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# REMEDIAL ACTION PLAN

Western Property, Former Powerine Refinery
Parcels 8009-022-017, -029, -030, and -031
12345 Lakeland Road, Santa Fe Springs, CA

Prepared on behalf of:
rdx Technologies Corporation

Prepared for:
Regional Water Quality Control Board
Los Angeles Region

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# Sign-off Sheet

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# Executive Summary

This Remedial Action Plan/Response Plan (RAP) for proposed cleanup activities at the former Powerine refinery located at 12345 Lakeland Road in Santa Fe Springs, California (Site) has been prepared on behalf of rdx Technologies Corporation. This report was prepared pursuant to the California Land Reuse and Revitalization Act (CLRRA), California Health & Safety Code Section 25395.96.

This RAP, which addresses the western parcels of the former refinery site (i.e., Parcels 8009-022-017, -029, -030, and -031, hereafter referred to in this RAP as the Western Property or the Site, revises and replaces a previous refinery-wide RAP prepared by Murex Environmental, Inc. (Murex 2013a). A second separate RAP prepared by Stantec for Goodman Santa Fe Springs SPE LLC (Goodman), also a revision of the previous refinery-wide RAP, addresses the eastern parcels of the former refinery site (i.e., Parcels 8009-022-053, -054, -055, -056, -057, and -058, hereafter referred to as the Eastern Property). Unless otherwise noted, all of the data and much of the discussions, analysis, and recommendations are taken from the refinery-wide RAP.

Pursuant to California Health and Safety Code Section 25393.96, the public, other agencies, and the host jurisdiction shall have the opportunity to participate in decisions regarding the response action, taking into consideration the nature of the community interest. Thirty days before taking action pursuant to the response plan, the agency shall provide the notifications as set forth in the CLRRA statute.

**Site Background and Redevelopment**

The Site is approximately 18 acres in size and is bordered to the north by Florence Avenue and to the south by Lakeland Road. The Site is bordered to the north, west and south by commercial and industrial properties and to the east by the Eastern Property of the former Powerine Refinery. Both the Site and the Eastern Property were operated as an oil refinery from the 1930s until July 1995.

Previous refining operations included processing crude oil into several grades of fuel including kerosene, leaded gasoline and aviation fuel, unleaded gasoline, jet fuel, high and low-sulfur diesel, fuel oil, and petroleum coke. Soil and groundwater quality beneath and in proximity to the Site has been impacted by accidental spills. Soil and groundwater investigations, as well as

proposed remedial activities have been conducted previously pursuant to a Cleanup and Abatement Order (CAO) No. 97 118 issued by the Regional Water Quality Control Board – Los Angeles Region (RWQCB) to Powerine Oil Company.

The Western Property is owned by rdx Technologies Corporation. The Site is zoned as industrial property and will remain a commercial/industrial property into the future. Demolition of former refinery facilities and construction of new commercial properties is planned and these properties are expected to resemble those of redeveloped properties to the east, across Bloomfield Avenue, and to the south, across Lakeland Road.

**Site Impacts**

A chronology of the identified documented and suspected releases after 1954 can be found in Table I. A map showing areas where historical releases occurred or may have occurred is located on Figure 5. The numbering of historical releases on Figure 5 coordinates with the enumeration of the releases on Table I. Note that Table I and Figure 5 have been revised from the original refinery-wide RAP to show only historical releases associated with the Western Property, however the release feature sequential numbering is unchanged from the original refinery-wide RAP. Therefore, gaps in the sequential numbering are intended.

Impacts on the former refinery property are present as a result of petroleum storage and refining operations. As such, chemicals associated with these releases include total petroleum hydrocarbons (TPH) as various ranges of hydrocarbon weights (i.e., TPH gasoline range organics [TPHg], TPH diesel range organics [TPHd], and TPH motor oil range organics [TPHmo]), volatile organic compounds (VOCs), such as benzene, toluene, ethylbenzene, and xylenes (BTEX compounds), polycyclic aromatic hydrocarbons (PAHs), such as dibenzo(a,h)anthracene, and petroleum product additives and processing chemicals (including metals and other VOCs). The Western Property subsurface is divided into the following major horizons for purposes of risk evaluation and remedy selection: (1) shallow soil (0 to 10 feet below ground surface [ft-bgs]); (2) deep soil (10 to approximately 90 to 100 ft-bgs, the approximate depth to groundwater); and (3) groundwater.

The shallow zone extends from ground surface to 10 ft-bgs. Based upon the findings of the baseline human health risk assessment (HHRA) and the HHRA Addendum, chemicals of concern (COCs) in the shallow soil samples include TPHg, TPHd, TPHmo, PAHs, VOCs, and metals. Soil vapor within the shallow soil exhibits BTEX compounds.

The deep soil is considered to be soil extending from 10 ft-bgs to approximately 100 ft-bgs (current depth to water table below the former refinery). COCs in deep soil include TPHg, TPHd, TPHmo, PAHs, and VOCs. In general, the PAHs and VOCs occur in similar locations and depths as the TPH compounds, although not in all areas. Methane is present in deep soil vapor.

Sampling and analysis of groundwater from Site wells in the third quarter of 2013 indicates that only benzene and methyl tert-butyl ether (MTBE) were present at concentrations exceeding the target remediation criteria (TRCs) listed on Table II for groundwater (Murex 2013b). Benzene was detected at concentrations exceeding the TRC of 1 microgram per liter (µg/L) in two wells (MW-703, 8.7 µg/L; and MW-704, 860 µg/L) (Figure 9). MTBE was detected at a concentration exceeding the TRC of 13 µg/L in one well (MW-704, 250 µg/L).

The TRCs for TPHg and TPHd are the presence of FPPH. No FPPH was observed during the third quarter 2013 monitoring event. FPPH has been observed previously in well W-11, most recently in August 2012 when 0.09 feet of FPPH was documented in the well (Murex 2012).

**Site Cleanup Goals**

Site cleanup goals are intended to be protective of human health and the environment, and groundwater. The selection of cleanup goals for the Site is based on a human health risk assessment previously conducted for the entire refinery property, and on consideration of potential threat to groundwater from deep soil and actual groundwater conditions. Table II presents the TRCs for soil and groundwater that represent the site cleanup goals.

The selection of cleanup goals for the Site involved choosing 1) appropriate human health-based goals for shallow soil (0-10 feet), as calculated through the use of a human health risk assessment, and 2) groundwater protection goals as assigned in published guidance documents by the RWQCB.

To facilitate development, the RWQCB has agreed to allow two phases of cleanup goals. The first will achieve site-specific human health risk-based cleanup goals to protect construction and commercial workers and expedite redevelopment activities, and the second will address protection of groundwater over the longer term. *Remediation Guidance for Petroleum and VOC-Impacted Sites*, Section II, Table 4-1 of that document specifies soil screening levels for TPH and BTEX above drinking water aquifers.

The Site's history of oil production (i.e., the historical presence of oil production wells on the Site) and the presence of high levels of methane in site soils will require that all buildings constructed on the Site be equipped with engineering controls to mitigate methane seepage and accumulation inside occupied spaces. These controls will have the added benefit of protecting future Site occupants from any unknown conditions related to VOCs and vapor intrusion, and was an important consideration in the evaluation of human health risk for future receptors.

**Identification of Remediation Areas**

A number of soil samples collected in the top ten feet at the Site exhibit COC (TPHg, TPHd, TPHmo, arsenic, lead, benzene, and dibenzo[a,h]anthracene) concentrations above the Site cleanup levels for shallow soil. Remediation of the upper 10 feet of soil to address these conditions and expedite redevelopment of the property is planned.

In the deep soil, TPHg, TPHd, TPHmo, and VOCs are present above Site cleanup goals. Remediation of deep soil and groundwater during and following redevelopment of the property is planned.

**Proposed Remedial Action Objectives and Remedial Action**

The following remedial action objectives are proposed for the Site:

- Mitigate unacceptable risk to humans involved in development and re-use of the property by reducing surface and shallow soil concentrations in the upper 10 feet to below human health risk-based cleanup levels derived for the Site (i.e., the TRCs specified for shallow soil in Table II), and controlling vapor intrusion to buildings through engineering controls.
- Expedite beneficial re-use of the property through redevelopment for commercial/industrial use.
- Protect groundwater from further degradation from Site contaminants.

The refinery-wide RAP evaluated several available remedial technologies suitable for the Site and identified the following remedial alternative as being preferred:

- Shallow soil - Excavation and off-site disposal. Installation of engineering controls per City of Santa Fe Springs building codes during Site redevelopment to mitigate vapor intrusion into occupied buildings
- Deep soil – Bioventing and air injection

- Groundwater – Air sparging

The proposed remedial action aggressively addresses shallow soil contamination to mitigate human exposure risk while allowing expeditious redevelopment to return the property to beneficial use. It also provides for longer term reduction in groundwater concentrations beneath the Site and reduces the threat to groundwater from residual soil contamination remaining in the vadose zone. The proposed remedy is protective of both human health and groundwater and is cost effective given the risks posed by the Site.

**Cleanup Approach**

The stages of advancement on this project are expected to follow the following general path:

1. Planning, permitting, and regulatory approval process
2. Demolition of remaining facilities (office/lab buildings, above-ground storage tanks, piping, and concrete slabs and footings)
3. Profiling and disposal and/or scrapping of demolition debris
4. Completion of site characterization (i.e., under-structure sampling, where necessary)
5. Shallow soil excavation, management, profiling, and disposal
6. Site restoration and mass grading
7. Entitlements and redevelopment approvals
8. Installation of deep soil and groundwater remediation infrastructure
9. Development construction and concurrent operation of vadose zone and groundwater remediation systems

**Variance**

As conditions in the field may vary, it may become necessary to implement variances when performing the proposed remediation activities as presented in this RAP. Field personnel will notify the project manager when deviations from this RAP are necessary. The RWQCB will be notified of significant variances immediately, and a verbal or written approval will be obtained from the RWQCB before implementing the modifications, where possible. Variances to the approved RAP will be documented in writing; an amended RAP may be necessary if excessive variances are required.

**Project Schedule**

The Western Property is currently in negotiation for a potential sale to Goodman, the owner of the Eastern Property. Property redevelopment plans are currently being evaluated by the

parties. A remediation schedule is currently being developed and will be submitted under separate cover.

# Abbreviations

| | |
|---|---|
| amsl | Above Mean Sea Level |
| APN | Assessor's Parcel Number |
| ARARs | Applicable or Relevant and Appropriate Requirements |
| AST | Aboveground Storage Tank |
| bgs | Below Ground Surface |
| CAO | Cleanup and Abatement Order |
| CDMG | California Department of Conservation Division of Mines and Geology |
| CDWR | California Department of Water Resources |
| CEQA | California Environmental Quality Act |
| CERCLA | Comprehensive Environmental Response Compensation & Liability Act |
| COC | Chemical of Concern |
| D(a,h)a | Dibenzo(a,h)anthracene |
| DOGR | Division of Oil & Gas Resources, State of California |
| DRO | Diesel Range Organics |
| DTSC | Department of Toxic Substances Control |
| ft | Feet |
| FPPH | Free Phase Petroleum Hydrocarbon |
| GRO | Gasoline Range Organics |
| HERO | Human and Ecological Risk Office of DTSC |
| HASP | Health and Safety Plan |
| HHRA | Human Health Risk Assessment |
| HI | Hazard Index |
| HVAC | Heating, Ventilation, and Air Conditioning |
| IAS | In-Well Air Sparge Well |
| ILCR | Incremental Lifetime Cancer Risk |
| LEL | Lower Explosive Limit |
| MRO | Motor Oil Range Organics |
| NFA | No Further Action |
| NOE | Notice of Exemption |
| OEHHA | Office of Environmental Health Hazard Assessment |
| O&M | Operation and Maintenance |
| OPR | Office of Planning and Research |
| PAH | Polycyclic Aromatic Hydrocarbons |
| PEA | Preliminary Environmental Assessment |
| Phase I | Phase I Environmental Site Assessment |
| ppmv | parts per million by volume |
| PRPs | Potentially Responsible Parties |
| psi | pounds per square inch |

| | |
|---|---|
| RAA | Remedial Action Alternative |
| RAIP | Removal Action Implementation Plan |
| RAO | Remedial Action Objectives |
| RAP | Remedial Action Plan |
| RAW | Remedial Action Workplan |
| RBCs | Risk-Based Cleanup Goals |
| RCRA | Resource Conservation and Recovery Act |
| RWQCB | Regional Water Quality Control Board |
| SCAQMD | South Coast Air Quality Management District |
| SCFM | Standard cubic feet per minute |
| TBC | To Be Considered |
| TPHg | Total Petroleum Hydrocarbons – Gasoline Range Organics |
| TPHd | Total Petroleum Hydrocarbons – Diesel Range Organics |
| TPHmo | Total Petroleum Hydrocarbons – Motor Oil Range Organics |
| UEL | Upper Explosive Limit |
| USEPA | United States Environmental Protection Agency |
| USGS | United States Geological Survey |
| UST | Underground Storage Tank |
| VOCs | Volatile Organic Compound |

# 1.0 Introduction

This RAP for proposed cleanup activities for Parcels 8009-022-017, -029, -030, and -031 at the former Powerine refinery located at 12345 Lakeland Road in Santa Fe Springs, California (Site, see Figure 1) has been prepared on behalf of rdx Technologies Corporation. This report was prepared pursuant to the California Land Reuse and Revitalization Act, California Health & Safety Code Section 25395.96.

This document provides background on the site, summarizes the findings of historical investigations and risk assessment, presents site cleanup goals, evaluates remedial alternatives, and provides an implementation plan and schedule for the completion of the selected remedial alternative.

The RWQCB requested the preparation of a RAP that would select a remedial alternative for site soil and groundwater, describe implementation measures, and propose a schedule for completion of site cleanup. Site representatives, Murex, and the RWQCB met on November 17, 2011 to discuss specific details of the requested RAP, including the selection of cleanup goals.

Between October 2011 and August 2012, Murex met with the DTSC and the RWQCB and submitted technical documents in support of the selection of Site cleanup goals for shallow soil, deep soil, and groundwater. These documents and the selected cleanup goals are discussed further in Section 4.0.

## 1.1 PURPOSE OF RAP AND LIMITATIONS

Previous investigations have identified chemical impacts in site soil and groundwater, including TPH (TPHg, TPHd, TPHmo), VOCs, PAHs, and metals such as lead and arsenic. This RAP summarizes site chemical impacts, identifies where impacts exceed site cleanup goals, evaluates various remedial options for cleanup, selects a remedial alternative, and presents an implementation plan for initiating the selected remedial alternative.

The RAP is not intended to address off-site groundwater impacts resultant from releases from the former refinery. The off-Site groundwater plume is still being studied, exhibits evidence of contribution from other parties, and may require additional characterization before remedies can be evaluated. This RAP is also not intended to address soil or groundwater impacts on the Eastern Property of the former refinery. The Eastern Property is the subject of a separate RAP being prepared by another party.

This document is not intended to provide a complete engineering design and should not be used for purposes of acquiring construction permits, performing estimation take-offs, or for preparing final cost estimates.

Subsequent to the approval of this document by the RWQCB, a formal engineering design will be prepared in order to gain permits, secure contractor bids, and plan for the safe and complete implementation of the proposed remedy.

This RAP prepared by Stantec, which addresses the Western Property (i.e., Parcels 8009-22-017, -029, -030, and -031), revises and replaces a previous refinery-wide RAP prepared by Murex (Murex 2013a). A second RAP, also a revision of the previous refinery-wide RAP, addresses the Eastern Property of the former refinery site (i.e., Parcels 8009-022-053, -054, -055, -056, -057, and -058). Unless otherwise noted, all of the data and much of the discussions, analysis, and recommendations are taken from the refinery-wide RAP.

Pursuant to California Health and Safety Code Section 25393.96, the public, other agencies, and the host jurisdiction shall have the opportunity to participate in decisions regarding the response action, taking into consideration the nature of the community interest. Thirty days before taking action pursuant to the response plan, the agency shall provide the notifications as set forth in the CLRRA statute.

## 1.2 REPORT ORGANIZATION

The following sections of the RAP are organized as follows:

- **Section 2, Site Background:** This section describes the site, its historical petroleum refining operations, and regional and local geology and hydrogeology.

- **Section 3, Nature and Extent of Subsurface Impacts:** This section provides an overview of the environmental assessments conducted at the Site and characterizes the type and degree of impacts to soil and groundwater, including those potentially arising from off-Site sources.

- **Section 4, Summary of Risk Evaluation and Site Cleanup Criteria:** This section presents the cleanup goals developed through discussions with the DTSC and RWQCB.

- **Section 5, Identification of Impacted Areas Above Cleanup Criteria:** Section 5 outlines the on-site extents of contamination in shallow soil (0-10 feet), deep soil (10 feet to groundwater), and groundwater.

- **Section 6, Remedial Action Objectives and Alternatives Selection:** This section specifies the remedial action objectives for soil and groundwater at the site and discusses evaluation and selection of the proposed remedial alternatives for shallow soil, and deep soil and groundwater.

- **Section 7, Proposed Remedial Alternative and Recommended Design Parameters:** Section 7 describes the selected remedial alternatives.

- **Section 8, Implementation Plan:** This section develops a general site-wide approach for implementation of the RAP. Included in this section are implementation plans for excavation of shallow soil as well as bioventing and air sparging plans for deep soil and groundwater impacts.

- **Section 9, Project Schedule:** Section 9 addresses the schedule for RAP implementation. The Western Property is currently in negotiation for a potential sale to Goodman, the owner of the Eastern Property. Property redevelopment plans are currently being evaluated by the parties. A remediation schedule is currently being developed and will be submitted under separate cover.

# 2.0 SITE BACKGROUND

## 2.1 SITE LOCATION AND GENERAL DESCRIPTION

The Site is approximately 18 acres in size and is bordered to the north by Florence Avenue and to the south by Lakeland Road. The Site is bordered to the north, west and south by commercial and industrial properties and to the east by the Eastern Property of the former Powerine Refinery. The property is actually made up of four parcels, 8009-022-017, -029, -030, -031, within the City of Santa Fe Springs, Los Angeles County, California. Figure 2 shows the parcel line divisions (parcel lines shown in blue).

The Eastern Property and Western Property together were operated as an oil refinery from the 1930s until July 1995. Oil-production-related structures such as ponds and aboveground holding tanks may have also been located onsite during these years (Haley & Aldrich, Inc. [Haley & Aldrich], 2005). The refinery ceased operations in July 1995. Since then, refinery structures, such as tanks, overhead piping, and other infrastructure, have been removed in stages. The remaining refinery structures are intended to be removed or demolished prior to the redevelopment of the property for commercial/industrial use. Figure 2 shows an aerial photo of the Site in its recent condition.

Soil and groundwater quality beneath and in proximity to the Site have been impacted by accidental spills. Soil and groundwater investigations have been conducted pursuant to a CAO No. 97-118 issued by the RWQCB to Powerine Oil Company (CENCO Refining Company) in 1997 (Haley & Aldrich, 2005). A summary of previous site investigations is presented below in Section 3.0.

## 2.2 HISTORY OF SITE USES

The refinery was historically operated by various entities, including the Bell View Oil Syndicate, Rothschild Oil Company, Powerine, Mr. Oscar Schmidt, Castle Energy Corporation, Energy Merchant Corporation, and CENCO. Information regarding site ownership and on-site operations was obtained from the January 28, 2000 Revised Master Work Plan, prepared by Versar, Inc. (Versar, 2000).

A review of aerial photographs dated 1928 and 1938 indicates that the western portion of the former refinery may have historically been used for agricultural purposes. Prior to construction of the refinery, the Powerine Refinery site was an oil field consisting of crude oil production wells and unlined sumps. In 1936, Rothschild Oil Company purchased the refinery from the Bell View Oil Syndicate. The Rothschild Oil Company owned and operated the Powerine Refinery from 1936 to 1984, when Powerine went into bankruptcy and ceased operations. In 1986, the refinery emerged from bankruptcy under new ownership by Mr. Oscar Schmidt. Mr. Schmidt restarted the refinery and continued operations until 1992, when it was shut down again due to financial hardships. In 1993, the Castle Energy Corporation purchased Powerine and operated the

refinery until 1995, when refinery operations were suspended. In 1996, Energy Merchant Corporation purchased Powerine. In August 1998, CENCO purchased the assets and liabilities of Powerine.

The former refinery had three main operational areas identified as the East Tank Farm, the Processing Area, and the West Tank Farm. The East Tank Farm was located in the southeastern portion of the former refinery, within the eastern property. This area contained several aboveground storage tanks (ASTs) and a storm water impounding basin in the southeast corner of the refinery. The ASTs were used to store various petroleum products, including crude oil, gasoline, jet fuel and intermediate refined products, propane, isobutylene, and butane. The Processing Area was located in the central and northern portions of the refinery, also mostly within the eastern property. The Processing Area contained an administration building, a maintenance office, a laboratory, and processing equipment including crude units, a fluid catalytic cracking unit, an alkylation unit, a coker unit, a sulfur plant, a hydrogen plant, a hydrocracker, various hydrotreating units, and a gasoline blending facility. The West Tank Farm was located along the western boundary of the refinery and contained several ASTs. The ASTs were used to store wastewater, vacuum residuum, gas oil, and other fuel products. Also, connections in at least three locations link the former Powerine refinery storage infrastructure with the regional network of petroleum transmission pipelines.

## 2.3 CURRENT SITE USE

The Western Property is owned by rdx Technologies Corporation. The Site is zoned as industrial property. The Site is currently in use by rdx Technologies Corporation for non-hazardous wastewater storage, treatment, and discharge through the Site's industrial sewer connection. The facility accepts and processes non-hazardous liquid waste from construction dewatering and a variety of industrial sources. Discharge of treated wastewater occurs under permit by the Los Angeles County Sanitation Districts.

## 2.4 FUTURE SITE USE AND REDEVELOPMENT

The Site will remain a commercial/industrial property into the future. Demolition of former refinery infrastructure and construction of new commercial properties is planned. These redeveloped properties are expected to resemble those of redeveloped properties to the east, across Bloomfield Avenue, and to the south, across Lakeland Road. These redeveloped neighboring properties house large multi-acre shipping and distribution warehouse buildings. Approximately 90% to 95% of the redeveloped property will be covered by buildings or asphalt parking and driveways. The only future long-term occupants of the Site will be commercial workers.

## 2.5 GEOLOGY AND HYDROGEOLOGY

### 2.5.1 Regional

The site is located within the Santa Fe Springs Plain Subgeomorphic Province of the Los Angeles Coastal Plain at an elevation of approximately 130 to 140 feet above mean sea level (ft-amsl).

This plain is a slightly rolling topographic feature sloping gently to the northeast in the vicinity of the site due to the northwest trending Santa Fe Springs–Coyote Hills anticlinal system. The site is positioned above the southern limb of the Santa Fe Springs Anticline. Petroleum accumulation associated with this anticlinal structure has resulted in substantial oil production in the Santa Fe Springs area. Prominent topographic features in the area include the Puente and Coyote Hills to the northeast, east, and southeast. The San Gabriel River is located approximately 1.75 miles west of the site and flows from north-northeast to south-southwest (Haley & Aldrich, 2005; Versar, 2000).

The Los Angeles Coastal Plain area is a large structural basin that has accumulated thousands of feet of sediments since Miocene time and has been tectonically active. The Los Angeles Coastal Plain generally consists of alluvial materials deposited by the Los Angeles, San Gabriel, and Santa Ana Rivers. The Santa Fe Springs Plain is comprised of the Upper Pleistocene–age Lakewood Formation (California Division of Mines and Geology, 1999). The Lakewood Formation and the underlying San Pedro Formation are folded over the anticlinal dome structure (Haley & Aldrich, 2005; Versar, 2000).

Several regional water-bearing units have been identified within the older alluvial fan and valley deposits of the Lakewood Formation and underlying San Pedro Formation. In the site area, the Lakewood Formation begins at ground surface, ranges from 100 to 180 ft thick, and is composed of three hydrostratigraphic units: 1) the Bellflower Aquiclude (upper unit), 2) the Exposition Aquifer, and 3) the Gage Aquifer. The Exposition and Gage aquifers consist predominantly of sands and fine gravels with discontinuous, thinly bedded silts and clays. These aquifers have an approximate combined thickness of 100 to 150 ft, approximately half of which is saturated (Versar, 2000).

Within the site vicinity, the Bellflower Aquiclude consists of a heterogeneous mixture of clays, silty clays, silts, and extensive interbedded lenses of sandy or gravelly silts and clays and has an estimated thickness between 20 and 40 ft. The major water-bearing unit of interest for this investigation is the Exposition Aquifer (otherwise known as the Artesia Aquifer), the upper water bearing unit of the Lakewood Formation. The Exposition Aquifer is composed of coarse gravel, coarse to fine sand, and interbedded silts and clays with a general southwesterly dip and thickness between 40 and 80 ft. The Exposition Aquifer is separated from the Gage Aquifer by an unnamed aquiclude.

Information for the site area in Santa Fe Springs indicates that the depth to first-encountered groundwater within the Exposition Aquifer ranges from 75 to 100 ft-bgs. The Gage Aquifer consists predominantly of sands and fine gravels with an estimated thickness between 30 and 60 ft (Department of Water Resources [DWR], 1961; Versar, 2000; Haley & Aldrich, 2005).

### 2.5.2 Local

In the site vicinity, the Santa Fe Springs Plain consists of the late Pleistocene alluvium of the Lakewood Formation. The Lakewood Formation unconformably overlies the lower Pleistocene San Pedro Formation and the Pliocene Pico Formation. The Lakewood Formation consists of

interbedded clays, silts, silty sands, and sands representative of stream-type alluvial and floodplain deposits (Versar, 2000). Previous subsurface investigations conducted at the site confirm that the lithology is a vertically and laterally heterogeneous mélange of such alluvial deposits (Haley & Aldrich, 2005, Blasland, Bouck & Lee, Inc. [BBL], 2006; ARCADIS, 2009).

The underlying materials consist of interbedded alluvial sediments ranging in texture from poorly graded sands through fat clays.

Figure 3 shows the Site, as well as cross-section cut line A-A'. Figure 4 depicts a geologic cross-section, corresponding to the cut line on Figure 3.

Based on recent groundwater level measurements, first-encountered groundwater beneath the site vicinity ranges in elevation from approximately 35 to 50 ft-amsl. The average horizontal groundwater gradient is approximately 0.008 foot per foot (ft/ft), which represents what is considered a moderately steep gradient. The groundwater flow direction originates from the northeast and turns south across the site (Figure 9). This direction and gradient are consistent with historical measurements.

Aquifer testing performed at the site by IT Corporation (IT, 1986) resulted in calculated transmissivities between 124 and 13,613 gallons per day per foot within groundwater. IT interpreted the results as an indication of a highly heterogeneous water-bearing zone containing significant boundary effects. However, the aquifer materials encountered between approximately 90 and 130 ft-bgs during recent installations of groundwater monitoring wells (MW-701 through MW-715) were generally uniform across the saturated zone, and composed of medium to fine silty sand (Murex, 2011).

Selected samples of aquifer soils were subjected to geophysical testing during the 2008 supplemental site characterization event and again in 2011 during the pilot test. Using these values, groundwater seepage flux was calculated as shown in the table below:

| Sample Location | Sample Depth (ft-bgs) | K(vert) (cm/sec) | K(horiz) (cm/sec)[1] | Gradient[2] (ft/ft) | Porosity | Darcy Flux (ft/day) | Linear GW Velocity (ft/day) |
|---|---|---|---|---|---|---|---|
| B-232 | 90 | 0.00043 | 0.0043 | 0.008 | 0.3 | 0.10 | 0.32 |
| MP-11 | 100 | 0.00091 | 0.0091 | 0.008 | 0.3 | 0.21 | 0.69 |
| MP-11 | 120 | 0.00076 | 0.0076 | 0.008 | 0.3 | 0.17 | 0.57 |
| | | | | | | **Average Groundwater Flux Per Year (ft)** | **193** |

**Notes:**

1. Horizontal hydraulic conductivity is assumed to be 10 times the laboratory value for vertical hydraulic conductivity based on soil type
2. Average hydrogeologic gradient across the site over period 2009-2012 is 0.008 ft/ft

## 2.6 MUNICIPAL SUPPLY WELLS

Local public and municipal production wells were researched by Haley & Aldrich (2005). According to DWR (2001), two municipal supply wells are operated within and by the City of Santa Fe Springs at locations further than 1 mile from the Site:

- Well 03S/11W-20R09S, located approximately 3.7 miles south-southeast of the Site, generated approximately 1,526 acre-ft of groundwater from July 1, 2000, through June 30, 2001.
- Well 02S/11W-30R03S, located approximately 2.9 miles north of the Site, generated approximately 1,878 acre-ft of groundwater during that same period.

# 3.0 NATURE AND EXTENT OF SITE IMPACTS

## 3.1 IDENTIFICATION OF SOURCE AREAS

A chronology of the identified releases after 1954 can be found in Table I (prior to 1954, records were not available). A map showing areas where historical releases occurred or may have occurred is located on Figure 5. The numbering of historical releases on Figure 5 coordinates with the enumeration of the releases on Table I. Note that Table I and Figure 5 have been revised from the original refinery-wide RAP (Murex 2013) to show only historical releases associated with the Western Property, however the release feature sequential numbering is unchanged from the facility-wide RAP. Therefore, gaps in the sequential numbering are intended.

Fourteen documented releases (those recorded in incident reports or described by witnesses) are detailed in Table I. Of these, ten have been investigated completely; of those, eight exhibit elevated concentrations of COCs and will require remediation and the other two do not. The remaining four documented releases will be further characterized (see Supplemental Characterization Recommendations, RAP Section 8.4).

### 3.1.1 Potential Offsite Sources

Versar (2000) identified at least eight potentially responsible parties (PRPs) that have been responsible for major contributions of COCs, primarily chlorinated VOCs, to regional groundwater. Versar (2000) also indicated that "research conducted by CENCO suggests that there may be as many as 100 PRPs contributing to the presence of VOCs in groundwater on a regional scale." The most significant contributor is believed to be the Omega Chemical Superfund Site, which exhibits a groundwater plume that has reached and surpassed the former Powerine site headed in a southerly flow pattern. Currently, detections of chlorinated solvents are common in on-Site and off-Site Powerine groundwater wells.

## 3.2 SUMMARY OF PREVIOUS SITE INVESTIGATIONS

### 3.2.1 Previous Investigations – Site Soil

The first systematic and site-wide soil and soil gas investigation was conducted over the entire former refinery property by BBL in 2006; they conducted a soil investigation between November 8, 2005, and February 8, 2006, in accordance with the Additional Site Investigation Work Plan (Haley & Aldrich, 2005) as approved by RWQCB (2005). The BBL investigation focused primarily on shallow soil (from ground surface to approximately 20 ft-bgs). Although other historical investigations were conducted prior to that (IT, 1985; Versar, 2000), the BBL investigation consisted of collecting sample data from a total of 220 soil borings evenly distributed (100 by 100 foot grid) across the former refinery property. In addition, an active soil-gas survey was conducted at 221 locations across the former refinery property. Soil gas samples were collected and analyzed using semi-permanent soil-gas probes at depths of 5 and 10 ft-bgs.

In 2009, ARCADIS performed an additional soil investigation at the former refinery property in accordance with the RWQCB-approved work plan titled Supplemental Soil Investigation Workplan dated August 2007 to address data gaps identified in the 2006 investigation. The soil investigation was performed in three subsurface zones at the site: (1) surface (ground surface to approximately 2 ft-bgs, (2) shallow (2 to approximately 20 ft-bgs), and (3) deep (20 to approximately 90 ft-bgs, the approximate depth to groundwater at that time).

The surface and shallow soil investigations focused on addressing site data gaps. Deep soil was investigated primarily to target areas with known historical petroleum hydrocarbon releases. Soil samples were also gathered under former structures that had already been demolished, (i.e., former petroleum product holding tanks), to a depth of approximately 40 ft-bgs as part of this investigation.

The results of the soil and soil gas sampling activities are summarized in the following documents:

- Additional Site Investigation Report, by BBL, dated August 8, 2006.
- Supplemental Soil Investigation Report, by ARCADIS, dated June 8, 2009.

These results were also compiled and used to complete the HHRA in 2009, which is discussed further in Section 4.0.

The most recent soil investigation at the former refinery occurred in 2011 by Murex, which took place as a part of the implementation of the Pilot Testing Workplan (Murex, 2010). Soil samples were collected from borings during the installation of the bioventing and vapor monitoring wells to provide information on the physical characteristics of and chemical concentrations in the soil in the pilot test areas, located at the southeast corner of the West Tank farm, the northwest corner of the East Tank farm and the north central region of the former refinery adjacent to Florence Avenue. Samples from the soil borings were taken between 15 and 125 ft-bgs. Samples were analyzed for VOCs, PAHs, and TPH, and select samples (dependent upon soil recovery) were also tested for physical parameters such as grain size, air permeability, moisture content and fraction of organic content.

As a second phase of the pilot test, shallow soil borings were advanced to further characterize soil impacts in the shallow zone (0-10 ft-bgs); specifically, this phase of the test was designed to develop a statistical model for predicting the accuracy of soil excavation volume estimates, which would be developed as a part of this RAP. A total of 30 locations were sampled at 1, 3, 6, and 9 ft-bgs. The samples were collected using a direct-push, Geoprobe drill rig and analyzed for TPH, VOCs, and SVOCs.

A select subset of some of the most contaminated (i.e., judged by odor and appearance) samples were also analyzed for Title 22 metals to pre-characterize soil for disposal purposes that would likely be excavated later.

The results of the soil sampling and pilot test activities are summarized in Pilot Testing Report, (Murex, 2011).

Murex (2013a) concluded that a significant portion of the TPHg, TPHd, and TPHmo data reported in the BBL/Arcadis investigation reports from 2006 and 2009 were cumulative additions of the actual laboratory results, which were reported as individual carbon chain ranges, such as C9-C10, C11-C12, etc. The ranges selected by Arcadis for these summations differed slightly from the laboratory reporting carbon ranges from their analytical laboratory's (Calscience) TPHd and TPHmo ranges for the actual TPHd and TPHmo results; both result sets differed again from TPHd and TPHmo ranges reported by Murex's laboratory (Sunstar Labs). Murex elected to use the RWQCB carbon-chain ranges identified in the RWQCB's Remediation Guidance for Petroleum and VOC-Impacted Sites, Section II. In that publication, TPHg is identified as carbon weight ranges C4-C12. TPHd is identified as C13-C22. TPHmo is identified as C23-C32. Where possible, Murex used the reported data that most closely matched the RWQCB carbon ranges for each petroleum species. Where the ranges differed, Murex selected the higher result of the individual species result or the summed carbon range result.

### 3.2.2 Previous Investigations – Site Groundwater

Groundwater monitoring has occurred at the former refinery since August 1986 and continues presently on a quarterly basis. The most recent monitoring report is for third quarter 2013 reporting the results of the monitoring event that took place in August and September 2013 (Murex 2013b). Fifty-nine wells now make up the Powerine groundwater monitoring program, of which as many as twenty are currently dry, due to the decline in groundwater elevations that has occurred over the last twenty years. The locations of the twenty-four Powerine groundwater monitoring wells are shown on Figures 3 and 9.

In 2010, the RWQCB issued a letter to Lakeland Development Company titled, "Requirements for Subsurface Investigation and Cleanup Pursuant to Cleanup and Abatement Order No 97- 118, Former Powerine/CENCO Refinery". Among other requirements (submittal of a pilot test work plan and an off-site soil gas sampling work plan) the order letter contained two requirements related to groundwater: first, the RWQCB directed Lakeland to plan for and conduct the installation of new monitoring wells sufficient to replace those that had gone dry. Second, the letter required a characterization of FPPH beneath the former refinery property and in the vicinity.

Murex submitted work plans to install fifteen new monitoring wells and to complete the FPPH investigation that had been begun by ARCADIS in 2009. The findings of the investigation activities proposed therein were summarized in the following documents:

- Groundwater Investigation Report and First Quarter 2011 Groundwater Monitoring Report, Former CENCO Refinery, 12345 Lakeland Road, Santa Fe Springs, California, March 23, 2011.

- Free Phase Petroleum Hydrocarbon Investigation Report, Former CENCO Refinery, 12345 Lakeland Road, Santa Fe Springs, California, June 30, 2011.

- Addendum to the Free-Phase Petroleum Hydrocarbon Investigation Report, Former CENCO Refinery, 12345 Lakeland Road, Santa Fe Springs, California, January 25, 2012.

In general, the footprint of impacted groundwater within the Site boundaries has decreased over time. FPPH, once prevalent in certain wells on-Site, is now observed only sporadically in well W-11; most recently in August 2012 when 0.09 feet of FPPH was documented in the well (Murex 2012).

Murex concluded that intrinsic biodegradation continues to be viable, in at least some areas of the site and vicinity. Murex concluded that the main limiting factor is oxygen, which if introduced mechanically to groundwater, could spur significant reduction in contamination through biodegradation.

## 3.3 SUMMARY OF SUBSURFACE SITE IMPACTS

As discussed, COCs at the site are present as a result of petroleum storage and refining operations. As such, these chemicals include TPH as various ranges of hydrocarbon weights (i.e., TPHg, TPHd, and TPHmo), aromatic VOCs such as BTEX compounds, PAHs, such as dibenzo(a,h)anthracene, and petroleum product additives and processing chemicals (including metals and other VOCs). As described above, the site subsurface is divided into the following major horizons for purposes of risk evaluation and remedy selection: (1) shallow soil (0 to approximately 10 ft-bgs); (2) deep soil (10 to approximately 90 to 100 ft-bgs, the approximate depth to groundwater); and (3) groundwater.

### 3.3.1 Shallow Soil (0-10 ft)

The shallow zone extends from ground surface to approximately 10 ft-bgs. Based upon the findings of the HHRA and the HHRA Addendum, COCs in the surface soil samples include TPHg, TPHd, TPHmo, PAHs, VOCs, and metals Murex 2013a). Detailed maps indicating the extent of impact for each of the COCs are presented in the August 2006 Additional Site Investigation Report by BBL.

### 3.3.2 Deep Soil (10-100 ft)

The deep soil is considered to be soil extending from approximately 10 ft-bgs to approximately 100 ft-bgs (current depth to water table below the Site). COCs in deep soil on-Site include TPHg, TPHd, TPHmo, PAHs, and VOCs (Murex 2013a). In general, the PAHs and VOCs occur in similar locations and depths as the TPH compound detections, although not in all areas.

The distribution of petroleum-related COCs changes with depth, resulting from their varying properties. For instance, PAHs decrease significantly with depth due to their low mobility in the environment (Murex 2013a).

Methane is present in deep soil vapor (Murex 2013a).

Figures 7 and 8 depict three dimensional isometric views of total TPH and total VOCs from 0 to 100 ft-bgs across the entire former refinery property (i.e., including both the site and the Eastern Property). The most significant impacts are apparent in the southwestern portion of the site.

### 3.3.3 On-Site Groundwater

Sampling and analysis of groundwater from site wells in the third quarter of 2013 indicates that only benzene and MTBE were present at concentrations exceeding the TRCs listed on Table II for groundwater (Murex 2013b). Benzene was detected at concentrations exceeding the TRC of 1 µg/L in two wells (MW-703, 8.7 µg/L; and MW-704, 860 µg/L) (Figure 9). MTBE was detected at a concentration exceeding the TRC of 13 µg/L in one well (MW-704, 250 µg/L).

The TRCs for TPHg and TPHd are the presence of FPPH. No FPPH was observed during the third quarter 2013 monitoring event. FPPH has been observed previously in well W-11, most recently in August 2012 when 0.09 feet of FPPH was documented in the well (Murex 2012).

# 4.0 SUMMARY OF RISK EVALUTION AND SITE CLEANUP CRITERIA

The evaluation of Site risk addresses both human health risk and groundwater protection. The following discussion is taken from Murex 2013.

Although the RWQCB is the lead agency, the DTSC has historically contributed to the regulatory oversight by evaluating human health-related studies. As part of the CLRRA process, it is anticipated that the RWQCB will be designated as the lead agency.

## 4.1 HUMAN HEALTH EVALUATION

### 4.1.1 Site Conceptual Risk Model

A site conceptual risk model (SCRM) describes the relationship between chemical sources, migration pathways, exposure routes, and possible exposure pathways for hypothetical human receptors potentially present on and near the Site under current and future use scenarios. It is necessary to construct a SCRM and define potentially complete exposure pathways for hypothetical current and future receptors at the Site in order to evaluate whether mitigation is necessary for a given hypothetical risk. Figure 10 presents the SCRM for the Site showing all the potential exposure pathways relevant to the site. The Site SCRM was included in the human health studies discussed below and approved by the DTSC in May 2012.

As shown, the potential human receptors evaluated under the current scenario were the on-Site commercial/industrial worker and the off-Site resident. Under the future use scenario, the on-Site construction worker, the on-Site utility or trench worker, and the on-Site commercial worker were included for evaluation.

### 4.1.2 Summary of Human Health Risk Evaluation

ARCADIS completed a HHRA for the Site in 2009. The baseline HHRA evaluated potential on-Site and off-Site human health under current and anticipated future conditions in accordance with the RWQCB-approved ARCADIS-BBL 2007 work plan predicated on standard DTSC and USEPA risk assessment guidelines. This work plan was approved by the RWQCB on January 11, 2008 and the HHRA was submitted by ARCADIS in September 2009.

DTSC provided comments summarizing the results of their review of the HHRA in January 2011. Murex formally responded to the DTSC comments in a letter dated April 15, 2011. During an April 12, 2011 teleconference between Murex staff and the DTSC and the Human and Ecological Risk Office (HERO) staff, the responses were discussed, and an approach for the presentation of an HHRA Addendum was agreed upon. The HHRA Addendum was submitted to the DTSC/HERO and the RWQCB on August 22, 2011 and was conditionally approved with comments that were to be addressed in this RAP, discussed further below.

### 4.1.3 DTSC-Requested RAP Considerations

Murex and Lakeland representatives met with the RWQCB and DTSC case managers and the HERO toxicologist on February 28, 2012 to discuss the HHRA Addendum approval and the remaining DTSC comments on the HHRA/HHRA Addendum. The DTSC agreed that the remaining comments could be addressed in the RAP. These remaining comments are discussed below.

*Inclusion of VOCs as COCs for indoor air risks to future commercial/industrial workers:* These must be addressed in the upcoming remedial action; once included, the use of vapor barriers and passive venting systems, as required by City of Santa Fe Springs, would adequately address this concern and the pathway would be considered incomplete.

The HHRA Addendum did, in fact, address VOCs as contaminants of concern for indoor air risk to future commercial/industrial workers in Section 2.1.2. The calculated values were listed in HHRA Addendum in Table 9. Going forward, however, the vapor intrusion risk drops out of the remedial action planning analysis, because all buildings constructed on the Site are required by City of Santa Fe Springs regulations to be equipped with appropriate vapor mitigation engineering controls (an evaluation of methane risk is discussed further in section 4.3). Therefore, as shown on the SCRM (Figure 10), the vapor intrusion pathway is incomplete and remedial goals need not consider that exposure route.

*Evaluation of lead risk:* Lead should be considered a COC and evaluated for remedial action where its 95% UCL exceeds the CHHSL of 320 milligrams per kilogram (mg/kg).

Murex reviewed Site data for lead and found that the higher concentration samples occurred mainly in the shallow soil (less than 2 ft-bgs). In addition, several of these samples occur within areas of high TPH contamination and are likely areas for direct removal. Therefore, several of the highest lead contaminated sample locations were selected for removal, and extracted from the 95% UCL calculations. By directly addressing the highest lead contamination, the 95% UCL values decreased to less than the CHHSL of 320 mg/kg. Supporting calculations are included as **Appendix B1**.

### 4.1.4 Development of RBCs

Site-specific risk-based cleanup goals (RBCs) were derived for individual COCs that exceeded an incremental lifetime cancer risk (ILCR) of 1 × 10–6 in the Addendum to the Baseline Human Health Risk Assessment (HHRA Addendum), Table 8 (Murex, 2010). All soil non-cancer hazard indices were below the acceptable ceiling HI of 1, so RBCs were not calculated for the non-cancer endpoint. The nine COCs for which RBCs were derived in the HHRA addendum are:

- Aldrin
- Arsenic
- Benzene
- Benzo(a)pyrene
- Chlordane
- Dibenzo(a,h)anthracene

- Lead
- PCB-1254
- 1,2,3-Trichloropropane

The RBCs were calculated in the HHRA Addendum using the standard pathway-specific equations, DTSC default exposure parameters, and a target risk of 1 x 10-6.

Because DTSC manages commercial/industrial properties at an acceptable ILCR of 1 x 10-5, the HHRA Addendum risk characterization results for soil pathways were reviewed to identify the specific site areas for which the ILCR exceeded 1 x 10-5. Four risk exposure areas were evaluated across the former refinery, of which Areas 3 and 4 lie partially within the Site. Virtually all of Areas 1 and 2, and portions of Areas 3 and 4, lie within the Eastern Property (Figure 2). Of the two exposure areas that lie partially within the Site (Areas 3 and 4, see Figure 2), the ILCR for Area 4 did not have ILCRs exceeding 1 x 10-5, but Area 3 did. For Area 3, dibenzo(a,h)anthracene contributes to the majority of the ILCR and, if the exposure concentration used in the HHRA Addendum is replaced with the site-specific RBC of 0.6 mg/kg, the total ILCR is reduced to below 1 x 10-5. Accordingly, dibenzo(a,h)anthracene is the "risk driver" for soil in Area 3 and the only soil COC requiring remediation in that area.

Therefore, according to the findings of the HHRA and the HHRA Addendum, certain compounds present in shallow soil exceed acceptable human health limits. These levels, listed in the table below:

| Chemical | Limit | Applicable to Area |
|---|---|---|
| Arsenic | 13 mg/kg | Site-wide |
| Dibenzo(a,h)anthracene | 0.6 mg/kg | Area 3 |
| Lead | 320 mg/kg* | Site-wide |

**Remediation of lead-impacted soil is necessary where the 95% UCL of a given risk area exceeds the CHHSL of 320 mg/kg; however, individual samples exceeding 320 mg/kg may be acceptable to be left in place. A discussion of the 95% Pro UCL analysis for lead can be found in Appendix B1.*

## 4.2 GROUNDWATER PROTECTION EVALUATION

### 4.2.1 Site Soil – Phase One (Shallow Soil)

In the vadose zone soil at certain locations within the Site, TPH and other petroleum constituents are present at elevated concentrations. The HHRA and HHRA Addendum indicate these contaminants do not present any unacceptable health hazard due to an incomplete pathway to receptors; however, they may present a threat to groundwater quality. The regulatory guidance used to evaluate soil cleanup goals that would be protective of groundwater was the

RWQCB's Remediation Guidance for Petroleum and VOC-Impacted Sites, Section II. Table 4-1 of that document outlines the maximum soil screening levels for TPH and BTEX above drinking water aquifers, taking into account distance between impacted soil and groundwater, and soil type.

The need to mobilize quickly in the redevelopment of the Site led Murex and the RWQCB to discuss a two-tiered approach to soil cleanup goals. Human health-based soil cleanup goals are higher and more easily achievable in the short term. Because human health risk goals could be met relatively quickly, and would be protective of construction workers and commercial workers, achieving risk thresholds was considered under this plan as "phase one". In phase one, higher shallow soil cleanup values were selected for TPH (compounds without toxic health effects) and BTEX. Accomplishing the phase one goals for shallow soil would enable Site development.

The proposed interim cleanup goals for shallow soil were presented to the RWQCB in the form of two documents submitted in 2012:

*1. Proposed Site Remediation Goals, Former Powerine Refinery (SLIC 0318), Santa Fe Springs, California, Murex Environmental, June 13, 2012.*

*2. Response to RWQCB Comments on Proposed Shallow Soil Cleanup Goals, Former Powerine Refinery (SLIC 0318), Santa Fe Springs, California, Murex Environmental, July 16, 2012.*

The outcome of these recommendations is that human health-based cleanup goals will be met during phase one, in addition to addressing the highest levels of TPH and BTEX impacts in shallow soil, also during phase one. After reviewing these documents, the RWQCB agreed to the proposed interim shallow soil cleanup goals as presented in Table II verbally on August 30, 2012.

### 4.2.2 Site Soil – Phase Two (Shallow/Deep Soil)

Consistent with discussions with the RWQCB, phase two protection of groundwater soil cleanup goals for shallow and deep soil are consistent with those provided in the RWQCB's Remediation Guidance for Petroleum and VOC-Impacted Sites, Section II, Table 4-1. Those screening levels are provided in Table II.

### 4.2.3 On-Site Groundwater Cleanup Goals

Maximum Contaminant Levels (MCLs) as published by the California Department of Environmental Health (CDEH) will be the goals of the groundwater remedy, as required by the California Water Code. Table II lists these cleanup goals for groundwater.

## 4.3 METHANE RISK EVALUATION

Methane in soil beneath buildings is a concern for the health and safety of building occupants, because of the increased risk of fire or explosion. Methane gas, or "natural" gas, is combustible between 5% (its lower explosive limit, or "LEL") and 15% (its upper explosive limit, or "UEL") in air by

volume in an enclosed area. Methane commonly forms in areas where buried organic matter (especially petroleum hydrocarbon material) decays in the presence of moisture and absence of oxygen.

Underground vaults, electrical/utility rooms, and other first-floor rooms in enclosed residential and/or office buildings with a slab-on-grade foundation are at particular risk because of the potential for cracks in the building slab or utility penetrations to become conduits for methane seepage into an enclosed space within the first floor of a structure.

Historical data, as well as field data and observations recorded during the pilot test indicate that methane is present in the subsurface at concentrations above the lower explosive limit of 53,500 parts per million by volume (ppmV). This condition is common in the City of Santa Fe Springs "methane zone," a geographic area of historical petroleum production in which the Site is located.

Materials relative to the City of Santa Fe Springs' methane regulations, including the Methane Zone Map and Ordinance Number 955 are included as Appendix C.

As required by the City of Santa Fe Springs, an action level of 25% of the LEL for methane, or 12,500 ppmV (1.25% by volume) has been selected for methane.

# 5.0 IDENTIFICATION OF IMPACTED AREAS ABOVE CLEANUP CRITERIA

Murex conducted a comprehensive query of all shallow and deep soil investigation data to identify sample locations that contained contaminant concentrations above the cleanup goals as shown in Table II. The following subsections present the impacted areas above the cleanup criteria for the on-site shallow, deep, and groundwater zones.

## 5.1 SHALLOW SOIL

A number of soil samples collected in the top ten feet at the site exhibit COC concentrations above the Site cleanup levels for shallow soil. Figure 11 shows the occurrence of all contaminants above the TRCs in shallow soil at the site. Appendix B1 contains supporting lead UCL calculations.

The following sample locations, where soil samples exhibit concentrations above the target remediation levels, have been selected for excavation:

| Gasoline Range Organics |
|---|
| S111 |
| B155 |
| B171 |
| B241 |
| B423 |
| S037 |
| B299 |
| B303 |

| Arsenic |
|---|
| S010 |
| S025 |
| S026 |
| S037 |
| S040 |
| S054 |
| S109 |
| S110 |
| S286 |

| Motor Oil Range Organics | | |
|---|---|---|
| S109 | S029 | S083 |
| S110 | S030 | S084 |
| S111 | S035 | S091 |
| S112 | S036 | S264 |
| B183 | S037 | S020 |
| S025 | S048 | S298 |
| S026 | S060 | |
| S027 | S076 | |

| Diesel Range Organics | | | |
|---|---|---|---|
| B279 | B261 | S036 | S091 |
| B149 | B316 | S037 | S264 |
| B150 | B-422 | S042 | B253 |
| B155 | B-426 | S046 | B299 |
| B161 | B-427 | S047 | B303 |
| B183 | B-428 | S048 | S006 |
| B194 | S025 | S053 | S011 |
| B203 | S026 | S060 | S016 |
| B237 | S027 | S076 | S020 |
| B243 | S029 | S083 | S298 |
| B257 | S030 | S084 | |
| B258 | S035 | S090 | |

| Dibenzo(a,h)anthracene (Area 3 Only) |
|---|
| S042 |

| Lead |
|---|
| B123 |
| B150 |
| S011 |
| S037 |

Appendices B2 through B8 contain shallow soil data used in this analysis.

Evaluation and selection of remedial alternatives are discussed in Sections 6.0 and 7.0.

## 5.2 DEEP SOIL

The extent of petroleum hydrocarbon impact in the deep soil zone is based on the results of soil investigation efforts conducted at the site between 2006 and 2011. Figure 7 presents a three-dimensional depiction of the extent of total petroleum hydrocarbon impact and Figure 8 presents the total VOC extent of impact in similar fashion. These figures address the entire former refinery property, including both the Western and Eastern Properties.

The soil analytical results were grouped by Murex into three subzones (A, B, and C), each made up of 30-foot intervals from surface to the water table (approximately at 90 to 100 feet, depending upon the location on Site). For each subzone, concentrations of COCs relative to their target cleanup goals were used to develop isoconcentration contour maps. TPHg and BTEX, exhibiting similar properties, were grouped as one chemical family, and TPHd was the second (Murex 2013a).

Murex normalized the concentration for each constituent by dividing the concentration by the corresponding target cleanup goal. For each depth interval, the isoconcentration contour magnitude was developed by Murex based on the highest normalized TPHg, BTEX, or TPHd concentration. Figures 12, 13, and 14 present normalized concentrations contours for TPHg and BTEX for the three subzones A (0 to 30 ft), B (30 to 60 ft), and C (60 to groundwater). Figures 15, 16, and 17 show the normalized isoconcentration magnitude contours for TPHd for the same three depth intervals (Murex 2013a).

## 5.3 ON-SITE GROUNDWATER

As discussed in Section 3.3.3, sampling and analysis of groundwater from Site wells in the third quarter of 2013 indicates that only benzene and MTBE were detected at concentrations exceeding the TRCs listed on Table II for groundwater. Benzene was detected at concentrations exceeding the TRC of 1 µg/L in two wells (MW-703, 8.7 µg/L; and MW-704, 860 µg/L) (Figure 9). MTBE was detected at a concentration exceeding the TRC of 13 µg/L in one well (MW-704, 250 µg/L)

The TRCs for TPHg and TPHd are the presence of FPPH. No FPPH was observed during the third quarter 2013 monitoring event. FPPH has been observed previously in well W-11, most recently in August 2012 when 0.09 feet of FPPH was documented in the well (Murex 2012).

# 6.0 REMEDIAL ACTION OBJECTIVES AND ALTERNATIVES EVALUATION

As a part of the design of the proposed pilot test, Murex conducted a preliminary focused feasibility analysis to identify best-fit remediation technologies for the Site.

## 6.1 REMEDIAL ACTION OBJECTIVES

The following remedial action objectives are proposed for the Site:

- Mitigate unacceptable risk to humans involved in development and re-use of the property by reducing surface and shallow soil concentrations in the upper 10 feet to below human health risk-based cleanup levels derived for the Site (i.e., the TRCs specified for shallow soil in Table II), and controlling vapor intrusion to buildings through engineering controls.

- Expedite beneficial re-use of the property through redevelopment for commercial/industrial use.

- Protect groundwater from further degradation form Site contaminants.

## 6.2 INITIAL SCREENING OF REMEDIAL TECHNOLOGIES

Table III outlines the technologies considered in the initial screening conducted by Murex, divided into applicable zones of shallow soil, deep soil and groundwater. These technologies are:

Shallow Soil Zone:

- Excavation with Off-Site Disposal
- Excavation with On-Site Treatment
- Soil Cap
- No Action

Deep Soil Zone:

- Soil Vapor Extraction
- Bioventing
- Deep Soil Excavation
- Thermal Treatment
- No Action

Groundwater:

- Pump and Treat
- Air Sparging
- Chemical Oxidation
- In-Situ Biological Treatment (Biosparging)

- Monitored Natural Attenuation
- No Action

A description of each of these technologies can be found in Appendix D. Murex assigned each technology a score in each of the nine criteria outlined in Appendix D based on its ability to meet said criteria. Ratings scaled from 1 to 10, with 1 being poor and 10 being excellent. The sum of all a technology's ratings in each of the nine criteria categories equals the composite score assigned by Murex, which is listed in the far right column. The technologies colored in green were judged by Murex to be the most capable of meeting the remedial action criteria and being worthy of further evaluation.

## 6.3 SELECTION OF REMEDIAL ALTERNATIVE

Murex concluded that the results of the initial screening (summarized in Table III) indicated that seven total technologies met the criteria for best-fit technologies at the Site. These are:

Shallow Soil Zone: Excavation with Off-Site Disposal
Excavation with On-Site Treatment

Deep Soil Zone: Soil Vapor Extraction
Bioventing

Groundwater: Air Sparging
Chemical Oxidation
In-Situ Biological Treatment (Biosparging)

These technologies were considered by Murex and paired into three separate remedial alternatives, choosing one technology for each zone.

| | **Alternative #1** | **Alternative #2** | **Alternative #3** |
|---|---|---|---|
| **Shallow Soil Zone** | Excavation; Off-Site Disposal | Excavation; On-Site Treatment | Excavation; Off-Site Disposal |
| **Deep Soil Zone** | Bioventing | Soil Vapor Extraction | Soil Vapor Extraction |
| **Groundwater** | Biosparging | Air Sparging | Chemical Oxidation |

Table IV details the Murex focused feasibility screening process through which the three alternatives were compared. The ratings assigned to each technology were combined to create three composite scores for each alternative.

Alternative 2, with a composite score of 205, was deemed by Murex to be cost prohibitive as an on-site treatment facility for the excavated shallow soil would require greater capital costs and nearly double the yearly operation and maintenance (O&M) costs of Alternatives 1 and 3. Additionally, this alternative would require the management of high quantities of methane recovered from deep soil.

Alternative 3, with a composite score of 216, was deemed by Murex to also be cost prohibitive due to the need for chemical oxidants for groundwater remediation over a wide areal extent. Capital costs range $1-2 million higher than the two other alternatives. This alternative would also require a WDR permit, greater monitoring requirements, and would take longer to implement given the use of chemical injection. This alternative could also require additional studies to expand characterization of the hydrogeology to better understand the effects and flow of the chemical oxidants once injected.

Murex ranked Alternative 1 with the highest score of 226. This option was deemed the most flexible (both schedule-related flexibility and flexible to different development scenarios), exhibits the lowest annual O&M projected costs, and would be the easiest to implement. It combines three proven technologies which Murex concluded have a high certainty of meeting cleanup goals and satisfying the RAOs within the estimated time frame of 3 to 5 years.

# 7.0 PROPOSED REMEDIAL ALTERNATIVE AND RECOMMENDED DESIGN PARAMETERS

This section summarizes the results of the 2011 pilot test conducted on-Site and design parameters which will allow the selected technologies to meet the RAOs for the media of concern at the Site.

## 7.1 SUMMARY OF PILOT TEST

In anticipation of the remedial technologies that would likely be selected for full-scale implementation, the pilot test was intended to vet those approaches and collect performance data. Murex performed pilot testing activities on-Site in 2011, gathering information on the following topics:

- Shallow soil excavation – Murex tested soil in three areas across the former refinery property and conducted a statistical model to predict the variability of COC concentrations to improve soil excavation volume estimations.

- Bioventing – Bioventing was tested in two areas across the former refinery property, one with a higher occurrence of TPHg and BTEX and one with a higher level of TPHd. Oxygen propagation and depletion, methane depletion, VOC and TPH concentrations and degradation rates, radii of influence, and air injection pressures and flow rates were studied.

- Air Sparging/In-well Air Stripping – Murex tested two methods of delivering oxygen into to the saturated zone, and gathered design data on the delivery and effects of the sparging and stripping, including flow rates, radii of influence, depletion rates, and effects on concentrations of TPHg and VOCs.

The data were analyzed and presented in the November 21, 2011 report titled Pilot Testing Report, Former CENCO Refinery, 12345 Lakeland Road, Santa Fe Springs, California.

## 7.2 TECHNOLOGY DESIGN PARAMETERS

Through the data analysis conducted during the pilot test, several full-scale design parameters were developed. The following subsections summarize the results and conclusions obtained from pilot testing activities at the Site.

### 7.2.1 Shallow Soil (0-10 ft) Excavation

For shallow soil sampling, a total of 30 locations were sampled across the former refinery property at 1, 3, 6, and 9 ft-bgs. The samples were collected using a direct-push, Geoprobe drill rig and analyzed for TPH, VOCs, and PAHs. Historical data (collected in years prior to the pilot test) were used to develop estimated soil plume extents for each layer using spatial interpolation by kriging

the logarithmic value of each result. The new pilot test data were then fed into the model in a step-wise fashion so that changes in the estimated soil plume extents could be compared. If the new data caused a significant change in the original volume estimates, then the variance would indicate either that area of the Site or the nature of the chemical itself has a less predictable distribution of impact.

Murex concluded the following:

- Given the relatively high phase one clean-up goal for benzene of 4.0 mg/kg, resolution at the current sample spacing is sufficient to outline excavations with relative certainty.
- Areas previously inaccessible during the 2006 and 2009 soil sampling events should be characterized, as they can have a large impact on soil volume estimates.
- TPHd has the greatest uncertainty in its distribution based on this analysis. Impacts of TPHg and TPHmo are more easily outlined with greater confidence.
- Based on the costs of soil disposal versus the costs of soil analysis, Murex recommends step-out excavations proceed in 12-foot by 12-foot intervals in order to minimize the cost and time required to complete the excavations.

### 7.2.2 Deep Soil (Surface to Groundwater) Bioventing

The following table summarizes the predicted initial influent concentrations of vapor extracted from the vadose zone during bioventing operations. After approximately 1 to 2 months of cycled operation, predicted concentrations of methane decrease significantly, and VOCs taper off more slowly over a period of 6 to 18 months.

| Zone | Methane (ppmv) | VOCs (ppmv) | Oxygen (%) |
|---|---|---|---|
| Shallow Zone (A) | 700,000 – 900,000 | 850 – 1750 | 0.5 – 10 |
| Intermediate Zone (B) | 650,000 – 850,000 | 1200 – 3200 | 0.6 – 2 |
| Deep Zone (C) | 700,000 – 900,000 | 3,700 – 10,000 | 0.5 – 2 |

The following table summarizes the predicted air injection influence distance based on an assumed air injection flow rate between 1 and 2 cubic feet per minute (cfm) per linear foot of well screen, depending on zone and proximity to contaminated soil.

| Zone | $O_2$ Radius of Influence |
|---|---|
| A (surface to 30 ft-bgs) | 90 ft |
| B (30 to 60 ft-bgs) | 60 – 95 ft |
| C (60 ft-bgs to groundwater) | 65 – 90 ft |

The B zone exhibits the greatest variability due to the presence of a lower permeability soil. Oxygen consumption occurs in the unsaturated zone at a rate of approximately 0.5% to 2.1% per day.

The design extraction flow rate for vapor extraction is 1 to 2 cfm per linear foot of screen, and the expected radius of influence is 50 to 75 feet (spacing would be larger than radius of influence when combined with air injection).

### 7.2.3 Groundwater / Air Sparging and In-Well Air Stripping

The purpose of the air sparging wells is to oxygenate the impacted groundwater and spur biological degradation of TPHg and BTEX compounds. The design radius of influence for air sparging is approximately 33 feet for an air sparge well screened approximately 25 feet below the water table, and an injection rate of 5 to 15 cfm is expected. The oxygen degradation rate in groundwater is 14.5% per day, meaning pulsing in zones is a viable approach to air sparging. This will allow the use of smaller equipment infrastructure and lower energy costs.

According to calculations shown in Section 2.0, the groundwater velocity is approximately 0.5 feet per day. Given that, groups of air sparging wells can be arranged in rows perpendicular to the flow direction (south) of groundwater at distances of approximately 75 feet apart, such that groundwater will pass through two rows of sparge points per year.

### 7.2.4 Building Engineering Controls

During the implementation of the deep soil remediation, and to a lesser extent, during the long-term occupancy of the redeveloped Site, engineering controls will be necessary to mitigate the possible threat of vapor intrusion from methane and VOCs. These controls are likely to wholly or partially include impermeable vapor barriers and/or passive vent piping beneath building slabs, features to allow increased air exchange within the buildings, as well as other components. These engineering controls will be installed as required by and under the review and inspection of the City of Santa Fe Springs Department of Planning and Development.

# 8.0 IMPLEMENTATION PLAN AND SCHEDULE

The following section discusses both the overall plan for implementation of the proposed Site cleanup, as well as several specific aspects of how the cleanup will progress. This discussion is taken from the Murex refinery-wide RAP. Tables V through IX and Figures 18 through 27, as well as Appendices E through I help to illustrate the proposed approach.

## 8.1 GENERAL APPROACH

The stages of advancement on the Site are expected to follow the following general path:

1. Planning, permitting, and regulatory approval process
2. Demolition of remaining structures (office/lab buildings, above-ground storage tanks), piping, and concrete slabs and footings
3. Profiling and disposal and/or scrapping of demolished features
4. Completion of Site characterization (i.e., under-structure sampling, where necessary)
5. Shallow soil excavation, management, profiling, and disposal
6. Site restoration and mass grading
7. Entitlements and redevelopment approvals
8. Installation of deep soil remediation infrastructure
9. Development construction and concurrent operation of bioventing/biosparging system

## 8.2 DEMOLITION

The demolition of remaining below ground refinery facilities on the Site will be performed in accordance with the applicable and appropriate protocols, under the jurisdiction of the appropriate municipal or environmental agencies. Asphaltic coatings overlaying the soil berms that surround groups of ASTs will be removed separately, subject to disposal restrictions similar to those of roofing shingles. Demolition of concrete foundations and subsurface structures shall be conducted in consultation with the Site environmental manager, and may be conducted at the same time as soil excavation, given the possibility of encountering impacted soil. Demolition of all below-surface structures will comply with the requirements of the Soil Management Plan (SMP), Appendix G, which is discussed further in the following sections.

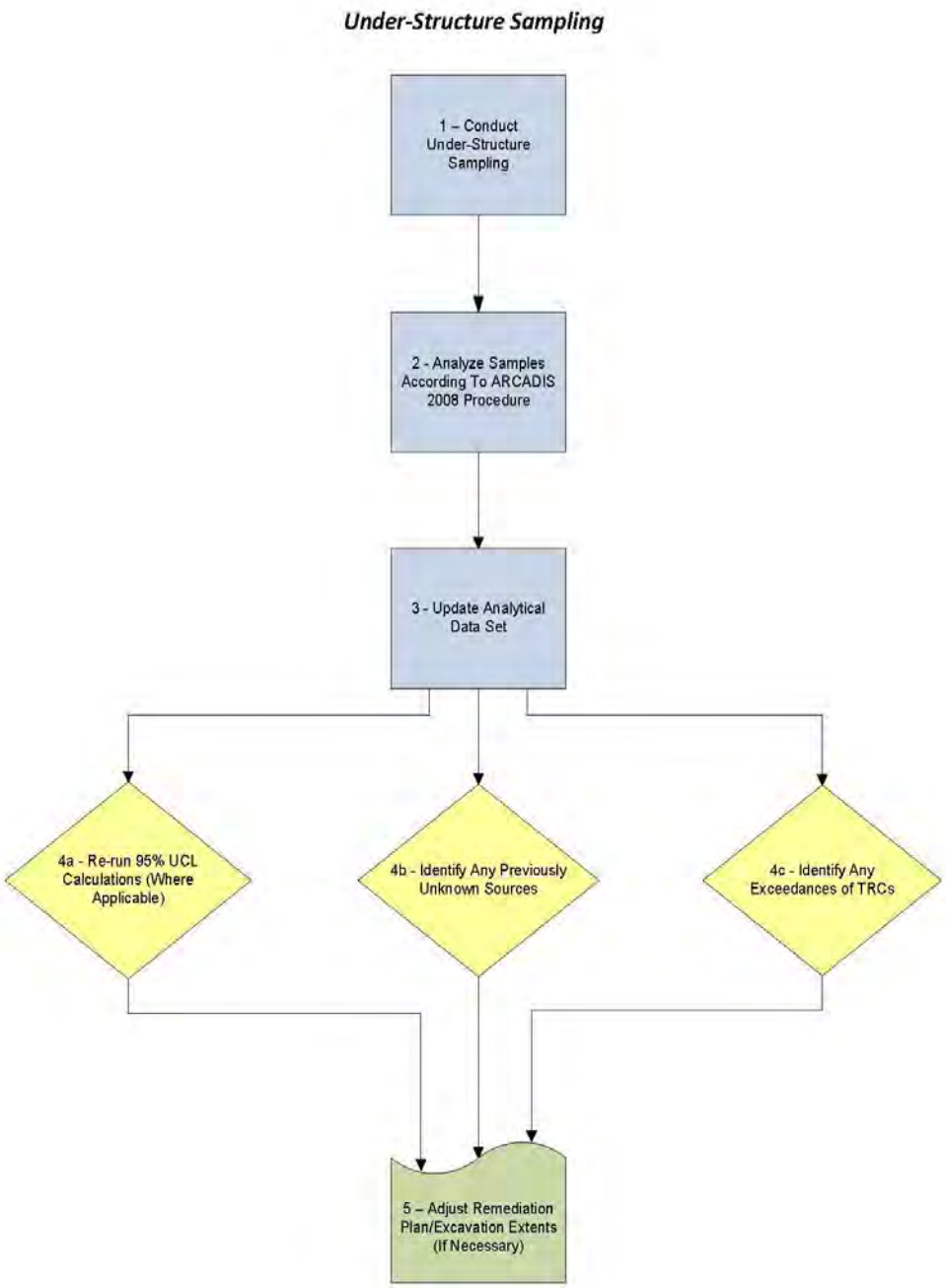
## 8.3 SUPPLEMENTAL CHARACTERIZATION RECOMMENDATIONS

Soil sampling under structures shall be done in accordance with Section 4.2.3 from the August 2007 Supplemental Soil Investigation Workplan produced by ARCADIS.

The investigation under refinery structures will characterize soil beneath ASTs, process units, and basins as they are demolished or dismantled and removed from the Site (see Figure 18).

Hollow-stem auger drilling rigs will be used to advance the soil borings, of which half will be completed to a depth of 40 ft-bgs and the other half will be completed to groundwater (approximately 100 ft-bgs). Samples will be collected using a split spoon sampler in accordance with the procedures described in the 2007 ARCADIS workplan. A total of 5 samples per boring will be analyzed for the 40 ft-bgs borings at depths of 5 feet, 10 feet, 20 feet, 30 feet, and 40 feet. A total of 10 samples per boring will be analyzed for the 90 ft-bgs borings at depths of 5 feet, 10 feet, 20 feet, 30 feet, 40 feet, 50 feet, 60 feet, 70 feet, 80 feet, and 90 feet. Each of the samples will be analyzed for TPH carbon-chain and VOCs by modified EPA method 8015. The 5- and 10-foot samples will also be analyzed for PAHs and Title 22 metals.

The following process flow diagram describes how the data collected during the supplemental characterization will be used:


Under-Structure Sampling
1 – Conduct Under-Structure Sampling
2 - Analyze Samples According To ARCADIS 2008 Procedure
3 - Update Analytical Data Set
4a - Re-run 95% UCL Calculations (Where Applicable)
4b - Identify Any Previously Unknown Sources
4c - Identify Any Exceedances of TRCs
5 – Adjust Remediation Plan/Excavation Extents (If Necessary)

## 8.4 SHALLOW SOIL EXCAVATION

### 8.4.1 Areas Identified for Excavation

Using kriging, isoconcentration contours for shallow soil impacts were generated and used to create excavation plans where impacts exceeded Site cleanup goals. Figure 19 depicts these areas across the entire former refinery property. Individual Site section figures within Appendix E (drawings E1 through E3) depict the planned excavation extents, the corresponding excavation identification number, and the contaminant(s) driving the cleanup. Table V lists each excavation, calculates the volume and weight of soil planned for removal, and tallies the total volumes for the Site (areas defined on Figure 2).

### 8.4.2 Health & Safety

As directed by the RWQCB, the selected remediation contractor shall prepare a site-specific health and safety plan that complies with Title 40 of the Code of Federal Regulations (CFR), Section 1910.120 (40CFR1910.120). The health and safety plan will be provided under separate cover as Appendix F of this RAP to the RWQCB prior to initiation of remedial activities.

### 8.4.3 Utility Survey

A desktop study will be completed using historical maps to identify the presence and location of subsurface utilities near areas of proposed excavation. Subsequently, a private utility locator service will conduct geophysical surveying to locate underground utilities in the vicinity of each excavation area. The survey methods may include using electromagnetic pipe and cable scanning devices, induction and metal detection, and ground-penetrating radar (GPR). Underground Service Alert (USA) will also be contacted a minimum of 72 hours prior to the initiation of any excavation activities.

### 8.4.4 Required Plans and Documentation

Additional documentation will be provided to agencies involved in permitting and overseeing the excavation work, including the City of Santa Fe Springs. These documents include:

- Truck traffic plan – detailing the route by which soil export trucks will travel over roads within the city;
- Grading plan – a set of civil engineering topographic plans detailing the volumes of soil planned for excavation, and how import fill will be placed, compacted, and graded.

### 8.4.5 Site Preparation

Prior to commencing excavation activities, a topographical survey of the Site will be completed, and excavation locations will be marked and surveyed. These tasks will be completed by a

California-licensed land surveyor. If necessary, relocation of utilities will be completed prior to excavation. Temporary facilities, such as exclusion zone fencing, sanitary facilities, and decontamination stations will be retained and erected.

A truck inspection, manifesting, and cleaning station will be positioned at a designated Site entrance. Crushed stone and/or rumble plates will be used to prevent the spreading of impacted soil onto Lakeland Road. More detailed information about soil management is included in the Soil Management Plan (Appendix G).

### 8.4.6 Site Control and Monitoring

Excavation locations will be mapped and excavation boundaries will be delineated to include offsets. Demarcation will be performed using one or more of the following materials: high-visibility paint, caution tape, stakes, and/or traffic delineators.

A dust monitoring program will be implemented during excavation activities to monitor for particulate matter (fugitive dust). The dust monitoring protocol is included in the Soil Management Plan (Appendix G).

A stormwater pollution prevention plan (SWPPP) will be developed for the Site as a part of the design and grading plans. SWPPP control measures, such as sandbags, hay bales, silt fencing, and crushed stone will be used to mitigate the outflow of any sediment during rain events.

### 8.4.7 Excavation and Soil Handling Methods

The proposed excavation is intended to remove soil that is impacted with one or more of the following contaminants: TPHg, TPHd, TPHmo, dibenzo(a,h)anthracene, arsenic, and lead. The segregation, stockpiling, profiling, and disposal procedures for impacted waste soil are discussed in the Soil Management Plan (Appendix G) and summarized below. Figures 20 and 21 illustrate the implementation steps for excavation, soil management, and waste soil segregation.

Step 1 – Mark/outline areas of excavation

> Excavation locations will be mapped and excavation boundaries will be delineated to include offsets. Maps of the excavations will be maintained by the field engineer(s) throughout the excavation activities using surveyed base points (such as benchmarks or surveyed offset stakes) as reference.

Step 2 – Excavate Soil

> Using the Soil Management Plan (Appendix G) as a guide, earth-moving equipment (i.e., excavators, front-end loaders) will be used to excavate the soil according to Appendix E and Table V.

Step 3 –Segregate soil

Where possible (TPH impacted areas), soil can be judged for its relative level of impact based on odor, staining, and photoionization detector (PID) readings. Where this is not possible (arsenic/lead contaminated soil, for instance) the pre-determined excavation extents will be wholly moved to stockpiles where characterization sampling is to occur.

Excavated soils that exhibit evidence of impairment will be segregated for waste management (see Figure 21).

Step 4 – Confirmation sidewall/bottom sampling

Confirmation samples will be collected to confirm the removal of contaminated soil that exceeds the Site cleanup goals. Refer to Section 8.5.8 of this RAP for further discussion regarding confirmation sampling.

Step 5 – Determine if confirmation samples are below cleanup goals

Excavation of each area is considered complete when laboratory analyses indicate that concentrations of COCs in confirmation samples are below the derived cleanup goals, as presented in Table II. Upon completion, each excavation will be secured or backfilled, as appropriate.

If laboratory analyses indicate that concentrations of COCs in confirmation samples exceed the derived cleanup goals, a 12-foot lateral expansion of the excavation will be implemented in the area of exceedance, and the flow of work will return to Step 2, above (see Figure 20).

Earthwork in excavation areas will be overseen by a field engineer working under the direction of a California-registered civil engineer to ensure worker safety and proper documentation. The oversight personnel will provide documentation, collect sidewall and bottom samples, monitor dust, odor, and VOCs, and direct the activities of the remediation contractor.

Soil demonstrated to be free from hazardous substances or exhibit known contaminants below the Site cleanup goals may be re-used as backfill. These decisions will be made by a California-registered civil engineer, and in consultation with the RWQCB.

### 8.4.8 Confirmation Sampling and Testing

Confirmation samples will be collected to confirm the removal of contaminated soil that exceeds the Site cleanup goals. Samples will be analyzed according to the intended contaminant removal goals of each excavation (i.e., an excavation designed for the removal of TPHg will be subjected to sidewall and bottom sampling for TPH-CC) unless visual or olfactory evidence suggests that other contaminants may be present above selected remediation criteria. The analytical program will include the following EPA analytical methods:

- TPH-CC (TPHg, TPHd, TPHmo) by EPA Method 8015M;
- VOCs by EPA Method 8260B;
- Title 22 Metals (or individual metals, as appropriate) by EPA Method 6010B/7400; and
- PAHs by EPA Method 8310.

Confirmation soil samples will be collected manually using a drive sampler lined with a stainless-steel tube or with a stainless steel trowel and certified, pre-cleaned laboratory-supplied glass jars. Samples may be gathered from excavator bucket teeth, provided the sample is acquired from a relatively undisturbed bottom or sidewall, and the slough has been wiped away prior to sampling.

The confirmation samples will be collected from an interval of 0 to 6 inches beneath the exposed excavation bottom and the excavation sidewall to confirm vertical and lateral removal. Upon recovery of the sample tube from the drive sampler, the tube will be trimmed to remove excess soil. Samples collected with a trowel will be placed in certified, pre-cleaned laboratory-supplied glass jars. The samples will be labeled with the date sampled, a unique identification number, and other identifying information. Samples will be sealed in sealable plastic bags and placed on ice in insulated coolers.

Each of the confirmation soil samples will be analyzed at an off-Site stationary State ELAP-certified laboratory for analysis. Soil samples will be submitted to the analytical laboratory on an expedited 24-hour turn-around time.

If laboratory analyses indicate that concentrations of COCs in confirmation samples exceed the Site cleanup goals, a 12-foot lateral expansion of the excavation will be implemented in the area of exceedance, as described in Section 8.5.7.

### 8.4.9 Field Documentation and Reporting

Documentation of field conditions and mitigation procedures will be noted in daily field reports. Field notes will document where, when, how, and from whom project information was obtained. Entries will be completed and accurate enough to permit reconstruction of field activities. Entries of activities will be recorded daily in the field notes and at a minimum will include the following:

- Site name and address;
- Recorder's name;
- Team members and their responsibilities;
- Time of Site arrival and time of Site departure from the Site;
- Other personnel on-Site;
- Summary of any on-Site meetings;
- Quantity of soils excavated and general description of soil and soil location;
- Quantity of soils temporarily stored on-Site, showing a sketch of the stockpile locations;
- Type and quantity of soils shipped by each transporter and manifest numbers associated with shipments;
- Deviations;

- Personnel records;
- Monitoring results/records;
- Wind direction and relative speed;
- Levels of safety protection; and
- Calibration readings for any equipment used, and equipment model and serial numbers.

Additional items to be included in daily field notes include dust monitoring results, PID readings, and collection of samples. The collection of samples will be documented daily on a Site map, including the use of a measuring tape/wheel to record sample locations.

Prior to backfill, sample locations will be surveyed by a California-licensed land surveyor.

The progress of RAP implementation will be reported in the form of quarterly progress reports.

#### *8.4.9.1 Decontamination*

Entry to the work area where the contaminated materials are encountered will be limited to essential personnel to avoid unnecessary exposure and related transfer of potentially impacted soil. In unavoidable circumstances, equipment or truck(s) will be decontaminated in a designated decontamination area before leaving the Site.

Disposable equipment intended for one-time use will not be decontaminated, but will be packaged for appropriate disposal. Relatively small equipment that comes into direct contact with potentially impacted soil or water will be decontaminated as described below. Non-phosphate detergent and tap water wash, using a brush if necessary:

1. Tap-water rinse
2. Initial deionized/distilled water rinse

Decontamination will occur prior to and after each designated use of a piece of equipment. Larger equipment (such as trucks and excavators) that comes into direct contact with potentially impacted soil or water will be decontaminated prior to leaving the Site to prevent the offsite tracking of impacted soil. Trucks will be visually inspected before leaving the Site and any dirt adhering to the exterior surfaces will be brushed off and collected on plastic sheeting. The storage bins or beds of the trucks will be inspected to ensure the loads are properly covered and secured. Excavation equipment surfaces will also be brushed off prior to removing it from the exclusion zone.

Equipment will be decontaminated in a pre-designated area on pallets or plastic sheeting. Cleaned bulky equipment will be stored on plastic sheeting in non-impact areas. Cleaned small equipment will be stored in plastic bags. Materials to be stored more than a few hours will also be covered.

Decontamination wash water will be collected and stored in drums, labeled, and profiled as potentially hazardous waste.

#### *8.4.9.2 Site Restoration*

The pits created from the soil excavation will be backfilled with clean soil imported from on-and off-Site sources, depending upon the availability of soil and the progress of development activities at the time of the excavation. The imported soil will be tested and confirmed clean prior to receiving it at the Site according the DTSC Information Advisory, Clean Imported Fill Material (DTSC, 2001). The backfill material may or may not be compacted, depending upon the depth of the excavation, the progress/status of mass grading activities connected with the property redevelopment, and the requirements of the City of Santa Fe Springs building department.

An appropriate density of characterization samples will be gathered from stockpiles or borrow fill source in order to ensure the imported soil is uncontaminated and acceptable. Fill material that is not characterized at the borrow area will need to be stockpiled until the analyses have been completed. Should contaminants exceeding acceptance criteria be identified in the stockpiled fill material, that material will be deemed unacceptable and new fill material will be obtained, sampled, and analyzed. Ideally, all sampling and analyses should be completed prior to delivery of fill material to the Site to ensure the soil is free of contamination, and to eliminate unnecessary transportation charges for unacceptable fill material.

## 8.5 DEEP SOIL REMEDIATION

The remediation system described in this RAP will be designed by a qualified, California-licensed engineer experienced in soil and groundwater remediation. The system design must be reviewed and approved by the RWQCB and City of Santa Fe Springs, and permitted for operation under the City of Santa Fe Springs, Department of Fire-Rescue oversight, as well as permitted through the Air Quality Management District of the South Coast (SCAQMD). The system must comply with applicable plumbing and electrical codes.

Examples of the remediation system well designs are shown in Figures 23, 24, and 25. The overall process of deep soil remediation is explained in the flow diagram displayed in Figure 26. This process flow describes the process through which the system will be installed, operated, and how success will be judged.

A detailed system design will be prepared under separate cover and is not included in this RAP.

### 8.5.1 Permitting

Once a design is completed, several permits will be required. First, permits for all wells advanced into the groundwater table (air sparging wells, performance monitoring wells, etc.) must be obtained from the CDEH.

Next, the system extraction and treatment units must be permitted through the SCAQMD. After approximately 3 months of review, the SCAQMD will issue a Permit to Construct the unit(s), and will require feedback data once startup is commenced in order to finalize a Permit to Operate.

System construction will require first submitting the design through plan check with the City of Santa Fe Springs. Once approved, an inspector will be assigned to the project and will require inspection visits for sign-off at certain project milestones.

### 8.5.2 Well Installation

Based on the analysis performed as a part of this RAP, a preliminary treatment well field design (see Figure 22) was created. Considering the thickness of the deep soil zone (~90 feet) and variations in soil type, the wells are designed to be triple-nested, dividing the deep zone into three subzones (A, B, and C).

In order to treat the on-Site portion of the deep soil plume, separate bioventing wells are needed (some wells will be installed in the same boreholes, screened within different zones, depending upon the depth of contaminants). In connection with these wells, separate air injection wells are also required. Typical bioventing and air injection well diagrams are shown in Figures 23 and 24.

For groundwater treatment, 13 air sparging wells were positioned across the site in six rows running west to east across the areas of impact. A typical air sparging well diagram is shown in Figure 25.

The wells will be installed by a California C-57 licensed well contactor using a hollow-stem auger drill rig that is able to reach the approximate 100-foot depth. All well installation activities will be completed under the direct supervision of a California-registered civil engineer or geologist. As determined by the field geologist, a subset of borings will be subject to soil sampling and analysis of TPH-CC (TPHg, TPHd, TPHmo), VOCs, SVOCs, Title 22 Metals, and PAHs.

Wastes from well installation will be staged onsite in roll-off bins or drums, and properly characterized/profiled prior to being neutralized and/or recycled at an approved disposal facility.

### 8.5.3 Bioventing Equipment Procurement and Installation

Based upon the design specifications, a system or systems will be procured through a manufacturing vendor. Because of the very high initial concentrations of methane in soil vapor, a two-staged approach may be used whereby a rental system or systems, capable of handling influent vapor streams exhibiting very high fuel values will be procured as a short-term rental. As concentrations of methane decrease (over approximately 3 months), the rental systems would be replaced with more permanent purchased systems.

The system(s) will likely be trailer-mounted, to allow for redeployment across different areas of the Site as areas reach target cleanup goals and as areas to the west become accessible. This will reduce the required length of manifold piping necessary to delivery injected air and delivery contaminated vapors to the treatment unit. The vapor treatment system(s) will consist, in general, of a vapor extraction unit capable of achieving a flow rate of approximately 500 cfm

at 5-7 inches of mercury (in-Hg) vacuum, a thermal oxidation burner unit, capable of operating between 900-1,200 degrees Fahrenheit, liquid condensate collection tank, integrated controls and monitoring devices consistent with SCAQMD monitoring requirements and rated safe for explosive atmospheres.

The air injection and sparging units will consist of multiple air blowers and/or oil-free air compressors, depending upon the configuration of wells, the number of active wells planned for use at any one time, and the calculated head loss resulting from air injected to the most distant well. In general, the system will attempt to deliver approximately 1 to 2 cfm per foot of air injection per screen active at a time.

A full-scale design will be prepared that will present the specific equipment proposed and the precise layout of air injection and vapor extraction piping.

### 8.5.4 Treatment Areas and Layout

A general layout of the wells for the Western Property is included as Figure 22 (note the well field shown for the Eastern Property is no longer applicable). The final locations of the wells will be determined in the field based on Site physical conditions and safe access. Minor position adjustments may be necessary, but the composition of the well layout will remain similar to its depiction in Figure 22.

The configuration of the system will likely employ a rotating series of active zones, such that each zone will be pulsed with injected air and vented through the bioventing wells on a loop. The intent of the design will be to inject air into an area long enough to supply it with the oxygen it needs, then moving on to another area while that oxygen is metabolized. A typical air injection/air sparge period is one to two hours.

### 8.5.5 Operation and Performance Monitoring Plans

Operation and performance monitoring of the remedial bioventing system is necessary to ensure that the system and biodegradation of petroleum hydrocarbon contaminants are optimized and performing in accordance with regulatory and cleanup requirements. Monitoring of the bioventing system would provide the necessary data to evaluate remediation progress and the basis for operation adjustments, as needed. Remediation progress is evaluated by mass removal of VOCs and biological degradation performance is evaluated by oxygen and carbon dioxide data.

The proposed operation and performance monitoring plans may be divided into the startup phase and long term operation phase, which are presented in the following subsections. Table VIII details the proposed operational monitoring and performance monitoring plans for bioventing. Table IX details the proposed groundwater remediation performance monitoring plan.

**Startup Phase**

The startup phase activities include system operation evaluation and optimization. The optimization activities include the efforts to balance flow, vacuum, oxygen delivery, oxygen uptake, carbon dioxide production rates while, to the extent possible, minimizing volatilization through vapor extraction from the bioventing wells. The startup phase is envisioned to take approximately two weeks where a number of parameters are measured in the field from all the wells, system influent and effluent including, flows, vacuum and pressure, oxygen concentrations, carbon dioxide concentrations, methane concentrations, and hydrogen sulfide concentrations.

Once the system is optimized, a baseline field measurement will be collected from each well and a vapor sample will be sent to the laboratory for analysis using EPA Method 8015 Modified. The baseline field measurements will include VOCs, oxygen, carbon dioxide, methane, and hydrogen sulfide. Furthermore, AQMD system monitoring samples will also be collected and analyzed, for the influent and effluent air streams, using EPA Method TO-15 Modified. Table VIII presents a summary of the proposed startup monitoring plan.

**Long Term Operation Monitoring Phase – Bioventing**

The long term operation will require monitoring the performance of the bioventing system through parameter measurements and sampling and analyses of vapors from bioventing wells. The field monitoring consists of measurements for VOC, oxygen, carbon dioxide, methane, air flow, and vacuum. The frequency for field monitoring is proposed to be biweekly in the initial four months of operation and monthly thereafter.

Selected wells will be chosen for sampling and laboratory analysis. Those wells would be selected based on location within the site, depth intervals, type of VOC, level of concentrations, and proximity to source of contamination. The objective of those wells is to provide subsurface data to be representative of the entire impacted zone within the vadose zone. The vapor samples collected from those wells will be analyzed using EPA Method 8015 Modified. The laboratory results will be used to correlate field measurement data for those wells not sampled. The proposed plan and frequency are provided in Table VIII.

The laboratory analysis data and field measurements data will be used to evaluate mass removal of VOCs over time. As mentioned earlier, the objective is to increase remediation through biodegradation and reduce VOC removal through volatilization. The periodic evaluation events will help in optimizing the system to increase bioventing effectiveness, and where necessary, make adjustments (i.e., vary flow or increase air injection) to achieve cleanup goals in a timely and cost-effective manner.

The long term performance monitoring plan will be finalized upon the completion of the final system design and remediation implementation schedule.

**Long Term Operation Monitoring Phase – Air Sparging**

In addition to the collection of air flow data (i.e., tracking the mass of oxygen injected over time), performance of the air sparging system will be measured mainly through field measurements and laboratory analysis of groundwater performance monitoring wells.

Figure 27 highlights existing groundwater monitoring wells that have been selected as performance monitoring wells, and in addition, proposes locations for additional monitoring wells to be installed in conjunction with the RAP activities.

These groundwater monitoring wells will be tested in the field using down-hole meters for the following parameters: dissolved oxygen (DO), oxidation-reduction potential (ORP), pH, temperature, and conductivity. The wells will be sampled monthly for the first 6 months for TPHg and VOCs by EPA method 8015.

### 8.5.6 General SCAQMD Monitoring

The SCAQMD Permit to Operate will require the following regular monitoring and maintenance:

- Weekly Site visits to perform monitoring of PID readings, flow, and temperature, inspect system performance, modify extraction well settings to optimize contaminant removal, and perform minor repairs as necessary;
- Record temperature and flow daily;
- Perform monthly air sampling by EPA method TO-15;
- Perform annual system maintenance; and
- Maintain system records for SCAQMD inspection.

The final plan will be based upon the Permit to Operate, as issued by the SCAQMD.

## 8.6 VARIANCE

As conditions in the field may vary, it may become necessary to implement variances when performing the proposed remediation activities as presented in this RAP. Field personnel will notify the project manager when deviations from this RAP are necessary. RWQCB will be notified of significant variances immediately, and a verbal or written approval will be obtained from RWQCB before implementing the modifications, where possible. Variances to the approved RAP will be documented in writing; an amended RAP may be necessary if excessive variances are required.

# 9.0 PROJECT SCHEDULE

The Western Property is currently in negotiation for a potential sale to Goodman, the owner of the Eastern Property. Property redevelopment plans are currently being evaluated by the parties. A remediation schedule is currently being developed and will be submitted under separate cover.

# 10.0 REFERENCES

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# TABLES

**Table I**
**Summary of Historical Releases and Suspected Sources**
**Parcels 8009-022-017, -029, -030, and -031, Former Powerine Refinery**
**Santa Fe Springs, CA**

| Number | Date | Location | Documented Release? | Data Supports Release? | Product | Notes | Requires Remediation? | Evidence Boring ID |
|---|---|---|---|---|---|---|---|---|
| 1 | 18-May-54 | Southwest area of Site; Former Gasoline Blending Area | Yes | Yes | Gasoline | A pressure relief valve failed, releasing gasoline and causing a fire. Several tanks caught fire & failed, explosions occurred, significant product loss. | Yes | B123 |
| 2 | Dec 1960 | Southwest area of Site, AST 4236; Former Gasoline Blending Area | Yes | Yes | 5,000 BBLs High Octane Gasoline and Diesel | An AST overflowed during blending and caused a fire. During the fire, about 5,000 barrels of fuel was released, and approx. 4.5 million gallons of fire suppression water was used. | Yes | B123 |
| 3 | 25-Dec-74 | AST 10045 | Yes | Yes | Fuel Oil | Overfilled, Unknown Amt | Yes | B128 |
| 4 | Oct-75 | AST 10006 / Southwest Tank Farm | Yes | Yes | Untreated Diesel | Overspill of product during transfer of gas-oil from Tank 40065 to Tank 10006. Impacted approx 1 acre | Yes | B427 |
| 5 | Aug-76 | AST 60059 | Yes | Yes | Naphtha | Overflow, Unknown Amt | Yes | B170 |
| 6 | Oct-77 | AST 1043 / Southwest Corner of Site | Yes | Yes | 200+ BBL Diesel | Overflow of waste from oil/water AST which drained through the Refinery, along Lakeland Rd, and then south along Norwalk Blvd | Yes | B148, B428 |
| 9 | Jan-79 | AST 1043 / Southwest Corner of Site | Yes | Yes | 10 BBL of Diesel Oil | Diesel Oil spilled to the Ground at Crude Unit "A", discharged to Lakeland Rd, then continued to Norwalk Blvd. Release followed same path as 10/19/1977 release. | Yes | B148, B428 |
| 10 | Mar-79 | AST 20058 | Yes | Unknown | Naphtha | Unknown Amt | Unknown | |
| 11 | Aug-79 | Southeast of West Tank Farm | Yes | No | crude 50-100 BBL | Underground Pipe Burst | No | B172, B176 |
| 15 | Jan-82 | AST 79022 | Yes | Yes | Crude 150 BBL | Overfill over 1 acre | Yes | B183 |
| 17 | Jun-82 | AST 34055 | Yes | No | Brown Oil | Water in AST 34055 flashed to steam at midnight and blew out top and wall of AST that caused brown fuel-oil to travel south from the west Tank Farm across Lakeland Rd to the Metropolitan State Hospital. | No | B180 |
| 25 | Unknown | AST 96086 | Yes | Unknown | Crude Oil | Tank bottom failure described in Environmental Risk Assessment (RSI, 1996) | Unknown | |
| 26 | Unknown | AST 40063 | Yes | Unknown | Diesel | Tank bottom failure described in Environmental Risk Assessment (RSI, 1996) | Unknown | |
| 27 | Unknown | AST 96090 | Yes | Unknown | Cycle Oil | Tank bottom failure described in Environmental Risk Assessment (RSI, 1996) | Unknown | |

Notes: [1] The release numbering is unchanged from the previous Murex refinery-wide RAP. Only those release features associated with Parcels 8009-22-017, -029, -030, and -031 are listed.
[2] AST - Above ground storage tank
3 TPHg - Total petroleum hydrocarbons - gasoline range organics; TPHmo - total petroleum hydrocarbons motor oil range organics

**Table II**
**Selection of Target Remediation Criteria (TRCs)**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Chemical of Concern | Screening Level 1 - Human Health Risk (mg/kg) | Screening Level 2 - RWQCB Screening Levels[1] (mg/kg) | Screening Level 3 - MCL (mg/L) | Selected Cleanup Goal | Notes |
|---|---|---|---|---|---|
| | | | | | |
| **Shallow Soil (0-10 ft bgs) "Phase 1"** | | | | | |
| Arsenic | 13.0 | -- | -- | **13 mg/kg** | Site wide - Cleanup Goal Selected by DTSC |
| Benzene | 4.0 | 0.066 | -- | **4.0 mg/kg** | Risk value selected (Risk Driver in Area 2 Only) - Residual benzene in upper 10 feet will be managed by bioventing |
| Dibenzo(a,h)anthracene | 0.6 | -- | -- | **0.6 mg/kg** | Risk value selected (Risk Driver in Area 3 Only) |
| Lead | 320 | -- | -- | **320 mg/kg[2]** | Soil that exceeds the 95% UCL of 320 mg/kg will be removed, as selected by DTSC |
| Toluene | Not a risk driver | 4.0 | -- | **--** | Not a Risk Driver - Residual toluene will be addressed along with deeper soil impacts |
| TPH(gasoline range) | Not a risk driver | 500 | -- | **2,500 mg/kg** | Short Term Goal for Development[3] = 5x RWQCB Screening Level - Residual TPHg will be addressed along with deeper soil impacts |
| TPH(diesel range) | Not a risk driver | 1,000 | -- | **5,000 mg/kg** | Short Term Goal for Development[3] = 5x RWQCB Screening Level - Residual TPHg will be addressed along with deeper soil impacts |
| TPH(motor oil range) | Not a risk driver | 10,000 | -- | **10,000 mg/kg** | RWQCB screening level selected |
| Xylenes | Not a risk driver | 40.0 | -- | **--** | Not a Risk Driver - Residual xylenes will be addressed along with deeper soil impacts |
| | | | | | |
| **Deep Soil (10-100 ft bgs)[4] "Phase 2"** | | | | | |
| Benzene | -- | 0.066 | -- | **0.066 mg/kg** | TRC Goal = RWQCB screening level Table 4-1 1996 Guidebook |
| Ethylbenzene | -- | 15 | -- | **15 mg/kg** | TRC Goal = RWQCB screening level Table 4-1 1996 Guidebook |
| Toluene | -- | 4.0 | -- | **4 mg/kg** | TRC Goal = RWQCB screening level Table 4-1 1996 Guidebook |
| TPH(gasoline range) | -- | 500 | -- | **500 mg/kg** | TRC Goal = RWQCB screening level Table 4-1 1996 Guidebook |
| TPH(diesel range) | -- | 1,000 | -- | **1,000 mg/kg** | TRC Goal = RWQCB screening level Table 4-1 1996 Guidebook |
| TPH(motor oil range) | -- | 10,000 | -- | **10,000 mg/kg** | TRC Goal = RWQCB screening level Table 4-1 1996 Guidebook |
| Xylenes | -- | 40 | -- | **40 mg/kg** | TRC Goal = RWQCB screening level Table 4-1 1996 Guidebook |
| | | | | | |
| **Groundwater** | | | | | |
| Benzene | -- | NA | 0.001 | **0.001 mg/L** | MCL, as required by Water Code[5] |
| Ethylbenzene | -- | NA | 0.3 | **0.3 mg/L** | MCL, as required by Water Code[5] |
| MTBE | -- | NA | 0.013 | **0.013 mg/L** | MCL, as required by Water Code[5] |
| Toluene | -- | NA | 0.15 | **0.15 mg/L** | MCL, as required by Water Code[5] |
| TPH(gasoline range) | -- | NA | No free product | **No free product** | Based on Low-Threat Policy |
| TPH(diesel range) | -- | NA | No free product | **No free product** | Based on Low-Threat Policy |
| Xylene | -- | NA | 1.75 | **1.75 mg/L** | MCL, as required by Water Code[5] |

Notes

[1]Values assume a distance above groundwater of 80-150 feet

[2]Certain samples exhibiting elevated lead concentration have been selected for excvation so that the resulting 95" UCL in each risk area falls below 320 mg/kg; however, some individual samples that exceed 320 mg/kg will remain as approved by DTSC.

[3]Grading and development activities shall proceed after achieving short-term shallow soil soil TRCs, with the longer-term goal of achieving more stringent soil remediation standards through bioventing. This will allow development activities to proceed as deeper soil remediation progresses.

[4]The longer-term deep soil remedy is intended to also benefit the top 10 feet of soil, where residual TPH/BTEX concentrations will be further reduced.

[5]Maximum Contaminant Levels (MCLs) will be the goal of the groundwater remedy. However, future performance and remedy success may be evaluated as a function of the reduction of threat to the groundwater resource.

**Table III**
**Initial Technology Screening Evaluation**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Alternatives | Remedy Selection Criteria for Cleanup Actions Under Regulatory Oversight | | | | | | | | | Evaluation Results | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Corrective Action Standards | | | | Remedy Selection Decision Factors | | | | | | |
| | Be Protective of Human Health and the Environment | Attain Media Cleanup Standards | Control the Source (s) of Releases [1] | Comply With Applicable Waste Management Regulations [2] | Short and Long-Term Effectiveness | Reduction of Toxicity, Mobility, and/or Volume | Long-Term Reliability | Implementability | Cost | Composite Score | Consider for Further Evaluation? |
| SHALLOW SOIL (0-10 ft-bgs) | | | | | | | | | | | |
| Excavation with Off-Site Disposal | 8 | 10 | 10 | 10 | 10 | 3 | 10 | 5 | 4 | 70 | Yes |
| Excavation with On-Site Treatment | 8 | 8 | 9 | 8 | 8 | 7 | 9 | 3 | 3 | 63 | Yes |
| Cap | 3 | 1 | 2 | 10 | 4 | 1 | 3 | 7 | 6 | 37 | No |
| No Action | 1 | 1 | 1 | 10 | 1 | 1 | 1 | 10 | 10 | 36 | No |
| DEEP SOIL (10-100 ft-bgs) | | | | | | | | | | | |
| Soil Vapor Extraction | 9 | 8 | 10 | 10 | 8 | 9 | 9 | 7 | 5 | 75 | Yes |
| Bioventing | 9 | 8 | 10 | 10 | 9 | 9 | 9 | 8 | 8 | 80 | Yes |
| Excavation | 7 | 10 | 10 | 10 | 10 | 3 | 10 | 1 | 1 | 62 | No |
| Thermal Treatment | 8 | 10 | 10 | 10 | 10 | 10 | 10 | 3 | 2 | 73 | No |
| No Action | 1 | 1 | 1 | 10 | 1 | 1 | 1 | 10 | 10 | 36 | No |
| ONSITE GROUNDWATER | | | | | | | | | | | |
| Pump and Treat | 5 | 4 | 2 | 6 | 4 | 6 | 4 | 3 | 3 | 37 | No |
| Air Sparging | 6 | 8 | 8 | 10 | 8 | 9 | 8 | 5 | 5 | 67 | Yes |
| Chemial Oxidation | 6 | 6 | 5 | 6 | 6 | 6 | 8 | 6 | 4 | 53 | Yes |
| In-Situ Biological Treatment (Biosparging) | 8 | 8 | 8 | 10 | 8 | 9 | 9 | 8 | 8 | 76 | Yes |
| Monitor Natural Attenuation | 3 | 3 | 1 | 10 | 2 | 4 | 3 | 10 | 10 | 46 | No |
| No Action | 1 | 1 | 1 | 10 | 1 | 1 | 1 | 10 | 10 | 36 | No |

**SCALE: 1 = POOR 10 = EXCELLENT**

**Notes**
[1]Control the sources of releases in order to reduce or eliminate, to the extent practicable, further releases of hazardous wastes that may pose a threat to human health and the environment
[2]Comply with any applicable federal, state, and local standards for management of wastes

**Table IV**
**Selection of Remedial Alternative**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| | Remedial Alternatives for Consideration | | |
|---|---|---|---|
| | **Alternative 1** | **Alternative 2** | **Alternative 3** |
| **Technologies used in Each Alternative** | **Shallow Soil: Excavation, Off-Site Disposal** | **Shallow Soil: Excavation, On-Site Treatment** | **Shallow Soil: Excavation, Off-Site Disposal** |
| | **Deep Soil: Bioventing** | **Deep Soil: Soil Vapor Extraction** | **Deep Soil: Soil Vapor Extraction** |
| | **Onsite Groundwater: Biosparging** | **Onsite Groundwater: Air Sparging** | **Onsite Groundwater: Chemical Oxidation** |
| **Alternative Description** | Removal of shallow soil contamination by excavation; soil will be moved to an appropriate off-site disposal facilty. Deep soil and groundwater will be treated by the introduction of oxygen, allowing microorganisms to remediate the contamination naturally. Lower flow air extraction and off-gas treatment are necessary. | Removal of shallow soil contaminants by excavation; soil will be treated on-site. Air sparging volatilizes contamiants which are caught by Soil Vapor Extraction Wells in both the deep soil and groundwater zones. | Removal of shallow soil contamination by excavation; soil will be moved to an appropriate off-site disposal facility. Air sparging volatilizes contaminants which are caught by SVE in the deep soil zone. Groundwater is treated by introduction of high concentration oxygen via synthetic chemicals. |
| **Advantages** | - Proven technology, regulatory acceptance<br>- Cost-effective approach<br>-Flexible to Implement<br>-Lower O&M Costs | - Proven technology, regulatory acceptance<br>-Flexible to Implement | - Proven technology, regulatory acceptance |
| **Disadvantages** | - Level of Shallow Soil Cleanup determined by accuracy of characterization<br>-Requires electrical usage<br>-Regular O&M, recurring costs | -Level of Shallow Soil Cleanup Determined by accuracy of characterization<br>-Requires electrical usage<br>-Regular O&M, recurring costs<br>-Higher Costs associated with On-Site Shallow Soil Treatment<br>'-Can worsen vapor intrusion concerns<br>'-Requires management of high quantities of methane | - Level of cleanup determined by accuracy of characterization<br>-Requires electrical usage<br>-Regular O&M, recurring costs<br>-Requires more in-depth understanding of hydrogeology<br>-Higher Capital Costs for Injection Chemicals<br>-Requires managing high quantities of methane<br>-Requires WDR Permit |

| Criteria | Score Comparison & Alternative Selection | | |
|---|---|---|---|
| | **Alternative 1** | **Alternative 2** | **Alternative 3** |
| **Protective of Human Health & Environment** | **25** | **23** | **25** |
| **Attain Media Cleanup Standards** | **26** | **24** | **26** |
| **Control the Sources of Release** | **28** | **27** | **27** |
| **Comply with Applicable Waste Mgmt Regulations** | **30** | **28** | **28** |
| **Short and Long Term Effectiveness** | **27** | **24** | **26** |
| **Reduction of Contaminant Toxicity, Mobility, Volume** | **21** | **25** | **20** |
| **Long Term Reliability** | **28** | **26** | **29** |
| **Implementibility** | **21** | **15** | **20** |
| **Cost** | **20** | **13** | **15** |
| ***COMPOSITE SCORE:*** | **226** | **205** | **216** |

SCALE: 0 = POOR 30 = EXCELLENT

**Notes**
It is assumed that all criteria are equally weighted, for the purposes of the feasibility exercise

**Table V**
**Summary of Soil Excavation Tonnage**
**Western Property, Former Powerine Refinery**
**Santa Fe Springs, CA**

| Excavation ID | Contaminants | Risk Area | Depth (ft) | Area ($ft^2$) | Base Excavation Estimate (tons) | Estimated Clean Portion for Reuse | Disposal Quantity Estimate (tons) |
|---|---|---|---|---|---|---|---|
| **1** | TPHd, TPHmo | 3 | 10 | 2,600 | 1,444 | 50% | 722 |
| **2** | TPHd, TPHmo | 3 | Varies | 11,090 | 3,148 | 50% | 1,574 |
| **3** | TPHd, TPHmo | 3 | 10 | 1,100 | 611 | 50% | 306 |
| **4** | TPHd, TPHmo | 3 | 2 | 350 | 39 | 0% | 39 |
| **5** | TPHd, Benzene | 3 | 10 | 800 | 444 | 50% | 222 |
| **6** | TPHg, Benzene | 3 | 6 | 400 | 133 | 0% | 133 |
| **7** | TPHd, TPHmo | 3 | 3 | 750 | 125 | 0% | 125 |
| **22** | TPHg, TPHd | 3 | 10 | 4,130 | 2,294 | 50% | 1,147 |
| **23** | TPHd, TPHmo | 3 | 3 | 400 | 67 | 25% | 50 |
| **24** | TPHd | 3 | 3 | 1,600 | 267 | 0% | 267 |
| **25** | TPHd | 3 | 6 | 1,600 | 533 | 0% | 533 |
| **26** | As | 3 | 2 | 1,200 | 133 | 0% | 133 |
| **27** | TPHg, TPHd, TPHmo, As, Pb | 3,4 | Varies | 45,100 | 13,522 | 0% | 13,522 |
| **28** | As | 3 | 1 | 900 | 50 | 0% | 50 |
| **29** | TPHg, As | 3, 4 | Varies | 8,000 | 2,306 | 0% | 2,306 |
| **30** | As | 3 | 3 | 900 | 150 | 0% | 150 |
| **31** | TPHd, TPHmo | 4 | 3 | 900 | 150 | 25% | 113 |
| **32** | TPHd, D(a,h)a | 3 | 3 | 900 | 150 | 0% | 150 |
| **33** | TPHg, TPHd | 4 | 10 | 900 | 500 | 50% | 250 |
| **34** | TPHd, Pb | 4 | 6 | 5,000 | 1,667 | 0% | 1,667 |
| **35** | TPHd, TPHmo | 4 | 3 | 500 | 83 | 0% | 83 |
| | **Western Property Totals (Tons):** | | | | **27,818** | | **23,542** |
| | **Western Property Contingency[1] (20%) (Tons):** | | | | **5,564** | | **4,708** |
| | **Western Property Totals w/ Contingency (Tons):** | | | | **33,381** | | **28,251** |

**Notes:**
[1] Contingency is included for unknown conditions.

The estimated volumes are based on available data and any additional data collected in the future could increase the volume to be excavated.

**Table VI**
**Confirmation Soil Sampling and Analysis - Shallow Soil Excavation**
**Western Property, Former Powerine Refinery**
**Santa Fe Springs, CA**

| Excavation ID | Contaminants | Risk Area | Depth (ft) | Area ($ft^2$) | Estimated Number of Soil Samples | Analytes | Analytical Method | Development Area |
|---|---|---|---|---|---|---|---|---|
| **1** | TPHd, TPHmo | 3 | 10 | 2,600 | 8 | TPH | 8015 M | West |
| **2** | TPHd, TPHmo | 3 | Varies | 11,090 | 25 | TPH | 8015 M | West |
| **3** | TPHd, TPHmo | 3 | 10 | 1,100 | 6 | TPH | 8015 M | West |
| **4** | TPHd, TPHmo | 3 | 2 | 350 | 5 | TPH | 8015 M | West |
| **5** | TPHd, Benzene | 3 | 10 | 800 | 5 | TPH<br>VOCs | 8015 M<br>8021 | West |
| **6** | TPHg, Benzene | 3 | 6 | 400 | 5 | TPH<br>VOCs | 8015 M<br>8021 | West |
| **7** | TPHd, TPHmo | 3 | 3 | 750 | 5 | TPH | 8015 M | West |
| **22** | TPHg, TPHd | 3 | 10 | 4,130 | 14 | TPH | 8015 M | West |
| **23** | TPHd, TPHmo | 3 | 3 | 400 | 5 | TPH | 8015 M | West |
| **24** | TPHd | 3 | 3 | 1,600 | 6 | TPH | 8015 M | West |
| **25** | TPHd | 3 | 6 | 1,600 | 6 | TPH | 8015 M | West |
| **26** | As | 3 | 2 | 1,200 | 6 | As | 6010 B | West |
| **27** | TPHg, TPHd, TPHmo, As, Pb | 3,4 | Varies | 45,100 | 84 | TPH<br>As, Pb | 8015 M<br>6010 B | West |
| **28** | As | 3 | 1 | 900 | 5 | As | 6010 B | West |
| **29** | TPHg, As | 3,4 | Varies | 8,000 | 22 | TPH<br>As | 8015 M<br>6010 B | West |
| **30** | As | 3 | 3 | 900 | 5 | As | 6010 B | West |
| **31** | TPHd, TPHmo | 4 | 3 | 900 | 5 | TPH | 8015 M | West |
| **32** | TPHd, D(a,h)a | 3 | 3 | 900 | 5 | TPH<br>PAH | 8015 M<br>8270 | West |
| **33** | TPHg, TPHd | 4 | 10 | 900 | 5 | TPH | 8015 M | West |
| **34** | TPHd, Pb | 4 | 6 | 5,000 | 12 | TPH<br>Pb | 8015 M<br>6010 B | West |
| **35** | TPHd, TPHmo | 4 | 3 | 500 | 5 | TPH | 8015 M | West |

**Table VII**
**Proposed Remediation and Performance Monitoring Well Construction**
**Western Property, Former Powerine Refinery**
**Santa Fe Springs, CA**

| Well ID | Total Depth (ft-bgs) | Casing Diameter (inches) | Screen Slot Size (inches) | Screened Interval (ft-bgs) |
|---|---|---|---|---|
| **Biovent Wells** | | | | |
| **BV-1A** | 31 | 2 | 0.02 | 5-30 |
| **BV-2A** | 31 | 2 | 0.02 | 5-30 |
| **BV-2B** | 61 | 2 | 0.02 | 35-60 |
| **BV-3B** | 61 | 2 | 0.02 | 35-60 |
| **BV-4A** | 31 | 2 | 0.02 | 5-30 |
| **BV-4B** | 61 | 2 | 0.02 | 35-60 |
| **BV-4C** | 91 | 2 | 0.02 | 65-90 |
| **BV-5A** | 31 | 2 | 0.02 | 5-30 |
| **BV-5C** | 91 | 2 | 0.02 | 65-90 |
| **BV-6A** | 31 | 2 | 0.02 | 5-30 |
| **BV-6B** | 61 | 2 | 0.02 | 35-60 |
| **BV-6C** | 91 | 2 | 0.02 | 65-90 |
| **BV-7B** | 61 | 2 | 0.02 | 35-60 |
| **BV-8A** | 31 | 2 | 0.02 | 5-30 |
| **BV-8B** | 61 | 2 | 0.02 | 35-60 |
| **BV-8C** | 91 | 2 | 0.02 | 65-90 |
| **BV-9A** | 31 | 2 | 0.02 | 5-30 |
| **BV-9B** | 61 | 2 | 0.02 | 35-60 |
| **BV-9C** | 91 | 2 | 0.02 | 65-90 |
| **BV-10A** | 31 | 2 | 0.02 | 5-30 |
| **BV-10B** | 61 | 2 | 0.02 | 35-60 |
| **BV-10C** | 91 | 2 | 0.02 | 65-90 |
| **BV-11A** | 31 | 2 | 0.02 | 5-30 |
| **BV-11B** | 61 | 2 | 0.02 | 35-60 |
| **BV-11C** | 91 | 2 | 0.02 | 65-90 |
| **BV-12A** | 31 | 2 | 0.02 | 5-30 |
| **BV-12B** | 61 | 2 | 0.02 | 35-60 |
| **BV-12C** | 91 | 2 | 0.02 | 65-90 |
| **BV-13A** | 31 | 2 | 0.02 | 5-30 |
| **BV-13B** | 61 | 2 | 0.02 | 35-60 |
| **BV-13C** | 91 | 2 | 0.02 | 65-90 |
| **BV-14A** | 31 | 2 | 0.02 | 5-30 |
| **BV-14B** | 61 | 2 | 0.02 | 35-60 |
| **BV-14C** | 91 | 2 | 0.02 | 65-90 |
| **BV-15A** | 31 | 2 | 0.02 | 5-30 |
| **BV-15B** | 61 | 2 | 0.02 | 35-60 |
| **BV-15C** | 91 | 2 | 0.02 | 65-90 |

**Table VII**
**Proposed Remediation and Performance Monitoring Well Construction**
**Western Property, Former Powerine Refinery**
**Santa Fe Springs, CA**

| Well ID | Total Depth (ft-bgs) | Casing Diameter (inches) | Screen Slot Size (inches) | Screened Interval (ft-bgs) |
|---|---|---|---|---|
| **BV-16A** | 31 | 2 | 0.02 | 5-30 |
| **BV-16B** | 61 | 2 | 0.02 | 35-60 |
| **BV-16C** | 91 | 2 | 0.02 | 65-90 |
| **BV-17A** | 31 | 2 | 0.02 | 5-30 |
| **BV-17B** | 61 | 2 | 0.02 | 35-60 |
| **BV-17C** | 91 | 2 | 0.02 | 65-90 |
| **BV-18A** | 31 | 2 | 0.02 | 5-30 |
| **BV-38A** | 31 | 2 | 0.02 | 5-30 |
| **BV-38C** | 91 | 2 | 0.02 | 65-90 |
| **BV-39A** | 31 | 2 | 0.02 | 5-30 |
| **BV-39B** | 61 | 2 | 0.02 | 35-60 |
| **BV-39C** | 91 | 2 | 0.02 | 65-90 |
| **BV-40A** | 31 | 2 | 0.02 | 5-30 |
| **BV-40C** | 91 | 2 | 0.02 | 65-90 |
| **BV-44C** | 91 | 2 | 0.02 | 65-90 |
| **Air Injection Wells** | | | | |
| **AI-1A** | 22 | 2 | 0.02 | 10-20 |
| **AI-2A** | 22 | 2 | 0.02 | 10-20 |
| **AI-2B** | 52 | 2 | 0.02 | 40-50 |
| **AI-3A** | 22 | 2 | 0.02 | 10-20 |
| **AI-3B** | 52 | 2 | 0.02 | 40-50 |
| **AI-4A** | 22 | 2 | 0.02 | 10-20 |
| **AI-4B** | 52 | 2 | 0.02 | 40-50 |
| **AI-4C** | 82 | 2 | 0.02 | 70-80 |
| **AI-5A** | 22 | 2 | 0.02 | 10-20 |
| **AI-5B** | 52 | 2 | 0.02 | 40-50 |
| **AI-5C** | 82 | 2 | 0.02 | 70-80 |
| **AI-6A** | 22 | 2 | 0.02 | 10-20 |
| **AI-6B** | 52 | 2 | 0.02 | 40-50 |
| **AI-6C** | 82 | 2 | 0.02 | 70-80 |
| **AI-7A** | 22 | 2 | 0.02 | 10-20 |
| **AI-7B** | 52 | 2 | 0.02 | 40-50 |
| **AI-7C** | 82 | 2 | 0.02 | 70-80 |
| **AI-8A** | 22 | 2 | 0.02 | 10-20 |
| **AI-8B** | 52 | 2 | 0.02 | 40-50 |
| **AI-8C** | 82 | 2 | 0.02 | 70-80 |
| **AI-9A** | 22 | 2 | 0.02 | 10-20 |
| **AI-9B** | 52 | 2 | 0.02 | 40-50 |

**Table VII**
**Proposed Remediation and Performance Monitoring Well Construction**
**Western Property, Former Powerine Refinery**
**Santa Fe Springs, CA**

| Well ID | Total Depth (ft-bgs) | Casing Diameter (inches) | Screen Slot Size (inches) | Screened Interval (ft-bgs) |
|---|---|---|---|---|
| **AI-9C** | 82 | 2 | 0.02 | 70-80 |
| **AI-10A** | 22 | 2 | 0.02 | 10-20 |
| **AI-10B** | 52 | 2 | 0.02 | 40-50 |
| **AI-10C** | 82 | 2 | 0.02 | 70-80 |
| **AI-11A** | 22 | 2 | 0.02 | 10-20 |
| **AI-11B** | 52 | 2 | 0.02 | 40-50 |
| **AI-11C** | 82 | 2 | 0.02 | 70-80 |
| **AI-12A** | 22 | 2 | 0.02 | 10-20 |
| **AI-12B** | 52 | 2 | 0.02 | 40-50 |
| **AI-13A** | 22 | 2 | 0.02 | 10-20 |
| **AI-14A** | 22 | 2 | 0.02 | 10-20 |
| **AI-14C** | 82 | 2 | 0.02 | 70-80 |
| **AI-15A** | 22 | 2 | 0.02 | 10-20 |
| **AI-15B** | 52 | 2 | 0.02 | 40-50 |
| **AI-15C** | 82 | 2 | 0.02 | 70-80 |
| **AI-16A** | 22 | 2 | 0.02 | 10-20 |
| **AI-16B** | 52 | 2 | 0.02 | 40-50 |
| **AI-16C** | 82 | 2 | 0.02 | 70-80 |
| **AI-17A** | 22 | 2 | 0.02 | 10-20 |
| **AI-17B** | 52 | 2 | 0.02 | 40-50 |
| **AI-17C** | 82 | 2 | 0.02 | 70-80 |
| **AI-18A** | 22 | 2 | 0.02 | 10-20 |
| **AI-18B** | 52 | 2 | 0.02 | 40-50 |
| **AI-18C** | 82 | 2 | 0.02 | 70-80 |
| **AI-19A** | 22 | 2 | 0.02 | 10-20 |
| **AI-19B** | 52 | 2 | 0.02 | 40-50 |
| **AI-19C** | 82 | 2 | 0.02 | 70-80 |
| **Air Sparge Wells** | | | | |
| **AS-1** | 132 | 1.5 | 0.02 | 128-130 |
| **AS-2** | 132 | 1.5 | 0.02 | 128-130 |
| **AS-3** | 132 | 1.5 | 0.02 | 128-130 |
| **AS-7** | 132 | 1.5 | 0.02 | 128-130 |
| **AS-8** | 132 | 1.5 | 0.02 | 128-130 |
| **AS-9** | 132 | 1.5 | 0.02 | 128-130 |
| **AS-11** | 132 | 1.5 | 0.02 | 128-130 |
| **AS-12** | 132 | 1.5 | 0.02 | 128-130 |
| **AS-14** | 132 | 1.5 | 0.02 | 128-130 |
| **AS-15** | 132 | 1.5 | 0.02 | 128-130 |

## Table VII
## Proposed Remediation and Performance Monitoring Well Construction
## Western Property, Former Powerine Refinery
## Santa Fe Springs, CA

| Well ID | Total Depth (ft-bgs) | Casing Diameter (inches) | Screen Slot Size (inches) | Screened Interval (ft-bgs) |
|---|---|---|---|---|
| **AS-16** | 132 | 1.5 | 0.02 | 128-130 |
| **AS-18** | 132 | 1.5 | 0.02 | 128-130 |
| **AS-22** | 132 | 1.5 | 0.02 | 128-130 |
| **Existing Monitoring Wells for Performance Monitoring** | | | | |
| **W-11** | 119 | 2 | 0.01 | 75-110 |
| **MW-703** | 130 | 4 | 0.02 | 80-130 |
| **MW-704** | 130 | 4 | 0.02 | 80-130 |
| | | | | |
| **Proposed Monitoring Wells for Performance Monitoring** | | | | |
| **MW-804** | 130 | 4 | 0.02 | 80-130 |
| **MW-805** | 130 | 4 | 0.02 | 80-130 |
| **MW-807** | 130 | 4 | 0.02 | 80-130 |
| **MW-808** | 130 | 4 | 0.02 | 80-130 |
| **MW-809** | 130 | 4 | 0.02 | 80-130 |

**Notes**

ft-bgs Feet below ground surface

**Table VIII**
**Onsite Bioventing Remediation Performance Monitoring Plan**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Phase | Sampling Locations | Sample Frequency | Field Analysis | Laboratory Analysis |
|---|---|---|---|---|
| **System Startup** | | | | |
| **AQMD Monitoring** | System Influent and Effluent | Startup, Monthly | CH4, O2, CO2, VOCs, H2S, Flow, Vacuum | Modified TO 15 Air |
| | | | | |
| **Remedial (Baseline)** | All Wells | One Time | CH4, O2, CO2, VOCs, H2S, Flow, Vacuum | Modified 8015 Air |
| | | | | |
| **Year 1 (after Startup)** | | | | |
| **AQMD Monitoring** | System Influent and Effluent | Monthly | CH4, O2, CO2, VOCs, H2S, Flow, Vacuum | Modified TO 15 Air |
| | | | | |
| **Remedial - Months 1 thru 4** | All Wells | Biweekly | CH4, O2, CO2, VOCs, H2S, Flow, Vacuum | |
| | 35% of Wells | Monthly | | Modified 8015 Air |
| | | | | |
| **Remedial - Months 5 thru 12** | All Wells | Monthly | CH4, O2, CO2, VOCs, H2S, Flow, Vacuum | |
| | 35% of Wells | Monthly | | Modified 8015 Air |
| | | | | |
| **Year 2 and beyond** | | | | |
| **AQMD Monitoring** | System Influent and Effluent | Monthly | CH4, O2, CO2, VOCs, H2S, Flow, Vacuum | Modified TO 15 Air |
| | | | | |
| **Remedial** | All Wells | Monthly | CH4, O2, CO2, VOCs, H2S, Flow, Vacuum | |
| | 10% of Wells | Monthly | | Modified 8015 Air |
| | | | | |

**Notes**
Performance monitoring may be modified, as necessary, according to field and laboratory analysis results.

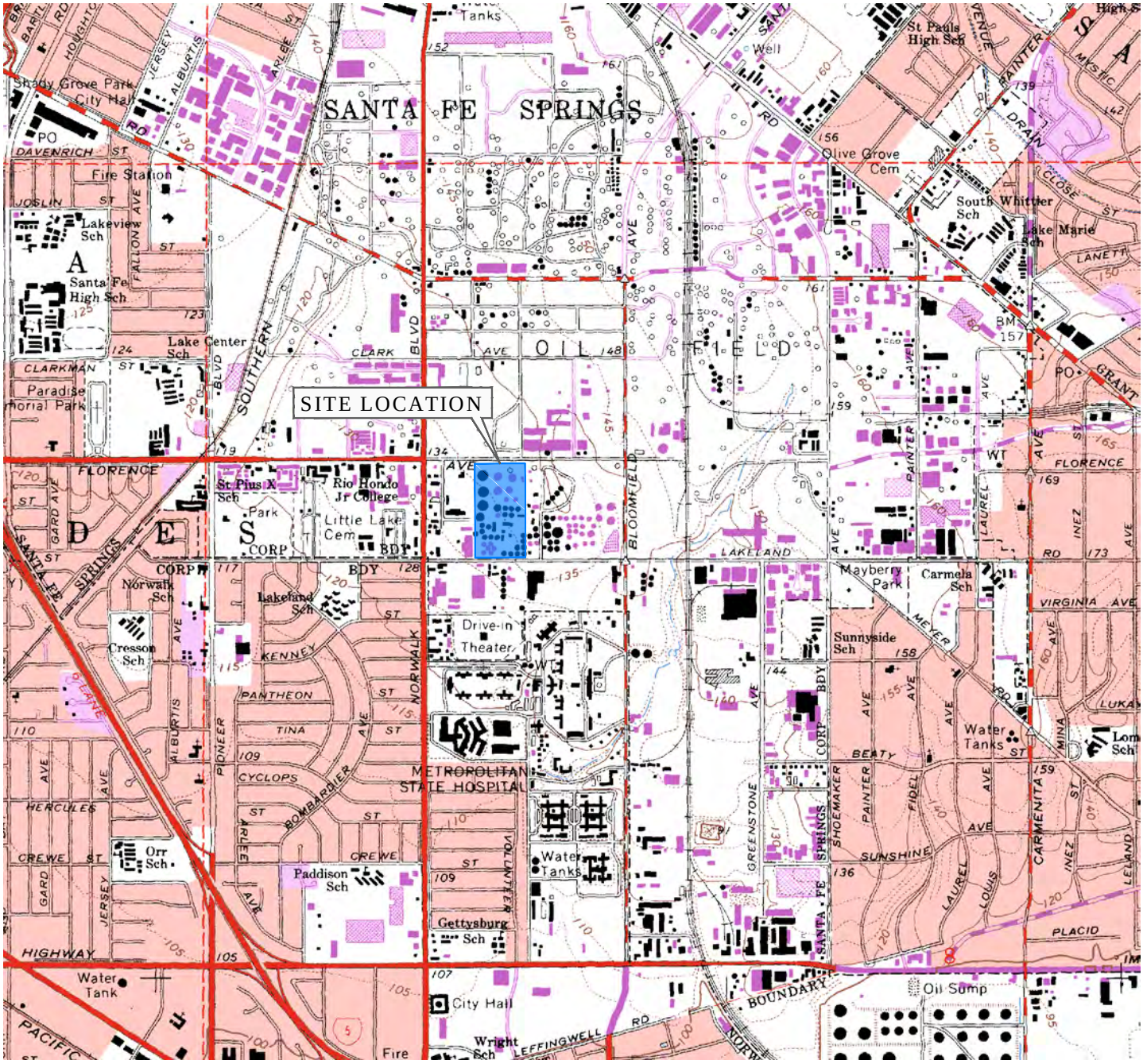
**Table IX**
**Onsite Groundwater Remediation Performance Monitoring Plan**
**Western Property, Former Powerine Refinery**
**Santa Fe Springs, CA**

| Well ID | Screened Interval (ft-bgs) | Sample Frequency | Field Analysis | Chemical Analysis |
|---|---|---|---|---|
| **W-11** | 75-110 | Quarterly | pH, ORP, DO, Temperature, Odor, Color | TPHg, VOCs |
| | | Semi-Annually | - | Nitrate, Sulfate, Total Alkalinity, Ferrous Iron, TDS |
| **MW-703** | 80-130 | Quarterly | pH, ORP, DO, Temperature, Odor, Color | TPHg, VOCs |
| | | Semi-Annually | - | Nitrate, Sulfate, Total Alkalinity, Ferrous Iron, TDS |
| **MW-704** | 80-130 | Quarterly | pH, ORP, DO, Temperature, Odor, Color | TPHg, VOCs |
| | | Semi-Annually | - | Nitrate, Sulfate, Total Alkalinity, Ferrous Iron, TDS |
| **MW-804** | 80-130 | Quarterly | pH, ORP, DO, Temperature, Odor, Color | TPHg, VOCs |
| | | Semi-Annually | - | Nitrate, Sulfate, Total Alkalinity, Ferrous Iron, TDS |
| **MW-805** | 80-130 | Quarterly | pH, ORP, DO, Temperature, Odor, Color | TPHg, VOCs |
| | | Semi-Annually | - | Nitrate, Sulfate, Total Alkalinity, Ferrous Iron, TDS |
| **MW-807** | 80-130 | Quarterly | pH, ORP, DO, Temperature, Odor, Color | TPHg, VOCs |
| | | Semi-Annually | - | Nitrate, Sulfate, Total Alkalinity, Ferrous Iron, TDS |
| **MW-808** | 80-130 | Quarterly | pH, ORP, DO, Temperature, Odor, Color | TPHg, VOCs |
| | | Semi-Annually | - | Nitrate, Sulfate, Total Alkalinity, Ferrous Iron, TDS |
| **MW-809** | 80-130 | Quarterly | pH, ORP, DO, Temperature, Odor, Color | TPHg, VOCs |
| | | Semi-Annually | - | Nitrate, Sulfate, Total Alkalinity, Ferrous Iron, TDS |

**Notes**

ft-bgs Feet below ground surface
ORP Oxidation Reduction Potential
DO Dissolved Oxygen
TDS Total Dissolved Solids
\- Not applicable
Baseline sampling event will occur quarter following approval of Remedial Action Plan

# FIGURES



1 1/2 0 1

SCALE IN MILE

1000 0 1000 2000 3000 4000 5000 6000 7000

SCALE IN FEET

REFERENCE: CA Digital Raster Graphics(http://gis.ca.gov/casil/usgs.gov/)
7.5 Minute Series, Albers NAD83, Trimmed
Block o33118h1, Dated 1965; Revised 1981

Stantec
25864-F BUSINESS CENTER DRIVE
REDLANDS, CALIFORNIA 92374
PHONE: (909) 335-6116 FAX: (909) 556-6516

FOR:
FORMER POWERINE REFINERY
PARCELS 8009-022-017, 029, 030 & 031
13345 LAKELAND ROAD
SANTA FE SPRINGS, CALIFORNIA

SITE LOCATION MAP

FIGURE: 1

| JOB NUMBER: | DRAWN BY: | CHECKED BY: | APPROVED BY: | DATE: |
|---|---|---|---|---|
| 185803065 | JBL | RN | KM | 08/13/13 |

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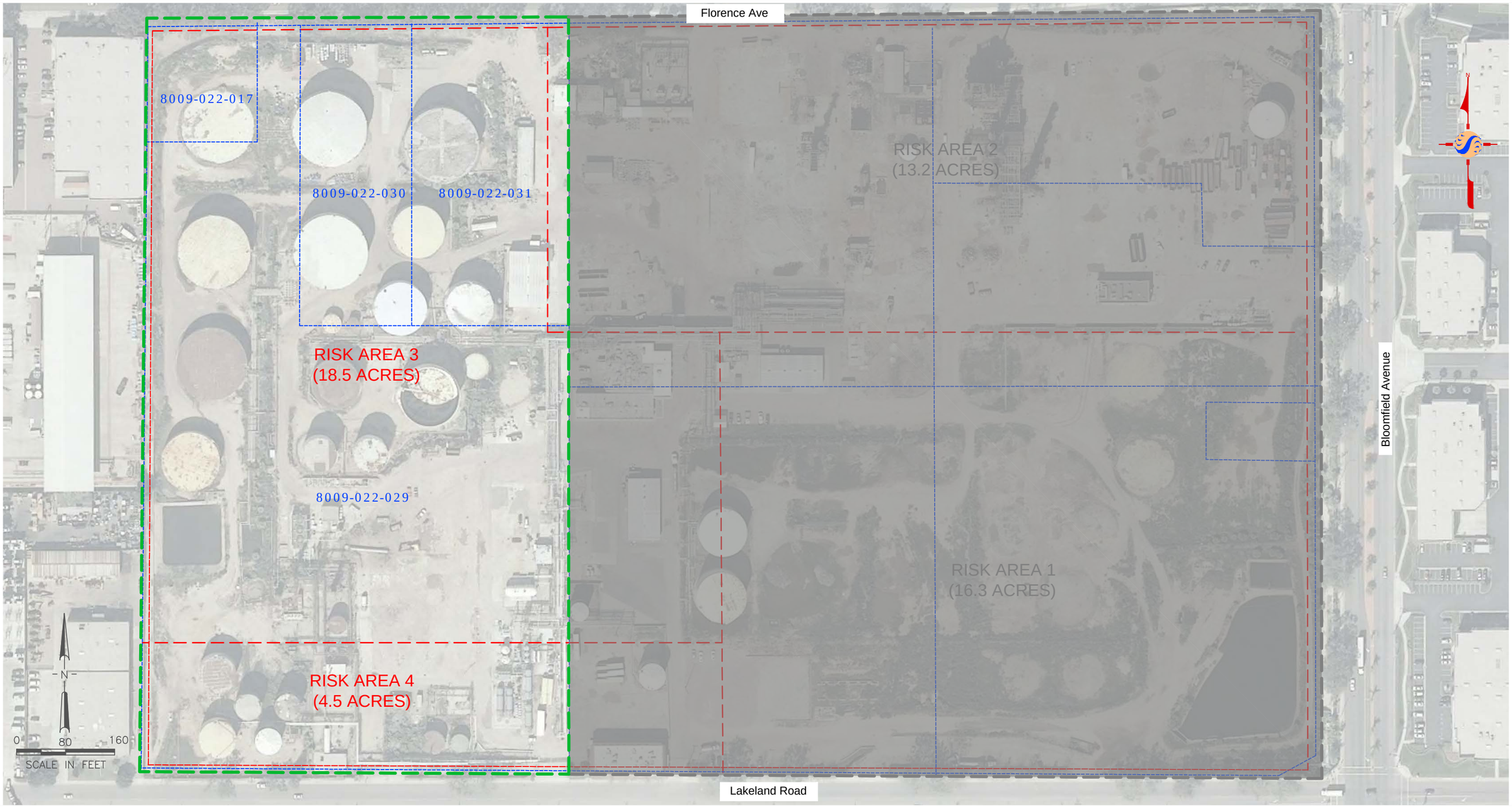


REFERENCE:
THIS FIGURED DERIVED FROM MUREX 2013. LOCATIONS ARE APPROXIMATE

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LEGEND

- DEVELOPMENT AREA BOUNDARIES
- RISK AREA BOUNDARIES
- PARCEL BOUNDARIES
- GRAY SHADED AREA IS FORMER REFINERY PROPERTY NOT ADDRESSED BY THIS RAP

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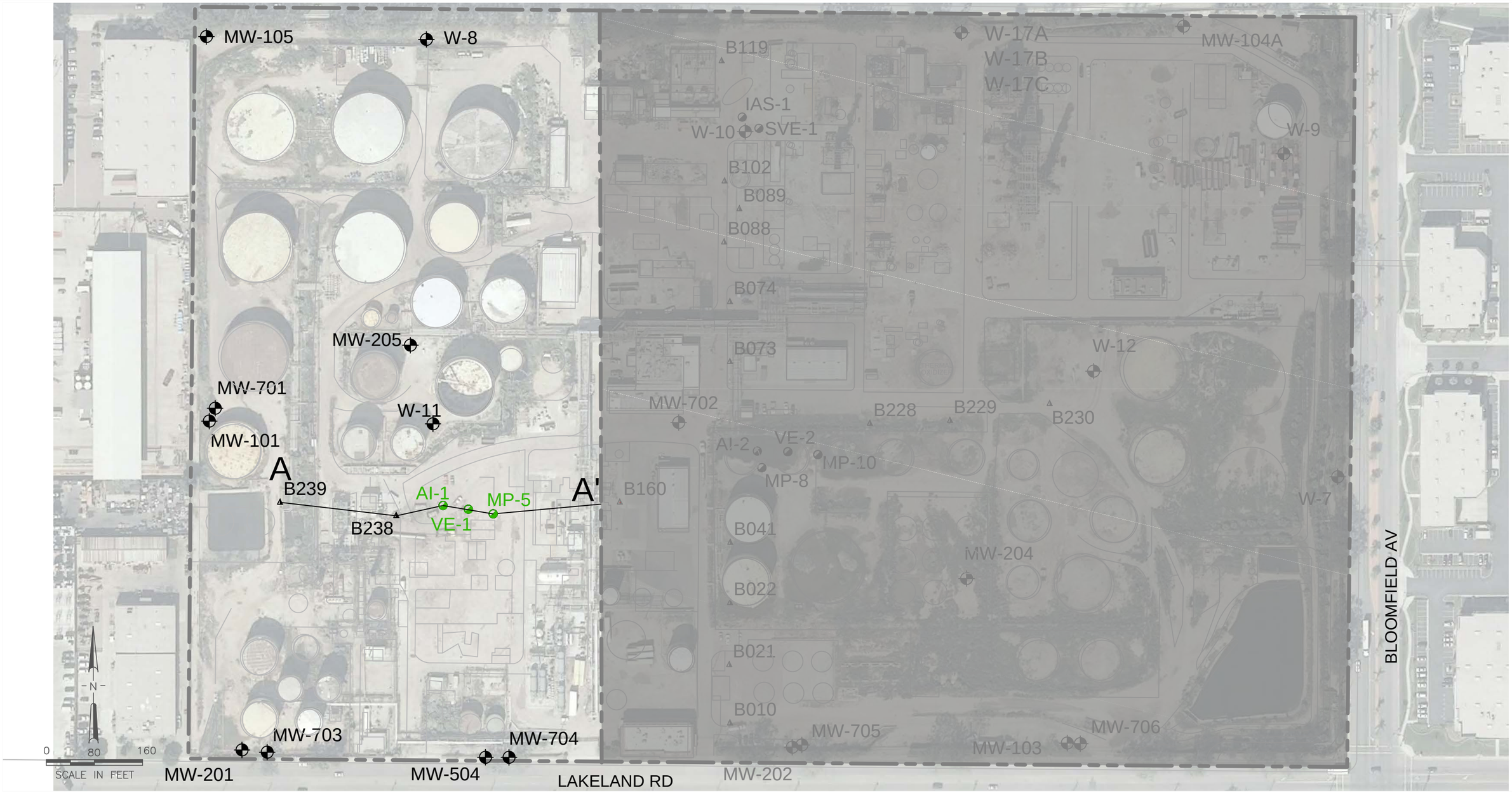
FOR:
FORMER POWERINE REFINERY
PARCELS 8009-022-017, 029, 030 & 031
13345 LAKELAND ROAD
SANTA FE SPRINGS, CALIFORNIA

SITE MAP
SHOWING DEVELOPMENT AREAS
RISK AREAS AND PARCEL DIVISION

FIGURE: 2

| JOB NUMBER: | DRAWN BY: | CHECKED BY: | APPROVED BY: | DATE: |
|---|---|---|---|---|
| 185803065 | JBL | RN | KM | 08/13/13 |

FILEPATH:M:\00_OTHER OFFICES\Redlands\Powerine-Refinery\2013\RAP\Stantec\West\F2 - Site Aerial With Divisions.dwg|jlieberman|Aug 20, 2013 at 10:22|Layout: Layout2




REFERENCE:
THIS FIGURED DERIVED FROM MUREX 2013. LOCATIONS ARE APPROXIMATE.

## LEGEND

MW-17 — MONITORING WELL LOCATION

2011 PILOT TESTING LOCATIONS USED IN CROSS SECTION

B119 — SOIL BORING LOCATIONS USED IN CROSS SECTION

GRAY SHADED AREA IS FORMER REFINERY PROPERTY NOT ADDRESSED BY THIS RAP

SITE BOUNDARY

A — A' CROSS SECTION CUT LINE

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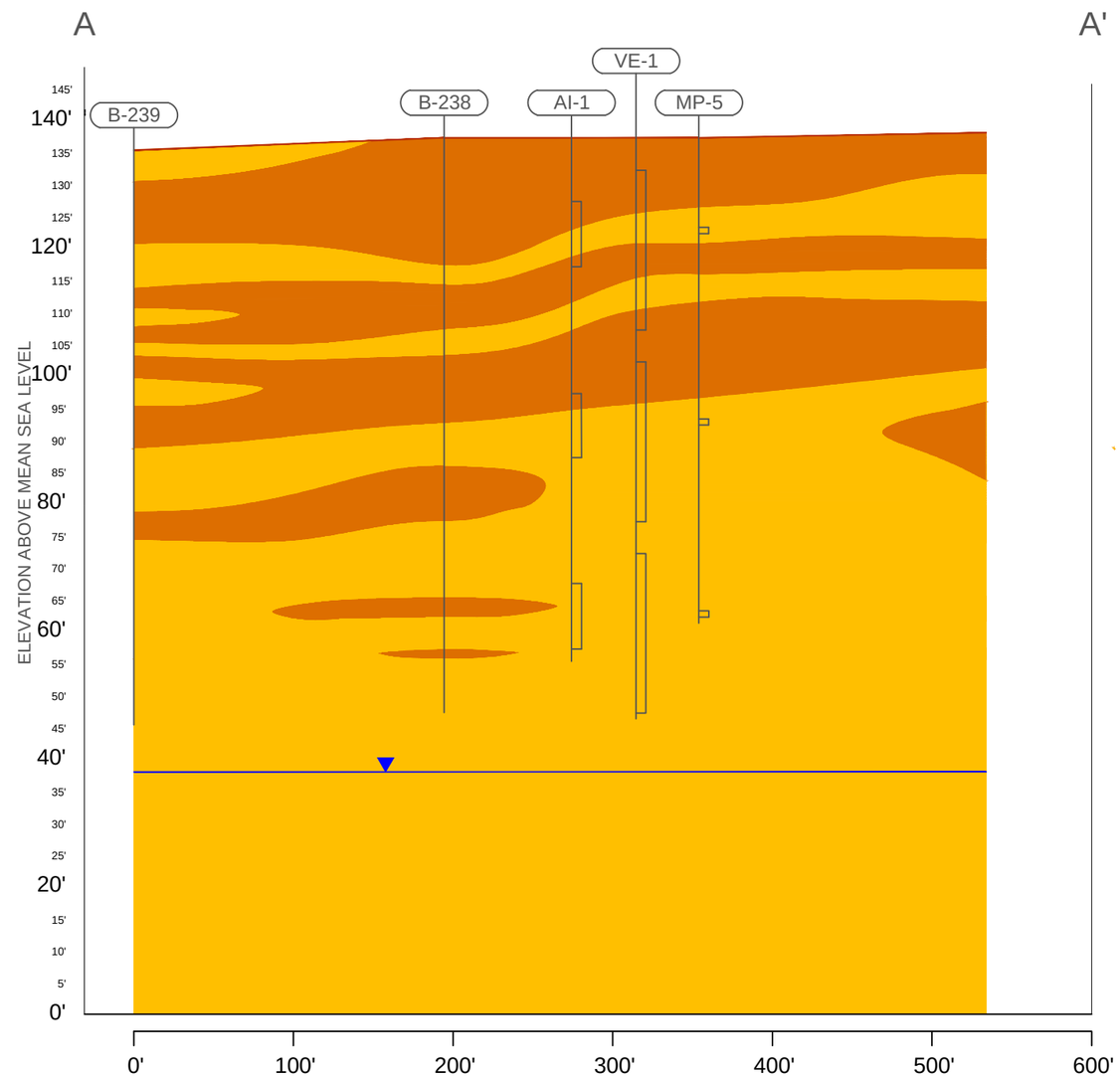
FORMER POWERINE REFINERY
PARCELS 8009-022-017, 029, 030 & 031
13345 LAKELAND ROAD
SANTA FE SPRINGS, CALIFORNIA

SITE MAP SHOWING
MONITORING WELL LOCATIONS
AND CROSS SECTION CUT LINES

FIGURE: 3

| JOB NUMBER: | DRAWN BY: | CHECKED BY: | APPROVED BY: | DATE: |
|---|---|---|---|---|
| | | RN | KM | 08/13/13 |

FILEPATH:M:\00_OTHER OFFICES\Redlands\Powerine-Refinery\2013\RAP\Stantec\West\F3 - Cross Section Cut Lines.dwg|jlieberman|Aug 20, 2013 at 10:23|Layout: Layout2




## LEGEND

- SILT / CLAY
- SILTY SAND / SAND
- GROUNDWATER ELEVATION
- AI-2 — BORING ID
- GROUND SURFACE
- SCREENED INTERVAL

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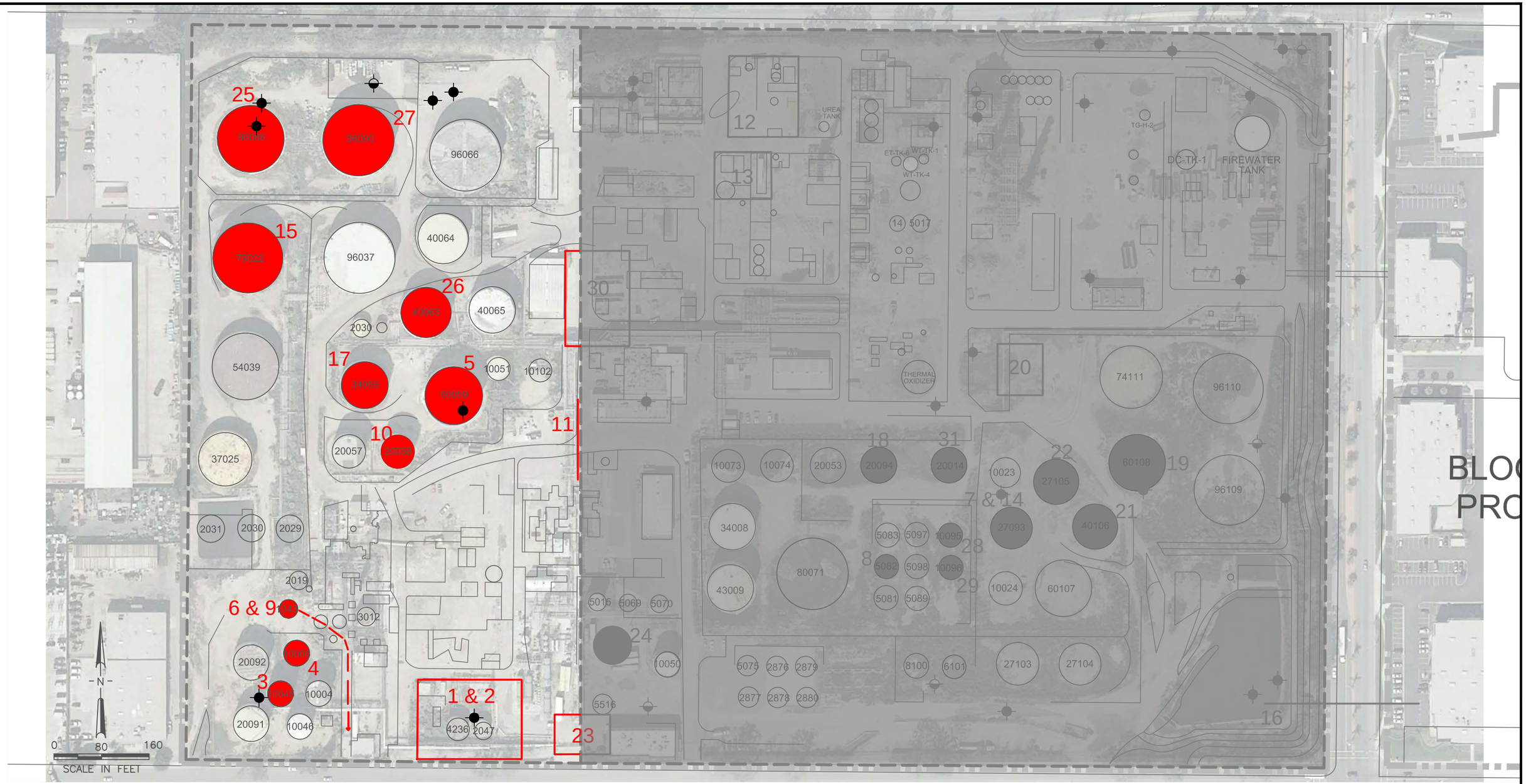
FOR:
FORMER POWERINE REFINERY
PARCELS 8009-022-017, 029, 030 & 031
13345 LAKELAND ROAD
SANTA FE SPRINGS, CALIFORNIA

GENERALIZED GEOLOGIC
CROSS SECTION A-A'

FIGURE: 4

| JOB NUMBER: | DRAWN BY: | CHECKED BY: | APPROVED BY: | DATE: |
|---|---|---|---|---|
| 185803065 | JBL | RN | KM | 08/13/13 |




LEGEND

2 Location and ID Number of Documented or Suspected Release (See Table I)

GRAY SHADED AREA IS FORMER REFINERY PROPERTY NOT ADDRESSED BY THIS RAP

27103 AST ID Number

Underground Pipeline

Reported Flow of Product After Release

APPROXIMATE LOCATION OF HISTORIC OIL WELLS PRESUMED ABANDONED, (DOGGR, 2006)

Plugged and Abandoned-Dry Hole

Plugged and Abandoned-Oil

Idle-Oil

REFERENCE:
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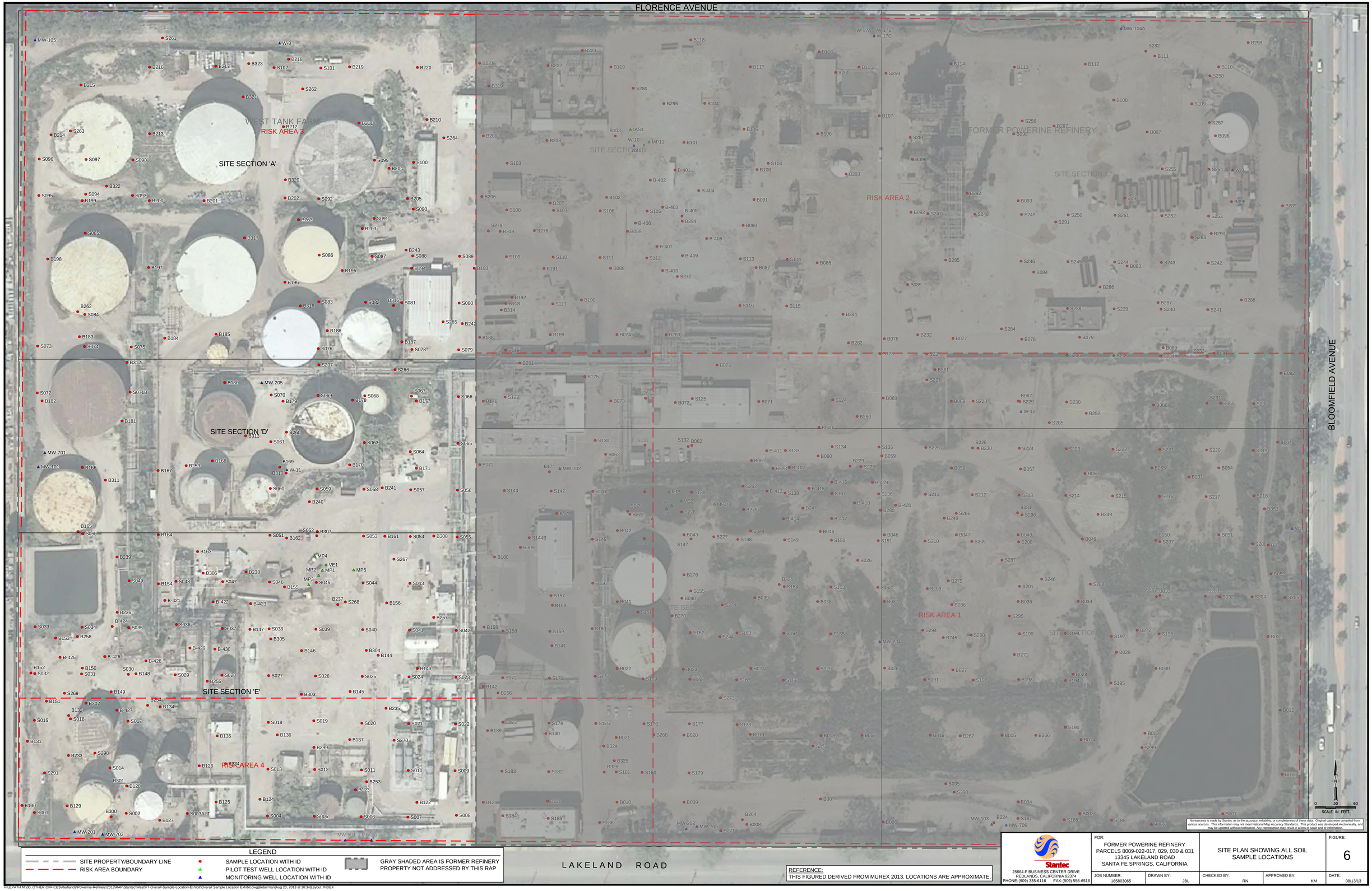
FOR:
FORMER POWERINE REFINERY
PARCELS 8009-022-017, 029, 030 & 031
13345 LAKELAND ROAD
SANTA FE SPRINGS, CALIFORNIA

SITE PLAN SHOWING HISTORICAL RELEASES AND SUSPECTED SOURCE AREAS

FIGURE: 5

| JOB NUMBER: | DRAWN BY: | CHECKED BY: | APPROVED BY: | DATE: |
|---|---|---|---|---|
| 185803065 | JBL | RN | KM | 08/13/13 |

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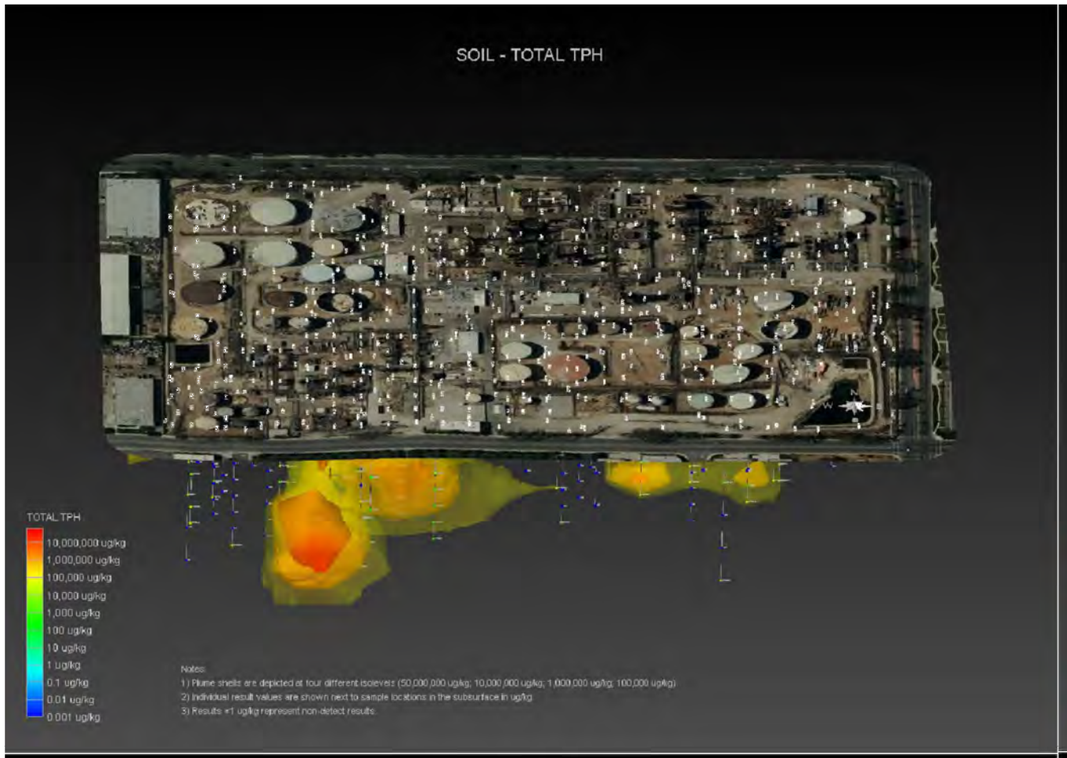


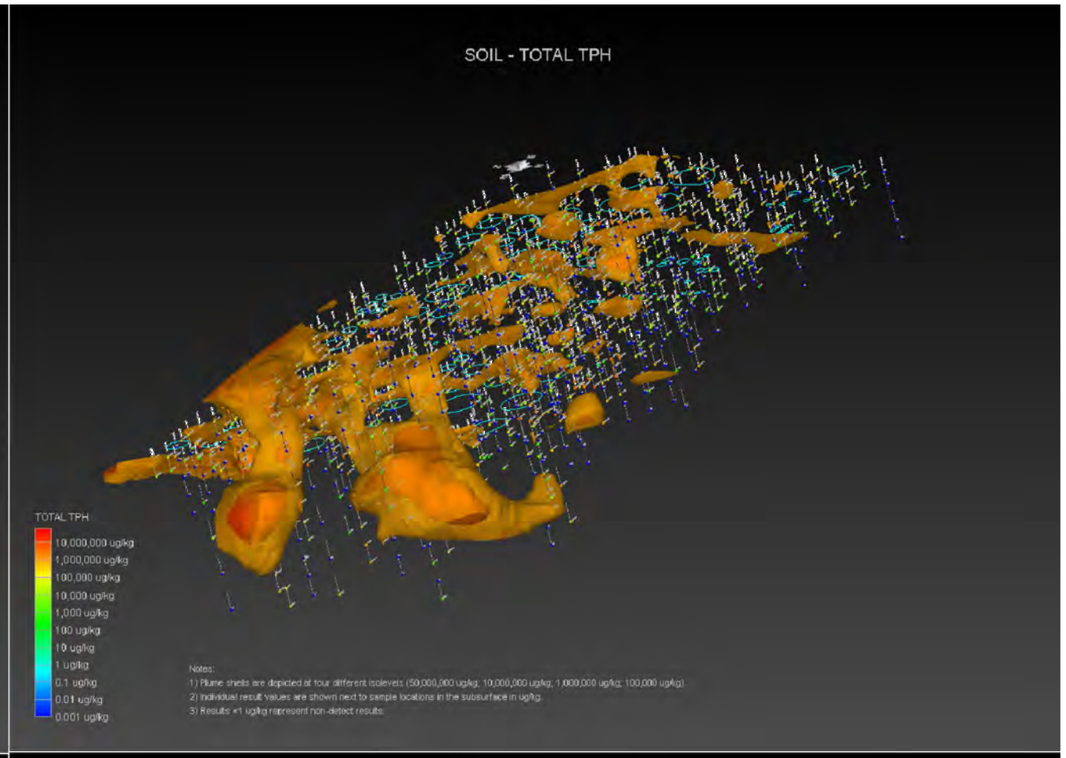


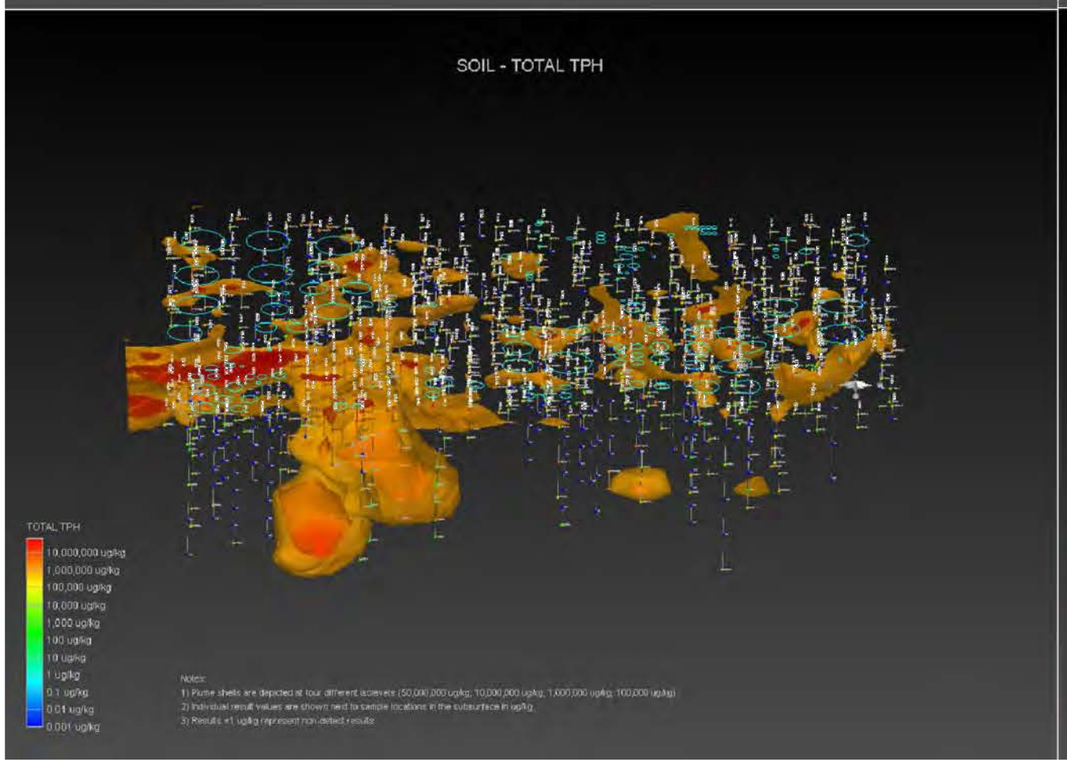


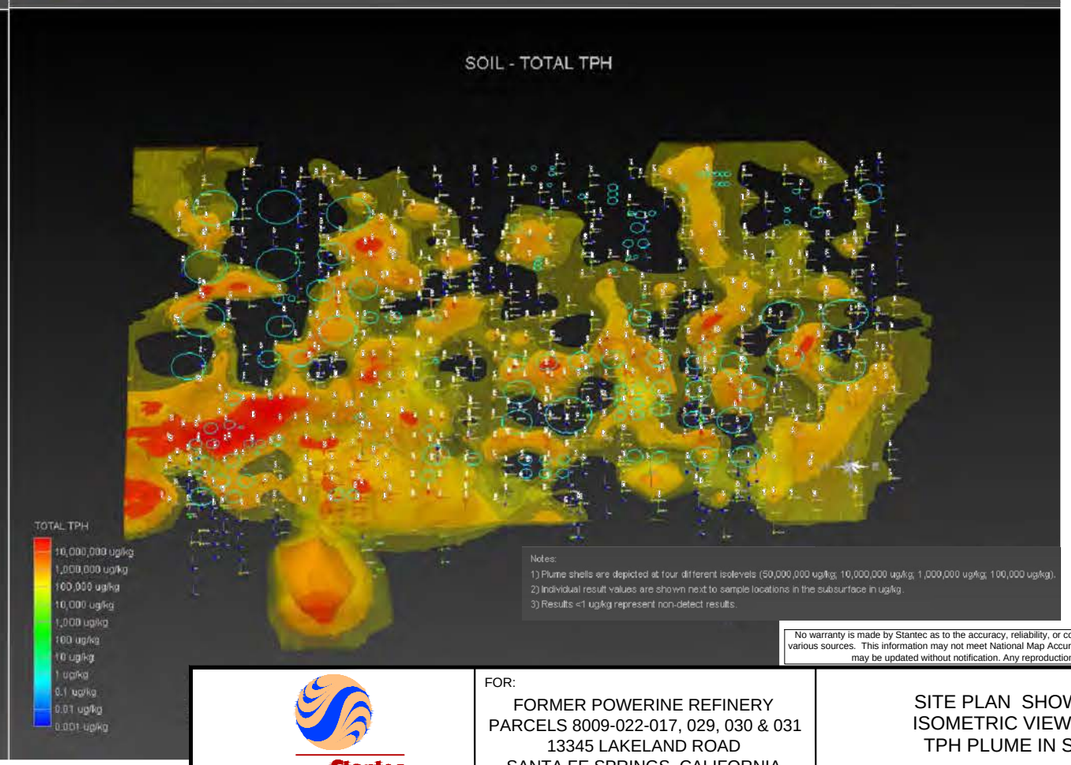


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SITE PLAN SHOWING
ISOMETRIC VIEWS OF
TPH PLUME IN SOIL

FIGURE: 7

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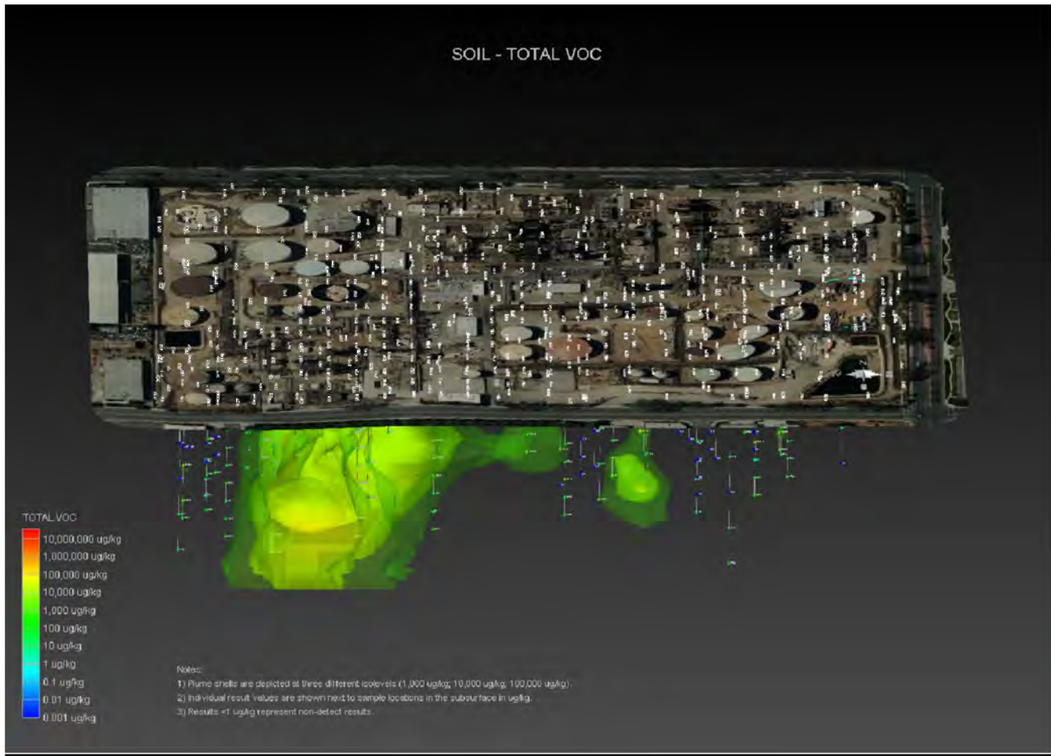


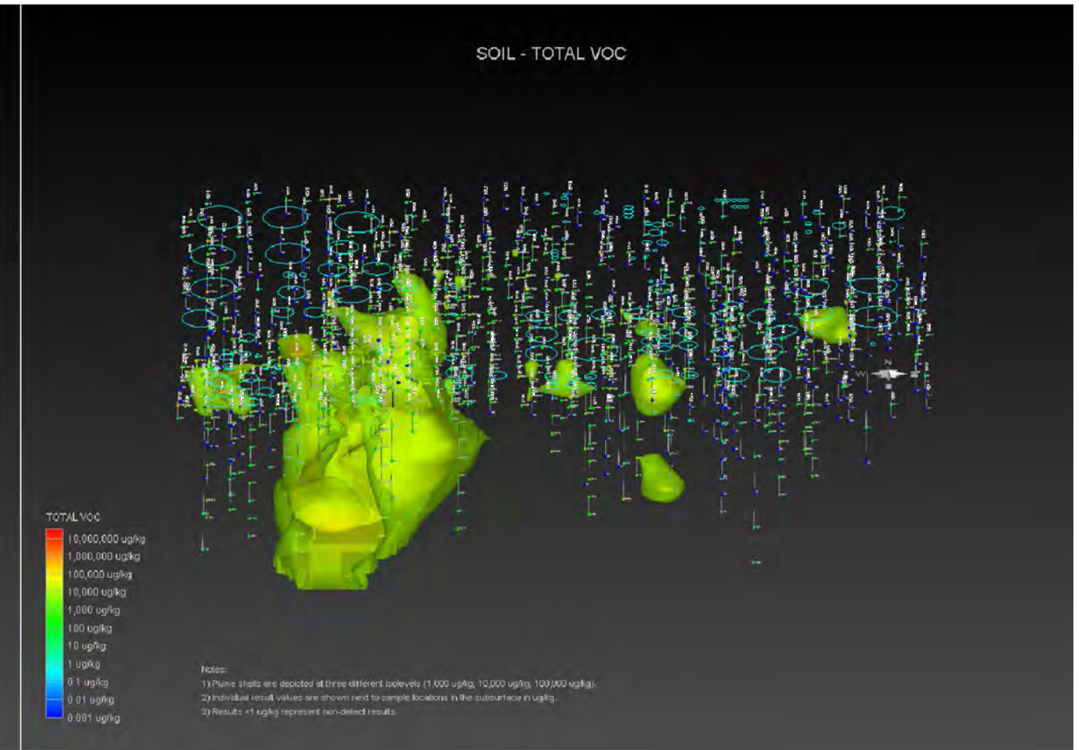


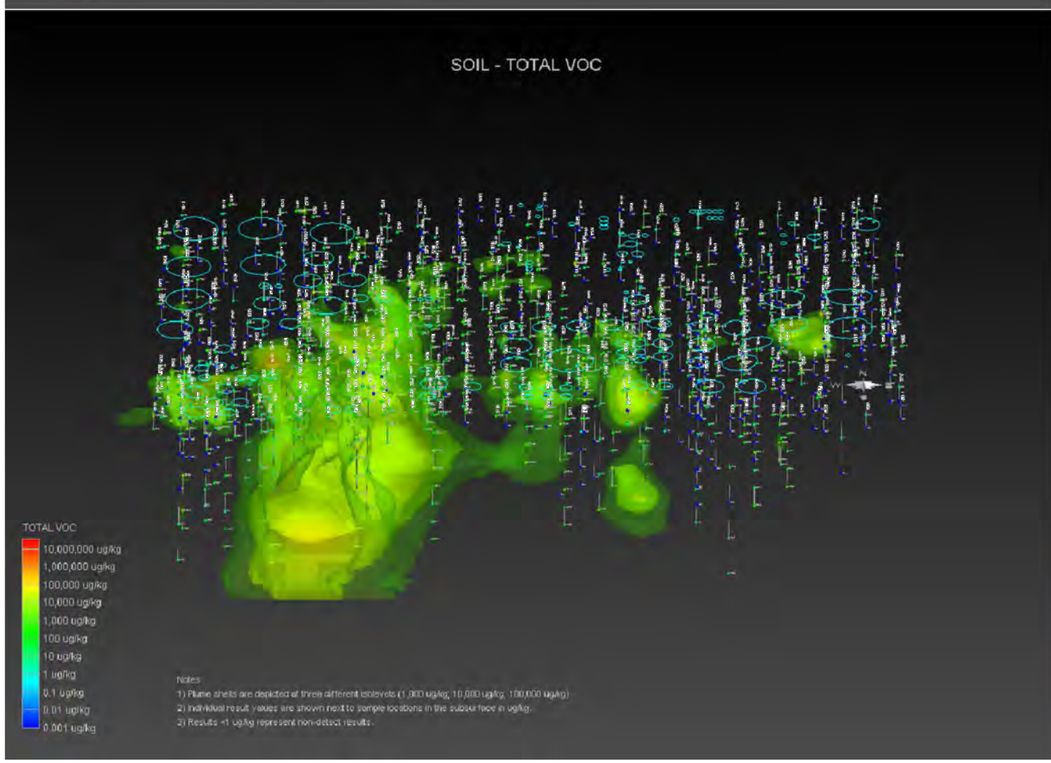


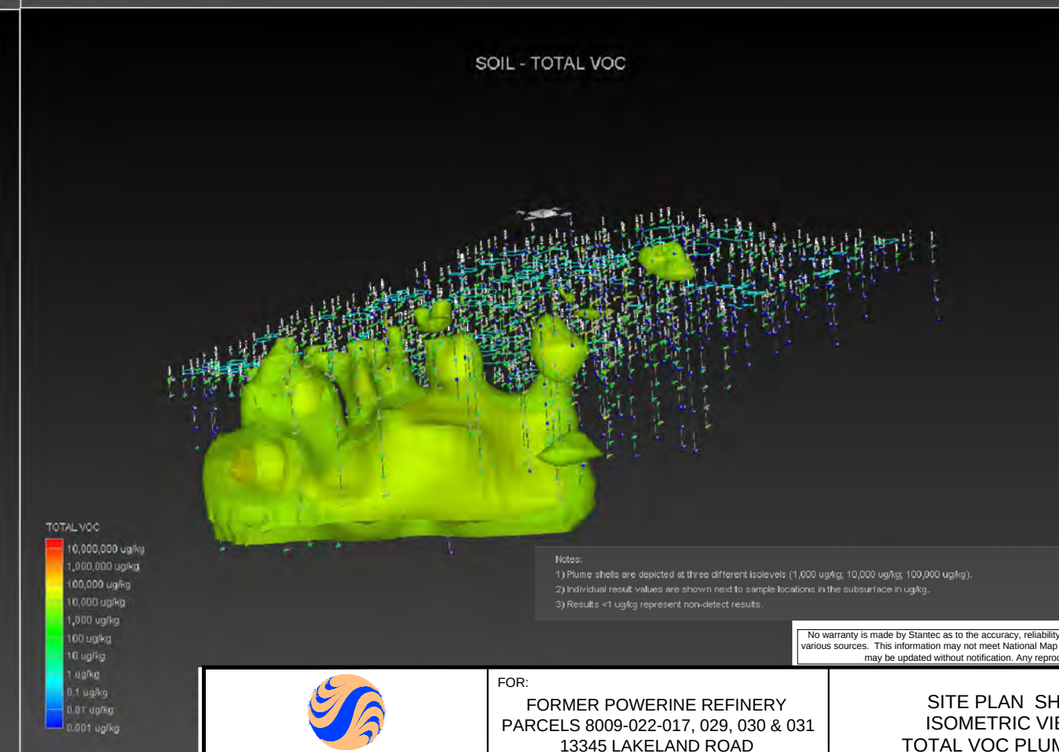


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SITE PLAN SHOWING
ISOMETRIC VIEWS OF
TOTAL VOC PLUME IN SOIL

FIGURE: 8

| JOB NUMBER: | DRAWN BY: | CHECKED BY: | APPROVED BY: | DATE: |
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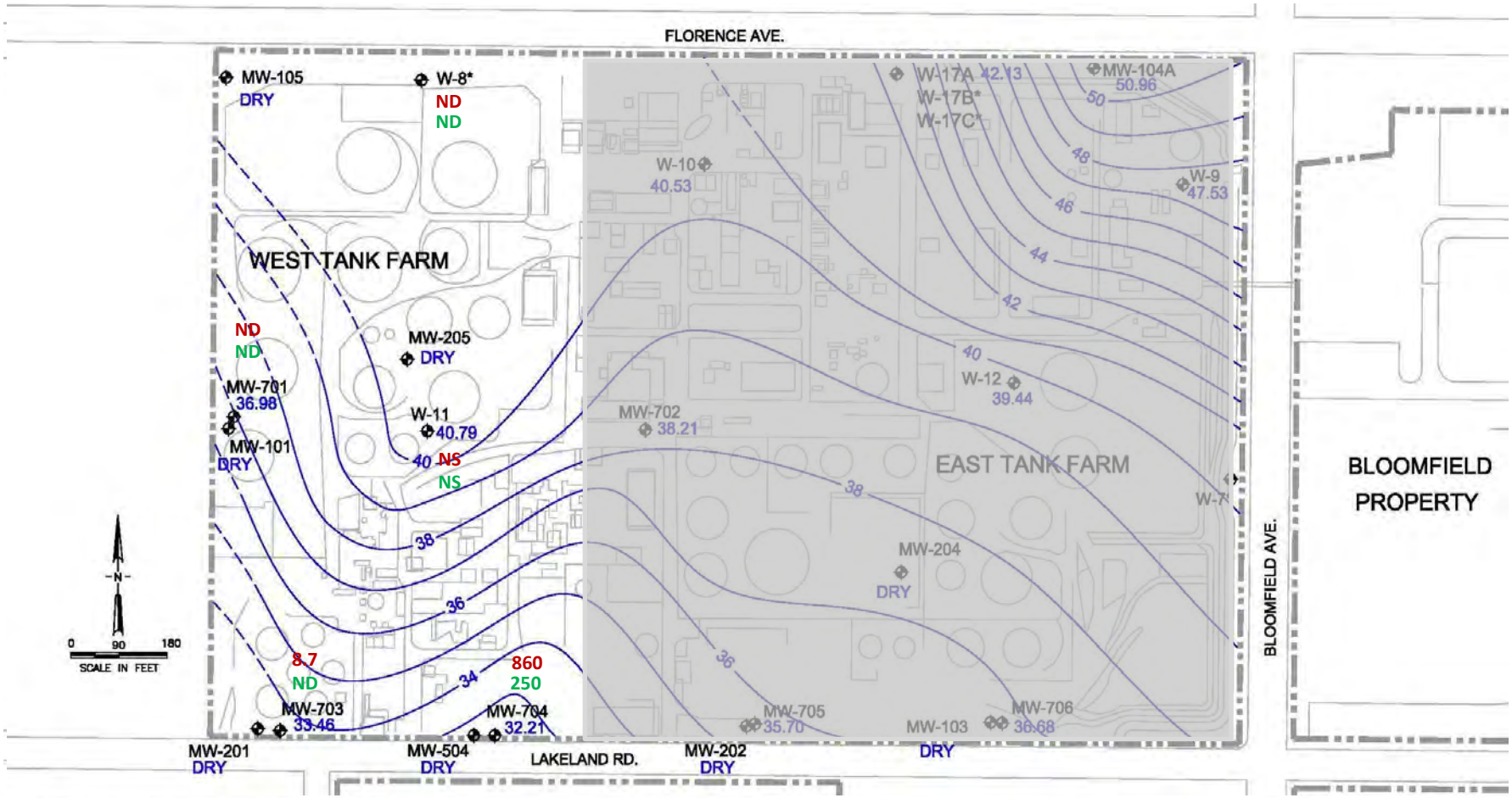


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LEGEND

MW-606 — MONITORING WELL LOCATION

GROUNDWATER ELEVATION CONTOUR

GRAY SHADED AREA IS FORMER REFINERY PROPERTY NOT ADDRESSED BY THIS RAP

43.13 — GROUNDWATER ELEVATION

860 — BENZENE CONCENTRATION (µg/L)

250 — MTBE CONCENTRATION (ug/L)

ND — NOT DETECTED, SAMPLE BELOW LABORATORY REPORTING LIMITS

MW-202 — DRY MONITORING WELL LOCATION

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SITE PLAN SHOWING BENZENE AND MTBE CONCENTRATIONS IN GROUNDWATER, Q3 2013

FIGURE: 9

| JOB NUMBER: | DRAWN BY: | CHECKED BY: | APPROVED BY: | DATE: |
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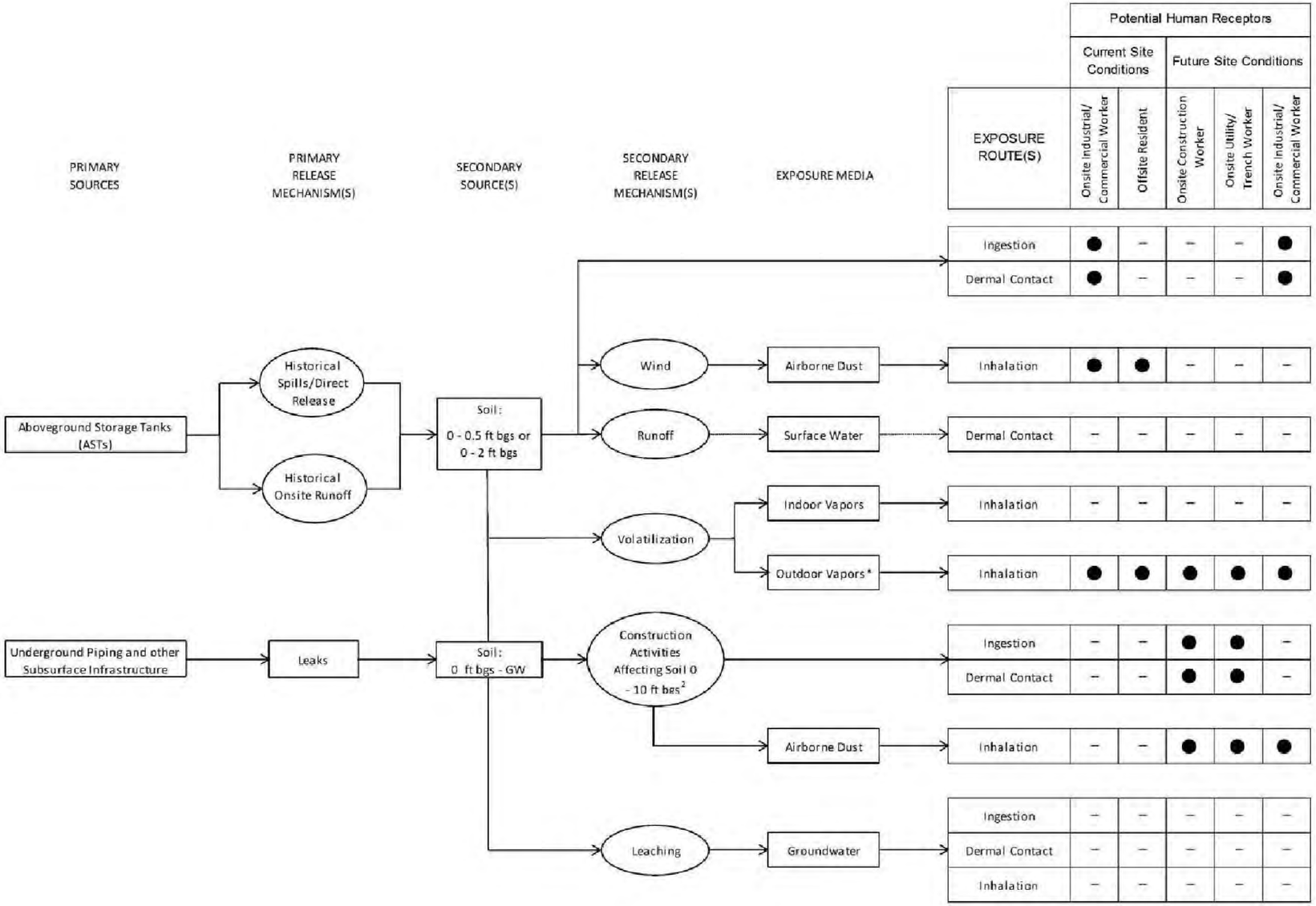
FILEPATH M:\00_OTHER OFFICES\Redlands\Powerine-Refinery\2013\RAP\Stantec\West\Figure 10 - GW CONTOUR BENZ TPHG.dwg|jlieberman|Aug 20, 2013 at 10:38|Layout: 17 X 11




Notes:

● Complete or Potentially Complete Exposure Pathway

– Incomplete or Insignificant Exposure Pathway/Release Mechanism

bgs = below ground surface

* Risk assessment conservatively assumes 100% of exposure time is spent indoors for chronic receptors (industrial/commercial workers and residents).

1 For all areas, the 0 to 0.5 feet and 0 to 2 ft bgs soil sample intervals were subject to a risk-based screening evaluation, and the soil sample interval reflecting the highest risk was conservatively used in the BHHRA.

2 Accounts for excavation activities down to 10 ft bgs and soil redistribution across the site during redevelopment/construction activities

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SITE CONCEPTUAL RISK MODEL

FIGURE: 10

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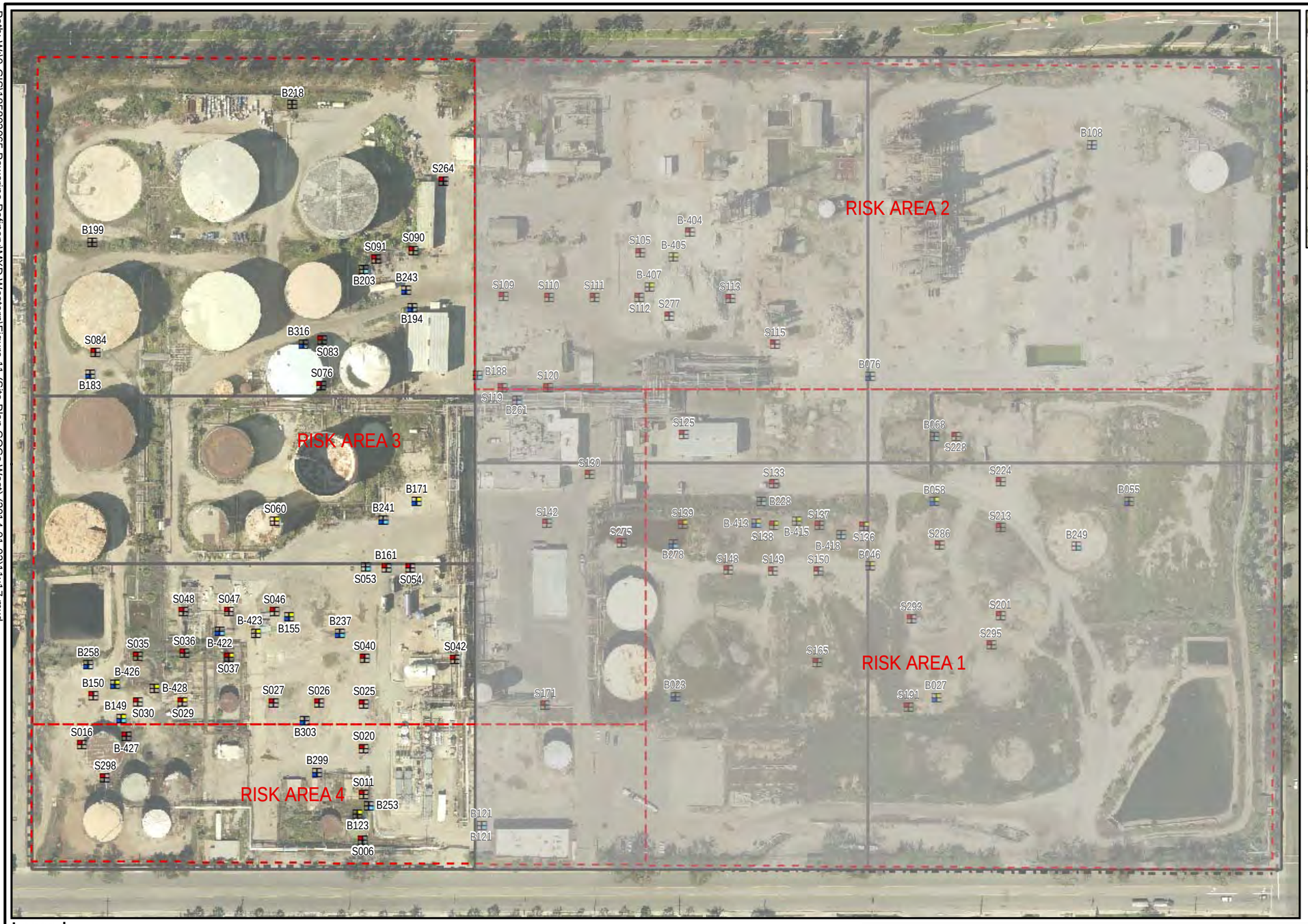
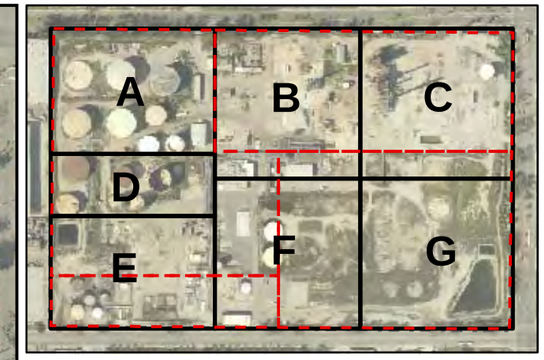
Path: W:\0-GIS\185803065 Powerine Refinery\MXD Western\Figure 11 (Site Plan COCs West) (2014-01-03)11x17.mxd




## Reporting Limits

| | | | |
|---|---|---|---|
| Arsenic (As) | ≥ | 13.0 | mg/kg |
| Benzene | ≥ | 4.0 | mg/kg |
| Dibenzo (D(a,h)a) | ≥ | 0.6 | mg/kg |
| Lead (Pb) | ≥ | 320 | mg/kg |
| TPHg | ≥ | 2,500 | mg/kg |
| TPHd | ≥ | 5,000 | mg/kg |
| TPHmo | ≥ | 10,000 | mg/kg |

0 80 160 320 Feet

1 inch = 160 feet

## Legend

- Risk Area Boundary
- Site Property/Boundary Line
- Gray Shaded Area is Former Reinfery Property Not Addressed by this RAP

Over Reporting Limit 0.0' - 1.5' BGS — Over Reporting Limit 1.5' - 3.0' BGS
S025 Sample ID
Over Reporting Limit 6.0' - 10.5' BGS — Over Reporting Limit 3.0' - 6.0' BGS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**SITE PLAN SHOWING OCCURRENCE OF COCS ABOVE TRCS IN SHALLOW SOIL (0-10 FEET BGS)**

FIGURE: 11

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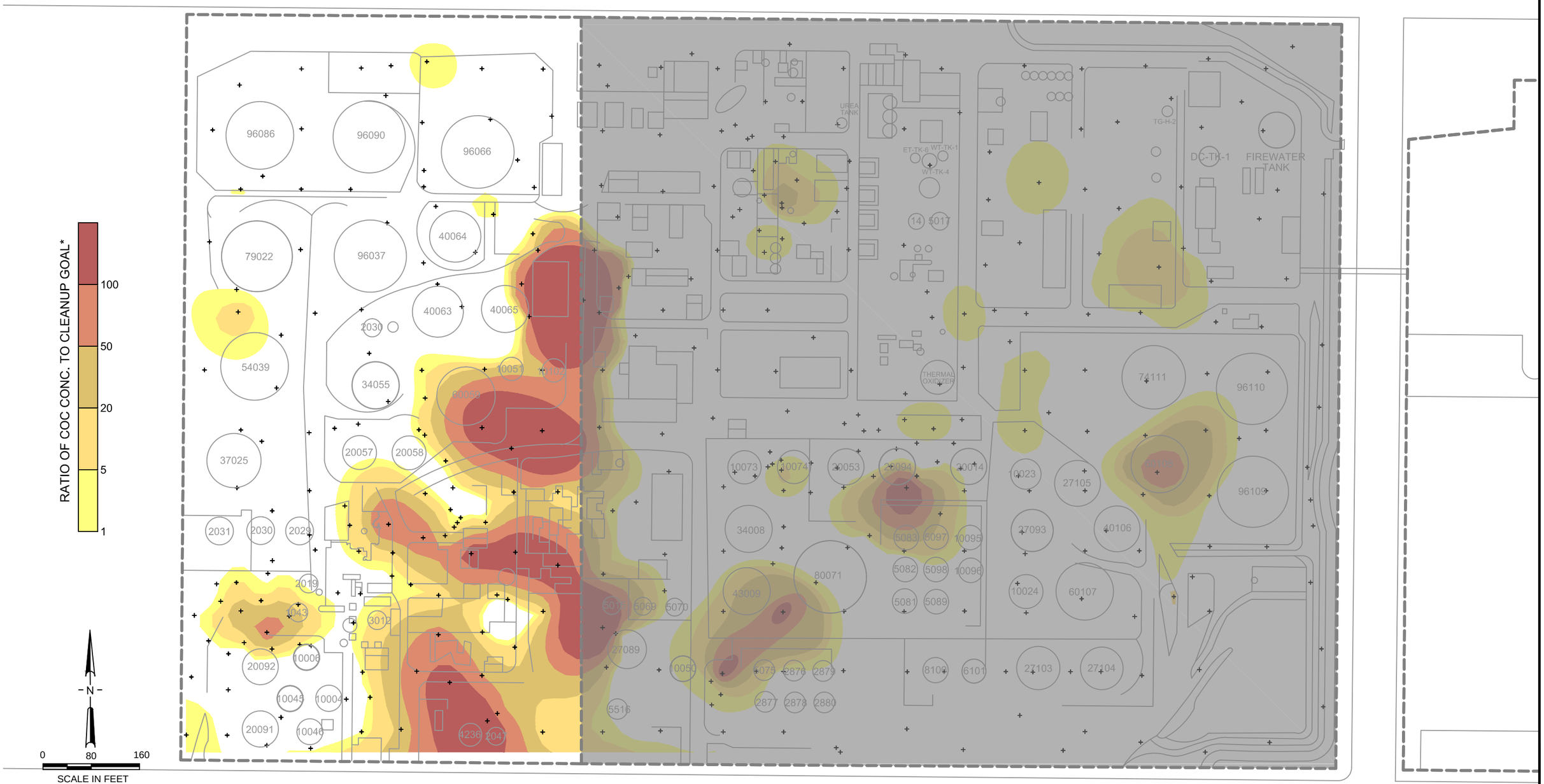


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SITE PLAN SHOWING TPHg AND BTEX IN ZONE 1 (0-30 FT BGS) ABOVE DEEP SOIL CLEANUP GOALS

FIGURE: 12

| JOB NUMBER: | DRAWN BY: | CHECKED BY: | APPROVED BY: | DATE: |
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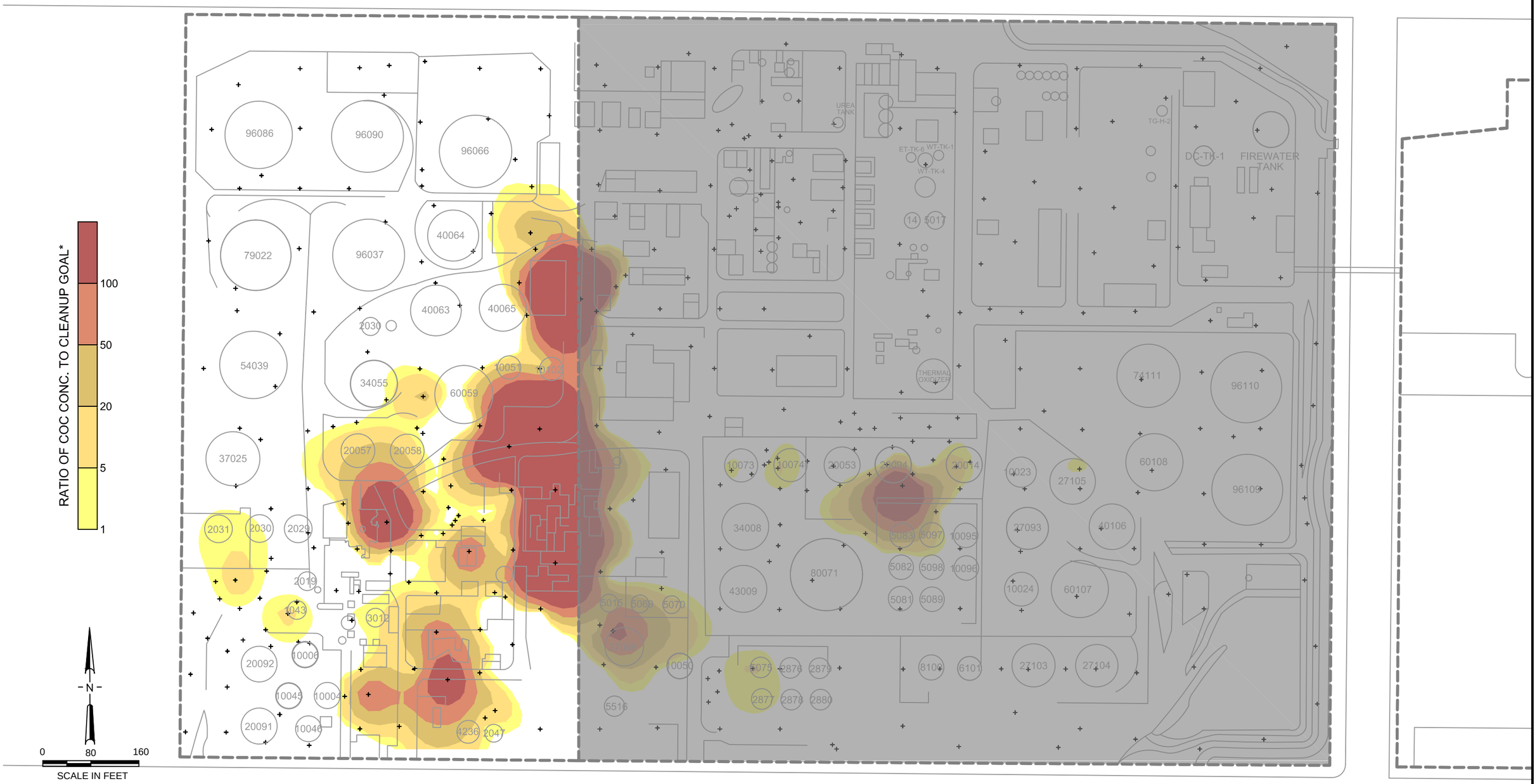


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SITE PLAN SHOWING TPHg AND BTEX IN ZONE 2 (30-60 FT BGS) ABOVE DEEP SOIL CLEANUP GOALS

FIGURE: 13

| JOB NUMBER: | DRAWN BY: | CHECKED BY: | APPROVED BY: | DATE: |
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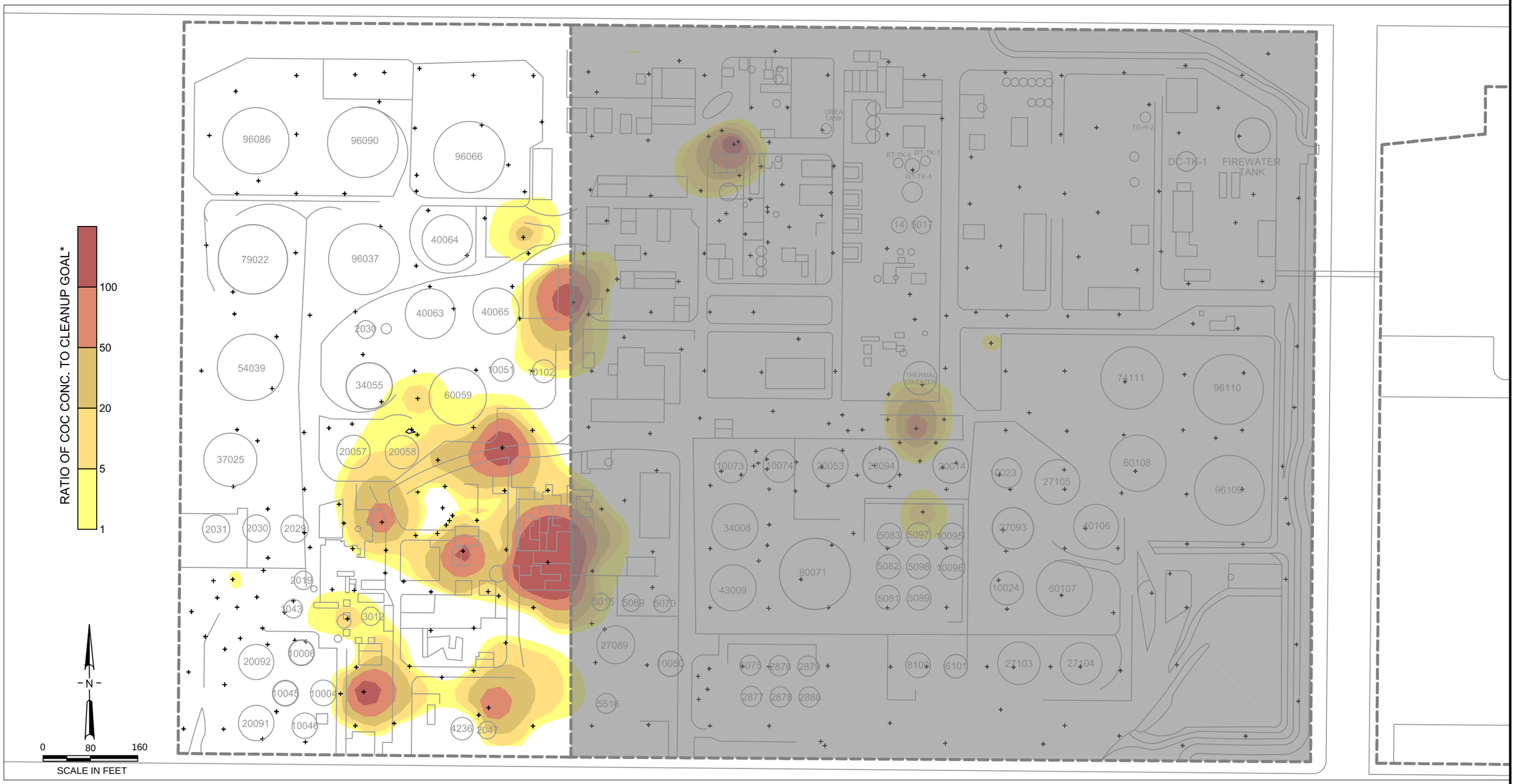


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SITE PLAN SHOWING TPHg AND BTEX IN ZONE 3 (60 FT BGS TO GW) ABOVE DEEP SOIL CLEANUP GOALS

FIGURE: 14

| JOB NUMBER: | DRAWN BY: | CHECKED BY: | APPROVED BY: | DATE: |
|---|---|---|---|---|
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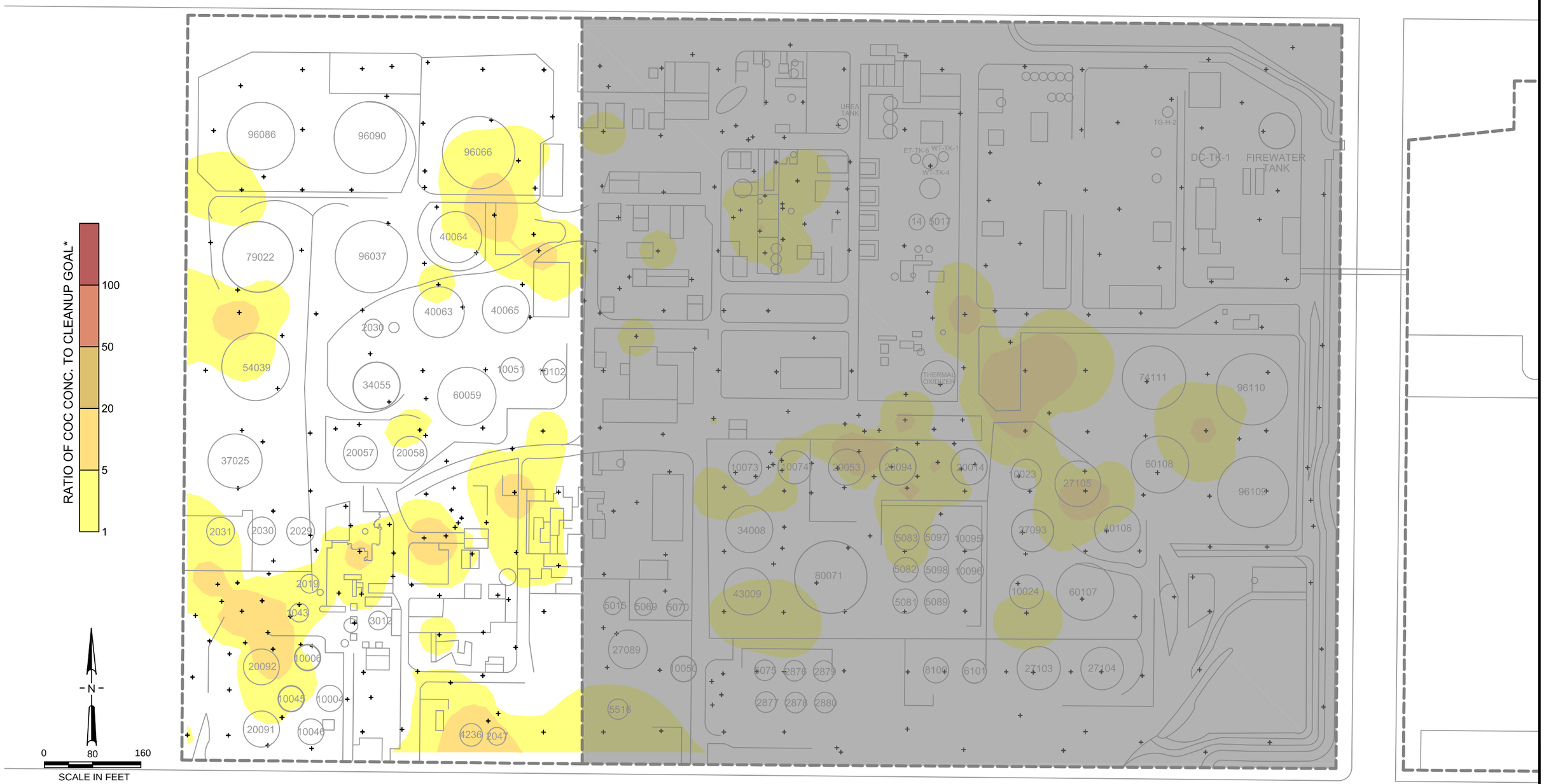


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SITE PLAN SHOWING TPHd
IN ZONE 1 (0-30 FT BGS)
ABOVE DEEP SOIL CLEANUP GOALS

FIGURE: 15

| JOB NUMBER: | DRAWN BY: | CHECKED BY: | APPROVED BY: | DATE: |
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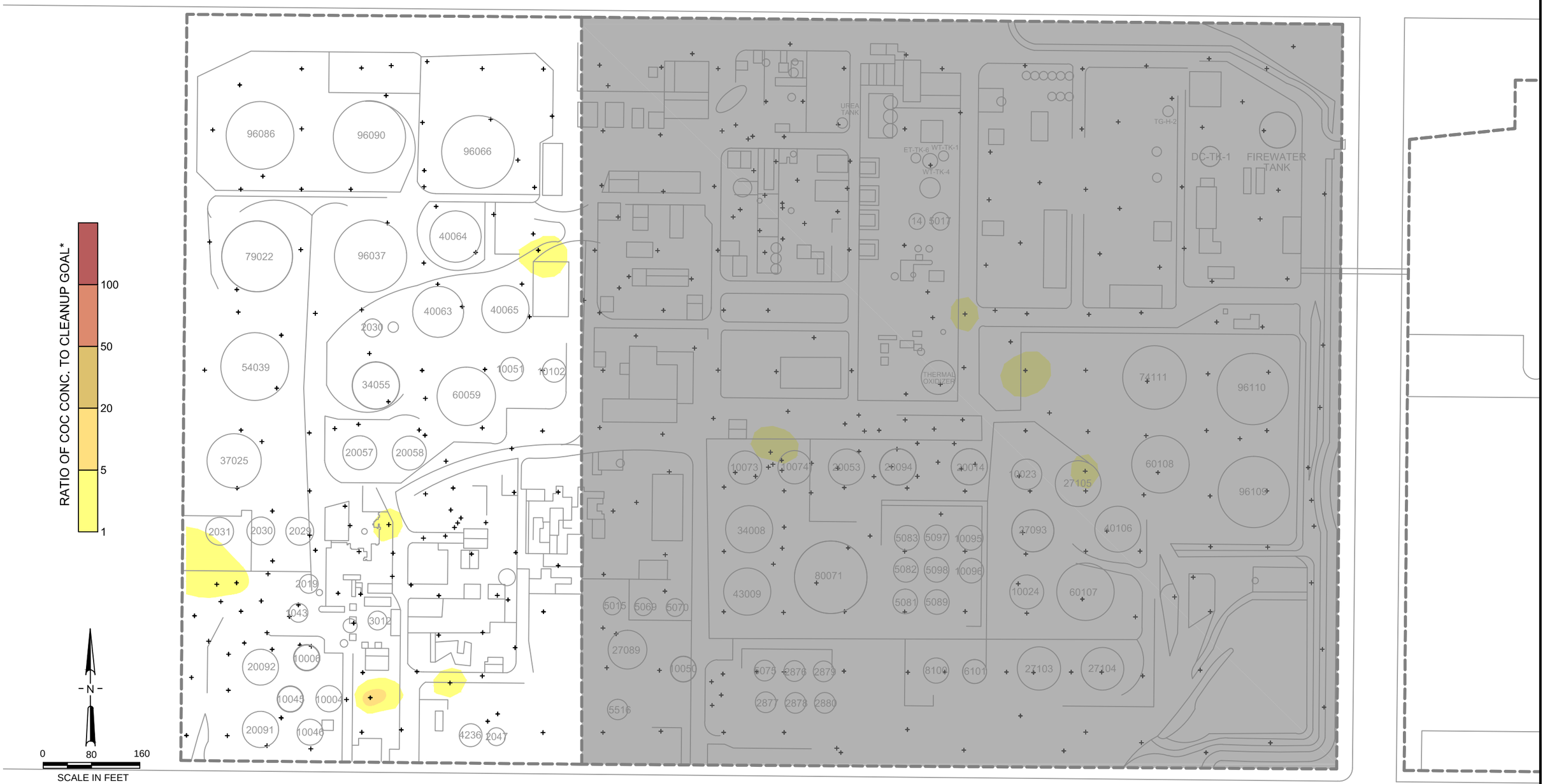


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SITE PLAN SHOWING TPHd
IN ZONE 2 (30-60 FT BGS)
ABOVE DEEP SOIL CLEANUP GOALS

FIGURE: 16

| JOB NUMBER: | DRAWN BY: | CHECKED BY: | APPROVED BY: | DATE: |
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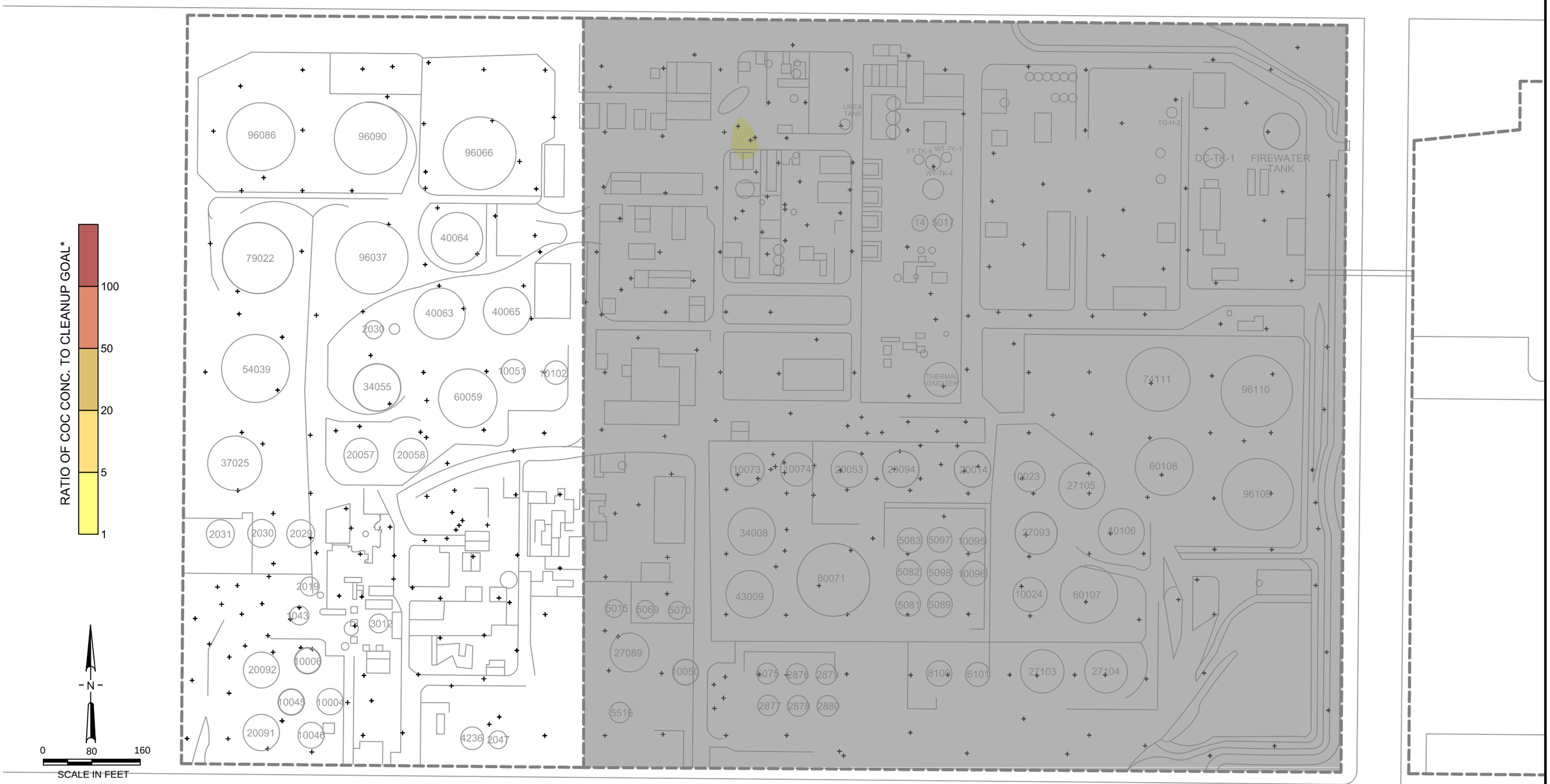


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SITE PLAN SHOWING TPHd
IN ZONE 3 (60 FT BGS TO GW)
ABOVE DEEP SOIL CLEANUP GOALS

FIGURE: 17

| JOB NUMBER: | DRAWN BY: | CHECKED BY: | APPROVED BY: | DATE: |
|---|---|---|---|---|
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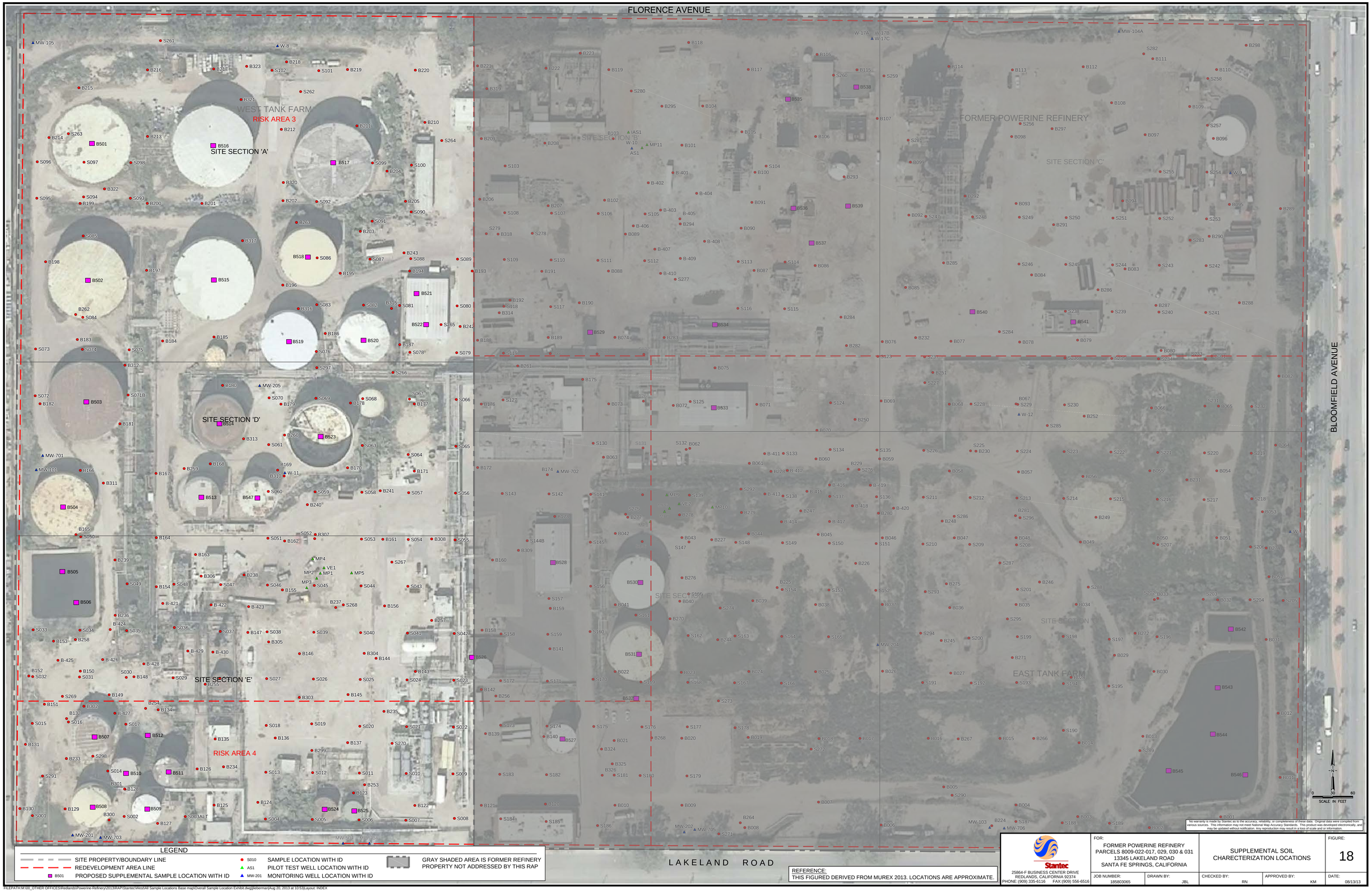


LEGEND

- SITE PROPERTY/BOUNDARY LINE
- REDEVELOPMENT AREA LINE
- B501 PROPOSED SUPPLEMENTAL SAMPLE LOCATION WITH ID
- S010 SAMPLE LOCATION WITH ID
- AS1 PILOT TEST WELL LOCATION WITH ID
- MW-201 MONITORING WELL LOCATION WITH ID
- GRAY SHADED AREA IS FORMER REFINERY PROPERTY NOT ADDRESSED BY THIS RAP

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PARCELS 8009-022-017, 029, 030 & 031
13345 LAKELAND ROAD
SANTA FE SPRINGS, CALIFORNIA

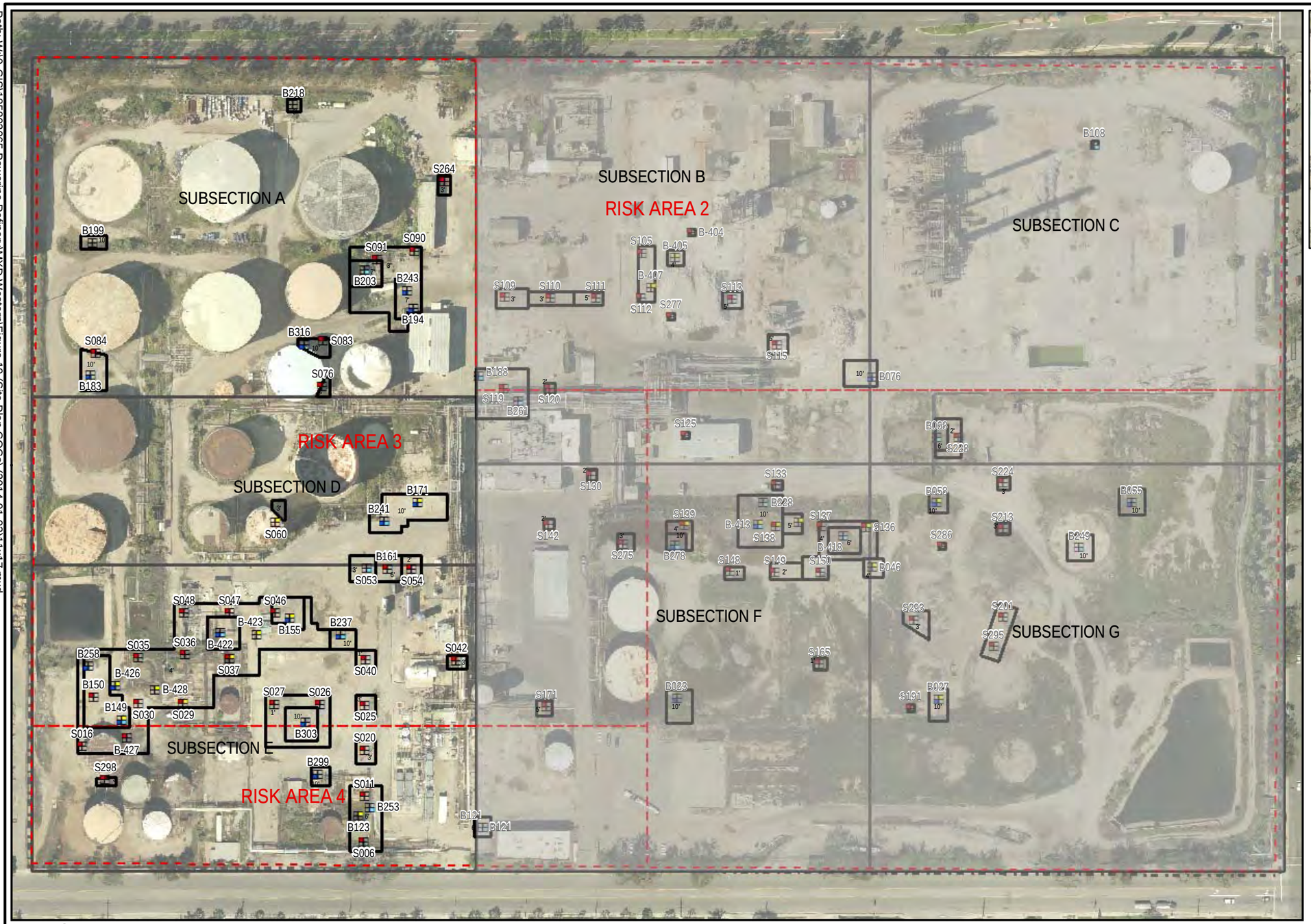
SUPPLEMENTAL SOIL CHARECTERIZATION LOCATIONS

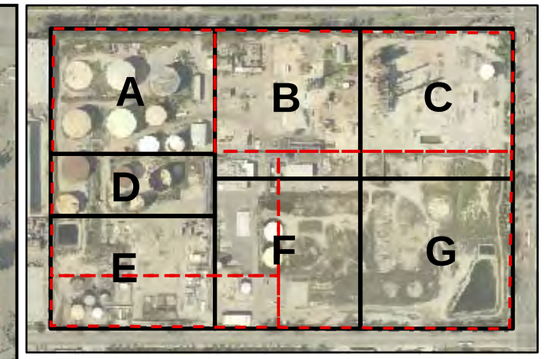
FIGURE: 18

| JOB NUMBER: | DRAWN BY: | CHECKED BY: | APPROVED BY: | DATE: |
|---|---|---|---|---|
| 185803065 | JBL | RN | KM | 08/13/13 |

FILEPATH M:\00_OTHER OFFICES\Redlands\Powerine-Refinery\2013\RAP\Stantec\West\All Sample Locations Base map\Overall Sample Location Exhibit.dwg|jleberman|Aug 20, 2013 at 10:53|Layout: INDEX

Path: W:\0-GIS\185803065 Powerine Refinery\MXD Western\Figure 19 (Site Plan COCs) (2014-01-03)11x17.mxd




## Reporting Limits

| | | | |
|---|---|---|---|
| Arsenic (As) | ≥ | 13.0 | mg/kg |
| Benzene | ≥ | 4.0 | mg/kg |
| Dibenzo (D(a,h)a) | ≥ | 0.6 | mg/kg |
| Lead (Pb) | ≥ | 320 | mg/kg |
| TPHg | ≥ | 2,500 | mg/kg |
| TPHd | ≥ | 5,000 | mg/kg |
| TPHmo | ≥ | 10,000 | mg/kg |

0 80 160 320 Feet

1 inch = 160 feet

## Legend

- Risk Area Boundary
- Excavation Areas
- Site Property/Boundary Line
- Gray Shaded Area is Former Reinfery Property Not Addressed by this RAP

Over Reporting Limit 0.0' - 1.5' BGS — Over Reporting Limit 1.5' - 3.0' BGS
S025 Sample ID
Over Reporting Limit 6.0' - 10.5' BGS — Over Reporting Limit 3.0' - 6.0' BGS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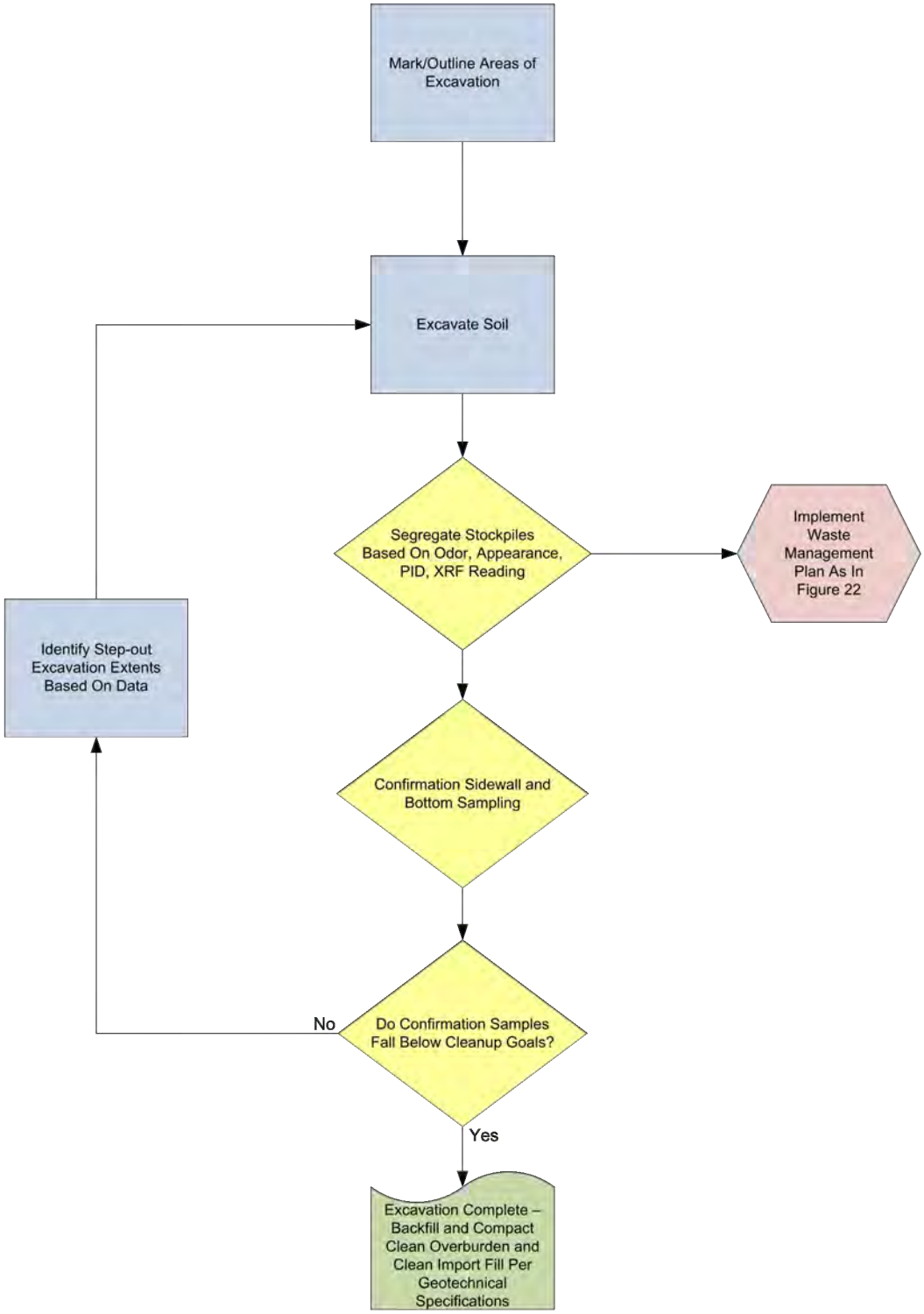
FOR:
FORMER POWERINE REFINERY
PARCELS 8009-02-017, 029, 030 & 031
12345 LAKELAND ROAD
SANTA FE SPRINGS, CALIFORNIA

**SITE PLAN SHOWING SITE SECTION INDEX AND LOCATIONS OF PROPOSED SHALLOW SOIL EXCAVATIONS**

FIGURE: 19

| JOB NUMBER: | DRAWN BY: | CHECKED BY: | APPROVED BY: | DATE: |
|---|---|---|---|---|
| 185803065 | TF | RN | RN | 01/03/14 |




Notes:
PID – Photoionization Detector
XRF – X-Ray Flourescence Detector

REFERENCE:
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PARCELS 8009-022-017, 029, 030 & 031
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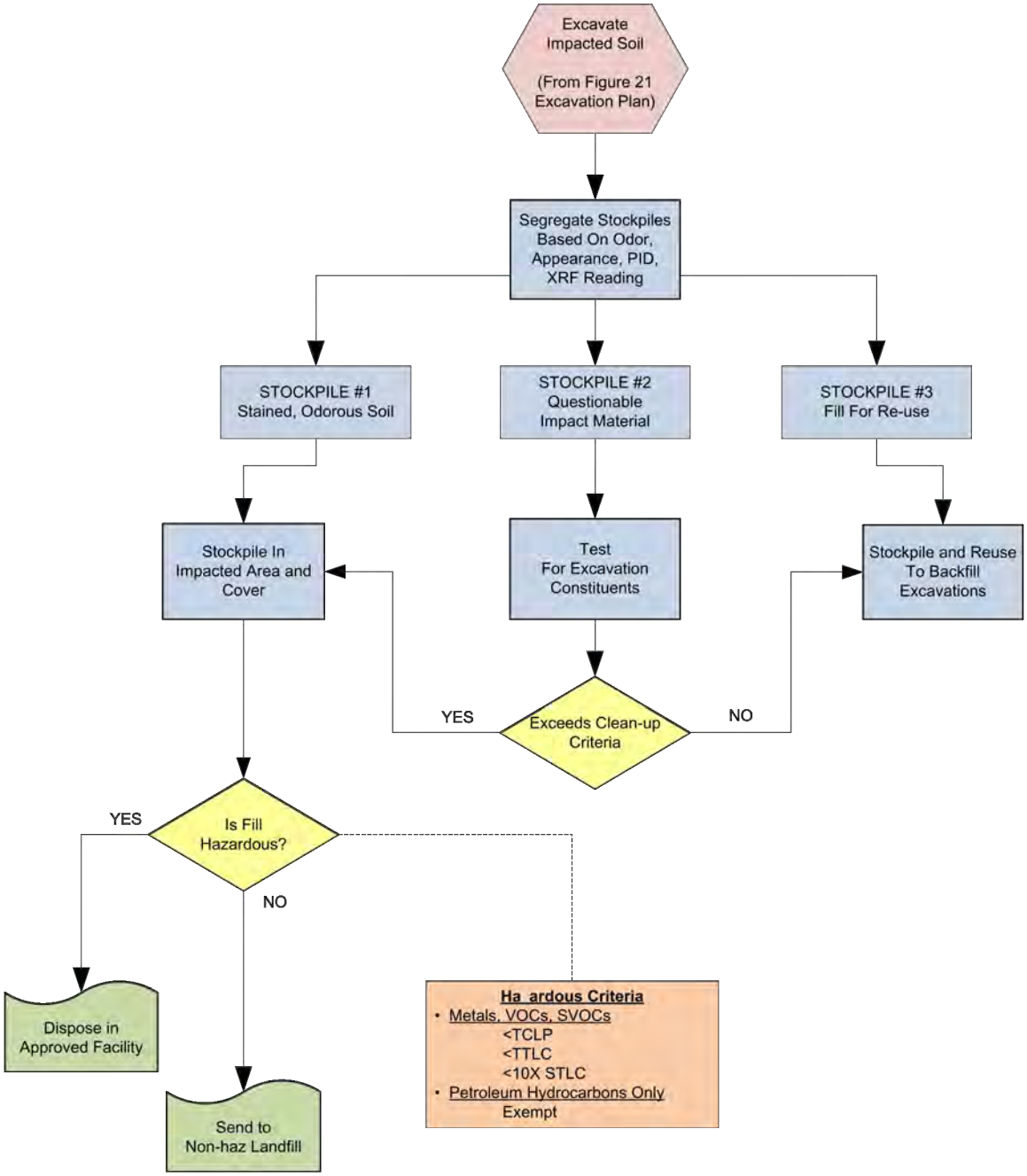
EXCAVATION PLAN

FIGURE: 20

| JOB NUMBER: | DRAWN BY: | CHECKED BY: | APPROVED BY: | DATE: |
|---|---|---|---|---|
| 185803065 | JBL | RN | KM | 08/13/13 |




Notes:
PID – Photoionization Detector
XRF – X-Ray Flourescence Detector
TCLP – Toxicity Characteristic Leaching Procedure
TTLC – Total Threshold Limit Concentration
STLC – Soluble Threshold Limit Concentration

REFERENCE:
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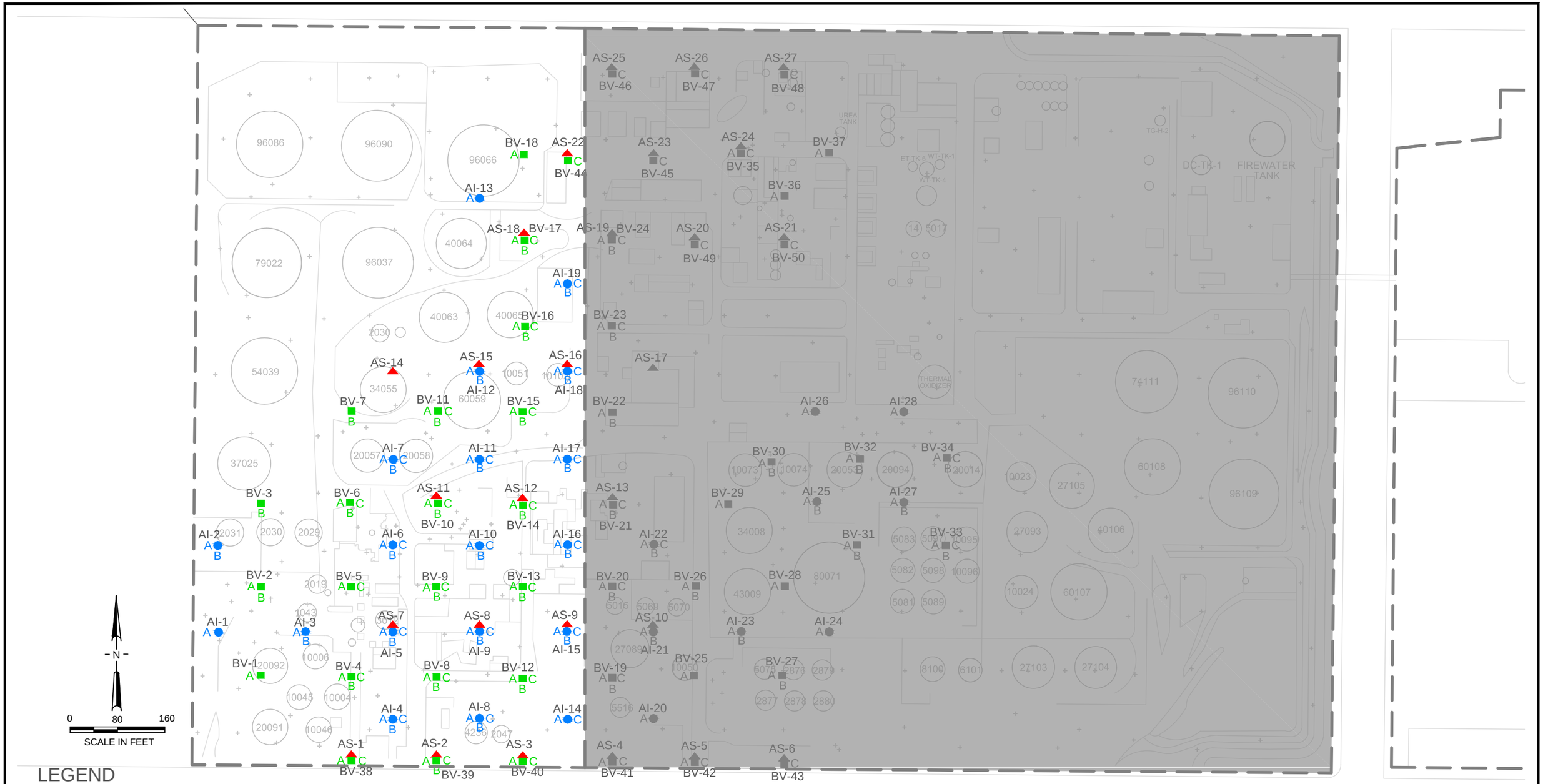
13345 LAKELAND ROAD
SANTA FE SPRINGS, CALIFORNIA

WASTE MANAGEMENT PLAN

FIGURE: 21

| JOB NUMBER: | DRAWN BY: | CHECKED BY: | APPROVED BY: | DATE: |
|---|---|---|---|---|
| 185803065 | JBL | RN | KM | 08/13/13 |




## LEGEND

BV-1
A ■ C
B
PROPOSED BIOVENTING WELL

AI-1
A ● C
B
PROPOSED AIR INJECTION WELL

AS-1
▲
PROPOSED AIR SPARGE WELL

**A** TREATMENT WELL PROPOSED 5-30 FT
**B** TREATMENT WELL PROPOSED 30-60 FT
**C** TREATMENT WELL PROPOSED 60 FT TO GW

| WELL | ZONE A 5-30 FT | ZONE B 30-60 FT | ZONE C 60-GW | GW | TOTAL |
|---|---|---|---|---|---|
| BV | 40 | 29 | 34 | - | 50 |
| AI | 28 | 21 | 15 | - | 28 |
| AS | - | - | - | 27 | 27 |

GRAY SHADED AREA
IS FORMER REFINERY
PROPERTY NOT ADDRESSED
BY THIS RAP

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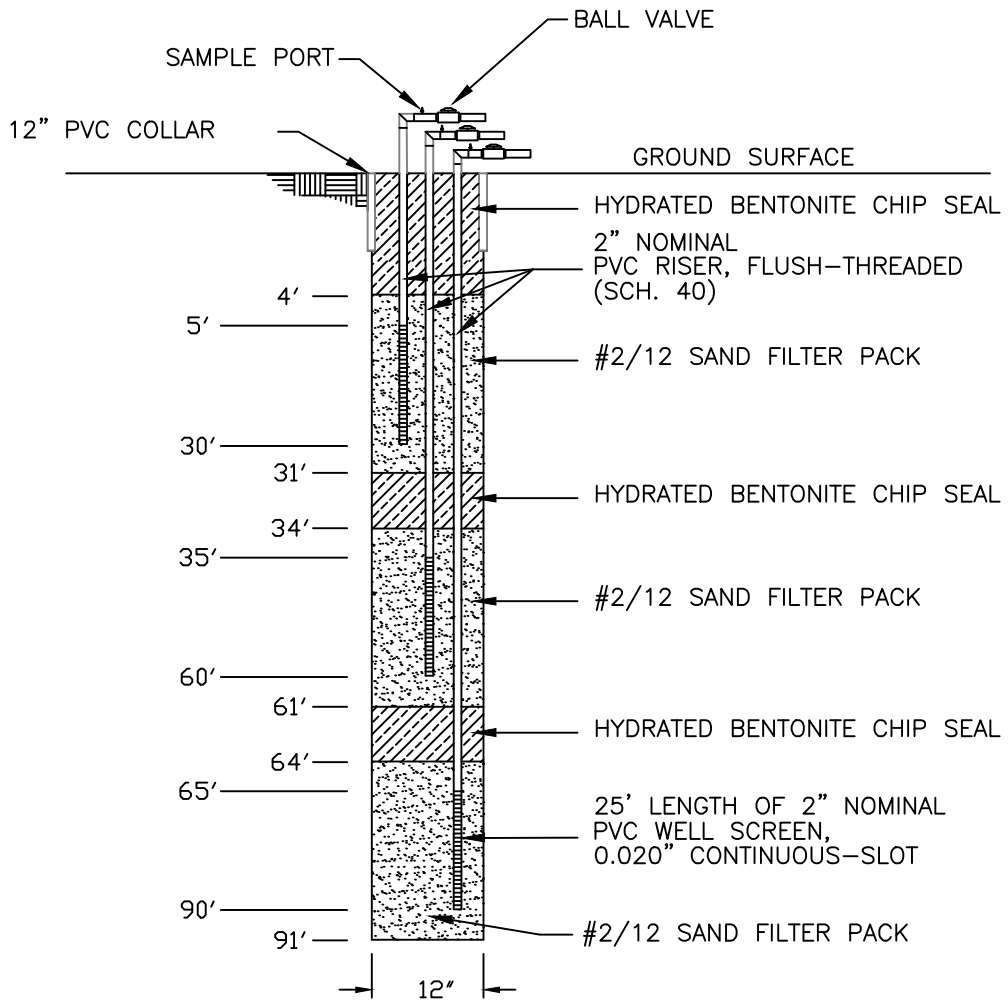
PARCELS 8009-022-017, 029, 030 & 031
13345 LAKELAND ROAD
SANTA FE SPRINGS, CALIFORNIA

SITE PLAN SHOWING
PROPOSED BIOVENTING, AIR
INJECTION, AND AIR SPARGE
WELL LOCATIONS

FIGURE: 22

| JOB NUMBER: | DRAWN BY: | CHECKED BY: | APPROVED BY: | DATE: |
|---|---|---|---|---|
| 185803065 | JBL | RN | KM | 08/13/13 |




BIOVENTING SVE WELL
CONSTRUCTION DETAIL (TYP.)

N.T.S.

REFERENCE:
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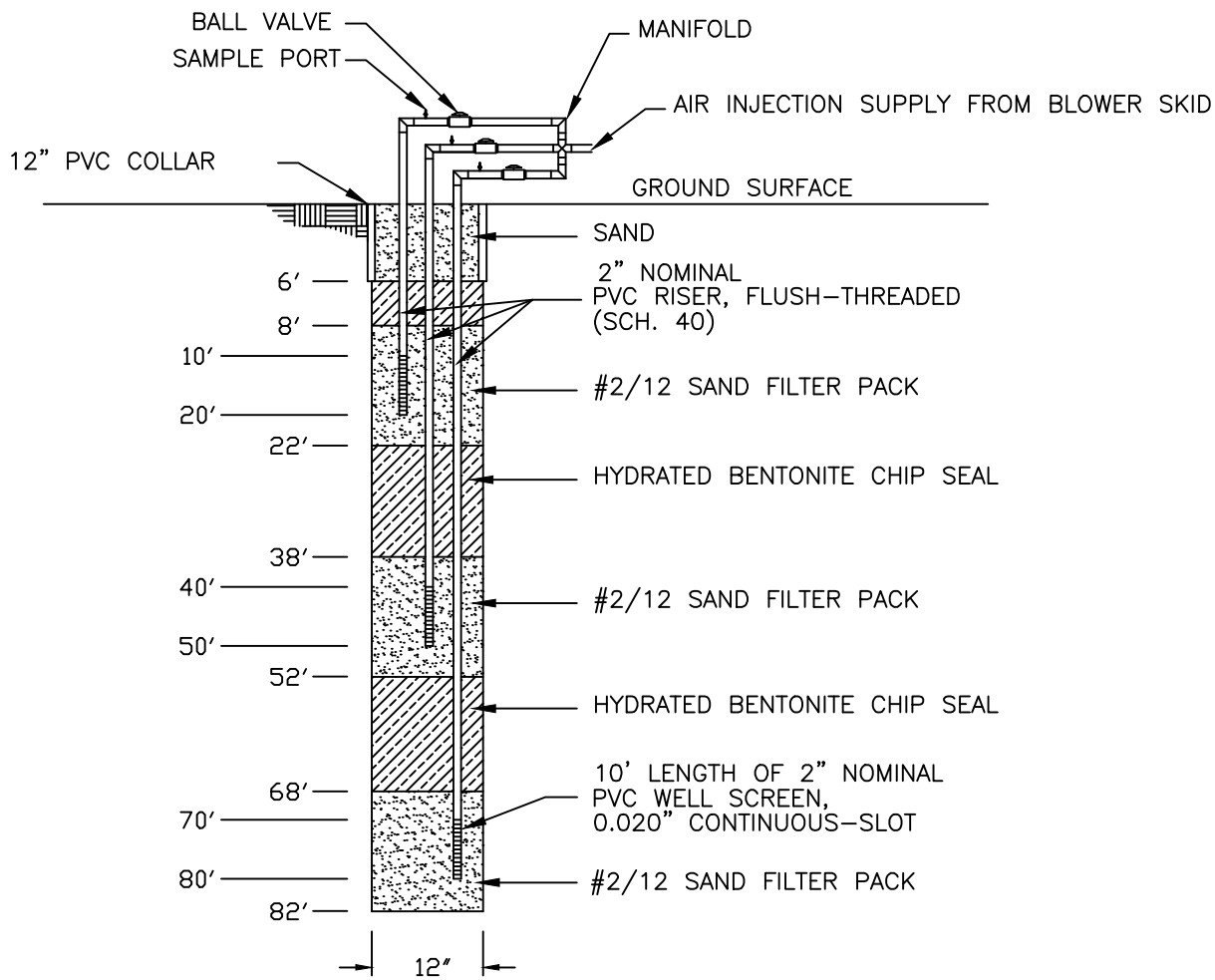
FORMER POWERINE REFINERY
PARCELS 8009-022-017, 029, 030 & 031
13345 LAKELAND ROAD
SANTA FE SPRINGS, CALIFORNIA

BIOVENTING SVE WELL
CONSTRUCTION DETAIL

FIGURE: 23

| JOB NUMBER: | DRAWN BY: | CHECKED BY: | APPROVED BY: | DATE: |
|---|---|---|---|---|
| 185803065 | JBL | RN | KM | 08/13/13 |




AIR INJECTION WELL
CONSTRUCTION DETAIL (TYP.)

N.T.S.

REFERENCE:
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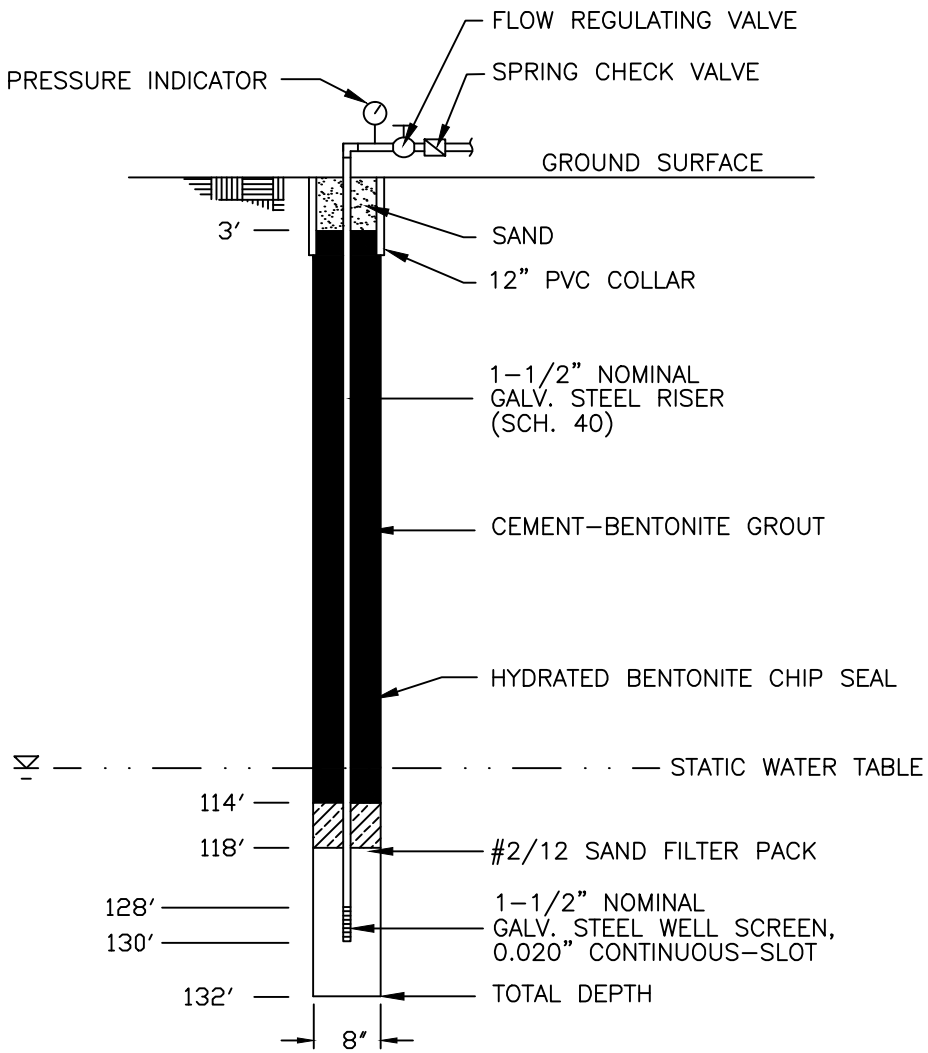
PARCELS 8009-022-017, 029, 030 & 031
13345 LAKELAND ROAD
SANTA FE SPRINGS, CALIFORNIA

AIR INJECTION WELL
CONSTRUCTION DETAIL

FIGURE: 24

| JOB NUMBER: | DRAWN BY: | CHECKED BY: | APPROVED BY: | DATE: |
|---|---|---|---|---|
| 185803065 | JBL | RN | KM | 08/13/13 |




# AIR SPARGE WELL CONSTRUCTION DETAIL (TYP.)

N.T.S.

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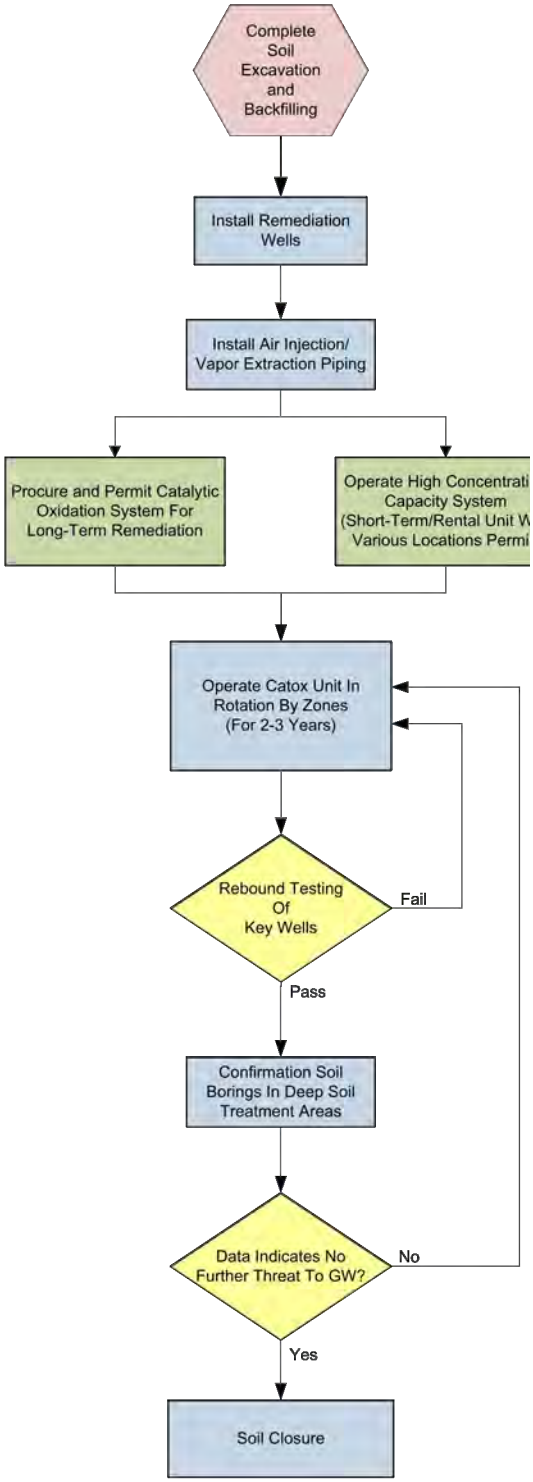
PARCELS 8009-022-017, 029, 030 & 031
13345 LAKELAND ROAD
SANTA FE SPRINGS, CALIFORNIA

AIR SPARGE WELL
CONSTRUCTION DETAIL

FIGURE: 25

| JOB NUMBER: | DRAWN BY: | CHECKED BY: | APPROVED BY: | DATE: |
|---|---|---|---|---|
| 185803065 | JBL | RN | KM | 08/13/13 |

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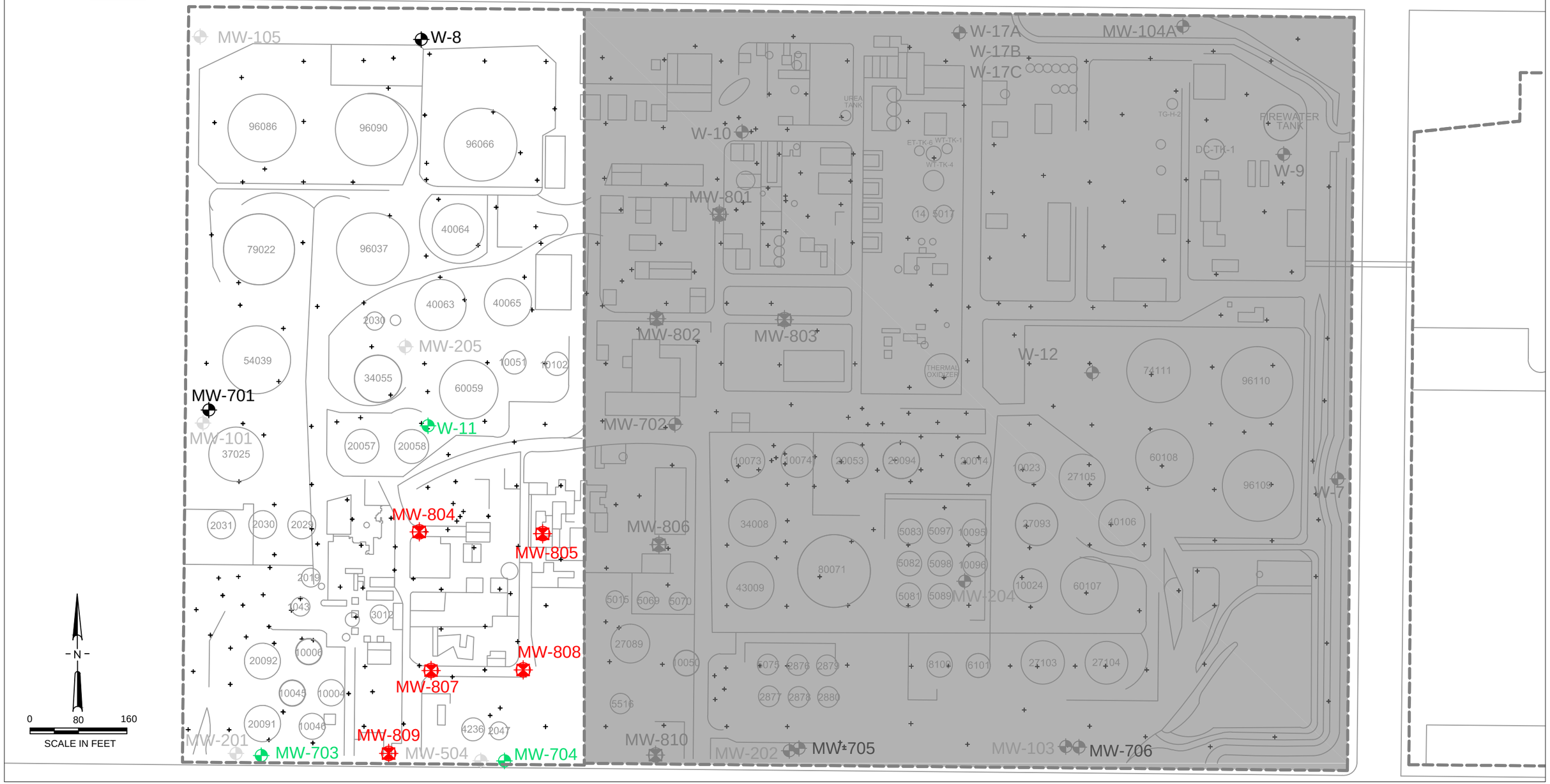
PARCELS 8009-022-017, 029, 030 & 031
13345 LAKELAND ROAD
SANTA FE SPRINGS, CALIFORNIA

IMPLEMINTATION FOR DEEP SOIL REMEDIATION

FIGURE: 26

| JOB NUMBER: | DRAWN BY: | CHECKED BY: | APPROVED BY: | DATE: |
|---|---|---|---|---|
| 185803065 | JBL | RN | KM | 08/13/13 |

FILEPATH:M:\00_OTHER OFFICES\Redlands\Powerine-Refinery\2013\RAP\Stantec\F24, 25, 26 , 27.dwg|jlieberman|Aug 20, 2013 at 11:02|Layout: 26W




LEGEND

MW-606 — MONITORING WELL LOCATION

MW-801 — PROPOSED PERFORMANCE MONITORING WELLS

GRAY SHADED AREA IS FORMER REFINERY PROPERTY NOT ADDRESSED BY THIS RAP

MW-202 — DRY MONITORING WELL LOCATION

MW-703 — EXISTING MONITORING WELL SELECTED FOR PERFORMANCE MONITORING

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13345 LAKELAND ROAD
SANTA FE SPRINGS, CALIFORNIA

SITE PLAN SHOWING GROUNDWATER AND PERFORMANCE MONITORING WELL LOCATIONS

FIGURE: 27

| JOB NUMBER: | DRAWN BY: | CHECKED BY: | APPROVED BY: | DATE: |
|---|---|---|---|---|
| 185803065 | JBL | RN | KM | 08/13/13 |

# APPENDIX A
# RESERVED

# APPENDIX B
# SUPPORTING SOIL DATA

Teri L. Copeland, M.S., DABT
Environmental Toxicologist

5737 Kanan Rd. #182, Agoura Hills, CA 91301 * (818) 991-8240 phone (818) 991-8140 fax

# Technical Memorandum

To: Jeremy R. Squire, P.E., Senior Engineer
Murex Environmental, Inc.

From: Teri Copeland, M.S., DABT and Kurt Fehling

Date: April 6, 2012

Re: Revised Lead UCLs to Support the RAP for the Former CENCO Refinery, Santa Fe Springs, California

---

In order to support the Remedial Action Plan (RAP) for the former CENCO Refinery site, we have completed additional analysis to support remedial action planning for lead in soil. The components of the analysis, and final results, are described in the remainder of this technical memorandum.

**Methods**

As requested, the lead data points from each of the four site areas (exposure areas) that are already planned for excavation (i.e., due to the concentrations of other chemicals) were removed from the dataset. This resulted in a new dataset for each of the soil depth interval populations within each of the four exposure areas[1]. The 95% upper confidence limit (UCL) was then calculated for each of the new lead data sets. The lead data file you provided by via email (Lead All Detections.xlsx) was used along and the current version of EPA's ProUCL software.

ProUCL provides a number of UCLs (both parametric and nonparametric) in the model output. The ProUCL output identifies a "potential UCL to use" which is selected by the ProUCL software from a list of normal, lognormal and nonparametric UCLs and is a default value regulatory agencies typically rely upon. The ProUCL "potential UCL" is caveated by EPA's suggestion that the user may want to consult a statistician to select the most defensible UCL. We consulted a statistician and were advised to select the maximum of the 95% Central Limit Theorem (CLT) UCL, 95% Standard Bootstrap UCL, and 95% BCA Bootstrap UCL. The 95% BCA Bootstrap UCL was the maximum value of these three UCLs in all cases.

[1] Area 1: 0-10 ft; Area 2: 0-2 ft, 0-10ft; Area 3: 0-0.5 ft, 0-2 ft, 0-10 ft; and Area 4: 0-2 ft and 0-10 ft.

The statistician-recommended UCLs were compared to the target commercial/industrial California Human Health Screening Level (CHHSL) of 320 mg/kg. The resulting UCLs for all of the new data sets were shown to be below 320 mg/kg[2] with the exception of Area 1, 0-2 feet depth interval. For that data set, one more data point was removed, starting with the maximum remaining concentration (sample S148), which resulted in a 95% BCA Bootstrap UCL that is lower than 320 mg/kg.

**Results**

The final UCLs are provided in the table below, which includes ProUCL's "potential UCL to use" UCL and the statistician–recommended UCL. All of the statistician-recommended UCLs are below 320 mg/kg. All of the "potential UCL to use" UCLs are below 320 mg/kg, with the exception of Area 1, 0-2 feet depth interval. If one additional sample (S150) is removed from that dataset, the "potential to use" UCL is then below 320 mg/kg.

| Area | Soil Depth Interval | 95% UCL EPA "Potential UCL To Use" | 95% UCL Statistician-Recommended UCL |
|---|---|---|---|
| | Feet | mg/kg | mg/kg |
| Area 1 | 0 - 2 | 343.6* | 270.2 |
| | 0 - 10 | 276.7 | 202.3 |
| Area 2 | 0 - 2 | 72.73 | 86.33 |
| | 0 - 10 | 75.61 | 59.94 |
| Area 3 | 0 - 0.5 | 247.8 | 196.9 |
| | 0 - 2 | 231.1 | 291.4 |
| | 0 - 10 | 230 | 200.2 |
| Area 4 | 0 - 2 | 228.9 | 230.7 |
| | 0 - 10 | 176.5 | 140.6 |

* This UCL is not recommended by our statistician. Note: if the next highest sample concentration is removed (S150); the "Potential UCL to use" is reduced to 247.4 mg/kg.

**<u>Summary</u>**

The 95% UCL for lead in soil exceeded the commercial/industrial CHHSL of 320 mg/kg in some areas of the site. Because, remedial activities are planned for these areas to address COCs other than lead, the UCL for lead was recalculated for each area after removing the samples that are slated for remediation. The resulting lead UCLs were all below the commercial/industrial CHHSL with the

[2] No further action is required by DTSC when the EPC does not exceed the commercial/industrial CHHSL for lead.

exception of the 0 to 2 foot depth interval for Area 1. The lead UCL was once again recalculated with the maximum sample location removed and the resulting lead UCL recommended for use by ProUCL was less than the CHHSL. If the two highest concentrations of lead are removed, then the both the ProUCL-recommended UCL and the statistician-recommended UCL are less than the commercial/industrial CHHSL.

## Summary of Upper Confidence Limits for Lead in Soil; 0 to 2 feet and 2 to 10 Feet.*

| Area | Depth | ProUCL Recommended UCL | Statistician Recommended UCL | ProUCL Recommended UCL | Statistician Recommended UCL |
|---|---|---|---|---|---|
| Area 1 | 0 - 2 feet | **438.6** | **328.2** | 258[a] | 200[a] |
| | 2 - 10 feet | 200.3 | 157.4 | --- | --- |
| Area 2 | 0 - 2 feet | **427.7** | **358.9** | 78.63[b] | 90.38[b] |
| | 2 - 10 feet | 24.65 | 20.58 | --- | --- |
| Area 3 | 0 - 2 feet | 285.3 | **918.4** | 237.8[c] | 299.2[c] |
| | 2 - 10 feet | **2870** | **2234** | 317.9[c] | 242.1[c] |
| Area 4 | 0 - 2 feet | **667.1** | **539.3** | 228.9[d] | 228.9[d] |
| | 2 - 10 feet | **377.4** | **350.8** | 70.71[d] | 57.93[d] |

| | |
|---|---|
| * | California Human Health Screening Level for lead for industrial/commercial land use is 320 mg/kg. |
| a | Area 1 UCLs with samples S148-0 and S150-12 removed. |
| b | Area 2 UCLs with sample S277-0 removed. |
| c | Area 3UCLs with sample S037-0 and S037-20 removed. |
| d | Area 4 UCLs with sample S011-0 and B123-2 removed. |
| --- | No applicable; UCL is below CHHSL of 320 mg/kg. |
| | Bold values denote those UCLs that exceed the industrial CHHSL for lead. |

**Table B2**
**Results of Arsenic Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Arsenic |
|---|---|---|---|---|---|---|---|
| B005 | B005-2 | 12/8/05 | 2 | 3 | Area 1 | MG/KG | <1.25 |
| B005 | B005-5 | 12/8/05 | 5 | 6 | Area 1 | MG/KG | 3.55 |
| B007 | B007-2 | 12/12/05 | 2 | 3 | Area 1 | MG/KG | 3.125 |
| B008 | B008-2 | 12/8/05 | 2 | 3 | Area 1 | MG/KG | <1.25 |
| B008 | B008-5 | 12/8/05 | 5 | 6 | Area 1 | MG/KG | 3.6875 |
| B009 | B009-2 | 12/9/05 | 2 | 3 | Area 1 | MG/KG | <1.25 |
| B010 | B010-2 | 12/9/05 | 2 | 3 | Area 4 | MG/KG | 0.89875 |
| B010 | B010-5 | 12/9/05 | 5 | 6 | Area 4 | MG/KG | 3.5625 |
| B011 | B011-2 | 1/9/06 | 2 | 3 | Area 1 | MG/KG | 3.9875 |
| B011 | B011-5 | 1/9/06 | 5 | 6 | Area 1 | MG/KG | 4.7125 |
| B014 | B014-2 | 12/13/05 | 2 | 3 | Area 1 | MG/KG | 6.1125 |
| B014 | B014-5 | 12/13/05 | 5 | 6 | Area 1 | MG/KG | 4.7625 |
| B015 | B015-2 | 12/12/05 | 2 | 3 | Area 1 | MG/KG | 0.67 |
| B016 | B016-2 | 12/13/05 | 2 | 3 | Area 1 | MG/KG | <1.25 |
| B017 | B017-2 | 12/29/05 | 2 | 3 | Area 1 | MG/KG | <1.25 |
| B018 | B018-2 | 12/29/05 | 2 | 3 | Area 1 | MG/KG | 1.825 |
| B018 | B018-5 | 12/29/05 | 5 | 6 | Area 1 | MG/KG | 2.3375 |
| B019 | B019-2 | 12/28/05 | 2 | 3 | Area 1 | MG/KG | <1.25 |
| B020 | B020-2 | 12/12/05 | 2 | 3 | Area 1 | MG/KG | <1.25 |
| B021 | B021-2 | 12/28/05 | 2 | 3 | Area 4 | MG/KG | <1.25 |
| B021 | B021-5 | 12/28/05 | 5 | 6 | Area 4 | MG/KG | <1.25 |
| B022 | B022-2 | 12/28/05 | 2 | 3 | Area 3 | MG/KG | <1.25 |
| B023 | B023-2 | 12/28/05 | 2 | 3 | Area 1 | MG/KG | <1.25 |
| B024 | B024-2 | 12/16/05 | 2 | 2.5 | Area 1 | MG/KG | 0.8925 |
| B025 | B025-2 | 12/15/05 | 2 | 3 | Area 1 | MG/KG | 1.3875 |
| B026 | B026-2 | 12/15/05 | 2 | 3 | Area 1 | MG/KG | 3.6875 |
| B027 | B027-2 | 12/14/05 | 2 | 3 | Area 1 | MG/KG | 2.9875 |
| B028 | B028-2 | 12/13/05 | 2 | 3 | Area 1 | MG/KG | 2.275 |
| B028 | B028-5 | 12/13/05 | 5 | 6 | Area 1 | MG/KG | 1.3375 |
| B034 | B034-2 | 12/14/05 | 2 | 3 | Area 1 | MG/KG | <1.25 |
| B035 | B035-2 | 12/14/05 | 2 | 3 | Area 1 | MG/KG | 3.625 |
| B036 | B036-2 | 12/14/05 | 2 | 3 | Area 1 | MG/KG | 3.425 |
| B036 | B036-5 | 12/14/05 | 5 | 6 | Area 1 | MG/KG | 2.375 |
| B036 | B036-10 | 12/14/05 | 10 | 11 | Area 1 | MG/KG | 4.95 |
| B037 | B037-2 | 12/19/05 | 2 | 3 | Area 1 | MG/KG | 5.3375 |
| B038 | B038-2 | 12/19/05 | 2 | 3 | Area 1 | MG/KG | <1.25 |
| B039 | B039-2 | 12/16/05 | 2 | 3 | Area 1 | MG/KG | 2.3125 |
| B039 | B039-5 | 12/16/05 | 5 | 6 | Area 1 | MG/KG | 3.825 |
| B040 | B040-2 | 12/19/05 | 2 | 3 | Area 1 | MG/KG | 4.1125 |
| B041 | B041-2 | 12/28/05 | 2 | 3 | Area 3 | MG/KG | <1.25 |
| B042 | B042-2 | 12/20/05 | 2 | 3 | Area 3 | MG/KG | <1.25 |
| B042 | B042-5 | 12/20/05 | 5 | 6 | Area 3 | MG/KG | 4.2625 |
| B043 | B043-2 | 12/16/05 | 2 | 3 | Area 1 | MG/KG | 4.175 |
| B044 | B044-2 | 12/16/05 | 2 | 3 | Area 1 | MG/KG | 1.185 |
| B045 | B045-2 | 12/15/05 | 2 | 3 | Area 1 | MG/KG | <1.25 |
| B046 | B046-2 | 12/15/05 | 2 | 3 | Area 1 | MG/KG | 4.5125 |
| B047 | B047-2 | 12/15/05 | 2 | 3 | Area 1 | MG/KG | 4.2875 |
| B048 | B048-2 | 12/20/05 | 2 | 3 | Area 1 | MG/KG | 6.3125 |
| B048 | B048-5 | 12/20/05 | 5 | 6 | Area 1 | MG/KG | 5.6875 |
| B049 | B049-2 | 12/14/05 | 2 | 3 | Area 1 | MG/KG | <1.25 |

**Table B2**
**Results of Arsenic Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Arsenic |
|---|---|---|---|---|---|---|---|
| B050 | B050-2 | 12/13/05 | 2 | 3 | Area 1 | MG/KG | 4.15 |
| B055 | B055-2 | 12/21/05 | 2 | 3 | Area 1 | MG/KG | 1.7375 |
| B056 | B056-2 | 12/14/05 | 2 | 3 | Area 1 | MG/KG | 3.1125 |
| B057 | B057-2 | 12/13/05 | 2 | 3 | Area 1 | MG/KG | 3.5375 |
| B058 | B058-2 | 12/20/05 | 2 | 3 | Area 1 | MG/KG | <1.25 |
| B059 | B059-2 | 12/20/05 | 2 | 3 | Area 1 | MG/KG | <1.25 |
| B060 | B060-2 | 12/20/05 | 2 | 3 | Area 1 | MG/KG | <1.25 |
| B061 | B061-2 | 12/20/05 | 2 | 3 | Area 1 | MG/KG | <1.25 |
| B062 | B062-2 | 12/21/05 | 2 | 3 | Area 1 | MG/KG | 0.45 |
| B063 | B063-2 | 1/9/06 | 2 | 3 | Area 3 | MG/KG | 3.1875 |
| B066 | B066-2 | 1/12/06 | 2 | 3 | Area 1 | MG/KG | 4.6625 |
| B066 | B066-5 | 1/12/06 | 5 | 6 | Area 1 | MG/KG | 3.3625 |
| B067 | B067-2 | 12/21/05 | 2 | 3 | Area 1 | MG/KG | 0.875 |
| B067 | B067-5 | 12/21/05 | 5 | 6 | Area 1 | MG/KG | 4.0625 |
| B070 | B070-2 | 12/22/05 | 2 | 3 | Area 1 | MG/KG | 3.675 |
| B070 | B070-5 | 12/22/05 | 5 | 6 | Area 1 | MG/KG | <1.25 |
| B078 | B078-2 | 12/23/05 | 2 | 3 | Area 2 | MG/KG | 2.8875 |
| B079 | B079-2 | 12/23/05 | 2 | 3 | Area 2 | MG/KG | 6.05 |
| B080 | B080-2 | 12/22/05 | 2 | 3 | Area 1 | MG/KG | 7.6625 |
| B081 | B081-2 | 12/22/05 | 2 | 3 | Area 1 | MG/KG | <1.25 |
| B084 | B084-2 | 1/5/06 | 2 | 3 | Area 2 | MG/KG | <1.25 |
| B085 | B085-2 | 12/28/05 | 2 | 3 | Area 2 | MG/KG | 5.9 |
| B088 | B088-2 | 1/18/06 | 2 | 3 | Area 2 | MG/KG | <1.87 |
| B088 | B088-5 | 1/18/06 | 5 | 6 | Area 2 | MG/KG | 7.125 |
| B089 | B089-2 | 1/9/06 | 2 | 3 | Area 2 | MG/KG | 5.8625 |
| B090 | B090-2 | 1/10/06 | 2 | 3 | Area 2 | MG/KG | <1.25 |
| B090 | B090-5 | 1/10/06 | 5 | 6 | Area 2 | MG/KG | <1.25 |
| B092 | B092-2 | 1/5/06 | 2 | 3 | Area 2 | MG/KG | <1.25 |
| B093 | B093-2 | 1/5/06 | 2 | 3 | Area 2 | MG/KG | <1.25 |
| B099 | B099-2 | 1/3/06 | 2 | 3 | Area 2 | MG/KG | 1.5375 |
| B099 | B099-5 | 1/3/06 | 5 | 6 | Area 2 | MG/KG | 3.875 |
| B101 | B101-2 | 1/10/06 | 2 | 3 | Area 2 | MG/KG | <1.25 |
| B103 | B103-2 | 1/6/06 | 2 | 3 | Area 2 | MG/KG | <1.25 |
| B104 | B104-2 | 2/3/06 | 2 | 3 | Area 2 | MG/KG | 3.8625 |
| B104 | B104-5 | 2/3/06 | 5 | 6 | Area 2 | MG/KG | 2.675 |
| B105 | B105-2 | 1/10/06 | 2 | 3 | Area 2 | MG/KG | <1.25 |
| B105 | B105-5 | 1/10/06 | 5 | 6 | Area 2 | MG/KG | <1.25 |
| B108 | B108-2 | 1/9/06 | 2 | 3 | Area 2 | MG/KG | 6.4 |
| B108 | B108-5 | 1/9/06 | 5 | 6 | Area 2 | MG/KG | 28.125 |
| B108 | B108-10 | 1/9/06 | 10 | 11 | Area 2 | MG/KG | 5.575 |
| B115 | B115-2 | 1/3/06 | 2 | 3 | Area 2 | MG/KG | 6.1125 |
| B117 | B117-2 | 1/6/06 | 2 | 3 | Area 2 | MG/KG | 6.35 |
| B117 | B117-5 | 1/6/06 | 5 | 6 | Area 2 | MG/KG | 4.5 |
| B118 | B118-2 | 1/6/06 | 2 | 3 | Area 2 | MG/KG | 4.8875 |
| B118 | B118-5 | 1/6/06 | 5 | 6 | Area 2 | MG/KG | 5.7375 |
| B119 | B119-2 | 1/27/06 | 2 | 3 | Area 2 | MG/KG | <2.5 |
| B120 | B120-2 | 1/30/06 | 2 | 3 | Area 4 | MG/KG | 4.125 |
| B120 | B120-5 | 1/30/06 | 5 | 6 | Area 4 | MG/KG | 4.5 |
| B121 | B121-2 | 2/1/06 | 2 | 3 | Area 4 | MG/KG | <2.86 |
| B123 | B123-2 | 1/20/06 | 2 | 3 | Area 4 | MG/KG | 1.3375 |

**Table B2**
**Results of Arsenic Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Arsenic |
|---|---|---|---|---|---|---|---|
| B123 | B123-5 | 1/20/06 | 5 | 6 | Area 4 | MG/KG | 2.8 |
| B124 | B124-2 | 1/16/06 | 2 | 3 | Area 4 | MG/KG | 0.82375 |
| B124 | B124-5 | 1/16/06 | 5 | 6 | Area 4 | MG/KG | 4.2375 |
| B126 | B126-2 | 1/20/06 | 2 | 3 | Area 4 | MG/KG | 3.225 |
| B126 | B126-5 | 1/20/06 | 5 | 6 | Area 4 | MG/KG | 4.2875 |
| B127 | B127-2 | 1/18/06 | 2 | 3 | Area 4 | MG/KG | <1.35 |
| B127 | B127-5 | 1/18/06 | 5 | 6 | Area 4 | MG/KG | <3.21 |
| B128 | B128-2 | 2/1/06 | 2 | 3 | Area 4 | MG/KG | <1.28 |
| B128 | B128-5 | 2/1/06 | 5 | 6 | Area 4 | MG/KG | 7.6 |
| B129 | B129-2 | 1/18/06 | 2 | 3 | Area 4 | MG/KG | <2.51 |
| B129 | B129-5 | 1/18/06 | 5 | 6 | Area 4 | MG/KG | <1.72 |
| B132 | B132-2 | 1/19/06 | 2 | 3 | Area 4 | MG/KG | <2.89 |
| B132 | B132-5 | 1/19/06 | 5 | 6 | Area 4 | MG/KG | 6.0125 |
| B134 | B134-2 | 1/23/06 | 2 | 3 | Area 4 | MG/KG | <3.11 |
| B134 | B134-5 | 1/23/06 | 5 | 6 | Area 4 | MG/KG | <1.25 |
| B139 | B139-2 | 1/13/06 | 2 | 3 | Area 4 | MG/KG | 1.35 |
| B140 | B140-2 | 1/31/06 | 2 | 3 | Area 4 | MG/KG | <3.81 |
| B142 | B142-2 | 1/31/06 | 2 | 3 | Area 3 | MG/KG | <1.6 |
| B142 | B142-5 | 1/31/06 | 5 | 6 | Area 3 | MG/KG | <2.92 |
| B142 | B142-10 | 1/31/06 | 10 | 11 | Area 3 | MG/KG | <2.36 |
| B144 | B144-2 | 1/13/06 | 2 | 3 | Area 3 | MG/KG | 1.725 |
| B144 | B144-5 | 1/13/06 | 5 | 6 | Area 3 | MG/KG | 0.76625 |
| B145 | B145-2 | 1/19/06 | 2 | 3 | Area 3 | MG/KG | <2.21 |
| B145 | B145-5 | 1/19/06 | 5 | 6 | Area 3 | MG/KG | <1.14875 |
| B146 | B146-2 | 1/27/06 | 2 | 3 | Area 3 | MG/KG | <0.58125 |
| B146 | B146-5 | 1/27/06 | 5 | 6 | Area 3 | MG/KG | <1.45 |
| B147 | B147-2 | 2/1/06 | 2 | 3 | Area 3 | MG/KG | <1.25 |
| B148 | B148-2 | 1/23/06 | 2 | 3 | Area 3 | MG/KG | <1.08625 |
| B148 | B148-5 | 1/23/06 | 5 | 6 | Area 3 | MG/KG | <2.53 |
| B149 | B149-2 | 1/23/06 | 2 | 3 | Area 3 | MG/KG | <1.25 |
| B149 | B149-5 | 1/23/06 | 5 | 6 | Area 3 | MG/KG | <2.97 |
| B149 | B149-10 | 1/23/06 | 10 | 11 | Area 3 | MG/KG | <3.7 |
| B150 | B150-2 | 1/20/06 | 2 | 3 | Area 3 | MG/KG | 1.9 |
| B150 | B150-5 | 1/20/06 | 5 | 6 | Area 3 | MG/KG | 2.825 |
| B151 | B151-2 | 1/19/06 | 2 | 3 | Area 4 | MG/KG | <1.45 |
| B151 | B151-5 | 1/19/06 | 5 | 6 | Area 4 | MG/KG | <1.6 |
| B151 | B151-10 | 1/19/06 | 10 | 11 | Area 4 | MG/KG | 8.825 |
| B153 | B153-2 | 1/20/06 | 2 | 3 | Area 3 | MG/KG | 2.625 |
| B153 | B153-5 | 1/20/06 | 5 | 6 | Area 3 | MG/KG | 3.0625 |
| B156 | B156-2 | 1/13/06 | 2 | 3 | Area 3 | MG/KG | 3.8625 |
| B158 | B158-2 | 1/30/06 | 2 | 3 | Area 3 | MG/KG | 5.125 |
| B159 | B159-2 | 1/31/06 | 2 | 3 | Area 3 | MG/KG | <2.7 |
| B159 | B159-5 | 1/31/06 | 5 | 6 | Area 3 | MG/KG | <4.97 |
| B160 | B160-2 | 1/31/06 | 2 | 3 | Area 3 | MG/KG | <3.31 |
| B162 | B162-2 | 1/16/06 | 2 | 3 | Area 3 | MG/KG | 1.185 |
| B163 | B163-2 | 1/16/06 | 2 | 3 | Area 3 | MG/KG | 1.9 |
| B163 | B163-5 | 1/16/06 | 5 | 6 | Area 3 | MG/KG | 3.25 |
| B164 | B164-2 | 1/16/06 | 2 | 3 | Area 3 | MG/KG | 3.9125 |
| B165 | B165-2 | 1/23/06 | 2 | 3 | Area 3 | MG/KG | <2.69 |
| B166 | B166-2 | 1/24/06 | 2 | 3 | Area 3 | MG/KG | <1.85 |

**Table B2**
**Results of Arsenic Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Arsenic |
|---|---|---|---|---|---|---|---|
| B166 | B166-5 | 1/24/06 | 5 | 6 | Area 3 | MG/KG | 6.975 |
| B167 | B167-2 | 1/17/06 | 2 | 3 | Area 3 | MG/KG | 0.715 |
| B167 | B167-5 | 1/17/06 | 5 | 6 | Area 3 | MG/KG | 2.475 |
| B168 | B168-2 | 1/17/06 | 2 | 3 | Area 3 | MG/KG | 2.225 |
| B169 | B169-2 | 1/17/06 | 2 | 3 | Area 3 | MG/KG | 0.495 |
| B170 | B170-2 | 1/18/06 | 2 | 3 | Area 3 | MG/KG | <4.59 |
| B170 | B170-5 | 1/18/06 | 5 | 6 | Area 3 | MG/KG | <2.88 |
| B172 | B172-2 | 1/12/06 | 2 | 3 | Area 3 | MG/KG | <1.25 |
| B173 | B173-2 | 1/12/06 | 2 | 3 | Area 3 | MG/KG | <1.25 |
| B173 | B173-5 | 1/12/06 | 5 | 6 | Area 3 | MG/KG | 3.2875 |
| B174 | B174-2 | 1/12/06 | 2 | 3 | Area 3 | MG/KG | 2.9 |
| B174 | B174-5 | 1/12/06 | 5 | 6 | Area 3 | MG/KG | 4 |
| B174 | B174-10 | 1/12/06 | 10 | 11 | Area 3 | MG/KG | 4.1625 |
| B175 | B175-2 | 2/7/06 | 2 | 3 | Area 3 | MG/KG | <2.99 |
| B177 | B177-2 | 2/2/06 | 2 | 3 | Area 3 | MG/KG | <2.09 |
| B178 | B178-2 | 2/2/06 | 2 | 3 | Area 3 | MG/KG | <4.01 |
| B178 | B178-5 | 2/2/06 | 5 | 6 | Area 3 | MG/KG | <2.25 |
| B179 | B179-2 | 1/26/06 | 2 | 3 | Area 3 | MG/KG | 3.825 |
| B180 | B180-2 | 1/26/06 | 2 | 3 | Area 3 | MG/KG | 1.125 |
| B180 | B180-5 | 1/26/06 | 5 | 6 | Area 3 | MG/KG | 2.4375 |
| B181 | B181-2 | 2/6/06 | 2 | 3 | Area 3 | MG/KG | 1.75 |
| B182 | B182-2 | 1/24/06 | 2 | 3 | Area 3 | MG/KG | <1.7 |
| B182 | B182-5 | 1/25/06 | 5 | 6 | Area 3 | MG/KG | 3.5 |
| B183 | B183-2 | 1/25/06 | 2 | 3 | Area 3 | MG/KG | 3 |
| B184 | B184-2 | 1/25/06 | 2 | 3 | Area 3 | MG/KG | 0.45125 |
| B185 | B185-2 | 1/26/06 | 2 | 3 | Area 3 | MG/KG | 1.2325 |
| B186 | B186-2 | 1/27/06 | 2 | 3 | Area 3 | MG/KG | <1.98 |
| B187 | B187-2 | 1/27/06 | 2 | 3 | Area 3 | MG/KG | 5.05 |
| B189 | B189-2 | 2/7/06 | 2 | 3 | Area 2 | MG/KG | <6.07 |
| B191 | B191-2 | 2/1/06 | 2 | 3 | Area 2 | MG/KG | <3.07 |
| B191 | B191-5 | 2/1/06 | 5 | 6 | Area 2 | MG/KG | <4.87 |
| B195 | B195-2 | 2/3/06 | 2 | 3 | Area 3 | MG/KG | 2.5 |
| B196 | B196-2 | 1/25/06 | 2 | 3 | Area 3 | MG/KG | 0.9375 |
| B197 | B197-2 | 2/1/06 | 2 | 3 | Area 3 | MG/KG | <1.97 |
| B198 | B198-2 | 1/26/06 | 2 | 3 | Area 3 | MG/KG | 2.275 |
| B198 | B198-5 | 1/26/06 | 5 | 6 | Area 3 | MG/KG | 4.7 |
| B199 | B199-2 | 1/23/06 | 2 | 3 | Area 3 | MG/KG | 3.375 |
| B200 | B200-2 | 1/24/06 | 2 | 3 | Area 3 | MG/KG | <2.37 |
| B201 | B201-2 | 1/25/06 | 2 | 3 | Area 3 | MG/KG | 2.15 |
| B201 | B201-5 | 1/25/06 | 5 | 6 | Area 3 | MG/KG | 3.75 |
| B202 | B202-2 | 1/25/06 | 2 | 3 | Area 3 | MG/KG | 0.79 |
| B203 | B203-2 | 2/7/06 | 2 | 3 | Area 3 | MG/KG | 6.8 |
| B204 | B204-2 | 2/6/06 | 2 | 3 | Area 3 | MG/KG | 3.95 |
| B205 | B205-2 | 2/7/06 | 2 | 3 | Area 3 | MG/KG | 4.55 |
| B205 | B205-5 | 2/7/06 | 5 | 6 | Area 3 | MG/KG | 3.825 |
| B206 | B206-2 | 2/8/06 | 2 | 3 | Area 2 | MG/KG | 3.6625 |
| B206 | B206-5 | 2/8/06 | 5 | 6 | Area 2 | MG/KG | 4.0875 |
| B209 | B209-2 | 1/31/06 | 2 | 3 | Area 2 | MG/KG | <2.25 |
| B210 | B210-2 | 1/31/06 | 2 | 3 | Area 3 | MG/KG | <3.16 |
| B211 | B211-2 | 2/6/06 | 2 | 3 | Area 3 | MG/KG | 3.0625 |

**Table B2**
**Results of Arsenic Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Arsenic |
|---|---|---|---|---|---|---|---|
| B212 | B212-2 | 1/24/06 | 2 | 3 | Area 3 | MG/KG | <1.14 |
| B213 | B213-2 | 2/6/06 | 2 | 3 | Area 3 | MG/KG | 1.9 |
| B214 | B214-2 | 1/23/06 | 2 | 3 | Area 3 | MG/KG | <1.25 |
| B215 | B215-2 | 2/3/06 | 2 | 3 | Area 3 | MG/KG | 1.2025 |
| B215 | B215-5 | 2/3/06 | 5 | 6 | Area 3 | MG/KG | 3.2625 |
| B216 | B216-2 | 2/2/06 | 2 | 3 | Area 3 | MG/KG | <1.26 |
| B217 | B217-2 | 1/24/06 | 2 | 3 | Area 3 | MG/KG | <2.08 |
| B218 | B218-2 | 2/8/06 | 2 | 3 | Area 3 | MG/KG | <4.45 |
| B219 | B219-2 | 1/26/06 | 2 | 3 | Area 3 | MG/KG | 0.745 |
| B219 | B219-5 | 1/26/06 | 5 | 6 | Area 3 | MG/KG | 0.90625 |
| B223 | B223-2 | 2/3/06 | 2 | 3 | Area 2 | MG/KG | 3.725 |
| B223 | B223-5 | 2/3/06 | 5 | 6 | Area 2 | MG/KG | 7.2125 |
| B228 | B228-05 | 1/18/08 | 5 | 6 | Area 1 | MG/KG | 10 |
| B229 | B229-05 | 1/18/08 | 5 | 6 | Area 1 | MG/KG | 11.1 |
| B235 | B235-5 | 1/25/08 | 5 | 6 | Area 4 | MG/KG | 8.71 |
| B247 | B247-05 | 1/17/08 | 5 | 6 | Area 1 | MG/KG | 11.8 |
| B248 | B248-05 | 1/15/08 | 5 | 6 | Area 1 | MG/KG | 9.2 |
| B251 | B251-05 | 1/16/08 | 5 | 6 | Area 1 | MG/KG | 6.47 |
| B262 | B262-05 | 1/29/08 | 5 | 6 | Area 3 | MG/KG | 5.92 |
| B270 | B270-5 | 1/20/09 | 4.5 | 5.5 | Area 3 | MG/KG | 10.8 |
| B278 | B278-5 | 1/16/08 | 5 | 6 | Area 1 | MG/KG | 10.3 |
| B279 | B279-5 | 1/16/08 | 5 | 6 | Area 1 | MG/KG | 4.66 |
| B294 | B294-05 | 1/31/08 | 4.5 | 5 | Area 2 | MG/KG | 9.55 |
| B302 | B302-05 | 2/5/08 | 5 | 6 | Area 4 | MG/KG | 10.7 |
| B303 | B303-05 | 1/28/08 | 5 | 6 | Area 4 | MG/KG | 5.95 |
| B306 | B306-05 | 1/31/08 | 5 | 6 | Area 3 | MG/KG | 5.77 |
| B322 | B322-05 | 2/1/08 | 5 | 6 | Area 3 | MG/KG | 4.47 |
| B324 | B324-00 | 4/8/08 | 0 | 0.5 | Area 4 | MG/KG | 7.13 |
| B324 | B324-02 | 4/8/08 | 1.5 | 2 | Area 4 | MG/KG | 7.38 |
| B325 | B325-00 | 4/8/08 | 0 | 0.5 | Area 4 | MG/KG | 6.01 |
| B325 | B325-02 | 4/8/08 | 1.5 | 2 | Area 4 | MG/KG | 5.23 |
| B326 | B326-00 | 4/8/08 | 0 | 0.5 | Area 4 | MG/KG | 7.14 |
| B326 | B326-02 | 4/8/08 | 1.5 | 2 | Area 4 | MG/KG | 8.37 |
| B-401 | LL_B-401-1_100611 | 10/6/11 | 0.5 | 1 | Area 2 | MG/KG | <5.0 |
| B-403 | LL_B-403-1_100711 | 10/7/11 | 0.5 | 1 | Area 2 | MG/KG | <5.0 |
| B-404 | LL_B-404-3_100711 | 10/7/11 | 2.5 | 3 | Area 2 | MG/KG | <5.0 |
| B-405 | LL_B-405-1_100711 | 10/7/11 | 0.5 | 1 | Area 2 | MG/KG | <5.0 |
| B-406 | LL_B-406-6_100711 | 10/7/11 | 5.5 | 6 | Area 2 | MG/KG | <5.0 |
| B-407 | LL_B-407-9_100711 | 10/7/11 | 8.5 | 9 | Area 2 | MG/KG | <5.0 |
| B-408 | LL_B-408-1_100711 | 10/7/11 | 0.5 | 1 | Area 2 | MG/KG | <5.0 |
| B-410 | LL_B-410-3_100711 | 10/7/11 | 2.5 | 3 | Area 2 | MG/KG | <5.0 |
| B-412 | LL_B-412-1_100611 | 10/6/11 | 0.5 | 1 | Area 1 | MG/KG | <5.0 |
| B-413 | LL_B-413-3_100611 | 10/6/11 | 2.5 | 3 | Area 1 | MG/KG | <5.0 |
| B-414 | LL_B-414-1_100611 | 10/6/11 | 0.5 | 1 | Area 1 | MG/KG | <5.0 |
| B-415 | LL_B-415-6_100611 | 10/6/11 | 5.5 | 6 | Area 1 | MG/KG | <5.0 |
| B-416 | LL_B-416-9_100611 | 10/6/11 | 8.5 | 9 | Area 1 | MG/KG | <5.0 |
| B-418 | LL_B-418-6_100611 | 10/6/11 | 5.5 | 6 | Area 1 | MG/KG | <5.0 |
| B-420 | LL_B-420-9_100611 | 10/6/11 | 8.5 | 9 | Area 1 | MG/KG | 5.2 |
| B-422 | LL_B-422-1_100511 | 10/5/11 | 0.5 | 1 | Area 3 | MG/KG | <5.0 |
| B-422 | LL_B-422-9_100611 | 10/6/11 | 8.5 | 9 | Area 3 | MG/KG | <5.0 |

**Table B2**
**Results of Arsenic Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Arsenic |
|---|---|---|---|---|---|---|---|
| B-424 | LL_B-424-3_100511 | 10/5/11 | 2.5 | 3 | Area 3 | MG/KG | <5.0 |
| B-426 | LL_B-426-1_100511 | 10/5/11 | 0.5 | 1 | Area 3 | MG/KG | <5.0 |
| B-427 | LL_B-427-6_100511 | 10/5/11 | 5.5 | 6 | Area 3 | MG/KG | <5.0 |
| B-429 | LL_B-429-9_100511 | 10/5/11 | 8.5 | 9 | Area 3 | MG/KG | <5.0 |
| B-430 | LL_B-430-3_100511 | 10/5/11 | 2.5 | 3 | Area 3 | MG/KG | <5.0 |
| S001 | S001-0" | 12/4/07 | 0 | 0.5 | Area 4 | MG/KG | 6.3 |
| S002 | S002-0" | 12/4/07 | 0 | 0.5 | Area 4 | MG/KG | 8.56 |
| S003ALT | S003ALT-0" | 12/20/07 | 0 | 0.5 | Area 4 | MG/KG | 7.3 |
| S004 | S004-0" | 1/4/08 | 0 | 0.5 | Area 4 | MG/KG | 3.14 |
| S004 | S004-12" | 1/4/08 | 1 | 1.5 | Area 4 | MG/KG | 3.87 |
| S005 | S005-0" | 12/18/07 | 0 | 0.5 | Area 4 | MG/KG | 6.41 |
| S006 | S006-0" | 12/17/07 | 0 | 0.5 | Area 4 | MG/KG | 4.72 |
| S006 | S006-12" | 12/17/07 | 1 | 1.5 | Area 4 | MG/KG | 3.15 |
| S007 | S007-0" | 12/17/07 | 0 | 0.5 | Area 4 | MG/KG | 11.6 |
| S008 | S008-0" | 12/17/07 | 0 | 0.5 | Area 4 | MG/KG | 6.03 |
| S009 | S009-0" | 12/17/07 | 0 | 0.5 | Area 4 | MG/KG | 5.07 |
| S009 | S009-12" | 12/17/07 | 1 | 1.5 | Area 4 | MG/KG | 6.92 |
| S010 | S010-6'' | 1/19/09 | 0.5 | 1 | Area 4 | MG/KG | 11.9 |
| S011 | S011-0" | 12/17/07 | 0 | 0.5 | Area 4 | MG/KG | 6.05 |
| S011 | S011-12" | 12/17/07 | 1 | 1.5 | Area 4 | MG/KG | 4.46 |
| S012 | S012B-0" | 12/18/07 | 0 | 0.5 | Area 4 | MG/KG | 5.21 |
| S013 | S013-0" | 1/4/08 | 0 | 0.5 | Area 4 | MG/KG | 5.1 |
| S014 | S014-0" | 12/4/07 | 0 | 0.5 | Area 4 | MG/KG | 7.38 |
| S015 | S015-0" | 12/4/07 | 0 | 0.5 | Area 4 | MG/KG | 5.84 |
| S016 | S016B-0" | 1/2/08 | 0 | 0.5 | Area 4 | MG/KG | 3.3 |
| S016 | S016B-12" | 1/2/08 | 1 | 1.5 | Area 4 | MG/KG | 3.47 |
| S017 | S017-0" | 12/4/07 | 0 | 0.5 | Area 4 | MG/KG | 8 |
| S018 | S018-0" | 12/20/07 | 0 | 0.5 | Area 4 | MG/KG | 4.25 |
| S019 | S019-0" | 12/18/07 | 0 | 0.5 | Area 4 | MG/KG | 9.11 |
| S020 | S020-0" | 12/18/07 | 0 | 0.5 | Area 4 | MG/KG | 6.6 |
| S020 | S020-12" | 12/18/07 | 1 | 1.5 | Area 4 | MG/KG | 6 |
| S021 | S021-6'' | 1/19/09 | 0.5 | 1 | Area 4 | MG/KG | 8.39 |
| S022 | S022-0" | 12/17/07 | 0 | 0.5 | Area 4 | MG/KG | 5.75 |
| S023 | S023-0" | 12/17/07 | 0 | 0.5 | Area 3 | MG/KG | 5.82 |
| S024 | S024-0" | 12/17/07 | 0 | 0.5 | Area 3 | MG/KG | 6.82 |
| S025 | S025-0" | 12/18/07 | 0 | 0.5 | Area 3 | MG/KG | 19.1 |
| S025 | S025-12" | 12/18/07 | 1 | 1.5 | Area 3 | MG/KG | 6.46 |
| S026 | S026-0" | 12/18/07 | 0 | 0.5 | Area 3 | MG/KG | 9.83 |
| S026 | S026-12" | 12/18/07 | 1 | 1.5 | Area 3 | MG/KG | 19.6 |
| S027 | S027-0" | 12/20/07 | 0 | 0.5 | Area 3 | MG/KG | 10.8 |
| S028 | S028-0" | 12/4/07 | 0 | 0.5 | Area 3 | MG/KG | 1.33 |
| S029 | S029-0" | 12/4/07 | 0 | 0.5 | Area 3 | MG/KG | 3.46 |
| S029 | S029-18" | 12/4/07 | 1.5 | 2 | Area 3 | MG/KG | 3.63 |
| S030 | S030-12" | 12/4/07 | 1 | 1.5 | Area 3 | MG/KG | 5.43 |
| S031 | S031-0" | 12/4/07 | 0 | 0.5 | Area 3 | MG/KG | 4.65 |
| S032 | S032-0" | 12/4/07 | 0 | 0.5 | Area 3 | MG/KG | 7.72 |
| S033 | S033-0" | 12/4/07 | 0 | 0.5 | Area 3 | MG/KG | 5.63 |
| S034 | S034-0" | 12/4/07 | 0 | 0.5 | Area 3 | MG/KG | 9.67 |
| S035 | S035-0" | 12/4/07 | 0 | 0.5 | Area 3 | MG/KG | 5.54 |
| S036 | S036-0" | 12/4/07 | 0 | 0.5 | Area 3 | MG/KG | 10.4 |

**Table B2**
**Results of Arsenic Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Arsenic |
|---|---|---|---|---|---|---|---|
| S037 | S037-0" | 12/4/07 | 0 | 0.5 | Area 3 | MG/KG | 18.8 |
| S037 | S037-20" | 12/4/07 | 1.67 | 2.167 | Area 3 | MG/KG | 9.72 |
| S038 | S038-0" | 12/20/07 | 0 | 0.5 | Area 3 | MG/KG | 5.76 |
| S039 | S039-0" | 1/2/08 | 0 | 0.5 | Area 3 | MG/KG | 10.9 |
| S039 | S039-12" | 1/2/08 | 1 | 1.5 | Area 3 | MG/KG | 4.39 |
| S040 | S040-0" | 12/20/07 | 0 | 0.5 | Area 3 | MG/KG | 40.9 |
| S040 | S040-12" | 12/20/07 | 1 | 1.5 | Area 3 | MG/KG | 6.6 |
| S041 | S041-0" | 1/30/08 | 0 | 0.5 | Area 3 | MG/KG | 7.08 |
| S042 | S042-0" | 1/30/08 | 0 | 0.5 | Area 3 | MG/KG | 8.52 |
| S042 | S042-12" | 1/30/08 | 1 | 1.5 | Area 3 | MG/KG | 6.2 |
| S043 | S043-0" | 1/30/08 | 0 | 0.5 | Area 3 | MG/KG | 8.92 |
| S044 | S044-0" | 12/20/07 | 0 | 0.5 | Area 3 | MG/KG | 7.11 |
| S045 | S045-0" | 12/20/07 | 0 | 0.5 | Area 3 | MG/KG | 8.96 |
| S046 | S046-0" | 12/20/07 | 0 | 0.5 | Area 3 | MG/KG | 4.83 |
| S047 | S047-6" | 1/20/09 | 0.5 | 1 | Area 3 | MG/KG | 5.26 |
| S048 | S048-0" | 1/7/08 | 0 | 0.5 | Area 3 | MG/KG | 7.2 |
| S049 | S049-6" | 1/20/09 | 0.5 | 1 | Area 3 | MG/KG | 6.21 |
| S050 | S050-0" | 12/4/07 | 0 | 0.5 | Area 3 | MG/KG | 5.45 |
| S051 | S051-0" | 12/20/07 | 0 | 0.5 | Area 3 | MG/KG | 3.55 |
| S052 | S052-0" | 12/20/07 | 0 | 0.5 | Area 3 | MG/KG | 5.62 |
| S052 | S052-12" | 12/20/07 | 1 | 1.5 | Area 3 | MG/KG | 3.18 |
| S053 | S053-0" | 12/20/07 | 0 | 0.5 | Area 3 | MG/KG | 6.23 |
| S053 | S053-12" | 12/20/07 | 1 | 1.5 | Area 3 | MG/KG | 5.2 |
| S054 | S054-0" | 1/30/08 | 0 | 0.5 | Area 3 | MG/KG | 13.4 |
| S055 | S055-0" | 1/30/08 | 0 | 0.5 | Area 3 | MG/KG | 7.19 |
| S055 | S055-12" | 1/30/08 | 1 | 1.5 | Area 3 | MG/KG | 7.85 |
| S056 | S056-0" | 1/30/08 | 0 | 0.5 | Area 3 | MG/KG | 7.53 |
| S056 | S056-12" | 1/30/08 | 1 | 1.5 | Area 3 | MG/KG | 6.76 |
| S057 | S057-0" | 1/30/08 | 0 | 0.5 | Area 3 | MG/KG | 7.09 |
| S058 | S058-0" | 2/1/08 | 0 | 0.5 | Area 3 | MG/KG | 6.51 |
| S059 | S059-0" | 2/1/08 | 0 | 0.5 | Area 3 | MG/KG | 3.91 |
| S059 | S059-12" | 2/1/08 | 1 | 1.5 | Area 3 | MG/KG | 5.96 |
| S060 | S060-0" | 12/13/07 | 0 | 0.5 | Area 3 | MG/KG | 7.89 |
| S060 | S060-18" | 12/13/07 | 1.5 | 2 | Area 3 | MG/KG | 3.28 |
| S061 | S061-0" | 12/13/07 | 0 | 0.5 | Area 3 | MG/KG | 5.31 |
| S063 | S063-0" | 12/14/07 | 0 | 0.5 | Area 3 | MG/KG | 5.08 |
| S064 | S064-0" | 12/14/07 | 0 | 0.5 | Area 3 | MG/KG | 6.78 |
| S064 | S064-18" | 12/14/07 | 1.5 | 2 | Area 3 | MG/KG | 7.45 |
| S065 | S065-0" | 2/1/08 | 0 | 0.5 | Area 3 | MG/KG | 6.73 |
| S065 | S065-12" | 2/1/08 | 1 | 1.5 | Area 3 | MG/KG | 5.63 |
| S066 | S066-0" | 12/14/07 | 0 | 0.5 | Area 3 | MG/KG | 5.95 |
| S067 | S067-0" | 12/14/07 | 0 | 0.5 | Area 3 | MG/KG | 8 |
| S068 | S068-0" | 12/13/07 | 0 | 0.5 | Area 3 | MG/KG | 6.33 |
| S069 | S069-0" | 12/13/07 | 0 | 0.5 | Area 3 | MG/KG | 2.22 |
| S070 | S070-0" | 12/13/07 | 0 | 0.5 | Area 3 | MG/KG | 3.72 |
| S071B | S071B-12" | 12/21/07 | 1 | 1.5 | Area 3 | MG/KG | 0.874 |
| S072 | S072-0" | 12/4/07 | 0 | 0.5 | Area 3 | MG/KG | 9.42 |
| S073 | S073-0" | 12/4/07 | 0 | 0.5 | Area 3 | MG/KG | 8.97 |
| S074 | S074-0" | 12/4/07 | 0 | 0.5 | Area 3 | MG/KG | 7.75 |
| S075 | S075-0" | 12/4/07 | 0 | 0.5 | Area 3 | MG/KG | 7.06 |

**Table B2**
**Results of Arsenic Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Arsenic |
|---|---|---|---|---|---|---|---|
| S076 | S076-6'' | 1/22/09 | 0.5 | 1 | Area 3 | MG/KG | 4.45 |
| S078 | S078-0" | 2/1/08 | 0 | 0.5 | Area 3 | MG/KG | 5.3 |
| S078 | S078-12" | 2/1/08 | 1 | 1.5 | Area 3 | MG/KG | 4.49 |
| S079 | S079-0" | 2/1/08 | 0 | 0.5 | Area 3 | MG/KG | 1.84 |
| S080 | S080-0" | 2/1/08 | 0 | 0.5 | Area 3 | MG/KG | 3.86 |
| S081 | S081-0" | 2/1/08 | 0 | 0.5 | Area 3 | MG/KG | 8.49 |
| S082 | S082-0" | 12/13/07 | 0 | 0.5 | Area 3 | MG/KG | 7.61 |
| S083 | S083-0" | 12/13/07 | 0 | 0.5 | Area 3 | MG/KG | 5.83 |
| S083 | S083-15" | 12/13/07 | 1.25 | 1.75 | Area 3 | MG/KG | 4.6 |
| S084 | S084-0" | 12/4/07 | 0 | 0.5 | Area 3 | MG/KG | 7.48 |
| S085 | S085-0" | 12/4/07 | 0 | 0.5 | Area 3 | MG/KG | 4.52 |
| S086 | S086-6" | 1/20/09 | 0.5 | 1 | Area 3 | MG/KG | 8.67 |
| S087 | S087-0" | 12/13/07 | 0 | 0.5 | Area 3 | MG/KG | 5.02 |
| S088 | S088-0" | 1/2/08 | 0 | 0.5 | Area 3 | MG/KG | 5.63 |
| S089 | S089-0" | 1/2/08 | 0 | 0.5 | Area 3 | MG/KG | 2.33 |
| S090 | S090-0" | 12/13/07 | 0 | 0.5 | Area 3 | MG/KG | 5.01 |
| S090 | S090-18" | 12/13/07 | 1.5 | 2 | Area 3 | MG/KG | <0.819 |
| S091 | S091-0" | 2/1/08 | 0 | 0.5 | Area 3 | MG/KG | 7.04 |
| S092 | S092-0" | 12/13/07 | 0 | 0.5 | Area 3 | MG/KG | 6.38 |
| S093 | S093-0" | 12/4/07 | 0 | 0.5 | Area 3 | MG/KG | 5.43 |
| S094 | S094-0" | 12/4/07 | 0 | 0.5 | Area 3 | MG/KG | 3.96 |
| S095 | S095-0" | 12/4/07 | 0 | 0.5 | Area 3 | MG/KG | 8.54 |
| S096 | S096-0" | 12/4/07 | 0 | 0.5 | Area 3 | MG/KG | 8.44 |
| S097 | S097-6" | 1/20/09 | 0.5 | 1 | Area 3 | MG/KG | 5.66 |
| S098 | S098-0" | 12/4/07 | 0 | 0.5 | Area 3 | MG/KG | 5.22 |
| S099 | S099-0" | 12/13/07 | 0 | 0.5 | Area 3 | MG/KG | 2.62 |
| S100 | S100-0" | 12/13/07 | 0 | 0.5 | Area 3 | MG/KG | 8.22 |
| S101 | S101-0" | 12/13/07 | 0 | 0.5 | Area 3 | MG/KG | 7.88 |
| S102 | S102-0" | 12/13/07 | 0 | 0.5 | Area 3 | MG/KG | 7.49 |
| S102 | S102-15" | 12/13/07 | 1.25 | 1.75 | Area 3 | MG/KG | 7.88 |
| S103 | S103-0" | 1/3/08 | 0 | 0.5 | Area 2 | MG/KG | 5.78 |
| S103 | S103-12" | 1/3/08 | 1 | 1.5 | Area 2 | MG/KG | 5.9 |
| S104 | S104-0" | 1/29/08 | 0 | 0.5 | Area 2 | MG/KG | 8.05 |
| S105 | S105-0" | 1/31/08 | 0 | 0.5 | Area 2 | MG/KG | 9.79 |
| S106 | S106-6'' | 1/22/09 | 0.5 | 1 | Area 2 | MG/KG | 7.77 |
| S106 | S106-12'' | 1/22/09 | 1 | 1.5 | Area 2 | MG/KG | 10.1 |
| S107 | S107-0" | 12/20/07 | 0 | 0.5 | Area 2 | MG/KG | 3.26 |
| S108 | S108-0" | 12/20/07 | 0 | 0.5 | Area 2 | MG/KG | 8.71 |
| S109 | S109-0" | 1/31/08 | 0 | 0.5 | Area 2 | MG/KG | 13.2 |
| S109 | S109-12" | 1/31/08 | 1 | 1.5 | Area 2 | MG/KG | 8.25 |
| S110 | S110-6'' | 1/22/09 | 0.5 | 1 | Area 2 | MG/KG | 18.6 |
| S111 | S111-0" | 12/21/07 | 0 | 0.5 | Area 2 | MG/KG | 4.95 |
| S111 | S111-12" | 12/21/07 | 1 | 1.5 | Area 2 | MG/KG | 2.29 |
| S112 | S112-6'' | 1/22/09 | 0.5 | 1 | Area 2 | MG/KG | 7.56 |
| S113 | S113-0" | 1/31/08 | 0 | 0.5 | Area 2 | MG/KG | 6.5 |
| S113 | S113-12" | 1/31/08 | 1 | 1.5 | Area 2 | MG/KG | 7.73 |
| S114 | S114-0" | 1/29/08 | 0 | 0.5 | Area 2 | MG/KG | 9.35 |
| S115 | S115-0" | 1/29/08 | 0 | 0.5 | Area 2 | MG/KG | 7.56 |
| S116 | S116-0" | 1/29/08 | 0 | 0.5 | Area 2 | MG/KG | 6.14 |
| S117 | S117-0" | 1/31/08 | 0 | 0.5 | Area 2 | MG/KG | 5.86 |

**Table B2**
**Results of Arsenic Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Arsenic |
|---|---|---|---|---|---|---|---|
| S117 | S117-12" | 2/1/08 | 1 | 1.5 | Area 2 | MG/KG | 5.88 |
| S118 | S118-6'' | 1/22/09 | 0.5 | 1 | Area 2 | MG/KG | 10.9 |
| S119 | S119-0" | 1/4/08 | 0 | 0.5 | Area 2 | MG/KG | 5.68 |
| S119 | S119-12" | 1/4/08 | 1 | 1.5 | Area 2 | MG/KG | 6.96 |
| S120 | S120-0" | 1/4/08 | 0 | 0.5 | Area 2 | MG/KG | 13.8 |
| S121 | S121-0" | 1/4/08 | 0 | 0.5 | Area 2 | MG/KG | 9.15 |
| S121 | S121-12" | 1/4/08 | 1 | 1.5 | Area 2 | MG/KG | 6.67 |
| S122 | S122-0" | 1/29/08 | 0 | 0.5 | Area 1 | MG/KG | 4.85 |
| S123 | S123-0" | 11/29/07 | 0 | 0.5 | Area 1 | MG/KG | 7.6 |
| S124 | S124-0" | 11/29/07 | 0 | 0.5 | Area 1 | MG/KG | 7.24 |
| S125 | S125-0" | 1/29/08 | 0 | 0.5 | Area 1 | MG/KG | 13.4 |
| S126 | S126-0" | 1/7/08 | 0 | 0.5 | Area 1 | MG/KG | 3.57 |
| S126 | S126-12" | 1/7/08 | 1 | 1.5 | Area 1 | MG/KG | 4.45 |
| S127 | S127-0" | 2/1/08 | 0 | 0.5 | Area 3 | MG/KG | 4.54 |
| S130 | S130-0" | 1/7/08 | 0 | 0.5 | Area 3 | MG/KG | 6.16 |
| S130 | S130-12" | 1/7/08 | 1 | 1.5 | Area 3 | MG/KG | 4.05 |
| S131 | S131-0" | 1/7/08 | 0 | 0.5 | Area 1 | MG/KG | 2.34 |
| S132 | S132-0" | 1/3/08 | 0 | 0.5 | Area 1 | MG/KG | 8.85 |
| S133 | S133B-0" | 11/29/07 | 0 | 0.5 | Area 1 | MG/KG | 5.22 |
| S133 | S133B-12" | 11/29/07 | 1 | 1.5 | Area 1 | MG/KG | 6.27 |
| S134 | S134-0" | 1/7/08 | 0 | 0.5 | Area 1 | MG/KG | 4.05 |
| S135 | S135-6'' | 1/19/09 | 0.5 | 1 | Area 1 | MG/KG | 3.37 |
| S136 | S136-0" | 11/29/07 | 0 | 0.5 | Area 1 | MG/KG | 5.58 |
| S136 | S136-24" | 11/29/07 | 2 | 2.5 | Area 1 | MG/KG | 7.83 |
| S137 | S137-0" | 11/29/07 | 0 | 0.5 | Area 1 | MG/KG | 5.78 |
| S138 | S138-0" | 11/29/07 | 0 | 0.5 | Area 1 | MG/KG | 4.6 |
| S138 | S138-18" | 11/29/07 | 1.5 | 2 | Area 1 | MG/KG | 5.78 |
| S139 | S139-12" | 11/29/07 | 1 | 1.5 | Area 1 | MG/KG | 8.35 |
| S139 | S139-24" | 11/29/07 | 2 | 2.5 | Area 1 | MG/KG | 7.48 |
| S140 | S140-12" | 11/29/07 | 1 | 1.5 | Area 1 | MG/KG | 3.73 |
| S141 | S141-0" | 1/7/08 | 0 | 0.5 | Area 3 | MG/KG | 9.85 |
| S141 | S141-12" | 1/7/08 | 1 | 1.5 | Area 3 | MG/KG | 3.34 |
| S142 | S142-0" | 1/7/08 | 0 | 0.5 | Area 3 | MG/KG | 5.98 |
| S143 | S143-0" | 1/7/08 | 0 | 0.5 | Area 3 | MG/KG | 5.62 |
| S144B | S144B-0" | 1/31/08 | 0 | 0.5 | Area 3 | MG/KG | 5.9 |
| S144B | S144B-12" | 1/31/08 | 1 | 1.5 | Area 3 | MG/KG | 8.7 |
| S145 | S145-0" | 1/7/08 | 0 | 0.5 | Area 3 | MG/KG | 4.13 |
| S145 | S145-12" | 1/7/08 | 1 | 1.5 | Area 3 | MG/KG | 6.62 |
| S146 | S146-0" | 11/29/07 | 0 | 0.5 | Area 1 | MG/KG | 5.36 |
| S147 | S147-12" | 11/29/07 | 1 | 1.5 | Area 1 | MG/KG | 5.92 |
| S148 | S148-0" | 11/29/07 | 0 | 0.5 | Area 1 | MG/KG | 9.99 |
| S149 | S149-12" | 11/29/07 | 1 | 1.5 | Area 1 | MG/KG | 7.89 |
| S150 | S150-12" | 11/29/07 | 1 | 1.5 | Area 1 | MG/KG | 8.41 |
| S151 | S151-12" | 11/29/07 | 1 | 1.5 | Area 1 | MG/KG | 7.91 |
| S152 | S152-0" | 11/29/07 | 0 | 0.5 | Area 1 | MG/KG | 5.42 |
| S153 | S153-0" | 11/29/07 | 0 | 0.5 | Area 1 | MG/KG | 9.65 |
| S154 | S154-0" | 11/29/07 | 0 | 0.5 | Area 1 | MG/KG | 5.11 |
| S155 | S155B-0" | 11/29/07 | 0 | 0.5 | Area 1 | MG/KG | 11.7 |
| S156 | S156-0" | 1/7/08 | 0 | 0.5 | Area 3 | MG/KG | 4.09 |
| S157 | S157-0" | 1/2/08 | 0 | 0.5 | Area 3 | MG/KG | 5.44 |

**Table B2**
**Results of Arsenic Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Arsenic |
|---|---|---|---|---|---|---|---|
| S158 | S158-0" | 12/17/07 | 0 | 0.5 | Area 3 | MG/KG | 6.4 |
| S158 | S158-12" | 12/17/07 | 1 | 1.5 | Area 3 | MG/KG | 5.31 |
| S159 | S159-0" | 12/17/07 | 0 | 0.5 | Area 3 | MG/KG | 6.33 |
| S160 | S160-0" | 1/7/08 | 0 | 0.5 | Area 3 | MG/KG | 5.29 |
| S161 | S161B-0" | 11/29/07 | 0 | 0.5 | Area 1 | MG/KG | 4.63 |
| S162 | S162-12" | 11/29/07 | 1 | 1.5 | Area 1 | MG/KG | 5.43 |
| S162 | S162-24" | 11/29/07 | 2 | 2.5 | Area 1 | MG/KG | 4 |
| S163 | S163-0" | 11/29/07 | 0 | 0.5 | Area 1 | MG/KG | 5.07 |
| S164 | S164-0" | 11/29/07 | 0 | 0.5 | Area 1 | MG/KG | 5.69 |
| S165 | S165-0" | 11/29/07 | 0 | 0.5 | Area 1 | MG/KG | 13.5 |
| S166 | S166-0" | 11/29/07 | 0 | 0.5 | Area 1 | MG/KG | 9.6 |
| S167 | S167-0" | 11/29/07 | 0 | 0.5 | Area 1 | MG/KG | 7.37 |
| S168 | S168-0" | 11/29/07 | 0 | 0.5 | Area 1 | MG/KG | 6.83 |
| S169 | S169-0" | 11/29/07 | 0 | 0.5 | Area 1 | MG/KG | 9.52 |
| S170 | S170-0" | 1/7/08 | 0 | 0.5 | Area 3 | MG/KG | 4.59 |
| S171 | S171-0" | 12/17/07 | 0 | 0.5 | Area 3 | MG/KG | 5.04 |
| S171 | S171-12" | 12/17/07 | 1 | 1.5 | Area 3 | MG/KG | 4.25 |
| S172 | S172-0" | 12/17/07 | 0 | 0.5 | Area 3 | MG/KG | 3.47 |
| S173 | S173-0" | 12/17/07 | 0 | 0.5 | Area 3 | MG/KG | 3.14 |
| S174 | S174-0" | 12/14/07 | 0 | 0.5 | Area 3 | MG/KG | 5.64 |
| S175 | S175-0" | 1/7/08 | 0 | 0.5 | Area 3 | MG/KG | 4.66 |
| S175 | S175-0" | 1/31/08 | 0 | 0.5 | Area 3 | MG/KG | 5.53 |
| S176 | S176-0" | 11/28/07 | 0 | 0.5 | Area 1 | MG/KG | 5.13 |
| S177 | S177-0" | 11/28/07 | 0 | 0.5 | Area 1 | MG/KG | 1.89 |
| S178 | S178-0" | 11/28/07 | 0 | 0.5 | Area 1 | MG/KG | 3.79 |
| S179 | S179-0" | 11/28/07 | 0 | 0.5 | Area 1 | MG/KG | 3.01 |
| S180 | S180-0" | 11/28/07 | 0 | 0.5 | Area 1 | MG/KG | 1.07 |
| S181 | S181-0" | 1/31/08 | 0 | 0.5 | Area 3 | MG/KG | 8.03 |
| S182 | S182-0" | 12/14/07 | 0 | 0.5 | Area 3 | MG/KG | 8.95 |
| S183 | S183-0" | 12/17/07 | 0 | 0.5 | Area 3 | MG/KG | 6.79 |
| S184 | S184-0" | 12/14/07 | 0 | 0.5 | Area 3 | MG/KG | 5.94 |
| S185 | S185-6'' | 1/19/09 | 0.5 | 1 | Area 3 | MG/KG | 5.42 |
| S186 | S186-0" | 1/31/08 | 0 | 0.5 | Area 3 | MG/KG | 6.68 |
| S187 | S187-0" | 1/4/08 | 0 | 0.5 | Area 1 | MG/KG | 4.64 |
| S188 | S188-0" | 11/26/07 | 0 | 0.5 | Area 1 | MG/KG | 3.08 |
| S189 | S189-0" | 11/26/07 | 0 | 0.5 | Area 1 | MG/KG | 2.13 |
| S190 | S190-0" | 11/26/07 | 0 | 0.5 | Area 1 | MG/KG | 11.2 |
| S191 | S191-0" | 11/26/07 | 0 | 0.5 | Area 1 | MG/KG | 12.6 |
| S192 | S192-0" | 11/26/07 | 0 | 0.5 | Area 1 | MG/KG | 3.85 |
| S193 | S193-0" | 11/26/07 | 0 | 0.5 | Area 1 | MG/KG | 2.86 |
| S194 | S194-0" | 11/26/07 | 0 | 0.5 | Area 1 | MG/KG | 7.68 |
| S195 | S195-0" | 11/26/07 | 0 | 0.5 | Area 1 | MG/KG | 8.28 |
| S196 | S196-0" | 11/26/07 | 0 | 0.5 | Area 1 | MG/KG | 6.28 |
| S196 | S196-18" | 11/26/07 | 1.5 | 2 | Area 1 | MG/KG | 7.24 |
| S197 | S197-0" | 11/26/07 | 0 | 0.5 | Area 1 | MG/KG | 5.85 |
| S198 | S198-0" | 11/26/07 | 0 | 0.5 | Area 1 | MG/KG | 4.39 |
| S199 | S199-12" | 11/26/07 | 1 | 1.5 | Area 1 | MG/KG | 6.98 |
| S199 | S199-24" | 11/26/07 | 2 | 2.5 | Area 1 | MG/KG | 7.89 |
| S200 | S200-0" | 11/26/07 | 0 | 0.5 | Area 1 | MG/KG | 3.64 |
| S201 | S201-0" | 11/26/07 | 0 | 0.5 | Area 1 | MG/KG | 4.45 |

**Table B2**
**Results of Arsenic Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Arsenic |
|---|---|---|---|---|---|---|---|
| S201 | S201-18" | 11/26/07 | 1.5 | 2 | Area 1 | MG/KG | 3.48 |
| S202 | S202-0" | 11/28/07 | 0 | 0.5 | Area 1 | MG/KG | 1.41 |
| S203 | S203-0" | 11/28/07 | 0 | 0.5 | Area 1 | MG/KG | 3.39 |
| S204 | S204-0" | 11/28/07 | 0 | 0.5 | Area 1 | MG/KG | 3.23 |
| S205 | S205-0" | 11/28/07 | 0 | 0.5 | Area 1 | MG/KG | 2.26 |
| S206 | S206-0" | 11/28/07 | 0 | 0.5 | Area 1 | MG/KG | 4.01 |
| S207 | S207-0" | 11/28/07 | 0 | 0.5 | Area 1 | MG/KG | 3.61 |
| S208 | S208-0" | 11/26/07 | 0 | 0.5 | Area 1 | MG/KG | 6.12 |
| S209 | S209-0" | 11/26/07 | 0 | 0.5 | Area 1 | MG/KG | 5.7 |
| S210 | S210-0" | 11/26/07 | 0 | 0.5 | Area 1 | MG/KG | 4.96 |
| S211 | S211-0" | 11/26/07 | 0 | 0.5 | Area 1 | MG/KG | 3.93 |
| S212 | S212-0" | 11/26/07 | 0 | 0.5 | Area 1 | MG/KG | 3.06 |
| S213 | S213-0" | 11/28/07 | 0 | 0.5 | Area 1 | MG/KG | <0.862 |
| S214 | S214-0" | 11/28/07 | 0 | 0.5 | Area 1 | MG/KG | 2.01 |
| S215 | S215-0" | 11/28/07 | 0 | 0.5 | Area 1 | MG/KG | <0.79 |
| S216 | S216-0" | 11/28/07 | 0 | 0.5 | Area 1 | MG/KG | <0.805 |
| S217 | S217-0" | 11/28/07 | 0 | 0.5 | Area 1 | MG/KG | 4.12 |
| S218 | S218-0" | 11/28/07 | 0 | 0.5 | Area 1 | MG/KG | <0.762 |
| S219 | S219-0" | 11/28/07 | 0 | 0.5 | Area 1 | MG/KG | 3.31 |
| S220 | S220-0" | 11/28/07 | 0 | 0.5 | Area 1 | MG/KG | 3.43 |
| S221 | S221-0" | 11/28/07 | 0 | 0.5 | Area 1 | MG/KG | <0.812 |
| S222 | S222-0" | 11/28/07 | 0 | 0.5 | Area 1 | MG/KG | <0.794 |
| S223 | S223-0" | 11/28/07 | 0 | 0.5 | Area 1 | MG/KG | 2.76 |
| S224 | S224-0" | 11/28/07 | 0 | 0.5 | Area 1 | MG/KG | 1.29 |
| S225 | S225-0" | 11/28/07 | 0 | 0.5 | Area 1 | MG/KG | 2.59 |
| S226 | S226-0" | 11/28/07 | 0 | 0.5 | Area 1 | MG/KG | 1.65 |
| S227 | S227-0" | 11/29/07 | 0 | 0.5 | Area 1 | MG/KG | 11 |
| S228 | S228-0" | 11/28/07 | 0 | 0.5 | Area 1 | MG/KG | 3 |
| S229 | S229-0" | 11/28/07 | 0 | 0.5 | Area 1 | MG/KG | 2.06 |
| S230 | S230-0" | 11/28/07 | 0 | 0.5 | Area 1 | MG/KG | <0.798 |
| S230 | S230-12" | 11/28/07 | 1 | 1.5 | Area 1 | MG/KG | <0.8 |
| S231 | S231-0" | 11/28/07 | 0 | 0.5 | Area 1 | MG/KG | 2.86 |
| S232 | S232-0" | 11/28/07 | 0 | 0.5 | Area 1 | MG/KG | 3.85 |
| S233 | S233-0" | 11/28/07 | 0 | 0.5 | Area 1 | MG/KG | 2.02 |
| S234 | S234-0" | 11/28/07 | 0 | 0.5 | Area 1 | MG/KG | 1.15 |
| S235 | S235-0" | 11/28/07 | 0 | 0.5 | Area 1 | MG/KG | 2.03 |
| S236 | S236-0" | 11/28/07 | 0 | 0.5 | Area 1 | MG/KG | 2.07 |
| S237 | S237-0" | 11/29/07 | 0 | 0.5 | Area 1 | MG/KG | 8.37 |
| S238 | S238-0" | 1/28/08 | 0 | 0.5 | Area 2 | MG/KG | 8.76 |
| S239 | S239-0" | 1/28/08 | 0 | 0.5 | Area 2 | MG/KG | 10.7 |
| S239 | S239-12" | 1/30/08 | 1 | 1.5 | Area 2 | MG/KG | 10.6 |
| S240 | S240-6" | 1/20/09 | 0.5 | 1 | Area 2 | MG/KG | 6.72 |
| S241 | S241-6" | 1/20/09 | 0.5 | 1 | Area 2 | MG/KG | 7.43 |
| S242 | S242-0" | 1/29/08 | 0 | 0.5 | Area 2 | MG/KG | 9.47 |
| S243 | S243-0" | 1/29/08 | 0 | 0.5 | Area 2 | MG/KG | 3.05 |
| S244 | S244-0" | 1/28/08 | 0 | 0.5 | Area 2 | MG/KG | 8.26 |
| S245 | S245-0" | 1/28/08 | 0 | 0.5 | Area 2 | MG/KG | 3.95 |
| S246 | S246-0" | 1/29/08 | 0 | 0.5 | Area 2 | MG/KG | 6.09 |
| S247 | S247-0" | 1/29/08 | 0 | 0.5 | Area 2 | MG/KG | 6.66 |
| S248 | S248-0" | 1/28/08 | 0 | 0.5 | Area 2 | MG/KG | 6.72 |

**Table B2**
**Results of Arsenic Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Arsenic |
|---|---|---|---|---|---|---|---|
| S249 | S249-0" | 1/28/08 | 0 | 0.5 | Area 2 | MG/KG | 9.6 |
| S250 | S250-0" | 1/28/08 | 0 | 0.5 | Area 2 | MG/KG | 2.66 |
| S250 | S250-12" | 1/30/08 | 1 | 1.5 | Area 2 | MG/KG | 5.16 |
| S251 | S251-0" | 1/28/08 | 0 | 0.5 | Area 2 | MG/KG | 8.99 |
| S251 | S251-6" | 1/20/09 | 0.5 | 1 | Area 2 | MG/KG | 7.83 |
| S252 | S252-0" | 1/29/08 | 0 | 0.5 | Area 2 | MG/KG | 8.69 |
| S253 | S253-0" | 1/29/08 | 0 | 0.5 | Area 2 | MG/KG | 11.1 |
| S254 | S254-0" | 1/29/08 | 0 | 0.5 | Area 2 | MG/KG | 11.1 |
| S254 | S254-12" | 1/30/08 | 1 | 1.5 | Area 2 | MG/KG | 11.1 |
| S255 | S255-0" | 1/29/08 | 0 | 0.5 | Area 2 | MG/KG | 5.7 |
| S256 | S256-0" | 1/31/08 | 0 | 0.5 | Area 2 | MG/KG | 8.98 |
| S257 | S257-0" | 1/3/08 | 0 | 0.5 | Area 2 | MG/KG | 7.82 |
| S258 | S258-0" | 1/3/08 | 0 | 0.5 | Area 2 | MG/KG | 5.63 |
| S259 | S259-0" | 1/31/08 | 0 | 0.5 | Area 2 | MG/KG | 7.14 |
| S260 | S260-0" | 1/3/08 | 0 | 0.5 | Area 2 | MG/KG | 3.74 |
| S261 | S261-0" | 12/21/07 | 0 | 0.5 | Area 3 | MG/KG | 2.46 |
| S262 | S262-0" | 12/13/07 | 0 | 0.5 | Area 3 | MG/KG | 8.88 |
| S263 | S263-0" | 2/1/08 | 0 | 0.5 | Area 3 | MG/KG | 5.5 |
| S264 | S264-0" | 1/3/08 | 0 | 0.5 | Area 3 | MG/KG | 3.78 |
| S264 | S264-12" | 1/3/08 | 1 | 1.5 | Area 3 | MG/KG | 5.84 |
| S265 | S265-6" | 1/20/09 | 0.5 | 1 | Area 3 | MG/KG | 5.59 |
| S266 | S266-0" | 12/14/07 | 0 | 0.5 | Area 3 | MG/KG | 6.81 |
| S267 | S267-0" | 1/4/08 | 0 | 0.5 | Area 3 | MG/KG | 5.32 |
| S268 | S268-0" | 1/2/08 | 0 | 0.5 | Area 3 | MG/KG | 9.97 |
| S268 | S268-12" | 1/2/08 | 1 | 1.5 | Area 3 | MG/KG | 9.46 |
| S269 | S269-0" | 12/4/07 | 0 | 0.5 | Area 3 | MG/KG | 6.66 |
| S270 | S270-0" | 12/17/07 | 0 | 0.5 | Area 4 | MG/KG | 9.34 |
| S271 | S271-0" | 1/4/08 | 0 | 0.5 | Area 1 | MG/KG | 8.09 |
| S272 | S272-0" | 11/28/07 | 0 | 0.5 | Area 1 | MG/KG | 1.46 |
| S273 | S273-0" | 11/28/07 | 0 | 0.5 | Area 1 | MG/KG | 4.71 |
| S274 | S274-0" | 11/29/07 | 0 | 0.5 | Area 1 | MG/KG | 5.32 |
| S274 | S274-12" | 11/29/07 | 1 | 1.5 | Area 1 | MG/KG | 6.9 |
| S275 | S275-0" | 11/29/07 | 0 | 0.5 | Area 3 | MG/KG | 4.22 |
| S275 | S275-12" | 11/29/07 | 1 | 1.5 | Area 3 | MG/KG | 6.36 |
| S276 | S276-0" | 11/29/07 | 0 | 0.5 | Area 1 | MG/KG | 5.51 |
| S277 | S277-0" | 1/31/08 | 0 | 0.5 | Area 2 | MG/KG | 15.2 |
| S278 | S278-0" | 1/31/08 | 0 | 0.5 | Area 2 | MG/KG | 10.3 |
| S279 | S279-0" | 12/20/07 | 0 | 0.5 | Area 2 | MG/KG | 7.33 |
| S279 | S279-12" | 12/20/07 | 1 | 1.5 | Area 2 | MG/KG | 4.89 |
| S280 | S280-0" | 1/3/08 | 0 | 0.5 | Area 2 | MG/KG | 5.01 |
| S281 | S281-0" | 2/1/08 | 0 | 0.5 | Area 2 | MG/KG | 7.58 |
| S282 | S282-6" | 1/20/09 | 0.5 | 1 | Area 2 | MG/KG | 7.05 |
| S282 | S282-12" | 1/20/09 | 1 | 1.5 | Area 2 | MG/KG | 6.4 |
| S283 | S283-0" | 1/29/08 | 0 | 0.5 | Area 2 | MG/KG | 9.82 |
| S284 | S284-0" | 1/29/08 | 0 | 0.5 | Area 2 | MG/KG | 6.31 |
| S284 | S284-12" | 1/30/08 | 1 | 1.5 | Area 2 | MG/KG | 8.53 |
| S285 | S285-0" | 11/28/07 | 0 | 0.5 | Area 1 | MG/KG | 1.76 |
| S286 | S286-0" | 11/26/07 | 0 | 0.5 | Area 1 | MG/KG | 12.7 |
| S287 | S287-0" | 11/26/07 | 0 | 0.5 | Area 1 | MG/KG | 5.64 |
| S287 | S287-12" | 11/26/07 | 1 | 1.5 | Area 1 | MG/KG | 6.3 |

**Table B2**
**Results of Arsenic Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Arsenic |
|---|---|---|---|---|---|---|---|
| S288 | S288-0" | 11/26/07 | 0 | 0.5 | Area 1 | MG/KG | 10.2 |
| S289 | S289-0" | 11/26/07 | 0 | 0.5 | Area 1 | MG/KG | 4.97 |
| S290 | S290-0" | 11/26/07 | 0 | 0.5 | Area 1 | MG/KG | 5.45 |
| S291 | S291-0" | 1/7/08 | 0 | 0.5 | Area 4 | MG/KG | 9.35 |
| S292 | S292-6'' | 1/19/09 | 0.5 | 1 | Area 1 | MG/KG | 1.13 |
| S293 | S293-0" | 11/26/07 | 0 | 0.5 | Area 1 | MG/KG | 5.66 |
| S293 | S293-24" | 11/26/07 | 2 | 2.5 | Area 1 | MG/KG | 2.92 |
| S294 | S294-0" | 11/26/07 | 0 | 0.5 | Area 1 | MG/KG | 5.87 |
| S295 | S295-6" | 11/26/07 | 0.5 | 1 | Area 1 | MG/KG | 4.82 |
| S296 | S296-0" | 11/28/07 | 0 | 0.5 | Area 1 | MG/KG | <0.848 |
| S296 | S296-18" | 11/28/07 | 1.5 | 2 | Area 1 | MG/KG | <0.872 |
| S297 | S297-6" | 1/20/09 | 0.5 | 1 | Area 3 | MG/KG | 4.44 |
| S297 | S297-12" | 1/20/09 | 1 | 1.5 | Area 3 | MG/KG | 9.91 |
| S298 | S298-0 | 12/4/07 | 0 | 0.5 | Area 4 | MG/KG | 9.52 |

Notes
MG/KG milligrams per kilogram

**Table B3**
**Results of Benzene Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Benzene |
|---|---|---|---|---|---|---|---|
| B001 | B001-2 | 12/5/05 | 2 | 3 | Area 1 | UG/KG | <6.25 |
| B001 | B001-5 | 12/5/05 | 5 | 6 | Area 1 | UG/KG | 2.25 |
| B001 | B001-10 | 12/5/05 | 10 | 11 | Area 1 | UG/KG | <6.25 |
| B002 | B002-2 | 12/5/05 | 2 | 3 | Area 1 | UG/KG | <6.25 |
| B002 | B002-5 | 12/5/05 | 5 | 6 | Area 1 | UG/KG | <6.25 |
| B002 | B002-10 | 12/5/05 | 10 | 11 | Area 1 | UG/KG | <6.25 |
| B003 | B003-2 | 12/7/05 | 2 | 3 | Area 1 | UG/KG | <6.25 |
| B003 | B003-5 | 12/7/05 | 5 | 6 | Area 1 | UG/KG | <6.25 |
| B004 | B004-2 | 12/8/05 | 2 | 3 | Area 1 | UG/KG | <6.25 |
| B004 | B004-5 | 12/8/05 | 5 | 6 | Area 1 | UG/KG | <6.25 |
| B004 | B004-10 | 12/8/05 | 10 | 11 | Area 1 | UG/KG | <6.25 |
| B005 | B005-2 | 12/8/05 | 2 | 3 | Area 1 | UG/KG | <6.25 |
| B005 | B005-5 | 12/8/05 | 5 | 6 | Area 1 | UG/KG | <6.25 |
| B005 | B005-10 | 12/8/05 | 10 | 11 | Area 1 | UG/KG | <6.25 |
| B006 | B006-2 | 12/12/05 | 2 | 3 | Area 1 | UG/KG | <6.25 |
| B006 | B006-5 | 12/12/05 | 5 | 6 | Area 1 | UG/KG | <6.25 |
| B006 | B006-10 | 12/12/05 | 10 | 11 | Area 1 | UG/KG | 1.25 |
| B007 | B007-2 | 12/12/05 | 2 | 3 | Area 1 | UG/KG | <6.25 |
| B007 | B007-5 | 12/12/05 | 5 | 6 | Area 1 | UG/KG | <6.25 |
| B007 | B007-10 | 12/12/05 | 10 | 11 | Area 1 | UG/KG | <6.25 |
| B008 | B008-2 | 12/8/05 | 2 | 3 | Area 1 | UG/KG | <6.25 |
| B008 | B008-5 | 12/8/05 | 5 | 6 | Area 1 | UG/KG | <6.25 |
| B008 | B008-10 | 12/8/05 | 10 | 11 | Area 1 | UG/KG | <6.25 |
| B009 | B009-2 | 12/9/05 | 2 | 3 | Area 1 | UG/KG | <6.25 |
| B009 | B009-5 | 12/9/05 | 5 | 6 | Area 1 | UG/KG | <6.25 |
| B009 | B009-10 | 12/9/05 | 10 | 11 | Area 1 | UG/KG | <6.25 |
| B010 | B010-2 | 12/9/05 | 2 | 3 | Area 4 | UG/KG | <6.25 |
| B010 | B010-5 | 12/9/05 | 5 | 6 | Area 4 | UG/KG | <6.25 |
| B010 | B010-10 | 12/9/05 | 10 | 11 | Area 4 | UG/KG | <6.25 |
| B011 | B011-2 | 1/9/06 | 2 | 3 | Area 1 | UG/KG | <6.25 |
| B011 | B011-5 | 1/9/06 | 5 | 6 | Area 1 | UG/KG | <6.25 |
| B011 | B011-10 | 1/9/06 | 10 | 11 | Area 1 | UG/KG | <6.25 |
| B012 | B012-2 | 1/6/06 | 2 | 3 | Area 1 | UG/KG | <6.25 |
| B012 | B012-5 | 1/6/06 | 5 | 6 | Area 1 | UG/KG | 4 |
| B012 | B012-10 | 1/6/06 | 10 | 11 | Area 1 | UG/KG | <6.25 |
| B013 | B013-2 | 12/15/05 | 2 | 3 | Area 1 | UG/KG | <6.25 |
| B013 | B013-5 | 12/15/05 | 5 | 6 | Area 1 | UG/KG | <6.25 |
| B013 | B013-10 | 12/15/05 | 10 | 11 | Area 1 | UG/KG | <6.25 |
| B014 | B014-2 | 12/13/05 | 2 | 3 | Area 1 | UG/KG | <6.25 |
| B014 | B014-5 | 12/13/05 | 5 | 6 | Area 1 | UG/KG | <6.25 |
| B014 | B014-10 | 12/13/05 | 10 | 11 | Area 1 | UG/KG | <6.25 |
| B015 | B015-2 | 12/12/05 | 2 | 3 | Area 1 | UG/KG | <6.25 |
| B015 | B015-5 | 12/12/05 | 5 | 6 | Area 1 | UG/KG | <6.25 |
| B015 | B015-10 | 12/12/05 | 10 | 11 | Area 1 | UG/KG | 1.625 |
| B016 | B016-2 | 12/13/05 | 2 | 3 | Area 1 | UG/KG | <6.25 |
| B016 | B016-5 | 12/13/05 | 5 | 6 | Area 1 | UG/KG | <6.25 |
| B016 | B016-10 | 12/13/05 | 10 | 11 | Area 1 | UG/KG | <6.25 |
| B017 | B017-2 | 12/29/05 | 2 | 3 | Area 1 | UG/KG | <6.25 |
| B017 | B017-5 | 12/29/05 | 5 | 6 | Area 1 | UG/KG | <6.25 |
| B017 | B017-10 | 12/29/05 | 10 | 11 | Area 1 | UG/KG | 1.25 |
| B018 | B018-2 | 12/29/05 | 2 | 3 | Area 1 | UG/KG | <6.25 |
| B018 | B018-5 | 12/29/05 | 5 | 6 | Area 1 | UG/KG | <6.25 |
| B018 | B018-10 | 12/29/05 | 10 | 11 | Area 1 | UG/KG | 1.25 |

**Table B3**
**Results of Benzene Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Benzene |
|---|---|---|---|---|---|---|---|
| B019 | B019-2 | 12/28/05 | 2 | 3 | Area 1 | UG/KG | <6.25 |
| B019 | B019-5 | 12/28/05 | 5 | 6 | Area 1 | UG/KG | <6.25 |
| B019 | B019-10 | 12/28/05 | 10 | 11 | Area 1 | UG/KG | 3.375 |
| B020 | B020-2 | 12/12/05 | 2 | 3 | Area 1 | UG/KG | <6.25 |
| B020 | B020-5 | 12/12/05 | 5 | 6 | Area 1 | UG/KG | <6.25 |
| B020 | B020-10 | 12/12/05 | 10 | 11 | Area 1 | UG/KG | <625 |
| B021 | B021-2 | 12/28/05 | 2 | 3 | Area 4 | UG/KG | 3.75 |
| B021 | B021-5 | 12/28/05 | 5 | 6 | Area 4 | UG/KG | <6.25 |
| B021 | B021-10 | 12/28/05 | 10 | 11 | Area 4 | UG/KG | 9050 |
| B022 | B022-2 | 12/28/05 | 2 | 3 | Area 3 | UG/KG | <275 |
| B022 | B022-5 | 12/28/05 | 5 | 6 | Area 3 | UG/KG | <12375 |
| B022 | B022-10 | 12/28/05 | 10 | 11 | Area 3 | UG/KG | 286.25 |
| B023 | B023-2 | 12/28/05 | 2 | 3 | Area 1 | UG/KG | <24062.5 |
| B023 | B023-5 | 12/28/05 | 5 | 6 | Area 1 | UG/KG | 1186.25 |
| B023 | B023-10 | 12/28/05 | 10 | 11 | Area 1 | UG/KG | 7750 |
| B024 | B024-2 | 12/16/05 | 2 | 2.5 | Area 1 | UG/KG | <343.75 |
| B024 | B024-5 | 12/16/05 | 5 | 6 | Area 1 | UG/KG | <487.5 |
| B024 | B024-10 | 12/16/05 | 10 | 11 | Area 1 | UG/KG | 47.5 |
| B025 | B025-2 | 12/15/05 | 2 | 3 | Area 1 | UG/KG | 3.875 |
| B025 | B025-5 | 12/15/05 | 5 | 6 | Area 1 | UG/KG | <6.25 |
| B025 | B025-10 | 12/15/05 | 10 | 11 | Area 1 | UG/KG | 1.5 |
| B026 | B026-2 | 12/15/05 | 2 | 3 | Area 1 | UG/KG | <6.25 |
| B026 | B026-5 | 12/15/05 | 5 | 6 | Area 1 | UG/KG | <6.25 |
| B026 | B026-10 | 12/15/05 | 10 | 11 | Area 1 | UG/KG | 1.75 |
| B027 | B027-2 | 12/14/05 | 2 | 3 | Area 1 | UG/KG | <6.25 |
| B027 | B027-5 | 12/15/05 | 5 | 6 | Area 1 | UG/KG | <6.25 |
| B027 | B027-10 | 12/15/05 | 10 | 11 | Area 1 | UG/KG | <6.25 |
| B028 | B028-2 | 12/13/05 | 2 | 3 | Area 1 | UG/KG | <6.25 |
| B028 | B028-5 | 12/13/05 | 5 | 6 | Area 1 | UG/KG | 5 |
| B028 | B028-10 | 12/13/05 | 10 | 11 | Area 1 | UG/KG | <6.25 |
| B029 | B029-2 | 12/14/05 | 2 | 3 | Area 1 | UG/KG | 420 |
| B029 | B029-5 | 12/14/05 | 5 | 6 | Area 1 | UG/KG | <6.25 |
| B029 | B029-10 | 12/14/05 | 10 | 11 | Area 1 | UG/KG | 2.25 |
| B030 | B030-2 | 12/14/05 | 2 | 3 | Area 1 | UG/KG | <6.25 |
| B030 | B030-5 | 12/14/05 | 5 | 6 | Area 1 | UG/KG | <6.25 |
| B030 | B030-10 | 12/14/05 | 10 | 11 | Area 1 | UG/KG | <6.25 |
| B031 | B031-2 | 1/6/06 | 2 | 3 | Area 1 | UG/KG | 3 |
| B031 | B031-5 | 1/6/06 | 5 | 6 | Area 1 | UG/KG | <6.25 |
| B031 | B031-10 | 1/6/06 | 10 | 11 | Area 1 | UG/KG | <6.25 |
| B032 | B032-2 | 1/6/06 | 2 | 3 | Area 1 | UG/KG | <6.25 |
| B032 | B032-5 | 1/6/06 | 5 | 6 | Area 1 | UG/KG | <506.25 |
| B032 | B032-10 | 1/6/06 | 10 | 11 | Area 1 | UG/KG | <6.25 |
| B033 | B033-2 | 12/29/05 | 2 | 3 | Area 1 | UG/KG | <6.25 |
| B033 | B033-5 | 12/29/05 | 5 | 6 | Area 1 | UG/KG | <6.25 |
| B033 | B033-10 | 12/29/05 | 10 | 11 | Area 1 | UG/KG | <287.5 |
| B034 | B034-2 | 12/14/05 | 2 | 3 | Area 1 | UG/KG | <6.25 |
| B034 | B034-5 | 12/14/05 | 5 | 6 | Area 1 | UG/KG | <6.25 |
| B034 | B034-10 | 12/14/05 | 10 | 11 | Area 1 | UG/KG | <6.25 |
| B035 | B035-2 | 12/14/05 | 2 | 3 | Area 1 | UG/KG | <6.25 |
| B035 | B035-5 | 12/14/05 | 5 | 6 | Area 1 | UG/KG | <6.25 |
| B035 | B035-10 | 12/14/05 | 10 | 11 | Area 1 | UG/KG | <6.25 |
| B036 | B036-2 | 12/14/05 | 2 | 3 | Area 1 | UG/KG | <6.25 |
| B036 | B036-5 | 12/14/05 | 5 | 6 | Area 1 | UG/KG | <6.25 |

**Table B3**
**Results of Benzene Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Benzene |
|---|---|---|---|---|---|---|---|
| B036 | B036-10 | 12/14/05 | 10 | 11 | Area 1 | UG/KG | <6.25 |
| B037 | B037-2 | 12/19/05 | 2 | 3 | Area 1 | UG/KG | <6.25 |
| B037 | B037-5 | 12/19/05 | 5 | 6 | Area 1 | UG/KG | <6.25 |
| B037 | B037-10 | 12/19/05 | 10 | 11 | Area 1 | UG/KG | <6.25 |
| B038 | B038-2 | 12/19/05 | 2 | 3 | Area 1 | UG/KG | <256.25 |
| B038 | B038-5 | 12/19/05 | 5 | 6 | Area 1 | UG/KG | 18.75 |
| B038 | B038-10 | 12/19/05 | 10 | 11 | Area 1 | UG/KG | <262.5 |
| B039 | B039-2 | 12/16/05 | 2 | 3 | Area 1 | UG/KG | <6.25 |
| B039 | B039-5 | 12/16/05 | 5 | 6 | Area 1 | UG/KG | <6.25 |
| B039 | B039-10 | 12/16/05 | 10 | 11 | Area 1 | UG/KG | <6.25 |
| B040 | B040-2 | 12/19/05 | 2 | 3 | Area 1 | UG/KG | 1.5 |
| B040 | B040-5 | 12/19/05 | 5 | 6 | Area 1 | UG/KG | <6.25 |
| B040 | B040-10 | 12/19/05 | 10 | 11 | Area 1 | UG/KG | 12.5 |
| B041 | B041-2 | 12/28/05 | 2 | 3 | Area 3 | UG/KG | <6.25 |
| B041 | B041-5 | 12/28/05 | 5 | 6 | Area 3 | UG/KG | <6.25 |
| B041 | B041-10 | 12/28/05 | 10 | 11 | Area 3 | UG/KG | 32.5 |
| B042 | B042-2 | 12/20/05 | 2 | 3 | Area 3 | UG/KG | <1250 |
| B042 | B042-5 | 12/20/05 | 5 | 6 | Area 3 | UG/KG | <625 |
| B042 | B042-10 | 12/20/05 | 10 | 11 | Area 3 | UG/KG | 5.125 |
| B043 | B043-2 | 12/16/05 | 2 | 3 | Area 1 | UG/KG | <6.25 |
| B043 | B043-5 | 12/16/05 | 5 | 6 | Area 1 | UG/KG | 115 |
| B043 | B043-10 | 12/16/05 | 10 | 11 | Area 1 | UG/KG | 231.25 |
| B044 | B044-2 | 12/16/05 | 2 | 3 | Area 1 | UG/KG | 3.375 |
| B044 | B044-5 | 12/16/05 | 5 | 6 | Area 1 | UG/KG | 2.375 |
| B044 | B044-10 | 12/16/05 | 10 | 11 | Area 1 | UG/KG | 4.375 |
| B045 | B045-2 | 12/15/05 | 2 | 3 | Area 1 | UG/KG | 15750 |
| B045 | B045-5 | 12/15/05 | 5 | 6 | Area 1 | UG/KG | 2525 |
| B045 | B045-10 | 12/15/05 | 10 | 11 | Area 1 | UG/KG | 5750 |
| B046 | B046-2 | 12/15/05 | 2 | 3 | Area 1 | UG/KG | <6.25 |
| B046 | B046-5 | 12/15/05 | 5 | 6 | Area 1 | UG/KG | <6.25 |
| B046 | B046-10 | 12/15/05 | 10 | 11 | Area 1 | UG/KG | 20 |
| B047 | B047-2 | 12/15/05 | 2 | 3 | Area 1 | UG/KG | <6.25 |
| B047 | B047-5 | 12/15/05 | 5 | 6 | Area 1 | UG/KG | <6.25 |
| B047 | B047-10 | 12/15/05 | 10 | 11 | Area 1 | UG/KG | <6.25 |
| B048 | B048-2 | 12/20/05 | 2 | 3 | Area 1 | UG/KG | <6.25 |
| B048 | B048-5 | 12/20/05 | 5 | 6 | Area 1 | UG/KG | <625 |
| B048 | B048-10 | 12/20/05 | 10 | 11 | Area 1 | UG/KG | <625 |
| B049 | B049-2 | 12/14/05 | 2 | 3 | Area 1 | UG/KG | 16.25 |
| B049 | B049-5 | 12/14/05 | 5 | 6 | Area 1 | UG/KG | 18.75 |
| B049 | B049-10 | 12/14/05 | 10 | 11 | Area 1 | UG/KG | 30 |
| B050 | B050-2 | 12/13/05 | 2 | 3 | Area 1 | UG/KG | <6.25 |
| B050 | B050-5 | 12/13/05 | 5 | 6 | Area 1 | UG/KG | <6.25 |
| B050 | B050-10 | 12/12/05 | 10 | 11 | Area 1 | UG/KG | <6.25 |
| B051 | B051-2 | 12/13/05 | 2 | 3 | Area 1 | UG/KG | <6.25 |
| B051 | B051-5 | 12/13/05 | 5 | 6 | Area 1 | UG/KG | <6.25 |
| B051 | B051-10 | 12/13/05 | 10 | 11 | Area 1 | UG/KG | <6.25 |
| B052 | B052-2 | 12/29/05 | 2 | 3 | Area 1 | UG/KG | 1.5 |
| B052 | B052-5 | 12/29/05 | 5 | 6 | Area 1 | UG/KG | <6.25 |
| B052 | B052-10 | 12/29/05 | 10 | 11 | Area 1 | UG/KG | <6.25 |
| B053 | B053-2 | 12/28/05 | 2 | 3 | Area 1 | UG/KG | <6.25 |
| B053 | B053-5 | 12/28/05 | 5 | 6 | Area 1 | UG/KG | <6.25 |
| B053 | B053-10 | 12/28/05 | 10 | 11 | Area 1 | UG/KG | <6.25 |
| B054 | B054-2 | 12/13/05 | 2 | 3 | Area 1 | UG/KG | <6.25 |

**Table B3**
**Results of Benzene Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Benzene |
|---|---|---|---|---|---|---|---|
| B054 | B054-5 | 12/13/05 | 5 | 6 | Area 1 | UG/KG | <6.25 |
| B054 | B054-10 | 12/13/05 | 10 | 11 | Area 1 | UG/KG | <6.25 |
| B055 | B055-2 | 12/21/05 | 2 | 3 | Area 1 | UG/KG | 825 |
| B055 | B055-5 | 12/21/05 | 5 | 6 | Area 1 | UG/KG | <1268.75 |
| B055 | B055-10 | 12/21/05 | 10 | 11 | Area 1 | UG/KG | 413.75 |
| B056 | B056-2 | 12/14/05 | 2 | 3 | Area 1 | UG/KG | 135 |
| B056 | B056-5 | 12/14/05 | 5 | 6 | Area 1 | UG/KG | 151.25 |
| B056 | B056-10 | 12/14/05 | 10 | 11 | Area 1 | UG/KG | 1.75 |
| B057 | B057-2 | 12/13/05 | 2 | 3 | Area 1 | UG/KG | <6.25 |
| B057 | B057-5 | 12/13/05 | 5 | 6 | Area 1 | UG/KG | <6.25 |
| B057 | B057-10 | 12/13/05 | 10 | 11 | Area 1 | UG/KG | 2.875 |
| B058 | B058-2 | 12/20/05 | 2 | 3 | Area 1 | UG/KG | <6250 |
| B058 | B058-5 | 12/20/05 | 5 | 6 | Area 1 | UG/KG | <1250 |
| B058 | B058-10 | 12/20/05 | 10 | 11 | Area 1 | UG/KG | <1250 |
| B059 | B059-2 | 12/20/05 | 2 | 3 | Area 1 | UG/KG | <6.25 |
| B059 | B059-5 | 12/20/05 | 5 | 6 | Area 1 | UG/KG | <6.25 |
| B059 | B059-10 | 12/20/05 | 10 | 11 | Area 1 | UG/KG | <6.25 |
| B060 | B060-2 | 12/20/05 | 2 | 3 | Area 1 | UG/KG | <6.25 |
| B060 | B060-5 | 12/20/05 | 5 | 6 | Area 1 | UG/KG | <625 |
| B060 | B060-10 | 12/20/05 | 10 | 11 | Area 1 | UG/KG | <625 |
| B061 | B061-2 | 12/20/05 | 2 | 3 | Area 1 | UG/KG | <6.25 |
| B061 | B061-5 | 12/20/05 | 5 | 6 | Area 1 | UG/KG | <6.25 |
| B061 | B061-10 | 12/20/05 | 10 | 11 | Area 1 | UG/KG | <6.25 |
| B062 | B062-2 | 12/21/05 | 2 | 3 | Area 1 | UG/KG | <6.25 |
| B062 | B062-5 | 12/21/05 | 5 | 6 | Area 1 | UG/KG | <6.25 |
| B062 | B062-10 | 12/21/05 | 10 | 11 | Area 1 | UG/KG | <6.25 |
| B063 | B063-2 | 1/9/06 | 2 | 3 | Area 3 | UG/KG | <6.25 |
| B063 | B063-5 | 1/9/06 | 5 | 6 | Area 3 | UG/KG | <6.25 |
| B063 | B063-10 | 1/9/06 | 10 | 11 | Area 3 | UG/KG | <6.25 |
| B064 | B064-2 | 12/23/05 | 2 | 3 | Area 1 | UG/KG | <6.25 |
| B064 | B064-5 | 12/23/05 | 5 | 6 | Area 1 | UG/KG | <6.25 |
| B064 | B064-10 | 12/23/05 | 10 | 11 | Area 1 | UG/KG | <6.25 |
| B065 | B065-2 | 1/12/06 | 2 | 3 | Area 1 | UG/KG | <6.25 |
| B065 | B065-5 | 1/12/06 | 5 | 6 | Area 1 | UG/KG | <6.25 |
| B065 | B065-10 | 1/12/06 | 10 | 11 | Area 1 | UG/KG | <6.25 |
| B066 | B066-2 | 1/12/06 | 2 | 3 | Area 1 | UG/KG | <6.25 |
| B066 | B066-5 | 1/12/06 | 5 | 6 | Area 1 | UG/KG | <6.25 |
| B066 | B066-10 | 1/12/06 | 10 | 11 | Area 1 | UG/KG | <6.25 |
| B067 | B067-2 | 12/21/05 | 2 | 3 | Area 1 | UG/KG | 2.25 |
| B067 | B067-5 | 12/21/05 | 5 | 6 | Area 1 | UG/KG | <756.25 |
| B067 | B067-10 | 12/21/05 | 10 | 11 | Area 1 | UG/KG | <6.25 |
| B068 | B068-2 | 12/21/05 | 2 | 3 | Area 1 | UG/KG | 2.625 |
| B068 | B068-5 | 12/21/05 | 5 | 6 | Area 1 | UG/KG | <1262.5 |
| B068 | B068-10 | 12/21/05 | 10 | 11 | Area 1 | UG/KG | <587.5 |
| B069 | B069-2 | 12/22/05 | 2 | 3 | Area 1 | UG/KG | <6.25 |
| B069 | B069-5 | 12/22/05 | 5 | 6 | Area 1 | UG/KG | <6.25 |
| B069 | B069-10 | 12/22/05 | 10 | 11 | Area 1 | UG/KG | <6.25 |
| B070 | B070-2 | 12/22/05 | 2 | 3 | Area 1 | UG/KG | <6.25 |
| B070 | B070-5 | 12/22/05 | 5 | 6 | Area 1 | UG/KG | <6.25 |
| B070 | B070-10 | 12/22/05 | 10 | 11 | Area 1 | UG/KG | <625 |
| B071 | B071-2 | 12/21/05 | 2 | 3 | Area 1 | UG/KG | <6.25 |
| B071 | B071-5 | 12/21/05 | 5 | 6 | Area 1 | UG/KG | <6.25 |
| B071 | B071-10 | 12/21/05 | 10 | 11 | Area 1 | UG/KG | 2.25 |

**Table B3**
**Results of Benzene Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Benzene |
|---|---|---|---|---|---|---|---|
| B072 | B072-2 | 12/21/05 | 2 | 3 | Area 1 | UG/KG | <343.75 |
| B072 | B072-5 | 12/21/05 | 5 | 6 | Area 1 | UG/KG | 6.875 |
| B072 | B072-10 | 12/21/05 | 10 | 11 | Area 1 | UG/KG | <6.25 |
| B073 | B073-2 | 1/30/06 | 2 | 3 | Area 3 | UG/KG | <6.25 |
| B073 | B073-5 | 1/30/06 | 5 | 6 | Area 3 | UG/KG | <6.25 |
| B073 | B073-10 | 1/30/06 | 10 | 11 | Area 3 | UG/KG | <6.25 |
| B074 | B074-2 | 1/11/06 | 2 | 3 | Area 2 | UG/KG | <6.25 |
| B074 | B074-5 | 1/11/06 | 5 | 6 | Area 2 | UG/KG | <625 |
| B074 | B074-10 | 1/11/06 | 10 | 11 | Area 2 | UG/KG | <625 |
| B075 | B075-2 | 1/11/06 | 2 | 3 | Area 1 | UG/KG | <6.25 |
| B075 | B075-5 | 1/11/06 | 5 | 6 | Area 1 | UG/KG | <6.25 |
| B075 | B075-10 | 1/11/06 | 10 | 11 | Area 1 | UG/KG | <6.25 |
| B076 | B076-2 | 12/22/05 | 2 | 3 | Area 2 | UG/KG | <625 |
| B076 | B076-5 | 12/22/05 | 5 | 6 | Area 2 | UG/KG | <6.25 |
| B076 | B076-10 | 12/22/05 | 10 | 11 | Area 2 | UG/KG | <625 |
| B077 | B077-2 | 12/23/05 | 2 | 3 | Area 2 | UG/KG | 58.75 |
| B077 | B077-5 | 12/23/05 | 5 | 6 | Area 2 | UG/KG | 1.625 |
| B077 | B077-10 | 12/23/05 | 10 | 11 | Area 2 | UG/KG | 13.75 |
| B078 | B078-2 | 12/23/05 | 2 | 3 | Area 2 | UG/KG | <6.25 |
| B078 | B078-5 | 12/23/05 | 5 | 6 | Area 2 | UG/KG | <6.25 |
| B078 | B078-10 | 12/23/05 | 10 | 11 | Area 2 | UG/KG | <6.25 |
| B079 | B079-2 | 12/23/05 | 2 | 3 | Area 2 | UG/KG | <6.25 |
| B079 | B079-5 | 12/23/05 | 5 | 6 | Area 2 | UG/KG | <6.25 |
| B079 | B079-10 | 12/23/05 | 10 | 11 | Area 2 | UG/KG | <6.25 |
| B080 | B080-2 | 12/22/05 | 2 | 3 | Area 1 | UG/KG | <6.25 |
| B080 | B080-5 | 12/22/05 | 5 | 6 | Area 1 | UG/KG | <6.25 |
| B080 | B080-10 | 12/22/05 | 10 | 11 | Area 1 | UG/KG | <6.25 |
| B081 | B081-2 | 12/22/05 | 2 | 3 | Area 1 | UG/KG | <6.25 |
| B081 | B081-5 | 12/22/05 | 5 | 6 | Area 1 | UG/KG | <6.25 |
| B081 | B081-10 | 12/22/05 | 10 | 11 | Area 1 | UG/KG | <6.25 |
| B082 | B082-2 | 12/23/05 | 2 | 3 | Area 1 | UG/KG | <6.25 |
| B082 | B082-5 | 12/23/05 | 5 | 6 | Area 1 | UG/KG | <6.25 |
| B082 | B082-10 | 12/23/05 | 10 | 11 | Area 1 | UG/KG | <6.25 |
| B083 | B083-2 | 1/4/06 | 2 | 3 | Area 2 | UG/KG | <256.25 |
| B083 | B083-5 | 1/4/06 | 5 | 6 | Area 2 | UG/KG | <6.25 |
| B083 | B083-10 | 1/4/06 | 10 | 11 | Area 2 | UG/KG | <6.25 |
| B084 | B084-2 | 1/5/06 | 2 | 3 | Area 2 | UG/KG | <6.25 |
| B084 | B084-5 | 1/5/06 | 5 | 6 | Area 2 | UG/KG | <6.25 |
| B084 | B084-10 | 1/5/06 | 10 | 11 | Area 2 | UG/KG | <6.25 |
| B085 | B085-2 | 12/28/05 | 2 | 3 | Area 2 | UG/KG | <6.25 |
| B085 | B085-5 | 12/28/05 | 5 | 6 | Area 2 | UG/KG | <6.25 |
| B085 | B085-10 | 12/28/05 | 10 | 11 | Area 2 | UG/KG | <6.25 |
| B086 | B086-2 | 1/11/06 | 2 | 3 | Area 2 | UG/KG | <6.25 |
| B086 | B086-5 | 1/11/06 | 5 | 6 | Area 2 | UG/KG | 1.25 |
| B086 | B086-10 | 1/11/06 | 10 | 11 | Area 2 | UG/KG | <6.25 |
| B087 | B087-2 | 1/11/06 | 2 | 3 | Area 2 | UG/KG | <6.25 |
| B087 | B087-5 | 1/11/06 | 5 | 6 | Area 2 | UG/KG | <6250 |
| B087 | B087-10 | 1/11/06 | 10 | 11 | Area 2 | UG/KG | <6.25 |
| B088 | B088-2 | 1/18/06 | 2 | 3 | Area 2 | UG/KG | <6.25 |
| B088 | B088-5 | 1/18/06 | 5 | 6 | Area 2 | UG/KG | <6.25 |
| B088 | B088-10 | 1/18/06 | 10 | 11 | Area 2 | UG/KG | <6.25 |
| B089 | B089-2 | 1/9/06 | 2 | 3 | Area 2 | UG/KG | <6.25 |
| B089 | B089-5 | 1/9/06 | 5 | 6 | Area 2 | UG/KG | <1262.5 |

**Table B3**
**Results of Benzene Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Benzene |
|---|---|---|---|---|---|---|---|
| B089 | B089-10 | 1/9/06 | 10 | 11 | Area 2 | UG/KG | 1.75 |
| B090 | B090-2 | 1/10/06 | 2 | 3 | Area 2 | UG/KG | <6.25 |
| B090 | B090-5 | 1/10/06 | 5 | 6 | Area 2 | UG/KG | <6.25 |
| B090 | B090-10 | 1/10/06 | 10 | 11 | Area 2 | UG/KG | <6.25 |
| B091 | B091-2 | 1/10/06 | 2 | 3 | Area 2 | UG/KG | <6.25 |
| B091 | B091-5 | 1/10/06 | 5 | 6 | Area 2 | UG/KG | 6.5 |
| B091 | B091-10 | 1/10/06 | 10 | 11 | Area 2 | UG/KG | <6.25 |
| B092 | B092-2 | 1/5/06 | 2 | 3 | Area 2 | UG/KG | <6.25 |
| B092 | B092-5 | 1/5/06 | 5 | 6 | Area 2 | UG/KG | 2.625 |
| B092 | B092-10 | 1/5/06 | 10 | 11 | Area 2 | UG/KG | <6.25 |
| B093 | B093-2 | 1/5/06 | 2 | 3 | Area 2 | UG/KG | <6.25 |
| B093 | B093-5 | 1/5/06 | 5 | 6 | Area 2 | UG/KG | <6.25 |
| B093 | B093-10 | 1/5/06 | 10 | 11 | Area 2 | UG/KG | <6.25 |
| B094 | B094-2 | 1/5/06 | 2 | 3 | Area 2 | UG/KG | <6.25 |
| B094 | B094-5 | 1/5/06 | 5 | 6 | Area 2 | UG/KG | <6.25 |
| B094 | B094-10 | 1/5/06 | 10 | 11 | Area 2 | UG/KG | <6.25 |
| B095 | B095-2 | 1/4/06 | 2 | 3 | Area 2 | UG/KG | <6.25 |
| B095 | B095-5 | 1/4/06 | 5 | 6 | Area 2 | UG/KG | 2.875 |
| B095 | B095-10 | 1/4/06 | 10 | 11 | Area 2 | UG/KG | <6.25 |
| B096 | B096-2 | 12/28/05 | 2 | 3 | Area 2 | UG/KG | <6.25 |
| B096 | B096-5 | 12/28/05 | 5 | 6 | Area 2 | UG/KG | <6.25 |
| B096 | B096-10 | 12/28/05 | 10 | 11 | Area 2 | UG/KG | <6.25 |
| B097 | B097-2 | 1/5/06 | 2 | 3 | Area 2 | UG/KG | <6.25 |
| B097 | B097-5 | 1/5/06 | 5 | 6 | Area 2 | UG/KG | <6.25 |
| B097 | B097-10 | 1/5/06 | 10 | 11 | Area 2 | UG/KG | <6.25 |
| B098 | B098-2 | 1/4/06 | 2 | 3 | Area 2 | UG/KG | <256.25 |
| B098 | B098-5 | 1/4/06 | 5 | 6 | Area 2 | UG/KG | 1.75 |
| B098 | B098-10 | 1/4/06 | 10 | 11 | Area 2 | UG/KG | <6.25 |
| B099 | B099-2 | 1/3/06 | 2 | 3 | Area 2 | UG/KG | <6.25 |
| B099 | B099-5 | 1/3/06 | 5 | 6 | Area 2 | UG/KG | <6.25 |
| B099 | B099-10 | 1/3/06 | 10 | 11 | Area 2 | UG/KG | <6.25 |
| B100 | B100-2 | 1/10/06 | 2 | 3 | Area 2 | UG/KG | <243.75 |
| B100 | B100-5 | 1/10/06 | 5 | 6 | Area 2 | UG/KG | <6.25 |
| B100 | B100-10 | 1/10/06 | 10 | 11 | Area 2 | UG/KG | <6.25 |
| B101 | B101-2 | 1/10/06 | 2 | 3 | Area 2 | UG/KG | <6.25 |
| B101 | B101-5 | 1/10/06 | 5 | 6 | Area 2 | UG/KG | <6.25 |
| B101 | B101-10 | 1/10/06 | 10 | 11 | Area 2 | UG/KG | <6.25 |
| B102 | B102-2 | 1/9/06 | 2 | 3 | Area 2 | UG/KG | <6.25 |
| B102 | B102-5 | 1/9/06 | 5 | 6 | Area 2 | UG/KG | <6.25 |
| B102 | B102-10 | 1/9/06 | 10 | 11 | Area 2 | UG/KG | <6.25 |
| B103 | B103-2 | 1/6/06 | 2 | 3 | Area 2 | UG/KG | <6.25 |
| B103 | B103-5 | 1/6/06 | 5 | 6 | Area 2 | UG/KG | <6.25 |
| B103 | B103-10 | 1/6/06 | 10 | 11 | Area 2 | UG/KG | 9.875 |
| B104 | B104-2 | 2/3/06 | 2 | 3 | Area 2 | UG/KG | <6.25 |
| B104 | B104-5 | 2/3/06 | 5 | 6 | Area 2 | UG/KG | <6.25 |
| B104 | B104-10 | 2/3/06 | 10 | 11 | Area 2 | UG/KG | <6.25 |
| B105 | B105-2 | 1/10/06 | 2 | 3 | Area 2 | UG/KG | <6.25 |
| B105 | B105-5 | 1/10/06 | 5 | 6 | Area 2 | UG/KG | <6.25 |
| B105 | B105-10 | 1/10/06 | 10 | 11 | Area 2 | UG/KG | <6.25 |
| B106 | B106-2 | 12/29/05 | 2 | 3 | Area 2 | UG/KG | 1.875 |
| B106 | B106-5 | 12/29/05 | 5 | 6 | Area 2 | UG/KG | 2.875 |
| B106 | B106-10 | 12/29/05 | 10 | 10.5 | Area 2 | UG/KG | 3.25 |
| B107 | B107-2 | 1/4/06 | 2 | 3 | Area 2 | UG/KG | <6.25 |

**Table B3**
**Results of Benzene Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Benzene |
|---|---|---|---|---|---|---|---|
| B107 | B107-5 | 1/4/06 | 5 | 6 | Area 2 | UG/KG | 1.5 |
| B107 | B107-10 | 1/4/06 | 10 | 11 | Area 2 | UG/KG | <6.25 |
| B108 | B108-2 | 1/9/06 | 2 | 3 | Area 2 | UG/KG | 4 |
| B108 | B108-5 | 1/9/06 | 5 | 6 | Area 2 | UG/KG | <6.25 |
| B108 | B108-10 | 1/9/06 | 10 | 11 | Area 2 | UG/KG | <6.25 |
| B109 | B109-2 | 1/4/06 | 2 | 3 | Area 2 | UG/KG | <6.25 |
| B109 | B109-5 | 1/4/06 | 5 | 6 | Area 2 | UG/KG | <6.25 |
| B109 | B109-10 | 1/4/06 | 10 | 11 | Area 2 | UG/KG | <6.25 |
| B110 | B110-2 | 12/28/05 | 2 | 3 | Area 2 | UG/KG | <6.25 |
| B110 | B110-5 | 12/28/05 | 5 | 6 | Area 2 | UG/KG | 46.25 |
| B110 | B110-10 | 12/28/05 | 10 | 11 | Area 2 | UG/KG | <6.25 |
| B111 | B111-2 | 12/28/05 | 2 | 3 | Area 2 | UG/KG | <6.25 |
| B111 | B111-5 | 12/28/05 | 5 | 6 | Area 2 | UG/KG | 1.25 |
| B111 | B111-10 | 12/28/05 | 10 | 11 | Area 2 | UG/KG | <6.25 |
| B112 | B112-2 | 12/29/05 | 2 | 3 | Area 2 | UG/KG | 1.875 |
| B112 | B112-5 | 12/29/05 | 5 | 6 | Area 2 | UG/KG | <6.25 |
| B112 | B112-10 | 12/29/05 | 10 | 11 | Area 2 | UG/KG | <6.25 |
| B113 | B113-2 | 12/29/05 | 2 | 3 | Area 2 | UG/KG | <6.25 |
| B113 | B113-5 | 12/29/05 | 5 | 6 | Area 2 | UG/KG | <6.25 |
| B113 | B113-10 | 12/29/05 | 10 | 11 | Area 2 | UG/KG | <6.25 |
| B114 | B114-2 | 1/3/06 | 2 | 3 | Area 2 | UG/KG | 2.25 |
| B114 | B114-5 | 1/3/06 | 5 | 6 | Area 2 | UG/KG | <6.25 |
| B114 | B114-10 | 1/3/06 | 10 | 11 | Area 2 | UG/KG | 1.375 |
| B115 | B115-2 | 1/3/06 | 2 | 3 | Area 2 | UG/KG | <6.25 |
| B115 | B115-5 | 1/3/06 | 5 | 6 | Area 2 | UG/KG | <6.25 |
| B115 | B115-10 | 1/3/06 | 10 | 11 | Area 2 | UG/KG | <625 |
| B116 | B116-2 | 1/4/06 | 2 | 3 | Area 2 | UG/KG | <6.25 |
| B116 | B116-5 | 1/4/06 | 5 | 6 | Area 2 | UG/KG | <6.25 |
| B116 | B116-10 | 1/4/06 | 10 | 11 | Area 2 | UG/KG | <6.25 |
| B117 | B117-2 | 1/6/06 | 2 | 3 | Area 2 | UG/KG | <6.25 |
| B117 | B117-5 | 1/6/06 | 5 | 6 | Area 2 | UG/KG | <6.25 |
| B117 | B117-10 | 1/6/06 | 10 | 11 | Area 2 | UG/KG | <6.25 |
| B118 | B118-2 | 1/6/06 | 2 | 3 | Area 2 | UG/KG | <6.25 |
| B118 | B118-5 | 1/6/06 | 5 | 6 | Area 2 | UG/KG | <6.25 |
| B118 | B118-10 | 1/6/06 | 10 | 11 | Area 2 | UG/KG | <6.25 |
| B119 | B119-2 | 1/27/06 | 2 | 3 | Area 2 | UG/KG | <6.25 |
| B119 | B119-5 | 1/27/06 | 5 | 6 | Area 2 | UG/KG | <6.25 |
| B119 | B119-10 | 1/27/06 | 10 | 11 | Area 2 | UG/KG | <6.25 |
| B120 | B120-2 | 1/30/06 | 2 | 3 | Area 4 | UG/KG | <231.25 |
| B120 | B120-5 | 1/30/06 | 5 | 6 | Area 4 | UG/KG | <6.25 |
| B120 | B120-10 | 1/30/06 | 10 | 11 | Area 4 | UG/KG | <2337.5 |
| B121 | B121-2 | 2/1/06 | 2 | 3 | Area 4 | UG/KG | <6.25 |
| B121 | B121-5 | 2/1/06 | 5 | 6 | Area 4 | UG/KG | 50 |
| B121 | B121-10 | 2/1/06 | 10 | 11 | Area 4 | UG/KG | 7 |
| B122 | B122-2 | 1/23/06 | 2 | 3 | Area 4 | UG/KG | <6.25 |
| B122 | B122-5 | 1/23/06 | 5 | 6 | Area 4 | UG/KG | 367.5 |
| B122 | B122-10 | 1/23/06 | 10 | 11 | Area 4 | UG/KG | 18.75 |
| B123 | B123-2 | 1/20/06 | 2 | 3 | Area 4 | UG/KG | 3475 |
| B123 | B123-5 | 1/20/06 | 5 | 6 | Area 4 | UG/KG | 2137.5 |
| B124 | B124-2 | 1/16/06 | 2 | 3 | Area 4 | UG/KG | 37.5 |
| B124 | B124-5 | 1/16/06 | 5 | 6 | Area 4 | UG/KG | 35 |
| B124 | B124-10 | 1/16/06 | 10 | 11 | Area 4 | UG/KG | 38.75 |
| B125 | B125-2 | 1/20/06 | 2 | 3 | Area 4 | UG/KG | 4.75 |

**Table B3**
**Results of Benzene Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Benzene |
|---|---|---|---|---|---|---|---|
| B125 | B125-5 | 1/20/06 | 5 | 6 | Area 4 | UG/KG | 3.125 |
| B125 | B125-10 | 1/20/06 | 10 | 11 | Area 4 | UG/KG | 17.5 |
| B126 | B126-2 | 1/20/06 | 2 | 3 | Area 4 | UG/KG | <6.25 |
| B126 | B126-5 | 1/20/06 | 5 | 6 | Area 4 | UG/KG | <6.25 |
| B126 | B126-10 | 1/20/06 | 10 | 11 | Area 4 | UG/KG | <6.25 |
| B127 | B127-2 | 1/18/06 | 2 | 3 | Area 4 | UG/KG | <6.25 |
| B127 | B127-5 | 1/18/06 | 5 | 6 | Area 4 | UG/KG | <6.25 |
| B127 | B127-10 | 1/18/06 | 10 | 11 | Area 4 | UG/KG | 2.375 |
| B128 | B128-2 | 2/1/06 | 2 | 3 | Area 4 | UG/KG | <625 |
| B128 | B128-5 | 2/1/06 | 5 | 6 | Area 4 | UG/KG | <625 |
| B128 | B128-10 | 2/1/06 | 10 | 11 | Area 4 | UG/KG | 6.25 |
| B129 | B129-2 | 1/18/06 | 2 | 3 | Area 4 | UG/KG | <6.25 |
| B129 | B129-5 | 1/18/06 | 5 | 6 | Area 4 | UG/KG | <6.25 |
| B129 | B129-10 | 1/18/06 | 10 | 11 | Area 4 | UG/KG | 2.75 |
| B130 | B130-2 | 1/19/06 | 2 | 3 | Area 4 | UG/KG | <1562.5 |
| B130 | B130-5 | 1/19/06 | 5 | 6 | Area 4 | UG/KG | <625 |
| B130 | B130-10 | 1/19/06 | 10 | 11 | Area 4 | UG/KG | <6.25 |
| B131 | B131-2 | 1/19/06 | 2 | 3 | Area 4 | UG/KG | <6.25 |
| B131 | B131-5 | 1/19/06 | 5 | 6 | Area 4 | UG/KG | <6.25 |
| B131 | B131-10 | 1/19/06 | 10 | 11 | Area 4 | UG/KG | <6.25 |
| B132 | B132-2 | 1/19/06 | 2 | 3 | Area 4 | UG/KG | <6.25 |
| B132 | B132-5 | 1/19/06 | 5 | 6 | Area 4 | UG/KG | <6.25 |
| B132 | B132-10 | 1/19/06 | 10 | 11 | Area 4 | UG/KG | 6 |
| B134 | B134-2 | 1/23/06 | 2 | 3 | Area 4 | UG/KG | <6.25 |
| B134 | B134-5 | 1/23/06 | 5 | 6 | Area 4 | UG/KG | <6.25 |
| B134 | B134-10 | 1/23/06 | 10 | 11 | Area 4 | UG/KG | 5.625 |
| B135 | B135-2 | 1/16/06 | 2 | 3 | Area 4 | UG/KG | <6.25 |
| B135 | B135-5 | 1/16/06 | 5 | 6 | Area 4 | UG/KG | 3.375 |
| B135 | B135-10 | 1/16/06 | 10 | 11 | Area 4 | UG/KG | 2.75 |
| B136 | B136-2 | 1/12/06 | 2 | 3 | Area 4 | UG/KG | 783.75 |
| B136 | B136-5 | 1/12/06 | 5 | 6 | Area 4 | UG/KG | 105 |
| B136 | B136-10 | 1/12/06 | 10 | 11 | Area 4 | UG/KG | 518.75 |
| B137 | B137-2 | 1/13/06 | 2 | 3 | Area 4 | UG/KG | 55 |
| B137 | B137-5 | 1/13/06 | 5 | 6 | Area 4 | UG/KG | 186.25 |
| B137 | B137-10 | 1/13/06 | 10 | 11 | Area 4 | UG/KG | 193.75 |
| B139 | B139-2 | 1/13/06 | 2 | 3 | Area 4 | UG/KG | 898.75 |
| B139 | B139-5 | 1/13/06 | 5 | 6 | Area 4 | UG/KG | 31.25 |
| B139 | B139-10 | 1/13/06 | 10 | 11 | Area 4 | UG/KG | 3.625 |
| B140 | B140-2 | 1/31/06 | 2 | 3 | Area 4 | UG/KG | 2.625 |
| B140 | B140-5 | 1/31/06 | 5 | 6 | Area 4 | UG/KG | <6.25 |
| B140 | B140-10 | 1/31/06 | 10 | 11 | Area 4 | UG/KG | 5 |
| B141 | B141-2 | 1/30/06 | 2 | 3 | Area 3 | UG/KG | <6.25 |
| B141 | B141-5 | 1/30/06 | 5 | 6 | Area 3 | UG/KG | <300 |
| B141 | B141-10 | 1/30/06 | 10 | 11 | Area 3 | UG/KG | 2.25 |
| B142 | B142-2 | 1/31/06 | 2 | 3 | Area 3 | UG/KG | 160 |
| B142 | B142-5 | 1/31/06 | 5 | 6 | Area 3 | UG/KG | 200 |
| B142 | B142-10 | 1/31/06 | 10 | 11 | Area 3 | UG/KG | 10500 |
| B143 | B143-2 | 1/18/06 | 2 | 3 | Area 3 | UG/KG | 1.75 |
| B143 | B143-5 | 1/18/06 | 5 | 6 | Area 3 | UG/KG | <6.25 |
| B143 | B143-10 | 1/18/06 | 10 | 11 | Area 3 | UG/KG | <6.25 |
| B144 | B144-2 | 1/13/06 | 2 | 3 | Area 3 | UG/KG | <637.5 |
| B144 | B144-5 | 1/13/06 | 5 | 6 | Area 3 | UG/KG | <318.75 |
| B144 | B144-10 | 1/13/06 | 10 | 11 | Area 3 | UG/KG | 4.25 |

**Table B3**
**Results of Benzene Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Benzene |
|---|---|---|---|---|---|---|---|
| B145 | B145-2 | 1/19/06 | 2 | 3 | Area 3 | UG/KG | 156.25 |
| B145 | B145-5 | 1/19/06 | 5 | 6 | Area 3 | UG/KG | 132.5 |
| B145 | B145-10 | 1/19/06 | 10 | 11 | Area 3 | UG/KG | 138.75 |
| B146 | B146-2 | 1/27/06 | 2 | 3 | Area 3 | UG/KG | 47.5 |
| B146 | B146-5 | 1/27/06 | 5 | 6 | Area 3 | UG/KG | 53.75 |
| B146 | B146-10 | 1/27/06 | 10 | 11 | Area 3 | UG/KG | 17.5 |
| B147 | B147-2 | 2/1/06 | 2 | 3 | Area 3 | UG/KG | <6250 |
| B147 | B147-5 | 2/1/06 | 5 | 6 | Area 3 | UG/KG | <6250 |
| B147 | B147-10 | 2/1/06 | 10 | 11 | Area 3 | UG/KG | 120 |
| B148 | B148-2 | 1/23/06 | 2 | 3 | Area 3 | UG/KG | 2925 |
| B148 | B148-5 | 1/23/06 | 5 | 6 | Area 3 | UG/KG | 270 |
| B148 | B148-10 | 1/23/06 | 10 | 11 | Area 3 | UG/KG | 122.5 |
| B149 | B149-2 | 1/23/06 | 2 | 3 | Area 3 | UG/KG | 3450 |
| B149 | B149-5 | 1/23/06 | 5 | 6 | Area 3 | UG/KG | 3612.5 |
| B149 | B149-10 | 1/23/06 | 10 | 11 | Area 3 | UG/KG | 5512.5 |
| B150 | B150-2 | 1/20/06 | 2 | 3 | Area 3 | UG/KG | <581.25 |
| B150 | B150-5 | 1/20/06 | 5 | 6 | Area 3 | UG/KG | 125 |
| B150 | B150-10 | 1/20/06 | 10 | 11 | Area 3 | UG/KG | 2562.5 |
| B151 | B151-2 | 1/19/06 | 2 | 3 | Area 4 | UG/KG | <6.25 |
| B151 | B151-5 | 1/19/06 | 5 | 6 | Area 4 | UG/KG | <6.25 |
| B151 | B151-10 | 1/19/06 | 10 | 11 | Area 4 | UG/KG | <6.25 |
| B152 | B152-2 | 1/20/06 | 2 | 3 | Area 3 | UG/KG | <550 |
| B152 | B152-5 | 1/20/06 | 5 | 6 | Area 3 | UG/KG | <237.5 |
| B152 | B152-10 | 1/20/06 | 10 | 11 | Area 3 | UG/KG | 5.125 |
| B153 | B153-2 | 1/20/06 | 2 | 3 | Area 3 | UG/KG | <1250 |
| B153 | B153-5 | 1/20/06 | 5 | 6 | Area 3 | UG/KG | <1243.75 |
| B153 | B153-10 | 1/20/06 | 10 | 11 | Area 3 | UG/KG | <1612.5 |
| B154 | B154-2 | 1/16/06 | 2 | 3 | Area 3 | UG/KG | <331.25 |
| B154 | B154-5 | 1/16/06 | 5 | 6 | Area 3 | UG/KG | <6.25 |
| B154 | B154-10 | 1/16/06 | 10 | 11 | Area 3 | UG/KG | 1.625 |
| B155 | B155-2 | 1/30/06 | 2 | 3 | Area 3 | UG/KG | 490 |
| B155 | B155-5 | 1/30/06 | 5 | 6 | Area 3 | UG/KG | 386.25 |
| B155 | B155-10 | 1/30/06 | 10 | 11 | Area 3 | UG/KG | 2762.5 |
| B156 | B156-2 | 1/13/06 | 2 | 3 | Area 3 | UG/KG | <287.5 |
| B156 | B156-5 | 1/13/06 | 5 | 6 | Area 3 | UG/KG | 7.625 |
| B156 | B156-10 | 1/13/06 | 10 | 11 | Area 3 | UG/KG | 3025 |
| B158 | B158-2 | 1/30/06 | 2 | 3 | Area 3 | UG/KG | 217.5 |
| B158 | B158-5 | 1/30/06 | 5 | 6 | Area 3 | UG/KG | 463.75 |
| B158 | B158-10 | 1/30/06 | 10 | 11 | Area 3 | UG/KG | 302.5 |
| B159 | B159-2 | 1/31/06 | 2 | 3 | Area 3 | UG/KG | <6.25 |
| B159 | B159-5 | 1/31/06 | 5 | 6 | Area 3 | UG/KG | <6.25 |
| B159 | B159-10 | 1/31/06 | 10 | 11 | Area 3 | UG/KG | <343.75 |
| B160 | B160-2 | 1/31/06 | 2 | 3 | Area 3 | UG/KG | <6.25 |
| B160 | B160-5 | 1/31/06 | 5 | 6 | Area 3 | UG/KG | <6.25 |
| B160 | B160-10 | 1/31/06 | 10 | 11 | Area 3 | UG/KG | 2.25 |
| B161 | B161-2 | 1/13/06 | 2 | 3 | Area 3 | UG/KG | 9.5 |
| B161 | B161-5 | 1/13/06 | 5 | 6 | Area 3 | UG/KG | <5150 |
| B161 | B161-10 | 1/13/06 | 10 | 11 | Area 3 | UG/KG | 80 |
| B162 | B162-2 | 1/16/06 | 2 | 3 | Area 3 | UG/KG | 23.75 |
| B162 | B162-5 | 1/16/06 | 5 | 6 | Area 3 | UG/KG | 38.75 |
| B162 | B162-10 | 1/16/06 | 10 | 11 | Area 3 | UG/KG | 23.75 |
| B163 | B163-2 | 1/16/06 | 2 | 3 | Area 3 | UG/KG | 95 |
| B163 | B163-5 | 1/16/06 | 5 | 6 | Area 3 | UG/KG | 227.5 |

**Table B3**
**Results of Benzene Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Benzene |
|---|---|---|---|---|---|---|---|
| B163 | B163-10 | 1/16/06 | 10 | 11 | Area 3 | UG/KG | 103.75 |
| B164 | B164-2 | 1/16/06 | 2 | 3 | Area 3 | UG/KG | <6.25 |
| B164 | B164-5 | 1/16/06 | 5 | 6 | Area 3 | UG/KG | <6.25 |
| B164 | B164-10 | 1/16/06 | 10 | 11 | Area 3 | UG/KG | <6.25 |
| B165 | B165-2 | 1/23/06 | 2 | 3 | Area 3 | UG/KG | <6.25 |
| B165 | B165-5 | 1/23/06 | 5 | 6 | Area 3 | UG/KG | <6.25 |
| B165 | B165-10 | 1/23/06 | 10 | 11 | Area 3 | UG/KG | 15 |
| B166 | B166-2 | 1/24/06 | 2 | 3 | Area 3 | UG/KG | <6.25 |
| B166 | B166-5 | 1/24/06 | 5 | 6 | Area 3 | UG/KG | <6.25 |
| B166 | B166-10 | 1/24/06 | 10 | 11 | Area 3 | UG/KG | 8 |
| B167 | B167-2 | 1/17/06 | 2 | 3 | Area 3 | UG/KG | <6.25 |
| B167 | B167-5 | 1/17/06 | 5 | 6 | Area 3 | UG/KG | <6.25 |
| B167 | B167-10 | 1/17/06 | 10 | 11 | Area 3 | UG/KG | <6.25 |
| B168 | B168-2 | 1/17/06 | 2 | 3 | Area 3 | UG/KG | <6.25 |
| B168 | B168-5 | 1/17/06 | 5 | 6 | Area 3 | UG/KG | <6.25 |
| B168 | B168-10 | 1/17/06 | 10 | 11 | Area 3 | UG/KG | 1.25 |
| B169 | B169-2 | 1/17/06 | 2 | 3 | Area 3 | UG/KG | <6250 |
| B169 | B169-5 | 1/17/06 | 5 | 6 | Area 3 | UG/KG | 30 |
| B169 | B169-10 | 1/17/06 | 10 | 11 | Area 3 | UG/KG | 15 |
| B170 | B170-2 | 1/18/06 | 2 | 3 | Area 3 | UG/KG | <231.25 |
| B170 | B170-5 | 1/18/06 | 5 | 6 | Area 3 | UG/KG | 10.75 |
| B170 | B170-10 | 1/18/06 | 10 | 11 | Area 3 | UG/KG | 1211.25 |
| B171 | B171-2 | 1/11/06 | 2 | 3 | Area 3 | UG/KG | <6250 |
| B171 | B171-5 | 1/11/06 | 5 | 6 | Area 3 | UG/KG | 1287.5 |
| B171 | B171-10 | 1/11/06 | 10 | 11 | Area 3 | UG/KG | 34375 |
| B172 | B172-2 | 1/12/06 | 2 | 3 | Area 3 | UG/KG | 1350 |
| B172 | B172-5 | 1/12/06 | 5 | 6 | Area 3 | UG/KG | 122.5 |
| B172 | B172-10 | 1/12/06 | 10 | 11 | Area 3 | UG/KG | 85 |
| B173 | B173-2 | 1/12/06 | 2 | 3 | Area 3 | UG/KG | <6.25 |
| B173 | B173-5 | 1/12/06 | 5 | 6 | Area 3 | UG/KG | <6.25 |
| B173 | B173-10 | 1/12/06 | 10 | 11 | Area 3 | UG/KG | 1.625 |
| B174 | B174-2 | 1/12/06 | 2 | 3 | Area 3 | UG/KG | <6.25 |
| B174 | B174-5 | 1/12/06 | 5 | 6 | Area 3 | UG/KG | <6.25 |
| B174 | B174-10 | 1/12/06 | 10 | 11 | Area 3 | UG/KG | 1.875 |
| B175 | B175-2 | 2/7/06 | 2 | 3 | Area 3 | UG/KG | <6.25 |
| B175 | B175-5 | 2/7/06 | 5 | 6 | Area 3 | UG/KG | 1.875 |
| B175 | B175-10 | 2/7/06 | 10 | 11 | Area 3 | UG/KG | 4.75 |
| B176 | B176-2 | 2/7/06 | 2 | 3 | Area 3 | UG/KG | <1268.75 |
| B176 | B176-5 | 2/7/06 | 5 | 6 | Area 3 | UG/KG | 705 |
| B176 | B176-10 | 2/7/06 | 10 | 11 | Area 3 | UG/KG | 427.5 |
| B177 | B177-2 | 2/2/06 | 2 | 3 | Area 3 | UG/KG | <281.25 |
| B177 | B177-5 | 2/2/06 | 5 | 6 | Area 3 | UG/KG | <6.25 |
| B177 | B177-10 | 2/2/06 | 10 | 11 | Area 3 | UG/KG | 147.5 |
| B178 | B178-2 | 2/2/06 | 2 | 3 | Area 3 | UG/KG | 300 |
| B178 | B178-5 | 2/2/06 | 5 | 6 | Area 3 | UG/KG | 126.25 |
| B178 | B178-10 | 2/2/06 | 10 | 11 | Area 3 | UG/KG | 131.25 |
| B179 | B179-2 | 1/26/06 | 2 | 3 | Area 3 | UG/KG | <306.25 |
| B179 | B179-5 | 1/26/06 | 5 | 6 | Area 3 | UG/KG | 240 |
| B179 | B179-10 | 1/26/06 | 10 | 11 | Area 3 | UG/KG | 81.25 |
| B180 | B180-2 | 1/26/06 | 2 | 3 | Area 3 | UG/KG | <6.25 |
| B180 | B180-5 | 1/26/06 | 5 | 6 | Area 3 | UG/KG | <6.25 |
| B180 | B180-10 | 1/26/06 | 10 | 11 | Area 3 | UG/KG | <6.25 |
| B181 | B181-2 | 2/6/06 | 2 | 3 | Area 3 | UG/KG | <6.25 |

**Table B3**
**Results of Benzene Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Benzene |
|---|---|---|---|---|---|---|---|
| B181 | B181-5 | 2/6/06 | 5 | 6 | Area 3 | UG/KG | <6.25 |
| B181 | B181-10 | 2/6/06 | 10 | 11 | Area 3 | UG/KG | <6.25 |
| B182 | B182-2 | 1/24/06 | 2 | 3 | Area 3 | UG/KG | <6.25 |
| B182 | B182-5 | 1/25/06 | 5 | 6 | Area 3 | UG/KG | <6.25 |
| B182 | B182-10 | 1/25/06 | 10 | 11 | Area 3 | UG/KG | <6.25 |
| B183 | B183-2 | 1/25/06 | 2 | 3 | Area 3 | UG/KG | <6.25 |
| B183 | B183-5 | 1/25/06 | 5 | 6 | Area 3 | UG/KG | <6.25 |
| B183 | B183-10 | 1/25/06 | 10 | 11 | Area 3 | UG/KG | <3125 |
| B184 | B184-2 | 1/25/06 | 2 | 3 | Area 3 | UG/KG | <6.25 |
| B184 | B184-5 | 1/25/06 | 5 | 6 | Area 3 | UG/KG | <6.25 |
| B184 | B184-10 | 1/25/06 | 10 | 11 | Area 3 | UG/KG | <6.25 |
| B185 | B185-2 | 1/26/06 | 2 | 3 | Area 3 | UG/KG | <6.25 |
| B185 | B185-5 | 1/26/06 | 5 | 6 | Area 3 | UG/KG | <6.25 |
| B185 | B185-10 | 1/26/06 | 10 | 11 | Area 3 | UG/KG | <6.25 |
| B186 | B186-2 | 1/27/06 | 2 | 3 | Area 3 | UG/KG | 90 |
| B186 | B186-5 | 1/27/06 | 5 | 6 | Area 3 | UG/KG | 4.375 |
| B186 | B186-10 | 1/27/06 | 10 | 11 | Area 3 | UG/KG | 20 |
| B187 | B187-2 | 1/27/06 | 2 | 3 | Area 3 | UG/KG | 140 |
| B187 | B187-5 | 1/27/06 | 5 | 6 | Area 3 | UG/KG | 148.75 |
| B187 | B187-10 | 1/27/06 | 10 | 11 | Area 3 | UG/KG | 160 |
| B188 | B188-2 | 2/7/06 | 2 | 3 | Area 2 | UG/KG | 458.75 |
| B188 | B188-5 | 2/7/06 | 5 | 6 | Area 2 | UG/KG | 12300 |
| B188 | B188-10 | 2/7/06 | 10 | 11 | Area 2 | UG/KG | 996.25 |
| B189 | B189-2 | 2/7/06 | 2 | 3 | Area 2 | UG/KG | 65 |
| B189 | B189-5 | 2/7/06 | 5 | 6 | Area 2 | UG/KG | 7.25 |
| B189 | B189-10 | 2/7/06 | 10 | 11 | Area 2 | UG/KG | 27.5 |
| B190 | B190-2 | 2/8/06 | 2 | 3 | Area 2 | UG/KG | <6.25 |
| B190 | B190-5 | 2/8/06 | 5 | 6 | Area 2 | UG/KG | <6.25 |
| B190 | B190-10 | 2/8/06 | 10 | 11 | Area 2 | UG/KG | 13.75 |
| B191 | B191-2 | 2/1/06 | 2 | 3 | Area 2 | UG/KG | <262.5 |
| B191 | B191-5 | 2/1/06 | 5 | 6 | Area 2 | UG/KG | <293.75 |
| B191 | B191-10 | 2/1/06 | 10 | 11 | Area 2 | UG/KG | 91.25 |
| B192 | B192-2 | 2/1/06 | 2 | 3 | Area 2 | UG/KG | 31.25 |
| B192 | B192-5 | 2/1/06 | 5 | 6 | Area 2 | UG/KG | 22.5 |
| B192 | B192-10 | 2/1/06 | 10 | 11 | Area 2 | UG/KG | 51.25 |
| B193 | B193-2 | 2/6/06 | 2 | 3 | Area 3 | UG/KG | <625 |
| B193 | B193-5 | 2/6/06 | 5 | 6 | Area 3 | UG/KG | <625 |
| B193 | B193-10 | 2/6/06 | 10 | 11 | Area 3 | UG/KG | 30 |
| B194 | B194-2 | 2/3/06 | 2 | 3 | Area 3 | UG/KG | <787.5 |
| B194 | B194-5 | 2/3/06 | 5 | 6 | Area 3 | UG/KG | 5 |
| B194 | B194-10 | 2/3/06 | 10 | 11 | Area 3 | UG/KG | <1193.75 |
| B195 | B195-2 | 2/3/06 | 2 | 3 | Area 3 | UG/KG | <6.25 |
| B195 | B195-5 | 2/3/06 | 5 | 6 | Area 3 | UG/KG | <6.25 |
| B195 | B195-10 | 2/3/06 | 10 | 11 | Area 3 | UG/KG | 9.75 |
| B196 | B196-2 | 1/25/06 | 2 | 3 | Area 3 | UG/KG | <6.25 |
| B196 | B196-5 | 1/25/06 | 5 | 6 | Area 3 | UG/KG | <6.25 |
| B196 | B196-10 | 1/25/06 | 10 | 11 | Area 3 | UG/KG | <6.25 |
| B197 | B197-2 | 2/1/06 | 2 | 3 | Area 3 | UG/KG | <6.25 |
| B197 | B197-5 | 2/1/06 | 5 | 6 | Area 3 | UG/KG | <6.25 |
| B197 | B197-10 | 2/1/06 | 10 | 11 | Area 3 | UG/KG | <6.25 |
| B198 | B198-2 | 1/26/06 | 2 | 3 | Area 3 | UG/KG | <6.25 |
| B198 | B198-5 | 1/26/06 | 5 | 6 | Area 3 | UG/KG | <6.25 |
| B198 | B198-10 | 1/26/06 | 10 | 11 | Area 3 | UG/KG | <6.25 |

**Table B3**
**Results of Benzene Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Benzene |
|---|---|---|---|---|---|---|---|
| B199 | B199-2 | 1/23/06 | 2 | 3 | Area 3 | UG/KG | 31.25 |
| B199 | B199-5 | 1/23/06 | 5 | 6 | Area 3 | UG/KG | <6812.5 |
| B199 | B199-10 | 1/23/06 | 10 | 11 | Area 3 | UG/KG | <281.25 |
| B200 | B200-2 | 1/24/06 | 2 | 3 | Area 3 | UG/KG | <6.25 |
| B200 | B200-5 | 1/24/06 | 5 | 6 | Area 3 | UG/KG | <6.25 |
| B200 | B200-10 | 1/24/06 | 10 | 11 | Area 3 | UG/KG | <6.25 |
| B201 | B201-2 | 1/25/06 | 2 | 3 | Area 3 | UG/KG | <6.25 |
| B201 | B201-5 | 1/25/06 | 5 | 6 | Area 3 | UG/KG | <6.25 |
| B201 | B201-10 | 1/25/06 | 10 | 11 | Area 3 | UG/KG | <6.25 |
| B202 | B202-2 | 1/25/06 | 2 | 3 | Area 3 | UG/KG | 2.875 |
| B202 | B202-5 | 1/25/06 | 5 | 6 | Area 3 | UG/KG | <6.25 |
| B202 | B202-10 | 1/25/06 | 10 | 11 | Area 3 | UG/KG | <6.25 |
| B203 | B203-2 | 2/7/06 | 2 | 3 | Area 3 | UG/KG | <468.75 |
| B203 | B203-5 | 2/7/06 | 5 | 6 | Area 3 | UG/KG | <1643.75 |
| B203 | B203-10 | 2/7/06 | 10 | 11 | Area 3 | UG/KG | <2225 |
| B204 | B204-2 | 2/6/06 | 2 | 3 | Area 3 | UG/KG | <6.25 |
| B204 | B204-5 | 2/6/06 | 5 | 6 | Area 3 | UG/KG | <700 |
| B204 | B204-10 | 2/6/06 | 10 | 11 | Area 3 | UG/KG | 1.625 |
| B205 | B205-2 | 2/7/06 | 2 | 3 | Area 3 | UG/KG | <6.25 |
| B205 | B205-5 | 2/7/06 | 5 | 6 | Area 3 | UG/KG | <6.25 |
| B205 | B205-10 | 2/7/06 | 10 | 11 | Area 3 | UG/KG | <6.25 |
| B206 | B206-2 | 2/8/06 | 2 | 3 | Area 2 | UG/KG | <6.25 |
| B206 | B206-5 | 2/8/06 | 5 | 6 | Area 2 | UG/KG | <6.25 |
| B206 | B206-10 | 2/8/06 | 10 | 11 | Area 2 | UG/KG | 8.75 |
| B207 | B207-2 | 2/8/06 | 2 | 3 | Area 2 | UG/KG | <6.25 |
| B207 | B207-5 | 2/8/06 | 5 | 6 | Area 2 | UG/KG | <6.25 |
| B207 | B207-10 | 2/8/06 | 10 | 11 | Area 2 | UG/KG | <6.25 |
| B208 | B208-2 | 1/31/06 | 2 | 3 | Area 2 | UG/KG | <6.25 |
| B208 | B208-5 | 1/31/06 | 5 | 6 | Area 2 | UG/KG | <6.25 |
| B208 | B208-10 | 1/31/06 | 10 | 11 | Area 2 | UG/KG | <6.25 |
| B209 | B209-2 | 1/31/06 | 2 | 3 | Area 2 | UG/KG | <6.25 |
| B209 | B209-5 | 1/31/06 | 5 | 6 | Area 2 | UG/KG | <6.25 |
| B209 | B209-10 | 1/31/06 | 10 | 11 | Area 2 | UG/KG | 3.875 |
| B210 | B210-2 | 1/31/06 | 2 | 3 | Area 3 | UG/KG | 2.125 |
| B210 | B210-5 | 1/31/06 | 5 | 6 | Area 3 | UG/KG | 1.375 |
| B210 | B210-10 | 1/31/06 | 10 | 11 | Area 3 | UG/KG | 6.125 |
| B211 | B211-2 | 2/6/06 | 2 | 3 | Area 3 | UG/KG | 8.375 |
| B211 | B211-5 | 2/6/06 | 5 | 6 | Area 3 | UG/KG | 3.625 |
| B211 | B211-10 | 2/6/06 | 10 | 11 | Area 3 | UG/KG | <6.25 |
| B212 | B212-2 | 1/24/06 | 2 | 3 | Area 3 | UG/KG | <6.25 |
| B212 | B212-5 | 1/24/06 | 5 | 6 | Area 3 | UG/KG | <6.25 |
| B212 | B212-10 | 1/24/06 | 10 | 11 | Area 3 | UG/KG | <6.25 |
| B213 | B213-2 | 2/6/06 | 2 | 3 | Area 3 | UG/KG | <6.25 |
| B213 | B213-5 | 2/6/06 | 5 | 6 | Area 3 | UG/KG | 2.625 |
| B213 | B213-10 | 2/6/06 | 10 | 11 | Area 3 | UG/KG | 2.375 |
| B214 | B214-2 | 1/23/06 | 2 | 3 | Area 3 | UG/KG | <256.25 |
| B214 | B214-5 | 1/23/06 | 5 | 6 | Area 3 | UG/KG | <6.25 |
| B214 | B214-10 | 1/23/06 | 10 | 11 | Area 3 | UG/KG | <6.25 |
| B215 | B215-2 | 2/3/06 | 2 | 3 | Area 3 | UG/KG | <6.25 |
| B215 | B215-5 | 2/3/06 | 5 | 6 | Area 3 | UG/KG | <6.25 |
| B215 | B215-10 | 2/3/06 | 10 | 11 | Area 3 | UG/KG | <6.25 |
| B216 | B216-2 | 2/2/06 | 2 | 3 | Area 3 | UG/KG | <6.25 |
| B216 | B216-5 | 2/2/06 | 5 | 6 | Area 3 | UG/KG | <6.25 |

**Table B3**
**Results of Benzene Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Benzene |
|---|---|---|---|---|---|---|---|
| B216 | B216-10 | 2/2/06 | 10 | 11 | Area 3 | UG/KG | <6.25 |
| B217 | B217-2 | 1/24/06 | 2 | 3 | Area 3 | UG/KG | <6.25 |
| B217 | B217-5 | 1/24/06 | 5 | 6 | Area 3 | UG/KG | <6.25 |
| B217 | B217-10 | 1/24/06 | 10 | 11 | Area 3 | UG/KG | <6.25 |
| B218 | B218-2 | 2/8/06 | 2 | 3 | Area 3 | UG/KG | <6.25 |
| B218 | B218-5 | 2/8/06 | 5 | 6 | Area 3 | UG/KG | 256.25 |
| B218 | B218-10 | 2/8/06 | 10 | 11 | Area 3 | UG/KG | 1.5 |
| B219 | B219-2 | 1/26/06 | 2 | 3 | Area 3 | UG/KG | <6.25 |
| B219 | B219-5 | 1/26/06 | 5 | 6 | Area 3 | UG/KG | <6.25 |
| B219 | B219-10 | 1/26/06 | 10 | 11 | Area 3 | UG/KG | 2.375 |
| B220 | B220-2 | 1/26/06 | 2 | 3 | Area 3 | UG/KG | <6.25 |
| B220 | B220-5 | 1/26/06 | 5 | 6 | Area 3 | UG/KG | <6.25 |
| B220 | B220-10 | 1/26/06 | 10 | 11 | Area 3 | UG/KG | <6.25 |
| B221 | B221-2 | 1/27/06 | 2 | 3 | Area 2 | UG/KG | <6.25 |
| B221 | B221-5 | 1/27/06 | 5 | 6 | Area 2 | UG/KG | <6.25 |
| B221 | B221-10 | 1/27/06 | 10 | 11 | Area 2 | UG/KG | 2 |
| B222 | B222-2 | 2/3/06 | 2 | 3 | Area 2 | UG/KG | <6.25 |
| B222 | B222-5 | 2/3/06 | 5 | 6 | Area 2 | UG/KG | <6.25 |
| B222 | B222-10 | 2/3/06 | 10 | 11 | Area 2 | UG/KG | <6.25 |
| B223 | B223-2 | 2/3/06 | 2 | 3 | Area 2 | UG/KG | <6.25 |
| B223 | B223-5 | 2/3/06 | 5 | 6 | Area 2 | UG/KG | <6.25 |
| B223 | B223-10 | 2/3/06 | 10 | 11 | Area 2 | UG/KG | <6.25 |
| B224 | B224-05 | 1/21/08 | 5 | 6 | Area 1 | UG/KG | <1 |
| B224 | B224-10 | 1/21/08 | 10 | 11 | Area 1 | UG/KG | <0.87 |
| B225 | B225-5 | 1/21/08 | 5 | 6 | Area 1 | UG/KG | <1.1 |
| B225 | B225-10 | 1/21/08 | 9 | 10 | Area 1 | UG/KG | <0.88 |
| B226 | B226-5 | 1/18/08 | 5 | 6 | Area 1 | UG/KG | <0.8 |
| B226 | B226-10 | 1/18/08 | 9 | 10 | Area 1 | UG/KG | 28 |
| B227 | B227-5 | 1/21/08 | 5 | 6 | Area 1 | UG/KG | 1.4 |
| B227 | B227-10 | 1/21/08 | 10 | 11 | Area 1 | UG/KG | <100 |
| B228 | B228-05 | 1/18/08 | 5 | 6 | Area 1 | UG/KG | <1 |
| B228 | B228-10 | 1/18/08 | 10 | 11 | Area 1 | UG/KG | <61 |
| B229 | B229-05 | 1/18/08 | 5 | 6 | Area 1 | UG/KG | 1.9 |
| B229 | B229-10 | 1/18/08 | 10 | 11 | Area 1 | UG/KG | 240 |
| B230 | B230-5 | 1/17/08 | 5 | 6 | Area 1 | UG/KG | <0.94 |
| B230 | B230-10 | 1/17/08 | 9 | 10 | Area 1 | UG/KG | <210 |
| B231 | B231-5 | 1/17/08 | 5 | 6 | Area 1 | UG/KG | <0.98 |
| B231 | B231-10 | 1/17/08 | 9 | 10 | Area 1 | UG/KG | <0.85 |
| B232 | B232-05 | 1/21/08 | 5 | 6 | Area 3 | UG/KG | 6.5 |
| B232 | B232-10 | 1/21/08 | 10 | 11 | Area 3 | UG/KG | <1.2 |
| B233 | B233-05 | 1/23/08 | 5 | 6 | Area 4 | UG/KG | <0.8 |
| B233 | B233-10 | 1/23/08 | 10 | 11 | Area 4 | UG/KG | <0.93 |
| B234 | B234-05 | 1/23/08 | 5 | 6 | Area 4 | UG/KG | 1.1 |
| B234 | B234-10 | 1/23/08 | 10 | 11 | Area 4 | UG/KG | 4.2 |
| B235 | B235-5 | 1/25/08 | 5 | 6 | Area 4 | UG/KG | 7.3 |
| B235 | B235-10 | 1/25/08 | 9 | 10 | Area 4 | UG/KG | 7.2 |
| B236 | B236-05 | 1/22/08 | 5 | 6 | Area 3 | UG/KG | <0.91 |
| B236 | B236-10 | 1/22/08 | 10 | 11 | Area 3 | UG/KG | <0.96 |
| B237 | B237-5 | 1/23/08 | 5 | 6 | Area 3 | UG/KG | 2400 |
| B237 | B237-10 | 1/23/08 | 10 | 11 | Area 3 | UG/KG | 2100 |
| B238 | B238-5 | 1/25/08 | 5 | 6 | Area 3 | UG/KG | 180 |
| B238 | B238-10 | 1/25/08 | 10 | 11 | Area 3 | UG/KG | 850 |
| B239 | B239-05 | 1/22/08 | 5 | 6 | Area 3 | UG/KG | 3 |

**Table B3**
**Results of Benzene Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Benzene |
|---|---|---|---|---|---|---|---|
| B239 | B239-10 | 1/22/08 | 10 | 11 | Area 3 | UG/KG | <1.1 |
| B240 | B240-5 | 1/22/08 | 5 | 6 | Area 3 | UG/KG | <1.1 |
| B240 | B240-10 | 1/22/08 | 9 | 10 | Area 3 | UG/KG | <1.4 |
| B241 | B241-5 | 1/23/08 | 5 | 6 | Area 3 | UG/KG | <3300 |
| B241 | B241-10 | 1/23/08 | 10 | 11 | Area 3 | UG/KG | <3600 |
| B242 | B242-05 | 1/25/08 | 5 | 6 | Area 3 | UG/KG | 24000 |
| B242 | B242-10 | 1/25/08 | 10 | 11 | Area 3 | UG/KG | 520 |
| B243 | B243-05 | 1/25/08 | 5 | 6 | Area 3 | UG/KG | 75 |
| B243 | B243-10 | 1/25/08 | 10 | 11 | Area 3 | UG/KG | 1300 |
| B244 | B244-05 | 1/17/08 | 5 | 6 | Area 1 | UG/KG | <0.83 |
| B244 | B244-10 | 1/17/08 | 10 | 11 | Area 1 | UG/KG | <0.97 |
| B245 | B245-05 | 1/15/08 | 5 | 6 | Area 1 | UG/KG | <1 |
| B245 | B245-10 | 1/15/08 | 10 | 11 | Area 1 | UG/KG | 1.2 |
| B246 | B246-5 | 1/15/08 | 5 | 6 | Area 1 | UG/KG | <0.94 |
| B246 | B246-10 | 1/15/08 | 10 | 11 | Area 1 | UG/KG | <0.99 |
| B247 | B247-05 | 1/17/08 | 5 | 6 | Area 1 | UG/KG | 110 |
| B247 | B247-10 | 1/17/08 | 10 | 11 | Area 1 | UG/KG | 150 |
| B248 | B248-05 | 1/15/08 | 5 | 6 | Area 1 | UG/KG | <0.91 |
| B248 | B248-10 | 1/15/08 | 10 | 11 | Area 1 | UG/KG | <0.93 |
| B249 | B249-05 | 1/14/08 | 5 | 6 | Area 1 | UG/KG | 6600 |
| B249 | B249-10 | 1/14/08 | 10 | 11 | Area 1 | UG/KG | 3000 |
| B250 | B250-05 | 1/16/08 | 5 | 6 | Area 1 | UG/KG | <1 |
| B250 | B250-10 | 1/16/08 | 10 | 11 | Area 1 | UG/KG | <0.98 |
| B251 | B251-05 | 1/16/08 | 5 | 6 | Area 1 | UG/KG | <0.83 |
| B251 | B251-10 | 1/16/08 | 10 | 11 | Area 1 | UG/KG | <0.88 |
| B252 | B252-5 | 1/15/08 | 5 | 6 | Area 1 | UG/KG | <0.9 |
| B252 | B252-10 | 1/15/08 | 10 | 11 | Area 1 | UG/KG | <0.93 |
| B253 | B253-05 | 1/31/08 | 5 | 6 | Area 4 | UG/KG | 12 |
| B253 | B253-10 | 1/31/08 | 10 | 11 | Area 4 | UG/KG | 4200 |
| B254 | B254-05 | 2/5/08 | 5 | 6 | Area 4 | UG/KG | <1.1 |
| B254 | B254-10 | 2/5/08 | 10 | 11 | Area 4 | UG/KG | 2.1 |
| B255 | B255-05 | 1/31/08 | 5 | 6 | Area 3 | UG/KG | <0.81 |
| B255 | B255-10 | 1/31/08 | 10 | 11 | Area 3 | UG/KG | <0.74 |
| B256 | B256-05 | 1/31/08 | 5 | 6 | Area 3 | UG/KG | <1.4 |
| B256 | B256-10 | 1/31/08 | 10 | 11 | Area 3 | UG/KG | 3.4 |
| B257 | B257-05 | 1/30/08 | 5 | 6 | Area 3 | UG/KG | 520 |
| B257 | B257-10 | 1/30/08 | 10 | 11 | Area 3 | UG/KG | 1700 |
| B258 | B258-05 | 1/31/08 | 5 | 6 | Area 3 | UG/KG | <63 |
| B258 | B258-10 | 1/31/08 | 10 | 11 | Area 3 | UG/KG | 370 |
| B259 | B259-05 | 2/1/08 | 5 | 6 | Area 3 | UG/KG | <1.4 |
| B259 | B259-10 | 2/1/08 | 10 | 11 | Area 3 | UG/KG | <0.97 |
| B260 | B260-05 | 2/1/08 | 5 | 6 | Area 3 | UG/KG | <1600 |
| B260 | B260-10 | 2/1/08 | 10 | 11 | Area 3 | UG/KG | 77 |
| B261 | B261-5 | 1/21/09 | 4.5 | 5.5 | Area 3 | UG/KG | <1 |
| B261 | B261-10 | 1/21/09 | 9.5 | 10.5 | Area 3 | UG/KG | <54 |
| B262 | B262-05 | 1/29/08 | 5 | 6 | Area 3 | UG/KG | <1.8 |
| B262 | B262-10 | 1/29/08 | 10 | 11 | Area 3 | UG/KG | <1.1 |
| B263 | B263-05 | 2/4/08 | 5 | 6 | Area 3 | UG/KG | <1.3 |
| B263 | B263-10 | 2/4/08 | 10 | 11 | Area 3 | UG/KG | <1 |
| B264 | B264-5 | 1/15/08 | 5 | 6 | Area 1 | UG/KG | <0.91 |
| B264 | B264-10 | 1/15/08 | 10 | 11 | Area 1 | UG/KG | 2 |
| B266 | B266-05 | 1/14/08 | 5 | 6 | Area 1 | UG/KG | <0.86 |
| B266 | B266-10 | 1/14/08 | 10 | 11 | Area 1 | UG/KG | <1.2 |

**Table B3**
**Results of Benzene Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Benzene |
|---|---|---|---|---|---|---|---|
| B267 | B267-05 | 1/15/08 | 5 | 6 | Area 1 | UG/KG | 2.9 |
| B267 | B267-10 | 1/15/08 | 10 | 11 | Area 1 | UG/KG | <1 |
| B268 | B268-05 | 2/1/08 | 5 | 6 | Area 1 | UG/KG | <0.97 |
| B268 | B268-10 | 2/1/08 | 10 | 11 | Area 1 | UG/KG | 1.3 |
| B270 | B270-5 | 1/20/09 | 4.5 | 5.5 | Area 3 | UG/KG | <1 |
| B270 | B270-10 | 1/20/09 | 10 | 11 | Area 3 | UG/KG | <1.1 |
| B271 | B271-5 | 1/14/08 | 5 | 6 | Area 1 | UG/KG | 1.4 |
| B271 | B271-10 | 1/14/08 | 10 | 11 | Area 1 | UG/KG | <1.1 |
| B272 | B272-5 | 1/14/08 | 5 | 6 | Area 1 | UG/KG | <0.95 |
| B272 | B272-10 | 1/14/08 | 10 | 11 | Area 1 | UG/KG | <1 |
| B274 | B274-05 | 1/14/08 | 5 | 6 | Area 1 | UG/KG | <0.93 |
| B274 | B274-10 | 1/14/08 | 10 | 11 | Area 1 | UG/KG | <0.87 |
| B275 | B275-5 | 1/14/08 | 5 | 6 | Area 1 | UG/KG | <0.97 |
| B275 | B275-10 | 1/14/08 | 10 | 11 | Area 1 | UG/KG | <0.8 |
| B276 | B276-05 | 2/4/08 | 5 | 6 | Area 3 | UG/KG | <1.4 |
| B276 | B276-10 | 2/4/08 | 10 | 11 | Area 3 | UG/KG | 64 |
| B277 | B277-5 | 1/16/08 | 5 | 6 | Area 3 | UG/KG | <42 |
| B277 | B277-10 | 1/16/08 | 10 | 11 | Area 3 | UG/KG | 3.4 |
| B278 | B278-5 | 1/16/08 | 5 | 6 | Area 1 | UG/KG | 610 |
| B278 | B278-10 | 1/16/08 | 10 | 11 | Area 1 | UG/KG | 69 |
| B279 | B279-5 | 1/16/08 | 5 | 6 | Area 1 | UG/KG | <61 |
| B279 | B279-10 | 1/16/08 | 10 | 11 | Area 1 | UG/KG | <45 |
| B280 | B280-5 | 1/16/08 | 5 | 6 | Area 1 | UG/KG | <51 |
| B280 | B280-10 | 1/16/08 | 10 | 11 | Area 1 | UG/KG | <46 |
| B281 | B281-5 | 1/14/08 | 5 | 6 | Area 1 | UG/KG | <0.78 |
| B281 | B281-10 | 1/14/08 | 10 | 11 | Area 1 | UG/KG | <1 |
| B282 | B282-05 | 1/28/08 | 5 | 6 | Area 1 | UG/KG | <1 |
| B282 | B282-10 | 1/28/08 | 10 | 11 | Area 1 | UG/KG | <1 |
| B283 | B283-05 | 1/29/08 | 5 | 6 | Area 1 | UG/KG | <86 |
| B283 | B283-10 | 1/29/08 | 10 | 11 | Area 1 | UG/KG | 9.6 |
| B284 | B284-05 | 1/28/08 | 5 | 6 | Area 2 | UG/KG | <0.98 |
| B284 | B284-10 | 1/28/08 | 10 | 11 | Area 2 | UG/KG | <1.1 |
| B285 | B285-05 | 1/28/08 | 5 | 6 | Area 2 | UG/KG | <1.1 |
| B285 | B285-10 | 1/28/08 | 10 | 11 | Area 2 | UG/KG | <1.1 |
| B286 | B286-5 | 1/22/09 | 5 | 6 | Area 2 | UG/KG | <0.96 |
| B286 | B286-10 | 1/22/09 | 10 | 11 | Area 2 | UG/KG | <0.84 |
| B287 | B287-5 | 1/22/08 | 5 | 6 | Area 2 | UG/KG | <1.1 |
| B287 | B287-10 | 1/22/08 | 10 | 11 | Area 2 | UG/KG | <0.89 |
| B288 | B288-05 | 1/17/08 | 5 | 6 | Area 2 | UG/KG | <0.87 |
| B288 | B288-10 | 1/17/08 | 10 | 11 | Area 2 | UG/KG | <0.74 |
| B289 | B289-5 | 1/28/08 | 5 | 6 | Area 2 | UG/KG | <1.4 |
| B289 | B289-10 | 1/28/08 | 10 | 11 | Area 2 | UG/KG | <1.1 |
| B290 | B290-5 | 1/28/08 | 5 | 6 | Area 2 | UG/KG | <1.1 |
| B290 | B290-10 | 1/28/08 | 10 | 11 | Area 2 | UG/KG | <1.5 |
| B291 | B291-10 | 1/29/08 | 10 | 11 | Area 2 | UG/KG | <1.6 |
| B292 | B292-5 | 1/22/09 | 5 | 6 | Area 2 | UG/KG | 16 |
| B292 | B292-10 | 1/22/09 | 10 | 11 | Area 2 | UG/KG | <61 |
| B293 | B293-5 | 1/22/09 | 5 | 6 | Area 2 | UG/KG | 1.5 |
| B293 | B293-10 | 1/22/09 | 10 | 11 | Area 2 | UG/KG | <1.1 |
| B294 | B294-05 | 1/31/08 | 4.5 | 5 | Area 2 | UG/KG | <78 |
| B294 | B294-10 | 1/31/08 | 10 | 11 | Area 2 | UG/KG | 12 |
| B295 | B295-5 | 1/22/09 | 5 | 6 | Area 2 | UG/KG | <0.96 |
| B295 | B295-10 | 1/22/09 | 10 | 11 | Area 2 | UG/KG | 2 |

**Table B3**
**Results of Benzene Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Benzene |
|---|---|---|---|---|---|---|---|
| B297 | B297-5 | 1/20/09 | 4.5 | 5.5 | Area 2 | UG/KG | 2.8 |
| B297 | B297-10 | 1/20/09 | 9.5 | 10.5 | Area 2 | UG/KG | <1.1 |
| B298 | B298-5 | 1/28/08 | 5 | 6 | Area 2 | UG/KG | <1.6 |
| B298 | B298-10 | 1/28/08 | 10 | 11 | Area 2 | UG/KG | 6.4 |
| B299 | B299-5 | 1/19/09 | 5 | 6 | Area 4 | UG/KG | 1800 |
| B299 | B299-10 | 1/19/09 | 9.5 | 10.5 | Area 4 | UG/KG | 9300 |
| B300 | B300-05 | 2/6/08 | 5 | 6 | Area 4 | UG/KG | <0.99 |
| B300 | B300-10 | 2/6/08 | 10 | 11 | Area 4 | UG/KG | <1.1 |
| B301 | B301-05 | 2/6/08 | 5 | 6 | Area 4 | UG/KG | <1.1 |
| B301 | B301-10 | 2/6/08 | 10 | 11 | Area 4 | UG/KG | <1 |
| B302 | B302-05 | 2/5/08 | 5 | 6 | Area 4 | UG/KG | <1.4 |
| B302 | B302-10 | 2/5/08 | 10 | 11 | Area 4 | UG/KG | <0.99 |
| B303 | B303-05 | 1/28/08 | 5 | 6 | Area 4 | UG/KG | 1200 |
| B303 | B303-10 | 1/28/08 | 10 | 11 | Area 4 | UG/KG | 780 |
| B304 | B304-5 | 1/19/09 | 4.5 | 5.5 | Area 3 | UG/KG | 1.7 |
| B304 | B304-10 | 1/19/09 | 9.5 | 10.5 | Area 3 | UG/KG | 1 |
| B305 | B305-5 | 1/19/09 | 4.5 | 5.5 | Area 3 | UG/KG | 2.5 |
| B305 | B305-10 | 1/19/09 | 9.5 | 10.5 | Area 3 | UG/KG | 19 |
| B306 | B306-05 | 1/31/08 | 5 | 6 | Area 3 | UG/KG | 90 |
| B306 | B306-10 | 1/31/08 | 10 | 11 | Area 3 | UG/KG | 29 |
| B307 | B307-5 | 1/28/08 | 5 | 6 | Area 3 | UG/KG | 28 |
| B307 | B307-10 | 1/28/08 | 10 | 11 | Area 3 | UG/KG | 23 |
| B308 | B308-05 | 1/30/08 | 5 | 6 | Area 3 | UG/KG | 3 |
| B308 | B308-10 | 1/30/08 | 10 | 11 | Area 3 | UG/KG | 6.6 |
| B309 | B309-5 | 1/19/09 | 4.5 | 5.5 | Area 3 | UG/KG | <0.86 |
| B309 | B309-10 | 1/19/09 | 9.5 | 10.5 | Area 3 | UG/KG | 3.7 |
| B310 | B310-05 | 2/4/08 | 5 | 6 | Area 3 | UG/KG | 140 |
| B310 | B310-10 | 2/4/08 | 10 | 11 | Area 3 | UG/KG | 120 |
| B311 | B311-05 | 2/5/08 | 5 | 6 | Area 3 | UG/KG | <54 |
| B311 | B311-10 | 2/5/08 | 10 | 11 | Area 3 | UG/KG | <1.4 |
| B312 | B312-05 | 1/30/08 | 4.5 | 5.5 | Area 3 | UG/KG | <1.5 |
| B312 | B312-10 | 1/30/08 | 10 | 11 | Area 3 | UG/KG | <1.4 |
| B313 | B313-05 | 2/1/08 | 4.5 | 5.5 | Area 3 | UG/KG | <1.6 |
| B313 | B313-10 | 2/1/08 | 10 | 11 | Area 3 | UG/KG | <1.4 |
| B314 | B314-05 | 1/30/08 | 5 | 6 | Area 2 | UG/KG | 190 |
| B314 | B314-10 | 1/30/08 | 10 | 11 | Area 2 | UG/KG | 98 |
| B315 | B315-05 | 1/30/08 | 4.5 | 5.5 | Area 3 | UG/KG | 880 |
| B315 | B315-10 | 1/30/08 | 10 | 11 | Area 3 | UG/KG | 5900 |
| B316 | B316-05 | 1/30/08 | 4.5 | 5.5 | Area 3 | UG/KG | <1.2 |
| B316 | B316-10 | 1/30/08 | 10 | 11 | Area 3 | UG/KG | <100 |
| B317 | B317-05 | 1/29/08 | 4.5 | 5.5 | Area 3 | UG/KG | <1.7 |
| B317 | B317-10 | 1/29/08 | 10 | 11 | Area 3 | UG/KG | <1.1 |
| B318 | B318-05 | 1/28/08 | 4.5 | 5.5 | Area 2 | UG/KG | <0.63 |
| B318 | B318-10 | 1/28/08 | 10 | 11 | Area 2 | UG/KG | 2.3 |
| B319 | B319-5 | 1/21/09 | 5 | 6 | Area 2 | UG/KG | 1.1 |
| B319 | B319-10 | 1/21/09 | 10 | 11 | Area 2 | UG/KG | <0.97 |
| B320 | B320-05 | 1/29/08 | 4.5 | 5.5 | Area 3 | UG/KG | <1.4 |
| B320 | B320-10 | 1/29/08 | 10 | 11 | Area 3 | UG/KG | <0.95 |
| B321 | B321-05 | 1/30/08 | 4.5 | 5.5 | Area 3 | UG/KG | <2 |
| B321 | B321-10 | 1/30/08 | 10 | 11 | Area 3 | UG/KG | <1.2 |
| B322 | B322-05 | 2/1/08 | 5 | 6 | Area 3 | UG/KG | <1.3 |
| B322 | B322-10 | 2/1/08 | 10 | 11 | Area 3 | UG/KG | <1.1 |
| B323 | B323-05 | 1/28/08 | 4.5 | 5.5 | Area 3 | UG/KG | <1 |

**Table B3**
**Results of Benzene Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Benzene |
|---|---|---|---|---|---|---|---|
| B323 | B323-10 | 1/28/08 | 10 | 11 | Area 3 | UG/KG | <1.1 |
| B324 | B324-00 | 4/8/08 | 0 | 0.5 | Area 4 | UG/KG | <1 |
| B324 | B324-02 | 4/8/08 | 1.5 | 2 | Area 4 | UG/KG | <1.3 |
| B325 | B325-00 | 4/8/08 | 0 | 0.5 | Area 4 | UG/KG | <1.2 |
| B325 | B325-02 | 4/8/08 | 1.5 | 2 | Area 4 | UG/KG | <1.1 |
| B326 | B326-00 | 4/8/08 | 0 | 0.5 | Area 4 | UG/KG | <1.2 |
| B326 | B326-02 | 4/8/08 | 1.5 | 2 | Area 4 | UG/KG | <1.3 |
| B-401 | LL_B-401-1_100611 | 10/6/11 | 0.5 | 1 | Area 2 | UG/KG | 300 |
| B-401 | LL_B-401-3_100611 | 10/6/11 | 2.5 | 3 | Area 2 | UG/KG | 5.6 |
| B-401 | LL_B-401-6_100611 | 10/6/11 | 5.5 | 6 | Area 2 | UG/KG | <5.0 |
| B-401 | LL_B-401-9_100611 | 10/6/11 | 8.5 | 9 | Area 2 | UG/KG | <5.0 |
| B-402 | LL_B-402-1_100611 | 10/6/11 | 0.5 | 1 | Area 2 | UG/KG | <5.0 |
| B-402 | LL_B-402-3_100611 | 10/6/11 | 2.5 | 3 | Area 2 | UG/KG | <5.0 |
| B-402 | LL_B-402-6_100611 | 10/6/11 | 5.5 | 6 | Area 2 | UG/KG | <5.0 |
| B-402 | LL_B-402-9_100611 | 10/6/11 | 8.5 | 9 | Area 2 | UG/KG | <5.0 |
| B-403 | LL_B-403-1_100711 | 10/7/11 | 0.5 | 1 | Area 2 | UG/KG | 18 |
| B-403 | LL_B-403-3_100711 | 10/7/11 | 2.5 | 3 | Area 2 | UG/KG | 75 |
| B-403 | LL_B-403-6_100711 | 10/7/11 | 5.5 | 6 | Area 2 | UG/KG | <5.0 |
| B-403 | LL_B-403-9_100711 | 10/7/11 | 8.5 | 9 | Area 2 | UG/KG | <5.0 |
| B-404 | LL_B-404-1_100711 | 10/7/11 | 0.5 | 1 | Area 2 | UG/KG | 70 |
| B-404 | LL_B-404-3_100711 | 10/7/11 | 2.5 | 3 | Area 2 | UG/KG | 360 |
| B-404 | LL_B-404-6_100711 | 10/7/11 | 5.5 | 6 | Area 2 | UG/KG | 14 |
| B-404 | LL_B-404-9_100711 | 10/7/11 | 8.5 | 9 | Area 2 | UG/KG | 5.1 |
| B-405 | LL_B-405-1_100711 | 10/7/11 | 0.5 | 1 | Area 2 | UG/KG | 30 |
| B-405 | LL_B-405-3_100711 | 10/7/11 | 2.5 | 3 | Area 2 | UG/KG | 4400 |
| B-406 | LL_B-406-1_100711 | 10/7/11 | 0.5 | 1 | Area 2 | UG/KG | <5.0 |
| B-406 | LL_B-406-3_100711 | 10/7/11 | 2.5 | 3 | Area 2 | UG/KG | <5.0 |
| B-406 | LL_B-406-6_100711 | 10/7/11 | 5.5 | 6 | Area 2 | UG/KG | <5.0 |
| B-406 | LL_B-406-9_100711 | 10/7/11 | 8.5 | 9 | Area 2 | UG/KG | <5.0 |
| B-407 | LL_B-407-1_100711 | 10/7/11 | 0.5 | 1 | Area 2 | UG/KG | 50 |
| B-407 | LL_B-407-3_100711 | 10/7/11 | 2.5 | 3 | Area 2 | UG/KG | 170 |
| B-407 | LL_B-407-6_100711 | 10/7/11 | 5.5 | 6 | Area 2 | UG/KG | 38 |
| B-407 | LL_B-407-9_100711 | 10/7/11 | 8.5 | 9 | Area 2 | UG/KG | 130 |
| B-408 | LL_B-408-1_100711 | 10/7/11 | 0.5 | 1 | Area 2 | UG/KG | 43 |
| B-408 | LL_B-408-3_100711 | 10/7/11 | 2.5 | 3 | Area 2 | UG/KG | 7.7 |
| B-408 | LL_B-408-6_100711 | 10/7/11 | 5.5 | 6 | Area 2 | UG/KG | <5.0 |
| B-408 | LL_B-408-9_100711 | 10/7/11 | 8.5 | 9 | Area 2 | UG/KG | <5.0 |
| B-409 | LL_B-409-1_100711 | 10/7/11 | 0.5 | 1 | Area 2 | UG/KG | 190 |
| B-409 | LL_B-409-3_100711 | 10/7/11 | 2.5 | 3 | Area 2 | UG/KG | 140 |
| B-409 | LL_B-409-6_100711 | 10/7/11 | 5.5 | 6 | Area 2 | UG/KG | 17 |
| B-409 | LL_B-409-9_100711 | 10/7/11 | 8.5 | 9 | Area 2 | UG/KG | 86 |
| B-410 | LL_B-410-1_100711 | 10/7/11 | 0.5 | 1 | Area 2 | UG/KG | 64 |
| B-410 | LL_B-410-3_100711 | 10/7/11 | 2.5 | 3 | Area 2 | UG/KG | 70 |
| B-410 | LL_B-410-6_100711 | 10/7/11 | 5.5 | 6 | Area 2 | UG/KG | <5.0 |
| B-410 | LL_B-410-9_100711 | 10/7/11 | 8.5 | 9 | Area 2 | UG/KG | 99 |
| B-411 | LL_B-411-1_100611 | 10/6/11 | 0.5 | 1 | Area 1 | UG/KG | <5.0 |
| B-411 | LL_B-411-3_100611 | 10/6/11 | 2.5 | 3 | Area 1 | UG/KG | <5.0 |
| B-411 | LL_B-411-6_100611 | 10/6/11 | 5.5 | 6 | Area 1 | UG/KG | <5.0 |
| B-411 | LL_B-411-9_100611 | 10/6/11 | 8.5 | 9 | Area 1 | UG/KG | <5.0 |
| B-412 | LL_B-412-1_100611 | 10/6/11 | 0.5 | 1 | Area 1 | UG/KG | <5.0 |
| B-412 | LL_B-412-3_100611 | 10/6/11 | 2.5 | 3 | Area 1 | UG/KG | <5.0 |
| B-412 | LL_B-412-6_100611 | 10/6/11 | 5.5 | 6 | Area 1 | UG/KG | <5.0 |
| B-412 | LL_B-412-9_100611 | 10/6/11 | 8.5 | 9 | Area 1 | UG/KG | <5.0 |

**Table B3**
**Results of Benzene Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Benzene |
|---|---|---|---|---|---|---|---|
| B-413 | LL_B-413-1_100611 | 10/6/11 | 0.5 | 1 | Area 1 | UG/KG | 5.1 |
| B-413 | LL_B-413-3_100611 | 10/6/11 | 2.5 | 3 | Area 1 | UG/KG | 9.1 |
| B-413 | LL_B-413-6_100611 | 10/6/11 | 5.5 | 6 | Area 1 | UG/KG | 21 |
| B-413 | LL_B-413-9_100611 | 10/6/11 | 8.5 | 9 | Area 1 | UG/KG | 7.2 |
| B-414 | LL_B-414-1_100611 | 10/6/11 | 0.5 | 1 | Area 1 | UG/KG | 6.6 |
| B-414 | LL_B-414-3_100611 | 10/6/11 | 2.5 | 3 | Area 1 | UG/KG | <5.0 |
| B-414 | LL_B-414-6_100611 | 10/6/11 | 5.5 | 6 | Area 1 | UG/KG | <5.0 |
| B-414 | LL_B-414-9_100611 | 10/6/11 | 8.5 | 9 | Area 1 | UG/KG | <5.0 |
| B-415 | LL_B-415-1_100611 | 10/6/11 | 0.5 | 1 | Area 1 | UG/KG | 61 |
| B-415 | LL_B-415-3_100611 | 10/6/11 | 2.5 | 3 | Area 1 | UG/KG | 56 |
| B-415 | LL_B-415-6_100611 | 10/6/11 | 5.5 | 6 | Area 1 | UG/KG | 110 |
| B-415 | LL_B-415-9_100611 | 10/6/11 | 8.5 | 9 | Area 1 | UG/KG | 88 |
| B-416 | LL_B-416-1_100611 | 10/6/11 | 0.5 | 1 | Area 1 | UG/KG | <5.0 |
| B-416 | LL_B-416-3_100611 | 10/6/11 | 2.5 | 3 | Area 1 | UG/KG | <5.0 |
| B-416 | LL_B-416-6_100611 | 10/6/11 | 5.5 | 6 | Area 1 | UG/KG | 8.0 |
| B-416 | LL_B-416-9_100611 | 10/6/11 | 8.5 | 9 | Area 1 | UG/KG | 160 |
| B-417 | LL_B-417-1_100611 | 10/6/11 | 0.5 | 1 | Area 1 | UG/KG | <5.0 |
| B-417 | LL_B-417-3_100611 | 10/6/11 | 2.5 | 3 | Area 1 | UG/KG | 32 |
| B-417 | LL_B-417-6_100611 | 10/6/11 | 5.5 | 6 | Area 1 | UG/KG | <5.0 |
| B-417 | LL_B-417-9_100611 | 10/6/11 | 8.5 | 9 | Area 1 | UG/KG | 51 |
| B-418 | LL_B-418-1_100611 | 10/6/11 | 0.5 | 1 | Area 1 | UG/KG | 5.0 |
| B-418 | LL_B-418-3_100611 | 10/6/11 | 2.5 | 3 | Area 1 | UG/KG | <5.0 |
| B-418 | LL_B-418-6_100611 | 10/6/11 | 5.5 | 6 | Area 1 | UG/KG | <5.0 |
| B-418 | LL_B-418-9_100611 | 10/6/11 | 8.5 | 9 | Area 1 | UG/KG | <5.0 |
| B-419 | LL_B-419-1_100611 | 10/6/11 | 0.5 | 1 | Area 1 | UG/KG | <5.0 |
| B-419 | LL_B-419-3_100611 | 10/6/11 | 2.5 | 3 | Area 1 | UG/KG | <5.0 |
| B-419 | LL_B-419-6_100611 | 10/6/11 | 5.5 | 6 | Area 1 | UG/KG | <5.0 |
| B-419 | LL_B-419-9_100611 | 10/6/11 | 8.5 | 9 | Area 1 | UG/KG | <5.0 |
| B-420 | LL_B-420-1_100611 | 10/6/11 | 0.5 | 1 | Area 1 | UG/KG | <5.0 |
| B-420 | LL_B-420-3_100611 | 10/6/11 | 2.5 | 3 | Area 1 | UG/KG | <5.0 |
| B-420 | LL_B-420-6_100611 | 10/6/11 | 5.5 | 6 | Area 1 | UG/KG | <5.0 |
| B-420 | LL_B-420-9_100611 | 10/6/11 | 8.5 | 9 | Area 1 | UG/KG | <5.0 |
| B-421 | LL_B-421-1_100511 | 10/5/11 | 0.5 | 1 | Area 3 | UG/KG | <5.0 |
| B-421 | LL_B-421-3_100511 | 10/5/11 | 2.5 | 3 | Area 3 | UG/KG | <5.0 |
| B-421 | LL_B-421-6_100511 | 10/5/11 | 5.5 | 6 | Area 3 | UG/KG | <5.0 |
| B-421 | LL_B-421-9_100511 | 10/5/11 | 8.5 | 9 | Area 3 | UG/KG | <5.0 |
| B-422 | LL_B-422-1_100511 | 10/5/11 | 0.5 | 1 | Area 3 | UG/KG | <5.0 |
| B-422 | LL_B-422-3_100511 | 10/5/11 | 2.5 | 3 | Area 3 | UG/KG | 70 |
| B-422 | LL_B-422-6_100611 | 10/6/11 | 5.5 | 6 | Area 3 | UG/KG | 270 |
| B-422 | LL_B-422-9_100611 | 10/6/11 | 8.5 | 9 | Area 3 | UG/KG | 150 |
| B-423 | LL_B-423-1_100711 | 10/7/11 | 0.5 | 1 | Area 3 | UG/KG | 11 |
| B-423 | LL_B-423-3_100711 | 10/7/11 | 2.5 | 3 | Area 3 | UG/KG | 96 |
| B-423 | LL_B-423-6_100711 | 10/7/11 | 5.5 | 6 | Area 3 | UG/KG | 46 |
| B-423 | LL_B-423-9_100711 | 10/7/11 | 8.5 | 9 | Area 3 | UG/KG | 6.6 |
| B-424 | LL_B-424-1_100511 | 10/5/11 | 0.5 | 1 | Area 3 | UG/KG | <5.0 |
| B-424 | LL_B-424-3_100511 | 10/5/11 | 2.5 | 3 | Area 3 | UG/KG | <5.0 |
| B-424 | LL_B-424-6_100511 | 10/5/11 | 5.5 | 6 | Area 3 | UG/KG | <5.0 |
| B-424 | LL_B-424-9_100511 | 10/5/11 | 8.5 | 9 | Area 3 | UG/KG | <5.0 |
| B-425 | LL_B-425-1_100511 | 10/5/11 | 0.5 | 1 | Area 3 | UG/KG | 7.2 |
| B-425 | LL_B-425-3_100511 | 10/5/11 | 2.5 | 3 | Area 3 | UG/KG | 54 |
| B-425 | LL_B-425-6_100511 | 10/5/11 | 5.5 | 6 | Area 3 | UG/KG | <5.0 |
| B-425 | LL_B-425-9_100511 | 10/5/11 | 8.5 | 9 | Area 3 | UG/KG | <5.0 |
| B-426 | LL_B-426-1_100511 | 10/5/11 | 0.5 | 1 | Area 3 | UG/KG | <5.0 |

**Table B3**
**Results of Benzene Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Benzene |
|---|---|---|---|---|---|---|---|
| B-426 | LL_B-426-3_100511 | 10/5/11 | 2.5 | 3 | Area 3 | UG/KG | <5.0 |
| B-426 | LL_B-426-6_100511 | 10/5/11 | 5.5 | 6 | Area 3 | UG/KG | <5.0 |
| B-426 | LL_B-426-9_100511 | 10/5/11 | 8.5 | 9 | Area 3 | UG/KG | 27 |
| B-427 | LL_B-427-1_100511 | 10/5/11 | 0.5 | 1 | Area 3 | UG/KG | 380 |
| B-427 | LL_B-427-3_100511 | 10/5/11 | 2.5 | 3 | Area 3 | UG/KG | 130 |
| B-427 | LL_B-427-6_100511 | 10/5/11 | 5.5 | 6 | Area 3 | UG/KG | 31 |
| B-427 | LL_B-427-9_100511 | 10/5/11 | 8.5 | 9 | Area 3 | UG/KG | 120 |
| B-428 | LL_B-428-1_100511 | 10/5/11 | 0.5 | 1 | Area 3 | UG/KG | 88 |
| B-428 | LL_B-428-3_100511 | 10/5/11 | 2.5 | 3 | Area 3 | UG/KG | 460 |
| B-428 | LL_B-428-6_100511 | 10/5/11 | 5.5 | 6 | Area 3 | UG/KG | 370 |
| B-428 | LL_B-428-9_100511 | 10/5/11 | 8.5 | 9 | Area 3 | UG/KG | 80 |
| B-429 | LL_B-429-1_100511 | 10/5/11 | 0.5 | 1 | Area 3 | UG/KG | <5.0 |
| B-429 | LL_B-429-3_100511 | 10/5/11 | 2.5 | 3 | Area 3 | UG/KG | 41 |
| B-429 | LL_B-429-6_100511 | 10/5/11 | 5.5 | 6 | Area 3 | UG/KG | 8.4 |
| B-429 | LL_B-429-9_100511 | 10/5/11 | 8.5 | 9 | Area 3 | UG/KG | <5.0 |
| B-430 | LL_B-430-1_100511 | 10/5/11 | 0.5 | 1 | Area 3 | UG/KG | <5.0 |
| B-430 | LL_B-430-3_100511 | 10/5/11 | 2.5 | 3 | Area 3 | UG/KG | 5.4 |
| B-430 | LL_B-430-6_100511 | 10/5/11 | 5.5 | 6 | Area 3 | UG/KG | 12 |
| B-430 | LL_B-430-9_100511 | 10/5/11 | 8.5 | 9 | Area 3 | UG/KG | 7.7 |
| S001 | S001-0" | 12/4/07 | 0 | 0.5 | Area 4 | UG/KG | <0.51 |
| S002 | S002-0" | 12/4/07 | 0 | 0.5 | Area 4 | UG/KG | <0.49 |
| S003ALT | S003ALT-0" | 12/20/07 | 0 | 0.5 | Area 4 | UG/KG | <0.92 |
| S004 | S004-0" | 1/4/08 | 0 | 0.5 | Area 4 | UG/KG | 1 |
| S004 | S004-12" | 1/4/08 | 1 | 1.5 | Area 4 | UG/KG | 1.1 |
| S005 | S005-0" | 12/18/07 | 0 | 0.5 | Area 4 | UG/KG | <1.2 |
| S006 | S006-0" | 12/17/07 | 0 | 0.5 | Area 4 | UG/KG | <1.2 |
| S006 | S006-12" | 12/17/07 | 1 | 1.5 | Area 4 | UG/KG | <1 |
| S007 | S007-0" | 12/17/07 | 0 | 0.5 | Area 4 | UG/KG | <1.1 |
| S008 | S008-0" | 12/17/07 | 0 | 0.5 | Area 4 | UG/KG | <1.1 |
| S009 | S009-0" | 12/17/07 | 0 | 0.5 | Area 4 | UG/KG | <0.95 |
| S009 | S009-12" | 12/17/07 | 1 | 1.5 | Area 4 | UG/KG | 3.6 |
| S010 | S010-6'' | 1/19/09 | 0.5 | 1 | Area 4 | UG/KG | <1.6 |
| S011 | S011-0" | 12/17/07 | 0 | 0.5 | Area 4 | UG/KG | 810 |
| S011 | S011-12" | 12/17/07 | 1 | 1.5 | Area 4 | UG/KG | 1900 |
| S012 | S012B-0" | 12/18/07 | 0 | 0.5 | Area 4 | UG/KG | <1.1 |
| S013 | S013-0" | 1/4/08 | 0 | 0.5 | Area 4 | UG/KG | <0.92 |
| S014 | S014-0" | 12/4/07 | 0 | 0.5 | Area 4 | UG/KG | <1.1 |
| S015 | S015-0" | 12/4/07 | 0 | 0.5 | Area 4 | UG/KG | <0.73 |
| S016 | S016B-0" | 1/2/08 | 0 | 0.5 | Area 4 | UG/KG | 4.1 |
| S016 | S016B-12" | 1/2/08 | 1 | 1.5 | Area 4 | UG/KG | <0.81 |
| S017 | S017-0" | 12/4/07 | 0 | 0.5 | Area 4 | UG/KG | <1.3 |
| S018 | S018-0" | 12/20/07 | 0 | 0.5 | Area 4 | UG/KG | 21 |
| S019 | S019-0" | 12/18/07 | 0 | 0.5 | Area 4 | UG/KG | <1 |
| S020 | S020-0" | 12/18/07 | 0 | 0.5 | Area 4 | UG/KG | 3500 |
| S020 | S020-12" | 12/18/07 | 1 | 1.5 | Area 4 | UG/KG | 4700 |
| S021 | S021-6'' | 1/19/09 | 0.5 | 1 | Area 4 | UG/KG | <1.3 |
| S022 | S022-0" | 12/17/07 | 0 | 0.5 | Area 4 | UG/KG | <0.85 |
| S023 | S023-0" | 12/17/07 | 0 | 0.5 | Area 3 | UG/KG | <1 |
| S024 | S024-0" | 12/17/07 | 0 | 0.5 | Area 3 | UG/KG | <1.2 |
| S025 | S025-0" | 12/18/07 | 0 | 0.5 | Area 3 | UG/KG | 190 |
| S025 | S025-12" | 12/18/07 | 1 | 1.5 | Area 3 | UG/KG | 72 |
| S026 | S026-0" | 12/18/07 | 0 | 0.5 | Area 3 | UG/KG | <250 |
| S026 | S026-12" | 12/18/07 | 1 | 1.5 | Area 3 | UG/KG | <170 |

**Table B3**
**Results of Benzene Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Benzene |
|---|---|---|---|---|---|---|---|
| S027 | S027-0" | 12/20/07 | 0 | 0.5 | Area 3 | UG/KG | 740 |
| S028 | S028-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | <1.1 |
| S029 | S029-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | <56 |
| S029 | S029-18" | 12/4/07 | 1.5 | 2 | Area 3 | UG/KG | <46 |
| S030 | S030-12" | 12/4/07 | 1 | 1.5 | Area 3 | UG/KG | 230 |
| S031 | S031-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | <1.2 |
| S032 | S032-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | <0.51 |
| S033 | S033-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | <0.63 |
| S034 | S034-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | <1 |
| S035 | S035-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | <51 |
| S036 | S036-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | <1.1 |
| S037 | S037-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | 700 |
| S037 | S037-20" | 12/4/07 | 1.67 | 2.167 | Area 3 | UG/KG | 2600 |
| S038 | S038-0" | 12/20/07 | 0 | 0.5 | Area 3 | UG/KG | <0.83 |
| S039 | S039-0" | 1/2/08 | 0 | 0.5 | Area 3 | UG/KG | 22 |
| S039 | S039-12" | 1/2/08 | 1 | 1.5 | Area 3 | UG/KG | 420 |
| S040 | S040-0" | 12/20/07 | 0 | 0.5 | Area 3 | UG/KG | 19 |
| S040 | S040-12" | 12/20/07 | 1 | 1.5 | Area 3 | UG/KG | 35 |
| S041 | S041-0" | 1/30/08 | 0 | 0.5 | Area 3 | UG/KG | <56 |
| S042 | S042-0" | 1/30/08 | 0 | 0.5 | Area 3 | UG/KG | 140 |
| S042 | S042-12" | 1/30/08 | 1 | 1.5 | Area 3 | UG/KG | 320 |
| S043 | S043-0" | 1/30/08 | 0 | 0.5 | Area 3 | UG/KG | <48 |
| S044 | S044-0" | 12/20/07 | 0 | 0.5 | Area 3 | UG/KG | <100 |
| S045 | S045-0" | 12/20/07 | 0 | 0.5 | Area 3 | UG/KG | 50 |
| S046 | S046-0" | 12/20/07 | 0 | 0.5 | Area 3 | UG/KG | 28 |
| S047 | S047-6" | 1/20/09 | 0.5 | 1 | Area 3 | UG/KG | 81 |
| S048 | S048-0" | 1/7/08 | 0 | 0.5 | Area 3 | UG/KG | 570 |
| S049 | S049-6" | 1/20/09 | 0.5 | 1 | Area 3 | UG/KG | <1.1 |
| S050 | S050-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | <24 |
| S051 | S051-0" | 12/20/07 | 0 | 0.5 | Area 3 | UG/KG | 28 |
| S052 | S052-0" | 12/20/07 | 0 | 0.5 | Area 3 | UG/KG | 280 |
| S052 | S052-12" | 12/20/07 | 1 | 1.5 | Area 3 | UG/KG | 1000 |
| S053 | S053-0" | 12/20/07 | 0 | 0.5 | Area 3 | UG/KG | 750 |
| S053 | S053-12" | 12/20/07 | 1 | 1.5 | Area 3 | UG/KG | 140 |
| S054 | S054-0" | 1/30/08 | 0 | 0.5 | Area 3 | UG/KG | 200 |
| S055 | S055-0" | 1/30/08 | 0 | 0.5 | Area 3 | UG/KG | <55 |
| S055 | S055-12" | 1/30/08 | 1 | 1.5 | Area 3 | UG/KG | 1.5 |
| S056 | S056-0" | 1/30/08 | 0 | 0.5 | Area 3 | UG/KG | <5.6 |
| S056 | S056-12" | 1/30/08 | 1 | 1.5 | Area 3 | UG/KG | <66 |
| S057 | S057-0" | 1/30/08 | 0 | 0.5 | Area 3 | UG/KG | 3.1 |
| S058 | S058-0" | 2/1/08 | 0 | 0.5 | Area 3 | UG/KG | <0.94 |
| S059 | S059-0" | 2/1/08 | 0 | 0.5 | Area 3 | UG/KG | 1.3 |
| S059 | S059-12" | 2/1/08 | 1 | 1.5 | Area 3 | UG/KG | 1.6 |
| S060 | S060-0" | 12/13/07 | 0 | 0.5 | Area 3 | UG/KG | <0.81 |
| S060 | S060-18" | 12/13/07 | 1.5 | 2 | Area 3 | UG/KG | 5.8 |
| S061 | S061-0" | 12/13/07 | 0 | 0.5 | Area 3 | UG/KG | <1.1 |
| S063 | S063-0" | 12/14/07 | 0 | 0.5 | Area 3 | UG/KG | 3.1 |
| S064 | S064-0" | 12/14/07 | 0 | 0.5 | Area 3 | UG/KG | <1.1 |
| S064 | S064-18" | 12/14/07 | 1.5 | 2 | Area 3 | UG/KG | 8.6 |
| S065 | S065-0" | 2/1/08 | 0 | 0.5 | Area 3 | UG/KG | <1.2 |
| S065 | S065-12" | 2/1/08 | 1 | 1.5 | Area 3 | UG/KG | <1 |
| S066 | S066-0" | 12/14/07 | 0 | 0.5 | Area 3 | UG/KG | 0.96 |
| S067 | S067-0" | 12/14/07 | 0 | 0.5 | Area 3 | UG/KG | <1.1 |

**Table B3**
**Results of Benzene Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Benzene |
|---|---|---|---|---|---|---|---|
| S068 | S068-0" | 12/13/07 | 0 | 0.5 | Area 3 | UG/KG | <1.2 |
| S069 | S069-0" | 12/13/07 | 0 | 0.5 | Area 3 | UG/KG | <0.92 |
| S070 | S070-0" | 12/13/07 | 0 | 0.5 | Area 3 | UG/KG | <1.2 |
| S071B | S071B-12" | 12/21/07 | 1 | 1.5 | Area 3 | UG/KG | <0.97 |
| S072 | S072-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | <0.72 |
| S073 | S073-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | <0.59 |
| S074 | S074-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | <25 |
| S075 | S075-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | <0.53 |
| S076 | S076-6'' | 1/22/09 | 0.5 | 1 | Area 3 | UG/KG | 3.7 |
| S078 | S078-0" | 2/1/08 | 0 | 0.5 | Area 3 | UG/KG | <45 |
| S078 | S078-12" | 2/1/08 | 1 | 1.5 | Area 3 | UG/KG | <35 |
| S079 | S079-0" | 2/1/08 | 0 | 0.5 | Area 3 | UG/KG | <77 |
| S080 | S080-0" | 2/1/08 | 0 | 0.5 | Area 3 | UG/KG | 19 |
| S081 | S081-0" | 2/1/08 | 0 | 0.5 | Area 3 | UG/KG | 1.2 |
| S082 | S082-0" | 12/13/07 | 0 | 0.5 | Area 3 | UG/KG | <1.1 |
| S083 | S083-0" | 12/13/07 | 0 | 0.5 | Area 3 | UG/KG | <44 |
| S083 | S083-15" | 12/13/07 | 1.25 | 1.75 | Area 3 | UG/KG | 2.1 |
| S084 | S084-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | <1.1 |
| S085 | S085-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | <1.2 |
| S086 | S086-6" | 1/20/09 | 0.5 | 1 | Area 3 | UG/KG | 17 |
| S087 | S087-0" | 12/13/07 | 0 | 0.5 | Area 3 | UG/KG | <1.4 |
| S088 | S088-0" | 1/2/08 | 0 | 0.5 | Area 3 | UG/KG | 1.8 |
| S089 | S089-0" | 1/2/08 | 0 | 0.5 | Area 3 | UG/KG | <1 |
| S090 | S090-0" | 12/13/07 | 0 | 0.5 | Area 3 | UG/KG | <52 |
| S090 | S090-18" | 12/13/07 | 1.5 | 2 | Area 3 | UG/KG | <44 |
| S091 | S091-0" | 2/1/08 | 0 | 0.5 | Area 3 | UG/KG | <53 |
| S092 | S092-0" | 12/13/07 | 0 | 0.5 | Area 3 | UG/KG | <1.3 |
| S093 | S093-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | <0.81 |
| S094 | S094-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | <0.6 |
| S095 | S095-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | <1.1 |
| S096 | S096-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | <0.9 |
| S097 | S097-6" | 1/20/09 | 0.5 | 1 | Area 3 | UG/KG | <1.1 |
| S098 | S098-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | <1.7 |
| S099 | S099-0" | 12/13/07 | 0 | 0.5 | Area 3 | UG/KG | <0.89 |
| S100 | S100-0" | 12/13/07 | 0 | 0.5 | Area 3 | UG/KG | <1.1 |
| S101 | S101-0" | 12/13/07 | 0 | 0.5 | Area 3 | UG/KG | <1 |
| S102 | S102-0" | 12/13/07 | 0 | 0.5 | Area 3 | UG/KG | <1 |
| S102 | S102-15" | 12/13/07 | 1.25 | 1.75 | Area 3 | UG/KG | <1 |
| S103 | S103-0" | 1/3/08 | 0 | 0.5 | Area 2 | UG/KG | <0.87 |
| S103 | S103-12" | 1/3/08 | 1 | 1.5 | Area 2 | UG/KG | <1.1 |
| S104 | S104-0" | 1/29/08 | 0 | 0.5 | Area 2 | UG/KG | <0.99 |
| S105 | S105-0" | 1/31/08 | 0 | 0.5 | Area 2 | UG/KG | 4.7 |
| S106 | S106-6'' | 1/22/09 | 0.5 | 1 | Area 2 | UG/KG | <1.2 |
| S106 | S106-12'' | 1/22/09 | 1 | 1.5 | Area 2 | UG/KG | <1.2 |
| S107 | S107-0" | 12/20/07 | 0 | 0.5 | Area 2 | UG/KG | <0.95 |
| S108 | S108-0" | 12/20/07 | 0 | 0.5 | Area 2 | UG/KG | 6.7 |
| S109 | S109-0" | 1/31/08 | 0 | 0.5 | Area 2 | UG/KG | 980 |
| S109 | S109-12" | 1/31/08 | 1 | 1.5 | Area 2 | UG/KG | 1200 |
| S110 | S110-6'' | 1/22/09 | 0.5 | 1 | Area 2 | UG/KG | <1.8 |
| S111 | S111-0" | 12/21/07 | 0 | 0.5 | Area 2 | UG/KG | <2400 |
| S111 | S111-12" | 12/21/07 | 1 | 1.5 | Area 2 | UG/KG | <940 |
| S112 | S112-6'' | 1/22/09 | 0.5 | 1 | Area 2 | UG/KG | 73 |
| S113 | S113-0" | 1/31/08 | 0 | 0.5 | Area 2 | UG/KG | 12000 |

**Table B3**
**Results of Benzene Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Benzene |
|---|---|---|---|---|---|---|---|
| S113 | S113-12" | 1/31/08 | 1 | 1.5 | Area 2 | UG/KG | 100000 |
| S114 | S114-0" | 1/29/08 | 0 | 0.5 | Area 2 | UG/KG | <0.86 |
| S115 | S115-0" | 1/29/08 | 0 | 0.5 | Area 2 | UG/KG | <51 |
| S116 | S116-0" | 1/29/08 | 0 | 0.5 | Area 2 | UG/KG | <1 |
| S117 | S117-0" | 1/31/08 | 0 | 0.5 | Area 2 | UG/KG | <1 |
| S117 | S117-12" | 2/1/08 | 1 | 1.5 | Area 2 | UG/KG | <1.1 |
| S118 | S118-6'' | 1/22/09 | 0.5 | 1 | Area 2 | UG/KG | <1.3 |
| S119 | S119-0" | 1/4/08 | 0 | 0.5 | Area 2 | UG/KG | 300 |
| S119 | S119-12" | 1/4/08 | 1 | 1.5 | Area 2 | UG/KG | 960 |
| S120 | S120-0" | 1/4/08 | 0 | 0.5 | Area 2 | UG/KG | 160 |
| S121 | S121-0" | 1/4/08 | 0 | 0.5 | Area 2 | UG/KG | <44 |
| S121 | S121-12" | 1/4/08 | 1 | 1.5 | Area 2 | UG/KG | <610 |
| S122 | S122-0" | 1/29/08 | 0 | 0.5 | Area 1 | UG/KG | <1.1 |
| S123 | S123-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | <0.88 |
| S124 | S124-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | <0.56 |
| S125 | S125-0" | 1/29/08 | 0 | 0.5 | Area 1 | UG/KG | <1.1 |
| S126 | S126-0" | 1/7/08 | 0 | 0.5 | Area 1 | UG/KG | <0.8 |
| S126 | S126-12" | 1/7/08 | 1 | 1.5 | Area 1 | UG/KG | <0.94 |
| S127 | S127-0" | 2/1/08 | 0 | 0.5 | Area 3 | UG/KG | <1.1 |
| S130 | S130-0" | 1/7/08 | 0 | 0.5 | Area 3 | UG/KG | 100 |
| S130 | S130-12" | 1/7/08 | 1 | 1.5 | Area 3 | UG/KG | <54 |
| S131 | S131-0" | 1/7/08 | 0 | 0.5 | Area 1 | UG/KG | <46 |
| S132 | S132-0" | 1/3/08 | 0 | 0.5 | Area 1 | UG/KG | 1.3 |
| S133 | S133B-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | <0.65 |
| S133 | S133B-12" | 11/29/07 | 1 | 1.5 | Area 1 | UG/KG | <0.74 |
| S134 | S134-0" | 1/7/08 | 0 | 0.5 | Area 1 | UG/KG | 1.1 |
| S135 | S135-6'' | 1/19/09 | 0.5 | 1 | Area 1 | UG/KG | <1.2 |
| S136 | S136-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | 64 |
| S136 | S136-24" | 11/29/07 | 2 | 2.5 | Area 1 | UG/KG | 14 |
| S137 | S137-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | <0.54 |
| S138 | S138-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | <34 |
| S138 | S138-18" | 11/29/07 | 1.5 | 2 | Area 1 | UG/KG | 140 |
| S139 | S139-12" | 11/29/07 | 1 | 1.5 | Area 1 | UG/KG | 18 |
| S139 | S139-24" | 11/29/07 | 2 | 2.5 | Area 1 | UG/KG | 61 |
| S140 | S140-12" | 11/29/07 | 1 | 1.5 | Area 1 | UG/KG | 0.61 |
| S141 | S141-0" | 1/7/08 | 0 | 0.5 | Area 3 | UG/KG | <34 |
| S141 | S141-12" | 1/7/08 | 1 | 1.5 | Area 3 | UG/KG | 0.71 |
| S142 | S142-0" | 1/7/08 | 0 | 0.5 | Area 3 | UG/KG | 1.1 |
| S143 | S143-0" | 1/7/08 | 0 | 0.5 | Area 3 | UG/KG | 1.1 |
| S144B | S144B-0" | 1/31/08 | 0 | 0.5 | Area 3 | UG/KG | <1.3 |
| S144B | S144B-12" | 1/31/08 | 1 | 1.5 | Area 3 | UG/KG | <0.9 |
| S145 | S145-0" | 1/7/08 | 0 | 0.5 | Area 3 | UG/KG | 1.7 |
| S145 | S145-12" | 1/7/08 | 1 | 1.5 | Area 3 | UG/KG | 2.4 |
| S146 | S146-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | <0.76 |
| S147 | S147-12" | 11/29/07 | 1 | 1.5 | Area 1 | UG/KG | <0.93 |
| S148 | S148-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | 3.9 |
| S149 | S149-12" | 11/29/07 | 1 | 1.5 | Area 1 | UG/KG | <0.62 |
| S150 | S150-12" | 11/29/07 | 1 | 1.5 | Area 1 | UG/KG | 280 |
| S151 | S151-12" | 11/29/07 | 1 | 1.5 | Area 1 | UG/KG | <0.56 |
| S152 | S152-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | <0.81 |
| S153 | S153-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | 0.92 |
| S154 | S154-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | 2.6 |
| S155 | S155B-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | <0.65 |

**Table B3**
**Results of Benzene Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Benzene |
|---|---|---|---|---|---|---|---|
| S156 | S156-0" | 1/7/08 | 0 | 0.5 | Area 3 | UG/KG | 2.9 |
| S157 | S157-0" | 1/2/08 | 0 | 0.5 | Area 3 | UG/KG | <0.76 |
| S158 | S158-0" | 12/17/07 | 0 | 0.5 | Area 3 | UG/KG | <0.98 |
| S158 | S158-12" | 12/17/07 | 1 | 1.5 | Area 3 | UG/KG | <61 |
| S159 | S159-0" | 12/17/07 | 0 | 0.5 | Area 3 | UG/KG | <1 |
| S160 | S160-0" | 1/7/08 | 0 | 0.5 | Area 3 | UG/KG | <0.92 |
| S161 | S161B-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | <0.77 |
| S162 | S162-12" | 11/29/07 | 1 | 1.5 | Area 1 | UG/KG | 2 |
| S162 | S162-24" | 11/29/07 | 2 | 2.5 | Area 1 | UG/KG | 1.1 |
| S163 | S163-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | <0.83 |
| S164 | S164-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | 1.5 |
| S165 | S165-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | <0.56 |
| S166 | S166-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | 6.9 |
| S167 | S167-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | 7 |
| S168 | S168-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | 2.6 |
| S169 | S169-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | <0.83 |
| S170 | S170-0" | 1/7/08 | 0 | 0.5 | Area 3 | UG/KG | 0.73 |
| S171 | S171-0" | 12/17/07 | 0 | 0.5 | Area 3 | UG/KG | <1.3 |
| S171 | S171-12" | 12/17/07 | 1 | 1.5 | Area 3 | UG/KG | <4.5 |
| S172 | S172-0" | 12/17/07 | 0 | 0.5 | Area 3 | UG/KG | 8 |
| S173 | S173-0" | 12/17/07 | 0 | 0.5 | Area 3 | UG/KG | <0.83 |
| S174 | S174-0" | 12/14/07 | 0 | 0.5 | Area 3 | UG/KG | <5.7 |
| S175 | S175-0" | 1/31/08 | 0 | 0.5 | Area 3 | UG/KG | 4.4 |
| S175 | S175-0" | 1/7/08 | 0 | 0.5 | Area 3 | UG/KG | 4300 |
| S176 | S176-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | <0.79 |
| S177 | S177-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | <0.9 |
| S178 | S178-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | <0.53 |
| S179 | S179-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | <0.98 |
| S180 | S180-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | <0.99 |
| S181 | S181-0" | 1/31/08 | 0 | 0.5 | Area 3 | UG/KG | <1 |
| S182 | S182-0" | 12/14/07 | 0 | 0.5 | Area 3 | UG/KG | <1.1 |
| S183 | S183-0" | 12/17/07 | 0 | 0.5 | Area 3 | UG/KG | <1.2 |
| S184 | S184-0" | 12/14/07 | 0 | 0.5 | Area 3 | UG/KG | 38 |
| S185 | S185-6'' | 1/19/09 | 0.5 | 1 | Area 3 | UG/KG | <1.1 |
| S186 | S186-0" | 1/31/08 | 0 | 0.5 | Area 3 | UG/KG | <1 |
| S187 | S187-0" | 1/4/08 | 0 | 0.5 | Area 1 | UG/KG | <0.71 |
| S188 | S188-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | <0.44 |
| S189 | S189-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | <0.92 |
| S190 | S190-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | <0.91 |
| S191 | S191-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | 0.64 |
| S192 | S192-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | <0.94 |
| S193 | S193-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | <0.89 |
| S194 | S194-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | <0.98 |
| S195 | S195-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | <1.2 |
| S196 | S196-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | 4.4 |
| S196 | S196-18" | 11/26/07 | 1.5 | 2 | Area 1 | UG/KG | <560 |
| S197 | S197-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | <1 |
| S198 | S198-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | <0.63 |
| S199 | S199-12" | 11/26/07 | 1 | 1.5 | Area 1 | UG/KG | <28 |
| S199 | S199-24" | 11/26/07 | 2 | 2.5 | Area 1 | UG/KG | <0.6 |
| S200 | S200-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | <0.54 |
| S201 | S201-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | 2.5 |
| S201 | S201-18" | 11/26/07 | 1.5 | 2 | Area 1 | UG/KG | <1.3 |

**Table B3**
**Results of Benzene Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Benzene |
|---|---|---|---|---|---|---|---|
| S202 | S202-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | <0.69 |
| S203 | S203-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | <0.81 |
| S204 | S204-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | <0.59 |
| S205 | S205-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | <0.9 |
| S206 | S206-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | <0.95 |
| S207 | S207-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | <0.45 |
| S208 | S208-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | <0.72 |
| S209 | S209-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | <0.46 |
| S210 | S210-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | <0.48 |
| S211 | S211-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | <0.44 |
| S212 | S212-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | <0.93 |
| S213 | S213-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | <0.91 |
| S214 | S214-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | 0.7 |
| S215 | S215-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | <170 |
| S216 | S216-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | <0.75 |
| S217 | S217-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | <0.68 |
| S218 | S218-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | <0.74 |
| S219 | S219-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | <0.46 |
| S220 | S220-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | <0.86 |
| S221 | S221-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | <0.75 |
| S222 | S222-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | <0.94 |
| S223 | S223-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | <0.59 |
| S224 | S224-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | <74 |
| S225 | S225-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | <0.47 |
| S226 | S226-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | <0.49 |
| S227 | S227-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | <0.62 |
| S228 | S228-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | <0.74 |
| S229 | S229-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | 1.6 |
| S230 | S230-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | <1.1 |
| S230 | S230-12" | 11/28/07 | 1 | 1.5 | Area 1 | UG/KG | <0.95 |
| S231 | S231-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | <0.67 |
| S232 | S232-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | <0.64 |
| S233 | S233-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | <0.98 |
| S234 | S234-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | <0.68 |
| S235 | S235-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | <1.1 |
| S236 | S236-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | 1.3 |
| S237 | S237-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | <1 |
| S238 | S238-0" | 1/28/08 | 0 | 0.5 | Area 2 | UG/KG | <0.9 |
| S239 | S239-0" | 1/28/08 | 0 | 0.5 | Area 2 | UG/KG | <1.7 |
| S239 | S239-12" | 1/30/08 | 1 | 1.5 | Area 2 | UG/KG | <1 |
| S240 | S240-6" | 1/20/09 | 0.5 | 1 | Area 2 | UG/KG | <1.5 |
| S241 | S241-6" | 1/20/09 | 0.5 | 1 | Area 2 | UG/KG | <1.3 |
| S242 | S242-0" | 1/29/08 | 0 | 0.5 | Area 2 | UG/KG | <1.2 |
| S243 | S243-0" | 1/29/08 | 0 | 0.5 | Area 2 | UG/KG | <1 |
| S244 | S244-0" | 1/28/08 | 0 | 0.5 | Area 2 | UG/KG | <0.96 |
| S245 | S245-0" | 1/28/08 | 0 | 0.5 | Area 2 | UG/KG | <1.1 |
| S246 | S246-0" | 1/29/08 | 0 | 0.5 | Area 2 | UG/KG | 2.2 |
| S247 | S247-0" | 1/29/08 | 0 | 0.5 | Area 2 | UG/KG | <1.2 |
| S248 | S248-0" | 1/28/08 | 0 | 0.5 | Area 2 | UG/KG | <0.96 |
| S249 | S249-0" | 1/28/08 | 0 | 0.5 | Area 2 | UG/KG | <0.88 |
| S250 | S250-0" | 1/28/08 | 0 | 0.5 | Area 2 | UG/KG | <1.1 |
| S250 | S250-12" | 1/30/08 | 1 | 1.5 | Area 2 | UG/KG | <0.97 |
| S251 | S251-0" | 1/28/08 | 0 | 0.5 | Area 2 | UG/KG | <1.4 |

**Table B3**
**Results of Benzene Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Benzene |
|---|---|---|---|---|---|---|---|
| S251 | S251-6" | 1/20/09 | 0.5 | 1 | Area 2 | UG/KG | 0.96 |
| S252 | S252-0" | 1/29/08 | 0 | 0.5 | Area 2 | UG/KG | <1.4 |
| S253 | S253-0" | 1/29/08 | 0 | 0.5 | Area 2 | UG/KG | <82 |
| S254 | S254-0" | 1/29/08 | 0 | 0.5 | Area 2 | UG/KG | <1 |
| S254 | S254-12" | 1/30/08 | 1 | 1.5 | Area 2 | UG/KG | <0.84 |
| S255 | S255-0" | 1/29/08 | 0 | 0.5 | Area 2 | UG/KG | <1.3 |
| S256 | S256-0" | 1/31/08 | 0 | 0.5 | Area 2 | UG/KG | 2.2 |
| S257 | S257-0" | 1/3/08 | 0 | 0.5 | Area 2 | UG/KG | <0.94 |
| S258 | S258-0" | 1/3/08 | 0 | 0.5 | Area 2 | UG/KG | <0.86 |
| S259 | S259-0" | 1/31/08 | 0 | 0.5 | Area 2 | UG/KG | <1.1 |
| S260 | S260-0" | 1/3/08 | 0 | 0.5 | Area 2 | UG/KG | <0.88 |
| S261 | S261-0" | 12/21/07 | 0 | 0.5 | Area 3 | UG/KG | <1.1 |
| S262 | S262-0" | 12/13/07 | 0 | 0.5 | Area 3 | UG/KG | <1.1 |
| S263 | S263-0" | 2/1/08 | 0 | 0.5 | Area 3 | UG/KG | <0.58 |
| S264 | S264-0" | 1/3/08 | 0 | 0.5 | Area 3 | UG/KG | <0.9 |
| S264 | S264-12" | 1/3/08 | 1 | 1.5 | Area 3 | UG/KG | <1 |
| S265 | S265-6" | 1/20/09 | 0.5 | 1 | Area 3 | UG/KG | <1.3 |
| S266 | S266-0" | 12/14/07 | 0 | 0.5 | Area 3 | UG/KG | <0.97 |
| S267 | S267-0" | 1/4/08 | 0 | 0.5 | Area 3 | UG/KG | 320 |
| S268 | S268-0" | 1/2/08 | 0 | 0.5 | Area 3 | UG/KG | 43 |
| S268 | S268-12" | 1/2/08 | 1 | 1.5 | Area 3 | UG/KG | 360 |
| S269 | S269-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | 0.77 |
| S270 | S270-0" | 12/17/07 | 0 | 0.5 | Area 4 | UG/KG | <1 |
| S271 | S271-0" | 1/4/08 | 0 | 0.5 | Area 1 | UG/KG | <0.87 |
| S272 | S272-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | <0.45 |
| S273 | S273-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | 5.8 |
| S274 | S274-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | 1.2 |
| S274 | S274-12" | 11/29/07 | 1 | 1.5 | Area 1 | UG/KG | <0.96 |
| S275 | S275-0" | 11/29/07 | 0 | 0.5 | Area 3 | UG/KG | 1.6 |
| S275 | S275-12" | 11/29/07 | 1 | 1.5 | Area 3 | UG/KG | <27 |
| S276 | S276-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | <0.62 |
| S277 | S277-0" | 1/31/08 | 0 | 0.5 | Area 2 | UG/KG | <1.2 |
| S278 | S278-0" | 1/31/08 | 0 | 0.5 | Area 2 | UG/KG | 6.3 |
| S279 | S279-0" | 12/20/07 | 0 | 0.5 | Area 2 | UG/KG | <1.1 |
| S279 | S279-12" | 12/20/07 | 1 | 1.5 | Area 2 | UG/KG | <0.85 |
| S280 | S280-0" | 1/3/08 | 0 | 0.5 | Area 2 | UG/KG | <0.84 |
| S281 | S281-0" | 2/1/08 | 0 | 0.5 | Area 2 | UG/KG | 1.2 |
| S282 | S282-6" | 1/20/09 | 0.5 | 1 | Area 2 | UG/KG | <1.2 |
| S282 | S282-12" | 1/20/09 | 1 | 1.5 | Area 2 | UG/KG | <1.5 |
| S283 | S283-0" | 1/29/08 | 0 | 0.5 | Area 2 | UG/KG | <0.94 |
| S284 | S284-0" | 1/29/08 | 0 | 0.5 | Area 2 | UG/KG | <0.94 |
| S284 | S284-12" | 1/30/08 | 1 | 1.5 | Area 2 | UG/KG | <0.57 |
| S285 | S285-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | <0.99 |
| S286 | S286-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | <1 |
| S287 | S287-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | <1 |
| S287 | S287-12" | 11/26/07 | 1 | 1.5 | Area 1 | UG/KG | <1.1 |
| S288 | S288-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | 2 |
| S289 | S289-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | <0.42 |
| S290 | S290-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | <0.46 |
| S291 | S291-0" | 1/7/08 | 0 | 0.5 | Area 4 | UG/KG | <1.1 |
| S292 | S292-6" | 1/19/09 | 0.5 | 1 | Area 1 | UG/KG | <120 |
| S293 | S293-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | <27 |
| S293 | S293-24" | 11/26/07 | 2 | 2.5 | Area 1 | UG/KG | <0.48 |

**Table B3**
**Results of Benzene Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Benzene |
|---|---|---|---|---|---|---|---|
| S294 | S294-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | <0.61 |
| S295 | S295-6" | 11/26/07 | 0.5 | 1 | Area 1 | UG/KG | 1.2 |
| S296 | S296-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | <0.45 |
| S296 | S296-18" | 11/28/07 | 1.5 | 2 | Area 1 | UG/KG | <0.66 |
| S297 | S297-6" | 1/20/09 | 0.5 | 1 | Area 3 | UG/KG | <1.2 |
| S297 | S297-12" | 1/20/09 | 1 | 1.5 | Area 3 | UG/KG | <1.4 |
| S298 | S298-0 | 12/4/07 | 0 | 0.5 | Area 4 | UG/KG | <27 |
| VE1 | LL_VE1_10_052611_01 | 5/26/11 | 9.5 | 10 | Area 3 | UG/KG | <5.0 |

Notes
UG/KG micrograms per kilogram

**Table B4**
**Results of Dibenzo(a,h)anthracene Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Dibenzo(a,h)anthracene |
|---|---|---|---|---|---|---|---|
| B001 | B001-2 | 12/5/05 | 2 | 3 | Area 1 | UG/KG | <12.5 |
| B001 | B001-5 | 12/5/05 | 5 | 6 | Area 1 | UG/KG | <12.5 |
| B001 | B001-10 | 12/5/05 | 10 | 11 | Area 1 | UG/KG | <12.5 |
| B002 | B002-2 | 12/5/05 | 2 | 3 | Area 1 | UG/KG | <12.5 |
| B002 | B002-5 | 12/5/05 | 5 | 6 | Area 1 | UG/KG | <12.5 |
| B002 | B002-10 | 12/5/05 | 10 | 11 | Area 1 | UG/KG | <12.5 |
| B003 | B003-2 | 12/7/05 | 2 | 3 | Area 1 | UG/KG | <12.5 |
| B003 | B003-5 | 12/7/05 | 5 | 6 | Area 1 | UG/KG | <12.5 |
| B004 | B004-2 | 12/8/05 | 2 | 3 | Area 1 | UG/KG | <12.5 |
| B004 | B004-5 | 12/8/05 | 5 | 6 | Area 1 | UG/KG | <12.5 |
| B004 | B004-10 | 12/8/05 | 10 | 11 | Area 1 | UG/KG | <12.5 |
| B005 | B005-2 | 12/8/05 | 2 | 3 | Area 1 | UG/KG | <12.5 |
| B005 | B005-5 | 12/8/05 | 5 | 6 | Area 1 | UG/KG | <12.5 |
| B005 | B005-10 | 12/8/05 | 10 | 11 | Area 1 | UG/KG | <12.5 |
| B006 | B006-2 | 12/12/05 | 2 | 3 | Area 1 | UG/KG | <12.5 |
| B006 | B006-5 | 12/12/05 | 5 | 6 | Area 1 | UG/KG | <12.5 |
| B006 | B006-10 | 12/12/05 | 10 | 11 | Area 1 | UG/KG | <12.5 |
| B007 | B007-2 | 12/12/05 | 2 | 3 | Area 1 | UG/KG | <12.5 |
| B007 | B007-5 | 12/12/05 | 5 | 6 | Area 1 | UG/KG | <12.5 |
| B007 | B007-10 | 12/12/05 | 10 | 11 | Area 1 | UG/KG | <12.5 |
| B008 | B008-2 | 12/8/05 | 2 | 3 | Area 1 | UG/KG | <12.5 |
| B008 | B008-5 | 12/8/05 | 5 | 6 | Area 1 | UG/KG | <12.5 |
| B008 | B008-10 | 12/8/05 | 10 | 11 | Area 1 | UG/KG | <12.5 |
| B009 | B009-2 | 12/9/05 | 2 | 3 | Area 1 | UG/KG | <12.5 |
| B009 | B009-5 | 12/9/05 | 5 | 6 | Area 1 | UG/KG | <12.5 |
| B009 | B009-10 | 12/9/05 | 10 | 11 | Area 1 | UG/KG | <12.5 |
| B010 | B010-2 | 12/9/05 | 2 | 3 | Area 4 | UG/KG | <12.5 |
| B010 | B010-5 | 12/9/05 | 5 | 6 | Area 4 | UG/KG | <12.5 |
| B010 | B010-10 | 12/9/05 | 10 | 11 | Area 4 | UG/KG | <12.5 |
| B011 | B011-2 | 1/9/06 | 2 | 3 | Area 1 | UG/KG | <312.5 |
| B011 | B011-5 | 1/9/06 | 5 | 6 | Area 1 | UG/KG | <12.5 |
| B011 | B011-10 | 1/9/06 | 10 | 11 | Area 1 | UG/KG | <12.5 |
| B012 | B012-2 | 1/6/06 | 2 | 3 | Area 1 | UG/KG | <12.5 |
| B012 | B012-5 | 1/6/06 | 5 | 6 | Area 1 | UG/KG | <12.5 |
| B012 | B012-10 | 1/6/06 | 10 | 11 | Area 1 | UG/KG | <12.5 |
| B013 | B013-2 | 12/15/05 | 2 | 3 | Area 1 | UG/KG | <12.5 |
| B013 | B013-5 | 12/15/05 | 5 | 6 | Area 1 | UG/KG | <125 |
| B013 | B013-10 | 12/15/05 | 10 | 11 | Area 1 | UG/KG | <12.5 |
| B014 | B014-2 | 12/13/05 | 2 | 3 | Area 1 | UG/KG | <12.5 |
| B014 | B014-5 | 12/13/05 | 5 | 6 | Area 1 | UG/KG | <12.5 |
| B015 | B015-2 | 12/12/05 | 2 | 3 | Area 1 | UG/KG | <12.5 |
| B015 | B015-5 | 12/12/05 | 5 | 6 | Area 1 | UG/KG | <12.5 |
| B015 | B015-10 | 12/12/05 | 10 | 11 | Area 1 | UG/KG | <12.5 |
| B016 | B016-2 | 12/13/05 | 2 | 3 | Area 1 | UG/KG | <12.5 |
| B016 | B016-5 | 12/13/05 | 5 | 6 | Area 1 | UG/KG | <12.5 |
| B016 | B016-10 | 12/13/05 | 10 | 11 | Area 1 | UG/KG | <12.5 |
| B017 | B017-2 | 12/29/05 | 2 | 3 | Area 1 | UG/KG | <12.5 |
| B017 | B017-5 | 12/29/05 | 5 | 6 | Area 1 | UG/KG | <12.5 |
| B017 | B017-10 | 12/29/05 | 10 | 11 | Area 1 | UG/KG | <12.5 |
| B018 | B018-2 | 12/29/05 | 2 | 3 | Area 1 | UG/KG | <12.5 |
| B018 | B018-5 | 12/29/05 | 5 | 6 | Area 1 | UG/KG | <12.5 |
| B018 | B018-10 | 12/29/05 | 10 | 11 | Area 1 | UG/KG | <12.5 |
| B019 | B019-2 | 12/28/05 | 2 | 3 | Area 1 | UG/KG | <12.5 |
| B019 | B019-5 | 12/28/05 | 5 | 6 | Area 1 | UG/KG | <12.5 |

**Table B4**
**Results of Dibenzo(a,h)anthracene Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Dibenzo(a,h)anthracene |
|---|---|---|---|---|---|---|---|
| B019 | B019-10 | 12/28/05 | 10 | 11 | Area 1 | UG/KG | <12.5 |
| B020 | B020-2 | 12/12/05 | 2 | 3 | Area 1 | UG/KG | <12.5 |
| B020 | B020-5 | 12/12/05 | 5 | 6 | Area 1 | UG/KG | <12.5 |
| B020 | B020-10 | 12/12/05 | 10 | 11 | Area 1 | UG/KG | <12.5 |
| B021 | B021-2 | 12/28/05 | 2 | 3 | Area 4 | UG/KG | <12.5 |
| B021 | B021-5 | 12/28/05 | 5 | 6 | Area 4 | UG/KG | <12.5 |
| B021 | B021-10 | 12/28/05 | 10 | 11 | Area 4 | UG/KG | <625 |
| B022 | B022-2 | 12/28/05 | 2 | 3 | Area 3 | UG/KG | <250 |
| B022 | B022-5 | 12/28/05 | 5 | 6 | Area 3 | UG/KG | <625 |
| B022 | B022-10 | 12/28/05 | 10 | 11 | Area 3 | UG/KG | <125 |
| B023 | B023-2 | 12/28/05 | 2 | 3 | Area 1 | UG/KG | <3125 |
| B023 | B023-5 | 12/28/05 | 5 | 6 | Area 1 | UG/KG | <1250 |
| B023 | B023-10 | 12/28/05 | 10 | 11 | Area 1 | UG/KG | <2500 |
| B024 | B024-2 | 12/16/05 | 2 | 2.5 | Area 1 | UG/KG | <25 |
| B024 | B024-5 | 12/16/05 | 5 | 6 | Area 1 | UG/KG | <12.5 |
| B024 | B024-10 | 12/16/05 | 10 | 11 | Area 1 | UG/KG | <12.5 |
| B025 | B025-2 | 12/15/05 | 2 | 3 | Area 1 | UG/KG | <12.5 |
| B025 | B025-5 | 12/15/05 | 5 | 6 | Area 1 | UG/KG | <12.5 |
| B025 | B025-10 | 12/15/05 | 10 | 11 | Area 1 | UG/KG | <12.5 |
| B026 | B026-2 | 12/15/05 | 2 | 3 | Area 1 | UG/KG | <12.5 |
| B026 | B026-5 | 12/15/05 | 5 | 6 | Area 1 | UG/KG | <12.5 |
| B026 | B026-10 | 12/15/05 | 10 | 11 | Area 1 | UG/KG | <12.5 |
| B027 | B027-2 | 12/14/05 | 2 | 3 | Area 1 | UG/KG | <125 |
| B027 | B027-5 | 12/15/05 | 5 | 6 | Area 1 | UG/KG | 57.5 |
| B028 | B028-2 | 12/13/05 | 2 | 3 | Area 1 | UG/KG | <12.5 |
| B028 | B028-5 | 12/13/05 | 5 | 6 | Area 1 | UG/KG | <12.5 |
| B028 | B028-10 | 12/13/05 | 10 | 11 | Area 1 | UG/KG | <12.5 |
| B029 | B029-2 | 12/14/05 | 2 | 3 | Area 1 | UG/KG | <125 |
| B029 | B029-5 | 12/14/05 | 5 | 6 | Area 1 | UG/KG | <125 |
| B029 | B029-10 | 12/14/05 | 10 | 11 | Area 1 | UG/KG | <62.5 |
| B030 | B030-2 | 12/14/05 | 2 | 3 | Area 1 | UG/KG | <62.5 |
| B030 | B030-5 | 12/14/05 | 5 | 6 | Area 1 | UG/KG | <12.5 |
| B030 | B030-10 | 12/14/05 | 10 | 11 | Area 1 | UG/KG | <12.5 |
| B031 | B031-2 | 1/6/06 | 2 | 3 | Area 1 | UG/KG | <12.5 |
| B031 | B031-5 | 1/6/06 | 5 | 6 | Area 1 | UG/KG | <12.5 |
| B031 | B031-10 | 1/6/06 | 10 | 11 | Area 1 | UG/KG | <12.5 |
| B032 | B032-2 | 1/6/06 | 2 | 3 | Area 1 | UG/KG | <12.5 |
| B032 | B032-5 | 1/6/06 | 5 | 6 | Area 1 | UG/KG | <12.5 |
| B032 | B032-10 | 1/6/06 | 10 | 11 | Area 1 | UG/KG | <62.5 |
| B033 | B033-2 | 12/29/05 | 2 | 3 | Area 1 | UG/KG | <12.5 |
| B033 | B033-5 | 12/29/05 | 5 | 6 | Area 1 | UG/KG | <12.5 |
| B033 | B033-10 | 12/29/05 | 10 | 11 | Area 1 | UG/KG | <12.5 |
| B034 | B034-2 | 12/14/05 | 2 | 3 | Area 1 | UG/KG | <12.5 |
| B034 | B034-5 | 12/14/05 | 5 | 6 | Area 1 | UG/KG | <12.5 |
| B034 | B034-10 | 12/14/05 | 10 | 11 | Area 1 | UG/KG | <12.5 |
| B035 | B035-2 | 12/14/05 | 2 | 3 | Area 1 | UG/KG | <62.5 |
| B035 | B035-5 | 12/14/05 | 5 | 6 | Area 1 | UG/KG | <12.5 |
| B035 | B035-10 | 12/14/05 | 10 | 11 | Area 1 | UG/KG | <12.5 |
| B036 | B036-2 | 12/14/05 | 2 | 3 | Area 1 | UG/KG | <12.5 |
| B036 | B036-5 | 12/14/05 | 5 | 6 | Area 1 | UG/KG | <12.5 |
| B036 | B036-10 | 12/14/05 | 10 | 11 | Area 1 | UG/KG | <12.5 |
| B037 | B037-2 | 12/19/05 | 2 | 3 | Area 1 | UG/KG | <12.5 |
| B037 | B037-5 | 12/19/05 | 5 | 6 | Area 1 | UG/KG | <12.5 |
| B037 | B037-10 | 12/19/05 | 10 | 11 | Area 1 | UG/KG | <12.5 |

**Table B4**
**Results of Dibenzo(a,h)anthracene Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Dibenzo(a,h)anthracene |
|---|---|---|---|---|---|---|---|
| B038 | B038-2 | 12/19/05 | 2 | 3 | Area 1 | UG/KG | <125 |
| B038 | B038-5 | 12/19/05 | 5 | 6 | Area 1 | UG/KG | <12.5 |
| B038 | B038-10 | 12/19/05 | 10 | 11 | Area 1 | UG/KG | <12.5 |
| B039 | B039-2 | 12/16/05 | 2 | 3 | Area 1 | UG/KG | <12.5 |
| B039 | B039-5 | 12/16/05 | 5 | 6 | Area 1 | UG/KG | <12.5 |
| B039 | B039-10 | 12/16/05 | 10 | 11 | Area 1 | UG/KG | <12.5 |
| B040 | B040-2 | 12/19/05 | 2 | 3 | Area 1 | UG/KG | <62.5 |
| B040 | B040-5 | 12/19/05 | 5 | 6 | Area 1 | UG/KG | <12.5 |
| B040 | B040-10 | 12/19/05 | 10 | 11 | Area 1 | UG/KG | <12.5 |
| B041 | B041-2 | 12/28/05 | 2 | 3 | Area 3 | UG/KG | <12.5 |
| B041 | B041-5 | 12/28/05 | 5 | 6 | Area 3 | UG/KG | <12.5 |
| B041 | B041-10 | 12/28/05 | 10 | 11 | Area 3 | UG/KG | <12.5 |
| B042 | B042-2 | 12/20/05 | 2 | 3 | Area 3 | UG/KG | <250 |
| B042 | B042-5 | 12/20/05 | 5 | 6 | Area 3 | UG/KG | <125 |
| B042 | B042-10 | 12/20/05 | 10 | 11 | Area 3 | UG/KG | <12.5 |
| B043 | B043-2 | 12/16/05 | 2 | 3 | Area 1 | UG/KG | <62.5 |
| B043 | B043-5 | 12/16/05 | 5 | 6 | Area 1 | UG/KG | <250 |
| B043 | B043-10 | 12/16/05 | 10 | 11 | Area 1 | UG/KG | <12.5 |
| B044 | B044-2 | 12/16/05 | 2 | 3 | Area 1 | UG/KG | <12.5 |
| B044 | B044-5 | 12/16/05 | 5 | 6 | Area 1 | UG/KG | <12.5 |
| B044 | B044-10 | 12/16/05 | 10 | 11 | Area 1 | UG/KG | 4.375 |
| B045 | B045-2 | 12/15/05 | 2 | 3 | Area 1 | UG/KG | <1250 |
| B045 | B045-5 | 12/15/05 | 5 | 6 | Area 1 | UG/KG | <125 |
| B045 | B045-10 | 12/15/05 | 10 | 11 | Area 1 | UG/KG | <12.5 |
| B046 | B046-2 | 12/15/05 | 2 | 3 | Area 1 | UG/KG | <125 |
| B046 | B046-5 | 12/15/05 | 5 | 6 | Area 1 | UG/KG | <12.5 |
| B046 | B046-10 | 12/15/05 | 10 | 11 | Area 1 | UG/KG | <12.5 |
| B047 | B047-2 | 12/15/05 | 2 | 3 | Area 1 | UG/KG | <12.5 |
| B047 | B047-5 | 12/15/05 | 5 | 6 | Area 1 | UG/KG | <12.5 |
| B047 | B047-10 | 12/15/05 | 10 | 11 | Area 1 | UG/KG | <12.5 |
| B048 | B048-2 | 12/20/05 | 2 | 3 | Area 1 | UG/KG | <12.5 |
| B048 | B048-5 | 12/20/05 | 5 | 6 | Area 1 | UG/KG | <12.5 |
| B048 | B048-10 | 12/20/05 | 10 | 11 | Area 1 | UG/KG | <125 |
| B049 | B049-2 | 12/14/05 | 2 | 3 | Area 1 | UG/KG | <12.5 |
| B049 | B049-5 | 12/14/05 | 5 | 6 | Area 1 | UG/KG | <12.5 |
| B049 | B049-10 | 12/14/05 | 10 | 11 | Area 1 | UG/KG | <12.5 |
| B050 | B050-2 | 12/13/05 | 2 | 3 | Area 1 | UG/KG | 51.25 |
| B050 | B050-5 | 12/13/05 | 5 | 6 | Area 1 | UG/KG | <12.5 |
| B050 | B050-10 | 12/12/05 | 10 | 11 | Area 1 | UG/KG | <125 |
| B051 | B051-2 | 12/13/05 | 2 | 3 | Area 1 | UG/KG | <12.5 |
| B051 | B051-5 | 12/13/05 | 5 | 6 | Area 1 | UG/KG | <12.5 |
| B051 | B051-10 | 12/13/05 | 10 | 11 | Area 1 | UG/KG | <12.5 |
| B052 | B052-2 | 12/29/05 | 2 | 3 | Area 1 | UG/KG | <625 |
| B052 | B052-5 | 12/29/05 | 5 | 6 | Area 1 | UG/KG | <25 |
| B052 | B052-10 | 12/29/05 | 10 | 11 | Area 1 | UG/KG | <625 |
| B053 | B053-2 | 12/28/05 | 2 | 3 | Area 1 | UG/KG | <12.5 |
| B053 | B053-5 | 12/28/05 | 5 | 6 | Area 1 | UG/KG | <12.5 |
| B053 | B053-10 | 12/28/05 | 10 | 11 | Area 1 | UG/KG | <12.5 |
| B054 | B054-2 | 12/13/05 | 2 | 3 | Area 1 | UG/KG | <125 |
| B054 | B054-5 | 12/13/05 | 5 | 6 | Area 1 | UG/KG | 61.25 |
| B054 | B054-10 | 12/13/05 | 10 | 11 | Area 1 | UG/KG | <12.5 |
| B055 | B055-2 | 12/21/05 | 2 | 3 | Area 1 | UG/KG | <1250 |
| B055 | B055-5 | 12/21/05 | 5 | 6 | Area 1 | UG/KG | 388.75 |
| B055 | B055-10 | 12/21/05 | 10 | 11 | Area 1 | UG/KG | <6250 |

**Table B4**
**Results of Dibenzo(a,h)anthracene Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Dibenzo(a,h)anthracene |
|---|---|---|---|---|---|---|---|
| B056 | B056-2 | 12/14/05 | 2 | 3 | Area 1 | UG/KG | <12.5 |
| B056 | B056-5 | 12/14/05 | 5 | 6 | Area 1 | UG/KG | <12.5 |
| B056 | B056-10 | 12/14/05 | 10 | 11 | Area 1 | UG/KG | <12.5 |
| B057 | B057-2 | 12/13/05 | 2 | 3 | Area 1 | UG/KG | 51.25 |
| B057 | B057-5 | 12/13/05 | 5 | 6 | Area 1 | UG/KG | <12.5 |
| B057 | B057-10 | 12/13/05 | 10 | 11 | Area 1 | UG/KG | <12.5 |
| B058 | B058-5 | 12/20/05 | 5 | 6 | Area 1 | UG/KG | <125 |
| B058 | B058-10 | 12/20/05 | 10 | 11 | Area 1 | UG/KG | <625 |
| B059 | B059-2 | 12/20/05 | 2 | 3 | Area 1 | UG/KG | <12.5 |
| B059 | B059-5 | 12/20/05 | 5 | 6 | Area 1 | UG/KG | <12.5 |
| B059 | B059-10 | 12/20/05 | 10 | 11 | Area 1 | UG/KG | <12.5 |
| B060 | B060-2 | 12/20/05 | 2 | 3 | Area 1 | UG/KG | <12.5 |
| B060 | B060-5 | 12/20/05 | 5 | 6 | Area 1 | UG/KG | <12.5 |
| B060 | B060-10 | 12/20/05 | 10 | 11 | Area 1 | UG/KG | <125 |
| B061 | B061-2 | 12/20/05 | 2 | 3 | Area 1 | UG/KG | <12.5 |
| B061 | B061-5 | 12/20/05 | 5 | 6 | Area 1 | UG/KG | <12.5 |
| B061 | B061-10 | 12/20/05 | 10 | 11 | Area 1 | UG/KG | <12.5 |
| B062 | B062-2 | 12/21/05 | 2 | 3 | Area 1 | UG/KG | <12.5 |
| B062 | B062-5 | 12/21/05 | 5 | 6 | Area 1 | UG/KG | <12.5 |
| B062 | B062-10 | 12/21/05 | 10 | 11 | Area 1 | UG/KG | <12.5 |
| B063 | B063-2 | 1/9/06 | 2 | 3 | Area 3 | UG/KG | <62.5 |
| B063 | B063-5 | 1/9/06 | 5 | 6 | Area 3 | UG/KG | <12.5 |
| B063 | B063-10 | 1/9/06 | 10 | 11 | Area 3 | UG/KG | <12.5 |
| B064 | B064-2 | 12/23/05 | 2 | 3 | Area 1 | UG/KG | <62.5 |
| B064 | B064-5 | 12/23/05 | 5 | 6 | Area 1 | UG/KG | <12.5 |
| B064 | B064-10 | 12/23/05 | 10 | 11 | Area 1 | UG/KG | <12.5 |
| B065 | B065-2 | 1/12/06 | 2 | 3 | Area 1 | UG/KG | <12.5 |
| B065 | B065-5 | 1/12/06 | 5 | 6 | Area 1 | UG/KG | <12.5 |
| B065 | B065-10 | 1/12/06 | 10 | 11 | Area 1 | UG/KG | <12.5 |
| B066 | B066-2 | 1/12/06 | 2 | 3 | Area 1 | UG/KG | <12.5 |
| B066 | B066-5 | 1/12/06 | 5 | 6 | Area 1 | UG/KG | <12.5 |
| B066 | B066-10 | 1/12/06 | 10 | 11 | Area 1 | UG/KG | <12.5 |
| B067 | B067-2 | 12/21/05 | 2 | 3 | Area 1 | UG/KG | 223.75 |
| B067 | B067-5 | 12/21/05 | 5 | 6 | Area 1 | UG/KG | <250 |
| B067 | B067-10 | 12/21/05 | 10 | 11 | Area 1 | UG/KG | 112.5 |
| B068 | B068-2 | 12/21/05 | 2 | 3 | Area 1 | UG/KG | <12.5 |
| B068 | B068-10 | 12/21/05 | 10 | 11 | Area 1 | UG/KG | <62.5 |
| B069 | B069-2 | 12/22/05 | 2 | 3 | Area 1 | UG/KG | <12.5 |
| B069 | B069-5 | 12/22/05 | 5 | 6 | Area 1 | UG/KG | <12.5 |
| B069 | B069-10 | 12/22/05 | 10 | 11 | Area 1 | UG/KG | <12.5 |
| B070 | B070-2 | 12/22/05 | 2 | 3 | Area 1 | UG/KG | <12.5 |
| B070 | B070-5 | 12/22/05 | 5 | 6 | Area 1 | UG/KG | <12.5 |
| B070 | B070-10 | 12/22/05 | 10 | 11 | Area 1 | UG/KG | <62.5 |
| B071 | B071-2 | 12/21/05 | 2 | 3 | Area 1 | UG/KG | <12.5 |
| B071 | B071-5 | 12/21/05 | 5 | 6 | Area 1 | UG/KG | <12.5 |
| B072 | B072-2 | 12/21/05 | 2 | 3 | Area 1 | UG/KG | <12.5 |
| B072 | B072-5 | 12/21/05 | 5 | 6 | Area 1 | UG/KG | <12.5 |
| B072 | B072-10 | 12/21/05 | 10 | 11 | Area 1 | UG/KG | <12.5 |
| B073 | B073-2 | 1/30/06 | 2 | 3 | Area 3 | UG/KG | <12.5 |
| B073 | B073-5 | 1/30/06 | 5 | 6 | Area 3 | UG/KG | <12.5 |
| B073 | B073-10 | 1/30/06 | 10 | 11 | Area 3 | UG/KG | <12.5 |
| B074 | B074-2 | 1/11/06 | 2 | 3 | Area 2 | UG/KG | <12.5 |
| B074 | B074-5 | 1/11/06 | 5 | 6 | Area 2 | UG/KG | <12.5 |
| B074 | B074-10 | 1/11/06 | 10 | 11 | Area 2 | UG/KG | <12.5 |

**Table B4**
**Results of Dibenzo(a,h)anthracene Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Dibenzo(a,h)anthracene |
|---|---|---|---|---|---|---|---|
| B075 | B075-2 | 1/11/06 | 2 | 3 | Area 1 | UG/KG | <12.5 |
| B075 | B075-5 | 1/11/06 | 5 | 6 | Area 1 | UG/KG | <12.5 |
| B075 | B075-10 | 1/11/06 | 10 | 11 | Area 1 | UG/KG | <12.5 |
| B076 | B076-2 | 12/22/05 | 2 | 3 | Area 2 | UG/KG | <125 |
| B077 | B077-2 | 12/23/05 | 2 | 3 | Area 2 | UG/KG | <12.5 |
| B077 | B077-5 | 12/23/05 | 5 | 6 | Area 2 | UG/KG | <12.5 |
| B077 | B077-10 | 12/23/05 | 10 | 11 | Area 2 | UG/KG | <12.5 |
| B078 | B078-2 | 12/23/05 | 2 | 3 | Area 2 | UG/KG | <12.5 |
| B078 | B078-5 | 12/23/05 | 5 | 6 | Area 2 | UG/KG | <12.5 |
| B078 | B078-10 | 12/23/05 | 10 | 11 | Area 2 | UG/KG | <12.5 |
| B079 | B079-2 | 12/23/05 | 2 | 3 | Area 2 | UG/KG | <62.5 |
| B079 | B079-5 | 12/23/05 | 5 | 6 | Area 2 | UG/KG | <62.5 |
| B079 | B079-10 | 12/23/05 | 10 | 11 | Area 2 | UG/KG | <12.5 |
| B080 | B080-2 | 12/22/05 | 2 | 3 | Area 1 | UG/KG | 110 |
| B080 | B080-5 | 12/22/05 | 5 | 6 | Area 1 | UG/KG | 147.5 |
| B080 | B080-10 | 12/22/05 | 10 | 11 | Area 1 | UG/KG | <12.5 |
| B081 | B081-2 | 12/22/05 | 2 | 3 | Area 1 | UG/KG | <62.5 |
| B081 | B081-5 | 12/22/05 | 5 | 6 | Area 1 | UG/KG | <12.5 |
| B081 | B081-10 | 12/22/05 | 10 | 11 | Area 1 | UG/KG | <12.5 |
| B082 | B082-2 | 12/23/05 | 2 | 3 | Area 1 | UG/KG | <12.5 |
| B082 | B082-5 | 12/23/05 | 5 | 6 | Area 1 | UG/KG | <12.5 |
| B082 | B082-10 | 12/23/05 | 10 | 11 | Area 1 | UG/KG | <12.5 |
| B083 | B083-2 | 1/4/06 | 2 | 3 | Area 2 | UG/KG | <625 |
| B083 | B083-5 | 1/4/06 | 5 | 6 | Area 2 | UG/KG | <12.5 |
| B083 | B083-10 | 1/4/06 | 10 | 11 | Area 2 | UG/KG | <12.5 |
| B084 | B084-2 | 1/5/06 | 2 | 3 | Area 2 | UG/KG | 18.75 |
| B084 | B084-5 | 1/5/06 | 5 | 6 | Area 2 | UG/KG | <62.5 |
| B084 | B084-10 | 1/5/06 | 10 | 11 | Area 2 | UG/KG | <12.5 |
| B085 | B085-2 | 12/28/05 | 2 | 3 | Area 2 | UG/KG | <12.5 |
| B085 | B085-5 | 12/28/05 | 5 | 6 | Area 2 | UG/KG | <12.5 |
| B085 | B085-10 | 12/28/05 | 10 | 11 | Area 2 | UG/KG | <12.5 |
| B086 | B086-2 | 1/11/06 | 2 | 3 | Area 2 | UG/KG | <12.5 |
| B086 | B086-5 | 1/11/06 | 5 | 6 | Area 2 | UG/KG | <12.5 |
| B086 | B086-10 | 1/11/06 | 10 | 11 | Area 2 | UG/KG | <12.5 |
| B087 | B087-2 | 1/11/06 | 2 | 3 | Area 2 | UG/KG | <12.5 |
| B087 | B087-5 | 1/11/06 | 5 | 6 | Area 2 | UG/KG | <12.5 |
| B087 | B087-10 | 1/11/06 | 10 | 11 | Area 2 | UG/KG | <12.5 |
| B088 | B088-2 | 1/18/06 | 2 | 3 | Area 2 | UG/KG | <12.5 |
| B088 | B088-5 | 1/18/06 | 5 | 6 | Area 2 | UG/KG | <12.5 |
| B088 | B088-10 | 1/18/06 | 10 | 11 | Area 2 | UG/KG | <12.5 |
| B089 | B089-2 | 1/9/06 | 2 | 3 | Area 2 | UG/KG | <25 |
| B089 | B089-5 | 1/9/06 | 5 | 6 | Area 2 | UG/KG | <25 |
| B089 | B089-10 | 1/9/06 | 10 | 11 | Area 2 | UG/KG | <25 |
| B090 | B090-2 | 1/10/06 | 2 | 3 | Area 2 | UG/KG | <12.5 |
| B090 | B090-5 | 1/10/06 | 5 | 6 | Area 2 | UG/KG | <12.5 |
| B090 | B090-10 | 1/10/06 | 10 | 11 | Area 2 | UG/KG | <12.5 |
| B091 | B091-2 | 1/10/06 | 2 | 3 | Area 2 | UG/KG | <12.5 |
| B091 | B091-5 | 1/10/06 | 5 | 6 | Area 2 | UG/KG | <12.5 |
| B091 | B091-10 | 1/10/06 | 10 | 11 | Area 2 | UG/KG | <12.5 |
| B092 | B092-2 | 1/5/06 | 2 | 3 | Area 2 | UG/KG | <62.5 |
| B092 | B092-5 | 1/5/06 | 5 | 6 | Area 2 | UG/KG | <12.5 |
| B092 | B092-10 | 1/5/06 | 10 | 11 | Area 2 | UG/KG | <12.5 |
| B093 | B093-2 | 1/5/06 | 2 | 3 | Area 2 | UG/KG | 82.5 |
| B093 | B093-5 | 1/5/06 | 5 | 6 | Area 2 | UG/KG | <12.5 |

**Table B4**
**Results of Dibenzo(a,h)anthracene Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Dibenzo(a,h)anthracene |
|---|---|---|---|---|---|---|---|
| B093 | B093-10 | 1/5/06 | 10 | 11 | Area 2 | UG/KG | <12.5 |
| B094 | B094-2 | 1/5/06 | 2 | 3 | Area 2 | UG/KG | <12.5 |
| B094 | B094-5 | 1/5/06 | 5 | 6 | Area 2 | UG/KG | <12.5 |
| B094 | B094-10 | 1/5/06 | 10 | 11 | Area 2 | UG/KG | <12.5 |
| B095 | B095-2 | 1/4/06 | 2 | 3 | Area 2 | UG/KG | <12.5 |
| B095 | B095-5 | 1/4/06 | 5 | 6 | Area 2 | UG/KG | <12.5 |
| B095 | B095-10 | 1/4/06 | 10 | 11 | Area 2 | UG/KG | <12.5 |
| B096 | B096-2 | 12/28/05 | 2 | 3 | Area 2 | UG/KG | <12.5 |
| B096 | B096-5 | 12/28/05 | 5 | 6 | Area 2 | UG/KG | <12.5 |
| B096 | B096-10 | 12/28/05 | 10 | 11 | Area 2 | UG/KG | <12.5 |
| B097 | B097-2 | 1/5/06 | 2 | 3 | Area 2 | UG/KG | <12.5 |
| B097 | B097-5 | 1/5/06 | 5 | 6 | Area 2 | UG/KG | <12.5 |
| B097 | B097-10 | 1/5/06 | 10 | 11 | Area 2 | UG/KG | <12.5 |
| B098 | B098-2 | 1/4/06 | 2 | 3 | Area 2 | UG/KG | <12.5 |
| B098 | B098-5 | 1/4/06 | 5 | 6 | Area 2 | UG/KG | <12.5 |
| B098 | B098-10 | 1/4/06 | 10 | 11 | Area 2 | UG/KG | <12.5 |
| B099 | B099-2 | 1/3/06 | 2 | 3 | Area 2 | UG/KG | <12.5 |
| B099 | B099-5 | 1/3/06 | 5 | 6 | Area 2 | UG/KG | <12.5 |
| B099 | B099-10 | 1/3/06 | 10 | 11 | Area 2 | UG/KG | <12.5 |
| B100 | B100-2 | 1/10/06 | 2 | 3 | Area 2 | UG/KG | <12.5 |
| B100 | B100-5 | 1/10/06 | 5 | 6 | Area 2 | UG/KG | <12.5 |
| B100 | B100-10 | 1/10/06 | 10 | 11 | Area 2 | UG/KG | <12.5 |
| B101 | B101-2 | 1/10/06 | 2 | 3 | Area 2 | UG/KG | <12.5 |
| B101 | B101-5 | 1/10/06 | 5 | 6 | Area 2 | UG/KG | <12.5 |
| B101 | B101-10 | 1/10/06 | 10 | 11 | Area 2 | UG/KG | <12.5 |
| B102 | B102-2 | 1/9/06 | 2 | 3 | Area 2 | UG/KG | <62.5 |
| B102 | B102-5 | 1/9/06 | 5 | 6 | Area 2 | UG/KG | <12.5 |
| B102 | B102-10 | 1/9/06 | 10 | 11 | Area 2 | UG/KG | <12.5 |
| B103 | B103-2 | 1/6/06 | 2 | 3 | Area 2 | UG/KG | <12.5 |
| B103 | B103-5 | 1/6/06 | 5 | 6 | Area 2 | UG/KG | <12.5 |
| B103 | B103-10 | 1/6/06 | 10 | 11 | Area 2 | UG/KG | <12.5 |
| B104 | B104-2 | 2/3/06 | 2 | 3 | Area 2 | UG/KG | <12.5 |
| B104 | B104-5 | 2/3/06 | 5 | 6 | Area 2 | UG/KG | <12.5 |
| B104 | B104-10 | 2/3/06 | 10 | 11 | Area 2 | UG/KG | <12.5 |
| B105 | B105-2 | 1/10/06 | 2 | 3 | Area 2 | UG/KG | <12.5 |
| B105 | B105-5 | 1/10/06 | 5 | 6 | Area 2 | UG/KG | <12.5 |
| B105 | B105-10 | 1/10/06 | 10 | 11 | Area 2 | UG/KG | <12.5 |
| B106 | B106-2 | 12/29/05 | 2 | 3 | Area 2 | UG/KG | <12.5 |
| B106 | B106-5 | 12/29/05 | 5 | 6 | Area 2 | UG/KG | <12.5 |
| B106 | B106-10 | 12/29/05 | 10 | 10.5 | Area 2 | UG/KG | <12.5 |
| B107 | B107-2 | 1/4/06 | 2 | 3 | Area 2 | UG/KG | <12.5 |
| B107 | B107-5 | 1/4/06 | 5 | 6 | Area 2 | UG/KG | <12.5 |
| B107 | B107-10 | 1/4/06 | 10 | 11 | Area 2 | UG/KG | <12.5 |
| B108 | B108-2 | 1/9/06 | 2 | 3 | Area 2 | UG/KG | <12.5 |
| B108 | B108-5 | 1/9/06 | 5 | 6 | Area 2 | UG/KG | <12.5 |
| B108 | B108-10 | 1/9/06 | 10 | 11 | Area 2 | UG/KG | <12.5 |
| B109 | B109-2 | 1/4/06 | 2 | 3 | Area 2 | UG/KG | <12.5 |
| B109 | B109-5 | 1/4/06 | 5 | 6 | Area 2 | UG/KG | <12.5 |
| B109 | B109-10 | 1/4/06 | 10 | 11 | Area 2 | UG/KG | <12.5 |
| B110 | B110-2 | 12/28/05 | 2 | 3 | Area 2 | UG/KG | <12.5 |
| B110 | B110-5 | 12/28/05 | 5 | 6 | Area 2 | UG/KG | <12.5 |
| B110 | B110-10 | 12/28/05 | 10 | 11 | Area 2 | UG/KG | <12.5 |
| B111 | B111-2 | 12/28/05 | 2 | 3 | Area 2 | UG/KG | 6.25 |
| B111 | B111-5 | 12/28/05 | 5 | 6 | Area 2 | UG/KG | <12.5 |

**Table B4**
**Results of Dibenzo(a,h)anthracene Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Dibenzo(a,h)anthracene |
|---|---|---|---|---|---|---|---|
| B111 | B111-10 | 12/28/05 | 10 | 11 | Area 2 | UG/KG | <12.5 |
| B112 | B112-2 | 12/29/05 | 2 | 3 | Area 2 | UG/KG | <12.5 |
| B112 | B112-5 | 12/29/05 | 5 | 6 | Area 2 | UG/KG | <12.5 |
| B112 | B112-10 | 12/29/05 | 10 | 11 | Area 2 | UG/KG | <12.5 |
| B113 | B113-2 | 12/29/05 | 2 | 3 | Area 2 | UG/KG | <12.5 |
| B113 | B113-5 | 12/29/05 | 5 | 6 | Area 2 | UG/KG | <12.5 |
| B113 | B113-10 | 12/29/05 | 10 | 11 | Area 2 | UG/KG | <12.5 |
| B114 | B114-2 | 1/3/06 | 2 | 3 | Area 2 | UG/KG | <62.5 |
| B114 | B114-5 | 1/3/06 | 5 | 6 | Area 2 | UG/KG | <12.5 |
| B114 | B114-10 | 1/3/06 | 10 | 11 | Area 2 | UG/KG | <12.5 |
| B115 | B115-2 | 1/3/06 | 2 | 3 | Area 2 | UG/KG | 77.5 |
| B115 | B115-5 | 1/3/06 | 5 | 6 | Area 2 | UG/KG | 222.5 |
| B115 | B115-10 | 1/3/06 | 10 | 11 | Area 2 | UG/KG | <12.5 |
| B116 | B116-2 | 1/4/06 | 2 | 3 | Area 2 | UG/KG | <12.5 |
| B116 | B116-5 | 1/4/06 | 5 | 6 | Area 2 | UG/KG | <12.5 |
| B116 | B116-10 | 1/4/06 | 10 | 11 | Area 2 | UG/KG | <12.5 |
| B117 | B117-2 | 1/6/06 | 2 | 3 | Area 2 | UG/KG | <12.5 |
| B117 | B117-5 | 1/6/06 | 5 | 6 | Area 2 | UG/KG | <12.5 |
| B117 | B117-10 | 1/6/06 | 10 | 11 | Area 2 | UG/KG | <12.5 |
| B118 | B118-2 | 1/6/06 | 2 | 3 | Area 2 | UG/KG | <12.5 |
| B118 | B118-5 | 1/6/06 | 5 | 6 | Area 2 | UG/KG | <12.5 |
| B118 | B118-10 | 1/6/06 | 10 | 11 | Area 2 | UG/KG | <12.5 |
| B119 | B119-2 | 1/27/06 | 2 | 3 | Area 2 | UG/KG | <62.5 |
| B119 | B119-5 | 1/27/06 | 5 | 6 | Area 2 | UG/KG | <12.5 |
| B119 | B119-10 | 1/27/06 | 10 | 11 | Area 2 | UG/KG | <12.5 |
| B120 | B120-2 | 1/30/06 | 2 | 3 | Area 4 | UG/KG | 2.875 |
| B120 | B120-5 | 1/30/06 | 5 | 6 | Area 4 | UG/KG | <12.5 |
| B120 | B120-10 | 1/30/06 | 10 | 11 | Area 4 | UG/KG | <12.5 |
| B121 | B121-2 | 2/1/06 | 2 | 3 | Area 4 | UG/KG | <62.5 |
| B121 | B121-5 | 2/1/06 | 5 | 6 | Area 4 | UG/KG | <312.5 |
| B121 | B121-10 | 2/1/06 | 10 | 11 | Area 4 | UG/KG | <62.5 |
| B122 | B122-2 | 1/23/06 | 2 | 3 | Area 4 | UG/KG | 16.25 |
| B122 | B122-5 | 1/23/06 | 5 | 6 | Area 4 | UG/KG | <625 |
| B122 | B122-10 | 1/23/06 | 10 | 11 | Area 4 | UG/KG | <12.5 |
| B123 | B123-2 | 1/20/06 | 2 | 3 | Area 4 | UG/KG | <12.5 |
| B123 | B123-5 | 1/20/06 | 5 | 6 | Area 4 | UG/KG | <12.5 |
| B124 | B124-2 | 1/16/06 | 2 | 3 | Area 4 | UG/KG | 3.125 |
| B124 | B124-5 | 1/16/06 | 5 | 6 | Area 4 | UG/KG | <12.5 |
| B124 | B124-10 | 1/16/06 | 10 | 11 | Area 4 | UG/KG | <12.5 |
| B125 | B125-2 | 1/20/06 | 2 | 3 | Area 4 | UG/KG | <12.5 |
| B125 | B125-5 | 1/20/06 | 5 | 6 | Area 4 | UG/KG | <12.5 |
| B125 | B125-10 | 1/20/06 | 10 | 11 | Area 4 | UG/KG | <12.5 |
| B126 | B126-2 | 1/20/06 | 2 | 3 | Area 4 | UG/KG | <12.5 |
| B126 | B126-5 | 1/20/06 | 5 | 6 | Area 4 | UG/KG | <12.5 |
| B126 | B126-10 | 1/20/06 | 10 | 11 | Area 4 | UG/KG | <12.5 |
| B127 | B127-2 | 1/18/06 | 2 | 3 | Area 4 | UG/KG | <12.5 |
| B127 | B127-5 | 1/18/06 | 5 | 6 | Area 4 | UG/KG | <12.5 |
| B127 | B127-10 | 1/18/06 | 10 | 11 | Area 4 | UG/KG | <12.5 |
| B128 | B128-2 | 2/1/06 | 2 | 3 | Area 4 | UG/KG | <312.5 |
| B128 | B128-5 | 2/1/06 | 5 | 6 | Area 4 | UG/KG | <312.5 |
| B128 | B128-10 | 2/1/06 | 10 | 11 | Area 4 | UG/KG | <62.5 |
| B129 | B129-2 | 1/18/06 | 2 | 3 | Area 4 | UG/KG | <12.5 |
| B129 | B129-5 | 1/18/06 | 5 | 6 | Area 4 | UG/KG | 3.125 |
| B129 | B129-10 | 1/18/06 | 10 | 11 | Area 4 | UG/KG | <12.5 |

**Table B4**
**Results of Dibenzo(a,h)anthracene Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Dibenzo(a,h)anthracene |
|---|---|---|---|---|---|---|---|
| B130 | B130-2 | 1/19/06 | 2 | 3 | Area 4 | UG/KG | <12.5 |
| B130 | B130-5 | 1/19/06 | 5 | 6 | Area 4 | UG/KG | <12.5 |
| B130 | B130-10 | 1/19/06 | 10 | 11 | Area 4 | UG/KG | <12.5 |
| B131 | B131-2 | 1/19/06 | 2 | 3 | Area 4 | UG/KG | <12.5 |
| B131 | B131-5 | 1/19/06 | 5 | 6 | Area 4 | UG/KG | <12.5 |
| B131 | B131-10 | 1/19/06 | 10 | 11 | Area 4 | UG/KG | <12.5 |
| B132 | B132-2 | 1/19/06 | 2 | 3 | Area 4 | UG/KG | <12.5 |
| B132 | B132-5 | 1/19/06 | 5 | 6 | Area 4 | UG/KG | <12.5 |
| B132 | B132-10 | 1/19/06 | 10 | 11 | Area 4 | UG/KG | <12.5 |
| B134 | B134-2 | 1/23/06 | 2 | 3 | Area 4 | UG/KG | <12.5 |
| B134 | B134-5 | 1/23/06 | 5 | 6 | Area 4 | UG/KG | <12.5 |
| B134 | B134-10 | 1/23/06 | 10 | 11 | Area 4 | UG/KG | <12.5 |
| B135 | B135-2 | 1/16/06 | 2 | 3 | Area 4 | UG/KG | <12.5 |
| B135 | B135-5 | 1/16/06 | 5 | 6 | Area 4 | UG/KG | <12.5 |
| B135 | B135-10 | 1/16/06 | 10 | 11 | Area 4 | UG/KG | <12.5 |
| B136 | B136-2 | 1/12/06 | 2 | 3 | Area 4 | UG/KG | <12.5 |
| B136 | B136-5 | 1/12/06 | 5 | 6 | Area 4 | UG/KG | <12.5 |
| B136 | B136-10 | 1/12/06 | 10 | 11 | Area 4 | UG/KG | <25 |
| B137 | B137-2 | 1/13/06 | 2 | 3 | Area 4 | UG/KG | <12.5 |
| B137 | B137-5 | 1/13/06 | 5 | 6 | Area 4 | UG/KG | <12.5 |
| B137 | B137-10 | 1/13/06 | 10 | 11 | Area 4 | UG/KG | <12.5 |
| B139 | B139-2 | 1/13/06 | 2 | 3 | Area 4 | UG/KG | <12.5 |
| B139 | B139-5 | 1/13/06 | 5 | 6 | Area 4 | UG/KG | <12.5 |
| B139 | B139-10 | 1/13/06 | 10 | 11 | Area 4 | UG/KG | <12.5 |
| B140 | B140-2 | 1/31/06 | 2 | 3 | Area 4 | UG/KG | <12.5 |
| B140 | B140-5 | 1/31/06 | 5 | 6 | Area 4 | UG/KG | <12.5 |
| B140 | B140-10 | 1/31/06 | 10 | 11 | Area 4 | UG/KG | <12.5 |
| B141 | B141-2 | 1/30/06 | 2 | 3 | Area 3 | UG/KG | <12.5 |
| B141 | B141-5 | 1/30/06 | 5 | 6 | Area 3 | UG/KG | <12.5 |
| B141 | B141-10 | 1/30/06 | 10 | 11 | Area 3 | UG/KG | <12.5 |
| B142 | B142-2 | 1/31/06 | 2 | 3 | Area 3 | UG/KG | <12.5 |
| B142 | B142-5 | 1/31/06 | 5 | 6 | Area 3 | UG/KG | <12.5 |
| B142 | B142-10 | 1/31/06 | 10 | 11 | Area 3 | UG/KG | <12.5 |
| B143 | B143-2 | 1/18/06 | 2 | 3 | Area 3 | UG/KG | <12.5 |
| B143 | B143-5 | 1/18/06 | 5 | 6 | Area 3 | UG/KG | <12.5 |
| B143 | B143-10 | 1/18/06 | 10 | 11 | Area 3 | UG/KG | <12.5 |
| B144 | B144-2 | 1/13/06 | 2 | 3 | Area 3 | UG/KG | <12.5 |
| B144 | B144-5 | 1/13/06 | 5 | 6 | Area 3 | UG/KG | <12.5 |
| B144 | B144-10 | 1/13/06 | 10 | 11 | Area 3 | UG/KG | <12.5 |
| B145 | B145-2 | 1/19/06 | 2 | 3 | Area 3 | UG/KG | <12.5 |
| B145 | B145-5 | 1/19/06 | 5 | 6 | Area 3 | UG/KG | <12.5 |
| B145 | B145-10 | 1/19/06 | 10 | 11 | Area 3 | UG/KG | <12.5 |
| B146 | B146-2 | 1/27/06 | 2 | 3 | Area 3 | UG/KG | <12.5 |
| B146 | B146-5 | 1/27/06 | 5 | 6 | Area 3 | UG/KG | <12.5 |
| B146 | B146-10 | 1/27/06 | 10 | 11 | Area 3 | UG/KG | <12.5 |
| B147 | B147-2 | 2/1/06 | 2 | 3 | Area 3 | UG/KG | <12.5 |
| B147 | B147-5 | 2/1/06 | 5 | 6 | Area 3 | UG/KG | <12.5 |
| B147 | B147-10 | 2/1/06 | 10 | 11 | Area 3 | UG/KG | <12.5 |
| B148 | B148-2 | 1/23/06 | 2 | 3 | Area 3 | UG/KG | <12.5 |
| B148 | B148-5 | 1/23/06 | 5 | 6 | Area 3 | UG/KG | <12.5 |
| B148 | B148-10 | 1/23/06 | 10 | 11 | Area 3 | UG/KG | <12.5 |
| B149 | B149-2 | 1/23/06 | 2 | 3 | Area 3 | UG/KG | <12.5 |
| B149 | B149-5 | 1/23/06 | 5 | 6 | Area 3 | UG/KG | <12.5 |
| B150 | B150-2 | 1/20/06 | 2 | 3 | Area 3 | UG/KG | 42.5 |

**Table B4**
**Results of Dibenzo(a,h)anthracene Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Dibenzo(a,h)anthracene |
|---|---|---|---|---|---|---|---|
| B150 | B150-5 | 1/20/06 | 5 | 6 | Area 3 | UG/KG | <62.5 |
| B150 | B150-10 | 1/20/06 | 10 | 11 | Area 3 | UG/KG | <625 |
| B151 | B151-2 | 1/19/06 | 2 | 3 | Area 4 | UG/KG | <12.5 |
| B151 | B151-5 | 1/19/06 | 5 | 6 | Area 4 | UG/KG | 17.5 |
| B151 | B151-10 | 1/19/06 | 10 | 11 | Area 4 | UG/KG | <12.5 |
| B152 | B152-5 | 1/20/06 | 5 | 6 | Area 3 | UG/KG | <12.5 |
| B152 | B152-10 | 1/20/06 | 10 | 11 | Area 3 | UG/KG | <12.5 |
| B153 | B153-2 | 1/20/06 | 2 | 3 | Area 3 | UG/KG | <62.5 |
| B153 | B153-5 | 1/20/06 | 5 | 6 | Area 3 | UG/KG | <12.5 |
| B153 | B153-10 | 1/20/06 | 10 | 11 | Area 3 | UG/KG | <62.5 |
| B154 | B154-2 | 1/16/06 | 2 | 3 | Area 3 | UG/KG | 51.25 |
| B154 | B154-5 | 1/16/06 | 5 | 6 | Area 3 | UG/KG | <12.5 |
| B154 | B154-10 | 1/16/06 | 10 | 11 | Area 3 | UG/KG | <12.5 |
| B155 | B155-2 | 1/30/06 | 2 | 3 | Area 3 | UG/KG | 12.5 |
| B155 | B155-5 | 1/30/06 | 5 | 6 | Area 3 | UG/KG | <12.5 |
| B155 | B155-10 | 1/30/06 | 10 | 11 | Area 3 | UG/KG | <12.5 |
| B156 | B156-2 | 1/13/06 | 2 | 3 | Area 3 | UG/KG | 18.75 |
| B156 | B156-5 | 1/13/06 | 5 | 6 | Area 3 | UG/KG | <12.5 |
| B156 | B156-10 | 1/13/06 | 10 | 11 | Area 3 | UG/KG | <625 |
| B158 | B158-2 | 1/30/06 | 2 | 3 | Area 3 | UG/KG | <12.5 |
| B158 | B158-5 | 1/30/06 | 5 | 6 | Area 3 | UG/KG | <12.5 |
| B158 | B158-10 | 1/30/06 | 10 | 11 | Area 3 | UG/KG | <12.5 |
| B159 | B159-2 | 1/31/06 | 2 | 3 | Area 3 | UG/KG | <12.5 |
| B159 | B159-5 | 1/31/06 | 5 | 6 | Area 3 | UG/KG | <62.5 |
| B159 | B159-10 | 1/31/06 | 10 | 11 | Area 3 | UG/KG | <62.5 |
| B160 | B160-2 | 1/31/06 | 2 | 3 | Area 3 | UG/KG | <12.5 |
| B160 | B160-5 | 1/31/06 | 5 | 6 | Area 3 | UG/KG | <12.5 |
| B160 | B160-10 | 1/31/06 | 10 | 11 | Area 3 | UG/KG | <12.5 |
| B161 | B161-2 | 1/13/06 | 2 | 3 | Area 3 | UG/KG | <12.5 |
| B161 | B161-5 | 1/13/06 | 5 | 6 | Area 3 | UG/KG | <625 |
| B161 | B161-10 | 1/13/06 | 10 | 11 | Area 3 | UG/KG | <12.5 |
| B162 | B162-2 | 1/16/06 | 2 | 3 | Area 3 | UG/KG | 5.625 |
| B162 | B162-5 | 1/16/06 | 5 | 6 | Area 3 | UG/KG | <12.5 |
| B162 | B162-10 | 1/16/06 | 10 | 11 | Area 3 | UG/KG | <12.5 |
| B163 | B163-2 | 1/16/06 | 2 | 3 | Area 3 | UG/KG | <12.5 |
| B163 | B163-5 | 1/16/06 | 5 | 6 | Area 3 | UG/KG | <12.5 |
| B163 | B163-10 | 1/16/06 | 10 | 11 | Area 3 | UG/KG | <125 |
| B164 | B164-2 | 1/16/06 | 2 | 3 | Area 3 | UG/KG | <12.5 |
| B164 | B164-5 | 1/16/06 | 5 | 6 | Area 3 | UG/KG | <12.5 |
| B164 | B164-10 | 1/16/06 | 10 | 11 | Area 3 | UG/KG | <12.5 |
| B165 | B165-2 | 1/23/06 | 2 | 3 | Area 3 | UG/KG | <12.5 |
| B165 | B165-5 | 1/23/06 | 5 | 6 | Area 3 | UG/KG | 9.875 |
| B165 | B165-10 | 1/23/06 | 10 | 11 | Area 3 | UG/KG | <12.5 |
| B166 | B166-2 | 1/24/06 | 2 | 3 | Area 3 | UG/KG | <12.5 |
| B166 | B166-5 | 1/24/06 | 5 | 6 | Area 3 | UG/KG | <12.5 |
| B166 | B166-10 | 1/24/06 | 10 | 11 | Area 3 | UG/KG | <12.5 |
| B167 | B167-2 | 1/17/06 | 2 | 3 | Area 3 | UG/KG | <12.5 |
| B167 | B167-5 | 1/17/06 | 5 | 6 | Area 3 | UG/KG | <12.5 |
| B167 | B167-10 | 1/17/06 | 10 | 11 | Area 3 | UG/KG | <12.5 |
| B168 | B168-2 | 1/17/06 | 2 | 3 | Area 3 | UG/KG | <62.5 |
| B168 | B168-5 | 1/17/06 | 5 | 6 | Area 3 | UG/KG | <12.5 |
| B168 | B168-10 | 1/17/06 | 10 | 11 | Area 3 | UG/KG | <12.5 |
| B169 | B169-2 | 1/17/06 | 2 | 3 | Area 3 | UG/KG | <125 |
| B169 | B169-5 | 1/17/06 | 5 | 6 | Area 3 | UG/KG | <12.5 |

**Table B4**
**Results of Dibenzo(a,h)anthracene Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Dibenzo(a,h)anthracene |
|---|---|---|---|---|---|---|---|
| B169 | B169-10 | 1/17/06 | 10 | 11 | Area 3 | UG/KG | <12.5 |
| B170 | B170-2 | 1/18/06 | 2 | 3 | Area 3 | UG/KG | <12.5 |
| B170 | B170-5 | 1/18/06 | 5 | 6 | Area 3 | UG/KG | <12.5 |
| B170 | B170-10 | 1/18/06 | 10 | 11 | Area 3 | UG/KG | <12.5 |
| B171 | B171-2 | 1/11/06 | 2 | 3 | Area 3 | UG/KG | <25 |
| B171 | B171-5 | 1/11/06 | 5 | 6 | Area 3 | UG/KG | <12.5 |
| B171 | B171-10 | 1/11/06 | 10 | 11 | Area 3 | UG/KG | <12.5 |
| B172 | B172-2 | 1/12/06 | 2 | 3 | Area 3 | UG/KG | <12.5 |
| B172 | B172-5 | 1/12/06 | 5 | 6 | Area 3 | UG/KG | <12.5 |
| B172 | B172-10 | 1/12/06 | 10 | 11 | Area 3 | UG/KG | <12.5 |
| B173 | B173-2 | 1/12/06 | 2 | 3 | Area 3 | UG/KG | <12.5 |
| B173 | B173-5 | 1/12/06 | 5 | 6 | Area 3 | UG/KG | <12.5 |
| B173 | B173-10 | 1/12/06 | 10 | 11 | Area 3 | UG/KG | <12.5 |
| B174 | B174-2 | 1/12/06 | 2 | 3 | Area 3 | UG/KG | <62.5 |
| B174 | B174-5 | 1/12/06 | 5 | 6 | Area 3 | UG/KG | <12.5 |
| B174 | B174-10 | 1/12/06 | 10 | 11 | Area 3 | UG/KG | <12.5 |
| B175 | B175-2 | 2/7/06 | 2 | 3 | Area 3 | UG/KG | <12.5 |
| B175 | B175-5 | 2/7/06 | 5 | 6 | Area 3 | UG/KG | <12.5 |
| B175 | B175-10 | 2/7/06 | 10 | 11 | Area 3 | UG/KG | <12.5 |
| B176 | B176-2 | 2/7/06 | 2 | 3 | Area 3 | UG/KG | <125 |
| B176 | B176-5 | 2/7/06 | 5 | 6 | Area 3 | UG/KG | <12.5 |
| B176 | B176-10 | 2/7/06 | 10 | 11 | Area 3 | UG/KG | <62.5 |
| B177 | B177-2 | 2/2/06 | 2 | 3 | Area 3 | UG/KG | <12.5 |
| B177 | B177-5 | 2/2/06 | 5 | 6 | Area 3 | UG/KG | <12.5 |
| B177 | B177-10 | 2/2/06 | 10 | 11 | Area 3 | UG/KG | <12.5 |
| B178 | B178-2 | 2/2/06 | 2 | 3 | Area 3 | UG/KG | <125 |
| B178 | B178-5 | 2/2/06 | 5 | 6 | Area 3 | UG/KG | <12.5 |
| B178 | B178-10 | 2/2/06 | 10 | 11 | Area 3 | UG/KG | <12.5 |
| B179 | B179-2 | 1/26/06 | 2 | 3 | Area 3 | UG/KG | <12.5 |
| B179 | B179-5 | 1/26/06 | 5 | 6 | Area 3 | UG/KG | <12.5 |
| B179 | B179-10 | 1/26/06 | 10 | 11 | Area 3 | UG/KG | <12.5 |
| B180 | B180-2 | 1/26/06 | 2 | 3 | Area 3 | UG/KG | <12.5 |
| B180 | B180-5 | 1/26/06 | 5 | 6 | Area 3 | UG/KG | <12.5 |
| B180 | B180-10 | 1/26/06 | 10 | 11 | Area 3 | UG/KG | <12.5 |
| B181 | B181-2 | 2/6/06 | 2 | 3 | Area 3 | UG/KG | <12.5 |
| B181 | B181-5 | 2/6/06 | 5 | 6 | Area 3 | UG/KG | <125 |
| B181 | B181-10 | 2/6/06 | 10 | 11 | Area 3 | UG/KG | <12.5 |
| B182 | B182-2 | 1/24/06 | 2 | 3 | Area 3 | UG/KG | <12.5 |
| B182 | B182-5 | 1/25/06 | 5 | 6 | Area 3 | UG/KG | <125 |
| B182 | B182-10 | 1/25/06 | 10 | 11 | Area 3 | UG/KG | <12.5 |
| B183 | B183-2 | 1/25/06 | 2 | 3 | Area 3 | UG/KG | <250 |
| B183 | B183-5 | 1/25/06 | 5 | 6 | Area 3 | UG/KG | <12.5 |
| B183 | B183-10 | 1/25/06 | 10 | 11 | Area 3 | UG/KG | 306.25 |
| B184 | B184-2 | 1/25/06 | 2 | 3 | Area 3 | UG/KG | <125 |
| B184 | B184-5 | 1/25/06 | 5 | 6 | Area 3 | UG/KG | <12.5 |
| B184 | B184-10 | 1/25/06 | 10 | 11 | Area 3 | UG/KG | <12.5 |
| B185 | B185-2 | 1/26/06 | 2 | 3 | Area 3 | UG/KG | <12.5 |
| B185 | B185-5 | 1/26/06 | 5 | 6 | Area 3 | UG/KG | <12.5 |
| B185 | B185-10 | 1/26/06 | 10 | 11 | Area 3 | UG/KG | <12.5 |
| B186 | B186-2 | 1/27/06 | 2 | 3 | Area 3 | UG/KG | <125 |
| B186 | B186-5 | 1/27/06 | 5 | 6 | Area 3 | UG/KG | <12.5 |
| B186 | B186-10 | 1/27/06 | 10 | 11 | Area 3 | UG/KG | <12.5 |
| B187 | B187-2 | 1/27/06 | 2 | 3 | Area 3 | UG/KG | <62.5 |
| B187 | B187-5 | 1/27/06 | 5 | 6 | Area 3 | UG/KG | <12.5 |

**Table B4**
**Results of Dibenzo(a,h)anthracene Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Dibenzo(a,h)anthracene |
|---|---|---|---|---|---|---|---|
| B187 | B187-10 | 1/27/06 | 10 | 11 | Area 3 | UG/KG | <12.5 |
| B188 | B188-2 | 2/7/06 | 2 | 3 | Area 2 | UG/KG | <12.5 |
| B188 | B188-5 | 2/7/06 | 5 | 6 | Area 2 | UG/KG | <125 |
| B188 | B188-10 | 2/7/06 | 10 | 11 | Area 2 | UG/KG | <12.5 |
| B189 | B189-2 | 2/7/06 | 2 | 3 | Area 2 | UG/KG | <12.5 |
| B189 | B189-5 | 2/7/06 | 5 | 6 | Area 2 | UG/KG | <12.5 |
| B189 | B189-10 | 2/7/06 | 10 | 11 | Area 2 | UG/KG | <12.5 |
| B190 | B190-2 | 2/8/06 | 2 | 3 | Area 2 | UG/KG | <12.5 |
| B190 | B190-5 | 2/8/06 | 5 | 6 | Area 2 | UG/KG | <12.5 |
| B190 | B190-10 | 2/8/06 | 10 | 11 | Area 2 | UG/KG | <12.5 |
| B191 | B191-2 | 2/1/06 | 2 | 3 | Area 2 | UG/KG | <125 |
| B191 | B191-5 | 2/1/06 | 5 | 6 | Area 2 | UG/KG | <125 |
| B191 | B191-10 | 2/1/06 | 10 | 11 | Area 2 | UG/KG | <125 |
| B192 | B192-2 | 2/1/06 | 2 | 3 | Area 2 | UG/KG | <12.5 |
| B192 | B192-5 | 2/1/06 | 5 | 6 | Area 2 | UG/KG | <12.5 |
| B192 | B192-10 | 2/1/06 | 10 | 11 | Area 2 | UG/KG | <12.5 |
| B193 | B193-2 | 2/6/06 | 2 | 3 | Area 3 | UG/KG | <12.5 |
| B193 | B193-5 | 2/6/06 | 5 | 6 | Area 3 | UG/KG | <12.5 |
| B193 | B193-10 | 2/6/06 | 10 | 11 | Area 3 | UG/KG | <12.5 |
| B194 | B194-2 | 2/3/06 | 2 | 3 | Area 3 | UG/KG | <62.5 |
| B194 | B194-5 | 2/3/06 | 5 | 6 | Area 3 | UG/KG | <12.5 |
| B194 | B194-10 | 2/3/06 | 10 | 11 | Area 3 | UG/KG | <125 |
| B195 | B195-2 | 2/3/06 | 2 | 3 | Area 3 | UG/KG | <62.5 |
| B195 | B195-5 | 2/3/06 | 5 | 6 | Area 3 | UG/KG | <12.5 |
| B195 | B195-10 | 2/3/06 | 10 | 11 | Area 3 | UG/KG | <12.5 |
| B196 | B196-2 | 1/25/06 | 2 | 3 | Area 3 | UG/KG | <12.5 |
| B196 | B196-5 | 1/25/06 | 5 | 6 | Area 3 | UG/KG | <12.5 |
| B196 | B196-10 | 1/25/06 | 10 | 11 | Area 3 | UG/KG | <12.5 |
| B197 | B197-2 | 2/1/06 | 2 | 3 | Area 3 | UG/KG | <12.5 |
| B197 | B197-5 | 2/1/06 | 5 | 6 | Area 3 | UG/KG | <12.5 |
| B197 | B197-10 | 2/1/06 | 10 | 11 | Area 3 | UG/KG | <12.5 |
| B198 | B198-2 | 1/26/06 | 2 | 3 | Area 3 | UG/KG | <12.5 |
| B198 | B198-5 | 1/26/06 | 5 | 6 | Area 3 | UG/KG | <12.5 |
| B198 | B198-10 | 1/26/06 | 10 | 11 | Area 3 | UG/KG | <12.5 |
| B199 | B199-2 | 1/23/06 | 2 | 3 | Area 3 | UG/KG | <12.5 |
| B199 | B199-5 | 1/23/06 | 5 | 6 | Area 3 | UG/KG | 3.75 |
| B199 | B199-10 | 1/23/06 | 10 | 11 | Area 3 | UG/KG | <12.5 |
| B200 | B200-2 | 1/24/06 | 2 | 3 | Area 3 | UG/KG | <12.5 |
| B200 | B200-5 | 1/24/06 | 5 | 6 | Area 3 | UG/KG | <12.5 |
| B200 | B200-10 | 1/24/06 | 10 | 11 | Area 3 | UG/KG | <12.5 |
| B201 | B201-2 | 1/25/06 | 2 | 3 | Area 3 | UG/KG | <12.5 |
| B201 | B201-5 | 1/25/06 | 5 | 6 | Area 3 | UG/KG | <12.5 |
| B201 | B201-10 | 1/25/06 | 10 | 11 | Area 3 | UG/KG | <12.5 |
| B202 | B202-2 | 1/25/06 | 2 | 3 | Area 3 | UG/KG | <12.5 |
| B202 | B202-5 | 1/25/06 | 5 | 6 | Area 3 | UG/KG | <12.5 |
| B202 | B202-10 | 1/25/06 | 10 | 11 | Area 3 | UG/KG | <12.5 |
| B203 | B203-2 | 2/7/06 | 2 | 3 | Area 3 | UG/KG | <125 |
| B203 | B203-5 | 2/7/06 | 5 | 6 | Area 3 | UG/KG | <625 |
| B203 | B203-10 | 2/7/06 | 10 | 11 | Area 3 | UG/KG | <62.5 |
| B204 | B204-2 | 2/6/06 | 2 | 3 | Area 3 | UG/KG | <125 |
| B204 | B204-5 | 2/6/06 | 5 | 6 | Area 3 | UG/KG | <125 |
| B204 | B204-10 | 2/6/06 | 10 | 11 | Area 3 | UG/KG | <12.5 |
| B205 | B205-2 | 2/7/06 | 2 | 3 | Area 3 | UG/KG | <625 |
| B205 | B205-5 | 2/7/06 | 5 | 6 | Area 3 | UG/KG | <1250 |

**Table B4**
**Results of Dibenzo(a,h)anthracene Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Dibenzo(a,h)anthracene |
|---|---|---|---|---|---|---|---|
| B205 | B205-10 | 2/7/06 | 10 | 11 | Area 3 | UG/KG | <12.5 |
| B206 | B206-2 | 2/8/06 | 2 | 3 | Area 2 | UG/KG | <62.5 |
| B206 | B206-5 | 2/8/06 | 5 | 6 | Area 2 | UG/KG | <12.5 |
| B206 | B206-10 | 2/8/06 | 10 | 11 | Area 2 | UG/KG | <12.5 |
| B207 | B207-2 | 2/8/06 | 2 | 3 | Area 2 | UG/KG | 58.75 |
| B207 | B207-5 | 2/8/06 | 5 | 6 | Area 2 | UG/KG | <12.5 |
| B207 | B207-10 | 2/8/06 | 10 | 11 | Area 2 | UG/KG | <12.5 |
| B208 | B208-2 | 1/31/06 | 2 | 3 | Area 2 | UG/KG | <12.5 |
| B208 | B208-5 | 1/31/06 | 5 | 6 | Area 2 | UG/KG | <12.5 |
| B208 | B208-10 | 1/31/06 | 10 | 11 | Area 2 | UG/KG | <12.5 |
| B209 | B209-2 | 1/31/06 | 2 | 3 | Area 2 | UG/KG | <125 |
| B209 | B209-5 | 1/31/06 | 5 | 6 | Area 2 | UG/KG | <125 |
| B209 | B209-10 | 1/31/06 | 10 | 11 | Area 2 | UG/KG | <125 |
| B210 | B210-2 | 1/31/06 | 2 | 3 | Area 3 | UG/KG | <62.5 |
| B210 | B210-5 | 1/31/06 | 5 | 6 | Area 3 | UG/KG | <12.5 |
| B210 | B210-10 | 1/31/06 | 10 | 11 | Area 3 | UG/KG | <12.5 |
| B211 | B211-2 | 2/6/06 | 2 | 3 | Area 3 | UG/KG | <62.5 |
| B211 | B211-5 | 2/6/06 | 5 | 6 | Area 3 | UG/KG | <125 |
| B211 | B211-10 | 2/6/06 | 10 | 11 | Area 3 | UG/KG | <62.5 |
| B212 | B212-2 | 1/24/06 | 2 | 3 | Area 3 | UG/KG | <12.5 |
| B212 | B212-5 | 1/24/06 | 5 | 6 | Area 3 | UG/KG | <12.5 |
| B212 | B212-10 | 1/24/06 | 10 | 11 | Area 3 | UG/KG | <12.5 |
| B213 | B213-2 | 2/6/06 | 2 | 3 | Area 3 | UG/KG | <12.5 |
| B213 | B213-5 | 2/6/06 | 5 | 6 | Area 3 | UG/KG | <12.5 |
| B213 | B213-10 | 2/6/06 | 10 | 11 | Area 3 | UG/KG | <12.5 |
| B214 | B214-2 | 1/23/06 | 2 | 3 | Area 3 | UG/KG | <12.5 |
| B214 | B214-5 | 1/23/06 | 5 | 6 | Area 3 | UG/KG | <12.5 |
| B214 | B214-10 | 1/23/06 | 10 | 11 | Area 3 | UG/KG | <12.5 |
| B215 | B215-2 | 2/3/06 | 2 | 3 | Area 3 | UG/KG | <62.5 |
| B215 | B215-5 | 2/3/06 | 5 | 6 | Area 3 | UG/KG | <12.5 |
| B215 | B215-10 | 2/3/06 | 10 | 11 | Area 3 | UG/KG | <12.5 |
| B216 | B216-2 | 2/2/06 | 2 | 3 | Area 3 | UG/KG | <12.5 |
| B216 | B216-5 | 2/2/06 | 5 | 6 | Area 3 | UG/KG | <12.5 |
| B216 | B216-10 | 2/2/06 | 10 | 11 | Area 3 | UG/KG | <12.5 |
| B217 | B217-2 | 1/24/06 | 2 | 3 | Area 3 | UG/KG | <12.5 |
| B217 | B217-5 | 1/24/06 | 5 | 6 | Area 3 | UG/KG | <12.5 |
| B217 | B217-10 | 1/24/06 | 10 | 11 | Area 3 | UG/KG | <12.5 |
| B218 | B218-2 | 2/8/06 | 2 | 3 | Area 3 | UG/KG | <125 |
| B218 | B218-5 | 2/8/06 | 5 | 6 | Area 3 | UG/KG | <125 |
| B218 | B218-10 | 2/8/06 | 10 | 11 | Area 3 | UG/KG | <12.5 |
| B219 | B219-2 | 1/26/06 | 2 | 3 | Area 3 | UG/KG | <12.5 |
| B219 | B219-5 | 1/26/06 | 5 | 6 | Area 3 | UG/KG | <12.5 |
| B219 | B219-10 | 1/26/06 | 10 | 11 | Area 3 | UG/KG | <12.5 |
| B220 | B220-2 | 1/26/06 | 2 | 3 | Area 3 | UG/KG | <12.5 |
| B220 | B220-5 | 1/26/06 | 5 | 6 | Area 3 | UG/KG | <12.5 |
| B220 | B220-10 | 1/26/06 | 10 | 11 | Area 3 | UG/KG | <12.5 |
| B221 | B221-2 | 1/27/06 | 2 | 3 | Area 2 | UG/KG | <12.5 |
| B221 | B221-5 | 1/27/06 | 5 | 6 | Area 2 | UG/KG | <12.5 |
| B221 | B221-10 | 1/27/06 | 10 | 11 | Area 2 | UG/KG | <12.5 |
| B222 | B222-2 | 2/3/06 | 2 | 3 | Area 2 | UG/KG | <12.5 |
| B222 | B222-5 | 2/3/06 | 5 | 6 | Area 2 | UG/KG | <12.5 |
| B222 | B222-10 | 2/3/06 | 10 | 11 | Area 2 | UG/KG | <12.5 |
| B223 | B223-2 | 2/3/06 | 2 | 3 | Area 2 | UG/KG | <12.5 |
| B223 | B223-5 | 2/3/06 | 5 | 6 | Area 2 | UG/KG | <12.5 |

**Table B4**
**Results of Dibenzo(a,h)anthracene Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Dibenzo(a,h)anthracene |
|---|---|---|---|---|---|---|---|
| B223 | B223-10 | 2/3/06 | 10 | 11 | Area 2 | UG/KG | <12.5 |
| B224 | B224-05 | 1/21/08 | 5 | 6 | Area 1 | UG/KG | <2300 |
| B224 | B224-10 | 1/21/08 | 10 | 11 | Area 1 | UG/KG | <21 |
| B225 | B225-5 | 1/21/08 | 5 | 6 | Area 1 | UG/KG | <22 |
| B225 | B225-10 | 1/21/08 | 9 | 10 | Area 1 | UG/KG | <23 |
| B226 | B226-5 | 1/18/08 | 5 | 6 | Area 1 | UG/KG | <220 |
| B226 | B226-10 | 1/18/08 | 9 | 10 | Area 1 | UG/KG | <230 |
| B227 | B227-5 | 1/21/08 | 5 | 6 | Area 1 | UG/KG | <230 |
| B227 | B227-10 | 1/21/08 | 10 | 11 | Area 1 | UG/KG | <2200 |
| B228 | B228-05 | 1/18/08 | 5 | 6 | Area 1 | UG/KG | <12000 |
| B228 | B228-10 | 1/18/08 | 10 | 11 | Area 1 | UG/KG | <420 |
| B229 | B229-05 | 1/18/08 | 5 | 6 | Area 1 | UG/KG | <110 |
| B229 | B229-10 | 1/18/08 | 10 | 11 | Area 1 | UG/KG | <11000 |
| B230 | B230-5 | 1/17/08 | 5 | 6 | Area 1 | UG/KG | <220 |
| B230 | B230-10 | 1/17/08 | 9 | 10 | Area 1 | UG/KG | <2300 |
| B231 | B231-5 | 1/17/08 | 5 | 6 | Area 1 | UG/KG | <22 |
| B231 | B231-10 | 1/17/08 | 9 | 10 | Area 1 | UG/KG | <22 |
| B232 | B232-05 | 1/21/08 | 5 | 6 | Area 3 | UG/KG | <240 |
| B232 | B232-10 | 1/21/08 | 10 | 11 | Area 3 | UG/KG | <24 |
| B233 | B233-05 | 1/23/08 | 5 | 6 | Area 4 | UG/KG | <20 |
| B233 | B233-10 | 1/23/08 | 10 | 11 | Area 4 | UG/KG | <20 |
| B234 | B234-05 | 1/23/08 | 5 | 6 | Area 4 | UG/KG | <20 |
| B234 | B234-10 | 1/23/08 | 10 | 11 | Area 4 | UG/KG | <20 |
| B235 | B235-5 | 1/25/08 | 5 | 6 | Area 4 | UG/KG | <23 |
| B235 | B235-10 | 1/25/08 | 9 | 10 | Area 4 | UG/KG | <220 |
| B236 | B236-05 | 1/22/08 | 5 | 6 | Area 3 | UG/KG | <230 |
| B236 | B236-10 | 1/22/08 | 10 | 11 | Area 3 | UG/KG | <24 |
| B237 | B237-5 | 1/23/08 | 5 | 6 | Area 3 | UG/KG | <12000 |
| B237 | B237-10 | 1/23/08 | 10 | 11 | Area 3 | UG/KG | <11000 |
| B238 | B238-5 | 1/25/08 | 5 | 6 | Area 3 | UG/KG | <1100 |
| B238 | B238-10 | 1/25/08 | 10 | 11 | Area 3 | UG/KG | <11000 |
| B239 | B239-05 | 1/22/08 | 5 | 6 | Area 3 | UG/KG | <230 |
| B239 | B239-10 | 1/22/08 | 10 | 11 | Area 3 | UG/KG | <24 |
| B240 | B240-5 | 1/22/08 | 5 | 6 | Area 3 | UG/KG | <23 |
| B240 | B240-10 | 1/22/08 | 9 | 10 | Area 3 | UG/KG | <23 |
| B241 | B241-5 | 1/23/08 | 5 | 6 | Area 3 | UG/KG | <230 |
| B241 | B241-10 | 1/23/08 | 10 | 11 | Area 3 | UG/KG | <230 |
| B242 | B242-05 | 1/25/08 | 5 | 6 | Area 3 | UG/KG | <1200 |
| B242 | B242-10 | 1/25/08 | 10 | 11 | Area 3 | UG/KG | <23 |
| B243 | B243-05 | 1/25/08 | 5 | 6 | Area 3 | UG/KG | <23 |
| B243 | B243-10 | 1/25/08 | 10 | 11 | Area 3 | UG/KG | <3100 |
| B244 | B244-05 | 1/17/08 | 5 | 6 | Area 1 | UG/KG | <23 |
| B244 | B244-10 | 1/17/08 | 10 | 11 | Area 1 | UG/KG | <24 |
| B245 | B245-05 | 1/15/08 | 5 | 6 | Area 1 | UG/KG | <23 |
| B245 | B245-10 | 1/15/08 | 10 | 11 | Area 1 | UG/KG | <24 |
| B246 | B246-5 | 1/15/08 | 5 | 6 | Area 1 | UG/KG | <23 |
| B246 | B246-10 | 1/15/08 | 10 | 11 | Area 1 | UG/KG | <24 |
| B247 | B247-05 | 1/17/08 | 5 | 6 | Area 1 | UG/KG | <230 |
| B247 | B247-10 | 1/17/08 | 10 | 11 | Area 1 | UG/KG | <23 |
| B248 | B248-05 | 1/15/08 | 5 | 6 | Area 1 | UG/KG | <23 |
| B248 | B248-10 | 1/15/08 | 10 | 11 | Area 1 | UG/KG | <23 |
| B249 | B249-05 | 1/14/08 | 5 | 6 | Area 1 | UG/KG | <11000 |
| B249 | B249-10 | 1/14/08 | 10 | 11 | Area 1 | UG/KG | <2400 |
| B250 | B250-05 | 1/16/08 | 5 | 6 | Area 1 | UG/KG | <23 |

**Table B4**
**Results of Dibenzo(a,h)anthracene Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Dibenzo(a,h)anthracene |
|---|---|---|---|---|---|---|---|
| B250 | B250-10 | 1/16/08 | 10 | 11 | Area 1 | UG/KG | <24 |
| B251 | B251-05 | 1/16/08 | 5 | 6 | Area 1 | UG/KG | <23 |
| B251 | B251-10 | 1/16/08 | 10 | 11 | Area 1 | UG/KG | <23 |
| B252 | B252-5 | 1/15/08 | 5 | 6 | Area 1 | UG/KG | <22 |
| B252 | B252-10 | 1/15/08 | 10 | 11 | Area 1 | UG/KG | <22 |
| B253 | B253-05 | 1/31/08 | 5 | 6 | Area 4 | UG/KG | <2300 |
| B253 | B253-10 | 1/31/08 | 10 | 11 | Area 4 | UG/KG | <2200 |
| B254 | B254-05 | 2/5/08 | 5 | 6 | Area 4 | UG/KG | <23 |
| B254 | B254-10 | 2/5/08 | 10 | 11 | Area 4 | UG/KG | <22 |
| B255 | B255-05 | 1/31/08 | 5 | 6 | Area 3 | UG/KG | <23 |
| B255 | B255-10 | 1/31/08 | 10 | 11 | Area 3 | UG/KG | <24 |
| B256 | B256-05 | 1/31/08 | 5 | 6 | Area 3 | UG/KG | <23 |
| B256 | B256-10 | 1/31/08 | 10 | 11 | Area 3 | UG/KG | <23 |
| B257 | B257-05 | 1/30/08 | 5 | 6 | Area 3 | UG/KG | <440 |
| B257 | B257-10 | 1/30/08 | 10 | 11 | Area 3 | UG/KG | <460 |
| B258 | B258-05 | 1/31/08 | 5 | 6 | Area 3 | UG/KG | <1100 |
| B258 | B258-10 | 1/31/08 | 10 | 11 | Area 3 | UG/KG | <11000 |
| B259 | B259-05 | 2/1/08 | 5 | 6 | Area 3 | UG/KG | <240 |
| B259 | B259-10 | 2/1/08 | 10 | 11 | Area 3 | UG/KG | <23 |
| B260 | B260-05 | 2/1/08 | 5 | 6 | Area 3 | UG/KG | <220 |
| B260 | B260-10 | 2/1/08 | 10 | 11 | Area 3 | UG/KG | <24 |
| B261 | B261-5 | 1/21/09 | 4.5 | 5.5 | Area 3 | UG/KG | <23 |
| B261 | B261-10 | 1/21/09 | 9.5 | 10.5 | Area 3 | UG/KG | <230 |
| B262 | B262-05 | 1/29/08 | 5 | 6 | Area 3 | UG/KG | <23 |
| B262 | B262-10 | 1/29/08 | 10 | 11 | Area 3 | UG/KG | <22 |
| B263 | B263-05 | 2/4/08 | 5 | 6 | Area 3 | UG/KG | <230 |
| B263 | B263-10 | 2/4/08 | 10 | 11 | Area 3 | UG/KG | <22 |
| B264 | B264-5 | 1/15/08 | 5 | 6 | Area 1 | UG/KG | <23 |
| B264 | B264-10 | 1/15/08 | 10 | 11 | Area 1 | UG/KG | <22 |
| B266 | B266-05 | 1/14/08 | 5 | 6 | Area 1 | UG/KG | <22 |
| B266 | B266-10 | 1/14/08 | 10 | 11 | Area 1 | UG/KG | <27 |
| B267 | B267-05 | 1/15/08 | 5 | 6 | Area 1 | UG/KG | <23 |
| B267 | B267-10 | 1/15/08 | 10 | 11 | Area 1 | UG/KG | <24 |
| B268 | B268-05 | 2/1/08 | 5 | 6 | Area 1 | UG/KG | <23 |
| B268 | B268-10 | 2/1/08 | 10 | 11 | Area 1 | UG/KG | <23 |
| B270 | B270-5 | 1/20/09 | 4.5 | 5.5 | Area 3 | UG/KG | <23 |
| B270 | B270-10 | 1/20/09 | 10 | 11 | Area 3 | UG/KG | <24 |
| B271 | B271-5 | 1/14/08 | 5 | 6 | Area 1 | UG/KG | <23 |
| B271 | B271-10 | 1/14/08 | 10 | 11 | Area 1 | UG/KG | <23 |
| B272 | B272-5 | 1/14/08 | 5 | 6 | Area 1 | UG/KG | <24 |
| B272 | B272-10 | 1/14/08 | 10 | 11 | Area 1 | UG/KG | <23 |
| B274 | B274-05 | 1/14/08 | 5 | 6 | Area 1 | UG/KG | <23 |
| B274 | B274-10 | 1/14/08 | 10 | 11 | Area 1 | UG/KG | <22 |
| B275 | B275-5 | 1/14/08 | 5 | 6 | Area 1 | UG/KG | <23 |
| B275 | B275-10 | 1/14/08 | 10 | 11 | Area 1 | UG/KG | <21 |
| B276 | B276-05 | 2/4/08 | 5 | 6 | Area 3 | UG/KG | <23 |
| B276 | B276-10 | 2/4/08 | 10 | 11 | Area 3 | UG/KG | <25 |
| B277 | B277-5 | 1/16/08 | 5 | 6 | Area 3 | UG/KG | <20 |
| B277 | B277-10 | 1/16/08 | 10 | 11 | Area 3 | UG/KG | <20 |
| B278 | B278-5 | 1/16/08 | 5 | 6 | Area 1 | UG/KG | <2000 |
| B278 | B278-10 | 1/16/08 | 10 | 11 | Area 1 | UG/KG | <200 |
| B279 | B279-5 | 1/16/08 | 5 | 6 | Area 1 | UG/KG | <200 |
| B279 | B279-10 | 1/16/08 | 10 | 11 | Area 1 | UG/KG | <200 |
| B280 | B280-5 | 1/16/08 | 5 | 6 | Area 1 | UG/KG | <200 |

**Table B4**
**Results of Dibenzo(a,h)anthracene Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Dibenzo(a,h)anthracene |
|---|---|---|---|---|---|---|---|
| B280 | B280-10 | 1/16/08 | 10 | 11 | Area 1 | UG/KG | <100 |
| B281 | B281-5 | 1/14/08 | 5 | 6 | Area 1 | UG/KG | <24 |
| B281 | B281-10 | 1/14/08 | 10 | 11 | Area 1 | UG/KG | <210 |
| B282 | B282-05 | 1/28/08 | 5 | 6 | Area 1 | UG/KG | <23 |
| B282 | B282-10 | 1/28/08 | 10 | 11 | Area 1 | UG/KG | <20 |
| B283 | B283-05 | 1/29/08 | 5 | 6 | Area 1 | UG/KG | <23 |
| B283 | B283-10 | 1/29/08 | 10 | 11 | Area 1 | UG/KG | <23 |
| B284 | B284-05 | 1/28/08 | 5 | 6 | Area 2 | UG/KG | <120 |
| B284 | B284-10 | 1/28/08 | 10 | 11 | Area 2 | UG/KG | <23 |
| B285 | B285-05 | 1/28/08 | 5 | 6 | Area 2 | UG/KG | <47 |
| B285 | B285-10 | 1/28/08 | 10 | 11 | Area 2 | UG/KG | <25 |
| B286 | B286-5 | 1/22/09 | 5 | 6 | Area 2 | UG/KG | 50 |
| B286 | B286-10 | 1/22/09 | 10 | 11 | Area 2 | UG/KG | <230 |
| B287 | B287-5 | 1/22/08 | 5 | 6 | Area 2 | UG/KG | <240 |
| B287 | B287-10 | 1/22/08 | 10 | 11 | Area 2 | UG/KG | <230 |
| B288 | B288-05 | 1/17/08 | 5 | 6 | Area 2 | UG/KG | <22 |
| B288 | B288-10 | 1/17/08 | 10 | 11 | Area 2 | UG/KG | <21 |
| B289 | B289-5 | 1/28/08 | 5 | 6 | Area 2 | UG/KG | <230 |
| B289 | B289-10 | 1/28/08 | 10 | 11 | Area 2 | UG/KG | <22 |
| B290 | B290-5 | 1/28/08 | 5 | 6 | Area 2 | UG/KG | <250 |
| B290 | B290-10 | 1/28/08 | 10 | 11 | Area 2 | UG/KG | <230 |
| B291 | B291-10 | 1/29/08 | 10 | 11 | Area 2 | UG/KG | <23 |
| B292 | B292-5 | 1/22/09 | 5 | 6 | Area 2 | UG/KG | <23 |
| B292 | B292-10 | 1/22/09 | 10 | 11 | Area 2 | UG/KG | <22 |
| B293 | B293-5 | 1/22/09 | 5 | 6 | Area 2 | UG/KG | <26 |
| B293 | B293-10 | 1/22/09 | 10 | 11 | Area 2 | UG/KG | <25 |
| B294 | B294-05 | 1/31/08 | 4.5 | 5 | Area 2 | UG/KG | <240 |
| B294 | B294-10 | 1/31/08 | 10 | 11 | Area 2 | UG/KG | <260 |
| B295 | B295-5 | 1/22/09 | 5 | 6 | Area 2 | UG/KG | <24 |
| B295 | B295-10 | 1/22/09 | 10 | 11 | Area 2 | UG/KG | <24 |
| B297 | B297-5 | 1/20/09 | 4.5 | 5.5 | Area 2 | UG/KG | 570 |
| B297 | B297-10 | 1/20/09 | 9.5 | 10.5 | Area 2 | UG/KG | <22 |
| B298 | B298-5 | 1/28/08 | 5 | 6 | Area 2 | UG/KG | <22 |
| B298 | B298-10 | 1/28/08 | 10 | 11 | Area 2 | UG/KG | <24 |
| B299 | B299-5 | 1/19/09 | 5 | 6 | Area 4 | UG/KG | <23 |
| B299 | B299-10 | 1/19/09 | 9.5 | 10.5 | Area 4 | UG/KG | <2200 |
| B300 | B300-05 | 2/6/08 | 5 | 6 | Area 4 | UG/KG | <23 |
| B300 | B300-10 | 2/6/08 | 10 | 11 | Area 4 | UG/KG | <23 |
| B301 | B301-05 | 2/6/08 | 5 | 6 | Area 4 | UG/KG | <23 |
| B301 | B301-10 | 2/6/08 | 10 | 11 | Area 4 | UG/KG | <23 |
| B302 | B302-05 | 2/5/08 | 5 | 6 | Area 4 | UG/KG | <23 |
| B302 | B302-10 | 2/5/08 | 10 | 11 | Area 4 | UG/KG | <23 |
| B303 | B303-05 | 1/28/08 | 5 | 6 | Area 4 | UG/KG | <220 |
| B303 | B303-10 | 1/28/08 | 10 | 11 | Area 4 | UG/KG | <230 |
| B304 | B304-5 | 1/19/09 | 4.5 | 5.5 | Area 3 | UG/KG | <23 |
| B304 | B304-10 | 1/19/09 | 9.5 | 10.5 | Area 3 | UG/KG | <23 |
| B305 | B305-5 | 1/19/09 | 4.5 | 5.5 | Area 3 | UG/KG | <23 |
| B305 | B305-10 | 1/19/09 | 9.5 | 10.5 | Area 3 | UG/KG | <23 |
| B306 | B306-05 | 1/31/08 | 5 | 6 | Area 3 | UG/KG | <2400 |
| B306 | B306-10 | 1/31/08 | 10 | 11 | Area 3 | UG/KG | <2300 |
| B307 | B307-5 | 1/28/08 | 5 | 6 | Area 3 | UG/KG | <23 |
| B307 | B307-10 | 1/28/08 | 10 | 11 | Area 3 | UG/KG | <22 |
| B308 | B308-05 | 1/30/08 | 5 | 6 | Area 3 | UG/KG | <23 |
| B308 | B308-10 | 1/30/08 | 10 | 11 | Area 3 | UG/KG | <22 |

**Table B4**
**Results of Dibenzo(a,h)anthracene Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Dibenzo(a,h)anthracene |
|---|---|---|---|---|---|---|---|
| B309 | B309-5 | 1/19/09 | 4.5 | 5.5 | Area 3 | UG/KG | <21 |
| B309 | B309-10 | 1/19/09 | 9.5 | 10.5 | Area 3 | UG/KG | <23 |
| B310 | B310-05 | 2/4/08 | 5 | 6 | Area 3 | UG/KG | <23 |
| B310 | B310-10 | 2/4/08 | 10 | 11 | Area 3 | UG/KG | <23 |
| B311 | B311-05 | 2/5/08 | 5 | 6 | Area 3 | UG/KG | <450 |
| B311 | B311-10 | 2/5/08 | 10 | 11 | Area 3 | UG/KG | <23 |
| B312 | B312-05 | 1/30/08 | 4.5 | 5.5 | Area 3 | UG/KG | <23 |
| B312 | B312-10 | 1/30/08 | 10 | 11 | Area 3 | UG/KG | <22 |
| B313 | B313-05 | 2/1/08 | 4.5 | 5.5 | Area 3 | UG/KG | <23 |
| B313 | B313-10 | 2/1/08 | 10 | 11 | Area 3 | UG/KG | <22 |
| B314 | B314-05 | 1/30/08 | 5 | 6 | Area 2 | UG/KG | <24 |
| B314 | B314-10 | 1/30/08 | 10 | 11 | Area 2 | UG/KG | <24 |
| B315 | B315-05 | 1/30/08 | 4.5 | 5.5 | Area 3 | UG/KG | <230 |
| B315 | B315-10 | 1/30/08 | 10 | 11 | Area 3 | UG/KG | <4900 |
| B316 | B316-05 | 1/30/08 | 4.5 | 5.5 | Area 3 | UG/KG | <230 |
| B316 | B316-10 | 1/30/08 | 10 | 11 | Area 3 | UG/KG | <2200 |
| B317 | B317-05 | 1/29/08 | 4.5 | 5.5 | Area 3 | UG/KG | <22 |
| B317 | B317-10 | 1/29/08 | 10 | 11 | Area 3 | UG/KG | <23 |
| B318 | B318-05 | 1/28/08 | 4.5 | 5.5 | Area 2 | UG/KG | <230 |
| B318 | B318-10 | 1/28/08 | 10 | 11 | Area 2 | UG/KG | <23 |
| B319 | B319-5 | 1/21/09 | 5 | 6 | Area 2 | UG/KG | <22 |
| B319 | B319-10 | 1/21/09 | 10 | 11 | Area 2 | UG/KG | <23 |
| B320 | B320-05 | 1/29/08 | 4.5 | 5.5 | Area 3 | UG/KG | <22 |
| B320 | B320-10 | 1/29/08 | 10 | 11 | Area 3 | UG/KG | <120 |
| B321 | B321-05 | 1/30/08 | 4.5 | 5.5 | Area 3 | UG/KG | <22 |
| B321 | B321-10 | 1/30/08 | 10 | 11 | Area 3 | UG/KG | <22 |
| B322 | B322-05 | 2/1/08 | 5 | 6 | Area 3 | UG/KG | <23 |
| B322 | B322-10 | 2/1/08 | 10 | 11 | Area 3 | UG/KG | <23 |
| B323 | B323-05 | 1/28/08 | 4.5 | 5.5 | Area 3 | UG/KG | <230 |
| B323 | B323-10 | 1/28/08 | 10 | 11 | Area 3 | UG/KG | <230 |
| B324 | B324-00 | 4/8/08 | 0 | 0.5 | Area 4 | UG/KG | <23 |
| B324 | B324-02 | 4/8/08 | 1.5 | 2 | Area 4 | UG/KG | <23 |
| B325 | B325-00 | 4/8/08 | 0 | 0.5 | Area 4 | UG/KG | <22 |
| B325 | B325-02 | 4/8/08 | 1.5 | 2 | Area 4 | UG/KG | <22 |
| B326 | B326-00 | 4/8/08 | 0 | 0.5 | Area 4 | UG/KG | <23 |
| B326 | B326-02 | 4/8/08 | 1.5 | 2 | Area 4 | UG/KG | <23 |
| B-401 | LL_B-401-1_100611 | 10/6/11 | 0.5 | 1 | Area 2 | UG/KG | <3000 |
| B-401 | LL_B-401-3_100611 | 10/6/11 | 2.5 | 3 | Area 2 | UG/KG | <300 |
| B-401 | LL_B-401-6_100611 | 10/6/11 | 5.5 | 6 | Area 2 | UG/KG | <300 |
| B-401 | LL_B-401-9_100611 | 10/6/11 | 8.5 | 9 | Area 2 | UG/KG | <300 |
| B-402 | LL_B-402-1_100611 | 10/6/11 | 0.5 | 1 | Area 2 | UG/KG | <3000 |
| B-402 | LL_B-402-3_100611 | 10/6/11 | 2.5 | 3 | Area 2 | UG/KG | <3000 |
| B-402 | LL_B-402-6_100611 | 10/6/11 | 5.5 | 6 | Area 2 | UG/KG | <300 |
| B-402 | LL_B-402-9_100611 | 10/6/11 | 8.5 | 9 | Area 2 | UG/KG | <300 |
| B-403 | LL_B-403-1_100711 | 10/7/11 | 0.5 | 1 | Area 2 | UG/KG | <300 |
| B-403 | LL_B-403-3_100711 | 10/7/11 | 2.5 | 3 | Area 2 | UG/KG | <300 |
| B-403 | LL_B-403-6_100711 | 10/7/11 | 5.5 | 6 | Area 2 | UG/KG | <300 |
| B-403 | LL_B-403-9_100711 | 10/7/11 | 8.5 | 9 | Area 2 | UG/KG | <300 |
| B-404 | LL_B-404-1_100711 | 10/7/11 | 0.5 | 1 | Area 2 | UG/KG | <300 |
| B-404 | LL_B-404-3_100711 | 10/7/11 | 2.5 | 3 | Area 2 | UG/KG | <300 |
| B-404 | LL_B-404-6_100711 | 10/7/11 | 5.5 | 6 | Area 2 | UG/KG | <300 |
| B-404 | LL_B-404-9_100711 | 10/7/11 | 8.5 | 9 | Area 2 | UG/KG | <300 |
| B-405 | LL_B-405-1_100711 | 10/7/11 | 0.5 | 1 | Area 2 | UG/KG | <300 |
| B-405 | LL_B-405-3_100711 | 10/7/11 | 2.5 | 3 | Area 2 | UG/KG | <300 |

**Table B4**
**Results of Dibenzo(a,h)anthracene Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Dibenzo(a,h)anthracene |
|---|---|---|---|---|---|---|---|
| B-406 | LL_B-406-1_100711 | 10/7/11 | 0.5 | 1 | Area 2 | UG/KG | <300 |
| B-406 | LL_B-406-3_100711 | 10/7/11 | 2.5 | 3 | Area 2 | UG/KG | <300 |
| B-406 | LL_B-406-6_100711 | 10/7/11 | 5.5 | 6 | Area 2 | UG/KG | <300 |
| B-406 | LL_B-406-9_100711 | 10/7/11 | 8.5 | 9 | Area 2 | UG/KG | <300 |
| B-407 | LL_B-407-1_100711 | 10/7/11 | 0.5 | 1 | Area 2 | UG/KG | <300 |
| B-407 | LL_B-407-3_100711 | 10/7/11 | 2.5 | 3 | Area 2 | UG/KG | <300 |
| B-407 | LL_B-407-6_100711 | 10/7/11 | 5.5 | 6 | Area 2 | UG/KG | <300 |
| B-407 | LL_B-407-9_100711 | 10/7/11 | 8.5 | 9 | Area 2 | UG/KG | <300 |
| B-408 | LL_B-408-1_100711 | 10/7/11 | 0.5 | 1 | Area 2 | UG/KG | <300 |
| B-408 | LL_B-408-3_100711 | 10/7/11 | 2.5 | 3 | Area 2 | UG/KG | <300 |
| B-408 | LL_B-408-6_100711 | 10/7/11 | 5.5 | 6 | Area 2 | UG/KG | <300 |
| B-408 | LL_B-408-9_100711 | 10/7/11 | 8.5 | 9 | Area 2 | UG/KG | <300 |
| B-409 | LL_B-409-1_100711 | 10/7/11 | 0.5 | 1 | Area 2 | UG/KG | <300 |
| B-409 | LL_B-409-3_100711 | 10/7/11 | 2.5 | 3 | Area 2 | UG/KG | <300 |
| B-409 | LL_B-409-6_100711 | 10/7/11 | 5.5 | 6 | Area 2 | UG/KG | <300 |
| B-409 | LL_B-409-9_100711 | 10/7/11 | 8.5 | 9 | Area 2 | UG/KG | <300 |
| B-410 | LL_B-410-1_100711 | 10/7/11 | 0.5 | 1 | Area 2 | UG/KG | <300 |
| B-410 | LL_B-410-3_100711 | 10/7/11 | 2.5 | 3 | Area 2 | UG/KG | <300 |
| B-410 | LL_B-410-6_100711 | 10/7/11 | 5.5 | 6 | Area 2 | UG/KG | <300 |
| B-410 | LL_B-410-9_100711 | 10/7/11 | 8.5 | 9 | Area 2 | UG/KG | <300 |
| B-411 | LL_B-411-1_100611 | 10/6/11 | 0.5 | 1 | Area 1 | UG/KG | <300 |
| B-411 | LL_B-411-3_100611 | 10/6/11 | 2.5 | 3 | Area 1 | UG/KG | <300 |
| B-411 | LL_B-411-6_100611 | 10/6/11 | 5.5 | 6 | Area 1 | UG/KG | <300 |
| B-411 | LL_B-411-9_100611 | 10/6/11 | 8.5 | 9 | Area 1 | UG/KG | <300 |
| B-412 | LL_B-412-1_100611 | 10/6/11 | 0.5 | 1 | Area 1 | UG/KG | <300 |
| B-412 | LL_B-412-3_100611 | 10/6/11 | 2.5 | 3 | Area 1 | UG/KG | <300 |
| B-412 | LL_B-412-6_100611 | 10/6/11 | 5.5 | 6 | Area 1 | UG/KG | <300 |
| B-412 | LL_B-412-9_100611 | 10/6/11 | 8.5 | 9 | Area 1 | UG/KG | <300 |
| B-413 | LL_B-413-1_100611 | 10/6/11 | 0.5 | 1 | Area 1 | UG/KG | <300 |
| B-413 | LL_B-413-3_100611 | 10/6/11 | 2.5 | 3 | Area 1 | UG/KG | <300 |
| B-413 | LL_B-413-6_100611 | 10/6/11 | 5.5 | 6 | Area 1 | UG/KG | <300 |
| B-413 | LL_B-413-9_100611 | 10/6/11 | 8.5 | 9 | Area 1 | UG/KG | <300 |
| B-414 | LL_B-414-1_100611 | 10/6/11 | 0.5 | 1 | Area 1 | UG/KG | <300 |
| B-414 | LL_B-414-3_100611 | 10/6/11 | 2.5 | 3 | Area 1 | UG/KG | <300 |
| B-414 | LL_B-414-6_100611 | 10/6/11 | 5.5 | 6 | Area 1 | UG/KG | <300 |
| B-414 | LL_B-414-9_100611 | 10/6/11 | 8.5 | 9 | Area 1 | UG/KG | <300 |
| B-415 | LL_B-415-1_100611 | 10/6/11 | 0.5 | 1 | Area 1 | UG/KG | <300 |
| B-415 | LL_B-415-3_100611 | 10/6/11 | 2.5 | 3 | Area 1 | UG/KG | <300 |
| B-415 | LL_B-415-6_100611 | 10/6/11 | 5.5 | 6 | Area 1 | UG/KG | <30000 |
| B-415 | LL_B-415-9_100611 | 10/6/11 | 8.5 | 9 | Area 1 | UG/KG | <300 |
| B-416 | LL_B-416-1_100611 | 10/6/11 | 0.5 | 1 | Area 1 | UG/KG | <30000 |
| B-416 | LL_B-416-3_100611 | 10/6/11 | 2.5 | 3 | Area 1 | UG/KG | <300 |
| B-416 | LL_B-416-6_100611 | 10/6/11 | 5.5 | 6 | Area 1 | UG/KG | <300 |
| B-416 | LL_B-416-9_100611 | 10/6/11 | 8.5 | 9 | Area 1 | UG/KG | <300 |
| B-417 | LL_B-417-1_100611 | 10/6/11 | 0.5 | 1 | Area 1 | UG/KG | <300 |
| B-417 | LL_B-417-3_100611 | 10/6/11 | 2.5 | 3 | Area 1 | UG/KG | <300 |
| B-417 | LL_B-417-6_100611 | 10/6/11 | 5.5 | 6 | Area 1 | UG/KG | <300 |
| B-417 | LL_B-417-9_100611 | 10/6/11 | 8.5 | 9 | Area 1 | UG/KG | <300 |
| B-418 | LL_B-418-1_100611 | 10/6/11 | 0.5 | 1 | Area 1 | UG/KG | <300 |
| B-418 | LL_B-418-3_100611 | 10/6/11 | 2.5 | 3 | Area 1 | UG/KG | <300 |
| B-418 | LL_B-418-6_100611 | 10/6/11 | 5.5 | 6 | Area 1 | UG/KG | <30000 |
| B-418 | LL_B-418-9_100611 | 10/6/11 | 8.5 | 9 | Area 1 | UG/KG | <300 |
| B-419 | LL_B-419-1_100611 | 10/6/11 | 0.5 | 1 | Area 1 | UG/KG | <30000 |
| B-419 | LL_B-419-3_100611 | 10/6/11 | 2.5 | 3 | Area 1 | UG/KG | <300 |

**Table B4**
**Results of Dibenzo(a,h)anthracene Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Dibenzo(a,h)anthracene |
|---|---|---|---|---|---|---|---|
| B-419 | LL_B-419-6_100611 | 10/6/11 | 5.5 | 6 | Area 1 | UG/KG | <300 |
| B-419 | LL_B-419-9_100611 | 10/6/11 | 8.5 | 9 | Area 1 | UG/KG | <300 |
| B-420 | LL_B-420-1_100611 | 10/6/11 | 0.5 | 1 | Area 1 | UG/KG | <30000 |
| B-420 | LL_B-420-3_100611 | 10/6/11 | 2.5 | 3 | Area 1 | UG/KG | <300 |
| B-420 | LL_B-420-6_100611 | 10/6/11 | 5.5 | 6 | Area 1 | UG/KG | <300 |
| B-420 | LL_B-420-9_100611 | 10/6/11 | 8.5 | 9 | Area 1 | UG/KG | <300 |
| B-421 | LL_B-421-1_100511 | 10/5/11 | 0.5 | 1 | Area 3 | UG/KG | <300 |
| B-421 | LL_B-421-3_100511 | 10/5/11 | 2.5 | 3 | Area 3 | UG/KG | <300 |
| B-421 | LL_B-421-6_100511 | 10/5/11 | 5.5 | 6 | Area 3 | UG/KG | <300 |
| B-421 | LL_B-421-9_100511 | 10/5/11 | 8.5 | 9 | Area 3 | UG/KG | <300 |
| B-422 | LL_B-422-1_100511 | 10/5/11 | 0.5 | 1 | Area 3 | UG/KG | <300 |
| B-422 | LL_B-422-3_100511 | 10/5/11 | 2.5 | 3 | Area 3 | UG/KG | <300 |
| B-422 | LL_B-422-6_100611 | 10/6/11 | 5.5 | 6 | Area 3 | UG/KG | <300 |
| B-422 | LL_B-422-9_100611 | 10/6/11 | 8.5 | 9 | Area 3 | UG/KG | <300 |
| B-423 | LL_B-423-1_100711 | 10/7/11 | 0.5 | 1 | Area 3 | UG/KG | <300 |
| B-423 | LL_B-423-3_100711 | 10/7/11 | 2.5 | 3 | Area 3 | UG/KG | <300 |
| B-423 | LL_B-423-6_100711 | 10/7/11 | 5.5 | 6 | Area 3 | UG/KG | <300 |
| B-423 | LL_B-423-9_100711 | 10/7/11 | 8.5 | 9 | Area 3 | UG/KG | <300 |
| B-424 | LL_B-424-1_100511 | 10/5/11 | 0.5 | 1 | Area 3 | UG/KG | <300 |
| B-424 | LL_B-424-3_100511 | 10/5/11 | 2.5 | 3 | Area 3 | UG/KG | <300 |
| B-424 | LL_B-424-6_100511 | 10/5/11 | 5.5 | 6 | Area 3 | UG/KG | <300 |
| B-424 | LL_B-424-9_100511 | 10/5/11 | 8.5 | 9 | Area 3 | UG/KG | <300 |
| B-425 | LL_B-425-1_100511 | 10/5/11 | 0.5 | 1 | Area 3 | UG/KG | <30000 |
| B-425 | LL_B-425-3_100511 | 10/5/11 | 2.5 | 3 | Area 3 | UG/KG | <30000 |
| B-425 | LL_B-425-6_100511 | 10/5/11 | 5.5 | 6 | Area 3 | UG/KG | <300 |
| B-425 | LL_B-425-9_100511 | 10/5/11 | 8.5 | 9 | Area 3 | UG/KG | <300 |
| B-426 | LL_B-426-1_100511 | 10/5/11 | 0.5 | 1 | Area 3 | UG/KG | <300 |
| B-426 | LL_B-426-3_100511 | 10/5/11 | 2.5 | 3 | Area 3 | UG/KG | <300 |
| B-426 | LL_B-426-6_100511 | 10/5/11 | 5.5 | 6 | Area 3 | UG/KG | <300 |
| B-426 | LL_B-426-9_100511 | 10/5/11 | 8.5 | 9 | Area 3 | UG/KG | <300 |
| B-427 | LL_B-427-1_100511 | 10/5/11 | 0.5 | 1 | Area 3 | UG/KG | <300 |
| B-427 | LL_B-427-3_100511 | 10/5/11 | 2.5 | 3 | Area 3 | UG/KG | <300 |
| B-427 | LL_B-427-6_100511 | 10/5/11 | 5.5 | 6 | Area 3 | UG/KG | <300 |
| B-427 | LL_B-427-9_100511 | 10/5/11 | 8.5 | 9 | Area 3 | UG/KG | <300 |
| B-428 | LL_B-428-1_100511 | 10/5/11 | 0.5 | 1 | Area 3 | UG/KG | <300 |
| B-428 | LL_B-428-3_100511 | 10/5/11 | 2.5 | 3 | Area 3 | UG/KG | <300 |
| B-428 | LL_B-428-6_100511 | 10/5/11 | 5.5 | 6 | Area 3 | UG/KG | <300 |
| B-428 | LL_B-428-9_100511 | 10/5/11 | 8.5 | 9 | Area 3 | UG/KG | <300 |
| B-429 | LL_B-429-1_100511 | 10/5/11 | 0.5 | 1 | Area 3 | UG/KG | <300 |
| B-429 | LL_B-429-3_100511 | 10/5/11 | 2.5 | 3 | Area 3 | UG/KG | <300 |
| B-429 | LL_B-429-6_100511 | 10/5/11 | 5.5 | 6 | Area 3 | UG/KG | <300 |
| B-429 | LL_B-429-9_100511 | 10/5/11 | 8.5 | 9 | Area 3 | UG/KG | <300 |
| B-430 | LL_B-430-1_100511 | 10/5/11 | 0.5 | 1 | Area 3 | UG/KG | <300 |
| B-430 | LL_B-430-3_100511 | 10/5/11 | 2.5 | 3 | Area 3 | UG/KG | <300 |
| B-430 | LL_B-430-6_100511 | 10/5/11 | 5.5 | 6 | Area 3 | UG/KG | <300 |
| B-430 | LL_B-430-9_100511 | 10/5/11 | 8.5 | 9 | Area 3 | UG/KG | <300 |
| S001 | S001-0" | 12/4/07 | 0 | 0.5 | Area 4 | UG/KG | <45 |
| S002 | S002-0" | 12/4/07 | 0 | 0.5 | Area 4 | UG/KG | <210 |
| S003ALT | S003ALT-0" | 12/20/07 | 0 | 0.5 | Area 4 | UG/KG | <110 |
| S004 | S004-0" | 1/4/08 | 0 | 0.5 | Area 4 | UG/KG | 620 |
| S004 | S004-12" | 1/4/08 | 1 | 1.5 | Area 4 | UG/KG | <23 |
| S005 | S005-0" | 12/18/07 | 0 | 0.5 | Area 4 | UG/KG | <110 |
| S006 | S006-0" | 12/17/07 | 0 | 0.5 | Area 4 | UG/KG | <110 |
| S006 | S006-12" | 12/17/07 | 1 | 1.5 | Area 4 | UG/KG | <110 |

**Table B4**
**Results of Dibenzo(a,h)anthracene Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Dibenzo(a,h)anthracene |
|---|---|---|---|---|---|---|---|
| S007 | S007-0" | 12/17/07 | 0 | 0.5 | Area 4 | UG/KG | <110 |
| S008 | S008-0" | 12/17/07 | 0 | 0.5 | Area 4 | UG/KG | <110 |
| S009 | S009-0" | 12/17/07 | 0 | 0.5 | Area 4 | UG/KG | <100 |
| S009 | S009-12" | 12/17/07 | 1 | 1.5 | Area 4 | UG/KG | <110 |
| S010 | S010-6'' | 1/19/09 | 0.5 | 1 | Area 4 | UG/KG | <220 |
| S011 | S011-0" | 12/17/07 | 0 | 0.5 | Area 4 | UG/KG | <120 |
| S011 | S011-12" | 12/17/07 | 1 | 1.5 | Area 4 | UG/KG | <2300 |
| S012 | S012B-0" | 12/18/07 | 0 | 0.5 | Area 4 | UG/KG | <100 |
| S013 | S013-0" | 1/4/08 | 0 | 0.5 | Area 4 | UG/KG | <220 |
| S014 | S014-0" | 12/4/07 | 0 | 0.5 | Area 4 | UG/KG | <26 |
| S015 | S015-0" | 12/4/07 | 0 | 0.5 | Area 4 | UG/KG | <110 |
| S016 | S016B-0" | 1/2/08 | 0 | 0.5 | Area 4 | UG/KG | <110 |
| S016 | S016B-12" | 1/2/08 | 1 | 1.5 | Area 4 | UG/KG | <23 |
| S017 | S017-0" | 12/4/07 | 0 | 0.5 | Area 4 | UG/KG | <24 |
| S018 | S018-0" | 12/20/07 | 0 | 0.5 | Area 4 | UG/KG | <110 |
| S019 | S019-0" | 12/18/07 | 0 | 0.5 | Area 4 | UG/KG | <110 |
| S020 | S020-0" | 12/18/07 | 0 | 0.5 | Area 4 | UG/KG | <110 |
| S020 | S020-12" | 12/18/07 | 1 | 1.5 | Area 4 | UG/KG | <1100 |
| S021 | S021-6'' | 1/19/09 | 0.5 | 1 | Area 4 | UG/KG | <220 |
| S022 | S022-0" | 12/17/07 | 0 | 0.5 | Area 4 | UG/KG | <110 |
| S023 | S023-0" | 12/17/07 | 0 | 0.5 | Area 3 | UG/KG | <110 |
| S024 | S024-0" | 12/17/07 | 0 | 0.5 | Area 3 | UG/KG | <23 |
| S025 | S025-0" | 12/18/07 | 0 | 0.5 | Area 3 | UG/KG | <110 |
| S025 | S025-12" | 12/18/07 | 1 | 1.5 | Area 3 | UG/KG | <110 |
| S026 | S026-0" | 12/18/07 | 0 | 0.5 | Area 3 | UG/KG | <120 |
| S026 | S026-12" | 12/18/07 | 1 | 1.5 | Area 3 | UG/KG | <1200 |
| S027 | S027-0" | 12/20/07 | 0 | 0.5 | Area 3 | UG/KG | <1100 |
| S028 | S028-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | <21 |
| S029 | S029-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | <110 |
| S029 | S029-18" | 12/4/07 | 1.5 | 2 | Area 3 | UG/KG | <1100 |
| S030 | S030-12" | 12/4/07 | 1 | 1.5 | Area 3 | UG/KG | <110 |
| S031 | S031-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | <110 |
| S032 | S032-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | <110 |
| S033 | S033-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | <100 |
| S034 | S034-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | <110 |
| S035 | S035-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | <110 |
| S036 | S036-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | <230 |
| S037 | S037-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | <320 |
| S037 | S037-20" | 12/4/07 | 1.67 | 2.167 | Area 3 | UG/KG | <510 |
| S038 | S038-0" | 12/20/07 | 0 | 0.5 | Area 3 | UG/KG | <120 |
| S039 | S039-0" | 1/2/08 | 0 | 0.5 | Area 3 | UG/KG | <110 |
| S039 | S039-12" | 1/2/08 | 1 | 1.5 | Area 3 | UG/KG | <11000 |
| S040 | S040-0" | 12/20/07 | 0 | 0.5 | Area 3 | UG/KG | <120 |
| S040 | S040-12" | 12/20/07 | 1 | 1.5 | Area 3 | UG/KG | <120 |
| S041 | S041-0" | 1/30/08 | 0 | 0.5 | Area 3 | UG/KG | <250 |
| S042 | S042-0" | 1/30/08 | 0 | 0.5 | Area 3 | UG/KG | 3500 |
| S042 | S042-12" | 1/30/08 | 1 | 1.5 | Area 3 | UG/KG | <26000 |
| S043 | S043-0" | 1/30/08 | 0 | 0.5 | Area 3 | UG/KG | <240 |
| S044 | S044-0" | 12/20/07 | 0 | 0.5 | Area 3 | UG/KG | <140 |
| S045 | S045-0" | 12/20/07 | 0 | 0.5 | Area 3 | UG/KG | <120 |
| S046 | S046-0" | 12/20/07 | 0 | 0.5 | Area 3 | UG/KG | <110 |
| S047 | S047-6" | 1/20/09 | 0.5 | 1 | Area 3 | UG/KG | <2300 |
| S048 | S048-0" | 1/7/08 | 0 | 0.5 | Area 3 | UG/KG | <230 |
| S049 | S049-6" | 1/20/09 | 0.5 | 1 | Area 3 | UG/KG | <240 |

**Table B4**
**Results of Dibenzo(a,h)anthracene Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Dibenzo(a,h)anthracene |
|---|---|---|---|---|---|---|---|
| S050 | S050-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | <45 |
| S051 | S051-0" | 12/20/07 | 0 | 0.5 | Area 3 | UG/KG | <110 |
| S052 | S052-0" | 12/20/07 | 0 | 0.5 | Area 3 | UG/KG | <120 |
| S052 | S052-12" | 12/20/07 | 1 | 1.5 | Area 3 | UG/KG | <120 |
| S053 | S053-0" | 12/20/07 | 0 | 0.5 | Area 3 | UG/KG | <110 |
| S053 | S053-12" | 12/20/07 | 1 | 1.5 | Area 3 | UG/KG | <110 |
| S054 | S054-0" | 1/30/08 | 0 | 0.5 | Area 3 | UG/KG | <240 |
| S055 | S055-0" | 1/30/08 | 0 | 0.5 | Area 3 | UG/KG | <240 |
| S055 | S055-12" | 1/30/08 | 1 | 1.5 | Area 3 | UG/KG | <240 |
| S056 | S056-0" | 1/30/08 | 0 | 0.5 | Area 3 | UG/KG | <220 |
| S056 | S056-12" | 1/30/08 | 1 | 1.5 | Area 3 | UG/KG | <210 |
| S057 | S057-0" | 1/30/08 | 0 | 0.5 | Area 3 | UG/KG | <240 |
| S058 | S058-0" | 2/1/08 | 0 | 0.5 | Area 3 | UG/KG | 380 |
| S059 | S059-0" | 2/1/08 | 0 | 0.5 | Area 3 | UG/KG | <1200 |
| S059 | S059-12" | 2/1/08 | 1 | 1.5 | Area 3 | UG/KG | 450 |
| S060 | S060-0" | 12/13/07 | 0 | 0.5 | Area 3 | UG/KG | <120 |
| S060 | S060-18" | 12/13/07 | 1.5 | 2 | Area 3 | UG/KG | <110 |
| S061 | S061-0" | 12/13/07 | 0 | 0.5 | Area 3 | UG/KG | <110 |
| S063 | S063-0" | 12/14/07 | 0 | 0.5 | Area 3 | UG/KG | <110 |
| S064 | S064-0" | 12/14/07 | 0 | 0.5 | Area 3 | UG/KG | <110 |
| S064 | S064-18" | 12/14/07 | 1.5 | 2 | Area 3 | UG/KG | <22 |
| S065 | S065-0" | 2/1/08 | 0 | 0.5 | Area 3 | UG/KG | 270 |
| S065 | S065-12" | 2/1/08 | 1 | 1.5 | Area 3 | UG/KG | <23 |
| S066 | S066-0" | 12/14/07 | 0 | 0.5 | Area 3 | UG/KG | <110 |
| S067 | S067-0" | 12/14/07 | 0 | 0.5 | Area 3 | UG/KG | <110 |
| S068 | S068-0" | 12/13/07 | 0 | 0.5 | Area 3 | UG/KG | <120 |
| S069 | S069-0" | 12/13/07 | 0 | 0.5 | Area 3 | UG/KG | <110 |
| S070 | S070-0" | 12/13/07 | 0 | 0.5 | Area 3 | UG/KG | <110 |
| S071B | S071B-12" | 12/21/07 | 1 | 1.5 | Area 3 | UG/KG | <23 |
| S072 | S072-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | <22 |
| S073 | S073-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | <110 |
| S074 | S074-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | <22 |
| S075 | S075-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | <1100 |
| S076 | S076-6'' | 1/22/09 | 0.5 | 1 | Area 3 | UG/KG | <220 |
| S078 | S078-0" | 2/1/08 | 0 | 0.5 | Area 3 | UG/KG | <220 |
| S078 | S078-12" | 2/1/08 | 1 | 1.5 | Area 3 | UG/KG | <24 |
| S079 | S079-0" | 2/1/08 | 0 | 0.5 | Area 3 | UG/KG | <23 |
| S080 | S080-0" | 2/1/08 | 0 | 0.5 | Area 3 | UG/KG | <220 |
| S081 | S081-0" | 2/1/08 | 0 | 0.5 | Area 3 | UG/KG | <240 |
| S082 | S082-0" | 12/13/07 | 0 | 0.5 | Area 3 | UG/KG | <120 |
| S083 | S083-0" | 12/13/07 | 0 | 0.5 | Area 3 | UG/KG | <110 |
| S083 | S083-15" | 12/13/07 | 1.25 | 1.75 | Area 3 | UG/KG | <110 |
| S084 | S084-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | <22 |
| S085 | S085-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | <120 |
| S086 | S086-6" | 1/20/09 | 0.5 | 1 | Area 3 | UG/KG | <310 |
| S087 | S087-0" | 12/13/07 | 0 | 0.5 | Area 3 | UG/KG | <110 |
| S088 | S088-0" | 1/2/08 | 0 | 0.5 | Area 3 | UG/KG | <110 |
| S089 | S089-0" | 1/2/08 | 0 | 0.5 | Area 3 | UG/KG | <21 |
| S090 | S090-0" | 12/13/07 | 0 | 0.5 | Area 3 | UG/KG | <110 |
| S090 | S090-18" | 12/13/07 | 1.5 | 2 | Area 3 | UG/KG | <110 |
| S091 | S091-0" | 2/1/08 | 0 | 0.5 | Area 3 | UG/KG | <1100 |
| S092 | S092-0" | 12/13/07 | 0 | 0.5 | Area 3 | UG/KG | <110 |
| S093 | S093-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | <100 |
| S094 | S094-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | <22 |

**Table B4**
**Results of Dibenzo(a,h)anthracene Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Dibenzo(a,h)anthracene |
|---|---|---|---|---|---|---|---|
| S095 | S095-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | <22 |
| S096 | S096-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | <22 |
| S097 | S097-6" | 1/20/09 | 0.5 | 1 | Area 3 | UG/KG | <21 |
| S098 | S098-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | <21 |
| S099 | S099-0" | 12/13/07 | 0 | 0.5 | Area 3 | UG/KG | <110 |
| S100 | S100-0" | 12/13/07 | 0 | 0.5 | Area 3 | UG/KG | <110 |
| S101 | S101-0" | 12/13/07 | 0 | 0.5 | Area 3 | UG/KG | <110 |
| S102 | S102-0" | 12/13/07 | 0 | 0.5 | Area 3 | UG/KG | <110 |
| S102 | S102-15" | 12/13/07 | 1.25 | 1.75 | Area 3 | UG/KG | <110 |
| S103 | S103-0" | 1/3/08 | 0 | 0.5 | Area 2 | UG/KG | <110 |
| S103 | S103-12" | 1/3/08 | 1 | 1.5 | Area 2 | UG/KG | <120 |
| S104 | S104-0" | 1/29/08 | 0 | 0.5 | Area 2 | UG/KG | <24 |
| S105 | S105-0" | 1/31/08 | 0 | 0.5 | Area 2 | UG/KG | <240 |
| S106 | S106-6'' | 1/22/09 | 0.5 | 1 | Area 2 | UG/KG | <23 |
| S106 | S106-12'' | 1/22/09 | 1 | 1.5 | Area 2 | UG/KG | <23 |
| S107 | S107-0" | 12/20/07 | 0 | 0.5 | Area 2 | UG/KG | <22 |
| S108 | S108-0" | 12/20/07 | 0 | 0.5 | Area 2 | UG/KG | <120 |
| S109 | S109-0" | 1/31/08 | 0 | 0.5 | Area 2 | UG/KG | <210 |
| S109 | S109-12" | 1/31/08 | 1 | 1.5 | Area 2 | UG/KG | <230 |
| S110 | S110-6'' | 1/22/09 | 0.5 | 1 | Area 2 | UG/KG | <210 |
| S111 | S111-0" | 12/21/07 | 0 | 0.5 | Area 2 | UG/KG | <110 |
| S111 | S111-12" | 12/21/07 | 1 | 1.5 | Area 2 | UG/KG | <1100 |
| S112 | S112-6'' | 1/22/09 | 0.5 | 1 | Area 2 | UG/KG | <2300 |
| S113 | S113-0" | 1/31/08 | 0 | 0.5 | Area 2 | UG/KG | <220 |
| S113 | S113-12" | 1/31/08 | 1 | 1.5 | Area 2 | UG/KG | <230 |
| S114 | S114-0" | 1/29/08 | 0 | 0.5 | Area 2 | UG/KG | <220 |
| S115 | S115-0" | 1/29/08 | 0 | 0.5 | Area 2 | UG/KG | <240 |
| S116 | S116-0" | 1/29/08 | 0 | 0.5 | Area 2 | UG/KG | <240 |
| S117 | S117-0" | 1/31/08 | 0 | 0.5 | Area 2 | UG/KG | <25 |
| S117 | S117-12" | 2/1/08 | 1 | 1.5 | Area 2 | UG/KG | <24 |
| S118 | S118-6'' | 1/22/09 | 0.5 | 1 | Area 2 | UG/KG | <24 |
| S119 | S119-0" | 1/4/08 | 0 | 0.5 | Area 2 | UG/KG | 240 |
| S119 | S119-12" | 1/4/08 | 1 | 1.5 | Area 2 | UG/KG | <24 |
| S120 | S120-0" | 1/4/08 | 0 | 0.5 | Area 2 | UG/KG | 180 |
| S121 | S121-0" | 1/4/08 | 0 | 0.5 | Area 2 | UG/KG | <240 |
| S121 | S121-12" | 1/4/08 | 1 | 1.5 | Area 2 | UG/KG | <1200 |
| S122 | S122-0" | 1/29/08 | 0 | 0.5 | Area 1 | UG/KG | <21 |
| S123 | S123-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | <22 |
| S124 | S124-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | <110 |
| S125 | S125-0" | 1/29/08 | 0 | 0.5 | Area 1 | UG/KG | <230 |
| S126 | S126-0" | 1/7/08 | 0 | 0.5 | Area 1 | UG/KG | <220 |
| S126 | S126-12" | 1/7/08 | 1 | 1.5 | Area 1 | UG/KG | <21 |
| S127 | S127-0" | 2/1/08 | 0 | 0.5 | Area 3 | UG/KG | <1200 |
| S130 | S130-0" | 1/7/08 | 0 | 0.5 | Area 3 | UG/KG | <220 |
| S130 | S130-12" | 1/7/08 | 1 | 1.5 | Area 3 | UG/KG | <230 |
| S131 | S131-0" | 1/7/08 | 0 | 0.5 | Area 1 | UG/KG | <420 |
| S132 | S132-0" | 1/3/08 | 0 | 0.5 | Area 1 | UG/KG | <23 |
| S133 | S133B-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | <1100 |
| S133 | S133B-12" | 11/29/07 | 1 | 1.5 | Area 1 | UG/KG | <110 |
| S134 | S134-0" | 1/7/08 | 0 | 0.5 | Area 1 | UG/KG | 51 |
| S135 | S135-6'' | 1/19/09 | 0.5 | 1 | Area 1 | UG/KG | <24 |
| S136 | S136-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | <2200 |
| S136 | S136-24" | 11/29/07 | 2 | 2.5 | Area 1 | UG/KG | <1100 |
| S137 | S137-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | <110 |

**Table B4**
**Results of Dibenzo(a,h)anthracene Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Dibenzo(a,h)anthracene |
|---|---|---|---|---|---|---|---|
| S138 | S138-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | <110 |
| S138 | S138-18" | 11/29/07 | 1.5 | 2 | Area 1 | UG/KG | <23000 |
| S139 | S139-12" | 11/29/07 | 1 | 1.5 | Area 1 | UG/KG | <110 |
| S139 | S139-24" | 11/29/07 | 2 | 2.5 | Area 1 | UG/KG | <110 |
| S140 | S140-12" | 11/29/07 | 1 | 1.5 | Area 1 | UG/KG | <22 |
| S141 | S141-0" | 1/7/08 | 0 | 0.5 | Area 3 | UG/KG | <240 |
| S141 | S141-12" | 1/7/08 | 1 | 1.5 | Area 3 | UG/KG | <240 |
| S142 | S142-0" | 1/7/08 | 0 | 0.5 | Area 3 | UG/KG | <210 |
| S143 | S143-0" | 1/7/08 | 0 | 0.5 | Area 3 | UG/KG | <220 |
| S144B | S144B-0" | 1/31/08 | 0 | 0.5 | Area 3 | UG/KG | <220 |
| S144B | S144B-12" | 1/31/08 | 1 | 1.5 | Area 3 | UG/KG | <230 |
| S145 | S145-0" | 1/7/08 | 0 | 0.5 | Area 3 | UG/KG | <220 |
| S145 | S145-12" | 1/7/08 | 1 | 1.5 | Area 3 | UG/KG | <230 |
| S146 | S146-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | <23 |
| S147 | S147-12" | 11/29/07 | 1 | 1.5 | Area 1 | UG/KG | <42 |
| S148 | S148-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | <110 |
| S149 | S149-12" | 11/29/07 | 1 | 1.5 | Area 1 | UG/KG | <1100 |
| S150 | S150-12" | 11/29/07 | 1 | 1.5 | Area 1 | UG/KG | <220 |
| S151 | S151-12" | 11/29/07 | 1 | 1.5 | Area 1 | UG/KG | <43 |
| S152 | S152-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | <110 |
| S153 | S153-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | <42 |
| S154 | S154-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | <100 |
| S155 | S155B-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | <220 |
| S156 | S156-0" | 1/7/08 | 0 | 0.5 | Area 3 | UG/KG | <220 |
| S157 | S157-0" | 1/2/08 | 0 | 0.5 | Area 3 | UG/KG | <23 |
| S158 | S158-0" | 12/17/07 | 0 | 0.5 | Area 3 | UG/KG | <110 |
| S158 | S158-12" | 12/17/07 | 1 | 1.5 | Area 3 | UG/KG | <130 |
| S159 | S159-0" | 12/17/07 | 0 | 0.5 | Area 3 | UG/KG | <110 |
| S160 | S160-0" | 1/7/08 | 0 | 0.5 | Area 3 | UG/KG | <220 |
| S161 | S161B-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | <21 |
| S162 | S162-12" | 11/29/07 | 1 | 1.5 | Area 1 | UG/KG | <120 |
| S162 | S162-24" | 11/29/07 | 2 | 2.5 | Area 1 | UG/KG | <23 |
| S163 | S163-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | <22 |
| S164 | S164-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | <210 |
| S165 | S165-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | <220 |
| S166 | S166-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | <42 |
| S167 | S167-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | <21 |
| S168 | S168-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | <110 |
| S169 | S169-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | <220 |
| S170 | S170-0" | 1/7/08 | 0 | 0.5 | Area 3 | UG/KG | <230 |
| S171 | S171-0" | 12/17/07 | 0 | 0.5 | Area 3 | UG/KG | <110 |
| S171 | S171-12" | 12/17/07 | 1 | 1.5 | Area 3 | UG/KG | <130 |
| S172 | S172-0" | 12/17/07 | 0 | 0.5 | Area 3 | UG/KG | <110 |
| S173 | S173-0" | 12/17/07 | 0 | 0.5 | Area 3 | UG/KG | <100 |
| S174 | S174-0" | 12/14/07 | 0 | 0.5 | Area 3 | UG/KG | <110 |
| S175 | S175-0" | 1/31/08 | 0 | 0.5 | Area 3 | UG/KG | <220 |
| S175 | S175-0" | 1/7/08 | 0 | 0.5 | Area 3 | UG/KG | <220 |
| S176 | S176-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | <21 |
| S177 | S177-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | <110 |
| S178 | S178-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | <110 |
| S179 | S179-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | <22 |
| S180 | S180-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | <21 |
| S181 | S181-0" | 1/31/08 | 0 | 0.5 | Area 3 | UG/KG | <220 |
| S182 | S182-0" | 12/14/07 | 0 | 0.5 | Area 3 | UG/KG | <110 |

**Table B4**
**Results of Dibenzo(a,h)anthracene Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Dibenzo(a,h)anthracene |
|---|---|---|---|---|---|---|---|
| S183 | S183-0" | 12/17/07 | 0 | 0.5 | Area 3 | UG/KG | <110 |
| S184 | S184-0" | 12/14/07 | 0 | 0.5 | Area 3 | UG/KG | <110 |
| S185 | S185-6'' | 1/19/09 | 0.5 | 1 | Area 3 | UG/KG | <210 |
| S186 | S186-0" | 1/31/08 | 0 | 0.5 | Area 3 | UG/KG | <230 |
| S187 | S187-0" | 1/4/08 | 0 | 0.5 | Area 1 | UG/KG | <23 |
| S188 | S188-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | <21 |
| S189 | S189-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | <21 |
| S190 | S190-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | <21 |
| S191 | S191-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | <100 |
| S192 | S192-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | 120 |
| S193 | S193-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | <22 |
| S194 | S194-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | <21 |
| S195 | S195-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | <24 |
| S196 | S196-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | <23 |
| S196 | S196-18" | 11/26/07 | 1.5 | 2 | Area 1 | UG/KG | <450 |
| S197 | S197-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | <22 |
| S198 | S198-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | <21 |
| S199 | S199-12" | 11/26/07 | 1 | 1.5 | Area 1 | UG/KG | <46 |
| S199 | S199-24" | 11/26/07 | 2 | 2.5 | Area 1 | UG/KG | <23 |
| S200 | S200-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | 180 |
| S201 | S201-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | 300 |
| S201 | S201-18" | 11/26/07 | 1.5 | 2 | Area 1 | UG/KG | <220 |
| S202 | S202-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | <22 |
| S203 | S203-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | <22 |
| S204 | S204-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | <22 |
| S205 | S205-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | <21 |
| S206 | S206-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | <100 |
| S207 | S207-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | <100 |
| S208 | S208-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | 530 |
| S209 | S209-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | 360 |
| S210 | S210-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | 320 |
| S211 | S211-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | <22 |
| S212 | S212-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | 54 |
| S213 | S213-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | <110 |
| S214 | S214-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | <110 |
| S215 | S215-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | <1100 |
| S216 | S216-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | <21 |
| S217 | S217-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | <21 |
| S218 | S218-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | <20 |
| S219 | S219-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | <100 |
| S220 | S220-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | <21 |
| S221 | S221-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | <22 |
| S222 | S222-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | <21 |
| S223 | S223-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | <110 |
| S224 | S224-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | 180 |
| S225 | S225-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | <22 |
| S226 | S226-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | <43 |
| S227 | S227-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | <22 |
| S228 | S228-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | <110 |
| S229 | S229-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | <100 |
| S230 | S230-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | <21 |
| S230 | S230-12" | 11/28/07 | 1 | 1.5 | Area 1 | UG/KG | <21 |
| S231 | S231-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | <100 |
| S232 | S232-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | <100 |

**Table B4**
**Results of Dibenzo(a,h)anthracene Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Dibenzo(a,h)anthracene |
|---|---|---|---|---|---|---|---|
| S233 | S233-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | <110 |
| S234 | S234-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | <21 |
| S235 | S235-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | <21 |
| S236 | S236-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | <100 |
| S237 | S237-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | <22 |
| S238 | S238-0" | 1/28/08 | 0 | 0.5 | Area 2 | UG/KG | <240 |
| S239 | S239-0" | 1/28/08 | 0 | 0.5 | Area 2 | UG/KG | <24 |
| S239 | S239-12" | 1/30/08 | 1 | 1.5 | Area 2 | UG/KG | <240 |
| S240 | S240-6" | 1/20/09 | 0.5 | 1 | Area 2 | UG/KG | <440 |
| S241 | S241-6" | 1/20/09 | 0.5 | 1 | Area 2 | UG/KG | <220 |
| S242 | S242-0" | 1/29/08 | 0 | 0.5 | Area 2 | UG/KG | <230 |
| S243 | S243-0" | 1/29/08 | 0 | 0.5 | Area 2 | UG/KG | <21 |
| S244 | S244-0" | 1/28/08 | 0 | 0.5 | Area 2 | UG/KG | <47 |
| S245 | S245-0" | 1/28/08 | 0 | 0.5 | Area 2 | UG/KG | <22 |
| S246 | S246-0" | 1/29/08 | 0 | 0.5 | Area 2 | UG/KG | <230 |
| S247 | S247-0" | 1/29/08 | 0 | 0.5 | Area 2 | UG/KG | <230 |
| S248 | S248-0" | 1/28/08 | 0 | 0.5 | Area 2 | UG/KG | <230 |
| S249 | S249-0" | 1/28/08 | 0 | 0.5 | Area 2 | UG/KG | <120 |
| S250 | S250-0" | 1/28/08 | 0 | 0.5 | Area 2 | UG/KG | <22 |
| S250 | S250-12" | 1/30/08 | 1 | 1.5 | Area 2 | UG/KG | <22 |
| S251 | S251-0" | 1/28/08 | 0 | 0.5 | Area 2 | UG/KG | <24 |
| S251 | S251-6" | 1/20/09 | 0.5 | 1 | Area 2 | UG/KG | <24 |
| S252 | S252-0" | 1/29/08 | 0 | 0.5 | Area 2 | UG/KG | <240 |
| S253 | S253-0" | 1/29/08 | 0 | 0.5 | Area 2 | UG/KG | <230 |
| S254 | S254-0" | 1/29/08 | 0 | 0.5 | Area 2 | UG/KG | <230 |
| S254 | S254-12" | 1/30/08 | 1 | 1.5 | Area 2 | UG/KG | <230 |
| S255 | S255-0" | 1/29/08 | 0 | 0.5 | Area 2 | UG/KG | <27 |
| S256 | S256-0" | 1/31/08 | 0 | 0.5 | Area 2 | UG/KG | <230 |
| S257 | S257-0" | 1/3/08 | 0 | 0.5 | Area 2 | UG/KG | <24 |
| S258 | S258-0" | 1/3/08 | 0 | 0.5 | Area 2 | UG/KG | <120 |
| S259 | S259-0" | 1/31/08 | 0 | 0.5 | Area 2 | UG/KG | <230 |
| S260 | S260-0" | 1/3/08 | 0 | 0.5 | Area 2 | UG/KG | <21 |
| S261 | S261-0" | 12/21/07 | 0 | 0.5 | Area 3 | UG/KG | <100 |
| S262 | S262-0" | 12/13/07 | 0 | 0.5 | Area 3 | UG/KG | <110 |
| S263 | S263-0" | 2/1/08 | 0 | 0.5 | Area 3 | UG/KG | <120 |
| S264 | S264-0" | 1/3/08 | 0 | 0.5 | Area 3 | UG/KG | <110 |
| S264 | S264-12" | 1/3/08 | 1 | 1.5 | Area 3 | UG/KG | <120 |
| S265 | S265-6" | 1/20/09 | 0.5 | 1 | Area 3 | UG/KG | <47 |
| S266 | S266-0" | 12/14/07 | 0 | 0.5 | Area 3 | UG/KG | <24 |
| S267 | S267-0" | 1/4/08 | 0 | 0.5 | Area 3 | UG/KG | 330 |
| S268 | S268-0" | 1/2/08 | 0 | 0.5 | Area 3 | UG/KG | <120 |
| S268 | S268-12" | 1/2/08 | 1 | 1.5 | Area 3 | UG/KG | <120 |
| S269 | S269-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | <44 |
| S270 | S270-0" | 12/17/07 | 0 | 0.5 | Area 4 | UG/KG | <110 |
| S271 | S271-0" | 1/4/08 | 0 | 0.5 | Area 1 | UG/KG | 500 |
| S272 | S272-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | <21 |
| S273 | S273-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | <21 |
| S274 | S274-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | <110 |
| S274 | S274-12" | 11/29/07 | 1 | 1.5 | Area 1 | UG/KG | <23 |
| S275 | S275-0" | 11/29/07 | 0 | 0.5 | Area 3 | UG/KG | <230 |
| S275 | S275-12" | 11/29/07 | 1 | 1.5 | Area 3 | UG/KG | <23 |
| S276 | S276-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | <110 |
| S277 | S277-0" | 1/31/08 | 0 | 0.5 | Area 2 | UG/KG | <260 |
| S278 | S278-0" | 1/31/08 | 0 | 0.5 | Area 2 | UG/KG | <24 |

**Table B4**
**Results of Dibenzo(a,h)anthracene Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Dibenzo(a,h)anthracene |
|---|---|---|---|---|---|---|---|
| S279 | S279-0" | 12/20/07 | 0 | 0.5 | Area 2 | UG/KG | <24 |
| S279 | S279-12" | 12/20/07 | 1 | 1.5 | Area 2 | UG/KG | <23 |
| S280 | S280-0" | 1/3/08 | 0 | 0.5 | Area 2 | UG/KG | <110 |
| S281 | S281-0" | 2/1/08 | 0 | 0.5 | Area 2 | UG/KG | <230 |
| S282 | S282-6" | 1/20/09 | 0.5 | 1 | Area 2 | UG/KG | <220 |
| S282 | S282-12" | 1/20/09 | 1 | 1.5 | Area 2 | UG/KG | <210 |
| S283 | S283-0" | 1/29/08 | 0 | 0.5 | Area 2 | UG/KG | <230 |
| S284 | S284-0" | 1/29/08 | 0 | 0.5 | Area 2 | UG/KG | <210 |
| S284 | S284-12" | 1/30/08 | 1 | 1.5 | Area 2 | UG/KG | <220 |
| S285 | S285-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | <110 |
| S286 | S286-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | <220 |
| S287 | S287-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | <220 |
| S287 | S287-12" | 11/26/07 | 1 | 1.5 | Area 1 | UG/KG | <220 |
| S288 | S288-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | <110 |
| S289 | S289-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | <22 |
| S290 | S290-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | <21 |
| S291 | S291-0" | 1/7/08 | 0 | 0.5 | Area 4 | UG/KG | <230 |
| S292 | S292-6'' | 1/19/09 | 0.5 | 1 | Area 1 | UG/KG | <2200 |
| S293 | S293-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | <220 |
| S293 | S293-24" | 11/26/07 | 2 | 2.5 | Area 1 | UG/KG | <22 |
| S294 | S294-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | <110 |
| S295 | S295-6" | 11/26/07 | 0.5 | 1 | Area 1 | UG/KG | <110 |
| S296 | S296-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | <23 |
| S296 | S296-18" | 11/28/07 | 1.5 | 2 | Area 1 | UG/KG | <120 |
| S297 | S297-6" | 1/20/09 | 0.5 | 1 | Area 3 | UG/KG | <26 |
| S297 | S297-12" | 1/20/09 | 1 | 1.5 | Area 3 | UG/KG | <26 |
| S298 | S298-0 | 12/4/07 | 0 | 0.5 | Area 4 | UG/KG | <22000 |
| VE1 | LL_VE1_10_052611_01 | 5/26/11 | 9.5 | 10 | Area 3 | UG/KG | <300 |

Notes
UG/KG micrograms per kilogram

**Table B5**
**Results of Lead Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Lead |
|---|---|---|---|---|---|---|---|
| B005 | B005-2 | 12/8/05 | 2 | 3 | Area 1 | MG/KG | 20.5 |
| B005 | B005-5 | 12/8/05 | 5 | 6 | Area 1 | MG/KG | 13.75 |
| B007 | B007-2 | 12/12/05 | 2 | 3 | Area 1 | MG/KG | 11.7375 |
| B008 | B008-2 | 12/8/05 | 2 | 3 | Area 1 | MG/KG | 13.5 |
| B008 | B008-5 | 12/8/05 | 5 | 6 | Area 1 | MG/KG | 12.75 |
| B009 | B009-2 | 12/9/05 | 2 | 3 | Area 1 | MG/KG | 8.1375 |
| B010 | B010-2 | 12/9/05 | 2 | 3 | Area 4 | MG/KG | 10.7875 |
| B010 | B010-5 | 12/9/05 | 5 | 6 | Area 4 | MG/KG | 11.4875 |
| B011 | B011-2 | 1/9/06 | 2 | 3 | Area 1 | MG/KG | 54.125 |
| B011 | B011-5 | 1/9/06 | 5 | 6 | Area 1 | MG/KG | 9.2125 |
| B014 | B014-2 | 12/13/05 | 2 | 3 | Area 1 | MG/KG | 52.125 |
| B014 | B014-5 | 12/13/05 | 5 | 6 | Area 1 | MG/KG | 14.875 |
| B015 | B015-2 | 12/12/05 | 2 | 3 | Area 1 | MG/KG | 26.25 |
| B016 | B016-2 | 12/13/05 | 2 | 3 | Area 1 | MG/KG | 8.95 |
| B017 | B017-2 | 12/29/05 | 2 | 3 | Area 1 | MG/KG | 7.5375 |
| B018 | B018-2 | 12/29/05 | 2 | 3 | Area 1 | MG/KG | 15 |
| B018 | B018-5 | 12/29/05 | 5 | 6 | Area 1 | MG/KG | 11.8875 |
| B019 | B019-2 | 12/28/05 | 2 | 3 | Area 1 | MG/KG | 10.8625 |
| B020 | B020-2 | 12/12/05 | 2 | 3 | Area 1 | MG/KG | 24.25 |
| B021 | B021-2 | 12/28/05 | 2 | 3 | Area 4 | MG/KG | 15 |
| B021 | B021-5 | 12/28/05 | 5 | 6 | Area 4 | MG/KG | 17.875 |
| B022 | B022-2 | 12/28/05 | 2 | 3 | Area 3 | MG/KG | 27 |
| B023 | B023-2 | 12/28/05 | 2 | 3 | Area 1 | MG/KG | 62.125 |
| B024 | B024-2 | 12/16/05 | 2 | 2.5 | Area 1 | MG/KG | 10.35 |
| B025 | B025-2 | 12/15/05 | 2 | 3 | Area 1 | MG/KG | 11.8875 |
| B026 | B026-2 | 12/15/05 | 2 | 3 | Area 1 | MG/KG | 95.25 |
| B027 | B027-2 | 12/14/05 | 2 | 3 | Area 1 | MG/KG | 69 |
| B028 | B028-2 | 12/13/05 | 2 | 3 | Area 1 | MG/KG | 66.75 |
| B028 | B028-5 | 12/13/05 | 5 | 6 | Area 1 | MG/KG | 11.2875 |
| B034 | B034-2 | 12/14/05 | 2 | 3 | Area 1 | MG/KG | 11.5875 |
| B035 | B035-2 | 12/14/05 | 2 | 3 | Area 1 | MG/KG | 79.375 |
| B036 | B036-2 | 12/14/05 | 2 | 3 | Area 1 | MG/KG | 12.875 |
| B036 | B036-5 | 12/14/05 | 5 | 6 | Area 1 | MG/KG | 9.8375 |
| B036 | B036-10 | 12/14/05 | 10 | 11 | Area 1 | MG/KG | 6.475 |
| B037 | B037-2 | 12/19/05 | 2 | 3 | Area 1 | MG/KG | 14.75 |
| B038 | B038-2 | 12/19/05 | 2 | 3 | Area 1 | MG/KG | 18.875 |
| B039 | B039-2 | 12/16/05 | 2 | 3 | Area 1 | MG/KG | 10.6 |
| B039 | B039-5 | 12/16/05 | 5 | 6 | Area 1 | MG/KG | 11.6875 |
| B040 | B040-2 | 12/19/05 | 2 | 3 | Area 1 | MG/KG | 15.25 |
| B041 | B041-2 | 12/28/05 | 2 | 3 | Area 3 | MG/KG | 12.2625 |
| B042 | B042-2 | 12/20/05 | 2 | 3 | Area 3 | MG/KG | 25.25 |
| B042 | B042-5 | 12/20/05 | 5 | 6 | Area 3 | MG/KG | 16.875 |
| B043 | B043-2 | 12/16/05 | 2 | 3 | Area 1 | MG/KG | 76 |
| B044 | B044-2 | 12/16/05 | 2 | 3 | Area 1 | MG/KG | 8.3125 |
| B045 | B045-2 | 12/15/05 | 2 | 3 | Area 1 | MG/KG | 9.875 |
| B046 | B046-2 | 12/15/05 | 2 | 3 | Area 1 | MG/KG | 160 |
| B047 | B047-2 | 12/15/05 | 2 | 3 | Area 1 | MG/KG | 10.6125 |
| B048 | B048-2 | 12/20/05 | 2 | 3 | Area 1 | MG/KG | 13.375 |
| B048 | B048-5 | 12/20/05 | 5 | 6 | Area 1 | MG/KG | 15.125 |

**Table B5**
**Results of Lead Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Lead |
|---|---|---|---|---|---|---|---|
| B049 | B049-2 | 12/14/05 | 2 | 3 | Area 1 | MG/KG | 13.25 |
| B050 | B050-2 | 12/13/05 | 2 | 3 | Area 1 | MG/KG | 34.625 |
| B055 | B055-2 | 12/21/05 | 2 | 3 | Area 1 | MG/KG | 5.0875 |
| B056 | B056-2 | 12/14/05 | 2 | 3 | Area 1 | MG/KG | 6.925 |
| B057 | B057-2 | 12/13/05 | 2 | 3 | Area 1 | MG/KG | 172.5 |
| B058 | B058-2 | 12/20/05 | 2 | 3 | Area 1 | MG/KG | 11.825 |
| B059 | B059-2 | 12/20/05 | 2 | 3 | Area 1 | MG/KG | 12.875 |
| B060 | B060-2 | 12/20/05 | 2 | 3 | Area 1 | MG/KG | 13 |
| B061 | B061-2 | 12/20/05 | 2 | 3 | Area 1 | MG/KG | 11.25 |
| B062 | B062-2 | 12/21/05 | 2 | 3 | Area 1 | MG/KG | 12.1875 |
| B063 | B063-2 | 1/9/06 | 2 | 3 | Area 3 | MG/KG | 90.625 |
| B066 | B066-2 | 1/12/06 | 2 | 3 | Area 1 | MG/KG | 8.0875 |
| B066 | B066-5 | 1/12/06 | 5 | 6 | Area 1 | MG/KG | 5.9 |
| B067 | B067-2 | 12/21/05 | 2 | 3 | Area 1 | MG/KG | 7.4125 |
| B067 | B067-5 | 12/21/05 | 5 | 6 | Area 1 | MG/KG | 15.625 |
| B070 | B070-2 | 12/22/05 | 2 | 3 | Area 1 | MG/KG | 27.375 |
| B070 | B070-5 | 12/22/05 | 5 | 6 | Area 1 | MG/KG | 9.8125 |
| B078 | B078-2 | 12/23/05 | 2 | 3 | Area 2 | MG/KG | 7.3125 |
| B079 | B079-2 | 12/23/05 | 2 | 3 | Area 2 | MG/KG | 23.25 |
| B080 | B080-2 | 12/22/05 | 2 | 3 | Area 1 | MG/KG | 36.875 |
| B081 | B081-2 | 12/22/05 | 2 | 3 | Area 1 | MG/KG | 32.875 |
| B084 | B084-2 | 1/5/06 | 2 | 3 | Area 2 | MG/KG | 35.25 |
| B085 | B085-2 | 12/28/05 | 2 | 3 | Area 2 | MG/KG | 11.2 |
| B088 | B088-2 | 1/18/06 | 2 | 3 | Area 2 | MG/KG | 9.725 |
| B088 | B088-5 | 1/18/06 | 5 | 6 | Area 2 | MG/KG | 14.5 |
| B089 | B089-2 | 1/9/06 | 2 | 3 | Area 2 | MG/KG | 14.375 |
| B090 | B090-2 | 1/10/06 | 2 | 3 | Area 2 | MG/KG | 9.7 |
| B090 | B090-5 | 1/10/06 | 5 | 6 | Area 2 | MG/KG | 9.4625 |
| B092 | B092-2 | 1/5/06 | 2 | 3 | Area 2 | MG/KG | 24.25 |
| B093 | B093-2 | 1/5/06 | 2 | 3 | Area 2 | MG/KG | 15.875 |
| B099 | B099-2 | 1/3/06 | 2 | 3 | Area 2 | MG/KG | 59.875 |
| B099 | B099-5 | 1/3/06 | 5 | 6 | Area 2 | MG/KG | 11.2875 |
| B101 | B101-2 | 1/10/06 | 2 | 3 | Area 2 | MG/KG | 10.2375 |
| B103 | B103-2 | 1/6/06 | 2 | 3 | Area 2 | MG/KG | 9.3 |
| B104 | B104-2 | 2/3/06 | 2 | 3 | Area 2 | MG/KG | 10.8 |
| B104 | B104-5 | 2/3/06 | 5 | 6 | Area 2 | MG/KG | 10.875 |
| B105 | B105-2 | 1/10/06 | 2 | 3 | Area 2 | MG/KG | 11.9625 |
| B105 | B105-5 | 1/10/06 | 5 | 6 | Area 2 | MG/KG | 10.7875 |
| B108 | B108-2 | 1/9/06 | 2 | 3 | Area 2 | MG/KG | 12.625 |
| B108 | B108-5 | 1/9/06 | 5 | 6 | Area 2 | MG/KG | 18.875 |
| B108 | B108-10 | 1/9/06 | 10 | 11 | Area 2 | MG/KG | 4.3625 |
| B115 | B115-2 | 1/3/06 | 2 | 3 | Area 2 | MG/KG | 55.125 |
| B117 | B117-2 | 1/6/06 | 2 | 3 | Area 2 | MG/KG | 12.625 |
| B117 | B117-5 | 1/6/06 | 5 | 6 | Area 2 | MG/KG | 11.4625 |
| B118 | B118-2 | 1/6/06 | 2 | 3 | Area 2 | MG/KG | 14.375 |
| B118 | B118-5 | 1/6/06 | 5 | 6 | Area 2 | MG/KG | 14 |
| B119 | B119-2 | 1/27/06 | 2 | 3 | Area 2 | MG/KG | 11.1 |
| B120 | B120-2 | 1/30/06 | 2 | 3 | Area 4 | MG/KG | 10.375 |
| B120 | B120-5 | 1/30/06 | 5 | 6 | Area 4 | MG/KG | 10.625 |

**Table B5**
**Results of Lead Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Lead |
|---|---|---|---|---|---|---|---|
| B121 | B121-2 | 2/1/06 | 2 | 3 | Area 4 | MG/KG | 11.5875 |
| B123 | B123-2 | 1/20/06 | 2 | 3 | Area 4 | MG/KG | 1975 |
| B123 | B123-5 | 1/20/06 | 5 | 6 | Area 4 | MG/KG | 19 |
| B124 | B124-2 | 1/16/06 | 2 | 3 | Area 4 | MG/KG | 9.4125 |
| B124 | B124-5 | 1/16/06 | 5 | 6 | Area 4 | MG/KG | 10.3125 |
| B126 | B126-2 | 1/20/06 | 2 | 3 | Area 4 | MG/KG | 22.625 |
| B126 | B126-5 | 1/20/06 | 5 | 6 | Area 4 | MG/KG | 12.75 |
| B127 | B127-2 | 1/18/06 | 2 | 3 | Area 4 | MG/KG | 11.55 |
| B127 | B127-5 | 1/18/06 | 5 | 6 | Area 4 | MG/KG | 10.7375 |
| B128 | B128-2 | 2/1/06 | 2 | 3 | Area 4 | MG/KG | 9.1875 |
| B128 | B128-5 | 2/1/06 | 5 | 6 | Area 4 | MG/KG | 32.25 |
| B129 | B129-2 | 1/18/06 | 2 | 3 | Area 4 | MG/KG | 19.625 |
| B129 | B129-5 | 1/18/06 | 5 | 6 | Area 4 | MG/KG | 16.5 |
| B132 | B132-2 | 1/19/06 | 2 | 3 | Area 4 | MG/KG | 11.55 |
| B132 | B132-5 | 1/19/06 | 5 | 6 | Area 4 | MG/KG | 11.9125 |
| B134 | B134-2 | 1/23/06 | 2 | 3 | Area 4 | MG/KG | 14.375 |
| B134 | B134-5 | 1/23/06 | 5 | 6 | Area 4 | MG/KG | 8.8625 |
| B139 | B139-2 | 1/13/06 | 2 | 3 | Area 4 | MG/KG | 9.5125 |
| B140 | B140-2 | 1/31/06 | 2 | 3 | Area 4 | MG/KG | 61.125 |
| B142 | B142-2 | 1/31/06 | 2 | 3 | Area 3 | MG/KG | 8.0875 |
| B142 | B142-5 | 1/31/06 | 5 | 6 | Area 3 | MG/KG | 257.5 |
| B142 | B142-10 | 1/31/06 | 10 | 11 | Area 3 | MG/KG | 10.4875 |
| B144 | B144-2 | 1/13/06 | 2 | 3 | Area 3 | MG/KG | 8.875 |
| B144 | B144-5 | 1/13/06 | 5 | 6 | Area 3 | MG/KG | 8.6125 |
| B145 | B145-2 | 1/19/06 | 2 | 3 | Area 3 | MG/KG | 7.875 |
| B145 | B145-5 | 1/19/06 | 5 | 6 | Area 3 | MG/KG | 8.0375 |
| B146 | B146-2 | 1/27/06 | 2 | 3 | Area 3 | MG/KG | 6.825 |
| B146 | B146-5 | 1/27/06 | 5 | 6 | Area 3 | MG/KG | 8.9 |
| B147 | B147-2 | 2/1/06 | 2 | 3 | Area 3 | MG/KG | 11.4875 |
| B148 | B148-2 | 1/23/06 | 2 | 3 | Area 3 | MG/KG | 17.125 |
| B148 | B148-5 | 1/23/06 | 5 | 6 | Area 3 | MG/KG | 128.75 |
| B149 | B149-2 | 1/23/06 | 2 | 3 | Area 3 | MG/KG | 3587.5 |
| B149 | B149-5 | 1/23/06 | 5 | 6 | Area 3 | MG/KG | 753.75 |
| B149 | B149-10 | 1/23/06 | 10 | 11 | Area 3 | MG/KG | 24.25 |
| B150 | B150-2 | 1/20/06 | 2 | 3 | Area 3 | MG/KG | 435 |
| B150 | B150-5 | 1/20/06 | 5 | 6 | Area 3 | MG/KG | 10.5125 |
| B151 | B151-2 | 1/19/06 | 2 | 3 | Area 4 | MG/KG | 16.875 |
| B151 | B151-5 | 1/19/06 | 5 | 6 | Area 4 | MG/KG | 308.75 |
| B151 | B151-10 | 1/19/06 | 10 | 11 | Area 4 | MG/KG | 9.425 |
| B153 | B153-2 | 1/20/06 | 2 | 3 | Area 3 | MG/KG | 12.75 |
| B153 | B153-5 | 1/20/06 | 5 | 6 | Area 3 | MG/KG | 176.25 |
| B156 | B156-2 | 1/13/06 | 2 | 3 | Area 3 | MG/KG | 71.25 |
| B158 | B158-2 | 1/30/06 | 2 | 3 | Area 3 | MG/KG | 9.75 |
| B159 | B159-2 | 1/31/06 | 2 | 3 | Area 3 | MG/KG | 9.7 |
| B159 | B159-5 | 1/31/06 | 5 | 6 | Area 3 | MG/KG | 13.375 |
| B160 | B160-2 | 1/31/06 | 2 | 3 | Area 3 | MG/KG | 11.5375 |
| B162 | B162-2 | 1/16/06 | 2 | 3 | Area 3 | MG/KG | 63.75 |
| B163 | B163-2 | 1/16/06 | 2 | 3 | Area 3 | MG/KG | 9.1875 |
| B163 | B163-5 | 1/16/06 | 5 | 6 | Area 3 | MG/KG | 10.1125 |

**Table B5**
**Results of Lead Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Lead |
|---|---|---|---|---|---|---|---|
| B164 | B164-2 | 1/16/06 | 2 | 3 | Area 3 | MG/KG | 10.8125 |
| B165 | B165-2 | 1/23/06 | 2 | 3 | Area 3 | MG/KG | 9.3875 |
| B166 | B166-2 | 1/24/06 | 2 | 3 | Area 3 | MG/KG | 8.8 |
| B166 | B166-5 | 1/24/06 | 5 | 6 | Area 3 | MG/KG | 9.6125 |
| B167 | B167-2 | 1/17/06 | 2 | 3 | Area 3 | MG/KG | <12.9 |
| B167 | B167-5 | 1/17/06 | 5 | 6 | Area 3 | MG/KG | <7.4 |
| B168 | B168-2 | 1/17/06 | 2 | 3 | Area 3 | MG/KG | <9.01 |
| B169 | B169-2 | 1/17/06 | 2 | 3 | Area 3 | MG/KG | <6.26 |
| B170 | B170-2 | 1/18/06 | 2 | 3 | Area 3 | MG/KG | 37.25 |
| B170 | B170-5 | 1/18/06 | 5 | 6 | Area 3 | MG/KG | 13.125 |
| B172 | B172-2 | 1/12/06 | 2 | 3 | Area 3 | MG/KG | 48.125 |
| B173 | B173-2 | 1/12/06 | 2 | 3 | Area 3 | MG/KG | 10.0875 |
| B173 | B173-5 | 1/12/06 | 5 | 6 | Area 3 | MG/KG | 10.9 |
| B174 | B174-2 | 1/12/06 | 2 | 3 | Area 3 | MG/KG | 308.75 |
| B174 | B174-5 | 1/12/06 | 5 | 6 | Area 3 | MG/KG | 11.4625 |
| B174 | B174-10 | 1/12/06 | 10 | 11 | Area 3 | MG/KG | 12.4125 |
| B175 | B175-2 | 2/7/06 | 2 | 3 | Area 3 | MG/KG | 11.3125 |
| B177 | B177-2 | 2/2/06 | 2 | 3 | Area 3 | MG/KG | 5.6875 |
| B178 | B178-2 | 2/2/06 | 2 | 3 | Area 3 | MG/KG | 34.5 |
| B178 | B178-5 | 2/2/06 | 5 | 6 | Area 3 | MG/KG | 9.4 |
| B179 | B179-2 | 1/26/06 | 2 | 3 | Area 3 | MG/KG | 12.875 |
| B180 | B180-2 | 1/26/06 | 2 | 3 | Area 3 | MG/KG | 7.65 |
| B180 | B180-5 | 1/26/06 | 5 | 6 | Area 3 | MG/KG | 8.15 |
| B181 | B181-2 | 2/6/06 | 2 | 3 | Area 3 | MG/KG | 8.4 |
| B182 | B182-2 | 1/24/06 | 2 | 3 | Area 3 | MG/KG | 9.025 |
| B182 | B182-5 | 1/25/06 | 5 | 6 | Area 3 | MG/KG | 13.125 |
| B183 | B183-2 | 1/25/06 | 2 | 3 | Area 3 | MG/KG | 53.625 |
| B184 | B184-2 | 1/25/06 | 2 | 3 | Area 3 | MG/KG | 7.7125 |
| B185 | B185-2 | 1/26/06 | 2 | 3 | Area 3 | MG/KG | 24.5 |
| B186 | B186-2 | 1/27/06 | 2 | 3 | Area 3 | MG/KG | 9.75 |
| B187 | B187-2 | 1/27/06 | 2 | 3 | Area 3 | MG/KG | 10.9 |
| B189 | B189-2 | 2/7/06 | 2 | 3 | Area 2 | MG/KG | 12.0125 |
| B191 | B191-2 | 2/1/06 | 2 | 3 | Area 2 | MG/KG | 11.2625 |
| B191 | B191-5 | 2/1/06 | 5 | 6 | Area 2 | MG/KG | 13.25 |
| B195 | B195-2 | 2/3/06 | 2 | 3 | Area 3 | MG/KG | 9.5875 |
| B196 | B196-2 | 1/25/06 | 2 | 3 | Area 3 | MG/KG | 8.4125 |
| B197 | B197-2 | 2/1/06 | 2 | 3 | Area 3 | MG/KG | 9.525 |
| B198 | B198-2 | 1/26/06 | 2 | 3 | Area 3 | MG/KG | 10.025 |
| B198 | B198-5 | 1/26/06 | 5 | 6 | Area 3 | MG/KG | 11.0125 |
| B199 | B199-2 | 1/23/06 | 2 | 3 | Area 3 | MG/KG | 86.75 |
| B200 | B200-2 | 1/24/06 | 2 | 3 | Area 3 | MG/KG | 8.7 |
| B201 | B201-2 | 1/25/06 | 2 | 3 | Area 3 | MG/KG | 9.75 |
| B201 | B201-5 | 1/25/06 | 5 | 6 | Area 3 | MG/KG | 10.375 |
| B202 | B202-2 | 1/25/06 | 2 | 3 | Area 3 | MG/KG | 8.75 |
| B203 | B203-2 | 2/7/06 | 2 | 3 | Area 3 | MG/KG | 19.375 |
| B204 | B204-2 | 2/6/06 | 2 | 3 | Area 3 | MG/KG | 12.875 |
| B205 | B205-2 | 2/7/06 | 2 | 3 | Area 3 | MG/KG | 26.125 |
| B205 | B205-5 | 2/7/06 | 5 | 6 | Area 3 | MG/KG | 9.7625 |
| B206 | B206-2 | 2/8/06 | 2 | 3 | Area 2 | MG/KG | 18.5 |

**Table B5**
**Results of Lead Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Lead |
|---|---|---|---|---|---|---|---|
| B206 | B206-5 | 2/8/06 | 5 | 6 | Area 2 | MG/KG | 12.75 |
| B209 | B209-2 | 1/31/06 | 2 | 3 | Area 2 | MG/KG | 9.4125 |
| B210 | B210-2 | 1/31/06 | 2 | 3 | Area 3 | MG/KG | 16.75 |
| B211 | B211-2 | 2/6/06 | 2 | 3 | Area 3 | MG/KG | 20.5 |
| B212 | B212-2 | 1/24/06 | 2 | 3 | Area 3 | MG/KG | 7.375 |
| B213 | B213-2 | 2/6/06 | 2 | 3 | Area 3 | MG/KG | 7.9 |
| B214 | B214-2 | 1/23/06 | 2 | 3 | Area 3 | MG/KG | 8.725 |
| B215 | B215-2 | 2/3/06 | 2 | 3 | Area 3 | MG/KG | 17.625 |
| B215 | B215-5 | 2/3/06 | 5 | 6 | Area 3 | MG/KG | 9.5875 |
| B216 | B216-2 | 2/2/06 | 2 | 3 | Area 3 | MG/KG | 7.875 |
| B217 | B217-2 | 1/24/06 | 2 | 3 | Area 3 | MG/KG | 8.1875 |
| B218 | B218-2 | 2/8/06 | 2 | 3 | Area 3 | MG/KG | 49.625 |
| B219 | B219-2 | 1/26/06 | 2 | 3 | Area 3 | MG/KG | 9.3125 |
| B219 | B219-5 | 1/26/06 | 5 | 6 | Area 3 | MG/KG | 10.575 |
| B223 | B223-2 | 2/3/06 | 2 | 3 | Area 2 | MG/KG | 10.7625 |
| B223 | B223-5 | 2/3/06 | 5 | 6 | Area 2 | MG/KG | 12.225 |
| B228 | B228-05 | 1/18/08 | 5 | 6 | Area 1 | MG/KG | 14.7 |
| B229 | B229-05 | 1/18/08 | 5 | 6 | Area 1 | MG/KG | 51.5 |
| B235 | B235-5 | 1/25/08 | 5 | 6 | Area 4 | MG/KG | 12.4 |
| B247 | B247-05 | 1/17/08 | 5 | 6 | Area 1 | MG/KG | 65.4 |
| B248 | B248-05 | 1/15/08 | 5 | 6 | Area 1 | MG/KG | 12.9 |
| B251 | B251-05 | 1/16/08 | 5 | 6 | Area 1 | MG/KG | 11.4 |
| B262 | B262-05 | 1/29/08 | 5 | 6 | Area 3 | MG/KG | 11.6 |
| B270 | B270-5 | 1/20/09 | 4.5 | 5.5 | Area 3 | MG/KG | 12 |
| B278 | B278-5 | 1/16/08 | 5 | 6 | Area 1 | MG/KG | 16.1 |
| B279 | B279-5 | 1/16/08 | 5 | 6 | Area 1 | MG/KG | 35.6 |
| B294 | B294-05 | 1/31/08 | 4.5 | 5 | Area 2 | MG/KG | 34.4 |
| B302 | B302-05 | 2/5/08 | 5 | 6 | Area 4 | MG/KG | 14.3 |
| B303 | B303-05 | 1/28/08 | 5 | 6 | Area 4 | MG/KG | 20.6 |
| B306 | B306-05 | 1/31/08 | 5 | 6 | Area 3 | MG/KG | 9.71 |
| B322 | B322-05 | 2/1/08 | 5 | 6 | Area 3 | MG/KG | 150 |
| B324 | B324-00 | 4/8/08 | 0 | 0.5 | Area 4 | MG/KG | 54.2 |
| B324 | B324-02 | 4/8/08 | 1.5 | 2 | Area 4 | MG/KG | 10.2 |
| B325 | B325-00 | 4/8/08 | 0 | 0.5 | Area 4 | MG/KG | 508 |
| B325 | B325-02 | 4/8/08 | 1.5 | 2 | Area 4 | MG/KG | 9.23 |
| B326 | B326-00 | 4/8/08 | 0 | 0.5 | Area 4 | MG/KG | 30.3 |
| B326 | B326-02 | 4/8/08 | 1.5 | 2 | Area 4 | MG/KG | 11.3 |
| B-401 | LL_B-401-1_100611 | 10/6/11 | 0.5 | 1 | Area 2 | MG/KG | 19 |
| B-403 | LL_B-403-1_100711 | 10/7/11 | 0.5 | 1 | Area 2 | MG/KG | 32 |
| B-404 | LL_B-404-3_100711 | 10/7/11 | 2.5 | 3 | Area 2 | MG/KG | 6.5 |
| B-405 | LL_B-405-1_100711 | 10/7/11 | 0.5 | 1 | Area 2 | MG/KG | 100 |
| B-406 | LL_B-406-6_100711 | 10/7/11 | 5.5 | 6 | Area 2 | MG/KG | 7.5 |
| B-407 | LL_B-407-9_100711 | 10/7/11 | 8.5 | 9 | Area 2 | MG/KG | 7.3 |
| B-408 | LL_B-408-1_100711 | 10/7/11 | 0.5 | 1 | Area 2 | MG/KG | 9.9 |
| B-410 | LL_B-410-3_100711 | 10/7/11 | 2.5 | 3 | Area 2 | MG/KG | 38 |
| B-412 | LL_B-412-1_100611 | 10/6/11 | 0.5 | 1 | Area 1 | MG/KG | 68 |
| B-413 | LL_B-413-3_100611 | 10/6/11 | 2.5 | 3 | Area 1 | MG/KG | 2500 |
| B-414 | LL_B-414-1_100611 | 10/6/11 | 0.5 | 1 | Area 1 | MG/KG | 550 |
| B-415 | LL_B-415-6_100611 | 10/6/11 | 5.5 | 6 | Area 1 | MG/KG | 8.9 |

**Table B5**
**Results of Lead Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Lead |
|---|---|---|---|---|---|---|---|
| B-416 | LL_B-416-9_100611 | 10/6/11 | 8.5 | 9 | Area 1 | MG/KG | 6.9 |
| B-418 | LL_B-418-6_100611 | 10/6/11 | 5.5 | 6 | Area 1 | MG/KG | 8.0 |
| B-420 | LL_B-420-9_100611 | 10/6/11 | 8.5 | 9 | Area 1 | MG/KG | 11 |
| B-422 | LL_B-422-1_100511 | 10/5/11 | 0.5 | 1 | Area 3 | MG/KG | 37 |
| B-422 | LL_B-422-9_100611 | 10/6/11 | 8.5 | 9 | Area 3 | MG/KG | 6.5 |
| B-424 | LL_B-424-3_100511 | 10/5/11 | 2.5 | 3 | Area 3 | MG/KG | 1000 |
| B-426 | LL_B-426-1_100511 | 10/5/11 | 0.5 | 1 | Area 3 | MG/KG | 3.7 |
| B-427 | LL_B-427-6_100511 | 10/5/11 | 5.5 | 6 | Area 3 | MG/KG | 5.9 |
| B-429 | LL_B-429-9_100511 | 10/5/11 | 8.5 | 9 | Area 3 | MG/KG | 16 |
| B-430 | LL_B-430-3_100511 | 10/5/11 | 2.5 | 3 | Area 3 | MG/KG | 2100 |
| S001 | S001-0" | 12/4/07 | 0 | 0.5 | Area 4 | MG/KG | 100 |
| S002 | S002-0" | 12/4/07 | 0 | 0.5 | Area 4 | MG/KG | 58.1 |
| S003ALT | S003ALT-0" | 12/20/07 | 0 | 0.5 | Area 4 | MG/KG | 63.9 |
| S004 | S004-0" | 1/4/08 | 0 | 0.5 | Area 4 | MG/KG | 10.6 |
| S004 | S004-12" | 1/4/08 | 1 | 1.5 | Area 4 | MG/KG | 7.42 |
| S005 | S005-0" | 12/18/07 | 0 | 0.5 | Area 4 | MG/KG | 221 |
| S006 | S006-0" | 12/17/07 | 0 | 0.5 | Area 4 | MG/KG | 122 |
| S006 | S006-12" | 12/17/07 | 1 | 1.5 | Area 4 | MG/KG | 21.3 |
| S007 | S007-0" | 12/17/07 | 0 | 0.5 | Area 4 | MG/KG | 182 |
| S008 | S008-0" | 12/17/07 | 0 | 0.5 | Area 4 | MG/KG | 59.7 |
| S009 | S009-0" | 12/17/07 | 0 | 0.5 | Area 4 | MG/KG | 27 |
| S009 | S009-12" | 12/17/07 | 1 | 1.5 | Area 4 | MG/KG | 53.5 |
| S010 | S010-6'' | 1/19/09 | 0.5 | 1 | Area 4 | MG/KG | 12.7 |
| S011 | S011-0" | 12/17/07 | 0 | 0.5 | Area 4 | MG/KG | 3810 |
| S011 | S011-12" | 12/17/07 | 1 | 1.5 | Area 4 | MG/KG | 1450 |
| S012 | S012B-0" | 12/18/07 | 0 | 0.5 | Area 4 | MG/KG | 87.8 |
| S013 | S013-0" | 1/4/08 | 0 | 0.5 | Area 4 | MG/KG | 50.6 |
| S014 | S014-0" | 12/4/07 | 0 | 0.5 | Area 4 | MG/KG | 66.9 |
| S015 | S015-0" | 12/4/07 | 0 | 0.5 | Area 4 | MG/KG | 120 |
| S016 | S016B-0" | 1/2/08 | 0 | 0.5 | Area 4 | MG/KG | 126 |
| S016 | S016B-12" | 1/2/08 | 1 | 1.5 | Area 4 | MG/KG | 10.1 |
| S017 | S017-0" | 12/4/07 | 0 | 0.5 | Area 4 | MG/KG | 100 |
| S018 | S018-0" | 12/20/07 | 0 | 0.5 | Area 4 | MG/KG | 88.2 |
| S019 | S019-0" | 12/18/07 | 0 | 0.5 | Area 4 | MG/KG | 134 |
| S020 | S020-0" | 12/18/07 | 0 | 0.5 | Area 4 | MG/KG | 63.7 |
| S020 | S020-12" | 12/18/07 | 1 | 1.5 | Area 4 | MG/KG | 46.5 |
| S021 | S021-6'' | 1/19/09 | 0.5 | 1 | Area 4 | MG/KG | 13.7 |
| S022 | S022-0" | 12/17/07 | 0 | 0.5 | Area 4 | MG/KG | 106 |
| S023 | S023-0" | 12/17/07 | 0 | 0.5 | Area 3 | MG/KG | 89.3 |
| S024 | S024-0" | 12/17/07 | 0 | 0.5 | Area 3 | MG/KG | 19.9 |
| S025 | S025-0" | 12/18/07 | 0 | 0.5 | Area 3 | MG/KG | 62.8 |
| S025 | S025-12" | 12/18/07 | 1 | 1.5 | Area 3 | MG/KG | 58.7 |
| S026 | S026-0" | 12/18/07 | 0 | 0.5 | Area 3 | MG/KG | 185 |
| S026 | S026-12" | 12/18/07 | 1 | 1.5 | Area 3 | MG/KG | 228 |
| S027 | S027-0" | 12/20/07 | 0 | 0.5 | Area 3 | MG/KG | 63.5 |
| S028 | S028-0" | 12/4/07 | 0 | 0.5 | Area 3 | MG/KG | 32 |
| S029 | S029-0" | 12/4/07 | 0 | 0.5 | Area 3 | MG/KG | 125 |
| S029 | S029-18" | 12/4/07 | 1.5 | 2 | Area 3 | MG/KG | 15.7 |
| S030 | S030-12" | 12/4/07 | 1 | 1.5 | Area 3 | MG/KG | 129 |

**Table B5**
**Results of Lead Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Lead |
|---|---|---|---|---|---|---|---|
| S031 | S031-0" | 12/4/07 | 0 | 0.5 | Area 3 | MG/KG | 157 |
| S032 | S032-0" | 12/4/07 | 0 | 0.5 | Area 3 | MG/KG | 466 |
| S033 | S033-0" | 12/4/07 | 0 | 0.5 | Area 3 | MG/KG | 98.7 |
| S034 | S034-0" | 12/4/07 | 0 | 0.5 | Area 3 | MG/KG | 1350 |
| S035 | S035-0" | 12/4/07 | 0 | 0.5 | Area 3 | MG/KG | 438 |
| S036 | S036-0" | 12/4/07 | 0 | 0.5 | Area 3 | MG/KG | 478 |
| S037 | S037-0" | 12/4/07 | 0 | 0.5 | Area 3 | MG/KG | 25700 |
| S037 | S037-20" | 12/4/07 | 1.67 | 2.167 | Area 3 | MG/KG | 47300 |
| S038 | S038-0" | 12/20/07 | 0 | 0.5 | Area 3 | MG/KG | 388 |
| S039 | S039-0" | 1/2/08 | 0 | 0.5 | Area 3 | MG/KG | 220 |
| S039 | S039-12" | 1/2/08 | 1 | 1.5 | Area 3 | MG/KG | 54.5 |
| S040 | S040-0" | 12/20/07 | 0 | 0.5 | Area 3 | MG/KG | 120 |
| S040 | S040-12" | 12/20/07 | 1 | 1.5 | Area 3 | MG/KG | 56.5 |
| S041 | S041-0" | 1/30/08 | 0 | 0.5 | Area 3 | MG/KG | 13.5 |
| S042 | S042-0" | 1/30/08 | 0 | 0.5 | Area 3 | MG/KG | 120 |
| S042 | S042-12" | 1/30/08 | 1 | 1.5 | Area 3 | MG/KG | 20 |
| S043 | S043-0" | 1/30/08 | 0 | 0.5 | Area 3 | MG/KG | 34.3 |
| S044 | S044-0" | 12/20/07 | 0 | 0.5 | Area 3 | MG/KG | 207 |
| S045 | S045-0" | 12/20/07 | 0 | 0.5 | Area 3 | MG/KG | 129 |
| S046 | S046-0" | 12/20/07 | 0 | 0.5 | Area 3 | MG/KG | 80.4 |
| S047 | S047-6" | 1/20/09 | 0.5 | 1 | Area 3 | MG/KG | 653 |
| S048 | S048-0" | 1/7/08 | 0 | 0.5 | Area 3 | MG/KG | 1060 |
| S049 | S049-6" | 1/20/09 | 0.5 | 1 | Area 3 | MG/KG | 36.4 |
| S050 | S050-0" | 12/4/07 | 0 | 0.5 | Area 3 | MG/KG | 32.6 |
| S051 | S051-0" | 12/20/07 | 0 | 0.5 | Area 3 | MG/KG | 664 |
| S052 | S052-0" | 12/20/07 | 0 | 0.5 | Area 3 | MG/KG | 294 |
| S052 | S052-12" | 12/20/07 | 1 | 1.5 | Area 3 | MG/KG | 279 |
| S053 | S053-0" | 12/20/07 | 0 | 0.5 | Area 3 | MG/KG | 86.1 |
| S053 | S053-12" | 12/20/07 | 1 | 1.5 | Area 3 | MG/KG | 9.95 |
| S054 | S054-0" | 1/30/08 | 0 | 0.5 | Area 3 | MG/KG | 99.6 |
| S055 | S055-0" | 1/30/08 | 0 | 0.5 | Area 3 | MG/KG | 50.2 |
| S055 | S055-12" | 1/30/08 | 1 | 1.5 | Area 3 | MG/KG | 16.4 |
| S056 | S056-0" | 1/30/08 | 0 | 0.5 | Area 3 | MG/KG | 302 |
| S056 | S056-12" | 1/30/08 | 1 | 1.5 | Area 3 | MG/KG | 105 |
| S057 | S057-0" | 1/30/08 | 0 | 0.5 | Area 3 | MG/KG | 66.5 |
| S058 | S058-0" | 2/1/08 | 0 | 0.5 | Area 3 | MG/KG | 48.7 |
| S059 | S059-0" | 2/1/08 | 0 | 0.5 | Area 3 | MG/KG | 86.8 |
| S059 | S059-12" | 2/1/08 | 1 | 1.5 | Area 3 | MG/KG | 103 |
| S060 | S060-0" | 12/13/07 | 0 | 0.5 | Area 3 | MG/KG | 58 |
| S060 | S060-18" | 12/13/07 | 1.5 | 2 | Area 3 | MG/KG | 16.9 |
| S061 | S061-0" | 12/13/07 | 0 | 0.5 | Area 3 | MG/KG | 37.8 |
| S063 | S063-0" | 12/14/07 | 0 | 0.5 | Area 3 | MG/KG | 26.7 |
| S064 | S064-0" | 12/14/07 | 0 | 0.5 | Area 3 | MG/KG | 34.4 |
| S064 | S064-18" | 12/14/07 | 1.5 | 2 | Area 3 | MG/KG | 23.3 |
| S065 | S065-0" | 2/1/08 | 0 | 0.5 | Area 3 | MG/KG | 131 |
| S065 | S065-12" | 2/1/08 | 1 | 1.5 | Area 3 | MG/KG | 14.5 |
| S066 | S066-0" | 12/14/07 | 0 | 0.5 | Area 3 | MG/KG | 94.2 |
| S067 | S067-0" | 12/14/07 | 0 | 0.5 | Area 3 | MG/KG | 62.1 |
| S068 | S068-0" | 12/13/07 | 0 | 0.5 | Area 3 | MG/KG | 113 |

**Table B5**
**Results of Lead Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Lead |
|---|---|---|---|---|---|---|---|
| S069 | S069-0" | 12/13/07 | 0 | 0.5 | Area 3 | MG/KG | 521 |
| S070 | S070-0" | 12/13/07 | 0 | 0.5 | Area 3 | MG/KG | 56.7 |
| S071B | S071B-12" | 12/21/07 | 1 | 1.5 | Area 3 | MG/KG | 6.83 |
| S072 | S072-0" | 12/4/07 | 0 | 0.5 | Area 3 | MG/KG | 46.9 |
| S073 | S073-0" | 12/4/07 | 0 | 0.5 | Area 3 | MG/KG | 36.4 |
| S074 | S074-0" | 12/4/07 | 0 | 0.5 | Area 3 | MG/KG | 65.3 |
| S075 | S075-0" | 12/4/07 | 0 | 0.5 | Area 3 | MG/KG | 69.2 |
| S076 | S076-6'' | 1/22/09 | 0.5 | 1 | Area 3 | MG/KG | 21.6 |
| S078 | S078-0" | 2/1/08 | 0 | 0.5 | Area 3 | MG/KG | 28.1 |
| S078 | S078-12" | 2/1/08 | 1 | 1.5 | Area 3 | MG/KG | 10.9 |
| S079 | S079-0" | 2/1/08 | 0 | 0.5 | Area 3 | MG/KG | 3.34 |
| S080 | S080-0" | 2/1/08 | 0 | 0.5 | Area 3 | MG/KG | 58.1 |
| S081 | S081-0" | 2/1/08 | 0 | 0.5 | Area 3 | MG/KG | 71 |
| S082 | S082-0" | 12/13/07 | 0 | 0.5 | Area 3 | MG/KG | 104 |
| S083 | S083-0" | 12/13/07 | 0 | 0.5 | Area 3 | MG/KG | 219 |
| S083 | S083-15" | 12/13/07 | 1.25 | 1.75 | Area 3 | MG/KG | 16.6 |
| S084 | S084-0" | 12/4/07 | 0 | 0.5 | Area 3 | MG/KG | 101 |
| S085 | S085-0" | 12/4/07 | 0 | 0.5 | Area 3 | MG/KG | 172 |
| S086 | S086-6" | 1/20/09 | 0.5 | 1 | Area 3 | MG/KG | 57.2 |
| S087 | S087-0" | 12/13/07 | 0 | 0.5 | Area 3 | MG/KG | 82.9 |
| S088 | S088-0" | 1/2/08 | 0 | 0.5 | Area 3 | MG/KG | 82 |
| S089 | S089-0" | 1/2/08 | 0 | 0.5 | Area 3 | MG/KG | 10.2 |
| S090 | S090-0" | 12/13/07 | 0 | 0.5 | Area 3 | MG/KG | 42.1 |
| S090 | S090-18" | 12/13/07 | 1.5 | 2 | Area 3 | MG/KG | 3.1 |
| S091 | S091-0" | 2/1/08 | 0 | 0.5 | Area 3 | MG/KG | 313 |
| S092 | S092-0" | 12/13/07 | 0 | 0.5 | Area 3 | MG/KG | 123 |
| S093 | S093-0" | 12/4/07 | 0 | 0.5 | Area 3 | MG/KG | 123 |
| S094 | S094-0" | 12/4/07 | 0 | 0.5 | Area 3 | MG/KG | 282 |
| S095 | S095-0" | 12/4/07 | 0 | 0.5 | Area 3 | MG/KG | 115 |
| S096 | S096-0" | 12/4/07 | 0 | 0.5 | Area 3 | MG/KG | 175 |
| S097 | S097-6" | 1/20/09 | 0.5 | 1 | Area 3 | MG/KG | 44.8 |
| S098 | S098-0" | 12/4/07 | 0 | 0.5 | Area 3 | MG/KG | 79.6 |
| S099 | S099-0" | 12/13/07 | 0 | 0.5 | Area 3 | MG/KG | 10.3 |
| S100 | S100-0" | 12/13/07 | 0 | 0.5 | Area 3 | MG/KG | 24.8 |
| S101 | S101-0" | 12/13/07 | 0 | 0.5 | Area 3 | MG/KG | 14.1 |
| S102 | S102-0" | 12/13/07 | 0 | 0.5 | Area 3 | MG/KG | 51.4 |
| S102 | S102-15" | 12/13/07 | 1.25 | 1.75 | Area 3 | MG/KG | 24.4 |
| S103 | S103-0" | 1/3/08 | 0 | 0.5 | Area 2 | MG/KG | 30.4 |
| S103 | S103-12" | 1/3/08 | 1 | 1.5 | Area 2 | MG/KG | 44.6 |
| S104 | S104-0" | 1/29/08 | 0 | 0.5 | Area 2 | MG/KG | 16.3 |
| S105 | S105-0" | 1/31/08 | 0 | 0.5 | Area 2 | MG/KG | 81 |
| S106 | S106-6'' | 1/22/09 | 0.5 | 1 | Area 2 | MG/KG | 41 |
| S106 | S106-12'' | 1/22/09 | 1 | 1.5 | Area 2 | MG/KG | 28 |
| S107 | S107-0" | 12/20/07 | 0 | 0.5 | Area 2 | MG/KG | 8.71 |
| S108 | S108-0" | 12/20/07 | 0 | 0.5 | Area 2 | MG/KG | 167 |
| S109 | S109-0" | 1/31/08 | 0 | 0.5 | Area 2 | MG/KG | 365 |
| S109 | S109-12" | 1/31/08 | 1 | 1.5 | Area 2 | MG/KG | 54.7 |
| S110 | S110-6'' | 1/22/09 | 0.5 | 1 | Area 2 | MG/KG | 214 |
| S111 | S111-0" | 12/21/07 | 0 | 0.5 | Area 2 | MG/KG | 70.2 |

**Table B5**
**Results of Lead Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Lead |
|---|---|---|---|---|---|---|---|
| S111 | S111-12" | 12/21/07 | 1 | 1.5 | Area 2 | MG/KG | 8.39 |
| S112 | S112-6'' | 1/22/09 | 0.5 | 1 | Area 2 | MG/KG | 19.1 |
| S113 | S113-0" | 1/31/08 | 0 | 0.5 | Area 2 | MG/KG | 24.3 |
| S113 | S113-12" | 1/31/08 | 1 | 1.5 | Area 2 | MG/KG | 23.4 |
| S114 | S114-0" | 1/29/08 | 0 | 0.5 | Area 2 | MG/KG | 78.2 |
| S115 | S115-0" | 1/29/08 | 0 | 0.5 | Area 2 | MG/KG | 16 |
| S116 | S116-0" | 1/29/08 | 0 | 0.5 | Area 2 | MG/KG | 106 |
| S117 | S117-0" | 1/31/08 | 0 | 0.5 | Area 2 | MG/KG | 15.3 |
| S117 | S117-12" | 2/1/08 | 1 | 1.5 | Area 2 | MG/KG | 12.1 |
| S118 | S118-6'' | 1/22/09 | 0.5 | 1 | Area 2 | MG/KG | 331 |
| S119 | S119-0" | 1/4/08 | 0 | 0.5 | Area 2 | MG/KG | 15 |
| S119 | S119-12" | 1/4/08 | 1 | 1.5 | Area 2 | MG/KG | 14.4 |
| S120 | S120-0" | 1/4/08 | 0 | 0.5 | Area 2 | MG/KG | 16.6 |
| S121 | S121-0" | 1/4/08 | 0 | 0.5 | Area 2 | MG/KG | 25.3 |
| S121 | S121-12" | 1/4/08 | 1 | 1.5 | Area 2 | MG/KG | 51.9 |
| S122 | S122-0" | 1/29/08 | 0 | 0.5 | Area 1 | MG/KG | 4.76 |
| S123 | S123-0" | 11/29/07 | 0 | 0.5 | Area 1 | MG/KG | 47.6 |
| S124 | S124-0" | 11/29/07 | 0 | 0.5 | Area 1 | MG/KG | 47.8 |
| S125 | S125-0" | 1/29/08 | 0 | 0.5 | Area 1 | MG/KG | 1570 |
| S126 | S126-0" | 1/7/08 | 0 | 0.5 | Area 1 | MG/KG | 94 |
| S126 | S126-12" | 1/7/08 | 1 | 1.5 | Area 1 | MG/KG | 24.3 |
| S127 | S127-0" | 2/1/08 | 0 | 0.5 | Area 3 | MG/KG | 50.4 |
| S130 | S130-0" | 1/7/08 | 0 | 0.5 | Area 3 | MG/KG | 405 |
| S130 | S130-12" | 1/7/08 | 1 | 1.5 | Area 3 | MG/KG | 298 |
| S131 | S131-0" | 1/7/08 | 0 | 0.5 | Area 1 | MG/KG | 4.43 |
| S132 | S132-0" | 1/3/08 | 0 | 0.5 | Area 1 | MG/KG | 26.3 |
| S133 | S133B-0" | 11/29/07 | 0 | 0.5 | Area 1 | MG/KG | 429 |
| S133 | S133B-12" | 11/29/07 | 1 | 1.5 | Area 1 | MG/KG | 598 |
| S134 | S134-0" | 1/7/08 | 0 | 0.5 | Area 1 | MG/KG | 43.3 |
| S135 | S135-6'' | 1/19/09 | 0.5 | 1 | Area 1 | MG/KG | 6.26 |
| S136 | S136-0" | 11/29/07 | 0 | 0.5 | Area 1 | MG/KG | 417 |
| S136 | S136-24" | 11/29/07 | 2 | 2.5 | Area 1 | MG/KG | 12.5 |
| S137 | S137-0" | 11/29/07 | 0 | 0.5 | Area 1 | MG/KG | 211 |
| S138 | S138-0" | 11/29/07 | 0 | 0.5 | Area 1 | MG/KG | 110 |
| S138 | S138-18" | 11/29/07 | 1.5 | 2 | Area 1 | MG/KG | 1230 |
| S139 | S139-12" | 11/29/07 | 1 | 1.5 | Area 1 | MG/KG | 45.7 |
| S139 | S139-24" | 11/29/07 | 2 | 2.5 | Area 1 | MG/KG | 11.2 |
| S140 | S140-12" | 11/29/07 | 1 | 1.5 | Area 1 | MG/KG | 14.7 |
| S141 | S141-0" | 1/7/08 | 0 | 0.5 | Area 3 | MG/KG | 915 |
| S141 | S141-12" | 1/7/08 | 1 | 1.5 | Area 3 | MG/KG | 9.25 |
| S142 | S142-0" | 1/7/08 | 0 | 0.5 | Area 3 | MG/KG | 386 |
| S143 | S143-0" | 1/7/08 | 0 | 0.5 | Area 3 | MG/KG | 43.7 |
| S144B | S144B-0" | 1/31/08 | 0 | 0.5 | Area 3 | MG/KG | 24.3 |
| S144B | S144B-12" | 1/31/08 | 1 | 1.5 | Area 3 | MG/KG | 38.4 |
| S145 | S145-0" | 1/7/08 | 0 | 0.5 | Area 3 | MG/KG | 90.2 |
| S145 | S145-12" | 1/7/08 | 1 | 1.5 | Area 3 | MG/KG | 196 |
| S146 | S146-0" | 11/29/07 | 0 | 0.5 | Area 1 | MG/KG | 151 |
| S147 | S147-12" | 11/29/07 | 1 | 1.5 | Area 1 | MG/KG | 47.2 |
| S148 | S148-0" | 11/29/07 | 0 | 0.5 | Area 1 | MG/KG | 4240 |

**Table B5**
**Results of Lead Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Lead |
|---|---|---|---|---|---|---|---|
| S149 | S149-12" | 11/29/07 | 1 | 1.5 | Area 1 | MG/KG | 265 |
| S150 | S150-12" | 11/29/07 | 1 | 1.5 | Area 1 | MG/KG | 3700 |
| S151 | S151-12" | 11/29/07 | 1 | 1.5 | Area 1 | MG/KG | 99.2 |
| S152 | S152-0" | 11/29/07 | 0 | 0.5 | Area 1 | MG/KG | 448 |
| S153 | S153-0" | 11/29/07 | 0 | 0.5 | Area 1 | MG/KG | 841 |
| S154 | S154-0" | 11/29/07 | 0 | 0.5 | Area 1 | MG/KG | 247 |
| S155 | S155B-0" | 11/29/07 | 0 | 0.5 | Area 1 | MG/KG | 23.9 |
| S156 | S156-0" | 1/7/08 | 0 | 0.5 | Area 3 | MG/KG | 170 |
| S157 | S157-0" | 1/2/08 | 0 | 0.5 | Area 3 | MG/KG | 51.5 |
| S158 | S158-0" | 12/17/07 | 0 | 0.5 | Area 3 | MG/KG | 275 |
| S158 | S158-12" | 12/17/07 | 1 | 1.5 | Area 3 | MG/KG | 258 |
| S159 | S159-0" | 12/17/07 | 0 | 0.5 | Area 3 | MG/KG | 112 |
| S160 | S160-0" | 1/7/08 | 0 | 0.5 | Area 3 | MG/KG | 136 |
| S161 | S161B-0" | 11/29/07 | 0 | 0.5 | Area 1 | MG/KG | 57 |
| S162 | S162-12" | 11/29/07 | 1 | 1.5 | Area 1 | MG/KG | 69.4 |
| S162 | S162-24" | 11/29/07 | 2 | 2.5 | Area 1 | MG/KG | 20.5 |
| S163 | S163-0" | 11/29/07 | 0 | 0.5 | Area 1 | MG/KG | 12.3 |
| S164 | S164-0" | 11/29/07 | 0 | 0.5 | Area 1 | MG/KG | 310 |
| S165 | S165-0" | 11/29/07 | 0 | 0.5 | Area 1 | MG/KG | 496 |
| S166 | S166-0" | 11/29/07 | 0 | 0.5 | Area 1 | MG/KG | 1180 |
| S167 | S167-0" | 11/29/07 | 0 | 0.5 | Area 1 | MG/KG | 735 |
| S168 | S168-0" | 11/29/07 | 0 | 0.5 | Area 1 | MG/KG | 563 |
| S169 | S169-0" | 11/29/07 | 0 | 0.5 | Area 1 | MG/KG | 370 |
| S170 | S170-0" | 1/7/08 | 0 | 0.5 | Area 3 | MG/KG | 208 |
| S171 | S171-0" | 12/17/07 | 0 | 0.5 | Area 3 | MG/KG | 521 |
| S171 | S171-12" | 12/17/07 | 1 | 1.5 | Area 3 | MG/KG | 5520 |
| S172 | S172-0" | 12/17/07 | 0 | 0.5 | Area 3 | MG/KG | 217 |
| S173 | S173-0" | 12/17/07 | 0 | 0.5 | Area 3 | MG/KG | 21.7 |
| S174 | S174-0" | 12/14/07 | 0 | 0.5 | Area 3 | MG/KG | 34.3 |
| S175 | S175-0" | 1/31/08 | 0 | 0.5 | Area 3 | MG/KG | 60.9 |
| S175 | S175-0" | 1/7/08 | 0 | 0.5 | Area 3 | MG/KG | 82.3 |
| S176 | S176-0" | 11/28/07 | 0 | 0.5 | Area 1 | MG/KG | 858 |
| S177 | S177-0" | 11/28/07 | 0 | 0.5 | Area 1 | MG/KG | 466 |
| S178 | S178-0" | 11/28/07 | 0 | 0.5 | Area 1 | MG/KG | 32.7 |
| S179 | S179-0" | 11/28/07 | 0 | 0.5 | Area 1 | MG/KG | 38.2 |
| S180 | S180-0" | 11/28/07 | 0 | 0.5 | Area 1 | MG/KG | 297 |
| S181 | S181-0" | 1/31/08 | 0 | 0.5 | Area 3 | MG/KG | 260 |
| S182 | S182-0" | 12/14/07 | 0 | 0.5 | Area 3 | MG/KG | 83.2 |
| S183 | S183-0" | 12/17/07 | 0 | 0.5 | Area 3 | MG/KG | 14.9 |
| S184 | S184-0" | 12/14/07 | 0 | 0.5 | Area 3 | MG/KG | 43.3 |
| S185 | S185-6'' | 1/19/09 | 0.5 | 1 | Area 3 | MG/KG | 14.4 |
| S186 | S186-0" | 1/31/08 | 0 | 0.5 | Area 3 | MG/KG | 167 |
| S187 | S187-0" | 1/4/08 | 0 | 0.5 | Area 1 | MG/KG | 9.89 |
| S188 | S188-0" | 11/26/07 | 0 | 0.5 | Area 1 | MG/KG | 13 |
| S189 | S189-0" | 11/26/07 | 0 | 0.5 | Area 1 | MG/KG | 8.71 |
| S190 | S190-0" | 11/26/07 | 0 | 0.5 | Area 1 | MG/KG | 102 |
| S191 | S191-0" | 11/26/07 | 0 | 0.5 | Area 1 | MG/KG | 139 |
| S192 | S192-0" | 11/26/07 | 0 | 0.5 | Area 1 | MG/KG | 24.5 |
| S193 | S193-0" | 11/26/07 | 0 | 0.5 | Area 1 | MG/KG | 7.2 |

**Table B5**
**Results of Lead Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Lead |
|---|---|---|---|---|---|---|---|
| S194 | S194-0" | 11/26/07 | 0 | 0.5 | Area 1 | MG/KG | 64.7 |
| S195 | S195-0" | 11/26/07 | 0 | 0.5 | Area 1 | MG/KG | 81.2 |
| S196 | S196-0" | 11/26/07 | 0 | 0.5 | Area 1 | MG/KG | 375 |
| S196 | S196-18" | 11/26/07 | 1.5 | 2 | Area 1 | MG/KG | 14.7 |
| S197 | S197-0" | 11/26/07 | 0 | 0.5 | Area 1 | MG/KG | 36.5 |
| S198 | S198-0" | 11/26/07 | 0 | 0.5 | Area 1 | MG/KG | 47.1 |
| S199 | S199-12" | 11/26/07 | 1 | 1.5 | Area 1 | MG/KG | 12.3 |
| S199 | S199-24" | 11/26/07 | 2 | 2.5 | Area 1 | MG/KG | 13 |
| S200 | S200-0" | 11/26/07 | 0 | 0.5 | Area 1 | MG/KG | 30.2 |
| S201 | S201-0" | 11/26/07 | 0 | 0.5 | Area 1 | MG/KG | 29.8 |
| S201 | S201-18" | 11/26/07 | 1.5 | 2 | Area 1 | MG/KG | 18.7 |
| S202 | S202-0" | 11/28/07 | 0 | 0.5 | Area 1 | MG/KG | 15 |
| S203 | S203-0" | 11/28/07 | 0 | 0.5 | Area 1 | MG/KG | 44.8 |
| S204 | S204-0" | 11/28/07 | 0 | 0.5 | Area 1 | MG/KG | 40.5 |
| S205 | S205-0" | 11/28/07 | 0 | 0.5 | Area 1 | MG/KG | 43.7 |
| S206 | S206-0" | 11/28/07 | 0 | 0.5 | Area 1 | MG/KG | 28.7 |
| S207 | S207-0" | 11/28/07 | 0 | 0.5 | Area 1 | MG/KG | 32.4 |
| S208 | S208-0" | 11/26/07 | 0 | 0.5 | Area 1 | MG/KG | 27.6 |
| S209 | S209-0" | 11/26/07 | 0 | 0.5 | Area 1 | MG/KG | 51.5 |
| S210 | S210-0" | 11/26/07 | 0 | 0.5 | Area 1 | MG/KG | 71.4 |
| S211 | S211-0" | 11/26/07 | 0 | 0.5 | Area 1 | MG/KG | 10.9 |
| S212 | S212-0" | 11/26/07 | 0 | 0.5 | Area 1 | MG/KG | 17.7 |
| S213 | S213-0" | 11/28/07 | 0 | 0.5 | Area 1 | MG/KG | 57 |
| S214 | S214-0" | 11/28/07 | 0 | 0.5 | Area 1 | MG/KG | 38.6 |
| S215 | S215-0" | 11/28/07 | 0 | 0.5 | Area 1 | MG/KG | 3.01 |
| S216 | S216-0" | 11/28/07 | 0 | 0.5 | Area 1 | MG/KG | 15 |
| S217 | S217-0" | 11/28/07 | 0 | 0.5 | Area 1 | MG/KG | 25.1 |
| S218 | S218-0" | 11/28/07 | 0 | 0.5 | Area 1 | MG/KG | 6.56 |
| S219 | S219-0" | 11/28/07 | 0 | 0.5 | Area 1 | MG/KG | 26.8 |
| S220 | S220-0" | 11/28/07 | 0 | 0.5 | Area 1 | MG/KG | 41.3 |
| S221 | S221-0" | 11/28/07 | 0 | 0.5 | Area 1 | MG/KG | 10.1 |
| S222 | S222-0" | 11/28/07 | 0 | 0.5 | Area 1 | MG/KG | 6.08 |
| S223 | S223-0" | 11/28/07 | 0 | 0.5 | Area 1 | MG/KG | 100 |
| S224 | S224-0" | 11/28/07 | 0 | 0.5 | Area 1 | MG/KG | 298 |
| S225 | S225-0" | 11/28/07 | 0 | 0.5 | Area 1 | MG/KG | 26.9 |
| S226 | S226-0" | 11/28/07 | 0 | 0.5 | Area 1 | MG/KG | 50.1 |
| S227 | S227-0" | 11/29/07 | 0 | 0.5 | Area 1 | MG/KG | 25.3 |
| S228 | S228-0" | 11/28/07 | 0 | 0.5 | Area 1 | MG/KG | 546 |
| S229 | S229-0" | 11/28/07 | 0 | 0.5 | Area 1 | MG/KG | 73.6 |
| S230 | S230-0" | 11/28/07 | 0 | 0.5 | Area 1 | MG/KG | 5.38 |
| S230 | S230-12" | 11/28/07 | 1 | 1.5 | Area 1 | MG/KG | 6.1 |
| S231 | S231-0" | 11/28/07 | 0 | 0.5 | Area 1 | MG/KG | 28.9 |
| S232 | S232-0" | 11/28/07 | 0 | 0.5 | Area 1 | MG/KG | 30.5 |
| S233 | S233-0" | 11/28/07 | 0 | 0.5 | Area 1 | MG/KG | 66.4 |
| S234 | S234-0" | 11/28/07 | 0 | 0.5 | Area 1 | MG/KG | 12.1 |
| S235 | S235-0" | 11/28/07 | 0 | 0.5 | Area 1 | MG/KG | 73.7 |
| S236 | S236-0" | 11/28/07 | 0 | 0.5 | Area 1 | MG/KG | 30.1 |
| S237 | S237-0" | 11/29/07 | 0 | 0.5 | Area 1 | MG/KG | 34.6 |
| S238 | S238-0" | 1/28/08 | 0 | 0.5 | Area 2 | MG/KG | 19.8 |

**Table B5**
**Results of Lead Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Lead |
|---|---|---|---|---|---|---|---|
| S239 | S239-0" | 1/28/08 | 0 | 0.5 | Area 2 | MG/KG | 25.4 |
| S239 | S239-12" | 1/30/08 | 1 | 1.5 | Area 2 | MG/KG | 33.9 |
| S240 | S240-6" | 1/20/09 | 0.5 | 1 | Area 2 | MG/KG | 31.4 |
| S241 | S241-6" | 1/20/09 | 0.5 | 1 | Area 2 | MG/KG | 29.8 |
| S242 | S242-0" | 1/29/08 | 0 | 0.5 | Area 2 | MG/KG | 50.9 |
| S243 | S243-0" | 1/29/08 | 0 | 0.5 | Area 2 | MG/KG | 5.17 |
| S244 | S244-0" | 1/28/08 | 0 | 0.5 | Area 2 | MG/KG | 39.3 |
| S245 | S245-0" | 1/28/08 | 0 | 0.5 | Area 2 | MG/KG | 16.6 |
| S246 | S246-0" | 1/29/08 | 0 | 0.5 | Area 2 | MG/KG | 63 |
| S247 | S247-0" | 1/29/08 | 0 | 0.5 | Area 2 | MG/KG | 44.1 |
| S248 | S248-0" | 1/28/08 | 0 | 0.5 | Area 2 | MG/KG | 40.5 |
| S249 | S249-0" | 1/28/08 | 0 | 0.5 | Area 2 | MG/KG | 127 |
| S250 | S250-0" | 1/28/08 | 0 | 0.5 | Area 2 | MG/KG | 6.82 |
| S250 | S250-12" | 1/30/08 | 1 | 1.5 | Area 2 | MG/KG | 15.4 |
| S251 | S251-0" | 1/28/08 | 0 | 0.5 | Area 2 | MG/KG | 32.3 |
| S251 | S251-6" | 1/20/09 | 0.5 | 1 | Area 2 | MG/KG | 24 |
| S252 | S252-0" | 1/29/08 | 0 | 0.5 | Area 2 | MG/KG | 608 |
| S253 | S253-0" | 1/29/08 | 0 | 0.5 | Area 2 | MG/KG | 26.4 |
| S254 | S254-0" | 1/29/08 | 0 | 0.5 | Area 2 | MG/KG | 157 |
| S254 | S254-12" | 1/30/08 | 1 | 1.5 | Area 2 | MG/KG | 33.4 |
| S255 | S255-0" | 1/29/08 | 0 | 0.5 | Area 2 | MG/KG | 4.57 |
| S256 | S256-0" | 1/31/08 | 0 | 0.5 | Area 2 | MG/KG | 220 |
| S257 | S257-0" | 1/3/08 | 0 | 0.5 | Area 2 | MG/KG | 12.4 |
| S258 | S258-0" | 1/3/08 | 0 | 0.5 | Area 2 | MG/KG | 29.5 |
| S259 | S259-0" | 1/31/08 | 0 | 0.5 | Area 2 | MG/KG | 24.6 |
| S260 | S260-0" | 1/3/08 | 0 | 0.5 | Area 2 | MG/KG | 4.59 |
| S261 | S261-0" | 12/21/07 | 0 | 0.5 | Area 3 | MG/KG | 37.6 |
| S262 | S262-0" | 12/13/07 | 0 | 0.5 | Area 3 | MG/KG | 103 |
| S263 | S263-0" | 2/1/08 | 0 | 0.5 | Area 3 | MG/KG | 15.4 |
| S264 | S264-0" | 1/3/08 | 0 | 0.5 | Area 3 | MG/KG | 56.3 |
| S264 | S264-12" | 1/3/08 | 1 | 1.5 | Area 3 | MG/KG | 42.7 |
| S265 | S265-6" | 1/20/09 | 0.5 | 1 | Area 3 | MG/KG | 44.6 |
| S266 | S266-0" | 12/14/07 | 0 | 0.5 | Area 3 | MG/KG | 32.5 |
| S267 | S267-0" | 1/4/08 | 0 | 0.5 | Area 3 | MG/KG | 48.9 |
| S268 | S268-0" | 1/2/08 | 0 | 0.5 | Area 3 | MG/KG | 235 |
| S268 | S268-12" | 1/2/08 | 1 | 1.5 | Area 3 | MG/KG | 90.7 |
| S269 | S269-0" | 12/4/07 | 0 | 0.5 | Area 3 | MG/KG | 302 |
| S270 | S270-0" | 12/17/07 | 0 | 0.5 | Area 4 | MG/KG | 16.5 |
| S271 | S271-0" | 1/4/08 | 0 | 0.5 | Area 1 | MG/KG | 136 |
| S272 | S272-0" | 11/28/07 | 0 | 0.5 | Area 1 | MG/KG | 29.2 |
| S273 | S273-0" | 11/28/07 | 0 | 0.5 | Area 1 | MG/KG | 527 |
| S274 | S274-0" | 11/29/07 | 0 | 0.5 | Area 1 | MG/KG | 53.9 |
| S274 | S274-12" | 11/29/07 | 1 | 1.5 | Area 1 | MG/KG | 9.48 |
| S275 | S275-0" | 11/29/07 | 0 | 0.5 | Area 3 | MG/KG | 8.95 |
| S275 | S275-12" | 11/29/07 | 1 | 1.5 | Area 3 | MG/KG | 12.4 |
| S276 | S276-0" | 11/29/07 | 0 | 0.5 | Area 1 | MG/KG | 208 |
| S277 | S277-0" | 1/31/08 | 0 | 0.5 | Area 2 | MG/KG | 4690 |
| S278 | S278-0" | 1/31/08 | 0 | 0.5 | Area 2 | MG/KG | 17.3 |
| S279 | S279-0" | 12/20/07 | 0 | 0.5 | Area 2 | MG/KG | 272 |

**Table B5**
**Results of Lead Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Lead |
|---|---|---|---|---|---|---|---|
| S279 | S279-12" | 12/20/07 | 1 | 1.5 | Area 2 | MG/KG | 12.3 |
| S280 | S280-0" | 1/3/08 | 0 | 0.5 | Area 2 | MG/KG | 72.7 |
| S281 | S281-0" | 2/1/08 | 0 | 0.5 | Area 2 | MG/KG | 48.7 |
| S282 | S282-6" | 1/20/09 | 0.5 | 1 | Area 2 | MG/KG | 28.7 |
| S282 | S282-12" | 1/20/09 | 1 | 1.5 | Area 2 | MG/KG | 39 |
| S283 | S283-0" | 1/29/08 | 0 | 0.5 | Area 2 | MG/KG | 54.8 |
| S284 | S284-0" | 1/29/08 | 0 | 0.5 | Area 2 | MG/KG | 10.2 |
| S284 | S284-12" | 1/30/08 | 1 | 1.5 | Area 2 | MG/KG | 25.3 |
| S285 | S285-0" | 11/28/07 | 0 | 0.5 | Area 1 | MG/KG | 44.1 |
| S286 | S286-0" | 11/26/07 | 0 | 0.5 | Area 1 | MG/KG | 11.7 |
| S287 | S287-0" | 11/26/07 | 0 | 0.5 | Area 1 | MG/KG | 11.3 |
| S287 | S287-12" | 11/26/07 | 1 | 1.5 | Area 1 | MG/KG | 11.8 |
| S288 | S288-0" | 11/26/07 | 0 | 0.5 | Area 1 | MG/KG | 29.3 |
| S289 | S289-0" | 11/26/07 | 0 | 0.5 | Area 1 | MG/KG | 44.1 |
| S290 | S290-0" | 11/26/07 | 0 | 0.5 | Area 1 | MG/KG | 120 |
| S291 | S291-0" | 1/7/08 | 0 | 0.5 | Area 4 | MG/KG | 98 |
| S292 | S292-6'' | 1/19/09 | 0.5 | 1 | Area 1 | MG/KG | 13.5 |
| S293 | S293-0" | 11/26/07 | 0 | 0.5 | Area 1 | MG/KG | 10.6 |
| S293 | S293-24" | 11/26/07 | 2 | 2.5 | Area 1 | MG/KG | 9.72 |
| S294 | S294-0" | 11/26/07 | 0 | 0.5 | Area 1 | MG/KG | 38.5 |
| S295 | S295-6" | 11/26/07 | 0.5 | 1 | Area 1 | MG/KG | 50.7 |
| S296 | S296-0" | 11/28/07 | 0 | 0.5 | Area 1 | MG/KG | 28.1 |
| S296 | S296-18" | 11/28/07 | 1.5 | 2 | Area 1 | MG/KG | 18.7 |
| S297 | S297-6" | 1/20/09 | 0.5 | 1 | Area 3 | MG/KG | 31.7 |
| S297 | S297-12" | 1/20/09 | 1 | 1.5 | Area 3 | MG/KG | 98.7 |
| S298 | S298-0 | 12/4/07 | 0 | 0.5 | Area 4 | MG/KG | 45.1 |

Notes
MG/KG milligrams per kilogram

**Table B6**
**Results of TPHg Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Gasoline Range Organics |
|---|---|---|---|---|---|---|---|
| B001 | B001-2 | 12/5/05 | 2 | 3 | Area 1 | UG/KG | <37500 |
| B001 | B001-5 | 12/5/05 | 5 | 6 | Area 1 | UG/KG | 5000 |
| B001 | B001-10 | 12/5/05 | 10 | 11 | Area 1 | UG/KG | <3750 |
| B002 | B002-2 | 12/5/05 | 2 | 3 | Area 1 | UG/KG | 3750 |
| B002 | B002-5 | 12/5/05 | 5 | 6 | Area 1 | UG/KG | <37500 |
| B002 | B002-10 | 12/5/05 | 10 | 11 | Area 1 | UG/KG | 4000 |
| B003 | B003-2 | 12/7/05 | 2 | 3 | Area 1 | UG/KG | <3750 |
| B003 | B003-5 | 12/7/05 | 5 | 6 | Area 1 | UG/KG | 138750 |
| B004 | B004-2 | 12/8/05 | 2 | 3 | Area 1 | UG/KG | <18750 |
| B004 | B004-5 | 12/8/05 | 5 | 6 | Area 1 | UG/KG | <3750 |
| B004 | B004-10 | 12/8/05 | 10 | 11 | Area 1 | UG/KG | 4000 |
| B005 | B005-2 | 12/8/05 | 2 | 3 | Area 1 | UG/KG | <3750 |
| B005 | B005-5 | 12/8/05 | 5 | 6 | Area 1 | UG/KG | <3750 |
| B005 | B005-10 | 12/8/05 | 10 | 11 | Area 1 | UG/KG | <3750 |
| B006 | B006-2 | 12/12/05 | 2 | 3 | Area 1 | UG/KG | 4125 |
| B006 | B006-5 | 12/12/05 | 5 | 6 | Area 1 | UG/KG | <3750 |
| B006 | B006-10 | 12/12/05 | 10 | 11 | Area 1 | UG/KG | 5375 |
| B007 | B007-2 | 12/12/05 | 2 | 3 | Area 1 | UG/KG | 4375 |
| B007 | B007-5 | 12/12/05 | 5 | 6 | Area 1 | UG/KG | <3750 |
| B007 | B007-10 | 12/12/05 | 10 | 11 | Area 1 | UG/KG | <3750 |
| B008 | B008-2 | 12/8/05 | 2 | 3 | Area 1 | UG/KG | <3750 |
| B008 | B008-5 | 12/8/05 | 5 | 6 | Area 1 | UG/KG | 4125 |
| B008 | B008-10 | 12/8/05 | 10 | 11 | Area 1 | UG/KG | <3750 |
| B009 | B009-2 | 12/9/05 | 2 | 3 | Area 1 | UG/KG | <3750 |
| B009 | B009-5 | 12/9/05 | 5 | 6 | Area 1 | UG/KG | <3750 |
| B009 | B009-10 | 12/9/05 | 10 | 11 | Area 1 | UG/KG | 5750 |
| B010 | B010-2 | 12/9/05 | 2 | 3 | Area 4 | UG/KG | <3750 |
| B010 | B010-5 | 12/9/05 | 5 | 6 | Area 4 | UG/KG | 4750 |
| B010 | B010-10 | 12/9/05 | 10 | 11 | Area 4 | UG/KG | <3750 |
| B011 | B011-2 | 1/9/06 | 2 | 3 | Area 1 | UG/KG | <37500 |
| B011 | B011-5 | 1/9/06 | 5 | 6 | Area 1 | UG/KG | 4125 |
| B011 | B011-10 | 1/9/06 | 10 | 11 | Area 1 | UG/KG | <3750 |
| B012 | B012-2 | 1/6/06 | 2 | 3 | Area 1 | UG/KG | <3750 |
| B012 | B012-5 | 1/6/06 | 5 | 6 | Area 1 | UG/KG | <3750 |
| B012 | B012-10 | 1/6/06 | 10 | 11 | Area 1 | UG/KG | <3750 |
| B013 | B013-2 | 12/15/05 | 2 | 3 | Area 1 | UG/KG | <75000 |
| B013 | B013-5 | 12/15/05 | 5 | 6 | Area 1 | UG/KG | <75000 |
| B013 | B013-10 | 12/15/05 | 10 | 11 | Area 1 | UG/KG | <3750 |
| B014 | B014-2 | 12/13/05 | 2 | 3 | Area 1 | UG/KG | <37500 |
| B014 | B014-5 | 12/13/05 | 5 | 6 | Area 1 | UG/KG | <3750 |
| B014 | B014-10 | 12/13/05 | 10 | 11 | Area 1 | UG/KG | 3750 |
| B015 | B015-2 | 12/12/05 | 2 | 3 | Area 1 | UG/KG | <3750 |
| B015 | B015-5 | 12/12/05 | 5 | 6 | Area 1 | UG/KG | 7500 |
| B015 | B015-10 | 12/12/05 | 10 | 11 | Area 1 | UG/KG | 5000 |
| B016 | B016-2 | 12/13/05 | 2 | 3 | Area 1 | UG/KG | 4000 |
| B016 | B016-5 | 12/13/05 | 5 | 6 | Area 1 | UG/KG | 4125 |
| B016 | B016-10 | 12/13/05 | 10 | 11 | Area 1 | UG/KG | <3750 |
| B017 | B017-2 | 12/29/05 | 2 | 3 | Area 1 | UG/KG | <3750 |
| B017 | B017-5 | 12/29/05 | 5 | 6 | Area 1 | UG/KG | 4500 |
| B017 | B017-10 | 12/29/05 | 10 | 11 | Area 1 | UG/KG | <3750 |
| B018 | B018-2 | 12/29/05 | 2 | 3 | Area 1 | UG/KG | <3750 |
| B018 | B018-5 | 12/29/05 | 5 | 6 | Area 1 | UG/KG | <3750 |
| B018 | B018-10 | 12/29/05 | 10 | 11 | Area 1 | UG/KG | <3750 |
| B019 | B019-2 | 12/28/05 | 2 | 3 | Area 1 | UG/KG | <3750 |
| B019 | B019-5 | 12/28/05 | 5 | 6 | Area 1 | UG/KG | <3750 |
| B019 | B019-10 | 12/28/05 | 10 | 11 | Area 1 | UG/KG | <3750 |
| B020 | B020-2 | 12/12/05 | 2 | 3 | Area 1 | UG/KG | <37500 |
| B020 | B020-5 | 12/12/05 | 5 | 6 | Area 1 | UG/KG | <3750 |
| B020 | B020-10 | 12/12/05 | 10 | 11 | Area 1 | UG/KG | 215000 |
| B021 | B021-2 | 12/28/05 | 2 | 3 | Area 4 | UG/KG | <3750 |
| B021 | B021-5 | 12/28/05 | 5 | 6 | Area 4 | UG/KG | <3750 |
| B021 | B021-10 | 12/28/05 | 10 | 11 | Area 4 | UG/KG | 738750 |
| B022 | B022-2 | 12/28/05 | 2 | 3 | Area 3 | UG/KG | 155000 |
| B022 | B022-5 | 12/28/05 | 5 | 6 | Area 3 | UG/KG | 537500 |
| B022 | B022-10 | 12/28/05 | 10 | 11 | Area 3 | UG/KG | 73750 |
| B023 | B023-2 | 12/28/05 | 2 | 3 | Area 1 | UG/KG | 1072500 |
| B023 | B023-5 | 12/28/05 | 5 | 6 | Area 1 | UG/KG | 1171250 |

**Table B6**
**Results of TPHg Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Gasoline Range Organics |
|---|---|---|---|---|---|---|---|
| B023 | B023-10 | 12/28/05 | 10 | 11 | Area 1 | UG/KG | 4300000 |
| B024 | B024-2 | 12/16/05 | 2 | 2.5 | Area 1 | UG/KG | 7250 |
| B024 | B024-5 | 12/16/05 | 5 | 6 | Area 1 | UG/KG | 7500 |
| B024 | B024-10 | 12/16/05 | 10 | 11 | Area 1 | UG/KG | <3750 |
| B025 | B025-2 | 12/15/05 | 2 | 3 | Area 1 | UG/KG | 5500 |
| B025 | B025-5 | 12/15/05 | 5 | 6 | Area 1 | UG/KG | <3750 |
| B025 | B025-10 | 12/15/05 | 10 | 11 | Area 1 | UG/KG | <3750 |
| B026 | B026-2 | 12/15/05 | 2 | 3 | Area 1 | UG/KG | <75000 |
| B026 | B026-5 | 12/15/05 | 5 | 6 | Area 1 | UG/KG | 4250 |
| B026 | B026-10 | 12/15/05 | 10 | 11 | Area 1 | UG/KG | <3750 |
| B027 | B027-2 | 12/14/05 | 2 | 3 | Area 1 | UG/KG | <187500 |
| B027 | B027-5 | 12/15/05 | 5 | 6 | Area 1 | UG/KG | <375000 |
| B027 | B027-10 | 12/15/05 | 10 | 11 | Area 1 | UG/KG | <750000 |
| B028 | B028-2 | 12/13/05 | 2 | 3 | Area 1 | UG/KG | <37500 |
| B028 | B028-5 | 12/13/05 | 5 | 6 | Area 1 | UG/KG | 5000 |
| B028 | B028-10 | 12/13/05 | 10 | 11 | Area 1 | UG/KG | 5000 |
| B029 | B029-2 | 12/14/05 | 2 | 3 | Area 1 | UG/KG | 473750 |
| B029 | B029-5 | 12/14/05 | 5 | 6 | Area 1 | UG/KG | <75000 |
| B029 | B029-10 | 12/14/05 | 10 | 11 | Area 1 | UG/KG | <75000 |
| B030 | B030-2 | 12/14/05 | 2 | 3 | Area 1 | UG/KG | <75000 |
| B030 | B030-5 | 12/14/05 | 5 | 6 | Area 1 | UG/KG | <3750 |
| B030 | B030-10 | 12/14/05 | 10 | 11 | Area 1 | UG/KG | 4625 |
| B031 | B031-2 | 1/6/06 | 2 | 3 | Area 1 | UG/KG | <37500 |
| B031 | B031-5 | 1/6/06 | 5 | 6 | Area 1 | UG/KG | 5250 |
| B031 | B031-10 | 1/6/06 | 10 | 11 | Area 1 | UG/KG | <3750 |
| B032 | B032-2 | 1/6/06 | 2 | 3 | Area 1 | UG/KG | <37500 |
| B032 | B032-5 | 1/6/06 | 5 | 6 | Area 1 | UG/KG | <37500 |
| B032 | B032-10 | 1/6/06 | 10 | 11 | Area 1 | UG/KG | <37500 |
| B033 | B033-2 | 12/29/05 | 2 | 3 | Area 1 | UG/KG | <3750 |
| B033 | B033-5 | 12/29/05 | 5 | 6 | Area 1 | UG/KG | <3750 |
| B033 | B033-10 | 12/29/05 | 10 | 11 | Area 1 | UG/KG | <3750 |
| B034 | B034-2 | 12/14/05 | 2 | 3 | Area 1 | UG/KG | 5125 |
| B034 | B034-5 | 12/14/05 | 5 | 6 | Area 1 | UG/KG | 6250 |
| B034 | B034-10 | 12/14/05 | 10 | 11 | Area 1 | UG/KG | <3750 |
| B035 | B035-2 | 12/14/05 | 2 | 3 | Area 1 | UG/KG | <187500 |
| B035 | B035-5 | 12/14/05 | 5 | 6 | Area 1 | UG/KG | 5750 |
| B035 | B035-10 | 12/14/05 | 10 | 11 | Area 1 | UG/KG | <3750 |
| B036 | B036-2 | 12/14/05 | 2 | 3 | Area 1 | UG/KG | <3750 |
| B036 | B036-5 | 12/14/05 | 5 | 6 | Area 1 | UG/KG | <3750 |
| B036 | B036-10 | 12/14/05 | 10 | 11 | Area 1 | UG/KG | 5500 |
| B037 | B037-2 | 12/19/05 | 2 | 3 | Area 1 | UG/KG | <3750 |
| B037 | B037-5 | 12/19/05 | 5 | 6 | Area 1 | UG/KG | <3750 |
| B037 | B037-10 | 12/19/05 | 10 | 11 | Area 1 | UG/KG | 4125 |
| B038 | B038-2 | 12/19/05 | 2 | 3 | Area 1 | UG/KG | 33750 |
| B038 | B038-5 | 12/19/05 | 5 | 6 | Area 1 | UG/KG | 4500 |
| B038 | B038-10 | 12/19/05 | 10 | 11 | Area 1 | UG/KG | <3750 |
| B039 | B039-2 | 12/16/05 | 2 | 3 | Area 1 | UG/KG | 5375 |
| B039 | B039-5 | 12/16/05 | 5 | 6 | Area 1 | UG/KG | <3750 |
| B039 | B039-10 | 12/16/05 | 10 | 11 | Area 1 | UG/KG | 5875 |
| B040 | B040-2 | 12/19/05 | 2 | 3 | Area 1 | UG/KG | <37500 |
| B040 | B040-5 | 12/19/05 | 5 | 6 | Area 1 | UG/KG | <75000 |
| B040 | B040-10 | 12/19/05 | 10 | 11 | Area 1 | UG/KG | <3750 |
| B041 | B041-2 | 12/28/05 | 2 | 3 | Area 3 | UG/KG | 16250 |
| B041 | B041-5 | 12/28/05 | 5 | 6 | Area 3 | UG/KG | <3750 |
| B041 | B041-10 | 12/28/05 | 10 | 11 | Area 3 | UG/KG | <3750 |
| B042 | B042-2 | 12/20/05 | 2 | 3 | Area 3 | UG/KG | 40000 |
| B042 | B042-5 | 12/20/05 | 5 | 6 | Area 3 | UG/KG | 105000 |
| B042 | B042-10 | 12/20/05 | 10 | 11 | Area 3 | UG/KG | 4750 |
| B043 | B043-2 | 12/16/05 | 2 | 3 | Area 1 | UG/KG | <75000 |
| B043 | B043-5 | 12/16/05 | 5 | 6 | Area 1 | UG/KG | <75000 |
| B043 | B043-10 | 12/16/05 | 10 | 11 | Area 1 | UG/KG | <75000 |
| B044 | B044-2 | 12/16/05 | 2 | 3 | Area 1 | UG/KG | 7500 |
| B044 | B044-5 | 12/16/05 | 5 | 6 | Area 1 | UG/KG | <3750 |
| B044 | B044-10 | 12/16/05 | 10 | 11 | Area 1 | UG/KG | 4750 |
| B045 | B045-2 | 12/15/05 | 2 | 3 | Area 1 | UG/KG | 127500 |
| B045 | B045-5 | 12/15/05 | 5 | 6 | Area 1 | UG/KG | 8000 |
| B045 | B045-10 | 12/15/05 | 10 | 11 | Area 1 | UG/KG | 312500 |

**Table B6**
**Results of TPHg Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Gasoline Range Organics |
|---|---|---|---|---|---|---|---|
| B046 | B046-2 | 12/15/05 | 2 | 3 | Area 1 | UG/KG | <75000 |
| B046 | B046-5 | 12/15/05 | 5 | 6 | Area 1 | UG/KG | <3750 |
| B046 | B046-10 | 12/15/05 | 10 | 11 | Area 1 | UG/KG | 4250 |
| B047 | B047-2 | 12/15/05 | 2 | 3 | Area 1 | UG/KG | <3750 |
| B047 | B047-5 | 12/15/05 | 5 | 6 | Area 1 | UG/KG | <3750 |
| B047 | B047-10 | 12/15/05 | 10 | 11 | Area 1 | UG/KG | <3750 |
| B048 | B048-2 | 12/20/05 | 2 | 3 | Area 1 | UG/KG | <3750 |
| B048 | B048-5 | 12/20/05 | 5 | 6 | Area 1 | UG/KG | 3875 |
| B048 | B048-10 | 12/20/05 | 10 | 11 | Area 1 | UG/KG | <187500 |
| B049 | B049-2 | 12/14/05 | 2 | 3 | Area 1 | UG/KG | 5000 |
| B049 | B049-5 | 12/14/05 | 5 | 6 | Area 1 | UG/KG | 4625 |
| B049 | B049-10 | 12/14/05 | 10 | 11 | Area 1 | UG/KG | <3750 |
| B050 | B050-2 | 12/13/05 | 2 | 3 | Area 1 | UG/KG | <75000 |
| B050 | B050-5 | 12/13/05 | 5 | 6 | Area 1 | UG/KG | <3750 |
| B050 | B050-10 | 12/12/05 | 10 | 11 | Area 1 | UG/KG | <75000 |
| B051 | B051-2 | 12/13/05 | 2 | 3 | Area 1 | UG/KG | <3750 |
| B051 | B051-5 | 12/13/05 | 5 | 6 | Area 1 | UG/KG | <3750 |
| B051 | B051-10 | 12/13/05 | 10 | 11 | Area 1 | UG/KG | <3750 |
| B052 | B052-2 | 12/29/05 | 2 | 3 | Area 1 | UG/KG | <187500 |
| B052 | B052-5 | 12/29/05 | 5 | 6 | Area 1 | UG/KG | <37500 |
| B052 | B052-10 | 12/29/05 | 10 | 11 | Area 1 | UG/KG | <187500 |
| B053 | B053-2 | 12/28/05 | 2 | 3 | Area 1 | UG/KG | <3750 |
| B053 | B053-5 | 12/28/05 | 5 | 6 | Area 1 | UG/KG | <18750 |
| B053 | B053-10 | 12/28/05 | 10 | 11 | Area 1 | UG/KG | <187500 |
| B054 | B054-2 | 12/13/05 | 2 | 3 | Area 1 | UG/KG | <75000 |
| B054 | B054-5 | 12/13/05 | 5 | 6 | Area 1 | UG/KG | <75000 |
| B054 | B054-10 | 12/13/05 | 10 | 11 | Area 1 | UG/KG | <3750 |
| B055 | B055-2 | 12/21/05 | 2 | 3 | Area 1 | UG/KG | 360000 |
| B055 | B055-5 | 12/21/05 | 5 | 6 | Area 1 | UG/KG | 316250 |
| B055 | B055-10 | 12/21/05 | 10 | 11 | Area 1 | UG/KG | 656250 |
| B056 | B056-2 | 12/14/05 | 2 | 3 | Area 1 | UG/KG | 56250 |
| B056 | B056-5 | 12/14/05 | 5 | 6 | Area 1 | UG/KG | 687500 |
| B056 | B056-10 | 12/14/05 | 10 | 11 | Area 1 | UG/KG | <3750 |
| B057 | B057-2 | 12/13/05 | 2 | 3 | Area 1 | UG/KG | <75000 |
| B057 | B057-5 | 12/13/05 | 5 | 6 | Area 1 | UG/KG | <75000 |
| B057 | B057-10 | 12/13/05 | 10 | 11 | Area 1 | UG/KG | <3750 |
| B058 | B058-2 | 12/20/05 | 2 | 3 | Area 1 | UG/KG | 138750 |
| B058 | B058-5 | 12/20/05 | 5 | 6 | Area 1 | UG/KG | 9250 |
| B058 | B058-10 | 12/20/05 | 10 | 11 | Area 1 | UG/KG | 1487500 |
| B059 | B059-2 | 12/20/05 | 2 | 3 | Area 1 | UG/KG | 6250 |
| B059 | B059-5 | 12/20/05 | 5 | 6 | Area 1 | UG/KG | 4500 |
| B059 | B059-10 | 12/20/05 | 10 | 11 | Area 1 | UG/KG | <3750 |
| B060 | B060-2 | 12/20/05 | 2 | 3 | Area 1 | UG/KG | <18750 |
| B060 | B060-5 | 12/20/05 | 5 | 6 | Area 1 | UG/KG | 6875 |
| B060 | B060-10 | 12/20/05 | 10 | 11 | Area 1 | UG/KG | 58750 |
| B061 | B061-2 | 12/20/05 | 2 | 3 | Area 1 | UG/KG | <3750 |
| B061 | B061-5 | 12/20/05 | 5 | 6 | Area 1 | UG/KG | <3750 |
| B061 | B061-10 | 12/20/05 | 10 | 11 | Area 1 | UG/KG | <3750 |
| B062 | B062-2 | 12/21/05 | 2 | 3 | Area 1 | UG/KG | 4250 |
| B062 | B062-5 | 12/21/05 | 5 | 6 | Area 1 | UG/KG | <3750 |
| B062 | B062-10 | 12/21/05 | 10 | 11 | Area 1 | UG/KG | <3750 |
| B063 | B063-2 | 1/9/06 | 2 | 3 | Area 3 | UG/KG | 15000 |
| B063 | B063-5 | 1/9/06 | 5 | 6 | Area 3 | UG/KG | 7000 |
| B063 | B063-10 | 1/9/06 | 10 | 11 | Area 3 | UG/KG | <75000 |
| B064 | B064-2 | 12/23/05 | 2 | 3 | Area 1 | UG/KG | <75000 |
| B064 | B064-5 | 12/23/05 | 5 | 6 | Area 1 | UG/KG | <3750 |
| B064 | B064-10 | 12/23/05 | 10 | 11 | Area 1 | UG/KG | <3750 |
| B065 | B065-2 | 1/12/06 | 2 | 3 | Area 1 | UG/KG | 5125 |
| B065 | B065-5 | 1/12/06 | 5 | 6 | Area 1 | UG/KG | 4250 |
| B065 | B065-10 | 1/12/06 | 10 | 11 | Area 1 | UG/KG | <3750 |
| B066 | B066-2 | 1/12/06 | 2 | 3 | Area 1 | UG/KG | 4625 |
| B066 | B066-5 | 1/12/06 | 5 | 6 | Area 1 | UG/KG | <3750 |
| B066 | B066-10 | 1/12/06 | 10 | 11 | Area 1 | UG/KG | 5000 |
| B067 | B067-2 | 12/21/05 | 2 | 3 | Area 1 | UG/KG | 112500 |
| B067 | B067-5 | 12/21/05 | 5 | 6 | Area 1 | UG/KG | 235000 |
| B067 | B067-10 | 12/21/05 | 10 | 11 | Area 1 | UG/KG | <18750 |
| B068 | B068-2 | 12/21/05 | 2 | 3 | Area 1 | UG/KG | <37500 |

**Table B6**
**Results of TPHg Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Gasoline Range Organics |
|---|---|---|---|---|---|---|---|
| B068 | B068-5 | 12/21/05 | 5 | 6 | Area 1 | UG/KG | 86250 |
| B068 | B068-10 | 12/21/05 | 10 | 11 | Area 1 | UG/KG | <37500 |
| B069 | B069-2 | 12/22/05 | 2 | 3 | Area 1 | UG/KG | <3750 |
| B069 | B069-5 | 12/22/05 | 5 | 6 | Area 1 | UG/KG | <3750 |
| B069 | B069-10 | 12/22/05 | 10 | 11 | Area 1 | UG/KG | <3750 |
| B070 | B070-2 | 12/22/05 | 2 | 3 | Area 1 | UG/KG | <187500 |
| B070 | B070-5 | 12/22/05 | 5 | 6 | Area 1 | UG/KG | <3750 |
| B070 | B070-10 | 12/22/05 | 10 | 11 | Area 1 | UG/KG | 38750 |
| B071 | B071-2 | 12/21/05 | 2 | 3 | Area 1 | UG/KG | <3750 |
| B071 | B071-5 | 12/21/05 | 5 | 6 | Area 1 | UG/KG | <3750 |
| B071 | B071-10 | 12/21/05 | 10 | 11 | Area 1 | UG/KG | <3750 |
| B072 | B072-2 | 12/21/05 | 2 | 3 | Area 1 | UG/KG | <187500 |
| B072 | B072-5 | 12/21/05 | 5 | 6 | Area 1 | UG/KG | <3750 |
| B072 | B072-10 | 12/21/05 | 10 | 11 | Area 1 | UG/KG | <3750 |
| B073 | B073-2 | 1/30/06 | 2 | 3 | Area 3 | UG/KG | <3750 |
| B073 | B073-5 | 1/30/06 | 5 | 6 | Area 3 | UG/KG | 6250 |
| B073 | B073-10 | 1/30/06 | 10 | 11 | Area 3 | UG/KG | <3750 |
| B074 | B074-2 | 1/11/06 | 2 | 3 | Area 2 | UG/KG | 11250 |
| B074 | B074-5 | 1/11/06 | 5 | 6 | Area 2 | UG/KG | 6625 |
| B074 | B074-10 | 1/11/06 | 10 | 11 | Area 2 | UG/KG | 95000 |
| B075 | B075-2 | 1/11/06 | 2 | 3 | Area 1 | UG/KG | <3750 |
| B075 | B075-5 | 1/11/06 | 5 | 6 | Area 1 | UG/KG | 5000 |
| B075 | B075-10 | 1/11/06 | 10 | 11 | Area 1 | UG/KG | <3750 |
| B076 | B076-2 | 12/22/05 | 2 | 3 | Area 2 | UG/KG | <187500 |
| B076 | B076-5 | 12/22/05 | 5 | 6 | Area 2 | UG/KG | <187500 |
| B076 | B076-10 | 12/22/05 | 10 | 11 | Area 2 | UG/KG | 1550000 |
| B077 | B077-2 | 12/23/05 | 2 | 3 | Area 2 | UG/KG | <3750 |
| B077 | B077-5 | 12/23/05 | 5 | 6 | Area 2 | UG/KG | <3750 |
| B077 | B077-10 | 12/23/05 | 10 | 11 | Area 2 | UG/KG | <3750 |
| B078 | B078-2 | 12/23/05 | 2 | 3 | Area 2 | UG/KG | <18750 |
| B078 | B078-5 | 12/23/05 | 5 | 6 | Area 2 | UG/KG | <75000 |
| B078 | B078-10 | 12/23/05 | 10 | 11 | Area 2 | UG/KG | <3750 |
| B079 | B079-2 | 12/23/05 | 2 | 3 | Area 2 | UG/KG | <75000 |
| B079 | B079-5 | 12/23/05 | 5 | 6 | Area 2 | UG/KG | <75000 |
| B079 | B079-10 | 12/23/05 | 10 | 11 | Area 2 | UG/KG | <3750 |
| B080 | B080-2 | 12/22/05 | 2 | 3 | Area 1 | UG/KG | <187500 |
| B080 | B080-5 | 12/22/05 | 5 | 6 | Area 1 | UG/KG | <187500 |
| B080 | B080-10 | 12/22/05 | 10 | 11 | Area 1 | UG/KG | <3750 |
| B081 | B081-2 | 12/22/05 | 2 | 3 | Area 1 | UG/KG | <37500 |
| B081 | B081-5 | 12/22/05 | 5 | 6 | Area 1 | UG/KG | <3750 |
| B081 | B081-10 | 12/22/05 | 10 | 11 | Area 1 | UG/KG | <3750 |
| B082 | B082-2 | 12/23/05 | 2 | 3 | Area 1 | UG/KG | <75000 |
| B082 | B082-5 | 12/23/05 | 5 | 6 | Area 1 | UG/KG | <3750 |
| B082 | B082-10 | 12/23/05 | 10 | 11 | Area 1 | UG/KG | <3750 |
| B083 | B083-2 | 1/4/06 | 2 | 3 | Area 2 | UG/KG | <187500 |
| B083 | B083-5 | 1/4/06 | 5 | 6 | Area 2 | UG/KG | <3750 |
| B083 | B083-10 | 1/4/06 | 10 | 11 | Area 2 | UG/KG | 5625 |
| B084 | B084-2 | 1/5/06 | 2 | 3 | Area 2 | UG/KG | <75000 |
| B084 | B084-5 | 1/5/06 | 5 | 6 | Area 2 | UG/KG | <75000 |
| B084 | B084-10 | 1/5/06 | 10 | 11 | Area 2 | UG/KG | 6375 |
| B085 | B085-2 | 12/28/05 | 2 | 3 | Area 2 | UG/KG | <3750 |
| B085 | B085-5 | 12/28/05 | 5 | 6 | Area 2 | UG/KG | 5625 |
| B085 | B085-10 | 12/28/05 | 10 | 11 | Area 2 | UG/KG | <3750 |
| B086 | B086-2 | 1/11/06 | 2 | 3 | Area 2 | UG/KG | 4250 |
| B086 | B086-5 | 1/11/06 | 5 | 6 | Area 2 | UG/KG | <3750 |
| B086 | B086-10 | 1/11/06 | 10 | 11 | Area 2 | UG/KG | 4625 |
| B087 | B087-2 | 1/11/06 | 2 | 3 | Area 2 | UG/KG | <3750 |
| B087 | B087-5 | 1/11/06 | 5 | 6 | Area 2 | UG/KG | <3750 |
| B087 | B087-10 | 1/11/06 | 10 | 11 | Area 2 | UG/KG | <3750 |
| B088 | B088-2 | 1/18/06 | 2 | 3 | Area 2 | UG/KG | <37500 |
| B088 | B088-5 | 1/18/06 | 5 | 6 | Area 2 | UG/KG | <37500 |
| B088 | B088-10 | 1/18/06 | 10 | 11 | Area 2 | UG/KG | <3750 |
| B089 | B089-2 | 1/9/06 | 2 | 3 | Area 2 | UG/KG | 7500 |
| B089 | B089-5 | 1/9/06 | 5 | 6 | Area 2 | UG/KG | <75000 |
| B089 | B089-10 | 1/9/06 | 10 | 11 | Area 2 | UG/KG | 6250 |
| B090 | B090-2 | 1/10/06 | 2 | 3 | Area 2 | UG/KG | <3750 |
| B090 | B090-5 | 1/10/06 | 5 | 6 | Area 2 | UG/KG | <3750 |

**Table B6**
**Results of TPHg Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Gasoline Range Organics |
|---|---|---|---|---|---|---|---|
| B090 | B090-10 | 1/10/06 | 10 | 11 | Area 2 | UG/KG | 4000 |
| B091 | B091-2 | 1/10/06 | 2 | 3 | Area 2 | UG/KG | <37500 |
| B091 | B091-5 | 1/10/06 | 5 | 6 | Area 2 | UG/KG | <3750 |
| B091 | B091-10 | 1/10/06 | 10 | 11 | Area 2 | UG/KG | <3750 |
| B092 | B092-2 | 1/5/06 | 2 | 3 | Area 2 | UG/KG | 15000 |
| B092 | B092-5 | 1/5/06 | 5 | 6 | Area 2 | UG/KG | <75000 |
| B092 | B092-10 | 1/5/06 | 10 | 11 | Area 2 | UG/KG | 6750 |
| B093 | B093-2 | 1/5/06 | 2 | 3 | Area 2 | UG/KG | 10000 |
| B093 | B093-5 | 1/5/06 | 5 | 6 | Area 2 | UG/KG | 6250 |
| B093 | B093-10 | 1/5/06 | 10 | 11 | Area 2 | UG/KG | <3750 |
| B094 | B094-2 | 1/5/06 | 2 | 3 | Area 2 | UG/KG | <75000 |
| B094 | B094-5 | 1/5/06 | 5 | 6 | Area 2 | UG/KG | <37500 |
| B094 | B094-10 | 1/5/06 | 10 | 11 | Area 2 | UG/KG | 8000 |
| B095 | B095-2 | 1/4/06 | 2 | 3 | Area 2 | UG/KG | <37500 |
| B095 | B095-5 | 1/4/06 | 5 | 6 | Area 2 | UG/KG | <3750 |
| B095 | B095-10 | 1/4/06 | 10 | 11 | Area 2 | UG/KG | <3750 |
| B096 | B096-2 | 12/28/05 | 2 | 3 | Area 2 | UG/KG | <75000 |
| B096 | B096-5 | 12/28/05 | 5 | 6 | Area 2 | UG/KG | <3750 |
| B096 | B096-10 | 12/28/05 | 10 | 11 | Area 2 | UG/KG | 4125 |
| B097 | B097-2 | 1/5/06 | 2 | 3 | Area 2 | UG/KG | 17500 |
| B097 | B097-5 | 1/5/06 | 5 | 6 | Area 2 | UG/KG | 6250 |
| B097 | B097-10 | 1/5/06 | 10 | 11 | Area 2 | UG/KG | 4375 |
| B098 | B098-2 | 1/4/06 | 2 | 3 | Area 2 | UG/KG | <187500 |
| B098 | B098-5 | 1/4/06 | 5 | 6 | Area 2 | UG/KG | <3750 |
| B098 | B098-10 | 1/4/06 | 10 | 11 | Area 2 | UG/KG | <3750 |
| B099 | B099-2 | 1/3/06 | 2 | 3 | Area 2 | UG/KG | <18750 |
| B099 | B099-5 | 1/3/06 | 5 | 6 | Area 2 | UG/KG | <3750 |
| B099 | B099-10 | 1/3/06 | 10 | 11 | Area 2 | UG/KG | 4625 |
| B100 | B100-2 | 1/10/06 | 2 | 3 | Area 2 | UG/KG | <3750 |
| B100 | B100-5 | 1/10/06 | 5 | 6 | Area 2 | UG/KG | <3750 |
| B100 | B100-10 | 1/10/06 | 10 | 11 | Area 2 | UG/KG | <3750 |
| B101 | B101-2 | 1/10/06 | 2 | 3 | Area 2 | UG/KG | <3750 |
| B101 | B101-5 | 1/10/06 | 5 | 6 | Area 2 | UG/KG | 4625 |
| B101 | B101-10 | 1/10/06 | 10 | 11 | Area 2 | UG/KG | <3750 |
| B102 | B102-2 | 1/9/06 | 2 | 3 | Area 2 | UG/KG | <37500 |
| B102 | B102-5 | 1/9/06 | 5 | 6 | Area 2 | UG/KG | 7000 |
| B102 | B102-10 | 1/9/06 | 10 | 11 | Area 2 | UG/KG | 4500 |
| B103 | B103-2 | 1/6/06 | 2 | 3 | Area 2 | UG/KG | <3750 |
| B103 | B103-5 | 1/6/06 | 5 | 6 | Area 2 | UG/KG | 5000 |
| B103 | B103-10 | 1/6/06 | 10 | 11 | Area 2 | UG/KG | <3750 |
| B104 | B104-2 | 2/3/06 | 2 | 3 | Area 2 | UG/KG | <3750 |
| B104 | B104-5 | 2/3/06 | 5 | 6 | Area 2 | UG/KG | <3750 |
| B104 | B104-10 | 2/3/06 | 10 | 11 | Area 2 | UG/KG | <3750 |
| B105 | B105-2 | 1/10/06 | 2 | 3 | Area 2 | UG/KG | <3750 |
| B105 | B105-5 | 1/10/06 | 5 | 6 | Area 2 | UG/KG | <3750 |
| B105 | B105-10 | 1/10/06 | 10 | 11 | Area 2 | UG/KG | <3750 |
| B106 | B106-2 | 12/29/05 | 2 | 3 | Area 2 | UG/KG | <37500 |
| B106 | B106-5 | 12/29/05 | 5 | 6 | Area 2 | UG/KG | <3750 |
| B106 | B106-10 | 12/29/05 | 10 | 10.5 | Area 2 | UG/KG | 3750 |
| B107 | B107-2 | 1/4/06 | 2 | 3 | Area 2 | UG/KG | <3750 |
| B107 | B107-5 | 1/4/06 | 5 | 6 | Area 2 | UG/KG | 3875 |
| B107 | B107-10 | 1/4/06 | 10 | 11 | Area 2 | UG/KG | <3750 |
| B108 | B108-2 | 1/9/06 | 2 | 3 | Area 2 | UG/KG | <3750 |
| B108 | B108-5 | 1/9/06 | 5 | 6 | Area 2 | UG/KG | 5000 |
| B108 | B108-10 | 1/9/06 | 10 | 11 | Area 2 | UG/KG | <3750 |
| B109 | B109-2 | 1/4/06 | 2 | 3 | Area 2 | UG/KG | 5625 |
| B109 | B109-5 | 1/4/06 | 5 | 6 | Area 2 | UG/KG | <3750 |
| B109 | B109-10 | 1/4/06 | 10 | 11 | Area 2 | UG/KG | <3750 |
| B110 | B110-2 | 12/28/05 | 2 | 3 | Area 2 | UG/KG | 5000 |
| B110 | B110-5 | 12/28/05 | 5 | 6 | Area 2 | UG/KG | <3750 |
| B110 | B110-10 | 12/28/05 | 10 | 11 | Area 2 | UG/KG | 4000 |
| B111 | B111-2 | 12/28/05 | 2 | 3 | Area 2 | UG/KG | <18750 |
| B111 | B111-5 | 12/28/05 | 5 | 6 | Area 2 | UG/KG | <18750 |
| B111 | B111-10 | 12/28/05 | 10 | 11 | Area 2 | UG/KG | 3875 |
| B112 | B112-2 | 12/29/05 | 2 | 3 | Area 2 | UG/KG | 5875 |
| B112 | B112-5 | 12/29/05 | 5 | 6 | Area 2 | UG/KG | <3750 |
| B112 | B112-10 | 12/29/05 | 10 | 11 | Area 2 | UG/KG | 5000 |

**Table B6**
**Results of TPHg Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Gasoline Range Organics |
|---|---|---|---|---|---|---|---|
| B113 | B113-2 | 12/29/05 | 2 | 3 | Area 2 | UG/KG | <3750 |
| B113 | B113-5 | 12/29/05 | 5 | 6 | Area 2 | UG/KG | <3750 |
| B113 | B113-10 | 12/29/05 | 10 | 11 | Area 2 | UG/KG | <3750 |
| B114 | B114-2 | 1/3/06 | 2 | 3 | Area 2 | UG/KG | <187500 |
| B114 | B114-5 | 1/3/06 | 5 | 6 | Area 2 | UG/KG | <75000 |
| B114 | B114-10 | 1/3/06 | 10 | 11 | Area 2 | UG/KG | <3750 |
| B115 | B115-2 | 1/3/06 | 2 | 3 | Area 2 | UG/KG | <187500 |
| B115 | B115-5 | 1/3/06 | 5 | 6 | Area 2 | UG/KG | 4500 |
| B115 | B115-10 | 1/3/06 | 10 | 11 | Area 2 | UG/KG | <187500 |
| B116 | B116-2 | 1/4/06 | 2 | 3 | Area 2 | UG/KG | <3750 |
| B116 | B116-5 | 1/4/06 | 5 | 6 | Area 2 | UG/KG | 5500 |
| B116 | B116-10 | 1/4/06 | 10 | 11 | Area 2 | UG/KG | <3750 |
| B117 | B117-2 | 1/6/06 | 2 | 3 | Area 2 | UG/KG | <3750 |
| B117 | B117-5 | 1/6/06 | 5 | 6 | Area 2 | UG/KG | 4000 |
| B117 | B117-10 | 1/6/06 | 10 | 11 | Area 2 | UG/KG | <3750 |
| B118 | B118-2 | 1/6/06 | 2 | 3 | Area 2 | UG/KG | <3750 |
| B118 | B118-5 | 1/6/06 | 5 | 6 | Area 2 | UG/KG | <3750 |
| B118 | B118-10 | 1/6/06 | 10 | 11 | Area 2 | UG/KG | <3750 |
| B119 | B119-2 | 1/27/06 | 2 | 3 | Area 2 | UG/KG | <3750 |
| B119 | B119-5 | 1/27/06 | 5 | 6 | Area 2 | UG/KG | <3750 |
| B119 | B119-10 | 1/27/06 | 10 | 11 | Area 2 | UG/KG | <3750 |
| B120 | B120-2 | 1/30/06 | 2 | 3 | Area 4 | UG/KG | 4250 |
| B120 | B120-5 | 1/30/06 | 5 | 6 | Area 4 | UG/KG | <37500 |
| B120 | B120-10 | 1/30/06 | 10 | 11 | Area 4 | UG/KG | 63750 |
| B121 | B121-2 | 2/1/06 | 2 | 3 | Area 4 | UG/KG | 5875 |
| B121 | B121-5 | 2/1/06 | 5 | 6 | Area 4 | UG/KG | 2440000 |
| B121 | B121-10 | 2/1/06 | 10 | 11 | Area 4 | UG/KG | 12500 |
| B122 | B122-2 | 1/23/06 | 2 | 3 | Area 4 | UG/KG | <37500 |
| B122 | B122-5 | 1/23/06 | 5 | 6 | Area 4 | UG/KG | <750000 |
| B122 | B122-10 | 1/23/06 | 10 | 11 | Area 4 | UG/KG | <3750 |
| B123 | B123-2 | 1/20/06 | 2 | 3 | Area 4 | UG/KG | 393000 |
| B123 | B123-5 | 1/20/06 | 5 | 6 | Area 4 | UG/KG | 258000 |
| B123 | B123-10 | 1/19/06 | 11 | 12 | Area 4 | UG/KG | 154000 |
| B124 | B124-2 | 1/16/06 | 2 | 3 | Area 4 | UG/KG | <75000 |
| B124 | B124-5 | 1/16/06 | 5 | 6 | Area 4 | UG/KG | <3750 |
| B124 | B124-10 | 1/16/06 | 10 | 11 | Area 4 | UG/KG | <3750 |
| B125 | B125-2 | 1/20/06 | 2 | 3 | Area 4 | UG/KG | <37500 |
| B125 | B125-5 | 1/20/06 | 5 | 6 | Area 4 | UG/KG | <3750 |
| B125 | B125-10 | 1/20/06 | 10 | 11 | Area 4 | UG/KG | <3750 |
| B126 | B126-2 | 1/20/06 | 2 | 3 | Area 4 | UG/KG | <37500 |
| B126 | B126-5 | 1/20/06 | 5 | 6 | Area 4 | UG/KG | <37500 |
| B126 | B126-10 | 1/20/06 | 10 | 11 | Area 4 | UG/KG | <3750 |
| B127 | B127-2 | 1/18/06 | 2 | 3 | Area 4 | UG/KG | 10625 |
| B127 | B127-5 | 1/18/06 | 5 | 6 | Area 4 | UG/KG | <3750 |
| B127 | B127-10 | 1/18/06 | 10 | 11 | Area 4 | UG/KG | 4375 |
| B128 | B128-2 | 2/1/06 | 2 | 3 | Area 4 | UG/KG | <75000 |
| B128 | B128-5 | 2/1/06 | 5 | 6 | Area 4 | UG/KG | <37500 |
| B128 | B128-10 | 2/1/06 | 10 | 11 | Area 4 | UG/KG | <3750 |
| B129 | B129-2 | 1/18/06 | 2 | 3 | Area 4 | UG/KG | 4500 |
| B129 | B129-5 | 1/18/06 | 5 | 6 | Area 4 | UG/KG | <3750 |
| B129 | B129-10 | 1/18/06 | 10 | 11 | Area 4 | UG/KG | 4375 |
| B130 | B130-2 | 1/19/06 | 2 | 3 | Area 4 | UG/KG | 1875000 |
| B130 | B130-5 | 1/19/06 | 5 | 6 | Area 4 | UG/KG | <37500 |
| B130 | B130-10 | 1/19/06 | 10 | 11 | Area 4 | UG/KG | 7500 |
| B131 | B131-2 | 1/19/06 | 2 | 3 | Area 4 | UG/KG | <3750 |
| B131 | B131-5 | 1/19/06 | 5 | 6 | Area 4 | UG/KG | 5625 |
| B131 | B131-10 | 1/19/06 | 10 | 11 | Area 4 | UG/KG | <3750 |
| B132 | B132-2 | 1/19/06 | 2 | 3 | Area 4 | UG/KG | 4000 |
| B132 | B132-5 | 1/19/06 | 5 | 6 | Area 4 | UG/KG | <3750 |
| B132 | B132-10 | 1/19/06 | 10 | 11 | Area 4 | UG/KG | 3750 |
| B134 | B134-2 | 1/23/06 | 2 | 3 | Area 4 | UG/KG | <3750 |
| B134 | B134-5 | 1/23/06 | 5 | 6 | Area 4 | UG/KG | <3750 |
| B134 | B134-10 | 1/23/06 | 10 | 11 | Area 4 | UG/KG | <3750 |
| B135 | B135-2 | 1/16/06 | 2 | 3 | Area 4 | UG/KG | 4125 |
| B135 | B135-5 | 1/16/06 | 5 | 6 | Area 4 | UG/KG | <3750 |
| B135 | B135-10 | 1/16/06 | 10 | 11 | Area 4 | UG/KG | <3750 |
| B136 | B136-2 | 1/12/06 | 2 | 3 | Area 4 | UG/KG | <75000 |

**Table B6**
**Results of TPHg Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Gasoline Range Organics |
|---|---|---|---|---|---|---|---|
| B136 | B136-5 | 1/12/06 | 5 | 6 | Area 4 | UG/KG | <75000 |
| B136 | B136-10 | 1/12/06 | 10 | 11 | Area 4 | UG/KG | 263750 |
| B137 | B137-2 | 1/13/06 | 2 | 3 | Area 4 | UG/KG | <75000 |
| B137 | B137-5 | 1/13/06 | 5 | 6 | Area 4 | UG/KG | 11875 |
| B137 | B137-10 | 1/13/06 | 10 | 11 | Area 4 | UG/KG | <3750 |
| B139 | B139-2 | 1/13/06 | 2 | 3 | Area 4 | UG/KG | <75000 |
| B139 | B139-5 | 1/13/06 | 5 | 6 | Area 4 | UG/KG | <3750 |
| B139 | B139-10 | 1/13/06 | 10 | 11 | Area 4 | UG/KG | 3750 |
| B140 | B140-2 | 1/31/06 | 2 | 3 | Area 4 | UG/KG | <37500 |
| B140 | B140-5 | 1/31/06 | 5 | 6 | Area 4 | UG/KG | <37500 |
| B140 | B140-10 | 1/31/06 | 10 | 11 | Area 4 | UG/KG | <3750 |
| B141 | B141-2 | 1/30/06 | 2 | 3 | Area 3 | UG/KG | <3750 |
| B141 | B141-5 | 1/30/06 | 5 | 6 | Area 3 | UG/KG | <37500 |
| B141 | B141-10 | 1/30/06 | 10 | 11 | Area 3 | UG/KG | <3750 |
| B142 | B142-2 | 1/31/06 | 2 | 3 | Area 3 | UG/KG | 11500 |
| B142 | B142-5 | 1/31/06 | 5 | 6 | Area 3 | UG/KG | <37500 |
| B142 | B142-10 | 1/31/06 | 10 | 11 | Area 3 | UG/KG | 1206250 |
| B143 | B143-2 | 1/18/06 | 2 | 3 | Area 3 | UG/KG | <75000 |
| B143 | B143-5 | 1/18/06 | 5 | 6 | Area 3 | UG/KG | <3750 |
| B143 | B143-10 | 1/18/06 | 10 | 11 | Area 3 | UG/KG | <3750 |
| B144 | B144-2 | 1/13/06 | 2 | 3 | Area 3 | UG/KG | <37500 |
| B144 | B144-5 | 1/13/06 | 5 | 6 | Area 3 | UG/KG | <375000 |
| B144 | B144-10 | 1/13/06 | 10 | 11 | Area 3 | UG/KG | <3750 |
| B145 | B145-2 | 1/19/06 | 2 | 3 | Area 3 | UG/KG | 4250 |
| B145 | B145-5 | 1/19/06 | 5 | 6 | Area 3 | UG/KG | 4500 |
| B145 | B145-10 | 1/19/06 | 10 | 11 | Area 3 | UG/KG | <3750 |
| B146 | B146-2 | 1/27/06 | 2 | 3 | Area 3 | UG/KG | <3750 |
| B146 | B146-5 | 1/27/06 | 5 | 6 | Area 3 | UG/KG | <3750 |
| B146 | B146-10 | 1/27/06 | 10 | 11 | Area 3 | UG/KG | <3750 |
| B147 | B147-2 | 2/1/06 | 2 | 3 | Area 3 | UG/KG | 40000 |
| B147 | B147-5 | 2/1/06 | 5 | 6 | Area 3 | UG/KG | 252500 |
| B147 | B147-10 | 2/1/06 | 10 | 11 | Area 3 | UG/KG | 22500 |
| B148 | B148-2 | 1/23/06 | 2 | 3 | Area 3 | UG/KG | 1270000 |
| B148 | B148-5 | 1/23/06 | 5 | 6 | Area 3 | UG/KG | 461250 |
| B148 | B148-10 | 1/23/06 | 10 | 11 | Area 3 | UG/KG | 5000 |
| B149 | B149-2 | 1/23/06 | 2 | 3 | Area 3 | UG/KG | 711000 |
| B149 | B149-5 | 1/23/06 | 5 | 6 | Area 3 | UG/KG | 1030000 |
| B149 | B149-10 | 1/23/06 | 10 | 11 | Area 3 | UG/KG | <1500000 |
| B150 | B150-2 | 1/20/06 | 2 | 3 | Area 3 | UG/KG | <37500 |
| B150 | B150-5 | 1/20/06 | 5 | 6 | Area 3 | UG/KG | <75000 |
| B150 | B150-10 | 1/20/06 | 10 | 11 | Area 3 | UG/KG | <1500000 |
| B151 | B151-2 | 1/19/06 | 2 | 3 | Area 4 | UG/KG | <3750 |
| B151 | B151-5 | 1/19/06 | 5 | 6 | Area 4 | UG/KG | <37500 |
| B151 | B151-10 | 1/19/06 | 10 | 11 | Area 4 | UG/KG | <3750 |
| B152 | B152-2 | 1/20/06 | 2 | 3 | Area 3 | UG/KG | <187500 |
| B152 | B152-5 | 1/20/06 | 5 | 6 | Area 3 | UG/KG | <187500 |
| B152 | B152-10 | 1/20/06 | 10 | 11 | Area 3 | UG/KG | 12500 |
| B153 | B153-2 | 1/20/06 | 2 | 3 | Area 3 | UG/KG | <750000 |
| B153 | B153-5 | 1/20/06 | 5 | 6 | Area 3 | UG/KG | <75000 |
| B153 | B153-10 | 1/20/06 | 10 | 11 | Area 3 | UG/KG | <750000 |
| B154 | B154-2 | 1/16/06 | 2 | 3 | Area 3 | UG/KG | <187500 |
| B154 | B154-5 | 1/16/06 | 5 | 6 | Area 3 | UG/KG | <3750 |
| B154 | B154-10 | 1/16/06 | 10 | 11 | Area 3 | UG/KG | 4375 |
| B155 | B155-2 | 1/30/06 | 2 | 3 | Area 3 | UG/KG | 1860000 |
| B155 | B155-5 | 1/30/06 | 5 | 6 | Area 3 | UG/KG | 335000 |
| B155 | B155-10 | 1/30/06 | 10 | 11 | Area 3 | UG/KG | 3280000 |
| B156 | B156-2 | 1/13/06 | 2 | 3 | Area 3 | UG/KG | 38750 |
| B156 | B156-5 | 1/13/06 | 5 | 6 | Area 3 | UG/KG | <3750 |
| B156 | B156-10 | 1/13/06 | 10 | 11 | Area 3 | UG/KG | 716250 |
| B158 | B158-2 | 1/30/06 | 2 | 3 | Area 3 | UG/KG | <3750 |
| B158 | B158-5 | 1/30/06 | 5 | 6 | Area 3 | UG/KG | 33750 |
| B158 | B158-10 | 1/30/06 | 10 | 11 | Area 3 | UG/KG | 4625 |
| B159 | B159-2 | 1/31/06 | 2 | 3 | Area 3 | UG/KG | <3750 |
| B159 | B159-5 | 1/31/06 | 5 | 6 | Area 3 | UG/KG | <37500 |
| B159 | B159-10 | 1/31/06 | 10 | 11 | Area 3 | UG/KG | <75000 |
| B160 | B160-2 | 1/31/06 | 2 | 3 | Area 3 | UG/KG | 6500 |
| B160 | B160-5 | 1/31/06 | 5 | 6 | Area 3 | UG/KG | 3750 |

**Table B6**
**Results of TPHg Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Gasoline Range Organics |
|---|---|---|---|---|---|---|---|
| B160 | B160-10 | 1/31/06 | 10 | 11 | Area 3 | UG/KG | <3750 |
| B161 | B161-2 | 1/13/06 | 2 | 3 | Area 3 | UG/KG | 10000 |
| B161 | B161-5 | 1/13/06 | 5 | 6 | Area 3 | UG/KG | 1337500 |
| B161 | B161-10 | 1/13/06 | 10 | 11 | Area 3 | UG/KG | <3750 |
| B162 | B162-2 | 1/16/06 | 2 | 3 | Area 3 | UG/KG | 4500 |
| B162 | B162-5 | 1/16/06 | 5 | 6 | Area 3 | UG/KG | <3750 |
| B162 | B162-10 | 1/16/06 | 10 | 11 | Area 3 | UG/KG | <3750 |
| B163 | B163-2 | 1/16/06 | 2 | 3 | Area 3 | UG/KG | <3750 |
| B163 | B163-5 | 1/16/06 | 5 | 6 | Area 3 | UG/KG | <3750 |
| B163 | B163-10 | 1/16/06 | 10 | 11 | Area 3 | UG/KG | 189000 |
| B164 | B164-2 | 1/16/06 | 2 | 3 | Area 3 | UG/KG | 3750 |
| B164 | B164-5 | 1/16/06 | 5 | 6 | Area 3 | UG/KG | <3750 |
| B164 | B164-10 | 1/16/06 | 10 | 11 | Area 3 | UG/KG | <75000 |
| B165 | B165-2 | 1/23/06 | 2 | 3 | Area 3 | UG/KG | <3750 |
| B165 | B165-5 | 1/23/06 | 5 | 6 | Area 3 | UG/KG | <37500 |
| B165 | B165-10 | 1/23/06 | 10 | 11 | Area 3 | UG/KG | <3750 |
| B166 | B166-2 | 1/24/06 | 2 | 3 | Area 3 | UG/KG | <3750 |
| B166 | B166-5 | 1/24/06 | 5 | 6 | Area 3 | UG/KG | <3750 |
| B166 | B166-10 | 1/24/06 | 10 | 11 | Area 3 | UG/KG | <3750 |
| B167 | B167-2 | 1/17/06 | 2 | 3 | Area 3 | UG/KG | <3750 |
| B167 | B167-5 | 1/17/06 | 5 | 6 | Area 3 | UG/KG | <3750 |
| B167 | B167-10 | 1/17/06 | 10 | 11 | Area 3 | UG/KG | <3750 |
| B168 | B168-2 | 1/17/06 | 2 | 3 | Area 3 | UG/KG | <375000 |
| B168 | B168-5 | 1/17/06 | 5 | 6 | Area 3 | UG/KG | 4375 |
| B168 | B168-10 | 1/17/06 | 10 | 11 | Area 3 | UG/KG | <3750 |
| B169 | B169-2 | 1/17/06 | 2 | 3 | Area 3 | UG/KG | <750000 |
| B169 | B169-5 | 1/17/06 | 5 | 6 | Area 3 | UG/KG | 6000 |
| B169 | B169-10 | 1/17/06 | 10 | 11 | Area 3 | UG/KG | <3750 |
| B170 | B170-2 | 1/18/06 | 2 | 3 | Area 3 | UG/KG | <3750 |
| B170 | B170-5 | 1/18/06 | 5 | 6 | Area 3 | UG/KG | 35000 |
| B170 | B170-10 | 1/18/06 | 10 | 11 | Area 3 | UG/KG | 402500 |
| B171 | B171-2 | 1/11/06 | 2 | 3 | Area 3 | UG/KG | 6700000 |
| B171 | B171-5 | 1/11/06 | 5 | 6 | Area 3 | UG/KG | 2225000 |
| B171 | B171-10 | 1/11/06 | 10 | 11 | Area 3 | UG/KG | 5250000 |
| B172 | B172-2 | 1/12/06 | 2 | 3 | Area 3 | UG/KG | <75000 |
| B172 | B172-5 | 1/12/06 | 5 | 6 | Area 3 | UG/KG | <3750 |
| B172 | B172-10 | 1/12/06 | 10 | 11 | Area 3 | UG/KG | 5750 |
| B173 | B173-2 | 1/12/06 | 2 | 3 | Area 3 | UG/KG | <3750 |
| B173 | B173-5 | 1/12/06 | 5 | 6 | Area 3 | UG/KG | 4500 |
| B173 | B173-10 | 1/12/06 | 10 | 11 | Area 3 | UG/KG | <3750 |
| B174 | B174-2 | 1/12/06 | 2 | 3 | Area 3 | UG/KG | <75000 |
| B174 | B174-5 | 1/12/06 | 5 | 6 | Area 3 | UG/KG | 5000 |
| B174 | B174-10 | 1/12/06 | 10 | 11 | Area 3 | UG/KG | <3750 |
| B175 | B175-2 | 2/7/06 | 2 | 3 | Area 3 | UG/KG | <3750 |
| B175 | B175-5 | 2/7/06 | 5 | 6 | Area 3 | UG/KG | <3750 |
| B175 | B175-10 | 2/7/06 | 10 | 11 | Area 3 | UG/KG | <3750 |
| B176 | B176-2 | 2/7/06 | 2 | 3 | Area 3 | UG/KG | <75000 |
| B176 | B176-5 | 2/7/06 | 5 | 6 | Area 3 | UG/KG | 107500 |
| B176 | B176-10 | 2/7/06 | 10 | 11 | Area 3 | UG/KG | <37500 |
| B177 | B177-2 | 2/2/06 | 2 | 3 | Area 3 | UG/KG | <3750 |
| B177 | B177-5 | 2/2/06 | 5 | 6 | Area 3 | UG/KG | 42500 |
| B177 | B177-10 | 2/2/06 | 10 | 11 | Area 3 | UG/KG | <3750 |
| B178 | B178-2 | 2/2/06 | 2 | 3 | Area 3 | UG/KG | 225000 |
| B178 | B178-5 | 2/2/06 | 5 | 6 | Area 3 | UG/KG | <3750 |
| B178 | B178-10 | 2/2/06 | 10 | 11 | Area 3 | UG/KG | 12500 |
| B179 | B179-2 | 1/26/06 | 2 | 3 | Area 3 | UG/KG | <187500 |
| B179 | B179-5 | 1/26/06 | 5 | 6 | Area 3 | UG/KG | 975000 |
| B179 | B179-10 | 1/26/06 | 10 | 11 | Area 3 | UG/KG | <187500 |
| B180 | B180-2 | 1/26/06 | 2 | 3 | Area 3 | UG/KG | <3750 |
| B180 | B180-5 | 1/26/06 | 5 | 6 | Area 3 | UG/KG | <3750 |
| B180 | B180-10 | 1/26/06 | 10 | 11 | Area 3 | UG/KG | <3750 |
| B181 | B181-2 | 2/6/06 | 2 | 3 | Area 3 | UG/KG | <3750 |
| B181 | B181-5 | 2/6/06 | 5 | 6 | Area 3 | UG/KG | <187500 |
| B181 | B181-10 | 2/6/06 | 10 | 11 | Area 3 | UG/KG | <3750 |
| B182 | B182-2 | 1/24/06 | 2 | 3 | Area 3 | UG/KG | <3750 |
| B182 | B182-5 | 1/25/06 | 5 | 6 | Area 3 | UG/KG | 70000 |
| B182 | B182-10 | 1/25/06 | 10 | 11 | Area 3 | UG/KG | <3750 |

**Table B6**
**Results of TPHg Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Gasoline Range Organics |
|---|---|---|---|---|---|---|---|
| B183 | B183-2 | 1/25/06 | 2 | 3 | Area 3 | UG/KG | <187500 |
| B183 | B183-5 | 1/25/06 | 5 | 6 | Area 3 | UG/KG | <75000 |
| B183 | B183-10 | 1/25/06 | 10 | 11 | Area 3 | UG/KG | 1120000 |
| B184 | B184-2 | 1/25/06 | 2 | 3 | Area 3 | UG/KG | <187500 |
| B184 | B184-5 | 1/25/06 | 5 | 6 | Area 3 | UG/KG | <3750 |
| B184 | B184-10 | 1/25/06 | 10 | 11 | Area 3 | UG/KG | <3750 |
| B185 | B185-2 | 1/26/06 | 2 | 3 | Area 3 | UG/KG | <75000 |
| B185 | B185-5 | 1/26/06 | 5 | 6 | Area 3 | UG/KG | <3750 |
| B185 | B185-10 | 1/26/06 | 10 | 11 | Area 3 | UG/KG | <3750 |
| B186 | B186-2 | 1/27/06 | 2 | 3 | Area 3 | UG/KG | <75000 |
| B186 | B186-5 | 1/27/06 | 5 | 6 | Area 3 | UG/KG | <3750 |
| B186 | B186-10 | 1/27/06 | 10 | 11 | Area 3 | UG/KG | <3750 |
| B187 | B187-2 | 1/27/06 | 2 | 3 | Area 3 | UG/KG | 4375 |
| B187 | B187-5 | 1/27/06 | 5 | 6 | Area 3 | UG/KG | <3750 |
| B187 | B187-10 | 1/27/06 | 10 | 11 | Area 3 | UG/KG | 4250 |
| B188 | B188-2 | 2/7/06 | 2 | 3 | Area 2 | UG/KG | <3750 |
| B188 | B188-5 | 2/7/06 | 5 | 6 | Area 2 | UG/KG | 375000 |
| B188 | B188-10 | 2/7/06 | 10 | 11 | Area 2 | UG/KG | 125000 |
| B189 | B189-2 | 2/7/06 | 2 | 3 | Area 2 | UG/KG | <3750 |
| B189 | B189-5 | 2/7/06 | 5 | 6 | Area 2 | UG/KG | <37500 |
| B189 | B189-10 | 2/7/06 | 10 | 11 | Area 2 | UG/KG | <3750 |
| B190 | B190-2 | 2/8/06 | 2 | 3 | Area 2 | UG/KG | <3750 |
| B190 | B190-5 | 2/8/06 | 5 | 6 | Area 2 | UG/KG | <3750 |
| B190 | B190-10 | 2/8/06 | 10 | 11 | Area 2 | UG/KG | <3750 |
| B191 | B191-2 | 2/1/06 | 2 | 3 | Area 2 | UG/KG | <75000 |
| B191 | B191-5 | 2/1/06 | 5 | 6 | Area 2 | UG/KG | <75000 |
| B191 | B191-10 | 2/1/06 | 10 | 11 | Area 2 | UG/KG | <75000 |
| B192 | B192-2 | 2/1/06 | 2 | 3 | Area 2 | UG/KG | <75000 |
| B192 | B192-5 | 2/1/06 | 5 | 6 | Area 2 | UG/KG | 4875 |
| B192 | B192-10 | 2/1/06 | 10 | 11 | Area 2 | UG/KG | 4125 |
| B193 | B193-2 | 2/6/06 | 2 | 3 | Area 3 | UG/KG | 5625 |
| B193 | B193-5 | 2/6/06 | 5 | 6 | Area 3 | UG/KG | <3750 |
| B193 | B193-10 | 2/6/06 | 10 | 11 | Area 3 | UG/KG | <3750 |
| B194 | B194-2 | 2/3/06 | 2 | 3 | Area 3 | UG/KG | 8750 |
| B194 | B194-5 | 2/3/06 | 5 | 6 | Area 3 | UG/KG | 5250 |
| B194 | B194-10 | 2/3/06 | 10 | 11 | Area 3 | UG/KG | 566000 |
| B195 | B195-2 | 2/3/06 | 2 | 3 | Area 3 | UG/KG | 7250 |
| B195 | B195-5 | 2/3/06 | 5 | 6 | Area 3 | UG/KG | 5875 |
| B195 | B195-10 | 2/3/06 | 10 | 11 | Area 3 | UG/KG | 5000 |
| B196 | B196-2 | 1/25/06 | 2 | 3 | Area 3 | UG/KG | <3750 |
| B196 | B196-5 | 1/25/06 | 5 | 6 | Area 3 | UG/KG | <3750 |
| B196 | B196-10 | 1/25/06 | 10 | 11 | Area 3 | UG/KG | <3750 |
| B197 | B197-2 | 2/1/06 | 2 | 3 | Area 3 | UG/KG | 41250 |
| B197 | B197-5 | 2/1/06 | 5 | 6 | Area 3 | UG/KG | <3750 |
| B197 | B197-10 | 2/1/06 | 10 | 11 | Area 3 | UG/KG | 4125 |
| B198 | B198-2 | 1/26/06 | 2 | 3 | Area 3 | UG/KG | <3750 |
| B198 | B198-5 | 1/26/06 | 5 | 6 | Area 3 | UG/KG | <3750 |
| B198 | B198-10 | 1/26/06 | 10 | 11 | Area 3 | UG/KG | <3750 |
| B199 | B199-2 | 1/23/06 | 2 | 3 | Area 3 | UG/KG | <75000 |
| B199 | B199-5 | 1/23/06 | 5 | 6 | Area 3 | UG/KG | <750000 |
| B199 | B199-10 | 1/23/06 | 10 | 11 | Area 3 | UG/KG | <375000 |
| B200 | B200-2 | 1/24/06 | 2 | 3 | Area 3 | UG/KG | <3750 |
| B200 | B200-5 | 1/24/06 | 5 | 6 | Area 3 | UG/KG | <3750 |
| B200 | B200-10 | 1/24/06 | 10 | 11 | Area 3 | UG/KG | <3750 |
| B201 | B201-2 | 1/25/06 | 2 | 3 | Area 3 | UG/KG | <3750 |
| B201 | B201-5 | 1/25/06 | 5 | 6 | Area 3 | UG/KG | <3750 |
| B201 | B201-10 | 1/25/06 | 10 | 11 | Area 3 | UG/KG | <3750 |
| B202 | B202-2 | 1/25/06 | 2 | 3 | Area 3 | UG/KG | 5875 |
| B202 | B202-5 | 1/25/06 | 5 | 6 | Area 3 | UG/KG | <3750 |
| B202 | B202-10 | 1/25/06 | 10 | 11 | Area 3 | UG/KG | <3750 |
| B203 | B203-2 | 2/7/06 | 2 | 3 | Area 3 | UG/KG | 81250 |
| B203 | B203-5 | 2/7/06 | 5 | 6 | Area 3 | UG/KG | 2000000 |
| B203 | B203-10 | 2/7/06 | 10 | 11 | Area 3 | UG/KG | 10625 |
| B204 | B204-2 | 2/6/06 | 2 | 3 | Area 3 | UG/KG | <3750 |
| B204 | B204-5 | 2/6/06 | 5 | 6 | Area 3 | UG/KG | 573750 |
| B204 | B204-10 | 2/6/06 | 10 | 11 | Area 3 | UG/KG | <3750 |
| B205 | B205-2 | 2/7/06 | 2 | 3 | Area 3 | UG/KG | <37500 |

**Table B6**
**Results of TPHg Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Gasoline Range Organics |
|---|---|---|---|---|---|---|---|
| B205 | B205-5 | 2/7/06 | 5 | 6 | Area 3 | UG/KG | <3750 |
| B205 | B205-10 | 2/7/06 | 10 | 11 | Area 3 | UG/KG | <3750 |
| B206 | B206-2 | 2/8/06 | 2 | 3 | Area 2 | UG/KG | <37500 |
| B206 | B206-5 | 2/8/06 | 5 | 6 | Area 2 | UG/KG | <3750 |
| B206 | B206-10 | 2/8/06 | 10 | 11 | Area 2 | UG/KG | <3750 |
| B207 | B207-2 | 2/8/06 | 2 | 3 | Area 2 | UG/KG | <75000 |
| B207 | B207-5 | 2/8/06 | 5 | 6 | Area 2 | UG/KG | <3750 |
| B207 | B207-10 | 2/8/06 | 10 | 11 | Area 2 | UG/KG | <3750 |
| B208 | B208-2 | 1/31/06 | 2 | 3 | Area 2 | UG/KG | <37500 |
| B208 | B208-5 | 1/31/06 | 5 | 6 | Area 2 | UG/KG | <3750 |
| B208 | B208-10 | 1/31/06 | 10 | 11 | Area 2 | UG/KG | <3750 |
| B209 | B209-2 | 1/31/06 | 2 | 3 | Area 2 | UG/KG | <37500 |
| B209 | B209-5 | 1/31/06 | 5 | 6 | Area 2 | UG/KG | <37500 |
| B209 | B209-10 | 1/31/06 | 10 | 11 | Area 2 | UG/KG | <187500 |
| B210 | B210-2 | 1/31/06 | 2 | 3 | Area 3 | UG/KG | <37500 |
| B210 | B210-5 | 1/31/06 | 5 | 6 | Area 3 | UG/KG | <3750 |
| B210 | B210-10 | 1/31/06 | 10 | 11 | Area 3 | UG/KG | <3750 |
| B211 | B211-2 | 2/6/06 | 2 | 3 | Area 3 | UG/KG | <75000 |
| B211 | B211-5 | 2/6/06 | 5 | 6 | Area 3 | UG/KG | <75000 |
| B211 | B211-10 | 2/6/06 | 10 | 11 | Area 3 | UG/KG | <3750 |
| B212 | B212-2 | 1/24/06 | 2 | 3 | Area 3 | UG/KG | <3750 |
| B212 | B212-5 | 1/24/06 | 5 | 6 | Area 3 | UG/KG | <3750 |
| B212 | B212-10 | 1/24/06 | 10 | 11 | Area 3 | UG/KG | <3750 |
| B213 | B213-2 | 2/6/06 | 2 | 3 | Area 3 | UG/KG | 5750 |
| B213 | B213-5 | 2/6/06 | 5 | 6 | Area 3 | UG/KG | <3750 |
| B213 | B213-10 | 2/6/06 | 10 | 11 | Area 3 | UG/KG | 4500 |
| B214 | B214-2 | 1/23/06 | 2 | 3 | Area 3 | UG/KG | 81250 |
| B214 | B214-5 | 1/23/06 | 5 | 6 | Area 3 | UG/KG | <3750 |
| B214 | B214-10 | 1/23/06 | 10 | 11 | Area 3 | UG/KG | <3750 |
| B215 | B215-2 | 2/3/06 | 2 | 3 | Area 3 | UG/KG | 5500 |
| B215 | B215-5 | 2/3/06 | 5 | 6 | Area 3 | UG/KG | 4375 |
| B215 | B215-10 | 2/3/06 | 10 | 11 | Area 3 | UG/KG | 5000 |
| B216 | B216-2 | 2/2/06 | 2 | 3 | Area 3 | UG/KG | <3750 |
| B216 | B216-5 | 2/2/06 | 5 | 6 | Area 3 | UG/KG | <3750 |
| B216 | B216-10 | 2/2/06 | 10 | 11 | Area 3 | UG/KG | <3750 |
| B217 | B217-2 | 1/24/06 | 2 | 3 | Area 3 | UG/KG | <3750 |
| B217 | B217-5 | 1/24/06 | 5 | 6 | Area 3 | UG/KG | <3750 |
| B217 | B217-10 | 1/24/06 | 10 | 11 | Area 3 | UG/KG | <3750 |
| B218 | B218-2 | 2/8/06 | 2 | 3 | Area 3 | UG/KG | <75000 |
| B218 | B218-5 | 2/8/06 | 5 | 6 | Area 3 | UG/KG | <37500 |
| B218 | B218-10 | 2/8/06 | 10 | 11 | Area 3 | UG/KG | <3750 |
| B219 | B219-2 | 1/26/06 | 2 | 3 | Area 3 | UG/KG | <3750 |
| B219 | B219-5 | 1/26/06 | 5 | 6 | Area 3 | UG/KG | <3750 |
| B219 | B219-10 | 1/26/06 | 10 | 11 | Area 3 | UG/KG | <3750 |
| B220 | B220-2 | 1/26/06 | 2 | 3 | Area 3 | UG/KG | <75000 |
| B220 | B220-5 | 1/26/06 | 5 | 6 | Area 3 | UG/KG | <37500 |
| B220 | B220-10 | 1/26/06 | 10 | 11 | Area 3 | UG/KG | <3750 |
| B221 | B221-2 | 1/27/06 | 2 | 3 | Area 2 | UG/KG | <3750 |
| B221 | B221-5 | 1/27/06 | 5 | 6 | Area 2 | UG/KG | <3750 |
| B221 | B221-10 | 1/27/06 | 10 | 11 | Area 2 | UG/KG | <3750 |
| B222 | B222-2 | 2/3/06 | 2 | 3 | Area 2 | UG/KG | <3750 |
| B222 | B222-5 | 2/3/06 | 5 | 6 | Area 2 | UG/KG | <3750 |
| B222 | B222-10 | 2/3/06 | 10 | 11 | Area 2 | UG/KG | <3750 |
| B223 | B223-2 | 2/3/06 | 2 | 3 | Area 2 | UG/KG | <3750 |
| B223 | B223-5 | 2/3/06 | 5 | 6 | Area 2 | UG/KG | <3750 |
| B223 | B223-10 | 2/3/06 | 10 | 11 | Area 2 | UG/KG | <3750 |
| B224 | B224-05 | 1/21/08 | 5 | 6 | Area 1 | UG/KG | 820 |
| B224 | B224-10 | 1/21/08 | 10 | 11 | Area 1 | UG/KG | <530 |
| B225 | B225-5 | 1/21/08 | 5 | 6 | Area 1 | UG/KG | <560 |
| B225 | B225-10 | 1/21/08 | 9 | 10 | Area 1 | UG/KG | <560 |
| B226 | B226-5 | 1/18/08 | 5 | 6 | Area 1 | UG/KG | <540 |
| B226 | B226-10 | 1/18/08 | 9 | 10 | Area 1 | UG/KG | <570 |
| B227 | B227-5 | 1/21/08 | 5 | 6 | Area 1 | UG/KG | <560 |
| B227 | B227-10 | 1/21/08 | 10 | 11 | Area 1 | UG/KG | 86000 |
| B228 | B228-05 | 1/18/08 | 5 | 6 | Area 1 | UG/KG | 130000 |
| B228 | B228-10 | 1/18/08 | 10 | 11 | Area 1 | UG/KG | 23400 |
| B229 | B229-05 | 1/18/08 | 5 | 6 | Area 1 | UG/KG | <570 |

**Table B6**
**Results of TPHg Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Gasoline Range Organics |
|---|---|---|---|---|---|---|---|
| B229 | B229-10 | 1/18/08 | 10 | 11 | Area 1 | UG/KG | 773000 |
| B230 | B230-5 | 1/17/08 | 5 | 6 | Area 1 | UG/KG | <560 |
| B230 | B230-10 | 1/17/08 | 9 | 10 | Area 1 | UG/KG | 19660 |
| B231 | B231-5 | 1/17/08 | 5 | 6 | Area 1 | UG/KG | <550 |
| B231 | B231-10 | 1/17/08 | 9 | 10 | Area 1 | UG/KG | <550 |
| B232 | B232-05 | 1/21/08 | 5 | 6 | Area 3 | UG/KG | <610 |
| B232 | B232-10 | 1/21/08 | 10 | 11 | Area 3 | UG/KG | <600 |
| B233 | B233-05 | 1/23/08 | 5 | 6 | Area 4 | UG/KG | <560 |
| B233 | B233-10 | 1/23/08 | 10 | 11 | Area 4 | UG/KG | <560 |
| B234 | B234-05 | 1/23/08 | 5 | 6 | Area 4 | UG/KG | <570 |
| B234 | B234-10 | 1/23/08 | 10 | 11 | Area 4 | UG/KG | <560 |
| B235 | B235-5 | 1/25/08 | 5 | 6 | Area 4 | UG/KG | 190 |
| B235 | B235-10 | 1/25/08 | 9 | 10 | Area 4 | UG/KG | 420 |
| B236 | B236-05 | 1/22/08 | 5 | 6 | Area 3 | UG/KG | <570 |
| B236 | B236-10 | 1/22/08 | 10 | 11 | Area 3 | UG/KG | 910 |
| B237 | B237-5 | 1/23/08 | 5 | 6 | Area 3 | UG/KG | 1200000 |
| B237 | B237-10 | 1/23/08 | 10 | 11 | Area 3 | UG/KG | 690000 |
| B238 | B238-5 | 1/25/08 | 5 | 6 | Area 3 | UG/KG | 370000 |
| B238 | B238-10 | 1/25/08 | 10 | 11 | Area 3 | UG/KG | 880000 |
| B239 | B239-05 | 1/22/08 | 5 | 6 | Area 3 | UG/KG | 250000 |
| B239 | B239-10 | 1/22/08 | 10 | 11 | Area 3 | UG/KG | <590 |
| B240 | B240-5 | 1/22/08 | 5 | 6 | Area 3 | UG/KG | <570 |
| B240 | B240-10 | 1/22/08 | 9 | 10 | Area 3 | UG/KG | <570 |
| B241 | B241-5 | 1/23/08 | 5 | 6 | Area 3 | UG/KG | 10000000 |
| B241 | B241-10 | 1/23/08 | 10 | 11 | Area 3 | UG/KG | 11000000 |
| B242 | B242-05 | 1/25/08 | 5 | 6 | Area 3 | UG/KG | 1500000 |
| B242 | B242-10 | 1/25/08 | 10 | 11 | Area 3 | UG/KG | 1900 |
| B243 | B243-05 | 1/25/08 | 5 | 6 | Area 3 | UG/KG | 28700 |
| B243 | B243-10 | 1/25/08 | 10 | 11 | Area 3 | UG/KG | 1000000 |
| B244 | B244-05 | 1/17/08 | 5 | 6 | Area 1 | UG/KG | <580 |
| B244 | B244-10 | 1/17/08 | 10 | 11 | Area 1 | UG/KG | <590 |
| B245 | B245-05 | 1/15/08 | 5 | 6 | Area 1 | UG/KG | <580 |
| B245 | B245-10 | 1/15/08 | 10 | 11 | Area 1 | UG/KG | <590 |
| B246 | B246-5 | 1/15/08 | 5 | 6 | Area 1 | UG/KG | 3200 |
| B246 | B246-10 | 1/15/08 | 10 | 11 | Area 1 | UG/KG | 40000 |
| B247 | B247-05 | 1/17/08 | 5 | 6 | Area 1 | UG/KG | <570 |
| B247 | B247-10 | 1/17/08 | 10 | 11 | Area 1 | UG/KG | <580 |
| B248 | B248-05 | 1/15/08 | 5 | 6 | Area 1 | UG/KG | <570 |
| B248 | B248-10 | 1/15/08 | 10 | 11 | Area 1 | UG/KG | <560 |
| B249 | B249-05 | 1/14/08 | 5 | 6 | Area 1 | UG/KG | 2400000 |
| B249 | B249-10 | 1/14/08 | 10 | 11 | Area 1 | UG/KG | 530000 |
| B250 | B250-05 | 1/16/08 | 5 | 6 | Area 1 | UG/KG | <590 |
| B250 | B250-10 | 1/16/08 | 10 | 11 | Area 1 | UG/KG | <590 |
| B251 | B251-05 | 1/16/08 | 5 | 6 | Area 1 | UG/KG | <580 |
| B251 | B251-10 | 1/16/08 | 10 | 11 | Area 1 | UG/KG | <570 |
| B252 | B252-5 | 1/15/08 | 5 | 6 | Area 1 | UG/KG | 8860 |
| B252 | B252-10 | 1/15/08 | 10 | 11 | Area 1 | UG/KG | <550 |
| B253 | B253-05 | 1/31/08 | 5 | 6 | Area 4 | UG/KG | 412000 |
| B253 | B253-10 | 1/31/08 | 10 | 11 | Area 4 | UG/KG | 1700000 |
| B254 | B254-05 | 2/5/08 | 5 | 6 | Area 4 | UG/KG | <570 |
| B254 | B254-10 | 2/5/08 | 10 | 11 | Area 4 | UG/KG | <560 |
| B255 | B255-05 | 1/31/08 | 5 | 6 | Area 3 | UG/KG | <580 |
| B255 | B255-10 | 1/31/08 | 10 | 11 | Area 3 | UG/KG | <590 |
| B256 | B256-05 | 1/31/08 | 5 | 6 | Area 3 | UG/KG | <570 |
| B256 | B256-10 | 1/31/08 | 10 | 11 | Area 3 | UG/KG | <590 |
| B257 | B257-05 | 1/30/08 | 5 | 6 | Area 3 | UG/KG | 68000 |
| B257 | B257-10 | 1/30/08 | 10 | 11 | Area 3 | UG/KG | 1100000 |
| B258 | B258-05 | 1/31/08 | 5 | 6 | Area 3 | UG/KG | 25000 |
| B258 | B258-10 | 1/31/08 | 10 | 11 | Area 3 | UG/KG | 187400 |
| B259 | B259-05 | 2/1/08 | 5 | 6 | Area 3 | UG/KG | <590 |
| B259 | B259-10 | 2/1/08 | 10 | 11 | Area 3 | UG/KG | <580 |
| B260 | B260-05 | 2/1/08 | 5 | 6 | Area 3 | UG/KG | 333800 |
| B260 | B260-10 | 2/1/08 | 10 | 11 | Area 3 | UG/KG | 140000 |
| B261 | B261-5 | 1/21/09 | 4.5 | 5.5 | Area 3 | UG/KG | 807000 |
| B261 | B261-10 | 1/21/09 | 9.5 | 10.5 | Area 3 | UG/KG | 700000 |
| B262 | B262-05 | 1/29/08 | 5 | 6 | Area 3 | UG/KG | <570 |
| B262 | B262-10 | 1/29/08 | 10 | 11 | Area 3 | UG/KG | <560 |

**Table B6**
**Results of TPHg Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Gasoline Range Organics |
|---|---|---|---|---|---|---|---|
| B263 | B263-05 | 2/4/08 | 5 | 6 | Area 3 | UG/KG | <570 |
| B263 | B263-10 | 2/4/08 | 10 | 11 | Area 3 | UG/KG | <560 |
| B264 | B264-5 | 1/15/08 | 5 | 6 | Area 1 | UG/KG | <570 |
| B264 | B264-10 | 1/15/08 | 10 | 11 | Area 1 | UG/KG | <550 |
| B266 | B266-05 | 1/14/08 | 5 | 6 | Area 1 | UG/KG | <560 |
| B266 | B266-10 | 1/14/08 | 10 | 11 | Area 1 | UG/KG | <670 |
| B267 | B267-05 | 1/15/08 | 5 | 6 | Area 1 | UG/KG | <580 |
| B267 | B267-10 | 1/15/08 | 10 | 11 | Area 1 | UG/KG | <600 |
| B268 | B268-05 | 2/1/08 | 5 | 6 | Area 1 | UG/KG | <580 |
| B268 | B268-10 | 2/1/08 | 10 | 11 | Area 1 | UG/KG | <580 |
| B270 | B270-5 | 1/20/09 | 4.5 | 5.5 | Area 3 | UG/KG | <240 |
| B270 | B270-10 | 1/20/09 | 10 | 11 | Area 3 | UG/KG | <260 |
| B271 | B271-5 | 1/14/08 | 5 | 6 | Area 1 | UG/KG | <580 |
| B271 | B271-10 | 1/14/08 | 10 | 11 | Area 1 | UG/KG | 20 |
| B272 | B272-5 | 1/14/08 | 5 | 6 | Area 1 | UG/KG | <600 |
| B272 | B272-10 | 1/14/08 | 10 | 11 | Area 1 | UG/KG | <570 |
| B274 | B274-05 | 1/14/08 | 5 | 6 | Area 1 | UG/KG | <580 |
| B274 | B274-10 | 1/14/08 | 10 | 11 | Area 1 | UG/KG | <560 |
| B275 | B275-5 | 1/14/08 | 5 | 6 | Area 1 | UG/KG | <570 |
| B275 | B275-10 | 1/14/08 | 10 | 11 | Area 1 | UG/KG | <520 |
| B276 | B276-05 | 2/4/08 | 5 | 6 | Area 3 | UG/KG | <570 |
| B276 | B276-10 | 2/4/08 | 10 | 11 | Area 3 | UG/KG | <630 |
| B277 | B277-5 | 1/16/08 | 5 | 6 | Area 3 | UG/KG | 4400 |
| B277 | B277-10 | 1/16/08 | 10 | 11 | Area 3 | UG/KG | <570 |
| B278 | B278-5 | 1/16/08 | 5 | 6 | Area 1 | UG/KG | 183900 |
| B278 | B278-10 | 1/16/08 | 10 | 11 | Area 1 | UG/KG | 71200 |
| B279 | B279-5 | 1/16/08 | 5 | 6 | Area 1 | UG/KG | 136000 |
| B279 | B279-10 | 1/16/08 | 10 | 11 | Area 1 | UG/KG | 48000 |
| B280 | B280-5 | 1/16/08 | 5 | 6 | Area 1 | UG/KG | 44000 |
| B280 | B280-10 | 1/16/08 | 10 | 11 | Area 1 | UG/KG | 39000 |
| B281 | B281-5 | 1/14/08 | 5 | 6 | Area 1 | UG/KG | <610 |
| B281 | B281-10 | 1/14/08 | 10 | 11 | Area 1 | UG/KG | 19000 |
| B282 | B282-05 | 1/28/08 | 5 | 6 | Area 1 | UG/KG | 2400 |
| B282 | B282-10 | 1/28/08 | 10 | 11 | Area 1 | UG/KG | <510 |
| B283 | B283-05 | 1/29/08 | 5 | 6 | Area 1 | UG/KG | 120000 |
| B283 | B283-10 | 1/29/08 | 10 | 11 | Area 1 | UG/KG | <580 |
| B284 | B284-05 | 1/28/08 | 5 | 6 | Area 2 | UG/KG | 11000 |
| B284 | B284-10 | 1/28/08 | 10 | 11 | Area 2 | UG/KG | <580 |
| B285 | B285-05 | 1/28/08 | 5 | 6 | Area 2 | UG/KG | <590 |
| B285 | B285-10 | 1/28/08 | 10 | 11 | Area 2 | UG/KG | <620 |
| B286 | B286-5 | 1/22/09 | 5 | 6 | Area 2 | UG/KG | <220 |
| B286 | B286-10 | 1/22/09 | 10 | 11 | Area 2 | UG/KG | <230 |
| B287 | B287-5 | 1/22/08 | 5 | 6 | Area 2 | UG/KG | <600 |
| B287 | B287-10 | 1/22/08 | 10 | 11 | Area 2 | UG/KG | <580 |
| B288 | B288-05 | 1/17/08 | 5 | 6 | Area 2 | UG/KG | <550 |
| B288 | B288-10 | 1/17/08 | 10 | 11 | Area 2 | UG/KG | <520 |
| B289 | B289-5 | 1/28/08 | 5 | 6 | Area 2 | UG/KG | <570 |
| B289 | B289-10 | 1/28/08 | 10 | 11 | Area 2 | UG/KG | <560 |
| B290 | B290-5 | 1/28/08 | 5 | 6 | Area 2 | UG/KG | 19 |
| B290 | B290-10 | 1/28/08 | 10 | 11 | Area 2 | UG/KG | 25690 |
| B291 | B291-10 | 1/29/08 | 10 | 11 | Area 2 | UG/KG | <580 |
| B292 | B292-5 | 1/22/09 | 5 | 6 | Area 2 | UG/KG | 1500000 |
| B292 | B292-10 | 1/22/09 | 10 | 11 | Area 2 | UG/KG | 160000 |
| B293 | B293-5 | 1/22/09 | 5 | 6 | Area 2 | UG/KG | <290 |
| B293 | B293-10 | 1/22/09 | 10 | 11 | Area 2 | UG/KG | <240 |
| B294 | B294-05 | 1/31/08 | 4.5 | 5 | Area 2 | UG/KG | 760 |
| B294 | B294-10 | 1/31/08 | 10 | 11 | Area 2 | UG/KG | 3150 |
| B295 | B295-5 | 1/22/09 | 5 | 6 | Area 2 | UG/KG | 10500 |
| B295 | B295-10 | 1/22/09 | 10 | 11 | Area 2 | UG/KG | 550 |
| B297 | B297-5 | 1/20/09 | 4.5 | 5.5 | Area 2 | UG/KG | <310 |
| B297 | B297-10 | 1/20/09 | 9.5 | 10.5 | Area 2 | UG/KG | <240 |
| B298 | B298-5 | 1/28/08 | 5 | 6 | Area 2 | UG/KG | <560 |
| B298 | B298-10 | 1/28/08 | 10 | 11 | Area 2 | UG/KG | <600 |
| B299 | B299-5 | 1/19/09 | 5 | 6 | Area 4 | UG/KG | 760000 |
| B299 | B299-10 | 1/19/09 | 9.5 | 10.5 | Area 4 | UG/KG | 3200000 |
| B300 | B300-05 | 2/6/08 | 5 | 6 | Area 4 | UG/KG | <560 |
| B300 | B300-10 | 2/6/08 | 10 | 11 | Area 4 | UG/KG | <570 |

**Table B6**
**Results of TPHg Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Gasoline Range Organics |
|---|---|---|---|---|---|---|---|
| B301 | B301-05 | 2/6/08 | 5 | 6 | Area 4 | UG/KG | <570 |
| B301 | B301-10 | 2/6/08 | 10 | 11 | Area 4 | UG/KG | <570 |
| B302 | B302-05 | 2/5/08 | 5 | 6 | Area 4 | UG/KG | <570 |
| B302 | B302-10 | 2/5/08 | 10 | 11 | Area 4 | UG/KG | <560 |
| B303 | B303-05 | 1/28/08 | 5 | 6 | Area 4 | UG/KG | 483000 |
| B303 | B303-10 | 1/28/08 | 10 | 11 | Area 4 | UG/KG | 5200000 |
| B304 | B304-5 | 1/19/09 | 4.5 | 5.5 | Area 3 | UG/KG | 46000 |
| B304 | B304-10 | 1/19/09 | 9.5 | 10.5 | Area 3 | UG/KG | 300 |
| B305 | B305-5 | 1/19/09 | 4.5 | 5.5 | Area 3 | UG/KG | 10000 |
| B305 | B305-10 | 1/19/09 | 9.5 | 10.5 | Area 3 | UG/KG | 19000 |
| B306 | B306-05 | 1/31/08 | 5 | 6 | Area 3 | UG/KG | 560000 |
| B306 | B306-10 | 1/31/08 | 10 | 11 | Area 3 | UG/KG | 66000 |
| B307 | B307-5 | 1/28/08 | 5 | 6 | Area 3 | UG/KG | 170 |
| B307 | B307-10 | 1/28/08 | 10 | 11 | Area 3 | UG/KG | 150 |
| B308 | B308-05 | 1/30/08 | 5 | 6 | Area 3 | UG/KG | 42500 |
| B308 | B308-10 | 1/30/08 | 10 | 11 | Area 3 | UG/KG | <540 |
| B309 | B309-5 | 1/19/09 | 4.5 | 5.5 | Area 3 | UG/KG | 470 |
| B309 | B309-10 | 1/19/09 | 9.5 | 10.5 | Area 3 | UG/KG | 1600 |
| B310 | B310-05 | 2/4/08 | 5 | 6 | Area 3 | UG/KG | 2700 |
| B310 | B310-10 | 2/4/08 | 10 | 11 | Area 3 | UG/KG | <560 |
| B311 | B311-05 | 2/5/08 | 5 | 6 | Area 3 | UG/KG | 200000 |
| B311 | B311-10 | 2/5/08 | 10 | 11 | Area 3 | UG/KG | <580 |
| B312 | B312-05 | 1/30/08 | 4.5 | 5.5 | Area 3 | UG/KG | <560 |
| B312 | B312-10 | 1/30/08 | 10 | 11 | Area 3 | UG/KG | <550 |
| B313 | B313-05 | 2/1/08 | 4.5 | 5.5 | Area 3 | UG/KG | <570 |
| B313 | B313-10 | 2/1/08 | 10 | 11 | Area 3 | UG/KG | <550 |
| B314 | B314-05 | 1/30/08 | 5 | 6 | Area 2 | UG/KG | 790 |
| B314 | B314-10 | 1/30/08 | 10 | 11 | Area 2 | UG/KG | <600 |
| B315 | B315-05 | 1/30/08 | 4.5 | 5.5 | Area 3 | UG/KG | 33000 |
| B315 | B315-10 | 1/30/08 | 10 | 11 | Area 3 | UG/KG | 394000 |
| B316 | B316-05 | 1/30/08 | 4.5 | 5.5 | Area 3 | UG/KG | 4900 |
| B316 | B316-10 | 1/30/08 | 10 | 11 | Area 3 | UG/KG | 307600 |
| B317 | B317-05 | 1/29/08 | 4.5 | 5.5 | Area 3 | UG/KG | <560 |
| B317 | B317-10 | 1/29/08 | 10 | 11 | Area 3 | UG/KG | <570 |
| B318 | B318-05 | 1/28/08 | 4.5 | 5.5 | Area 2 | UG/KG | <570 |
| B318 | B318-10 | 1/28/08 | 10 | 11 | Area 2 | UG/KG | <580 |
| B319 | B319-5 | 1/21/09 | 5 | 6 | Area 2 | UG/KG | <290 |
| B319 | B319-10 | 1/21/09 | 10 | 11 | Area 2 | UG/KG | <250 |
| B320 | B320-05 | 1/29/08 | 4.5 | 5.5 | Area 3 | UG/KG | <550 |
| B320 | B320-10 | 1/29/08 | 10 | 11 | Area 3 | UG/KG | 780 |
| B321 | B321-05 | 1/30/08 | 4.5 | 5.5 | Area 3 | UG/KG | <560 |
| B321 | B321-10 | 1/30/08 | 10 | 11 | Area 3 | UG/KG | <550 |
| B322 | B322-05 | 2/1/08 | 5 | 6 | Area 3 | UG/KG | <560 |
| B322 | B322-10 | 2/1/08 | 10 | 11 | Area 3 | UG/KG | <560 |
| B323 | B323-05 | 1/28/08 | 4.5 | 5.5 | Area 3 | UG/KG | 3360 |
| B323 | B323-10 | 1/28/08 | 10 | 11 | Area 3 | UG/KG | <570 |
| B-401 | LL_B-401-1_100611 | 10/6/11 | 0.5 | 1 | Area 2 | UG/KG | 23000 |
| B-401 | LL_B-401-3_100611 | 10/6/11 | 2.5 | 3 | Area 2 | UG/KG | 2500 |
| B-401 | LL_B-401-6_100611 | 10/6/11 | 5.5 | 6 | Area 2 | UG/KG | 4700 |
| B-401 | LL_B-401-9_100611 | 10/6/11 | 8.5 | 9 | Area 2 | UG/KG | <500 |
| B-402 | LL_B-402-1_100611 | 10/6/11 | 0.5 | 1 | Area 2 | UG/KG | <500 |
| B-402 | LL_B-402-3_100611 | 10/6/11 | 2.5 | 3 | Area 2 | UG/KG | <500 |
| B-402 | LL_B-402-6_100611 | 10/6/11 | 5.5 | 6 | Area 2 | UG/KG | <500 |
| B-402 | LL_B-402-9_100611 | 10/6/11 | 8.5 | 9 | Area 2 | UG/KG | <500 |
| B-403 | LL_B-403-1_100711 | 10/7/11 | 0.5 | 1 | Area 2 | UG/KG | 3500 |
| B-403 | LL_B-403-3_100711 | 10/7/11 | 2.5 | 3 | Area 2 | UG/KG | 8000 |
| B-403 | LL_B-403-6_100711 | 10/7/11 | 5.5 | 6 | Area 2 | UG/KG | <500 |
| B-403 | LL_B-403-9_100711 | 10/7/11 | 8.5 | 9 | Area 2 | UG/KG | <500 |
| B-404 | LL_B-404-1_100711 | 10/7/11 | 0.5 | 1 | Area 2 | UG/KG | 20000 |
| B-404 | LL_B-404-3_100711 | 10/7/11 | 2.5 | 3 | Area 2 | UG/KG | 31000 |
| B-404 | LL_B-404-6_100711 | 10/7/11 | 5.5 | 6 | Area 2 | UG/KG | 8700 |
| B-404 | LL_B-404-9_100711 | 10/7/11 | 8.5 | 9 | Area 2 | UG/KG | 22000 |
| B-405 | LL_B-405-1_100711 | 10/7/11 | 0.5 | 1 | Area 2 | UG/KG | 1400 |
| B-405 | LL_B-405-3_100711 | 10/7/11 | 2.5 | 3 | Area 2 | UG/KG | 8400000 |
| B-406 | LL_B-406-1_100711 | 10/7/11 | 0.5 | 1 | Area 2 | UG/KG | <500 |
| B-406 | LL_B-406-3_100711 | 10/7/11 | 2.5 | 3 | Area 2 | UG/KG | 690 |
| B-406 | LL_B-406-6_100711 | 10/7/11 | 5.5 | 6 | Area 2 | UG/KG | 730 |

**Table B6**
**Results of TPHg Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Gasoline Range Organics |
|---|---|---|---|---|---|---|---|
| B-406 | LL_B-406-9_100711 | 10/7/11 | 8.5 | 9 | Area 2 | UG/KG | 13000 |
| B-407 | LL_B-407-1_100711 | 10/7/11 | 0.5 | 1 | Area 2 | UG/KG | 41000 |
| B-407 | LL_B-407-3_100711 | 10/7/11 | 2.5 | 3 | Area 2 | UG/KG | 12000 |
| B-407 | LL_B-407-6_100711 | 10/7/11 | 5.5 | 6 | Area 2 | UG/KG | 11000 |
| B-407 | LL_B-407-9_100711 | 10/7/11 | 8.5 | 9 | Area 2 | UG/KG | 17000 |
| B-408 | LL_B-408-1_100711 | 10/7/11 | 0.5 | 1 | Area 2 | UG/KG | 8100 |
| B-408 | LL_B-408-3_100711 | 10/7/11 | 2.5 | 3 | Area 2 | UG/KG | <500 |
| B-408 | LL_B-408-6_100711 | 10/7/11 | 5.5 | 6 | Area 2 | UG/KG | <500 |
| B-408 | LL_B-408-9_100711 | 10/7/11 | 8.5 | 9 | Area 2 | UG/KG | <500 |
| B-409 | LL_B-409-1_100711 | 10/7/11 | 0.5 | 1 | Area 2 | UG/KG | <500 |
| B-409 | LL_B-409-3_100711 | 10/7/11 | 2.5 | 3 | Area 2 | UG/KG | 15000 |
| B-409 | LL_B-409-6_100711 | 10/7/11 | 5.5 | 6 | Area 2 | UG/KG | 2200 |
| B-409 | LL_B-409-9_100711 | 10/7/11 | 8.5 | 9 | Area 2 | UG/KG | 4800 |
| B-410 | LL_B-410-1_100711 | 10/7/11 | 0.5 | 1 | Area 2 | UG/KG | 6300 |
| B-410 | LL_B-410-3_100711 | 10/7/11 | 2.5 | 3 | Area 2 | UG/KG | 8300 |
| B-410 | LL_B-410-6_100711 | 10/7/11 | 5.5 | 6 | Area 2 | UG/KG | <500 |
| B-410 | LL_B-410-9_100711 | 10/7/11 | 8.5 | 9 | Area 2 | UG/KG | 28000 |
| B-411 | LL_B-411-1_100611 | 10/6/11 | 0.5 | 1 | Area 1 | UG/KG | 980 |
| B-411 | LL_B-411-3_100611 | 10/6/11 | 2.5 | 3 | Area 1 | UG/KG | <500 |
| B-411 | LL_B-411-6_100611 | 10/6/11 | 5.5 | 6 | Area 1 | UG/KG | <500 |
| B-411 | LL_B-411-9_100611 | 10/6/11 | 8.5 | 9 | Area 1 | UG/KG | <500 |
| B-412 | LL_B-412-1_100611 | 10/6/11 | 0.5 | 1 | Area 1 | UG/KG | <500 |
| B-412 | LL_B-412-3_100611 | 10/6/11 | 2.5 | 3 | Area 1 | UG/KG | <500 |
| B-412 | LL_B-412-6_100611 | 10/6/11 | 5.5 | 6 | Area 1 | UG/KG | <500 |
| B-412 | LL_B-412-9_100611 | 10/6/11 | 8.5 | 9 | Area 1 | UG/KG | <500 |
| B-413 | LL_B-413-1_100611 | 10/6/11 | 0.5 | 1 | Area 1 | UG/KG | 4400 |
| B-413 | LL_B-413-3_100611 | 10/6/11 | 2.5 | 3 | Area 1 | UG/KG | 3900 |
| B-413 | LL_B-413-6_100611 | 10/6/11 | 5.5 | 6 | Area 1 | UG/KG | 8800 |
| B-413 | LL_B-413-9_100611 | 10/6/11 | 8.5 | 9 | Area 1 | UG/KG | 5600 |
| B-414 | LL_B-414-1_100611 | 10/6/11 | 0.5 | 1 | Area 1 | UG/KG | 2000 |
| B-414 | LL_B-414-3_100611 | 10/6/11 | 2.5 | 3 | Area 1 | UG/KG | <500 |
| B-414 | LL_B-414-6_100611 | 10/6/11 | 5.5 | 6 | Area 1 | UG/KG | <500 |
| B-414 | LL_B-414-9_100611 | 10/6/11 | 8.5 | 9 | Area 1 | UG/KG | <500 |
| B-415 | LL_B-415-1_100611 | 10/6/11 | 0.5 | 1 | Area 1 | UG/KG | 34000 |
| B-415 | LL_B-415-3_100611 | 10/6/11 | 2.5 | 3 | Area 1 | UG/KG | 55000 |
| B-415 | LL_B-415-6_100611 | 10/6/11 | 5.5 | 6 | Area 1 | UG/KG | 23000 |
| B-415 | LL_B-415-9_100611 | 10/6/11 | 8.5 | 9 | Area 1 | UG/KG | 12000 |
| B-416 | LL_B-416-1_100611 | 10/6/11 | 0.5 | 1 | Area 1 | UG/KG | <500 |
| B-416 | LL_B-416-3_100611 | 10/6/11 | 2.5 | 3 | Area 1 | UG/KG | 730 |
| B-416 | LL_B-416-6_100611 | 10/6/11 | 5.5 | 6 | Area 1 | UG/KG | 42000 |
| B-416 | LL_B-416-9_100611 | 10/6/11 | 8.5 | 9 | Area 1 | UG/KG | 530000 |
| B-417 | LL_B-417-1_100611 | 10/6/11 | 0.5 | 1 | Area 1 | UG/KG | <500 |
| B-417 | LL_B-417-3_100611 | 10/6/11 | 2.5 | 3 | Area 1 | UG/KG | 47000 |
| B-417 | LL_B-417-6_100611 | 10/6/11 | 5.5 | 6 | Area 1 | UG/KG | 12000 |
| B-417 | LL_B-417-9_100611 | 10/6/11 | 8.5 | 9 | Area 1 | UG/KG | 44000 |
| B-418 | LL_B-418-1_100611 | 10/6/11 | 0.5 | 1 | Area 1 | UG/KG | 22000 |
| B-418 | LL_B-418-3_100611 | 10/6/11 | 2.5 | 3 | Area 1 | UG/KG | 6000 |
| B-418 | LL_B-418-6_100611 | 10/6/11 | 5.5 | 6 | Area 1 | UG/KG | 38000 |
| B-418 | LL_B-418-9_100611 | 10/6/11 | 8.5 | 9 | Area 1 | UG/KG | <500 |
| B-419 | LL_B-419-1_100611 | 10/6/11 | 0.5 | 1 | Area 1 | UG/KG | <500 |
| B-419 | LL_B-419-3_100611 | 10/6/11 | 2.5 | 3 | Area 1 | UG/KG | <500 |
| B-419 | LL_B-419-6_100611 | 10/6/11 | 5.5 | 6 | Area 1 | UG/KG | 980 |
| B-419 | LL_B-419-9_100611 | 10/6/11 | 8.5 | 9 | Area 1 | UG/KG | <500 |
| B-420 | LL_B-420-1_100611 | 10/6/11 | 0.5 | 1 | Area 1 | UG/KG | 880 |
| B-420 | LL_B-420-3_100611 | 10/6/11 | 2.5 | 3 | Area 1 | UG/KG | <500 |
| B-420 | LL_B-420-6_100611 | 10/6/11 | 5.5 | 6 | Area 1 | UG/KG | <500 |
| B-420 | LL_B-420-9_100611 | 10/6/11 | 8.5 | 9 | Area 1 | UG/KG | <500 |
| B-421 | LL_B-421-1_100511 | 10/5/11 | 0.5 | 1 | Area 3 | UG/KG | <500 |
| B-421 | LL_B-421-3_100511 | 10/5/11 | 2.5 | 3 | Area 3 | UG/KG | 790 |
| B-421 | LL_B-421-6_100511 | 10/5/11 | 5.5 | 6 | Area 3 | UG/KG | 760 |
| B-421 | LL_B-421-9_100511 | 10/5/11 | 8.5 | 9 | Area 3 | UG/KG | 670 |
| B-422 | LL_B-422-1_100511 | 10/5/11 | 0.5 | 1 | Area 3 | UG/KG | 50000 |
| B-422 | LL_B-422-3_100511 | 10/5/11 | 2.5 | 3 | Area 3 | UG/KG | 1200000 |
| B-422 | LL_B-422-6_100611 | 10/6/11 | 5.5 | 6 | Area 3 | UG/KG | 130000 |
| B-422 | LL_B-422-9_100611 | 10/6/11 | 8.5 | 9 | Area 3 | UG/KG | 150000 |
| B-423 | LL_B-423-1_100711 | 10/7/11 | 0.5 | 1 | Area 3 | UG/KG | 170000 |
| B-423 | LL_B-423-3_100711 | 10/7/11 | 2.5 | 3 | Area 3 | UG/KG | 3500000 |

**Table B6**
**Results of TPHg Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Gasoline Range Organics |
|---|---|---|---|---|---|---|---|
| B-423 | LL_B-423-6_100711 | 10/7/11 | 5.5 | 6 | Area 3 | UG/KG | 88000 |
| B-423 | LL_B-423-9_100711 | 10/7/11 | 8.5 | 9 | Area 3 | UG/KG | 15000 |
| B-424 | LL_B-424-1_100511 | 10/5/11 | 0.5 | 1 | Area 3 | UG/KG | 520 |
| B-424 | LL_B-424-3_100511 | 10/5/11 | 2.5 | 3 | Area 3 | UG/KG | <500 |
| B-424 | LL_B-424-6_100511 | 10/5/11 | 5.5 | 6 | Area 3 | UG/KG | 1300 |
| B-424 | LL_B-424-9_100511 | 10/5/11 | 8.5 | 9 | Area 3 | UG/KG | 45000 |
| B-425 | LL_B-425-1_100511 | 10/5/11 | 0.5 | 1 | Area 3 | UG/KG | 7400 |
| B-425 | LL_B-425-3_100511 | 10/5/11 | 2.5 | 3 | Area 3 | UG/KG | <500 |
| B-425 | LL_B-425-6_100511 | 10/5/11 | 5.5 | 6 | Area 3 | UG/KG | 2400 |
| B-425 | LL_B-425-9_100511 | 10/5/11 | 8.5 | 9 | Area 3 | UG/KG | 3600 |
| B-426 | LL_B-426-1_100511 | 10/5/11 | 0.5 | 1 | Area 3 | UG/KG | 42000 |
| B-426 | LL_B-426-3_100511 | 10/5/11 | 2.5 | 3 | Area 3 | UG/KG | <500 |
| B-426 | LL_B-426-6_100511 | 10/5/11 | 5.5 | 6 | Area 3 | UG/KG | 86000 |
| B-426 | LL_B-426-9_100511 | 10/5/11 | 8.5 | 9 | Area 3 | UG/KG | 59000 |
| B-427 | LL_B-427-1_100511 | 10/5/11 | 0.5 | 1 | Area 3 | UG/KG | 1300000 |
| B-427 | LL_B-427-3_100511 | 10/5/11 | 2.5 | 3 | Area 3 | UG/KG | 6200 |
| B-427 | LL_B-427-6_100511 | 10/5/11 | 5.5 | 6 | Area 3 | UG/KG | 4200 |
| B-427 | LL_B-427-9_100511 | 10/5/11 | 8.5 | 9 | Area 3 | UG/KG | 1700 |
| B-428 | LL_B-428-1_100511 | 10/5/11 | 0.5 | 1 | Area 3 | UG/KG | 30000 |
| B-428 | LL_B-428-3_100511 | 10/5/11 | 2.5 | 3 | Area 3 | UG/KG | 21000 |
| B-428 | LL_B-428-6_100511 | 10/5/11 | 5.5 | 6 | Area 3 | UG/KG | 830000 |
| B-428 | LL_B-428-9_100511 | 10/5/11 | 8.5 | 9 | Area 3 | UG/KG | 420000 |
| B-429 | LL_B-429-1_100511 | 10/5/11 | 0.5 | 1 | Area 3 | UG/KG | <500 |
| B-429 | LL_B-429-3_100511 | 10/5/11 | 2.5 | 3 | Area 3 | UG/KG | 1800 |
| B-429 | LL_B-429-6_100511 | 10/5/11 | 5.5 | 6 | Area 3 | UG/KG | 580 |
| B-429 | LL_B-429-9_100511 | 10/5/11 | 8.5 | 9 | Area 3 | UG/KG | 600 |
| B-430 | LL_B-430-1_100511 | 10/5/11 | 0.5 | 1 | Area 3 | UG/KG | 92000 |
| B-430 | LL_B-430-3_100511 | 10/5/11 | 2.5 | 3 | Area 3 | UG/KG | 44000 |
| B-430 | LL_B-430-6_100511 | 10/5/11 | 5.5 | 6 | Area 3 | UG/KG | 36000 |
| B-430 | LL_B-430-9_100511 | 10/5/11 | 8.5 | 9 | Area 3 | UG/KG | 34000 |
| S001 | S001-0" | 12/4/07 | 0 | 0.5 | Area 4 | UG/KG | <110 |
| S002 | S002-0" | 12/4/07 | 0 | 0.5 | Area 4 | UG/KG | <300 |
| S003ALT | S003ALT-0" | 12/20/07 | 0 | 0.5 | Area 4 | UG/KG | <270 |
| S004 | S004-0" | 1/4/08 | 0 | 0.5 | Area 4 | UG/KG | 300 |
| S004 | S004-12" | 1/4/08 | 1 | 1.5 | Area 4 | UG/KG | 210 |
| S005 | S005-0" | 12/18/07 | 0 | 0.5 | Area 4 | UG/KG | <240 |
| S006 | S006-0" | 12/17/07 | 0 | 0.5 | Area 4 | UG/KG | <280 |
| S006 | S006-12" | 12/17/07 | 1 | 1.5 | Area 4 | UG/KG | <280 |
| S007 | S007-0" | 12/17/07 | 0 | 0.5 | Area 4 | UG/KG | 97000 |
| S008 | S008-0" | 12/17/07 | 0 | 0.5 | Area 4 | UG/KG | <260 |
| S009 | S009-0" | 12/17/07 | 0 | 0.5 | Area 4 | UG/KG | <250 |
| S009 | S009-12" | 12/17/07 | 1 | 1.5 | Area 4 | UG/KG | 3100 |
| S010 | S010-6'' | 1/19/09 | 0.5 | 1 | Area 4 | UG/KG | <340 |
| S011 | S011-0" | 12/17/07 | 0 | 0.5 | Area 4 | UG/KG | 380000 |
| S011 | S011-12" | 12/17/07 | 1 | 1.5 | Area 4 | UG/KG | 1200000 |
| S012 | S012B-0" | 12/18/07 | 0 | 0.5 | Area 4 | UG/KG | 7000 |
| S013 | S013-0" | 1/4/08 | 0 | 0.5 | Area 4 | UG/KG | 23000 |
| S014 | S014-0" | 12/4/07 | 0 | 0.5 | Area 4 | UG/KG | <240 |
| S015 | S015-0" | 12/4/07 | 0 | 0.5 | Area 4 | UG/KG | <120 |
| S016 | S016B-0" | 1/2/08 | 0 | 0.5 | Area 4 | UG/KG | 40900 |
| S016 | S016B-12" | 1/2/08 | 1 | 1.5 | Area 4 | UG/KG | 220 |
| S017 | S017-0" | 12/4/07 | 0 | 0.5 | Area 4 | UG/KG | <220 |
| S018 | S018-0" | 12/20/07 | 0 | 0.5 | Area 4 | UG/KG | 310000 |
| S019 | S019-0" | 12/18/07 | 0 | 0.5 | Area 4 | UG/KG | <260 |
| S020 | S020-0" | 12/18/07 | 0 | 0.5 | Area 4 | UG/KG | 180000 |
| S020 | S020-12" | 12/18/07 | 1 | 1.5 | Area 4 | UG/KG | 2100000 |
| S021 | S021-6'' | 1/19/09 | 0.5 | 1 | Area 4 | UG/KG | 1500 |
| S022 | S022-0" | 12/17/07 | 0 | 0.5 | Area 4 | UG/KG | <250 |
| S023 | S023-0" | 12/17/07 | 0 | 0.5 | Area 3 | UG/KG | <310 |
| S024 | S024-0" | 12/17/07 | 0 | 0.5 | Area 3 | UG/KG | <240 |
| S025 | S025-0" | 12/18/07 | 0 | 0.5 | Area 3 | UG/KG | 120000 |
| S025 | S025-12" | 12/18/07 | 1 | 1.5 | Area 3 | UG/KG | 2400 |
| S026 | S026-0" | 12/18/07 | 0 | 0.5 | Area 3 | UG/KG | 200000 |
| S026 | S026-12" | 12/18/07 | 1 | 1.5 | Area 3 | UG/KG | 1400000 |
| S027 | S027-0" | 12/20/07 | 0 | 0.5 | Area 3 | UG/KG | 1300000 |
| S028 | S028-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | <330 |
| S029 | S029-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | 850000 |

**Table B6**
**Results of TPHg Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Gasoline Range Organics |
|---|---|---|---|---|---|---|---|
| S029 | S029-18" | 12/4/07 | 1.5 | 2 | Area 3 | UG/KG | 370000 |
| S030 | S030-12" | 12/4/07 | 1 | 1.5 | Area 3 | UG/KG | 160000 |
| S031 | S031-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | <270 |
| S032 | S032-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | <120 |
| S033 | S033-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | <210 |
| S034 | S034-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | <150 |
| S035 | S035-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | <260 |
| S036 | S036-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | <270 |
| S037 | S037-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | 5800000 |
| S037 | S037-20" | 12/4/07 | 1.67 | 2.167 | Area 3 | UG/KG | 3600000 |
| S038 | S038-0" | 12/20/07 | 0 | 0.5 | Area 3 | UG/KG | <250 |
| S039 | S039-0" | 1/2/08 | 0 | 0.5 | Area 3 | UG/KG | 400000 |
| S039 | S039-12" | 1/2/08 | 1 | 1.5 | Area 3 | UG/KG | 160000 |
| S040 | S040-0" | 12/20/07 | 0 | 0.5 | Area 3 | UG/KG | 170000 |
| S040 | S040-12" | 12/20/07 | 1 | 1.5 | Area 3 | UG/KG | 170000 |
| S041 | S041-0" | 1/30/08 | 0 | 0.5 | Area 3 | UG/KG | 7600 |
| S042 | S042-0" | 1/30/08 | 0 | 0.5 | Area 3 | UG/KG | 270000 |
| S042 | S042-12" | 1/30/08 | 1 | 1.5 | Area 3 | UG/KG | 420000 |
| S043 | S043-0" | 1/30/08 | 0 | 0.5 | Area 3 | UG/KG | 430000 |
| S044 | S044-0" | 12/20/07 | 0 | 0.5 | Area 3 | UG/KG | <320 |
| S045 | S045-0" | 12/20/07 | 0 | 0.5 | Area 3 | UG/KG | 220000 |
| S046 | S046-0" | 12/20/07 | 0 | 0.5 | Area 3 | UG/KG | 20000 |
| S047 | S047-6" | 1/20/09 | 0.5 | 1 | Area 3 | UG/KG | 1620000 |
| S048 | S048-0" | 1/7/08 | 0 | 0.5 | Area 3 | UG/KG | 88200 |
| S049 | S049-6" | 1/20/09 | 0.5 | 1 | Area 3 | UG/KG | <290 |
| S050 | S050-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | <160 |
| S051 | S051-0" | 12/20/07 | 0 | 0.5 | Area 3 | UG/KG | 54000 |
| S052 | S052-0" | 12/20/07 | 0 | 0.5 | Area 3 | UG/KG | 120000 |
| S052 | S052-12" | 12/20/07 | 1 | 1.5 | Area 3 | UG/KG | 440000 |
| S053 | S053-0" | 12/20/07 | 0 | 0.5 | Area 3 | UG/KG | 54000 |
| S053 | S053-12" | 12/20/07 | 1 | 1.5 | Area 3 | UG/KG | 63000 |
| S054 | S054-0" | 1/30/08 | 0 | 0.5 | Area 3 | UG/KG | 214100 |
| S055 | S055-0" | 1/30/08 | 0 | 0.5 | Area 3 | UG/KG | 7900 |
| S055 | S055-12" | 1/30/08 | 1 | 1.5 | Area 3 | UG/KG | 2000 |
| S056 | S056-0" | 1/30/08 | 0 | 0.5 | Area 3 | UG/KG | <250 |
| S056 | S056-12" | 1/30/08 | 1 | 1.5 | Area 3 | UG/KG | 25000 |
| S057 | S057-0" | 1/30/08 | 0 | 0.5 | Area 3 | UG/KG | <250 |
| S058 | S058-0" | 2/1/08 | 0 | 0.5 | Area 3 | UG/KG | 23000 |
| S059 | S059-0" | 2/1/08 | 0 | 0.5 | Area 3 | UG/KG | <270 |
| S059 | S059-12" | 2/1/08 | 1 | 1.5 | Area 3 | UG/KG | <250 |
| S060 | S060-0" | 12/13/07 | 0 | 0.5 | Area 3 | UG/KG | 4700 |
| S060 | S060-18" | 12/13/07 | 1.5 | 2 | Area 3 | UG/KG | 744100 |
| S061 | S061-0" | 12/13/07 | 0 | 0.5 | Area 3 | UG/KG | <290 |
| S063 | S063-0" | 12/14/07 | 0 | 0.5 | Area 3 | UG/KG | <290 |
| S064 | S064-0" | 12/14/07 | 0 | 0.5 | Area 3 | UG/KG | <260 |
| S064 | S064-18" | 12/14/07 | 1.5 | 2 | Area 3 | UG/KG | 1600 |
| S065 | S065-0" | 2/1/08 | 0 | 0.5 | Area 3 | UG/KG | <220 |
| S065 | S065-12" | 2/1/08 | 1 | 1.5 | Area 3 | UG/KG | <240 |
| S066 | S066-0" | 12/14/07 | 0 | 0.5 | Area 3 | UG/KG | <280 |
| S067 | S067-0" | 12/14/07 | 0 | 0.5 | Area 3 | UG/KG | <270 |
| S068 | S068-0" | 12/13/07 | 0 | 0.5 | Area 3 | UG/KG | <290 |
| S069 | S069-0" | 12/13/07 | 0 | 0.5 | Area 3 | UG/KG | <260 |
| S070 | S070-0" | 12/13/07 | 0 | 0.5 | Area 3 | UG/KG | <280 |
| S071B | S071B-12" | 12/21/07 | 1 | 1.5 | Area 3 | UG/KG | 17000 |
| S072 | S072-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | <170 |
| S073 | S073-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | <180 |
| S074 | S074-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | <130 |
| S075 | S075-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | <210 |
| S076 | S076-6'' | 1/22/09 | 0.5 | 1 | Area 3 | UG/KG | 36600 |
| S078 | S078-0" | 2/1/08 | 0 | 0.5 | Area 3 | UG/KG | 150000 |
| S078 | S078-12" | 2/1/08 | 1 | 1.5 | Area 3 | UG/KG | 27000 |
| S079 | S079-0" | 2/1/08 | 0 | 0.5 | Area 3 | UG/KG | 1900 |
| S080 | S080-0" | 2/1/08 | 0 | 0.5 | Area 3 | UG/KG | 3800 |
| S081 | S081-0" | 2/1/08 | 0 | 0.5 | Area 3 | UG/KG | <280 |
| S082 | S082-0" | 12/13/07 | 0 | 0.5 | Area 3 | UG/KG | <240 |
| S083 | S083-0" | 12/13/07 | 0 | 0.5 | Area 3 | UG/KG | 3400 |
| S083 | S083-15" | 12/13/07 | 1.25 | 1.75 | Area 3 | UG/KG | 620 |

**Table B6**
**Results of TPHg Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Gasoline Range Organics |
|---|---|---|---|---|---|---|---|
| S084 | S084-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | <350 |
| S085 | S085-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | <270 |
| S086 | S086-6" | 1/20/09 | 0.5 | 1 | Area 3 | UG/KG | 1400 |
| S087 | S087-0" | 12/13/07 | 0 | 0.5 | Area 3 | UG/KG | <230 |
| S088 | S088-0" | 1/2/08 | 0 | 0.5 | Area 3 | UG/KG | 220 |
| S089 | S089-0" | 1/2/08 | 0 | 0.5 | Area 3 | UG/KG | <230 |
| S090 | S090-0" | 12/13/07 | 0 | 0.5 | Area 3 | UG/KG | 8000 |
| S090 | S090-18" | 12/13/07 | 1.5 | 2 | Area 3 | UG/KG | 1400 |
| S091 | S091-0" | 2/1/08 | 0 | 0.5 | Area 3 | UG/KG | 52000 |
| S092 | S092-0" | 12/13/07 | 0 | 0.5 | Area 3 | UG/KG | <290 |
| S093 | S093-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | <190 |
| S094 | S094-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | <230 |
| S095 | S095-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | <270 |
| S096 | S096-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | <180 |
| S097 | S097-6" | 1/20/09 | 0.5 | 1 | Area 3 | UG/KG | <320 |
| S098 | S098-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | <220 |
| S099 | S099-0" | 12/13/07 | 0 | 0.5 | Area 3 | UG/KG | <230 |
| S100 | S100-0" | 12/13/07 | 0 | 0.5 | Area 3 | UG/KG | <290 |
| S101 | S101-0" | 12/13/07 | 0 | 0.5 | Area 3 | UG/KG | <280 |
| S102 | S102-0" | 12/13/07 | 0 | 0.5 | Area 3 | UG/KG | <240 |
| S102 | S102-15" | 12/13/07 | 1.25 | 1.75 | Area 3 | UG/KG | <250 |
| S103 | S103-0" | 1/3/08 | 0 | 0.5 | Area 2 | UG/KG | <220 |
| S103 | S103-12" | 1/3/08 | 1 | 1.5 | Area 2 | UG/KG | <230 |
| S104 | S104-0" | 1/29/08 | 0 | 0.5 | Area 2 | UG/KG | <240 |
| S105 | S105-0" | 1/31/08 | 0 | 0.5 | Area 2 | UG/KG | 550 |
| S106 | S106-6'' | 1/22/09 | 0.5 | 1 | Area 2 | UG/KG | <280 |
| S106 | S106-12'' | 1/22/09 | 1 | 1.5 | Area 2 | UG/KG | <260 |
| S107 | S107-0" | 12/20/07 | 0 | 0.5 | Area 2 | UG/KG | <270 |
| S108 | S108-0" | 12/20/07 | 0 | 0.5 | Area 2 | UG/KG | <210 |
| S109 | S109-0" | 1/31/08 | 0 | 0.5 | Area 2 | UG/KG | 2000000 |
| S109 | S109-12" | 1/31/08 | 1 | 1.5 | Area 2 | UG/KG | 1900000 |
| S110 | S110-6'' | 1/22/09 | 0.5 | 1 | Area 2 | UG/KG | 5400 |
| S111 | S111-0" | 12/21/07 | 0 | 0.5 | Area 2 | UG/KG | 2800000 |
| S111 | S111-12" | 12/21/07 | 1 | 1.5 | Area 2 | UG/KG | 1500000 |
| S112 | S112-6'' | 1/22/09 | 0.5 | 1 | Area 2 | UG/KG | 130000 |
| S113 | S113-0" | 1/31/08 | 0 | 0.5 | Area 2 | UG/KG | 1200000 |
| S113 | S113-12" | 1/31/08 | 1 | 1.5 | Area 2 | UG/KG | 3400000 |
| S114 | S114-0" | 1/29/08 | 0 | 0.5 | Area 2 | UG/KG | <220 |
| S115 | S115-0" | 1/29/08 | 0 | 0.5 | Area 2 | UG/KG | 340 |
| S116 | S116-0" | 1/29/08 | 0 | 0.5 | Area 2 | UG/KG | 1700 |
| S117 | S117-0" | 1/31/08 | 0 | 0.5 | Area 2 | UG/KG | 690 |
| S117 | S117-12" | 2/1/08 | 1 | 1.5 | Area 2 | UG/KG | <230 |
| S118 | S118-6'' | 1/22/09 | 0.5 | 1 | Area 2 | UG/KG | 300 |
| S119 | S119-0" | 1/4/08 | 0 | 0.5 | Area 2 | UG/KG | 3900000 |
| S119 | S119-12" | 1/4/08 | 1 | 1.5 | Area 2 | UG/KG | 4270000 |
| S120 | S120-0" | 1/4/08 | 0 | 0.5 | Area 2 | UG/KG | 39000 |
| S121 | S121-0" | 1/4/08 | 0 | 0.5 | Area 2 | UG/KG | 120000 |
| S121 | S121-12" | 1/4/08 | 1 | 1.5 | Area 2 | UG/KG | 340000 |
| S122 | S122-0" | 1/29/08 | 0 | 0.5 | Area 1 | UG/KG | <960 |
| S123 | S123-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | <160 |
| S124 | S124-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | <190 |
| S125 | S125-0" | 1/29/08 | 0 | 0.5 | Area 1 | UG/KG | <260 |
| S126 | S126-0" | 1/7/08 | 0 | 0.5 | Area 1 | UG/KG | <210 |
| S126 | S126-12" | 1/7/08 | 1 | 1.5 | Area 1 | UG/KG | <390 |
| S127 | S127-0" | 2/1/08 | 0 | 0.5 | Area 3 | UG/KG | <290 |
| S130 | S130-0" | 1/7/08 | 0 | 0.5 | Area 3 | UG/KG | 27000 |
| S130 | S130-12" | 1/7/08 | 1 | 1.5 | Area 3 | UG/KG | 120000 |
| S131 | S131-0" | 1/7/08 | 0 | 0.5 | Area 1 | UG/KG | 9200 |
| S132 | S132-0" | 1/3/08 | 0 | 0.5 | Area 1 | UG/KG | 1800 |
| S133 | S133B-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | 28000 |
| S133 | S133B-12" | 11/29/07 | 1 | 1.5 | Area 1 | UG/KG | <210 |
| S134 | S134-0" | 1/7/08 | 0 | 0.5 | Area 1 | UG/KG | <230 |
| S135 | S135-6'' | 1/19/09 | 0.5 | 1 | Area 1 | UG/KG | <240 |
| S136 | S136-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | 190000 |
| S136 | S136-24" | 11/29/07 | 2 | 2.5 | Area 1 | UG/KG | 45000 |
| S137 | S137-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | <130 |
| S138 | S138-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | 55000 |

**Table B6**
**Results of TPHg Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Gasoline Range Organics |
|---|---|---|---|---|---|---|---|
| S138 | S138-18" | 11/29/07 | 1.5 | 2 | Area 1 | UG/KG | 461000 |
| S139 | S139-12" | 11/29/07 | 1 | 1.5 | Area 1 | UG/KG | 26000 |
| S139 | S139-24" | 11/29/07 | 2 | 2.5 | Area 1 | UG/KG | 280000 |
| S140 | S140-12" | 11/29/07 | 1 | 1.5 | Area 1 | UG/KG | 320 |
| S141 | S141-0" | 1/7/08 | 0 | 0.5 | Area 3 | UG/KG | 19000 |
| S141 | S141-12" | 1/7/08 | 1 | 1.5 | Area 3 | UG/KG | 1900 |
| S142 | S142-0" | 1/7/08 | 0 | 0.5 | Area 3 | UG/KG | 24000 |
| S143 | S143-0" | 1/7/08 | 0 | 0.5 | Area 3 | UG/KG | 150 |
| S144B | S144B-0" | 1/31/08 | 0 | 0.5 | Area 3 | UG/KG | <250 |
| S144B | S144B-12" | 1/31/08 | 1 | 1.5 | Area 3 | UG/KG | <280 |
| S145 | S145-0" | 1/7/08 | 0 | 0.5 | Area 3 | UG/KG | <200 |
| S145 | S145-12" | 1/7/08 | 1 | 1.5 | Area 3 | UG/KG | 55000 |
| S146 | S146-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | 210 |
| S147 | S147-12" | 11/29/07 | 1 | 1.5 | Area 1 | UG/KG | 760 |
| S148 | S148-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | 1300 |
| S149 | S149-12" | 11/29/07 | 1 | 1.5 | Area 1 | UG/KG | <190 |
| S150 | S150-12" | 11/29/07 | 1 | 1.5 | Area 1 | UG/KG | 7900 |
| S151 | S151-12" | 11/29/07 | 1 | 1.5 | Area 1 | UG/KG | <160 |
| S152 | S152-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | <200 |
| S153 | S153-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | <180 |
| S154 | S154-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | <270 |
| S155 | S155B-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | <140 |
| S156 | S156-0" | 1/7/08 | 0 | 0.5 | Area 3 | UG/KG | <560 |
| S157 | S157-0" | 1/2/08 | 0 | 0.5 | Area 3 | UG/KG | <150 |
| S158 | S158-0" | 12/17/07 | 0 | 0.5 | Area 3 | UG/KG | <230 |
| S158 | S158-12" | 12/17/07 | 1 | 1.5 | Area 3 | UG/KG | 200000 |
| S159 | S159-0" | 12/17/07 | 0 | 0.5 | Area 3 | UG/KG | <250 |
| S160 | S160-0" | 1/7/08 | 0 | 0.5 | Area 3 | UG/KG | <150 |
| S161 | S161B-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | <180 |
| S162 | S162-12" | 11/29/07 | 1 | 1.5 | Area 1 | UG/KG | 40800 |
| S162 | S162-24" | 11/29/07 | 2 | 2.5 | Area 1 | UG/KG | <150 |
| S163 | S163-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | 240 |
| S164 | S164-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | 33100 |
| S165 | S165-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | <190 |
| S166 | S166-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | <110 |
| S167 | S167-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | <200 |
| S168 | S168-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | <150 |
| S169 | S169-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | 96000 |
| S170 | S170-0" | 1/7/08 | 0 | 0.5 | Area 3 | UG/KG | <330 |
| S171 | S171-0" | 12/17/07 | 0 | 0.5 | Area 3 | UG/KG | <310 |
| S171 | S171-12" | 12/17/07 | 1 | 1.5 | Area 3 | UG/KG | <570 |
| S172 | S172-0" | 12/17/07 | 0 | 0.5 | Area 3 | UG/KG | 99000 |
| S173 | S173-0" | 12/17/07 | 0 | 0.5 | Area 3 | UG/KG | <260 |
| S174 | S174-0" | 12/14/07 | 0 | 0.5 | Area 3 | UG/KG | <280 |
| S175A | S175A-0" | 1/7/08 | 0 | 0.5 | Area 3 | UG/KG | 54000 |
| S175B | S175B-0" | 1/31/08 | 0 | 0.5 | Area 3 | UG/KG | 15000 |
| S176 | S176-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | <140 |
| S177 | S177-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | <150 |
| S178 | S178-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | <130 |
| S179 | S179-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | <180 |
| S180 | S180-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | 2620 |
| S181 | S181-0" | 1/31/08 | 0 | 0.5 | Area 3 | UG/KG | <270 |
| S182 | S182-0" | 12/14/07 | 0 | 0.5 | Area 3 | UG/KG | <350 |
| S183 | S183-0" | 12/17/07 | 0 | 0.5 | Area 3 | UG/KG | <180 |
| S184 | S184-0" | 12/14/07 | 0 | 0.5 | Area 3 | UG/KG | 170000 |
| S185 | S185-6'' | 1/19/09 | 0.5 | 1 | Area 3 | UG/KG | <280 |
| S186 | S186-0" | 1/31/08 | 0 | 0.5 | Area 3 | UG/KG | <240 |
| S187 | S187-0" | 1/4/08 | 0 | 0.5 | Area 1 | UG/KG | <210 |
| S188 | S188-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | <100 |
| S189 | S189-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | <250 |
| S190 | S190-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | <260 |
| S191 | S191-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | <130 |
| S192 | S192-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | <280 |
| S193 | S193-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | <250 |
| S194 | S194-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | <280 |
| S195 | S195-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | <280 |
| S196 | S196-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | 95000 |

**Table B6**
**Results of TPHg Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Gasoline Range Organics |
|---|---|---|---|---|---|---|---|
| S196 | S196-18" | 11/26/07 | 1.5 | 2 | Area 1 | UG/KG | 580000 |
| S197 | S197-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | <270 |
| S198 | S198-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | <150 |
| S199 | S199-12" | 11/26/07 | 1 | 1.5 | Area 1 | UG/KG | 28600 |
| S199 | S199-24" | 11/26/07 | 2 | 2.5 | Area 1 | UG/KG | 18000 |
| S200 | S200-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | <120 |
| S201 | S201-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | 39000 |
| S201 | S201-18" | 11/26/07 | 1.5 | 2 | Area 1 | UG/KG | 56000 |
| S202 | S202-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | <230 |
| S203 | S203-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | <170 |
| S204 | S204-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | <220 |
| S205 | S205-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | <210 |
| S206 | S206-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | <150 |
| S207 | S207-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | <140 |
| S208 | S208-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | 30000 |
| S209 | S209-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | <130 |
| S210 | S210-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | <120 |
| S211 | S211-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | <130 |
| S212 | S212-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | <240 |
| S213 | S213-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | 14000 |
| S214 | S214-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | <130 |
| S215 | S215-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | 213300 |
| S216 | S216-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | <210 |
| S217 | S217-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | <160 |
| S218 | S218-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | <240 |
| S219 | S219-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | <180 |
| S220 | S220-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | <160 |
| S221 | S221-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | <160 |
| S222 | S222-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | <160 |
| S223 | S223-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | <140 |
| S224 | S224-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | 7600 |
| S225 | S225-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | 2400 |
| S226 | S226-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | <190 |
| S227 | S227-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | <210 |
| S228 | S228-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | <190 |
| S229 | S229-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | 210 |
| S230 | S230-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | <220 |
| S230 | S230-12" | 11/28/07 | 1 | 1.5 | Area 1 | UG/KG | <160 |
| S231 | S231-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | <140 |
| S232 | S232-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | <150 |
| S233 | S233-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | <230 |
| S234 | S234-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | <180 |
| S235 | S235-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | <160 |
| S236 | S236-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | 360 |
| S237 | S237-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | <240 |
| S238 | S238-0" | 1/28/08 | 0 | 0.5 | Area 2 | UG/KG | <280 |
| S239 | S239-0" | 1/28/08 | 0 | 0.5 | Area 2 | UG/KG | <580 |
| S239 | S239-12" | 1/30/08 | 1 | 1.5 | Area 2 | UG/KG | <320 |
| S240 | S240-6" | 1/20/09 | 0.5 | 1 | Area 2 | UG/KG | <330 |
| S241 | S241-6" | 1/20/09 | 0.5 | 1 | Area 2 | UG/KG | <300 |
| S242 | S242-0" | 1/29/08 | 0 | 0.5 | Area 2 | UG/KG | <260 |
| S243 | S243-0" | 1/29/08 | 0 | 0.5 | Area 2 | UG/KG | <260 |
| S244 | S244-0" | 1/28/08 | 0 | 0.5 | Area 2 | UG/KG | <270 |
| S245 | S245-0" | 1/28/08 | 0 | 0.5 | Area 2 | UG/KG | <290 |
| S246 | S246-0" | 1/29/08 | 0 | 0.5 | Area 2 | UG/KG | <250 |
| S247 | S247-0" | 1/29/08 | 0 | 0.5 | Area 2 | UG/KG | <250 |
| S248 | S248-0" | 1/28/08 | 0 | 0.5 | Area 2 | UG/KG | <250 |
| S249 | S249-0" | 1/28/08 | 0 | 0.5 | Area 2 | UG/KG | <270 |
| S250 | S250-0" | 1/28/08 | 0 | 0.5 | Area 2 | UG/KG | <250 |
| S250 | S250-12" | 1/30/08 | 1 | 1.5 | Area 2 | UG/KG | 1500 |
| S251 | S251-0" | 1/28/08 | 0 | 0.5 | Area 2 | UG/KG | <360 |
| S251 | S251-6" | 1/20/09 | 0.5 | 1 | Area 2 | UG/KG | <260 |
| S252 | S252-0" | 1/29/08 | 0 | 0.5 | Area 2 | UG/KG | 300 |
| S253 | S253-0" | 1/29/08 | 0 | 0.5 | Area 2 | UG/KG | 15400 |
| S254 | S254-0" | 1/29/08 | 0 | 0.5 | Area 2 | UG/KG | <250 |
| S254 | S254-12" | 1/30/08 | 1 | 1.5 | Area 2 | UG/KG | <220 |
| S255 | S255-0" | 1/29/08 | 0 | 0.5 | Area 2 | UG/KG | <230 |

**Table B6**
**Results of TPHg Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Gasoline Range Organics |
|---|---|---|---|---|---|---|---|
| S256 | S256-0" | 1/31/08 | 0 | 0.5 | Area 2 | UG/KG | <240 |
| S257 | S257-0" | 1/3/08 | 0 | 0.5 | Area 2 | UG/KG | <200 |
| S258 | S258-0" | 1/3/08 | 0 | 0.5 | Area 2 | UG/KG | <190 |
| S259 | S259-0" | 1/31/08 | 0 | 0.5 | Area 2 | UG/KG | <290 |
| S260 | S260-0" | 1/3/08 | 0 | 0.5 | Area 2 | UG/KG | <250 |
| S261 | S261-0" | 12/21/07 | 0 | 0.5 | Area 3 | UG/KG | <250 |
| S262 | S262-0" | 12/13/07 | 0 | 0.5 | Area 3 | UG/KG | <250 |
| S263 | S263-0" | 2/1/08 | 0 | 0.5 | Area 3 | UG/KG | <250 |
| S264 | S264-0" | 1/3/08 | 0 | 0.5 | Area 3 | UG/KG | <250 |
| S264 | S264-12" | 1/3/08 | 1 | 1.5 | Area 3 | UG/KG | 62000 |
| S265 | S265-6" | 1/20/09 | 0.5 | 1 | Area 3 | UG/KG | <360 |
| S266 | S266-0" | 12/14/07 | 0 | 0.5 | Area 3 | UG/KG | <240 |
| S267 | S267-0" | 1/4/08 | 0 | 0.5 | Area 3 | UG/KG | 150000 |
| S268 | S268-0" | 1/2/08 | 0 | 0.5 | Area 3 | UG/KG | 29000 |
| S268 | S268-12" | 1/2/08 | 1 | 1.5 | Area 3 | UG/KG | 320000 |
| S269 | S269-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | <170 |
| S270 | S270-0" | 12/17/07 | 0 | 0.5 | Area 4 | UG/KG | <340 |
| S271 | S271-0" | 1/4/08 | 0 | 0.5 | Area 1 | UG/KG | <210 |
| S272 | S272-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | <95 |
| S273 | S273-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | <220 |
| S274 | S274-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | 76000 |
| S274 | S274-12" | 11/29/07 | 1 | 1.5 | Area 1 | UG/KG | 610 |
| S275 | S275-0" | 11/29/07 | 0 | 0.5 | Area 3 | UG/KG | 24000 |
| S275 | S275-12" | 11/29/07 | 1 | 1.5 | Area 3 | UG/KG | 33000 |
| S276 | S276-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | <270 |
| S277 | S277-0" | 1/31/08 | 0 | 0.5 | Area 2 | UG/KG | <280 |
| S278 | S278-0" | 1/31/08 | 0 | 0.5 | Area 2 | UG/KG | <230 |
| S279 | S279-0" | 12/20/07 | 0 | 0.5 | Area 2 | UG/KG | <250 |
| S279 | S279-12" | 12/20/07 | 1 | 1.5 | Area 2 | UG/KG | <250 |
| S280 | S280-0" | 1/3/08 | 0 | 0.5 | Area 2 | UG/KG | 710 |
| S281 | S281-0" | 2/1/08 | 0 | 0.5 | Area 2 | UG/KG | <250 |
| S282 | S282-6" | 1/20/09 | 0.5 | 1 | Area 2 | UG/KG | <360 |
| S282 | S282-12" | 1/20/09 | 1 | 1.5 | Area 2 | UG/KG | <370 |
| S283 | S283-0" | 1/29/08 | 0 | 0.5 | Area 2 | UG/KG | <270 |
| S284 | S284-0" | 1/29/08 | 0 | 0.5 | Area 2 | UG/KG | <240 |
| S284 | S284-12" | 1/30/08 | 1 | 1.5 | Area 2 | UG/KG | <140 |
| S285 | S285-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | <180 |
| S286 | S286-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | <590 |
| S287 | S287-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | 86000 |
| S287 | S287-12" | 11/26/07 | 1 | 1.5 | Area 1 | UG/KG | 27000 |
| S288 | S288-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | <310 |
| S289 | S289-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | <110 |
| S290 | S290-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | <110 |
| S291 | S291-0" | 1/7/08 | 0 | 0.5 | Area 4 | UG/KG | <210 |
| S292 | S292-6" | 1/19/09 | 0.5 | 1 | Area 1 | UG/KG | <320 |
| S293 | S293-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | 69200 |
| S293 | S293-24" | 11/26/07 | 2 | 2.5 | Area 1 | UG/KG | 400 |
| S294 | S294-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | <140 |
| S295 | S295-6" | 11/26/07 | 0.5 | 1 | Area 1 | UG/KG | 56000 |
| S296 | S296-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | <150 |
| S296 | S296-18" | 11/28/07 | 1.5 | 2 | Area 1 | UG/KG | 4700 |
| S297 | S297-6" | 1/20/09 | 0.5 | 1 | Area 3 | UG/KG | <290 |
| S297 | S297-12" | 1/20/09 | 1 | 1.5 | Area 3 | UG/KG | <300 |
| S298 | S298-0 | 12/4/07 | 0 | 0.5 | Area 4 | UG/KG | 110000 |
| VE1 | LL_VE1_10_052611_01 | 5/26/11 | 9.5 | 10 | Area 3 | UG/KG | 1200 |

**Notes**
UG/KG micrograms per kilogram

**Table B7**
**Results of TPHd Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Diesel Range Organics |
|---|---|---|---|---|---|---|---|
| B001 | B001-2 | 12/5/05 | 2 | 3 | Area 1 | UG/KG | <37500 |
| B001 | B001-5 | 12/5/05 | 5 | 6 | Area 1 | UG/KG | 3750 |
| B001 | B001-10 | 12/5/05 | 10 | 11 | Area 1 | UG/KG | 5375 |
| B002 | B002-2 | 12/5/05 | 2 | 3 | Area 1 | UG/KG | 5000 |
| B002 | B002-5 | 12/5/05 | 5 | 6 | Area 1 | UG/KG | <37500 |
| B002 | B002-10 | 12/5/05 | 10 | 11 | Area 1 | UG/KG | <3750 |
| B003 | B003-2 | 12/7/05 | 2 | 3 | Area 1 | UG/KG | <3750 |
| B003 | B003-5 | 12/7/05 | 5 | 6 | Area 1 | UG/KG | 366250 |
| B004 | B004-2 | 12/8/05 | 2 | 3 | Area 1 | UG/KG | <18750 |
| B004 | B004-5 | 12/8/05 | 5 | 6 | Area 1 | UG/KG | <3750 |
| B004 | B004-10 | 12/8/05 | 10 | 11 | Area 1 | UG/KG | <3750 |
| B005 | B005-2 | 12/8/05 | 2 | 3 | Area 1 | UG/KG | 4625 |
| B005 | B005-5 | 12/8/05 | 5 | 6 | Area 1 | UG/KG | <3750 |
| B005 | B005-10 | 12/8/05 | 10 | 11 | Area 1 | UG/KG | <3750 |
| B006 | B006-2 | 12/12/05 | 2 | 3 | Area 1 | UG/KG | <3750 |
| B006 | B006-5 | 12/12/05 | 5 | 6 | Area 1 | UG/KG | <3750 |
| B006 | B006-10 | 12/12/05 | 10 | 11 | Area 1 | UG/KG | <3750 |
| B007 | B007-2 | 12/12/05 | 2 | 3 | Area 1 | UG/KG | <3750 |
| B007 | B007-5 | 12/12/05 | 5 | 6 | Area 1 | UG/KG | <3750 |
| B007 | B007-10 | 12/12/05 | 10 | 11 | Area 1 | UG/KG | <3750 |
| B008 | B008-2 | 12/8/05 | 2 | 3 | Area 1 | UG/KG | <3750 |
| B008 | B008-5 | 12/8/05 | 5 | 6 | Area 1 | UG/KG | <3750 |
| B008 | B008-10 | 12/8/05 | 10 | 11 | Area 1 | UG/KG | <3750 |
| B009 | B009-2 | 12/9/05 | 2 | 3 | Area 1 | UG/KG | <3750 |
| B009 | B009-5 | 12/9/05 | 5 | 6 | Area 1 | UG/KG | <3750 |
| B009 | B009-10 | 12/9/05 | 10 | 11 | Area 1 | UG/KG | <3750 |
| B010 | B010-2 | 12/9/05 | 2 | 3 | Area 4 | UG/KG | <3750 |
| B010 | B010-5 | 12/9/05 | 5 | 6 | Area 4 | UG/KG | <3750 |
| B010 | B010-10 | 12/9/05 | 10 | 11 | Area 4 | UG/KG | <3750 |
| B011 | B011-2 | 1/9/06 | 2 | 3 | Area 1 | UG/KG | <37500 |
| B011 | B011-5 | 1/9/06 | 5 | 6 | Area 1 | UG/KG | <3750 |
| B011 | B011-10 | 1/9/06 | 10 | 11 | Area 1 | UG/KG | <3750 |
| B012 | B012-2 | 1/6/06 | 2 | 3 | Area 1 | UG/KG | <3750 |
| B012 | B012-5 | 1/6/06 | 5 | 6 | Area 1 | UG/KG | <3750 |
| B012 | B012-10 | 1/6/06 | 10 | 11 | Area 1 | UG/KG | <3750 |
| B013 | B013-2 | 12/15/05 | 2 | 3 | Area 1 | UG/KG | <75000 |
| B013 | B013-5 | 12/15/05 | 5 | 6 | Area 1 | UG/KG | <75000 |
| B013 | B013-10 | 12/15/05 | 10 | 11 | Area 1 | UG/KG | <3750 |
| B014 | B014-2 | 12/13/05 | 2 | 3 | Area 1 | UG/KG | <37500 |
| B014 | B014-5 | 12/13/05 | 5 | 6 | Area 1 | UG/KG | <3750 |
| B014 | B014-10 | 12/13/05 | 10 | 11 | Area 1 | UG/KG | <3750 |
| B015 | B015-2 | 12/12/05 | 2 | 3 | Area 1 | UG/KG | <3750 |
| B015 | B015-5 | 12/12/05 | 5 | 6 | Area 1 | UG/KG | <3750 |
| B015 | B015-10 | 12/12/05 | 10 | 11 | Area 1 | UG/KG | 7500 |
| B016 | B016-2 | 12/13/05 | 2 | 3 | Area 1 | UG/KG | <3750 |
| B016 | B016-5 | 12/13/05 | 5 | 6 | Area 1 | UG/KG | <3750 |
| B016 | B016-10 | 12/13/05 | 10 | 11 | Area 1 | UG/KG | <3750 |
| B017 | B017-2 | 12/29/05 | 2 | 3 | Area 1 | UG/KG | <3750 |
| B017 | B017-5 | 12/29/05 | 5 | 6 | Area 1 | UG/KG | <3750 |
| B017 | B017-10 | 12/29/05 | 10 | 11 | Area 1 | UG/KG | <3750 |
| B018 | B018-2 | 12/29/05 | 2 | 3 | Area 1 | UG/KG | <3750 |
| B018 | B018-5 | 12/29/05 | 5 | 6 | Area 1 | UG/KG | <3750 |
| B018 | B018-10 | 12/29/05 | 10 | 11 | Area 1 | UG/KG | <3750 |
| B019 | B019-2 | 12/28/05 | 2 | 3 | Area 1 | UG/KG | <3750 |
| B019 | B019-5 | 12/28/05 | 5 | 6 | Area 1 | UG/KG | <3750 |
| B019 | B019-10 | 12/28/05 | 10 | 11 | Area 1 | UG/KG | <3750 |
| B020 | B020-2 | 12/12/05 | 2 | 3 | Area 1 | UG/KG | <37500 |
| B020 | B020-5 | 12/12/05 | 5 | 6 | Area 1 | UG/KG | <3750 |
| B020 | B020-10 | 12/12/05 | 10 | 11 | Area 1 | UG/KG | 401250 |
| B021 | B021-2 | 12/28/05 | 2 | 3 | Area 4 | UG/KG | <3750 |
| B021 | B021-5 | 12/28/05 | 5 | 6 | Area 4 | UG/KG | <3750 |
| B021 | B021-10 | 12/28/05 | 10 | 11 | Area 4 | UG/KG | 346250 |
| B022 | B022-2 | 12/28/05 | 2 | 3 | Area 3 | UG/KG | 1512500 |
| B022 | B022-5 | 12/28/05 | 5 | 6 | Area 3 | UG/KG | 643750 |
| B022 | B022-10 | 12/28/05 | 10 | 11 | Area 3 | UG/KG | 106250 |
| B023 | B023-2 | 12/28/05 | 2 | 3 | Area 1 | UG/KG | 2537500 |
| B023 | B023-5 | 12/28/05 | 5 | 6 | Area 1 | UG/KG | 2225000 |

**Table B7**
**Results of TPHd Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Diesel Range Organics |
|---|---|---|---|---|---|---|---|
| B023 | B023-10 | 12/28/05 | 10 | 11 | Area 1 | UG/KG | 3700000 |
| B024 | B024-2 | 12/16/05 | 2 | 2.5 | Area 1 | UG/KG | 52500 |
| B024 | B024-5 | 12/16/05 | 5 | 6 | Area 1 | UG/KG | 30000 |
| B024 | B024-10 | 12/16/05 | 10 | 11 | Area 1 | UG/KG | 4000 |
| B025 | B025-2 | 12/15/05 | 2 | 3 | Area 1 | UG/KG | <3750 |
| B025 | B025-5 | 12/15/05 | 5 | 6 | Area 1 | UG/KG | <3750 |
| B025 | B025-10 | 12/15/05 | 10 | 11 | Area 1 | UG/KG | <3750 |
| B026 | B026-2 | 12/15/05 | 2 | 3 | Area 1 | UG/KG | <75000 |
| B026 | B026-5 | 12/15/05 | 5 | 6 | Area 1 | UG/KG | 18750 |
| B026 | B026-10 | 12/15/05 | 10 | 11 | Area 1 | UG/KG | <3750 |
| B027 | B027-2 | 12/14/05 | 2 | 3 | Area 1 | UG/KG | 1220000 |
| B027 | B027-5 | 12/15/05 | 5 | 6 | Area 1 | UG/KG | 395000 |
| B027 | B027-10 | 12/15/05 | 10 | 11 | Area 1 | UG/KG | 1525000 |
| B028 | B028-2 | 12/13/05 | 2 | 3 | Area 1 | UG/KG | <37500 |
| B028 | B028-5 | 12/13/05 | 5 | 6 | Area 1 | UG/KG | <3750 |
| B028 | B028-10 | 12/13/05 | 10 | 11 | Area 1 | UG/KG | <3750 |
| B029 | B029-2 | 12/14/05 | 2 | 3 | Area 1 | UG/KG | 287500 |
| B029 | B029-5 | 12/14/05 | 5 | 6 | Area 1 | UG/KG | <75000 |
| B029 | B029-10 | 12/14/05 | 10 | 11 | Area 1 | UG/KG | <75000 |
| B030 | B030-2 | 12/14/05 | 2 | 3 | Area 1 | UG/KG | <75000 |
| B030 | B030-5 | 12/14/05 | 5 | 6 | Area 1 | UG/KG | <3750 |
| B030 | B030-10 | 12/14/05 | 10 | 11 | Area 1 | UG/KG | <3750 |
| B031 | B031-2 | 1/6/06 | 2 | 3 | Area 1 | UG/KG | <37500 |
| B031 | B031-5 | 1/6/06 | 5 | 6 | Area 1 | UG/KG | <3750 |
| B031 | B031-10 | 1/6/06 | 10 | 11 | Area 1 | UG/KG | <3750 |
| B032 | B032-2 | 1/6/06 | 2 | 3 | Area 1 | UG/KG | <37500 |
| B032 | B032-5 | 1/6/06 | 5 | 6 | Area 1 | UG/KG | 392500 |
| B032 | B032-10 | 1/6/06 | 10 | 11 | Area 1 | UG/KG | 501250 |
| B033 | B033-2 | 12/29/05 | 2 | 3 | Area 1 | UG/KG | 12500 |
| B033 | B033-5 | 12/29/05 | 5 | 6 | Area 1 | UG/KG | <3750 |
| B033 | B033-10 | 12/29/05 | 10 | 11 | Area 1 | UG/KG | 5375 |
| B034 | B034-2 | 12/14/05 | 2 | 3 | Area 1 | UG/KG | <3750 |
| B034 | B034-5 | 12/14/05 | 5 | 6 | Area 1 | UG/KG | <3750 |
| B034 | B034-10 | 12/14/05 | 10 | 11 | Area 1 | UG/KG | <3750 |
| B035 | B035-2 | 12/14/05 | 2 | 3 | Area 1 | UG/KG | <187500 |
| B035 | B035-5 | 12/14/05 | 5 | 6 | Area 1 | UG/KG | <3750 |
| B035 | B035-10 | 12/14/05 | 10 | 11 | Area 1 | UG/KG | <3750 |
| B036 | B036-2 | 12/14/05 | 2 | 3 | Area 1 | UG/KG | 5000 |
| B036 | B036-5 | 12/14/05 | 5 | 6 | Area 1 | UG/KG | <3750 |
| B036 | B036-10 | 12/14/05 | 10 | 11 | Area 1 | UG/KG | <3750 |
| B037 | B037-2 | 12/19/05 | 2 | 3 | Area 1 | UG/KG | <3750 |
| B037 | B037-5 | 12/19/05 | 5 | 6 | Area 1 | UG/KG | <3750 |
| B037 | B037-10 | 12/19/05 | 10 | 11 | Area 1 | UG/KG | 3750 |
| B038 | B038-2 | 12/19/05 | 2 | 3 | Area 1 | UG/KG | 1962500 |
| B038 | B038-5 | 12/19/05 | 5 | 6 | Area 1 | UG/KG | 31250 |
| B038 | B038-10 | 12/19/05 | 10 | 11 | Area 1 | UG/KG | 5000 |
| B039 | B039-2 | 12/16/05 | 2 | 3 | Area 1 | UG/KG | <3750 |
| B039 | B039-5 | 12/16/05 | 5 | 6 | Area 1 | UG/KG | <3750 |
| B039 | B039-10 | 12/16/05 | 10 | 11 | Area 1 | UG/KG | <3750 |
| B040 | B040-2 | 12/19/05 | 2 | 3 | Area 1 | UG/KG | 213750 |
| B040 | B040-5 | 12/19/05 | 5 | 6 | Area 1 | UG/KG | <75000 |
| B040 | B040-10 | 12/19/05 | 10 | 11 | Area 1 | UG/KG | 7125 |
| B041 | B041-2 | 12/28/05 | 2 | 3 | Area 3 | UG/KG | <3750 |
| B041 | B041-5 | 12/28/05 | 5 | 6 | Area 3 | UG/KG | 7500 |
| B041 | B041-10 | 12/28/05 | 10 | 11 | Area 3 | UG/KG | <3750 |
| B042 | B042-2 | 12/20/05 | 2 | 3 | Area 3 | UG/KG | 2450000 |
| B042 | B042-5 | 12/20/05 | 5 | 6 | Area 3 | UG/KG | 552500 |
| B042 | B042-10 | 12/20/05 | 10 | 11 | Area 3 | UG/KG | 4500 |
| B043 | B043-2 | 12/16/05 | 2 | 3 | Area 1 | UG/KG | 1110000 |
| B043 | B043-5 | 12/16/05 | 5 | 6 | Area 1 | UG/KG | 2562500 |
| B043 | B043-10 | 12/16/05 | 10 | 11 | Area 1 | UG/KG | 1387500 |
| B044 | B044-2 | 12/16/05 | 2 | 3 | Area 1 | UG/KG | <3750 |
| B044 | B044-5 | 12/16/05 | 5 | 6 | Area 1 | UG/KG | <3750 |
| B044 | B044-10 | 12/16/05 | 10 | 11 | Area 1 | UG/KG | <3750 |
| B045 | B045-2 | 12/15/05 | 2 | 3 | Area 1 | UG/KG | 7637500 |
| B045 | B045-5 | 12/15/05 | 5 | 6 | Area 1 | UG/KG | 578750 |
| B045 | B045-10 | 12/15/05 | 10 | 11 | Area 1 | UG/KG | 813750 |

**Table B7**
**Results of TPHd Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Diesel Range Organics |
|---|---|---|---|---|---|---|---|
| B046 | B046-2 | 12/15/05 | 2 | 3 | Area 1 | UG/KG | 1687500 |
| B046 | B046-5 | 12/15/05 | 5 | 6 | Area 1 | UG/KG | 8375 |
| B046 | B046-10 | 12/15/05 | 10 | 11 | Area 1 | UG/KG | <3750 |
| B047 | B047-2 | 12/15/05 | 2 | 3 | Area 1 | UG/KG | <3750 |
| B047 | B047-5 | 12/15/05 | 5 | 6 | Area 1 | UG/KG | <3750 |
| B047 | B047-10 | 12/15/05 | 10 | 11 | Area 1 | UG/KG | <3750 |
| B048 | B048-2 | 12/20/05 | 2 | 3 | Area 1 | UG/KG | 87500 |
| B048 | B048-5 | 12/20/05 | 5 | 6 | Area 1 | UG/KG | 117500 |
| B048 | B048-10 | 12/20/05 | 10 | 11 | Area 1 | UG/KG | 1700000 |
| B049 | B049-2 | 12/14/05 | 2 | 3 | Area 1 | UG/KG | <3750 |
| B049 | B049-5 | 12/14/05 | 5 | 6 | Area 1 | UG/KG | <3750 |
| B049 | B049-10 | 12/14/05 | 10 | 11 | Area 1 | UG/KG | <3750 |
| B050 | B050-2 | 12/13/05 | 2 | 3 | Area 1 | UG/KG | <75000 |
| B050 | B050-5 | 12/13/05 | 5 | 6 | Area 1 | UG/KG | <3750 |
| B050 | B050-10 | 12/12/05 | 10 | 11 | Area 1 | UG/KG | 186250 |
| B051 | B051-2 | 12/13/05 | 2 | 3 | Area 1 | UG/KG | <3750 |
| B051 | B051-5 | 12/13/05 | 5 | 6 | Area 1 | UG/KG | <3750 |
| B051 | B051-10 | 12/13/05 | 10 | 11 | Area 1 | UG/KG | 11500 |
| B052 | B052-2 | 12/29/05 | 2 | 3 | Area 1 | UG/KG | <187500 |
| B052 | B052-5 | 12/29/05 | 5 | 6 | Area 1 | UG/KG | <37500 |
| B052 | B052-10 | 12/29/05 | 10 | 11 | Area 1 | UG/KG | <187500 |
| B053 | B053-2 | 12/28/05 | 2 | 3 | Area 1 | UG/KG | <3750 |
| B053 | B053-5 | 12/28/05 | 5 | 6 | Area 1 | UG/KG | <18750 |
| B053 | B053-10 | 12/28/05 | 10 | 11 | Area 1 | UG/KG | 206250 |
| B054 | B054-2 | 12/13/05 | 2 | 3 | Area 1 | UG/KG | <75000 |
| B054 | B054-5 | 12/13/05 | 5 | 6 | Area 1 | UG/KG | <75000 |
| B054 | B054-10 | 12/13/05 | 10 | 11 | Area 1 | UG/KG | <3750 |
| B055 | B055-2 | 12/21/05 | 2 | 3 | Area 1 | UG/KG | 1575000 |
| B055 | B055-5 | 12/21/05 | 5 | 6 | Area 1 | UG/KG | 1537500 |
| B055 | B055-10 | 12/21/05 | 10 | 11 | Area 1 | UG/KG | 7337500 |
| B056 | B056-2 | 12/14/05 | 2 | 3 | Area 1 | UG/KG | 32500 |
| B056 | B056-5 | 12/14/05 | 5 | 6 | Area 1 | UG/KG | 125000 |
| B056 | B056-10 | 12/14/05 | 10 | 11 | Area 1 | UG/KG | <3750 |
| B057 | B057-2 | 12/13/05 | 2 | 3 | Area 1 | UG/KG | <75000 |
| B057 | B057-5 | 12/13/05 | 5 | 6 | Area 1 | UG/KG | <75000 |
| B057 | B057-10 | 12/13/05 | 10 | 11 | Area 1 | UG/KG | <3750 |
| B058 | B058-2 | 12/20/05 | 2 | 3 | Area 1 | UG/KG | 6562500 |
| B058 | B058-5 | 12/20/05 | 5 | 6 | Area 1 | UG/KG | 2425000 |
| B058 | B058-10 | 12/20/05 | 10 | 11 | Area 1 | UG/KG | 5012500 |
| B059 | B059-2 | 12/20/05 | 2 | 3 | Area 1 | UG/KG | <3750 |
| B059 | B059-5 | 12/20/05 | 5 | 6 | Area 1 | UG/KG | <3750 |
| B059 | B059-10 | 12/20/05 | 10 | 11 | Area 1 | UG/KG | <3750 |
| B060 | B060-2 | 12/20/05 | 2 | 3 | Area 1 | UG/KG | 26250 |
| B060 | B060-5 | 12/20/05 | 5 | 6 | Area 1 | UG/KG | 728750 |
| B060 | B060-10 | 12/20/05 | 10 | 11 | Area 1 | UG/KG | 1287500 |
| B061 | B061-2 | 12/20/05 | 2 | 3 | Area 1 | UG/KG | <3750 |
| B061 | B061-5 | 12/20/05 | 5 | 6 | Area 1 | UG/KG | <3750 |
| B061 | B061-10 | 12/20/05 | 10 | 11 | Area 1 | UG/KG | <3750 |
| B062 | B062-2 | 12/21/05 | 2 | 3 | Area 1 | UG/KG | 60000 |
| B062 | B062-5 | 12/21/05 | 5 | 6 | Area 1 | UG/KG | 96250 |
| B062 | B062-10 | 12/21/05 | 10 | 11 | Area 1 | UG/KG | <3750 |
| B063 | B063-2 | 1/9/06 | 2 | 3 | Area 3 | UG/KG | 53750 |
| B063 | B063-5 | 1/9/06 | 5 | 6 | Area 3 | UG/KG | 22500 |
| B063 | B063-10 | 1/9/06 | 10 | 11 | Area 3 | UG/KG | 1113750 |
| B064 | B064-2 | 12/23/05 | 2 | 3 | Area 1 | UG/KG | <75000 |
| B064 | B064-5 | 12/23/05 | 5 | 6 | Area 1 | UG/KG | <3750 |
| B064 | B064-10 | 12/23/05 | 10 | 11 | Area 1 | UG/KG | <3750 |
| B065 | B065-2 | 1/12/06 | 2 | 3 | Area 1 | UG/KG | 4000 |
| B065 | B065-5 | 1/12/06 | 5 | 6 | Area 1 | UG/KG | <3750 |
| B065 | B065-10 | 1/12/06 | 10 | 11 | Area 1 | UG/KG | <3750 |
| B066 | B066-2 | 1/12/06 | 2 | 3 | Area 1 | UG/KG | <3750 |
| B066 | B066-5 | 1/12/06 | 5 | 6 | Area 1 | UG/KG | <3750 |
| B066 | B066-10 | 1/12/06 | 10 | 11 | Area 1 | UG/KG | <3750 |
| B067 | B067-2 | 12/21/05 | 2 | 3 | Area 1 | UG/KG | 3300000 |
| B067 | B067-5 | 12/21/05 | 5 | 6 | Area 1 | UG/KG | 2850000 |
| B067 | B067-10 | 12/21/05 | 10 | 11 | Area 1 | UG/KG | 42500 |
| B068 | B068-2 | 12/21/05 | 2 | 3 | Area 1 | UG/KG | <37500 |

**Table B7**
**Results of TPHd Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Diesel Range Organics |
|---|---|---|---|---|---|---|---|
| B068 | B068-5 | 12/21/05 | 5 | 6 | Area 1 | UG/KG | 6187500 |
| B068 | B068-10 | 12/21/05 | 10 | 11 | Area 1 | UG/KG | 2962500 |
| B069 | B069-2 | 12/22/05 | 2 | 3 | Area 1 | UG/KG | <3750 |
| B069 | B069-5 | 12/22/05 | 5 | 6 | Area 1 | UG/KG | <3750 |
| B069 | B069-10 | 12/22/05 | 10 | 11 | Area 1 | UG/KG | <3750 |
| B070 | B070-2 | 12/22/05 | 2 | 3 | Area 1 | UG/KG | <187500 |
| B070 | B070-5 | 12/22/05 | 5 | 6 | Area 1 | UG/KG | 8250 |
| B070 | B070-10 | 12/22/05 | 10 | 11 | Area 1 | UG/KG | 993750 |
| B071 | B071-2 | 12/21/05 | 2 | 3 | Area 1 | UG/KG | <3750 |
| B071 | B071-5 | 12/21/05 | 5 | 6 | Area 1 | UG/KG | <3750 |
| B071 | B071-10 | 12/21/05 | 10 | 11 | Area 1 | UG/KG | 4500 |
| B072 | B072-2 | 12/21/05 | 2 | 3 | Area 1 | UG/KG | <187500 |
| B072 | B072-5 | 12/21/05 | 5 | 6 | Area 1 | UG/KG | <3750 |
| B072 | B072-10 | 12/21/05 | 10 | 11 | Area 1 | UG/KG | <3750 |
| B073 | B073-2 | 1/30/06 | 2 | 3 | Area 3 | UG/KG | <3750 |
| B073 | B073-5 | 1/30/06 | 5 | 6 | Area 3 | UG/KG | <3750 |
| B073 | B073-10 | 1/30/06 | 10 | 11 | Area 3 | UG/KG | <3750 |
| B074 | B074-2 | 1/11/06 | 2 | 3 | Area 2 | UG/KG | <3750 |
| B074 | B074-5 | 1/11/06 | 5 | 6 | Area 2 | UG/KG | <3750 |
| B074 | B074-10 | 1/11/06 | 10 | 11 | Area 2 | UG/KG | 212500 |
| B075 | B075-2 | 1/11/06 | 2 | 3 | Area 1 | UG/KG | <3750 |
| B075 | B075-5 | 1/11/06 | 5 | 6 | Area 1 | UG/KG | <3750 |
| B075 | B075-10 | 1/11/06 | 10 | 11 | Area 1 | UG/KG | <3750 |
| B076 | B076-2 | 12/22/05 | 2 | 3 | Area 2 | UG/KG | 290000 |
| B076 | B076-5 | 12/22/05 | 5 | 6 | Area 2 | UG/KG | 562500 |
| B076 | B076-10 | 12/22/05 | 10 | 11 | Area 2 | UG/KG | 10812500 |
| B077 | B077-2 | 12/23/05 | 2 | 3 | Area 2 | UG/KG | <3750 |
| B077 | B077-5 | 12/23/05 | 5 | 6 | Area 2 | UG/KG | <3750 |
| B077 | B077-10 | 12/23/05 | 10 | 11 | Area 2 | UG/KG | 5000 |
| B078 | B078-2 | 12/23/05 | 2 | 3 | Area 2 | UG/KG | <18750 |
| B078 | B078-5 | 12/23/05 | 5 | 6 | Area 2 | UG/KG | <75000 |
| B078 | B078-10 | 12/23/05 | 10 | 11 | Area 2 | UG/KG | <3750 |
| B079 | B079-2 | 12/23/05 | 2 | 3 | Area 2 | UG/KG | <75000 |
| B079 | B079-5 | 12/23/05 | 5 | 6 | Area 2 | UG/KG | 180000 |
| B079 | B079-10 | 12/23/05 | 10 | 11 | Area 2 | UG/KG | <3750 |
| B080 | B080-2 | 12/22/05 | 2 | 3 | Area 1 | UG/KG | <187500 |
| B080 | B080-5 | 12/22/05 | 5 | 6 | Area 1 | UG/KG | <187500 |
| B080 | B080-10 | 12/22/05 | 10 | 11 | Area 1 | UG/KG | 95000 |
| B081 | B081-2 | 12/22/05 | 2 | 3 | Area 1 | UG/KG | 51250 |
| B081 | B081-5 | 12/22/05 | 5 | 6 | Area 1 | UG/KG | <3750 |
| B081 | B081-10 | 12/22/05 | 10 | 11 | Area 1 | UG/KG | <3750 |
| B082 | B082-2 | 12/23/05 | 2 | 3 | Area 1 | UG/KG | <75000 |
| B082 | B082-5 | 12/23/05 | 5 | 6 | Area 1 | UG/KG | <3750 |
| B082 | B082-10 | 12/23/05 | 10 | 11 | Area 1 | UG/KG | <3750 |
| B083 | B083-2 | 1/4/06 | 2 | 3 | Area 2 | UG/KG | <187500 |
| B083 | B083-5 | 1/4/06 | 5 | 6 | Area 2 | UG/KG | 12500 |
| B083 | B083-10 | 1/4/06 | 10 | 11 | Area 2 | UG/KG | <3750 |
| B084 | B084-2 | 1/5/06 | 2 | 3 | Area 2 | UG/KG | <75000 |
| B084 | B084-5 | 1/5/06 | 5 | 6 | Area 2 | UG/KG | <75000 |
| B084 | B084-10 | 1/5/06 | 10 | 11 | Area 2 | UG/KG | <3750 |
| B085 | B085-2 | 12/28/05 | 2 | 3 | Area 2 | UG/KG | <3750 |
| B085 | B085-5 | 12/28/05 | 5 | 6 | Area 2 | UG/KG | <3750 |
| B085 | B085-10 | 12/28/05 | 10 | 11 | Area 2 | UG/KG | <3750 |
| B086 | B086-2 | 1/11/06 | 2 | 3 | Area 2 | UG/KG | <3750 |
| B086 | B086-5 | 1/11/06 | 5 | 6 | Area 2 | UG/KG | <3750 |
| B086 | B086-10 | 1/11/06 | 10 | 11 | Area 2 | UG/KG | <3750 |
| B087 | B087-2 | 1/11/06 | 2 | 3 | Area 2 | UG/KG | <3750 |
| B087 | B087-5 | 1/11/06 | 5 | 6 | Area 2 | UG/KG | <3750 |
| B087 | B087-10 | 1/11/06 | 10 | 11 | Area 2 | UG/KG | <3750 |
| B088 | B088-2 | 1/18/06 | 2 | 3 | Area 2 | UG/KG | <37500 |
| B088 | B088-5 | 1/18/06 | 5 | 6 | Area 2 | UG/KG | <37500 |
| B088 | B088-10 | 1/18/06 | 10 | 11 | Area 2 | UG/KG | <3750 |
| B089 | B089-2 | 1/9/06 | 2 | 3 | Area 2 | UG/KG | 166250 |
| B089 | B089-5 | 1/9/06 | 5 | 6 | Area 2 | UG/KG | 500000 |
| B089 | B089-10 | 1/9/06 | 10 | 11 | Area 2 | UG/KG | 48750 |
| B090 | B090-2 | 1/10/06 | 2 | 3 | Area 2 | UG/KG | <3750 |
| B090 | B090-5 | 1/10/06 | 5 | 6 | Area 2 | UG/KG | <3750 |

**Table B7**
**Results of TPHd Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Diesel Range Organics |
|---|---|---|---|---|---|---|---|
| B090 | B090-10 | 1/10/06 | 10 | 11 | Area 2 | UG/KG | <3750 |
| B091 | B091-2 | 1/10/06 | 2 | 3 | Area 2 | UG/KG | <37500 |
| B091 | B091-5 | 1/10/06 | 5 | 6 | Area 2 | UG/KG | <3750 |
| B091 | B091-10 | 1/10/06 | 10 | 11 | Area 2 | UG/KG | <3750 |
| B092 | B092-2 | 1/5/06 | 2 | 3 | Area 2 | UG/KG | 22500 |
| B092 | B092-5 | 1/5/06 | 5 | 6 | Area 2 | UG/KG | <75000 |
| B092 | B092-10 | 1/5/06 | 10 | 11 | Area 2 | UG/KG | <3750 |
| B093 | B093-2 | 1/5/06 | 2 | 3 | Area 2 | UG/KG | 7875 |
| B093 | B093-5 | 1/5/06 | 5 | 6 | Area 2 | UG/KG | <3750 |
| B093 | B093-10 | 1/5/06 | 10 | 11 | Area 2 | UG/KG | <3750 |
| B094 | B094-2 | 1/5/06 | 2 | 3 | Area 2 | UG/KG | <75000 |
| B094 | B094-5 | 1/5/06 | 5 | 6 | Area 2 | UG/KG | 75000 |
| B094 | B094-10 | 1/5/06 | 10 | 11 | Area 2 | UG/KG | 7500 |
| B095 | B095-2 | 1/4/06 | 2 | 3 | Area 2 | UG/KG | <37500 |
| B095 | B095-5 | 1/4/06 | 5 | 6 | Area 2 | UG/KG | <3750 |
| B095 | B095-10 | 1/4/06 | 10 | 11 | Area 2 | UG/KG | <3750 |
| B096 | B096-2 | 12/28/05 | 2 | 3 | Area 2 | UG/KG | <75000 |
| B096 | B096-5 | 12/28/05 | 5 | 6 | Area 2 | UG/KG | <3750 |
| B096 | B096-10 | 12/28/05 | 10 | 11 | Area 2 | UG/KG | <3750 |
| B097 | B097-2 | 1/5/06 | 2 | 3 | Area 2 | UG/KG | <3750 |
| B097 | B097-5 | 1/5/06 | 5 | 6 | Area 2 | UG/KG | <3750 |
| B097 | B097-10 | 1/5/06 | 10 | 11 | Area 2 | UG/KG | <3750 |
| B098 | B098-2 | 1/4/06 | 2 | 3 | Area 2 | UG/KG | 278750 |
| B098 | B098-5 | 1/4/06 | 5 | 6 | Area 2 | UG/KG | <3750 |
| B098 | B098-10 | 1/4/06 | 10 | 11 | Area 2 | UG/KG | <3750 |
| B099 | B099-2 | 1/3/06 | 2 | 3 | Area 2 | UG/KG | <18750 |
| B099 | B099-5 | 1/3/06 | 5 | 6 | Area 2 | UG/KG | <3750 |
| B099 | B099-10 | 1/3/06 | 10 | 11 | Area 2 | UG/KG | <3750 |
| B100 | B100-2 | 1/10/06 | 2 | 3 | Area 2 | UG/KG | 8750 |
| B100 | B100-5 | 1/10/06 | 5 | 6 | Area 2 | UG/KG | <3750 |
| B100 | B100-10 | 1/10/06 | 10 | 11 | Area 2 | UG/KG | <3750 |
| B101 | B101-2 | 1/10/06 | 2 | 3 | Area 2 | UG/KG | <3750 |
| B101 | B101-5 | 1/10/06 | 5 | 6 | Area 2 | UG/KG | <3750 |
| B101 | B101-10 | 1/10/06 | 10 | 11 | Area 2 | UG/KG | <3750 |
| B102 | B102-2 | 1/9/06 | 2 | 3 | Area 2 | UG/KG | 122500 |
| B102 | B102-5 | 1/9/06 | 5 | 6 | Area 2 | UG/KG | <3750 |
| B102 | B102-10 | 1/9/06 | 10 | 11 | Area 2 | UG/KG | <3750 |
| B103 | B103-2 | 1/6/06 | 2 | 3 | Area 2 | UG/KG | <3750 |
| B103 | B103-5 | 1/6/06 | 5 | 6 | Area 2 | UG/KG | <3750 |
| B103 | B103-10 | 1/6/06 | 10 | 11 | Area 2 | UG/KG | <3750 |
| B104 | B104-2 | 2/3/06 | 2 | 3 | Area 2 | UG/KG | <3750 |
| B104 | B104-5 | 2/3/06 | 5 | 6 | Area 2 | UG/KG | <3750 |
| B104 | B104-10 | 2/3/06 | 10 | 11 | Area 2 | UG/KG | <3750 |
| B105 | B105-2 | 1/10/06 | 2 | 3 | Area 2 | UG/KG | <3750 |
| B105 | B105-5 | 1/10/06 | 5 | 6 | Area 2 | UG/KG | <3750 |
| B105 | B105-10 | 1/10/06 | 10 | 11 | Area 2 | UG/KG | <3750 |
| B106 | B106-2 | 12/29/05 | 2 | 3 | Area 2 | UG/KG | <37500 |
| B106 | B106-5 | 12/29/05 | 5 | 6 | Area 2 | UG/KG | 10625 |
| B106 | B106-10 | 12/29/05 | 10 | 10.5 | Area 2 | UG/KG | <3750 |
| B107 | B107-2 | 1/4/06 | 2 | 3 | Area 2 | UG/KG | 6250 |
| B107 | B107-5 | 1/4/06 | 5 | 6 | Area 2 | UG/KG | <3750 |
| B107 | B107-10 | 1/4/06 | 10 | 11 | Area 2 | UG/KG | <3750 |
| B108 | B108-2 | 1/9/06 | 2 | 3 | Area 2 | UG/KG | <3750 |
| B108 | B108-5 | 1/9/06 | 5 | 6 | Area 2 | UG/KG | <3750 |
| B108 | B108-10 | 1/9/06 | 10 | 11 | Area 2 | UG/KG | <3750 |
| B109 | B109-2 | 1/4/06 | 2 | 3 | Area 2 | UG/KG | <3750 |
| B109 | B109-5 | 1/4/06 | 5 | 6 | Area 2 | UG/KG | <3750 |
| B109 | B109-10 | 1/4/06 | 10 | 11 | Area 2 | UG/KG | <3750 |
| B110 | B110-2 | 12/28/05 | 2 | 3 | Area 2 | UG/KG | <3750 |
| B110 | B110-5 | 12/28/05 | 5 | 6 | Area 2 | UG/KG | <3750 |
| B110 | B110-10 | 12/28/05 | 10 | 11 | Area 2 | UG/KG | <3750 |
| B111 | B111-2 | 12/28/05 | 2 | 3 | Area 2 | UG/KG | <18750 |
| B111 | B111-5 | 12/28/05 | 5 | 6 | Area 2 | UG/KG | <18750 |
| B111 | B111-10 | 12/28/05 | 10 | 11 | Area 2 | UG/KG | <3750 |
| B112 | B112-2 | 12/29/05 | 2 | 3 | Area 2 | UG/KG | <3750 |
| B112 | B112-5 | 12/29/05 | 5 | 6 | Area 2 | UG/KG | <3750 |
| B112 | B112-10 | 12/29/05 | 10 | 11 | Area 2 | UG/KG | <3750 |

**Table B7**
**Results of TPHd Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Diesel Range Organics |
|---|---|---|---|---|---|---|---|
| B113 | B113-2 | 12/29/05 | 2 | 3 | Area 2 | UG/KG | 5625 |
| B113 | B113-5 | 12/29/05 | 5 | 6 | Area 2 | UG/KG | <3750 |
| B113 | B113-10 | 12/29/05 | 10 | 11 | Area 2 | UG/KG | <3750 |
| B114 | B114-2 | 1/3/06 | 2 | 3 | Area 2 | UG/KG | <187500 |
| B114 | B114-5 | 1/3/06 | 5 | 6 | Area 2 | UG/KG | <75000 |
| B114 | B114-10 | 1/3/06 | 10 | 11 | Area 2 | UG/KG | <3750 |
| B115 | B115-2 | 1/3/06 | 2 | 3 | Area 2 | UG/KG | <187500 |
| B115 | B115-5 | 1/3/06 | 5 | 6 | Area 2 | UG/KG | <3750 |
| B115 | B115-10 | 1/3/06 | 10 | 11 | Area 2 | UG/KG | <187500 |
| B116 | B116-2 | 1/4/06 | 2 | 3 | Area 2 | UG/KG | <3750 |
| B116 | B116-5 | 1/4/06 | 5 | 6 | Area 2 | UG/KG | <3750 |
| B116 | B116-10 | 1/4/06 | 10 | 11 | Area 2 | UG/KG | <3750 |
| B117 | B117-2 | 1/6/06 | 2 | 3 | Area 2 | UG/KG | <3750 |
| B117 | B117-5 | 1/6/06 | 5 | 6 | Area 2 | UG/KG | <3750 |
| B117 | B117-10 | 1/6/06 | 10 | 11 | Area 2 | UG/KG | <3750 |
| B118 | B118-2 | 1/6/06 | 2 | 3 | Area 2 | UG/KG | <3750 |
| B118 | B118-5 | 1/6/06 | 5 | 6 | Area 2 | UG/KG | <3750 |
| B118 | B118-10 | 1/6/06 | 10 | 11 | Area 2 | UG/KG | <3750 |
| B119 | B119-2 | 1/27/06 | 2 | 3 | Area 2 | UG/KG | 13750 |
| B119 | B119-5 | 1/27/06 | 5 | 6 | Area 2 | UG/KG | <3750 |
| B119 | B119-10 | 1/27/06 | 10 | 11 | Area 2 | UG/KG | <3750 |
| B120 | B120-2 | 1/30/06 | 2 | 3 | Area 4 | UG/KG | 107500 |
| B120 | B120-5 | 1/30/06 | 5 | 6 | Area 4 | UG/KG | 241250 |
| B120 | B120-10 | 1/30/06 | 10 | 11 | Area 4 | UG/KG | 1800000 |
| B121 | B121-2 | 2/1/06 | 2 | 3 | Area 4 | UG/KG | <3750 |
| B121 | B121-5 | 2/1/06 | 5 | 6 | Area 4 | UG/KG | 4690000 |
| B121 | B121-10 | 2/1/06 | 10 | 11 | Area 4 | UG/KG | 6250 |
| B122 | B122-2 | 1/23/06 | 2 | 3 | Area 4 | UG/KG | 117500 |
| B122 | B122-5 | 1/23/06 | 5 | 6 | Area 4 | UG/KG | 1850000 |
| B122 | B122-10 | 1/23/06 | 10 | 11 | Area 4 | UG/KG | 5250 |
| B123 | B123-2 | 1/20/06 | 2 | 3 | Area 4 | UG/KG | 1300000 |
| B123 | B123-5 | 1/20/06 | 5 | 6 | Area 4 | UG/KG | 1730000 |
| B123 | B123-10 | 1/19/06 | 11 | 12 | Area 4 | UG/KG | 2720000 |
| B124 | B124-2 | 1/16/06 | 2 | 3 | Area 4 | UG/KG | 76250 |
| B124 | B124-5 | 1/16/06 | 5 | 6 | Area 4 | UG/KG | <3750 |
| B124 | B124-10 | 1/16/06 | 10 | 11 | Area 4 | UG/KG | <3750 |
| B125 | B125-2 | 1/20/06 | 2 | 3 | Area 4 | UG/KG | 56250 |
| B125 | B125-5 | 1/20/06 | 5 | 6 | Area 4 | UG/KG | <3750 |
| B125 | B125-10 | 1/20/06 | 10 | 11 | Area 4 | UG/KG | <3750 |
| B126 | B126-2 | 1/20/06 | 2 | 3 | Area 4 | UG/KG | 361250 |
| B126 | B126-5 | 1/20/06 | 5 | 6 | Area 4 | UG/KG | 60000 |
| B126 | B126-10 | 1/20/06 | 10 | 11 | Area 4 | UG/KG | <3750 |
| B127 | B127-2 | 1/18/06 | 2 | 3 | Area 4 | UG/KG | 6750 |
| B127 | B127-5 | 1/18/06 | 5 | 6 | Area 4 | UG/KG | <3750 |
| B127 | B127-10 | 1/18/06 | 10 | 11 | Area 4 | UG/KG | <3750 |
| B128 | B128-2 | 2/1/06 | 2 | 3 | Area 4 | UG/KG | 1790000 |
| B128 | B128-5 | 2/1/06 | 5 | 6 | Area 4 | UG/KG | 153750 |
| B128 | B128-10 | 2/1/06 | 10 | 11 | Area 4 | UG/KG | <3750 |
| B129 | B129-2 | 1/18/06 | 2 | 3 | Area 4 | UG/KG | 6500 |
| B129 | B129-5 | 1/18/06 | 5 | 6 | Area 4 | UG/KG | 4500 |
| B129 | B129-10 | 1/18/06 | 10 | 11 | Area 4 | UG/KG | <3750 |
| B130 | B130-2 | 1/19/06 | 2 | 3 | Area 4 | UG/KG | 1300000 |
| B130 | B130-5 | 1/19/06 | 5 | 6 | Area 4 | UG/KG | 93750 |
| B130 | B130-10 | 1/19/06 | 10 | 11 | Area 4 | UG/KG | 28750 |
| B131 | B131-2 | 1/19/06 | 2 | 3 | Area 4 | UG/KG | <3750 |
| B131 | B131-5 | 1/19/06 | 5 | 6 | Area 4 | UG/KG | <3750 |
| B131 | B131-10 | 1/19/06 | 10 | 11 | Area 4 | UG/KG | <3750 |
| B132 | B132-2 | 1/19/06 | 2 | 3 | Area 4 | UG/KG | <3750 |
| B132 | B132-5 | 1/19/06 | 5 | 6 | Area 4 | UG/KG | <3750 |
| B132 | B132-10 | 1/19/06 | 10 | 11 | Area 4 | UG/KG | <3750 |
| B134 | B134-2 | 1/23/06 | 2 | 3 | Area 4 | UG/KG | 13750 |
| B134 | B134-5 | 1/23/06 | 5 | 6 | Area 4 | UG/KG | <3750 |
| B134 | B134-10 | 1/23/06 | 10 | 11 | Area 4 | UG/KG | <3750 |
| B135 | B135-2 | 1/16/06 | 2 | 3 | Area 4 | UG/KG | <3750 |
| B135 | B135-5 | 1/16/06 | 5 | 6 | Area 4 | UG/KG | <3750 |
| B135 | B135-10 | 1/16/06 | 10 | 11 | Area 4 | UG/KG | <3750 |
| B136 | B136-2 | 1/12/06 | 2 | 3 | Area 4 | UG/KG | 471250 |

**Table B7**
**Results of TPHd Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Diesel Range Organics |
|---|---|---|---|---|---|---|---|
| B136 | B136-5 | 1/12/06 | 5 | 6 | Area 4 | UG/KG | 443750 |
| B136 | B136-10 | 1/12/06 | 10 | 11 | Area 4 | UG/KG | 1186250 |
| B137 | B137-2 | 1/13/06 | 2 | 3 | Area 4 | UG/KG | 183750 |
| B137 | B137-5 | 1/13/06 | 5 | 6 | Area 4 | UG/KG | 226250 |
| B137 | B137-10 | 1/13/06 | 10 | 11 | Area 4 | UG/KG | 10250 |
| B139 | B139-2 | 1/13/06 | 2 | 3 | Area 4 | UG/KG | 90000 |
| B139 | B139-5 | 1/13/06 | 5 | 6 | Area 4 | UG/KG | 4375 |
| B139 | B139-10 | 1/13/06 | 10 | 11 | Area 4 | UG/KG | 80000 |
| B140 | B140-2 | 1/31/06 | 2 | 3 | Area 4 | UG/KG | 85000 |
| B140 | B140-5 | 1/31/06 | 5 | 6 | Area 4 | UG/KG | 25000 |
| B140 | B140-10 | 1/31/06 | 10 | 11 | Area 4 | UG/KG | <3750 |
| B141 | B141-2 | 1/30/06 | 2 | 3 | Area 3 | UG/KG | 7500 |
| B141 | B141-5 | 1/30/06 | 5 | 6 | Area 3 | UG/KG | 97500 |
| B141 | B141-10 | 1/30/06 | 10 | 11 | Area 3 | UG/KG | <3750 |
| B142 | B142-2 | 1/31/06 | 2 | 3 | Area 3 | UG/KG | 10875 |
| B142 | B142-5 | 1/31/06 | 5 | 6 | Area 3 | UG/KG | 120000 |
| B142 | B142-10 | 1/31/06 | 10 | 11 | Area 3 | UG/KG | <75000 |
| B143 | B143-2 | 1/18/06 | 2 | 3 | Area 3 | UG/KG | 306250 |
| B143 | B143-5 | 1/18/06 | 5 | 6 | Area 3 | UG/KG | 20000 |
| B143 | B143-10 | 1/18/06 | 10 | 11 | Area 3 | UG/KG | <3750 |
| B144 | B144-2 | 1/13/06 | 2 | 3 | Area 3 | UG/KG | 117500 |
| B144 | B144-5 | 1/13/06 | 5 | 6 | Area 3 | UG/KG | 931250 |
| B144 | B144-10 | 1/13/06 | 10 | 11 | Area 3 | UG/KG | 3875 |
| B145 | B145-2 | 1/19/06 | 2 | 3 | Area 3 | UG/KG | 332500 |
| B145 | B145-5 | 1/19/06 | 5 | 6 | Area 3 | UG/KG | <3750 |
| B145 | B145-10 | 1/19/06 | 10 | 11 | Area 3 | UG/KG | <3750 |
| B146 | B146-2 | 1/27/06 | 2 | 3 | Area 3 | UG/KG | 27500 |
| B146 | B146-5 | 1/27/06 | 5 | 6 | Area 3 | UG/KG | <3750 |
| B146 | B146-10 | 1/27/06 | 10 | 11 | Area 3 | UG/KG | <3750 |
| B147 | B147-2 | 2/1/06 | 2 | 3 | Area 3 | UG/KG | 21000 |
| B147 | B147-5 | 2/1/06 | 5 | 6 | Area 3 | UG/KG | 247500 |
| B147 | B147-10 | 2/1/06 | 10 | 11 | Area 3 | UG/KG | 12500 |
| B148 | B148-2 | 1/23/06 | 2 | 3 | Area 3 | UG/KG | 2580000 |
| B148 | B148-5 | 1/23/06 | 5 | 6 | Area 3 | UG/KG | 1337500 |
| B148 | B148-10 | 1/23/06 | 10 | 11 | Area 3 | UG/KG | 10000 |
| B149 | B149-2 | 1/23/06 | 2 | 3 | Area 3 | UG/KG | 8140000 |
| B149 | B149-5 | 1/23/06 | 5 | 6 | Area 3 | UG/KG | 8370000 |
| B149 | B149-10 | 1/23/06 | 10 | 11 | Area 3 | UG/KG | 6650000 |
| B150 | B150-2 | 1/20/06 | 2 | 3 | Area 3 | UG/KG | 623750 |
| B150 | B150-5 | 1/20/06 | 5 | 6 | Area 3 | UG/KG | 2487500 |
| B150 | B150-10 | 1/20/06 | 10 | 11 | Area 3 | UG/KG | 22900000 |
| B151 | B151-2 | 1/19/06 | 2 | 3 | Area 4 | UG/KG | <3750 |
| B151 | B151-5 | 1/19/06 | 5 | 6 | Area 4 | UG/KG | 87500 |
| B151 | B151-10 | 1/19/06 | 10 | 11 | Area 4 | UG/KG | <3750 |
| B152 | B152-2 | 1/20/06 | 2 | 3 | Area 3 | UG/KG | 637000 |
| B152 | B152-5 | 1/20/06 | 5 | 6 | Area 3 | UG/KG | 421000 |
| B152 | B152-10 | 1/20/06 | 10 | 11 | Area 3 | UG/KG | 95000 |
| B153 | B153-2 | 1/20/06 | 2 | 3 | Area 3 | UG/KG | 2187500 |
| B153 | B153-5 | 1/20/06 | 5 | 6 | Area 3 | UG/KG | 921250 |
| B153 | B153-10 | 1/20/06 | 10 | 11 | Area 3 | UG/KG | 3160000 |
| B154 | B154-2 | 1/16/06 | 2 | 3 | Area 3 | UG/KG | 739000 |
| B154 | B154-5 | 1/16/06 | 5 | 6 | Area 3 | UG/KG | <3750 |
| B154 | B154-10 | 1/16/06 | 10 | 11 | Area 3 | UG/KG | <3750 |
| B155 | B155-2 | 1/30/06 | 2 | 3 | Area 3 | UG/KG | 8150000 |
| B155 | B155-5 | 1/30/06 | 5 | 6 | Area 3 | UG/KG | 1047500 |
| B155 | B155-10 | 1/30/06 | 10 | 11 | Area 3 | UG/KG | 10600000 |
| B156 | B156-2 | 1/13/06 | 2 | 3 | Area 3 | UG/KG | <37500 |
| B156 | B156-5 | 1/13/06 | 5 | 6 | Area 3 | UG/KG | 11250 |
| B156 | B156-10 | 1/13/06 | 10 | 11 | Area 3 | UG/KG | 3050000 |
| B158 | B158-2 | 1/30/06 | 2 | 3 | Area 3 | UG/KG | <3750 |
| B158 | B158-5 | 1/30/06 | 5 | 6 | Area 3 | UG/KG | 162500 |
| B158 | B158-10 | 1/30/06 | 10 | 11 | Area 3 | UG/KG | 6250 |
| B159 | B159-2 | 1/31/06 | 2 | 3 | Area 3 | UG/KG | <3750 |
| B159 | B159-5 | 1/31/06 | 5 | 6 | Area 3 | UG/KG | <37500 |
| B159 | B159-10 | 1/31/06 | 10 | 11 | Area 3 | UG/KG | 145000 |
| B160 | B160-2 | 1/31/06 | 2 | 3 | Area 3 | UG/KG | <3750 |
| B160 | B160-5 | 1/31/06 | 5 | 6 | Area 3 | UG/KG | <3750 |

**Table B7**
**Results of TPHd Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Diesel Range Organics |
|---|---|---|---|---|---|---|---|
| B160 | B160-10 | 1/31/06 | 10 | 11 | Area 3 | UG/KG | <3750 |
| B161 | B161-2 | 1/13/06 | 2 | 3 | Area 3 | UG/KG | 57500 |
| B161 | B161-5 | 1/13/06 | 5 | 6 | Area 3 | UG/KG | 9687500 |
| B161 | B161-10 | 1/13/06 | 10 | 11 | Area 3 | UG/KG | 15000 |
| B162 | B162-2 | 1/16/06 | 2 | 3 | Area 3 | UG/KG | <3750 |
| B162 | B162-5 | 1/16/06 | 5 | 6 | Area 3 | UG/KG | <3750 |
| B162 | B162-10 | 1/16/06 | 10 | 11 | Area 3 | UG/KG | <3750 |
| B163 | B163-2 | 1/16/06 | 2 | 3 | Area 3 | UG/KG | <3750 |
| B163 | B163-5 | 1/16/06 | 5 | 6 | Area 3 | UG/KG | <3750 |
| B163 | B163-10 | 1/16/06 | 10 | 11 | Area 3 | UG/KG | 1140000 |
| B164 | B164-2 | 1/16/06 | 2 | 3 | Area 3 | UG/KG | <3750 |
| B164 | B164-5 | 1/16/06 | 5 | 6 | Area 3 | UG/KG | <3750 |
| B164 | B164-10 | 1/16/06 | 10 | 11 | Area 3 | UG/KG | 281250 |
| B165 | B165-2 | 1/23/06 | 2 | 3 | Area 3 | UG/KG | 5000 |
| B165 | B165-5 | 1/23/06 | 5 | 6 | Area 3 | UG/KG | 62500 |
| B165 | B165-10 | 1/23/06 | 10 | 11 | Area 3 | UG/KG | 7000 |
| B166 | B166-2 | 1/24/06 | 2 | 3 | Area 3 | UG/KG | <3750 |
| B166 | B166-5 | 1/24/06 | 5 | 6 | Area 3 | UG/KG | <3750 |
| B166 | B166-10 | 1/24/06 | 10 | 11 | Area 3 | UG/KG | <3750 |
| B167 | B167-2 | 1/17/06 | 2 | 3 | Area 3 | UG/KG | <3750 |
| B167 | B167-5 | 1/17/06 | 5 | 6 | Area 3 | UG/KG | <3750 |
| B167 | B167-10 | 1/17/06 | 10 | 11 | Area 3 | UG/KG | <3750 |
| B168 | B168-2 | 1/17/06 | 2 | 3 | Area 3 | UG/KG | 670000 |
| B168 | B168-5 | 1/17/06 | 5 | 6 | Area 3 | UG/KG | <3750 |
| B168 | B168-10 | 1/17/06 | 10 | 11 | Area 3 | UG/KG | 7500 |
| B169 | B169-2 | 1/17/06 | 2 | 3 | Area 3 | UG/KG | 3110000 |
| B169 | B169-5 | 1/17/06 | 5 | 6 | Area 3 | UG/KG | 15000 |
| B169 | B169-10 | 1/17/06 | 10 | 11 | Area 3 | UG/KG | <3750 |
| B170 | B170-2 | 1/18/06 | 2 | 3 | Area 3 | UG/KG | 5750 |
| B170 | B170-5 | 1/18/06 | 5 | 6 | Area 3 | UG/KG | 35000 |
| B170 | B170-10 | 1/18/06 | 10 | 11 | Area 3 | UG/KG | 430000 |
| B171 | B171-2 | 1/11/06 | 2 | 3 | Area 3 | UG/KG | 1225000 |
| B171 | B171-5 | 1/11/06 | 5 | 6 | Area 3 | UG/KG | 303750 |
| B171 | B171-10 | 1/11/06 | 10 | 11 | Area 3 | UG/KG | 1001250 |
| B172 | B172-2 | 1/12/06 | 2 | 3 | Area 3 | UG/KG | 75000 |
| B172 | B172-5 | 1/12/06 | 5 | 6 | Area 3 | UG/KG | <3750 |
| B172 | B172-10 | 1/12/06 | 10 | 11 | Area 3 | UG/KG | <3750 |
| B173 | B173-2 | 1/12/06 | 2 | 3 | Area 3 | UG/KG | <3750 |
| B173 | B173-5 | 1/12/06 | 5 | 6 | Area 3 | UG/KG | <3750 |
| B173 | B173-10 | 1/12/06 | 10 | 11 | Area 3 | UG/KG | <3750 |
| B174 | B174-2 | 1/12/06 | 2 | 3 | Area 3 | UG/KG | 475000 |
| B174 | B174-5 | 1/12/06 | 5 | 6 | Area 3 | UG/KG | <3750 |
| B174 | B174-10 | 1/12/06 | 10 | 11 | Area 3 | UG/KG | <3750 |
| B175 | B175-2 | 2/7/06 | 2 | 3 | Area 3 | UG/KG | <3750 |
| B175 | B175-5 | 2/7/06 | 5 | 6 | Area 3 | UG/KG | <3750 |
| B175 | B175-10 | 2/7/06 | 10 | 11 | Area 3 | UG/KG | <3750 |
| B176 | B176-2 | 2/7/06 | 2 | 3 | Area 3 | UG/KG | 343750 |
| B176 | B176-5 | 2/7/06 | 5 | 6 | Area 3 | UG/KG | 350000 |
| B176 | B176-10 | 2/7/06 | 10 | 11 | Area 3 | UG/KG | <37500 |
| B177 | B177-2 | 2/2/06 | 2 | 3 | Area 3 | UG/KG | <3750 |
| B177 | B177-5 | 2/2/06 | 5 | 6 | Area 3 | UG/KG | 27500 |
| B177 | B177-10 | 2/2/06 | 10 | 11 | Area 3 | UG/KG | <3750 |
| B178 | B178-2 | 2/2/06 | 2 | 3 | Area 3 | UG/KG | 88750 |
| B178 | B178-5 | 2/2/06 | 5 | 6 | Area 3 | UG/KG | <3750 |
| B178 | B178-10 | 2/2/06 | 10 | 11 | Area 3 | UG/KG | 8750 |
| B179 | B179-2 | 1/26/06 | 2 | 3 | Area 3 | UG/KG | 436250 |
| B179 | B179-5 | 1/26/06 | 5 | 6 | Area 3 | UG/KG | 658750 |
| B179 | B179-10 | 1/26/06 | 10 | 11 | Area 3 | UG/KG | 358750 |
| B180 | B180-2 | 1/26/06 | 2 | 3 | Area 3 | UG/KG | <3750 |
| B180 | B180-5 | 1/26/06 | 5 | 6 | Area 3 | UG/KG | <3750 |
| B180 | B180-10 | 1/26/06 | 10 | 11 | Area 3 | UG/KG | <3750 |
| B181 | B181-2 | 2/6/06 | 2 | 3 | Area 3 | UG/KG | <3750 |
| B181 | B181-5 | 2/6/06 | 5 | 6 | Area 3 | UG/KG | 292500 |
| B181 | B181-10 | 2/6/06 | 10 | 11 | Area 3 | UG/KG | <3750 |
| B182 | B182-2 | 1/24/06 | 2 | 3 | Area 3 | UG/KG | <3750 |
| B182 | B182-5 | 1/25/06 | 5 | 6 | Area 3 | UG/KG | 60000 |
| B182 | B182-10 | 1/25/06 | 10 | 11 | Area 3 | UG/KG | 8750 |

**Table B7**
**Results of TPHd Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Diesel Range Organics |
|---|---|---|---|---|---|---|---|
| B183 | B183-2 | 1/25/06 | 2 | 3 | Area 3 | UG/KG | 402000 |
| B183 | B183-5 | 1/25/06 | 5 | 6 | Area 3 | UG/KG | 1760000 |
| B183 | B183-10 | 1/25/06 | 10 | 11 | Area 3 | UG/KG | 10200000 |
| B184 | B184-2 | 1/25/06 | 2 | 3 | Area 3 | UG/KG | <187500 |
| B184 | B184-5 | 1/25/06 | 5 | 6 | Area 3 | UG/KG | <3750 |
| B184 | B184-10 | 1/25/06 | 10 | 11 | Area 3 | UG/KG | <3750 |
| B185 | B185-2 | 1/26/06 | 2 | 3 | Area 3 | UG/KG | 152500 |
| B185 | B185-5 | 1/26/06 | 5 | 6 | Area 3 | UG/KG | <3750 |
| B185 | B185-10 | 1/26/06 | 10 | 11 | Area 3 | UG/KG | <3750 |
| B186 | B186-2 | 1/27/06 | 2 | 3 | Area 3 | UG/KG | 197500 |
| B186 | B186-5 | 1/27/06 | 5 | 6 | Area 3 | UG/KG | <3750 |
| B186 | B186-10 | 1/27/06 | 10 | 11 | Area 3 | UG/KG | <3750 |
| B187 | B187-2 | 1/27/06 | 2 | 3 | Area 3 | UG/KG | 9250 |
| B187 | B187-5 | 1/27/06 | 5 | 6 | Area 3 | UG/KG | <3750 |
| B187 | B187-10 | 1/27/06 | 10 | 11 | Area 3 | UG/KG | <3750 |
| B188 | B188-2 | 2/7/06 | 2 | 3 | Area 2 | UG/KG | <3750 |
| B188 | B188-5 | 2/7/06 | 5 | 6 | Area 2 | UG/KG | 1032500 |
| B188 | B188-10 | 2/7/06 | 10 | 11 | Area 2 | UG/KG | 445000 |
| B189 | B189-2 | 2/7/06 | 2 | 3 | Area 2 | UG/KG | <3750 |
| B189 | B189-5 | 2/7/06 | 5 | 6 | Area 2 | UG/KG | <37500 |
| B189 | B189-10 | 2/7/06 | 10 | 11 | Area 2 | UG/KG | <3750 |
| B190 | B190-2 | 2/8/06 | 2 | 3 | Area 2 | UG/KG | <3750 |
| B190 | B190-5 | 2/8/06 | 5 | 6 | Area 2 | UG/KG | <3750 |
| B190 | B190-10 | 2/8/06 | 10 | 11 | Area 2 | UG/KG | <3750 |
| B191 | B191-2 | 2/1/06 | 2 | 3 | Area 2 | UG/KG | 1010000 |
| B191 | B191-5 | 2/1/06 | 5 | 6 | Area 2 | UG/KG | 537500 |
| B191 | B191-10 | 2/1/06 | 10 | 11 | Area 2 | UG/KG | 1960000 |
| B192 | B192-2 | 2/1/06 | 2 | 3 | Area 2 | UG/KG | 230000 |
| B192 | B192-5 | 2/1/06 | 5 | 6 | Area 2 | UG/KG | <3750 |
| B192 | B192-10 | 2/1/06 | 10 | 11 | Area 2 | UG/KG | <3750 |
| B193 | B193-2 | 2/6/06 | 2 | 3 | Area 3 | UG/KG | 90000 |
| B193 | B193-5 | 2/6/06 | 5 | 6 | Area 3 | UG/KG | <3750 |
| B193 | B193-10 | 2/6/06 | 10 | 11 | Area 3 | UG/KG | <3750 |
| B194 | B194-2 | 2/3/06 | 2 | 3 | Area 3 | UG/KG | 16250 |
| B194 | B194-5 | 2/3/06 | 5 | 6 | Area 3 | UG/KG | 18750 |
| B194 | B194-10 | 2/3/06 | 10 | 11 | Area 3 | UG/KG | 6020000 |
| B195 | B195-2 | 2/3/06 | 2 | 3 | Area 3 | UG/KG | 22500 |
| B195 | B195-5 | 2/3/06 | 5 | 6 | Area 3 | UG/KG | 4500 |
| B195 | B195-10 | 2/3/06 | 10 | 11 | Area 3 | UG/KG | <3750 |
| B196 | B196-2 | 1/25/06 | 2 | 3 | Area 3 | UG/KG | <3750 |
| B196 | B196-5 | 1/25/06 | 5 | 6 | Area 3 | UG/KG | <3750 |
| B196 | B196-10 | 1/25/06 | 10 | 11 | Area 3 | UG/KG | 3875 |
| B197 | B197-2 | 2/1/06 | 2 | 3 | Area 3 | UG/KG | <3750 |
| B197 | B197-5 | 2/1/06 | 5 | 6 | Area 3 | UG/KG | <3750 |
| B197 | B197-10 | 2/1/06 | 10 | 11 | Area 3 | UG/KG | <3750 |
| B198 | B198-2 | 1/26/06 | 2 | 3 | Area 3 | UG/KG | <3750 |
| B198 | B198-5 | 1/26/06 | 5 | 6 | Area 3 | UG/KG | <3750 |
| B198 | B198-10 | 1/26/06 | 10 | 11 | Area 3 | UG/KG | <3750 |
| B199 | B199-2 | 1/23/06 | 2 | 3 | Area 3 | UG/KG | <75000 |
| B199 | B199-5 | 1/23/06 | 5 | 6 | Area 3 | UG/KG | 3350000 |
| B199 | B199-10 | 1/23/06 | 10 | 11 | Area 3 | UG/KG | 2087500 |
| B200 | B200-2 | 1/24/06 | 2 | 3 | Area 3 | UG/KG | <3750 |
| B200 | B200-5 | 1/24/06 | 5 | 6 | Area 3 | UG/KG | <3750 |
| B200 | B200-10 | 1/24/06 | 10 | 11 | Area 3 | UG/KG | <3750 |
| B201 | B201-2 | 1/25/06 | 2 | 3 | Area 3 | UG/KG | <3750 |
| B201 | B201-5 | 1/25/06 | 5 | 6 | Area 3 | UG/KG | <3750 |
| B201 | B201-10 | 1/25/06 | 10 | 11 | Area 3 | UG/KG | <3750 |
| B202 | B202-2 | 1/25/06 | 2 | 3 | Area 3 | UG/KG | 12500 |
| B202 | B202-5 | 1/25/06 | 5 | 6 | Area 3 | UG/KG | <3750 |
| B202 | B202-10 | 1/25/06 | 10 | 11 | Area 3 | UG/KG | 6625 |
| B203 | B203-2 | 2/7/06 | 2 | 3 | Area 3 | UG/KG | 406250 |
| B203 | B203-5 | 2/7/06 | 5 | 6 | Area 3 | UG/KG | 12500000 |
| B203 | B203-10 | 2/7/06 | 10 | 11 | Area 3 | UG/KG | 93750 |
| B204 | B204-2 | 2/6/06 | 2 | 3 | Area 3 | UG/KG | <3750 |
| B204 | B204-5 | 2/6/06 | 5 | 6 | Area 3 | UG/KG | 3787500 |
| B204 | B204-10 | 2/6/06 | 10 | 11 | Area 3 | UG/KG | <3750 |
| B205 | B205-2 | 2/7/06 | 2 | 3 | Area 3 | UG/KG | <37500 |

**Table B7**
**Results of TPHd Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Diesel Range Organics |
|---|---|---|---|---|---|---|---|
| B205 | B205-5 | 2/7/06 | 5 | 6 | Area 3 | UG/KG | <3750 |
| B205 | B205-10 | 2/7/06 | 10 | 11 | Area 3 | UG/KG | 10500 |
| B206 | B206-2 | 2/8/06 | 2 | 3 | Area 2 | UG/KG | <37500 |
| B206 | B206-5 | 2/8/06 | 5 | 6 | Area 2 | UG/KG | <3750 |
| B206 | B206-10 | 2/8/06 | 10 | 11 | Area 2 | UG/KG | <3750 |
| B207 | B207-2 | 2/8/06 | 2 | 3 | Area 2 | UG/KG | 76250 |
| B207 | B207-5 | 2/8/06 | 5 | 6 | Area 2 | UG/KG | <3750 |
| B207 | B207-10 | 2/8/06 | 10 | 11 | Area 2 | UG/KG | <3750 |
| B208 | B208-2 | 1/31/06 | 2 | 3 | Area 2 | UG/KG | <37500 |
| B208 | B208-5 | 1/31/06 | 5 | 6 | Area 2 | UG/KG | <3750 |
| B208 | B208-10 | 1/31/06 | 10 | 11 | Area 2 | UG/KG | <3750 |
| B209 | B209-2 | 1/31/06 | 2 | 3 | Area 2 | UG/KG | <37500 |
| B209 | B209-5 | 1/31/06 | 5 | 6 | Area 2 | UG/KG | <37500 |
| B209 | B209-10 | 1/31/06 | 10 | 11 | Area 2 | UG/KG | 1500000 |
| B210 | B210-2 | 1/31/06 | 2 | 3 | Area 3 | UG/KG | <37500 |
| B210 | B210-5 | 1/31/06 | 5 | 6 | Area 3 | UG/KG | <3750 |
| B210 | B210-10 | 1/31/06 | 10 | 11 | Area 3 | UG/KG | <3750 |
| B211 | B211-2 | 2/6/06 | 2 | 3 | Area 3 | UG/KG | <75000 |
| B211 | B211-5 | 2/6/06 | 5 | 6 | Area 3 | UG/KG | 175000 |
| B211 | B211-10 | 2/6/06 | 10 | 11 | Area 3 | UG/KG | 9250 |
| B212 | B212-2 | 1/24/06 | 2 | 3 | Area 3 | UG/KG | <3750 |
| B212 | B212-5 | 1/24/06 | 5 | 6 | Area 3 | UG/KG | <3750 |
| B212 | B212-10 | 1/24/06 | 10 | 11 | Area 3 | UG/KG | <3750 |
| B213 | B213-2 | 2/6/06 | 2 | 3 | Area 3 | UG/KG | <3750 |
| B213 | B213-5 | 2/6/06 | 5 | 6 | Area 3 | UG/KG | <3750 |
| B213 | B213-10 | 2/6/06 | 10 | 11 | Area 3 | UG/KG | <3750 |
| B214 | B214-2 | 1/23/06 | 2 | 3 | Area 3 | UG/KG | 273750 |
| B214 | B214-5 | 1/23/06 | 5 | 6 | Area 3 | UG/KG | <3750 |
| B214 | B214-10 | 1/23/06 | 10 | 11 | Area 3 | UG/KG | <3750 |
| B215 | B215-2 | 2/3/06 | 2 | 3 | Area 3 | UG/KG | 28750 |
| B215 | B215-5 | 2/3/06 | 5 | 6 | Area 3 | UG/KG | <3750 |
| B215 | B215-10 | 2/3/06 | 10 | 11 | Area 3 | UG/KG | <3750 |
| B216 | B216-2 | 2/2/06 | 2 | 3 | Area 3 | UG/KG | <3750 |
| B216 | B216-5 | 2/2/06 | 5 | 6 | Area 3 | UG/KG | <3750 |
| B216 | B216-10 | 2/2/06 | 10 | 11 | Area 3 | UG/KG | <3750 |
| B217 | B217-2 | 1/24/06 | 2 | 3 | Area 3 | UG/KG | <3750 |
| B217 | B217-5 | 1/24/06 | 5 | 6 | Area 3 | UG/KG | <3750 |
| B217 | B217-10 | 1/24/06 | 10 | 11 | Area 3 | UG/KG | <3750 |
| B218 | B218-2 | 2/8/06 | 2 | 3 | Area 3 | UG/KG | <75000 |
| B218 | B218-5 | 2/8/06 | 5 | 6 | Area 3 | UG/KG | 843750 |
| B218 | B218-10 | 2/8/06 | 10 | 11 | Area 3 | UG/KG | <3750 |
| B219 | B219-2 | 1/26/06 | 2 | 3 | Area 3 | UG/KG | <3750 |
| B219 | B219-5 | 1/26/06 | 5 | 6 | Area 3 | UG/KG | <3750 |
| B219 | B219-10 | 1/26/06 | 10 | 11 | Area 3 | UG/KG | <3750 |
| B220 | B220-2 | 1/26/06 | 2 | 3 | Area 3 | UG/KG | 105000 |
| B220 | B220-5 | 1/26/06 | 5 | 6 | Area 3 | UG/KG | <37500 |
| B220 | B220-10 | 1/26/06 | 10 | 11 | Area 3 | UG/KG | <3750 |
| B221 | B221-2 | 1/27/06 | 2 | 3 | Area 2 | UG/KG | <3750 |
| B221 | B221-5 | 1/27/06 | 5 | 6 | Area 2 | UG/KG | <3750 |
| B221 | B221-10 | 1/27/06 | 10 | 11 | Area 2 | UG/KG | <3750 |
| B222 | B222-2 | 2/3/06 | 2 | 3 | Area 2 | UG/KG | <3750 |
| B222 | B222-5 | 2/3/06 | 5 | 6 | Area 2 | UG/KG | <3750 |
| B222 | B222-10 | 2/3/06 | 10 | 11 | Area 2 | UG/KG | <3750 |
| B223 | B223-2 | 2/3/06 | 2 | 3 | Area 2 | UG/KG | <3750 |
| B223 | B223-5 | 2/3/06 | 5 | 6 | Area 2 | UG/KG | <3750 |
| B223 | B223-10 | 2/3/06 | 10 | 11 | Area 2 | UG/KG | <3750 |
| B224 | B224-05 | 1/21/08 | 5 | 6 | Area 1 | UG/KG | 3097000 |
| B226 | B226-5 | 1/18/08 | 5 | 6 | Area 1 | UG/KG | 53460 |
| B226 | B226-10 | 1/18/08 | 9 | 10 | Area 1 | UG/KG | 40670 |
| B227 | B227-5 | 1/21/08 | 5 | 6 | Area 1 | UG/KG | 824000 |
| B227 | B227-10 | 1/21/08 | 10 | 11 | Area 1 | UG/KG | 1980000 |
| B228 | B228-05 | 1/18/08 | 5 | 6 | Area 1 | UG/KG | 7200000 |
| B228 | B228-10 | 1/18/08 | 10 | 11 | Area 1 | UG/KG | 2920000 |
| B229 | B229-05 | 1/18/08 | 5 | 6 | Area 1 | UG/KG | 750000 |
| B229 | B229-10 | 1/18/08 | 10 | 11 | Area 1 | UG/KG | 3137000 |
| B230 | B230-5 | 1/17/08 | 5 | 6 | Area 1 | UG/KG | 16907.1 |
| B230 | B230-10 | 1/17/08 | 9 | 10 | Area 1 | UG/KG | 2494900 |

**Table B7**
**Results of TPHd Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Diesel Range Organics |
|---|---|---|---|---|---|---|---|
| B232 | B232-05 | 1/21/08 | 5 | 6 | Area 3 | UG/KG | 102770 |
| B232 | B232-10 | 1/21/08 | 10 | 11 | Area 3 | UG/KG | 980 |
| B234 | B234-05 | 1/23/08 | 5 | 6 | Area 4 | UG/KG | 105500 |
| B235 | B235-5 | 1/25/08 | 5 | 6 | Area 4 | UG/KG | 2160 |
| B235 | B235-10 | 1/25/08 | 9 | 10 | Area 4 | UG/KG | 122600 |
| B236 | B236-05 | 1/22/08 | 5 | 6 | Area 3 | UG/KG | 357900 |
| B236 | B236-10 | 1/22/08 | 10 | 11 | Area 3 | UG/KG | 30853 |
| B237 | B237-5 | 1/23/08 | 5 | 6 | Area 3 | UG/KG | 8100000 |
| B237 | B237-10 | 1/23/08 | 10 | 11 | Area 3 | UG/KG | 7210000 |
| B238 | B238-5 | 1/25/08 | 5 | 6 | Area 3 | UG/KG | 2720000 |
| B238 | B238-10 | 1/25/08 | 10 | 11 | Area 3 | UG/KG | 3165000 |
| B239 | B239-05 | 1/22/08 | 5 | 6 | Area 3 | UG/KG | 1028000 |
| B240 | B240-10 | 1/22/08 | 9 | 10 | Area 3 | UG/KG | 23600 |
| B241 | B241-5 | 1/23/08 | 5 | 6 | Area 3 | UG/KG | 3382500 |
| B241 | B241-10 | 1/23/08 | 10 | 11 | Area 3 | UG/KG | 4350310 |
| B242 | B242-05 | 1/25/08 | 5 | 6 | Area 3 | UG/KG | 1500000 |
| B242 | B242-10 | 1/25/08 | 10 | 11 | Area 3 | UG/KG | 11100 |
| B243 | B243-05 | 1/25/08 | 5 | 6 | Area 3 | UG/KG | 460000 |
| B243 | B243-10 | 1/25/08 | 10 | 11 | Area 3 | UG/KG | 9410000 |
| B246 | B246-5 | 1/15/08 | 5 | 6 | Area 1 | UG/KG | 158200 |
| B246 | B246-10 | 1/15/08 | 10 | 11 | Area 1 | UG/KG | 3470000 |
| B247 | B247-05 | 1/17/08 | 5 | 6 | Area 1 | UG/KG | 160000 |
| B249 | B249-05 | 1/14/08 | 5 | 6 | Area 1 | UG/KG | 1552800 |
| B249 | B249-10 | 1/14/08 | 10 | 11 | Area 1 | UG/KG | 464435 |
| B250 | B250-05 | 1/16/08 | 5 | 6 | Area 1 | UG/KG | 17900 |
| B252 | B252-5 | 1/15/08 | 5 | 6 | Area 1 | UG/KG | 12800 |
| B253 | B253-05 | 1/31/08 | 5 | 6 | Area 4 | UG/KG | 16880000 |
| B253 | B253-10 | 1/31/08 | 10 | 11 | Area 4 | UG/KG | 2749000 |
| B254 | B254-05 | 2/5/08 | 5 | 6 | Area 4 | UG/KG | 35000 |
| B255 | B255-05 | 1/31/08 | 5 | 6 | Area 3 | UG/KG | 264000 |
| B257 | B257-05 | 1/30/08 | 5 | 6 | Area 3 | UG/KG | 4020000 |
| B257 | B257-10 | 1/30/08 | 10 | 11 | Area 3 | UG/KG | 1314000 |
| B258 | B258-05 | 1/31/08 | 5 | 6 | Area 3 | UG/KG | 2805100 |
| B258 | B258-10 | 1/31/08 | 10 | 11 | Area 3 | UG/KG | 18052500 |
| B260 | B260-05 | 2/1/08 | 5 | 6 | Area 3 | UG/KG | 1029000 |
| B260 | B260-10 | 2/1/08 | 10 | 11 | Area 3 | UG/KG | 417000 |
| B261 | B261-5 | 1/21/09 | 4.5 | 5.5 | Area 3 | UG/KG | 17700000 |
| B263 | B263-05 | 2/4/08 | 5 | 6 | Area 3 | UG/KG | 668000 |
| B266 | B266-10 | 1/14/08 | 10 | 11 | Area 1 | UG/KG | 1400 |
| B267 | B267-05 | 1/15/08 | 5 | 6 | Area 1 | UG/KG | 3300 |
| B267 | B267-10 | 1/15/08 | 10 | 11 | Area 1 | UG/KG | 3100 |
| B271 | B271-10 | 1/14/08 | 10 | 11 | Area 1 | UG/KG | 3154 |
| B272 | B272-5 | 1/14/08 | 5 | 6 | Area 1 | UG/KG | 711 |
| B272 | B272-10 | 1/14/08 | 10 | 11 | Area 1 | UG/KG | 2190 |
| B274 | B274-05 | 1/14/08 | 5 | 6 | Area 1 | UG/KG | 332000 |
| B274 | B274-10 | 1/14/08 | 10 | 11 | Area 1 | UG/KG | 463700 |
| B275 | B275-5 | 1/14/08 | 5 | 6 | Area 1 | UG/KG | 3012 |
| B275 | B275-10 | 1/14/08 | 10 | 11 | Area 1 | UG/KG | 2350 |
| B276 | B276-05 | 2/4/08 | 5 | 6 | Area 3 | UG/KG | 837000 |
| B277 | B277-5 | 1/16/08 | 5 | 6 | Area 3 | UG/KG | 758000 |
| B277 | B277-10 | 1/16/08 | 10 | 11 | Area 3 | UG/KG | 1900 |
| B278 | B278-5 | 1/16/08 | 5 | 6 | Area 1 | UG/KG | 11790000 |
| B278 | B278-10 | 1/16/08 | 10 | 11 | Area 1 | UG/KG | 6100000 |
| B279 | B279-5 | 1/16/08 | 5 | 6 | Area 1 | UG/KG | 1840000 |
| B280 | B280-5 | 1/16/08 | 5 | 6 | Area 1 | UG/KG | 806000 |
| B280 | B280-10 | 1/16/08 | 10 | 11 | Area 1 | UG/KG | 4634000 |
| B281 | B281-5 | 1/14/08 | 5 | 6 | Area 1 | UG/KG | 2718.4 |
| B281 | B281-10 | 1/14/08 | 10 | 11 | Area 1 | UG/KG | 2481000 |
| B282 | B282-05 | 1/28/08 | 5 | 6 | Area 1 | UG/KG | 42700 |
| B282 | B282-10 | 1/28/08 | 10 | 11 | Area 1 | UG/KG | 4890 |
| B283 | B283-05 | 1/29/08 | 5 | 6 | Area 1 | UG/KG | 339000 |
| B284 | B284-05 | 1/28/08 | 5 | 6 | Area 2 | UG/KG | 125740 |
| B285 | B285-05 | 1/28/08 | 5 | 6 | Area 2 | UG/KG | 309200 |
| B285 | B285-10 | 1/28/08 | 10 | 11 | Area 2 | UG/KG | 2009 |
| B286 | B286-5 | 1/22/09 | 5 | 6 | Area 2 | UG/KG | 210400 |
| B286 | B286-10 | 1/22/09 | 10 | 11 | Area 2 | UG/KG | 530000 |
| B287 | B287-5 | 1/22/08 | 5 | 6 | Area 2 | UG/KG | 31400 |

**Table B7**
**Results of TPHd Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Diesel Range Organics |
|---|---|---|---|---|---|---|---|
| B287 | B287-10 | 1/22/08 | 10 | 11 | Area 2 | UG/KG | 66000 |
| B289 | B289-5 | 1/28/08 | 5 | 6 | Area 2 | UG/KG | 25000 |
| B290 | B290-5 | 1/28/08 | 5 | 6 | Area 2 | UG/KG | 728000 |
| B290 | B290-10 | 1/28/08 | 10 | 11 | Area 2 | UG/KG | 1138000 |
| B291 | B291-10 | 1/29/08 | 10 | 11 | Area 2 | UG/KG | 55630 |
| B292 | B292-5 | 1/22/09 | 5 | 6 | Area 2 | UG/KG | 512800 |
| B292 | B292-10 | 1/22/09 | 10 | 11 | Area 2 | UG/KG | 109900 |
| B294 | B294-05 | 1/31/08 | 4.5 | 5 | Area 2 | UG/KG | 166300 |
| B294 | B294-10 | 1/31/08 | 10 | 11 | Area 2 | UG/KG | 372100 |
| B295 | B295-5 | 1/22/09 | 5 | 6 | Area 2 | UG/KG | 11900 |
| B297 | B297-5 | 1/20/09 | 4.5 | 5.5 | Area 2 | UG/KG | 6200 |
| B299 | B299-5 | 1/19/09 | 5 | 6 | Area 4 | UG/KG | 3302000 |
| B299 | B299-10 | 1/19/09 | 9.5 | 10.5 | Area 4 | UG/KG | 20460000 |
| B301 | B301-05 | 2/6/08 | 5 | 6 | Area 4 | UG/KG | 92100 |
| B301 | B301-10 | 2/6/08 | 10 | 11 | Area 4 | UG/KG | 900 |
| B303 | B303-05 | 1/28/08 | 5 | 6 | Area 4 | UG/KG | 4820000 |
| B303 | B303-10 | 1/28/08 | 10 | 11 | Area 4 | UG/KG | 5470000 |
| B304 | B304-5 | 1/19/09 | 4.5 | 5.5 | Area 3 | UG/KG | 47500 |
| B305 | B305-5 | 1/19/09 | 4.5 | 5.5 | Area 3 | UG/KG | 99500 |
| B306 | B306-05 | 1/31/08 | 5 | 6 | Area 3 | UG/KG | 3436000 |
| B306 | B306-10 | 1/31/08 | 10 | 11 | Area 3 | UG/KG | 2336000 |
| B307 | B307-5 | 1/28/08 | 5 | 6 | Area 3 | UG/KG | 6710 |
| B307 | B307-10 | 1/28/08 | 10 | 11 | Area 3 | UG/KG | 5160 |
| B308 | B308-05 | 1/30/08 | 5 | 6 | Area 3 | UG/KG | 639000 |
| B309 | B309-5 | 1/19/09 | 4.5 | 5.5 | Area 3 | UG/KG | 20700 |
| B310 | B310-05 | 2/4/08 | 5 | 6 | Area 3 | UG/KG | 107000 |
| B311 | B311-05 | 2/5/08 | 5 | 6 | Area 3 | UG/KG | 3860000 |
| B313 | B313-05 | 2/1/08 | 4.5 | 5.5 | Area 3 | UG/KG | 480 |
| B315 | B315-05 | 1/30/08 | 4.5 | 5.5 | Area 3 | UG/KG | 1375000 |
| B315 | B315-10 | 1/30/08 | 10 | 11 | Area 3 | UG/KG | 4530000 |
| B316 | B316-05 | 1/30/08 | 4.5 | 5.5 | Area 3 | UG/KG | 1099000 |
| B316 | B316-10 | 1/30/08 | 10 | 11 | Area 3 | UG/KG | 8310000 |
| B317 | B317-05 | 1/29/08 | 4.5 | 5.5 | Area 3 | UG/KG | 1760 |
| B317 | B317-10 | 1/29/08 | 10 | 11 | Area 3 | UG/KG | 1200 |
| B318 | B318-05 | 1/28/08 | 4.5 | 5.5 | Area 2 | UG/KG | 162000 |
| B319 | B319-10 | 1/21/09 | 10 | 11 | Area 2 | UG/KG | 15500 |
| B320 | B320-10 | 1/29/08 | 10 | 11 | Area 3 | UG/KG | 415300 |
| B322 | B322-05 | 2/1/08 | 5 | 6 | Area 3 | UG/KG | 538200 |
| B322 | B322-10 | 2/1/08 | 10 | 11 | Area 3 | UG/KG | 12000 |
| B323 | B323-05 | 1/28/08 | 4.5 | 5.5 | Area 3 | UG/KG | 94300 |
| B324 | B324-00 | 4/8/08 | 0 | 0.5 | Area 4 | UG/KG | 250150 |
| B325 | B325-00 | 4/8/08 | 0 | 0.5 | Area 4 | UG/KG | 226960 |
| B326 | B326-00 | 4/8/08 | 0 | 0.5 | Area 4 | UG/KG | 28200 |
| B-401 | LL_B-401-1_100611 | 10/6/11 | 0.5 | 1 | Area 2 | UG/KG | 630000 |
| B-401 | LL_B-401-3_100611 | 10/6/11 | 2.5 | 3 | Area 2 | UG/KG | 40000 |
| B-401 | LL_B-401-6_100611 | 10/6/11 | 5.5 | 6 | Area 2 | UG/KG | <10000 |
| B-401 | LL_B-401-9_100611 | 10/6/11 | 8.5 | 9 | Area 2 | UG/KG | <10000 |
| B-402 | LL_B-402-1_100611 | 10/6/11 | 0.5 | 1 | Area 2 | UG/KG | 270000 |
| B-402 | LL_B-402-3_100611 | 10/6/11 | 2.5 | 3 | Area 2 | UG/KG | 85000 |
| B-402 | LL_B-402-6_100611 | 10/6/11 | 5.5 | 6 | Area 2 | UG/KG | 10000 |
| B-402 | LL_B-402-9_100611 | 10/6/11 | 8.5 | 9 | Area 2 | UG/KG | <10000 |
| B-403 | LL_B-403-1_100711 | 10/7/11 | 0.5 | 1 | Area 2 | UG/KG | 460000 |
| B-403 | LL_B-403-3_100711 | 10/7/11 | 2.5 | 3 | Area 2 | UG/KG | 1500000 |
| B-403 | LL_B-403-6_100711 | 10/7/11 | 5.5 | 6 | Area 2 | UG/KG | 16000 |
| B-403 | LL_B-403-9_100711 | 10/7/11 | 8.5 | 9 | Area 2 | UG/KG | <10000 |
| B-404 | LL_B-404-1_100711 | 10/7/11 | 0.5 | 1 | Area 2 | UG/KG | 3300000 |
| B-404 | LL_B-404-3_100711 | 10/7/11 | 2.5 | 3 | Area 2 | UG/KG | 1700000 |
| B-404 | LL_B-404-6_100711 | 10/7/11 | 5.5 | 6 | Area 2 | UG/KG | 1000000 |
| B-404 | LL_B-404-9_100711 | 10/7/11 | 8.5 | 9 | Area 2 | UG/KG | 4000000 |
| B-405 | LL_B-405-1_100711 | 10/7/11 | 0.5 | 1 | Area 2 | UG/KG | 1100000 |
| B-405 | LL_B-405-3_100711 | 10/7/11 | 2.5 | 3 | Area 2 | UG/KG | 4800000 |
| B-406 | LL_B-406-1_100711 | 10/7/11 | 0.5 | 1 | Area 2 | UG/KG | 350000 |
| B-406 | LL_B-406-3_100711 | 10/7/11 | 2.5 | 3 | Area 2 | UG/KG | 850000 |
| B-406 | LL_B-406-6_100711 | 10/7/11 | 5.5 | 6 | Area 2 | UG/KG | 1000000 |
| B-406 | LL_B-406-9_100711 | 10/7/11 | 8.5 | 9 | Area 2 | UG/KG | 4500000 |
| B-407 | LL_B-407-1_100711 | 10/7/11 | 0.5 | 1 | Area 2 | UG/KG | 4500000 |
| B-407 | LL_B-407-3_100711 | 10/7/11 | 2.5 | 3 | Area 2 | UG/KG | 5900000 |

**Table B7**
**Results of TPHd Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Diesel Range Organics |
|---|---|---|---|---|---|---|---|
| B-407 | LL_B-407-6_100711 | 10/7/11 | 5.5 | 6 | Area 2 | UG/KG | 2000000 |
| B-407 | LL_B-407-9_100711 | 10/7/11 | 8.5 | 9 | Area 2 | UG/KG | 2900000 |
| B-408 | LL_B-408-1_100711 | 10/7/11 | 0.5 | 1 | Area 2 | UG/KG | 570000 |
| B-408 | LL_B-408-3_100711 | 10/7/11 | 2.5 | 3 | Area 2 | UG/KG | 94000 |
| B-408 | LL_B-408-6_100711 | 10/7/11 | 5.5 | 6 | Area 2 | UG/KG | 18000 |
| B-408 | LL_B-408-9_100711 | 10/7/11 | 8.5 | 9 | Area 2 | UG/KG | <10000 |
| B-409 | LL_B-409-1_100711 | 10/7/11 | 0.5 | 1 | Area 2 | UG/KG | 380000 |
| B-409 | LL_B-409-3_100711 | 10/7/11 | 2.5 | 3 | Area 2 | UG/KG | 250000 |
| B-409 | LL_B-409-6_100711 | 10/7/11 | 5.5 | 6 | Area 2 | UG/KG | 1700000 |
| B-409 | LL_B-409-9_100711 | 10/7/11 | 8.5 | 9 | Area 2 | UG/KG | 4300000 |
| B-410 | LL_B-410-1_100711 | 10/7/11 | 0.5 | 1 | Area 2 | UG/KG | 1300000 |
| B-410 | LL_B-410-3_100711 | 10/7/11 | 2.5 | 3 | Area 2 | UG/KG | 500000 |
| B-410 | LL_B-410-6_100711 | 10/7/11 | 5.5 | 6 | Area 2 | UG/KG | <10000 |
| B-410 | LL_B-410-9_100711 | 10/7/11 | 8.5 | 9 | Area 2 | UG/KG | 630000 |
| B-411 | LL_B-411-1_100611 | 10/6/11 | 0.5 | 1 | Area 1 | UG/KG | 25000 |
| B-411 | LL_B-411-3_100611 | 10/6/11 | 2.5 | 3 | Area 1 | UG/KG | 17000 |
| B-411 | LL_B-411-6_100611 | 10/6/11 | 5.5 | 6 | Area 1 | UG/KG | 47000 |
| B-411 | LL_B-411-9_100611 | 10/6/11 | 8.5 | 9 | Area 1 | UG/KG | <10000 |
| B-412 | LL_B-412-1_100611 | 10/6/11 | 0.5 | 1 | Area 1 | UG/KG | 35000 |
| B-412 | LL_B-412-3_100611 | 10/6/11 | 2.5 | 3 | Area 1 | UG/KG | 120000 |
| B-412 | LL_B-412-6_100611 | 10/6/11 | 5.5 | 6 | Area 1 | UG/KG | <10000 |
| B-412 | LL_B-412-9_100611 | 10/6/11 | 8.5 | 9 | Area 1 | UG/KG | <10000 |
| B-413 | LL_B-413-1_100611 | 10/6/11 | 0.5 | 1 | Area 1 | UG/KG | 4900000 |
| B-413 | LL_B-413-3_100611 | 10/6/11 | 2.5 | 3 | Area 1 | UG/KG | 27000000 |
| B-413 | LL_B-413-6_100611 | 10/6/11 | 5.5 | 6 | Area 1 | UG/KG | 6400000 |
| B-413 | LL_B-413-9_100611 | 10/6/11 | 8.5 | 9 | Area 1 | UG/KG | 20000000 |
| B-414 | LL_B-414-1_100611 | 10/6/11 | 0.5 | 1 | Area 1 | UG/KG | 750000 |
| B-414 | LL_B-414-3_100611 | 10/6/11 | 2.5 | 3 | Area 1 | UG/KG | <10000 |
| B-414 | LL_B-414-6_100611 | 10/6/11 | 5.5 | 6 | Area 1 | UG/KG | <10000 |
| B-414 | LL_B-414-9_100611 | 10/6/11 | 8.5 | 9 | Area 1 | UG/KG | 83000 |
| B-415 | LL_B-415-1_100611 | 10/6/11 | 0.5 | 1 | Area 1 | UG/KG | 2900000 |
| B-415 | LL_B-415-3_100611 | 10/6/11 | 2.5 | 3 | Area 1 | UG/KG | 5200000 |
| B-415 | LL_B-415-6_100611 | 10/6/11 | 5.5 | 6 | Area 1 | UG/KG | 430000 |
| B-415 | LL_B-415-9_100611 | 10/6/11 | 8.5 | 9 | Area 1 | UG/KG | 54000 |
| B-416 | LL_B-416-1_100611 | 10/6/11 | 0.5 | 1 | Area 1 | UG/KG | 430000 |
| B-416 | LL_B-416-3_100611 | 10/6/11 | 2.5 | 3 | Area 1 | UG/KG | 330000 |
| B-416 | LL_B-416-6_100611 | 10/6/11 | 5.5 | 6 | Area 1 | UG/KG | 730000 |
| B-416 | LL_B-416-9_100611 | 10/6/11 | 8.5 | 9 | Area 1 | UG/KG | 360000 |
| B-417 | LL_B-417-1_100611 | 10/6/11 | 0.5 | 1 | Area 1 | UG/KG | <10000 |
| B-417 | LL_B-417-3_100611 | 10/6/11 | 2.5 | 3 | Area 1 | UG/KG | 3000000 |
| B-417 | LL_B-417-6_100611 | 10/6/11 | 5.5 | 6 | Area 1 | UG/KG | 1200000 |
| B-417 | LL_B-417-9_100611 | 10/6/11 | 8.5 | 9 | Area 1 | UG/KG | 1600000 |
| B-418 | LL_B-418-1_100611 | 10/6/11 | 0.5 | 1 | Area 1 | UG/KG | 4700000 |
| B-418 | LL_B-418-3_100611 | 10/6/11 | 2.5 | 3 | Area 1 | UG/KG | 870000 |
| B-418 | LL_B-418-6_100611 | 10/6/11 | 5.5 | 6 | Area 1 | UG/KG | 7100000 |
| B-418 | LL_B-418-9_100611 | 10/6/11 | 8.5 | 9 | Area 1 | UG/KG | <10000 |
| B-419 | LL_B-419-1_100611 | 10/6/11 | 0.5 | 1 | Area 1 | UG/KG | 140000 |
| B-419 | LL_B-419-3_100611 | 10/6/11 | 2.5 | 3 | Area 1 | UG/KG | <10000 |
| B-419 | LL_B-419-6_100611 | 10/6/11 | 5.5 | 6 | Area 1 | UG/KG | <10000 |
| B-419 | LL_B-419-9_100611 | 10/6/11 | 8.5 | 9 | Area 1 | UG/KG | <10000 |
| B-420 | LL_B-420-1_100611 | 10/6/11 | 0.5 | 1 | Area 1 | UG/KG | 21000 |
| B-420 | LL_B-420-3_100611 | 10/6/11 | 2.5 | 3 | Area 1 | UG/KG | <10000 |
| B-420 | LL_B-420-6_100611 | 10/6/11 | 5.5 | 6 | Area 1 | UG/KG | 72000 |
| B-420 | LL_B-420-9_100611 | 10/6/11 | 8.5 | 9 | Area 1 | UG/KG | <10000 |
| B-421 | LL_B-421-1_100511 | 10/5/11 | 0.5 | 1 | Area 3 | UG/KG | 96000 |
| B-421 | LL_B-421-3_100511 | 10/5/11 | 2.5 | 3 | Area 3 | UG/KG | <10000 |
| B-421 | LL_B-421-6_100511 | 10/5/11 | 5.5 | 6 | Area 3 | UG/KG | <10000 |
| B-421 | LL_B-421-9_100511 | 10/5/11 | 8.5 | 9 | Area 3 | UG/KG | <10000 |
| B-422 | LL_B-422-1_100511 | 10/5/11 | 0.5 | 1 | Area 3 | UG/KG | 2100000 |
| B-422 | LL_B-422-3_100511 | 10/5/11 | 2.5 | 3 | Area 3 | UG/KG | 4600000 |
| B-422 | LL_B-422-6_100611 | 10/6/11 | 5.5 | 6 | Area 3 | UG/KG | 5200000 |
| B-422 | LL_B-422-9_100611 | 10/6/11 | 8.5 | 9 | Area 3 | UG/KG | 8900000 |
| B-423 | LL_B-423-1_100711 | 10/7/11 | 0.5 | 1 | Area 3 | UG/KG | 850000 |
| B-423 | LL_B-423-3_100711 | 10/7/11 | 2.5 | 3 | Area 3 | UG/KG | 1800000 |
| B-423 | LL_B-423-6_100711 | 10/7/11 | 5.5 | 6 | Area 3 | UG/KG | 690000 |
| B-423 | LL_B-423-9_100711 | 10/7/11 | 8.5 | 9 | Area 3 | UG/KG | 310000 |
| B-424 | LL_B-424-1_100511 | 10/5/11 | 0.5 | 1 | Area 3 | UG/KG | 82000 |

**Table B7**
**Results of TPHd Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Diesel Range Organics |
|---|---|---|---|---|---|---|---|
| B-424 | LL_B-424-3_100511 | 10/5/11 | 2.5 | 3 | Area 3 | UG/KG | 170000 |
| B-424 | LL_B-424-6_100511 | 10/5/11 | 5.5 | 6 | Area 3 | UG/KG | 110000 |
| B-424 | LL_B-424-9_100511 | 10/5/11 | 8.5 | 9 | Area 3 | UG/KG | 340000 |
| B-425 | LL_B-425-1_100511 | 10/5/11 | 0.5 | 1 | Area 3 | UG/KG | 2200000 |
| B-425 | LL_B-425-3_100511 | 10/5/11 | 2.5 | 3 | Area 3 | UG/KG | 510000 |
| B-425 | LL_B-425-6_100511 | 10/5/11 | 5.5 | 6 | Area 3 | UG/KG | 160000 |
| B-425 | LL_B-425-9_100511 | 10/5/11 | 8.5 | 9 | Area 3 | UG/KG | 1800000 |
| B-426 | LL_B-426-1_100511 | 10/5/11 | 0.5 | 1 | Area 3 | UG/KG | 5700000 |
| B-426 | LL_B-426-3_100511 | 10/5/11 | 2.5 | 3 | Area 3 | UG/KG | <10000 |
| B-426 | LL_B-426-6_100511 | 10/5/11 | 5.5 | 6 | Area 3 | UG/KG | 1100000 |
| B-426 | LL_B-426-9_100511 | 10/5/11 | 8.5 | 9 | Area 3 | UG/KG | 680000 |
| B-427 | LL_B-427-1_100511 | 10/5/11 | 0.5 | 1 | Area 3 | UG/KG | 16000000 |
| B-427 | LL_B-427-3_100511 | 10/5/11 | 2.5 | 3 | Area 3 | UG/KG | 19000 |
| B-427 | LL_B-427-6_100511 | 10/5/11 | 5.5 | 6 | Area 3 | UG/KG | 12000 |
| B-427 | LL_B-427-9_100511 | 10/5/11 | 8.5 | 9 | Area 3 | UG/KG | 17000 |
| B-428 | LL_B-428-1_100511 | 10/5/11 | 0.5 | 1 | Area 3 | UG/KG | 3600000 |
| B-428 | LL_B-428-3_100511 | 10/5/11 | 2.5 | 3 | Area 3 | UG/KG | 5400000 |
| B-428 | LL_B-428-6_100511 | 10/5/11 | 5.5 | 6 | Area 3 | UG/KG | 1900000 |
| B-428 | LL_B-428-9_100511 | 10/5/11 | 8.5 | 9 | Area 3 | UG/KG | 1100000 |
| B-429 | LL_B-429-1_100511 | 10/5/11 | 0.5 | 1 | Area 3 | UG/KG | 840000 |
| B-429 | LL_B-429-3_100511 | 10/5/11 | 2.5 | 3 | Area 3 | UG/KG | 160000 |
| B-429 | LL_B-429-6_100511 | 10/5/11 | 5.5 | 6 | Area 3 | UG/KG | <10000 |
| B-429 | LL_B-429-9_100511 | 10/5/11 | 8.5 | 9 | Area 3 | UG/KG | <10000 |
| B-430 | LL_B-430-1_100511 | 10/5/11 | 0.5 | 1 | Area 3 | UG/KG | 2800000 |
| B-430 | LL_B-430-3_100511 | 10/5/11 | 2.5 | 3 | Area 3 | UG/KG | 1000000 |
| B-430 | LL_B-430-6_100511 | 10/5/11 | 5.5 | 6 | Area 3 | UG/KG | 790000 |
| B-430 | LL_B-430-9_100511 | 10/5/11 | 8.5 | 9 | Area 3 | UG/KG | 580000 |
| S001 | S001-0" | 12/4/07 | 0 | 0.5 | Area 4 | UG/KG | 358000 |
| S002 | S002-0" | 12/4/07 | 0 | 0.5 | Area 4 | UG/KG | 710000 |
| S003ALT | S003ALT-0" | 12/20/07 | 0 | 0.5 | Area 4 | UG/KG | 532740 |
| S004 | S004-0" | 1/4/08 | 0 | 0.5 | Area 4 | UG/KG | 186300 |
| S004 | S004-12" | 1/4/08 | 1 | 1.5 | Area 4 | UG/KG | 5300 |
| S005 | S005-0" | 12/18/07 | 0 | 0.5 | Area 4 | UG/KG | 2114000 |
| S006 | S006-0" | 12/17/07 | 0 | 0.5 | Area 4 | UG/KG | 1460000 |
| S006 | S006-12" | 12/17/07 | 1 | 1.5 | Area 4 | UG/KG | 5096000 |
| S007 | S007-0" | 12/17/07 | 0 | 0.5 | Area 4 | UG/KG | 3910000 |
| S008 | S008-0" | 12/17/07 | 0 | 0.5 | Area 4 | UG/KG | 416000 |
| S009 | S009-0" | 12/17/07 | 0 | 0.5 | Area 4 | UG/KG | 184000 |
| S009 | S009-12" | 12/17/07 | 1 | 1.5 | Area 4 | UG/KG | 338000 |
| S010 | S010-6'' | 1/19/09 | 0.5 | 1 | Area 4 | UG/KG | 312200 |
| S011 | S011-0" | 12/17/07 | 0 | 0.5 | Area 4 | UG/KG | 3451000 |
| S011 | S011-12" | 12/17/07 | 1 | 1.5 | Area 4 | UG/KG | 10810000 |
| S012 | S012B-0" | 12/18/07 | 0 | 0.5 | Area 4 | UG/KG | 1102000 |
| S013 | S013-0" | 1/4/08 | 0 | 0.5 | Area 4 | UG/KG | 1242000 |
| S014 | S014-0" | 12/4/07 | 0 | 0.5 | Area 4 | UG/KG | 210000 |
| S015 | S015-0" | 12/4/07 | 0 | 0.5 | Area 4 | UG/KG | 3418000 |
| S016 | S016B-0" | 1/2/08 | 0 | 0.5 | Area 4 | UG/KG | 7050000 |
| S016 | S016B-12" | 1/2/08 | 1 | 1.5 | Area 4 | UG/KG | 2260 |
| S017 | S017-0" | 12/4/07 | 0 | 0.5 | Area 4 | UG/KG | 604000 |
| S018 | S018-0" | 12/20/07 | 0 | 0.5 | Area 4 | UG/KG | 155700 |
| S019 | S019-0" | 12/18/07 | 0 | 0.5 | Area 4 | UG/KG | 401100 |
| S020 | S020-0" | 12/18/07 | 0 | 0.5 | Area 4 | UG/KG | 11210000 |
| S020 | S020-12" | 12/18/07 | 1 | 1.5 | Area 4 | UG/KG | 12700000 |
| S021 | S021-6'' | 1/19/09 | 0.5 | 1 | Area 4 | UG/KG | 240500 |
| S022 | S022-0" | 12/17/07 | 0 | 0.5 | Area 4 | UG/KG | 501000 |
| S023 | S023-0" | 12/17/07 | 0 | 0.5 | Area 3 | UG/KG | 474000 |
| S024 | S024-0" | 12/17/07 | 0 | 0.5 | Area 3 | UG/KG | 37300 |
| S025 | S025-0" | 12/18/07 | 0 | 0.5 | Area 3 | UG/KG | 10170000 |
| S025 | S025-12" | 12/18/07 | 1 | 1.5 | Area 3 | UG/KG | 1372000 |
| S026 | S026-0" | 12/18/07 | 0 | 0.5 | Area 3 | UG/KG | 6010000 |
| S026 | S026-12" | 12/18/07 | 1 | 1.5 | Area 3 | UG/KG | 18500000 |
| S027 | S027-0" | 12/20/07 | 0 | 0.5 | Area 3 | UG/KG | 18700000 |
| S028 | S028-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | 162000 |
| S029 | S029-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | 14480000 |
| S029 | S029-18" | 12/4/07 | 1.5 | 2 | Area 3 | UG/KG | 7050000 |
| S030 | S030-12" | 12/4/07 | 1 | 1.5 | Area 3 | UG/KG | 11823000 |
| S031 | S031-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | 2202000 |

**Table B7**
**Results of TPHd Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Diesel Range Organics |
|---|---|---|---|---|---|---|---|
| S032 | S032-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | 1862000 |
| S033 | S033-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | 4175000 |
| S034 | S034-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | 1595000 |
| S035 | S035-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | 8404000 |
| S036 | S036-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | 11480000 |
| S037 | S037-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | 20040000 |
| S037 | S037-20" | 12/4/07 | 1.67 | 2.167 | Area 3 | UG/KG | 709000 |
| S038 | S038-0" | 12/20/07 | 0 | 0.5 | Area 3 | UG/KG | 1334800 |
| S039 | S039-0" | 1/2/08 | 0 | 0.5 | Area 3 | UG/KG | 1394000 |
| S039 | S039-12" | 1/2/08 | 1 | 1.5 | Area 3 | UG/KG | 3040000 |
| S040 | S040-0" | 12/20/07 | 0 | 0.5 | Area 3 | UG/KG | 419000 |
| S040 | S040-12" | 12/20/07 | 1 | 1.5 | Area 3 | UG/KG | 1428000 |
| S041 | S041-0" | 1/30/08 | 0 | 0.5 | Area 3 | UG/KG | 217900 |
| S042 | S042-0" | 1/30/08 | 0 | 0.5 | Area 3 | UG/KG | 15550000 |
| S042 | S042-12" | 1/30/08 | 1 | 1.5 | Area 3 | UG/KG | 19930000 |
| S043 | S043-0" | 1/30/08 | 0 | 0.5 | Area 3 | UG/KG | 146300 |
| S044 | S044-0" | 12/20/07 | 0 | 0.5 | Area 3 | UG/KG | 767600 |
| S045 | S045-0" | 12/20/07 | 0 | 0.5 | Area 3 | UG/KG | 206500 |
| S046 | S046-0" | 12/20/07 | 0 | 0.5 | Area 3 | UG/KG | 8200000 |
| S047 | S047-6" | 1/20/09 | 0.5 | 1 | Area 3 | UG/KG | 42410000 |
| S048 | S048-0" | 1/7/08 | 0 | 0.5 | Area 3 | UG/KG | 22250000 |
| S049 | S049-6" | 1/20/09 | 0.5 | 1 | Area 3 | UG/KG | 756310 |
| S050 | S050-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | 1212000 |
| S051 | S051-0" | 12/20/07 | 0 | 0.5 | Area 3 | UG/KG | 285200 |
| S052 | S052-0" | 12/20/07 | 0 | 0.5 | Area 3 | UG/KG | 711200 |
| S052 | S052-12" | 12/20/07 | 1 | 1.5 | Area 3 | UG/KG | 1492000 |
| S053 | S053-0" | 12/20/07 | 0 | 0.5 | Area 3 | UG/KG | 7341000 |
| S053 | S053-12" | 12/20/07 | 1 | 1.5 | Area 3 | UG/KG | 1500000 |
| S054 | S054-0" | 1/30/08 | 0 | 0.5 | Area 3 | UG/KG | 840340 |
| S055 | S055-0" | 1/30/08 | 0 | 0.5 | Area 3 | UG/KG | 771100 |
| S055 | S055-12" | 1/30/08 | 1 | 1.5 | Area 3 | UG/KG | 671200 |
| S056 | S056-0" | 1/30/08 | 0 | 0.5 | Area 3 | UG/KG | 262590 |
| S056 | S056-12" | 1/30/08 | 1 | 1.5 | Area 3 | UG/KG | 140900 |
| S057 | S057-0" | 1/30/08 | 0 | 0.5 | Area 3 | UG/KG | 209000 |
| S058 | S058-0" | 2/1/08 | 0 | 0.5 | Area 3 | UG/KG | 1230000 |
| S059 | S059-0" | 2/1/08 | 0 | 0.5 | Area 3 | UG/KG | 117490 |
| S059 | S059-12" | 2/1/08 | 1 | 1.5 | Area 3 | UG/KG | 133200 |
| S060 | S060-0" | 12/13/07 | 0 | 0.5 | Area 3 | UG/KG | 2330000 |
| S060 | S060-18" | 12/13/07 | 1.5 | 2 | Area 3 | UG/KG | 21460000 |
| S061 | S061-0" | 12/13/07 | 0 | 0.5 | Area 3 | UG/KG | 1128000 |
| S063 | S063-0" | 12/14/07 | 0 | 0.5 | Area 3 | UG/KG | 84000 |
| S064 | S064-0" | 12/14/07 | 0 | 0.5 | Area 3 | UG/KG | 190000 |
| S064 | S064-18" | 12/14/07 | 1.5 | 2 | Area 3 | UG/KG | 44000 |
| S065 | S065-0" | 2/1/08 | 0 | 0.5 | Area 3 | UG/KG | 137400 |
| S065 | S065-12" | 2/1/08 | 1 | 1.5 | Area 3 | UG/KG | 4980 |
| S066 | S066-0" | 12/14/07 | 0 | 0.5 | Area 3 | UG/KG | 712000 |
| S067 | S067-0" | 12/14/07 | 0 | 0.5 | Area 3 | UG/KG | 330600 |
| S068 | S068-0" | 12/13/07 | 0 | 0.5 | Area 3 | UG/KG | 292000 |
| S069 | S069-0" | 12/13/07 | 0 | 0.5 | Area 3 | UG/KG | 395000 |
| S070 | S070-0" | 12/13/07 | 0 | 0.5 | Area 3 | UG/KG | 398000 |
| S071B | S071B-12" | 12/21/07 | 1 | 1.5 | Area 3 | UG/KG | 7160 |
| S072 | S072-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | 218200 |
| S073 | S073-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | 131400 |
| S074 | S074-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | 2403100 |
| S075 | S075-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | 1774000 |
| S076 | S076-6'' | 1/22/09 | 0.5 | 1 | Area 3 | UG/KG | 47520000 |
| S078 | S078-0" | 2/1/08 | 0 | 0.5 | Area 3 | UG/KG | 2860000 |
| S078 | S078-12" | 2/1/08 | 1 | 1.5 | Area 3 | UG/KG | 58200 |
| S080 | S080-0" | 2/1/08 | 0 | 0.5 | Area 3 | UG/KG | 2371000 |
| S081 | S081-0" | 2/1/08 | 0 | 0.5 | Area 3 | UG/KG | 187600 |
| S082 | S082-0" | 12/13/07 | 0 | 0.5 | Area 3 | UG/KG | 3004000 |
| S083 | S083-0" | 12/13/07 | 0 | 0.5 | Area 3 | UG/KG | 11340000 |
| S083 | S083-15" | 12/13/07 | 1.25 | 1.75 | Area 3 | UG/KG | 9260000 |
| S084 | S084-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | 5891000 |
| S085 | S085-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | 1132100 |
| S086 | S086-6" | 1/20/09 | 0.5 | 1 | Area 3 | UG/KG | 676000 |
| S087 | S087-0" | 12/13/07 | 0 | 0.5 | Area 3 | UG/KG | 1697000 |

**Table B7**
**Results of TPHd Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Diesel Range Organics |
|---|---|---|---|---|---|---|---|
| S088 | S088-0" | 1/2/08 | 0 | 0.5 | Area 3 | UG/KG | 2051100 |
| S089 | S089-0" | 1/2/08 | 0 | 0.5 | Area 3 | UG/KG | 47360 |
| S090 | S090-0" | 12/13/07 | 0 | 0.5 | Area 3 | UG/KG | 6370000 |
| S090 | S090-18" | 12/13/07 | 1.5 | 2 | Area 3 | UG/KG | 4940000 |
| S091 | S091-0" | 2/1/08 | 0 | 0.5 | Area 3 | UG/KG | 16310000 |
| S092 | S092-0" | 12/13/07 | 0 | 0.5 | Area 3 | UG/KG | 325400 |
| S093 | S093-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | 1113800 |
| S094 | S094-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | 24500 |
| S095 | S095-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | 272000 |
| S096 | S096-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | 171100 |
| S097 | S097-6" | 1/20/09 | 0.5 | 1 | Area 3 | UG/KG | 547600 |
| S098 | S098-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | 22100 |
| S099 | S099-0" | 12/13/07 | 0 | 0.5 | Area 3 | UG/KG | 14500 |
| S100 | S100-0" | 12/13/07 | 0 | 0.5 | Area 3 | UG/KG | 94700 |
| S101 | S101-0" | 12/13/07 | 0 | 0.5 | Area 3 | UG/KG | 803000 |
| S102 | S102-0" | 12/13/07 | 0 | 0.5 | Area 3 | UG/KG | 3150000 |
| S102 | S102-15" | 12/13/07 | 1.25 | 1.75 | Area 3 | UG/KG | 872000 |
| S103 | S103-0" | 1/3/08 | 0 | 0.5 | Area 2 | UG/KG | 1507000 |
| S103 | S103-12" | 1/3/08 | 1 | 1.5 | Area 2 | UG/KG | 201300 |
| S105 | S105-0" | 1/31/08 | 0 | 0.5 | Area 2 | UG/KG | 5598000 |
| S106 | S106-6'' | 1/22/09 | 0.5 | 1 | Area 2 | UG/KG | 26400 |
| S106 | S106-12'' | 1/22/09 | 1 | 1.5 | Area 2 | UG/KG | 12000 |
| S108 | S108-0" | 12/20/07 | 0 | 0.5 | Area 2 | UG/KG | 2030900 |
| S109 | S109-0" | 1/31/08 | 0 | 0.5 | Area 2 | UG/KG | 29100000 |
| S109 | S109-12" | 1/31/08 | 1 | 1.5 | Area 2 | UG/KG | 16100000 |
| S110 | S110-6'' | 1/22/09 | 0.5 | 1 | Area 2 | UG/KG | 15240000 |
| S111 | S111-0" | 12/21/07 | 0 | 0.5 | Area 2 | UG/KG | 7680000 |
| S111 | S111-12" | 12/21/07 | 1 | 1.5 | Area 2 | UG/KG | 2780000 |
| S112 | S112-6'' | 1/22/09 | 0.5 | 1 | Area 2 | UG/KG | 10030000 |
| S113 | S113-0" | 1/31/08 | 0 | 0.5 | Area 2 | UG/KG | 1658000 |
| S113 | S113-12" | 1/31/08 | 1 | 1.5 | Area 2 | UG/KG | 2830000 |
| S114 | S114-0" | 1/29/08 | 0 | 0.5 | Area 2 | UG/KG | 50207 |
| S115 | S115-0" | 1/29/08 | 0 | 0.5 | Area 2 | UG/KG | 20838000 |
| S116 | S116-0" | 1/29/08 | 0 | 0.5 | Area 2 | UG/KG | 766900 |
| S117 | S117-0" | 1/31/08 | 0 | 0.5 | Area 2 | UG/KG | 3360 |
| S118 | S118-6'' | 1/22/09 | 0.5 | 1 | Area 2 | UG/KG | 13800 |
| S119 | S119-0" | 1/4/08 | 0 | 0.5 | Area 2 | UG/KG | 552000 |
| S119 | S119-12" | 1/4/08 | 1 | 1.5 | Area 2 | UG/KG | 4850000 |
| S120 | S120-0" | 1/4/08 | 0 | 0.5 | Area 2 | UG/KG | 230700 |
| S121 | S121-0" | 1/4/08 | 0 | 0.5 | Area 2 | UG/KG | 2660000 |
| S121 | S121-12" | 1/4/08 | 1 | 1.5 | Area 2 | UG/KG | 3480000 |
| S123 | S123-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | 128600 |
| S124 | S124-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | 1213000 |
| S125 | S125-0" | 1/29/08 | 0 | 0.5 | Area 1 | UG/KG | 1027600 |
| S126 | S126-0" | 1/7/08 | 0 | 0.5 | Area 1 | UG/KG | 1048700 |
| S126 | S126-12" | 1/7/08 | 1 | 1.5 | Area 1 | UG/KG | 1476000 |
| S127 | S127-0" | 2/1/08 | 0 | 0.5 | Area 3 | UG/KG | 2376000 |
| S130 | S130-0" | 1/7/08 | 0 | 0.5 | Area 3 | UG/KG | 6136000 |
| S130 | S130-12" | 1/7/08 | 1 | 1.5 | Area 3 | UG/KG | 1357200 |
| S131 | S131-0" | 1/7/08 | 0 | 0.5 | Area 1 | UG/KG | 3504400 |
| S132 | S132-0" | 1/3/08 | 0 | 0.5 | Area 1 | UG/KG | 68200 |
| S133 | S133B-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | 12010000 |
| S133 | S133B-12" | 11/29/07 | 1 | 1.5 | Area 1 | UG/KG | 8905000 |
| S134 | S134-0" | 1/7/08 | 0 | 0.5 | Area 1 | UG/KG | 682000 |
| S135 | S135-6'' | 1/19/09 | 0.5 | 1 | Area 1 | UG/KG | 12600 |
| S136 | S136-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | 46000000 |
| S136 | S136-24" | 11/29/07 | 2 | 2.5 | Area 1 | UG/KG | 6235000 |
| S137 | S137-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | 6723000 |
| S138 | S138-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | 10603000 |
| S138 | S138-18" | 11/29/07 | 1.5 | 2 | Area 1 | UG/KG | 24870000 |
| S139 | S139-12" | 11/29/07 | 1 | 1.5 | Area 1 | UG/KG | 12120000 |
| S139 | S139-24" | 11/29/07 | 2 | 2.5 | Area 1 | UG/KG | 5580000 |
| S140 | S140-12" | 11/29/07 | 1 | 1.5 | Area 1 | UG/KG | 73200 |
| S141 | S141-0" | 1/7/08 | 0 | 0.5 | Area 3 | UG/KG | 473200 |
| S141 | S141-12" | 1/7/08 | 1 | 1.5 | Area 3 | UG/KG | 67250 |
| S142 | S142-0" | 1/7/08 | 0 | 0.5 | Area 3 | UG/KG | 5829000 |
| S143 | S143-0" | 1/7/08 | 0 | 0.5 | Area 3 | UG/KG | 105020 |

**Table B7**
**Results of TPHd Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Diesel Range Organics |
|---|---|---|---|---|---|---|---|
| S144B | S144B-0" | 1/31/08 | 0 | 0.5 | Area 3 | UG/KG | 387000 |
| S144B | S144B-12" | 1/31/08 | 1 | 1.5 | Area 3 | UG/KG | 330000 |
| S145 | S145-0" | 1/7/08 | 0 | 0.5 | Area 3 | UG/KG | 178610 |
| S145 | S145-12" | 1/7/08 | 1 | 1.5 | Area 3 | UG/KG | 226600 |
| S146 | S146-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | 1306000 |
| S147 | S147-12" | 11/29/07 | 1 | 1.5 | Area 1 | UG/KG | 634200 |
| S148 | S148-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | 508600 |
| S149 | S149-12" | 11/29/07 | 1 | 1.5 | Area 1 | UG/KG | 13908000 |
| S150 | S150-12" | 11/29/07 | 1 | 1.5 | Area 1 | UG/KG | 968500 |
| S151 | S151-12" | 11/29/07 | 1 | 1.5 | Area 1 | UG/KG | 1138000 |
| S152 | S152-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | 2026000 |
| S153 | S153-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | 1431000 |
| S154 | S154-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | 506800 |
| S155 | S155B-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | 599300 |
| S156 | S156-0" | 1/7/08 | 0 | 0.5 | Area 3 | UG/KG | 410000 |
| S157 | S157-0" | 1/2/08 | 0 | 0.5 | Area 3 | UG/KG | 109800 |
| S158 | S158-0" | 12/17/07 | 0 | 0.5 | Area 3 | UG/KG | 3880000 |
| S158 | S158-12" | 12/17/07 | 1 | 1.5 | Area 3 | UG/KG | 3730000 |
| S159 | S159-0" | 12/17/07 | 0 | 0.5 | Area 3 | UG/KG | 245000 |
| S160 | S160-0" | 1/7/08 | 0 | 0.5 | Area 3 | UG/KG | 179100 |
| S161 | S161B-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | 64260 |
| S162 | S162-12" | 11/29/07 | 1 | 1.5 | Area 1 | UG/KG | 1098000 |
| S162 | S162-24" | 11/29/07 | 2 | 2.5 | Area 1 | UG/KG | 3840 |
| S163 | S163-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | 7440 |
| S164 | S164-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | 1491240 |
| S165 | S165-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | 4230000 |
| S166 | S166-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | 859900 |
| S167 | S167-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | 125800 |
| S168 | S168-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | 1746900 |
| S169 | S169-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | 1141900 |
| S170 | S170-0" | 1/7/08 | 0 | 0.5 | Area 3 | UG/KG | 652620 |
| S171 | S171-0" | 12/17/07 | 0 | 0.5 | Area 3 | UG/KG | 3397000 |
| S171 | S171-12" | 12/17/07 | 1 | 1.5 | Area 3 | UG/KG | 30970000 |
| S172 | S172-0" | 12/17/07 | 0 | 0.5 | Area 3 | UG/KG | 2099000 |
| S173 | S173-0" | 12/17/07 | 0 | 0.5 | Area 3 | UG/KG | 3689000 |
| S174 | S174-0" | 12/14/07 | 0 | 0.5 | Area 3 | UG/KG | 434000 |
| S175A | S175A-0" | 1/7/08 | 0 | 0.5 | Area 3 | UG/KG | 1321000 |
| S175B | S175B-0" | 1/31/08 | 0 | 0.5 | Area 3 | UG/KG | 696000 |
| S176 | S176-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | 965000 |
| S177 | S177-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | 786000 |
| S178 | S178-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | 377800 |
| S179 | S179-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | 375900 |
| S180 | S180-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | 236000 |
| S181 | S181-0" | 1/31/08 | 0 | 0.5 | Area 3 | UG/KG | 83000 |
| S182 | S182-0" | 12/14/07 | 0 | 0.5 | Area 3 | UG/KG | 1564000 |
| S183 | S183-0" | 12/17/07 | 0 | 0.5 | Area 3 | UG/KG | 315000 |
| S184 | S184-0" | 12/14/07 | 0 | 0.5 | Area 3 | UG/KG | 572000 |
| S185 | S185-6'' | 1/19/09 | 0.5 | 1 | Area 3 | UG/KG | 1075000 |
| S186 | S186-0" | 1/31/08 | 0 | 0.5 | Area 3 | UG/KG | 157000 |
| S187 | S187-0" | 1/4/08 | 0 | 0.5 | Area 1 | UG/KG | 2100 |
| S188 | S188-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | 32900 |
| S189 | S189-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | 65200 |
| S190 | S190-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | 588700 |
| S191 | S191-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | 4337300 |
| S192 | S192-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | 3346000 |
| S193 | S193-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | 30300 |
| S194 | S194-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | 351600 |
| S195 | S195-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | 914000 |
| S196 | S196-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | 2541000 |
| S196 | S196-18" | 11/26/07 | 1.5 | 2 | Area 1 | UG/KG | 3420000 |
| S197 | S197-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | 47000 |
| S198 | S198-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | 249900 |
| S199 | S199-12" | 11/26/07 | 1 | 1.5 | Area 1 | UG/KG | 3770000 |
| S199 | S199-24" | 11/26/07 | 2 | 2.5 | Area 1 | UG/KG | 1243000 |
| S200 | S200-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | 1293600 |
| S201 | S201-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | 14930000 |
| S201 | S201-18" | 11/26/07 | 1.5 | 2 | Area 1 | UG/KG | 3224000 |

**Table B7**
**Results of TPHd Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Diesel Range Organics |
|---|---|---|---|---|---|---|---|
| S202 | S202-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | 89200 |
| S203 | S203-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | 275100 |
| S204 | S204-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | 265100 |
| S205 | S205-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | 296900 |
| S206 | S206-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | 258500 |
| S207 | S207-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | 197400 |
| S208 | S208-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | 2064000 |
| S209 | S209-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | 1893000 |
| S210 | S210-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | 3529000 |
| S211 | S211-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | 2654000 |
| S212 | S212-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | 692800 |
| S213 | S213-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | 7990000 |
| S214 | S214-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | 286100 |
| S215 | S215-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | 493000 |
| S216 | S216-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | 33200 |
| S217 | S217-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | 190100 |
| S218 | S218-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | 69200 |
| S219 | S219-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | 240400 |
| S220 | S220-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | 244900 |
| S221 | S221-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | 232600 |
| S222 | S222-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | 145100 |
| S223 | S223-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | 875000 |
| S224 | S224-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | 7604000 |
| S225 | S225-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | 1137000 |
| S226 | S226-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | 432900 |
| S227 | S227-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | 234800 |
| S228 | S228-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | 9826000 |
| S229 | S229-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | 577000 |
| S230 | S230-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | 13300 |
| S230 | S230-12" | 11/28/07 | 1 | 1.5 | Area 1 | UG/KG | 70300 |
| S231 | S231-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | 225900 |
| S232 | S232-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | 167200 |
| S233 | S233-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | 2155000 |
| S234 | S234-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | 35900 |
| S235 | S235-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | 86400 |
| S236 | S236-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | 261900 |
| S237 | S237-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | 432840 |
| S238 | S238-0" | 1/28/08 | 0 | 0.5 | Area 2 | UG/KG | 59930 |
| S239 | S239-0" | 1/28/08 | 0 | 0.5 | Area 2 | UG/KG | 19000 |
| S239 | S239-12" | 1/30/08 | 1 | 1.5 | Area 2 | UG/KG | 30050 |
| S240 | S240-6" | 1/20/09 | 0.5 | 1 | Area 2 | UG/KG | 587500 |
| S241 | S241-6" | 1/20/09 | 0.5 | 1 | Area 2 | UG/KG | 390700 |
| S242 | S242-0" | 1/29/08 | 0 | 0.5 | Area 2 | UG/KG | 175000 |
| S244 | S244-0" | 1/28/08 | 0 | 0.5 | Area 2 | UG/KG | 143510 |
| S245 | S245-0" | 1/28/08 | 0 | 0.5 | Area 2 | UG/KG | 3680 |
| S246 | S246-0" | 1/29/08 | 0 | 0.5 | Area 2 | UG/KG | 114600 |
| S247 | S247-0" | 1/29/08 | 0 | 0.5 | Area 2 | UG/KG | 133900 |
| S248 | S248-0" | 1/28/08 | 0 | 0.5 | Area 2 | UG/KG | 329780 |
| S249 | S249-0" | 1/28/08 | 0 | 0.5 | Area 2 | UG/KG | 206900 |
| S250 | S250-0" | 1/28/08 | 0 | 0.5 | Area 2 | UG/KG | 350 |
| S250 | S250-12" | 1/30/08 | 1 | 1.5 | Area 2 | UG/KG | 44153.9 |
| S251 | S251-0" | 1/28/08 | 0 | 0.5 | Area 2 | UG/KG | 140870 |
| S251 | S251-6" | 1/20/09 | 0.5 | 1 | Area 2 | UG/KG | 145700 |
| S252 | S252-0" | 1/29/08 | 0 | 0.5 | Area 2 | UG/KG | 107140 |
| S253 | S253-0" | 1/29/08 | 0 | 0.5 | Area 2 | UG/KG | 134000 |
| S254 | S254-0" | 1/29/08 | 0 | 0.5 | Area 2 | UG/KG | 268579 |
| S254 | S254-12" | 1/30/08 | 1 | 1.5 | Area 2 | UG/KG | 148730 |
| S256 | S256-0" | 1/31/08 | 0 | 0.5 | Area 2 | UG/KG | 1506000 |
| S257 | S257-0" | 1/3/08 | 0 | 0.5 | Area 2 | UG/KG | 51700 |
| S258 | S258-0" | 1/3/08 | 0 | 0.5 | Area 2 | UG/KG | 257700 |
| S259 | S259-0" | 1/31/08 | 0 | 0.5 | Area 2 | UG/KG | 364000 |
| S260 | S260-0" | 1/3/08 | 0 | 0.5 | Area 2 | UG/KG | 14600 |
| S261 | S261-0" | 12/21/07 | 0 | 0.5 | Area 3 | UG/KG | 2716300 |
| S262 | S262-0" | 12/13/07 | 0 | 0.5 | Area 3 | UG/KG | 1345000 |
| S263 | S263-0" | 2/1/08 | 0 | 0.5 | Area 3 | UG/KG | 13300 |
| S264 | S264-0" | 1/3/08 | 0 | 0.5 | Area 3 | UG/KG | 411600 |
| S264 | S264-12" | 1/3/08 | 1 | 1.5 | Area 3 | UG/KG | 9330000 |

**Table B7**
**Results of TPHd Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Diesel Range Organics |
|---|---|---|---|---|---|---|---|
| S265 | S265-6" | 1/20/09 | 0.5 | 1 | Area 3 | UG/KG | 1465000 |
| S266 | S266-0" | 12/14/07 | 0 | 0.5 | Area 3 | UG/KG | 45700 |
| S267 | S267-0" | 1/4/08 | 0 | 0.5 | Area 3 | UG/KG | 841000 |
| S268 | S268-0" | 1/2/08 | 0 | 0.5 | Area 3 | UG/KG | 793000 |
| S268 | S268-12" | 1/2/08 | 1 | 1.5 | Area 3 | UG/KG | 829000 |
| S269 | S269-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | 1008000 |
| S270 | S270-0" | 12/17/07 | 0 | 0.5 | Area 4 | UG/KG | 150000 |
| S271 | S271-0" | 1/4/08 | 0 | 0.5 | Area 1 | UG/KG | 136000 |
| S272 | S272-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | 21700 |
| S273 | S273-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | 394000 |
| S274 | S274-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | 411000 |
| S274 | S274-12" | 11/29/07 | 1 | 1.5 | Area 1 | UG/KG | 4470 |
| S275 | S275-0" | 11/29/07 | 0 | 0.5 | Area 3 | UG/KG | 4848000 |
| S275 | S275-12" | 11/29/07 | 1 | 1.5 | Area 3 | UG/KG | 6850000 |
| S276 | S276-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | 324600 |
| S277 | S277-0" | 1/31/08 | 0 | 0.5 | Area 2 | UG/KG | 166000 |
| S278 | S278-0" | 1/31/08 | 0 | 0.5 | Area 2 | UG/KG | 627000 |
| S279 | S279-0" | 12/20/07 | 0 | 0.5 | Area 2 | UG/KG | 142000 |
| S280 | S280-0" | 1/3/08 | 0 | 0.5 | Area 2 | UG/KG | 237500 |
| S281 | S281-0" | 2/1/08 | 0 | 0.5 | Area 2 | UG/KG | 396910 |
| S282 | S282-6" | 1/20/09 | 0.5 | 1 | Area 2 | UG/KG | 232600 |
| S282 | S282-12" | 1/20/09 | 1 | 1.5 | Area 2 | UG/KG | 370000 |
| S283 | S283-0" | 1/29/08 | 0 | 0.5 | Area 2 | UG/KG | 3216000 |
| S284 | S284-0" | 1/29/08 | 0 | 0.5 | Area 2 | UG/KG | 34110 |
| S284 | S284-12" | 1/30/08 | 1 | 1.5 | Area 2 | UG/KG | 181000 |
| S285 | S285-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | 748800 |
| S286 | S286-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | 380800 |
| S287 | S287-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | 4225000 |
| S287 | S287-12" | 11/26/07 | 1 | 1.5 | Area 1 | UG/KG | 1734000 |
| S288 | S288-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | 410300 |
| S289 | S289-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | 389200 |
| S290 | S290-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | 156500 |
| S291 | S291-0" | 1/7/08 | 0 | 0.5 | Area 4 | UG/KG | 358900 |
| S292 | S292-6'' | 1/19/09 | 0.5 | 1 | Area 1 | UG/KG | 273000 |
| S293 | S293-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | 14460000 |
| S294 | S294-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | 3771000 |
| S295 | S295-6" | 11/26/07 | 0.5 | 1 | Area 1 | UG/KG | 8130000 |
| S296 | S296-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | 709600 |
| S296 | S296-18" | 11/28/07 | 1.5 | 2 | Area 1 | UG/KG | 585000 |
| S297 | S297-6" | 1/20/09 | 0.5 | 1 | Area 3 | UG/KG | 236600 |
| S297 | S297-12" | 1/20/09 | 1 | 1.5 | Area 3 | UG/KG | 2331300 |
| S298 | S298-0 | 12/4/07 | 0 | 0.5 | Area 4 | UG/KG | 23900000 |
| VE1 | LL_VE1_10_052611_01 | 5/26/11 | 9.5 | 10 | Area 3 | UG/KG | 13000 |

**Notes**
UG/KG micrograms per kilogram

**Table B8**
**Results of TPHmo Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Motor Oil Range Organics |
|---|---|---|---|---|---|---|---|
| B001 | B001-2 | 12/5/05 | 2 | 3 | Area 1 | UG/KG | 197500 |
| B001 | B001-5 | 12/5/05 | 5 | 6 | Area 1 | UG/KG | 131250 |
| B001 | B001-10 | 12/5/05 | 10 | 11 | Area 1 | UG/KG | 142500 |
| B002 | B002-2 | 12/5/05 | 2 | 3 | Area 1 | UG/KG | 66250 |
| B002 | B002-5 | 12/5/05 | 5 | 6 | Area 1 | UG/KG | 593750 |
| B002 | B002-10 | 12/5/05 | 10 | 11 | Area 1 | UG/KG | <6250 |
| B003 | B003-2 | 12/7/05 | 2 | 3 | Area 1 | UG/KG | <6250 |
| B003 | B003-5 | 12/7/05 | 5 | 6 | Area 1 | UG/KG | 9487500 |
| B004 | B004-2 | 12/8/05 | 2 | 3 | Area 1 | UG/KG | 145000 |
| B004 | B004-5 | 12/8/05 | 5 | 6 | Area 1 | UG/KG | 6625 |
| B004 | B004-10 | 12/8/05 | 10 | 11 | Area 1 | UG/KG | <6250 |
| B005 | B005-2 | 12/8/05 | 2 | 3 | Area 1 | UG/KG | 73750 |
| B005 | B005-5 | 12/8/05 | 5 | 6 | Area 1 | UG/KG | <6250 |
| B005 | B005-10 | 12/8/05 | 10 | 11 | Area 1 | UG/KG | <6250 |
| B006 | B006-2 | 12/12/05 | 2 | 3 | Area 1 | UG/KG | <6250 |
| B006 | B006-5 | 12/12/05 | 5 | 6 | Area 1 | UG/KG | <6250 |
| B006 | B006-10 | 12/12/05 | 10 | 11 | Area 1 | UG/KG | <6250 |
| B007 | B007-2 | 12/12/05 | 2 | 3 | Area 1 | UG/KG | <6250 |
| B007 | B007-5 | 12/12/05 | 5 | 6 | Area 1 | UG/KG | <6250 |
| B007 | B007-10 | 12/12/05 | 10 | 11 | Area 1 | UG/KG | <6250 |
| B008 | B008-2 | 12/8/05 | 2 | 3 | Area 1 | UG/KG | <6250 |
| B008 | B008-5 | 12/8/05 | 5 | 6 | Area 1 | UG/KG | 7125 |
| B008 | B008-10 | 12/8/05 | 10 | 11 | Area 1 | UG/KG | <6250 |
| B009 | B009-2 | 12/9/05 | 2 | 3 | Area 1 | UG/KG | 61250 |
| B009 | B009-5 | 12/9/05 | 5 | 6 | Area 1 | UG/KG | <6250 |
| B009 | B009-10 | 12/9/05 | 10 | 11 | Area 1 | UG/KG | <6250 |
| B010 | B010-2 | 12/9/05 | 2 | 3 | Area 4 | UG/KG | <6250 |
| B010 | B010-5 | 12/9/05 | 5 | 6 | Area 4 | UG/KG | <6250 |
| B010 | B010-10 | 12/9/05 | 10 | 11 | Area 4 | UG/KG | <6250 |
| B011 | B011-2 | 1/9/06 | 2 | 3 | Area 1 | UG/KG | 308750 |
| B011 | B011-5 | 1/9/06 | 5 | 6 | Area 1 | UG/KG | <6250 |
| B011 | B011-10 | 1/9/06 | 10 | 11 | Area 1 | UG/KG | <6250 |
| B012 | B012-2 | 1/6/06 | 2 | 3 | Area 1 | UG/KG | 10000 |
| B012 | B012-5 | 1/6/06 | 5 | 6 | Area 1 | UG/KG | 11250 |
| B012 | B012-10 | 1/6/06 | 10 | 11 | Area 1 | UG/KG | 8750 |
| B013 | B013-2 | 12/15/05 | 2 | 3 | Area 1 | UG/KG | 320000 |
| B013 | B013-5 | 12/15/05 | 5 | 6 | Area 1 | UG/KG | 400000 |
| B013 | B013-10 | 12/15/05 | 10 | 11 | Area 1 | UG/KG | 7500 |
| B014 | B014-2 | 12/13/05 | 2 | 3 | Area 1 | UG/KG | 711250 |
| B014 | B014-5 | 12/13/05 | 5 | 6 | Area 1 | UG/KG | <6250 |
| B014 | B014-10 | 12/13/05 | 10 | 11 | Area 1 | UG/KG | <6250 |
| B015 | B015-2 | 12/12/05 | 2 | 3 | Area 1 | UG/KG | 120000 |
| B015 | B015-5 | 12/12/05 | 5 | 6 | Area 1 | UG/KG | <6250 |
| B015 | B015-10 | 12/12/05 | 10 | 11 | Area 1 | UG/KG | <6250 |
| B016 | B016-2 | 12/13/05 | 2 | 3 | Area 1 | UG/KG | 43750 |
| B016 | B016-5 | 12/13/05 | 5 | 6 | Area 1 | UG/KG | 13750 |
| B016 | B016-10 | 12/13/05 | 10 | 11 | Area 1 | UG/KG | <6250 |
| B017 | B017-2 | 12/29/05 | 2 | 3 | Area 1 | UG/KG | 8000 |
| B017 | B017-5 | 12/29/05 | 5 | 6 | Area 1 | UG/KG | 7875 |
| B017 | B017-10 | 12/29/05 | 10 | 11 | Area 1 | UG/KG | 11750 |
| B018 | B018-2 | 12/29/05 | 2 | 3 | Area 1 | UG/KG | 10000 |
| B018 | B018-5 | 12/29/05 | 5 | 6 | Area 1 | UG/KG | <6250 |
| B018 | B018-10 | 12/29/05 | 10 | 11 | Area 1 | UG/KG | 30000 |
| B019 | B019-2 | 12/28/05 | 2 | 3 | Area 1 | UG/KG | 7500 |
| B019 | B019-5 | 12/28/05 | 5 | 6 | Area 1 | UG/KG | <6250 |
| B019 | B019-10 | 12/28/05 | 10 | 11 | Area 1 | UG/KG | <6250 |
| B020 | B020-2 | 12/12/05 | 2 | 3 | Area 1 | UG/KG | 163750 |
| B020 | B020-5 | 12/12/05 | 5 | 6 | Area 1 | UG/KG | <6250 |
| B020 | B020-10 | 12/12/05 | 10 | 11 | Area 1 | UG/KG | 102500 |
| B021 | B021-2 | 12/28/05 | 2 | 3 | Area 4 | UG/KG | <6250 |
| B021 | B021-5 | 12/28/05 | 5 | 6 | Area 4 | UG/KG | 6875 |
| B021 | B021-10 | 12/28/05 | 10 | 11 | Area 4 | UG/KG | <125000 |
| B022 | B022-2 | 12/28/05 | 2 | 3 | Area 3 | UG/KG | 250000 |
| B022 | B022-5 | 12/28/05 | 5 | 6 | Area 3 | UG/KG | <125000 |
| B022 | B022-10 | 12/28/05 | 10 | 11 | Area 3 | UG/KG | <62500 |
| B023 | B023-2 | 12/28/05 | 2 | 3 | Area 1 | UG/KG | <625000 |
| B023 | B023-5 | 12/28/05 | 5 | 6 | Area 1 | UG/KG | <625000 |

**Table B8**
**Results of TPHmo Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Motor Oil Range Organics |
|---|---|---|---|---|---|---|---|
| B023 | B023-10 | 12/28/05 | 10 | 11 | Area 1 | UG/KG | <625000 |
| B024 | B024-2 | 12/16/05 | 2 | 2.5 | Area 1 | UG/KG | 7750 |
| B024 | B024-5 | 12/16/05 | 5 | 6 | Area 1 | UG/KG | <6250 |
| B024 | B024-10 | 12/16/05 | 10 | 11 | Area 1 | UG/KG | 6375 |
| B025 | B025-2 | 12/15/05 | 2 | 3 | Area 1 | UG/KG | 12250 |
| B025 | B025-5 | 12/15/05 | 5 | 6 | Area 1 | UG/KG | 11375 |
| B025 | B025-10 | 12/15/05 | 10 | 11 | Area 1 | UG/KG | 13750 |
| B026 | B026-2 | 12/15/05 | 2 | 3 | Area 1 | UG/KG | 1067500 |
| B026 | B026-5 | 12/15/05 | 5 | 6 | Area 1 | UG/KG | 87500 |
| B026 | B026-10 | 12/15/05 | 10 | 11 | Area 1 | UG/KG | 6625 |
| B027 | B027-2 | 12/14/05 | 2 | 3 | Area 1 | UG/KG | 24000000 |
| B027 | B027-5 | 12/15/05 | 5 | 6 | Area 1 | UG/KG | 1180000 |
| B027 | B027-10 | 12/15/05 | 10 | 11 | Area 1 | UG/KG | 13000000 |
| B028 | B028-2 | 12/13/05 | 2 | 3 | Area 1 | UG/KG | 458750 |
| B028 | B028-5 | 12/13/05 | 5 | 6 | Area 1 | UG/KG | <6250 |
| B028 | B028-10 | 12/13/05 | 10 | 11 | Area 1 | UG/KG | 16250 |
| B029 | B029-2 | 12/14/05 | 2 | 3 | Area 1 | UG/KG | 2500000 |
| B029 | B029-5 | 12/14/05 | 5 | 6 | Area 1 | UG/KG | 2825000 |
| B029 | B029-10 | 12/14/05 | 10 | 11 | Area 1 | UG/KG | 452500 |
| B030 | B030-2 | 12/14/05 | 2 | 3 | Area 1 | UG/KG | 695000 |
| B030 | B030-5 | 12/14/05 | 5 | 6 | Area 1 | UG/KG | <6250 |
| B030 | B030-10 | 12/14/05 | 10 | 11 | Area 1 | UG/KG | <6250 |
| B031 | B031-2 | 1/6/06 | 2 | 3 | Area 1 | UG/KG | 238750 |
| B031 | B031-5 | 1/6/06 | 5 | 6 | Area 1 | UG/KG | 11250 |
| B031 | B031-10 | 1/6/06 | 10 | 11 | Area 1 | UG/KG | 7500 |
| B032 | B032-2 | 1/6/06 | 2 | 3 | Area 1 | UG/KG | 125000 |
| B032 | B032-5 | 1/6/06 | 5 | 6 | Area 1 | UG/KG | 420000 |
| B032 | B032-10 | 1/6/06 | 10 | 11 | Area 1 | UG/KG | 857500 |
| B033 | B033-2 | 12/29/05 | 2 | 3 | Area 1 | UG/KG | 56250 |
| B033 | B033-5 | 12/29/05 | 5 | 6 | Area 1 | UG/KG | 22500 |
| B033 | B033-10 | 12/29/05 | 10 | 11 | Area 1 | UG/KG | 37500 |
| B034 | B034-2 | 12/14/05 | 2 | 3 | Area 1 | UG/KG | 16250 |
| B034 | B034-5 | 12/14/05 | 5 | 6 | Area 1 | UG/KG | <6250 |
| B034 | B034-10 | 12/14/05 | 10 | 11 | Area 1 | UG/KG | 6500 |
| B035 | B035-2 | 12/14/05 | 2 | 3 | Area 1 | UG/KG | 3875000 |
| B035 | B035-5 | 12/14/05 | 5 | 6 | Area 1 | UG/KG | 6250 |
| B035 | B035-10 | 12/14/05 | 10 | 11 | Area 1 | UG/KG | 7500 |
| B036 | B036-2 | 12/14/05 | 2 | 3 | Area 1 | UG/KG | 36250 |
| B036 | B036-5 | 12/14/05 | 5 | 6 | Area 1 | UG/KG | <6250 |
| B036 | B036-10 | 12/14/05 | 10 | 11 | Area 1 | UG/KG | <6250 |
| B037 | B037-2 | 12/19/05 | 2 | 3 | Area 1 | UG/KG | 7875 |
| B037 | B037-5 | 12/19/05 | 5 | 6 | Area 1 | UG/KG | 8375 |
| B037 | B037-10 | 12/19/05 | 10 | 11 | Area 1 | UG/KG | 10000 |
| B038 | B038-2 | 12/19/05 | 2 | 3 | Area 1 | UG/KG | <6250 |
| B038 | B038-5 | 12/19/05 | 5 | 6 | Area 1 | UG/KG | 6250 |
| B038 | B038-10 | 12/19/05 | 10 | 11 | Area 1 | UG/KG | 26250 |
| B039 | B039-2 | 12/16/05 | 2 | 3 | Area 1 | UG/KG | <6250 |
| B039 | B039-5 | 12/16/05 | 5 | 6 | Area 1 | UG/KG | <6250 |
| B039 | B039-10 | 12/16/05 | 10 | 11 | Area 1 | UG/KG | <6250 |
| B040 | B040-2 | 12/19/05 | 2 | 3 | Area 1 | UG/KG | 396250 |
| B040 | B040-5 | 12/19/05 | 5 | 6 | Area 1 | UG/KG | 328750 |
| B040 | B040-10 | 12/19/05 | 10 | 11 | Area 1 | UG/KG | 15000 |
| B041 | B041-2 | 12/28/05 | 2 | 3 | Area 3 | UG/KG | <6250 |
| B041 | B041-5 | 12/28/05 | 5 | 6 | Area 3 | UG/KG | <6250 |
| B041 | B041-10 | 12/28/05 | 10 | 11 | Area 3 | UG/KG | <6250 |
| B042 | B042-2 | 12/20/05 | 2 | 3 | Area 3 | UG/KG | 333750 |
| B042 | B042-5 | 12/20/05 | 5 | 6 | Area 3 | UG/KG | 6250 |
| B042 | B042-10 | 12/20/05 | 10 | 11 | Area 3 | UG/KG | <6250 |
| B043 | B043-2 | 12/16/05 | 2 | 3 | Area 1 | UG/KG | 1010000 |
| B043 | B043-5 | 12/16/05 | 5 | 6 | Area 1 | UG/KG | 1196250 |
| B043 | B043-10 | 12/16/05 | 10 | 11 | Area 1 | UG/KG | 428750 |
| B044 | B044-2 | 12/16/05 | 2 | 3 | Area 1 | UG/KG | <6250 |
| B044 | B044-5 | 12/16/05 | 5 | 6 | Area 1 | UG/KG | 7000 |
| B044 | B044-10 | 12/16/05 | 10 | 11 | Area 1 | UG/KG | <6250 |
| B045 | B045-2 | 12/15/05 | 2 | 3 | Area 1 | UG/KG | <6250 |
| B045 | B045-5 | 12/15/05 | 5 | 6 | Area 1 | UG/KG | <6250 |
| B045 | B045-10 | 12/15/05 | 10 | 11 | Area 1 | UG/KG | <312500 |

**Table B8**
**Results of TPHmo Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Motor Oil Range Organics |
|---|---|---|---|---|---|---|---|
| B046 | B046-2 | 12/15/05 | 2 | 3 | Area 1 | UG/KG | 13250000 |
| B046 | B046-5 | 12/15/05 | 5 | 6 | Area 1 | UG/KG | 30000 |
| B046 | B046-10 | 12/15/05 | 10 | 11 | Area 1 | UG/KG | 6375 |
| B047 | B047-2 | 12/15/05 | 2 | 3 | Area 1 | UG/KG | 9250 |
| B047 | B047-5 | 12/15/05 | 5 | 6 | Area 1 | UG/KG | 6625 |
| B047 | B047-10 | 12/15/05 | 10 | 11 | Area 1 | UG/KG | 6750 |
| B048 | B048-2 | 12/20/05 | 2 | 3 | Area 1 | UG/KG | 68750 |
| B048 | B048-5 | 12/20/05 | 5 | 6 | Area 1 | UG/KG | 50000 |
| B048 | B048-10 | 12/20/05 | 10 | 11 | Area 1 | UG/KG | 577500 |
| B049 | B049-2 | 12/14/05 | 2 | 3 | Area 1 | UG/KG | <6250 |
| B049 | B049-5 | 12/14/05 | 5 | 6 | Area 1 | UG/KG | <6250 |
| B049 | B049-10 | 12/14/05 | 10 | 11 | Area 1 | UG/KG | <6250 |
| B050 | B050-2 | 12/13/05 | 2 | 3 | Area 1 | UG/KG | 892500 |
| B050 | B050-5 | 12/13/05 | 5 | 6 | Area 1 | UG/KG | <6250 |
| B050 | B050-10 | 12/12/05 | 10 | 11 | Area 1 | UG/KG | 1375000 |
| B051 | B051-2 | 12/13/05 | 2 | 3 | Area 1 | UG/KG | 9750 |
| B051 | B051-5 | 12/13/05 | 5 | 6 | Area 1 | UG/KG | 6250 |
| B051 | B051-10 | 12/13/05 | 10 | 11 | Area 1 | UG/KG | 8750 |
| B052 | B052-2 | 12/29/05 | 2 | 3 | Area 1 | UG/KG | 972500 |
| B052 | B052-5 | 12/29/05 | 5 | 6 | Area 1 | UG/KG | 195000 |
| B052 | B052-10 | 12/29/05 | 10 | 11 | Area 1 | UG/KG | 1035000 |
| B053 | B053-2 | 12/28/05 | 2 | 3 | Area 1 | UG/KG | 6250 |
| B053 | B053-5 | 12/28/05 | 5 | 6 | Area 1 | UG/KG | 81250 |
| B053 | B053-10 | 12/28/05 | 10 | 11 | Area 1 | UG/KG | 630000 |
| B054 | B054-2 | 12/13/05 | 2 | 3 | Area 1 | UG/KG | 1662500 |
| B054 | B054-5 | 12/13/05 | 5 | 6 | Area 1 | UG/KG | 818750 |
| B054 | B054-10 | 12/13/05 | 10 | 11 | Area 1 | UG/KG | <6250 |
| B055 | B055-2 | 12/21/05 | 2 | 3 | Area 1 | UG/KG | 1057500 |
| B055 | B055-5 | 12/21/05 | 5 | 6 | Area 1 | UG/KG | 378750 |
| B055 | B055-10 | 12/21/05 | 10 | 11 | Area 1 | UG/KG | 631250 |
| B056 | B056-2 | 12/14/05 | 2 | 3 | Area 1 | UG/KG | <6250 |
| B056 | B056-5 | 12/14/05 | 5 | 6 | Area 1 | UG/KG | <125000 |
| B056 | B056-10 | 12/14/05 | 10 | 11 | Area 1 | UG/KG | <6250 |
| B057 | B057-2 | 12/13/05 | 2 | 3 | Area 1 | UG/KG | 2022500 |
| B057 | B057-5 | 12/13/05 | 5 | 6 | Area 1 | UG/KG | 295000 |
| B057 | B057-10 | 12/13/05 | 10 | 11 | Area 1 | UG/KG | <6250 |
| B058 | B058-2 | 12/20/05 | 2 | 3 | Area 1 | UG/KG | 1325000 |
| B058 | B058-5 | 12/20/05 | 5 | 6 | Area 1 | UG/KG | 65000 |
| B058 | B058-10 | 12/20/05 | 10 | 11 | Area 1 | UG/KG | 203750 |
| B059 | B059-2 | 12/20/05 | 2 | 3 | Area 1 | UG/KG | 23750 |
| B059 | B059-5 | 12/20/05 | 5 | 6 | Area 1 | UG/KG | <6250 |
| B059 | B059-10 | 12/20/05 | 10 | 11 | Area 1 | UG/KG | <6250 |
| B060 | B060-2 | 12/20/05 | 2 | 3 | Area 1 | UG/KG | 88750 |
| B060 | B060-5 | 12/20/05 | 5 | 6 | Area 1 | UG/KG | 122500 |
| B060 | B060-10 | 12/20/05 | 10 | 11 | Area 1 | UG/KG | 445000 |
| B061 | B061-2 | 12/20/05 | 2 | 3 | Area 1 | UG/KG | 20000 |
| B061 | B061-5 | 12/20/05 | 5 | 6 | Area 1 | UG/KG | <6250 |
| B061 | B061-10 | 12/20/05 | 10 | 11 | Area 1 | UG/KG | <6250 |
| B062 | B062-2 | 12/21/05 | 2 | 3 | Area 1 | UG/KG | 35000 |
| B062 | B062-5 | 12/21/05 | 5 | 6 | Area 1 | UG/KG | 21250 |
| B062 | B062-10 | 12/21/05 | 10 | 11 | Area 1 | UG/KG | <6250 |
| B063 | B063-2 | 1/9/06 | 2 | 3 | Area 3 | UG/KG | 16250 |
| B063 | B063-5 | 1/9/06 | 5 | 6 | Area 3 | UG/KG | 10750 |
| B063 | B063-10 | 1/9/06 | 10 | 11 | Area 3 | UG/KG | 335000 |
| B064 | B064-2 | 12/23/05 | 2 | 3 | Area 1 | UG/KG | 267500 |
| B064 | B064-5 | 12/23/05 | 5 | 6 | Area 1 | UG/KG | 7250 |
| B064 | B064-10 | 12/23/05 | 10 | 11 | Area 1 | UG/KG | <6250 |
| B065 | B065-2 | 1/12/06 | 2 | 3 | Area 1 | UG/KG | 137500 |
| B065 | B065-5 | 1/12/06 | 5 | 6 | Area 1 | UG/KG | 53750 |
| B065 | B065-10 | 1/12/06 | 10 | 11 | Area 1 | UG/KG | <6250 |
| B066 | B066-2 | 1/12/06 | 2 | 3 | Area 1 | UG/KG | <6250 |
| B066 | B066-5 | 1/12/06 | 5 | 6 | Area 1 | UG/KG | <6250 |
| B066 | B066-10 | 1/12/06 | 10 | 11 | Area 1 | UG/KG | <6250 |
| B067 | B067-2 | 12/21/05 | 2 | 3 | Area 1 | UG/KG | 208750 |
| B067 | B067-5 | 12/21/05 | 5 | 6 | Area 1 | UG/KG | 145000 |
| B067 | B067-10 | 12/21/05 | 10 | 11 | Area 1 | UG/KG | 131250 |
| B068 | B068-2 | 12/21/05 | 2 | 3 | Area 1 | UG/KG | 75000 |

**Table B8**
**Results of TPHmo Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Motor Oil Range Organics |
|---|---|---|---|---|---|---|---|
| B068 | B068-5 | 12/21/05 | 5 | 6 | Area 1 | UG/KG | 542500 |
| B068 | B068-10 | 12/21/05 | 10 | 11 | Area 1 | UG/KG | 140000 |
| B069 | B069-2 | 12/22/05 | 2 | 3 | Area 1 | UG/KG | 28750 |
| B069 | B069-5 | 12/22/05 | 5 | 6 | Area 1 | UG/KG | <6250 |
| B069 | B069-10 | 12/22/05 | 10 | 11 | Area 1 | UG/KG | <6250 |
| B070 | B070-2 | 12/22/05 | 2 | 3 | Area 1 | UG/KG | 447500 |
| B070 | B070-5 | 12/22/05 | 5 | 6 | Area 1 | UG/KG | 17500 |
| B070 | B070-10 | 12/22/05 | 10 | 11 | Area 1 | UG/KG | <312500 |
| B071 | B071-2 | 12/21/05 | 2 | 3 | Area 1 | UG/KG | 6250 |
| B071 | B071-5 | 12/21/05 | 5 | 6 | Area 1 | UG/KG | <6250 |
| B071 | B071-10 | 12/21/05 | 10 | 11 | Area 1 | UG/KG | 11875 |
| B072 | B072-2 | 12/21/05 | 2 | 3 | Area 1 | UG/KG | 575000 |
| B072 | B072-5 | 12/21/05 | 5 | 6 | Area 1 | UG/KG | 7500 |
| B072 | B072-10 | 12/21/05 | 10 | 11 | Area 1 | UG/KG | <6250 |
| B073 | B073-2 | 1/30/06 | 2 | 3 | Area 3 | UG/KG | <6250 |
| B073 | B073-5 | 1/30/06 | 5 | 6 | Area 3 | UG/KG | <6250 |
| B073 | B073-10 | 1/30/06 | 10 | 11 | Area 3 | UG/KG | <6250 |
| B074 | B074-2 | 1/11/06 | 2 | 3 | Area 2 | UG/KG | 12500 |
| B074 | B074-5 | 1/11/06 | 5 | 6 | Area 2 | UG/KG | <6250 |
| B074 | B074-10 | 1/11/06 | 10 | 11 | Area 2 | UG/KG | 135000 |
| B075 | B075-2 | 1/11/06 | 2 | 3 | Area 1 | UG/KG | <6250 |
| B075 | B075-5 | 1/11/06 | 5 | 6 | Area 1 | UG/KG | 12500 |
| B075 | B075-10 | 1/11/06 | 10 | 11 | Area 1 | UG/KG | 6250 |
| B076 | B076-2 | 12/22/05 | 2 | 3 | Area 2 | UG/KG | 663750 |
| B076 | B076-5 | 12/22/05 | 5 | 6 | Area 2 | UG/KG | 3262500 |
| B076 | B076-10 | 12/22/05 | 10 | 11 | Area 2 | UG/KG | 8300000 |
| B077 | B077-2 | 12/23/05 | 2 | 3 | Area 2 | UG/KG | 11250 |
| B077 | B077-5 | 12/23/05 | 5 | 6 | Area 2 | UG/KG | 8750 |
| B077 | B077-10 | 12/23/05 | 10 | 11 | Area 2 | UG/KG | 6875 |
| B078 | B078-2 | 12/23/05 | 2 | 3 | Area 2 | UG/KG | 51250 |
| B078 | B078-5 | 12/23/05 | 5 | 6 | Area 2 | UG/KG | 615000 |
| B078 | B078-10 | 12/23/05 | 10 | 11 | Area 2 | UG/KG | 6375 |
| B079 | B079-2 | 12/23/05 | 2 | 3 | Area 2 | UG/KG | 213750 |
| B079 | B079-5 | 12/23/05 | 5 | 6 | Area 2 | UG/KG | 547500 |
| B079 | B079-10 | 12/23/05 | 10 | 11 | Area 2 | UG/KG | 8750 |
| B080 | B080-2 | 12/22/05 | 2 | 3 | Area 1 | UG/KG | 602500 |
| B080 | B080-5 | 12/22/05 | 5 | 6 | Area 1 | UG/KG | 663750 |
| B080 | B080-10 | 12/22/05 | 10 | 11 | Area 1 | UG/KG | <6250 |
| B081 | B081-2 | 12/22/05 | 2 | 3 | Area 1 | UG/KG | 196250 |
| B081 | B081-5 | 12/22/05 | 5 | 6 | Area 1 | UG/KG | 7500 |
| B081 | B081-10 | 12/22/05 | 10 | 11 | Area 1 | UG/KG | 25000 |
| B082 | B082-2 | 12/23/05 | 2 | 3 | Area 1 | UG/KG | 362500 |
| B082 | B082-5 | 12/23/05 | 5 | 6 | Area 1 | UG/KG | 8125 |
| B082 | B082-10 | 12/23/05 | 10 | 11 | Area 1 | UG/KG | 8375 |
| B083 | B083-2 | 1/4/06 | 2 | 3 | Area 2 | UG/KG | 377500 |
| B083 | B083-5 | 1/4/06 | 5 | 6 | Area 2 | UG/KG | 42500 |
| B083 | B083-10 | 1/4/06 | 10 | 11 | Area 2 | UG/KG | <6250 |
| B084 | B084-2 | 1/5/06 | 2 | 3 | Area 2 | UG/KG | 251250 |
| B084 | B084-5 | 1/5/06 | 5 | 6 | Area 2 | UG/KG | 453750 |
| B084 | B084-10 | 1/5/06 | 10 | 11 | Area 2 | UG/KG | <6250 |
| B085 | B085-2 | 12/28/05 | 2 | 3 | Area 2 | UG/KG | <6250 |
| B085 | B085-5 | 12/28/05 | 5 | 6 | Area 2 | UG/KG | <6250 |
| B085 | B085-10 | 12/28/05 | 10 | 11 | Area 2 | UG/KG | <6250 |
| B086 | B086-2 | 1/11/06 | 2 | 3 | Area 2 | UG/KG | <6250 |
| B086 | B086-5 | 1/11/06 | 5 | 6 | Area 2 | UG/KG | <6250 |
| B086 | B086-10 | 1/11/06 | 10 | 11 | Area 2 | UG/KG | <6250 |
| B087 | B087-2 | 1/11/06 | 2 | 3 | Area 2 | UG/KG | 7500 |
| B087 | B087-5 | 1/11/06 | 5 | 6 | Area 2 | UG/KG | <6250 |
| B087 | B087-10 | 1/11/06 | 10 | 11 | Area 2 | UG/KG | <6250 |
| B088 | B088-2 | 1/18/06 | 2 | 3 | Area 2 | UG/KG | 171250 |
| B088 | B088-5 | 1/18/06 | 5 | 6 | Area 2 | UG/KG | 140000 |
| B088 | B088-10 | 1/18/06 | 10 | 11 | Area 2 | UG/KG | <6250 |
| B089 | B089-2 | 1/9/06 | 2 | 3 | Area 2 | UG/KG | 90000 |
| B089 | B089-5 | 1/9/06 | 5 | 6 | Area 2 | UG/KG | 170000 |
| B089 | B089-10 | 1/9/06 | 10 | 11 | Area 2 | UG/KG | 51250 |
| B090 | B090-2 | 1/10/06 | 2 | 3 | Area 2 | UG/KG | 8125 |
| B090 | B090-5 | 1/10/06 | 5 | 6 | Area 2 | UG/KG | 7125 |

**Table B8**
**Results of TPHmo Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Motor Oil Range Organics |
|---|---|---|---|---|---|---|---|
| B090 | B090-10 | 1/10/06 | 10 | 11 | Area 2 | UG/KG | 7500 |
| B091 | B091-2 | 1/10/06 | 2 | 3 | Area 2 | UG/KG | 278750 |
| B091 | B091-5 | 1/10/06 | 5 | 6 | Area 2 | UG/KG | 7500 |
| B091 | B091-10 | 1/10/06 | 10 | 11 | Area 2 | UG/KG | <6250 |
| B092 | B092-2 | 1/5/06 | 2 | 3 | Area 2 | UG/KG | 227500 |
| B092 | B092-5 | 1/5/06 | 5 | 6 | Area 2 | UG/KG | 243750 |
| B092 | B092-10 | 1/5/06 | 10 | 11 | Area 2 | UG/KG | 7500 |
| B093 | B093-2 | 1/5/06 | 2 | 3 | Area 2 | UG/KG | 61250 |
| B093 | B093-5 | 1/5/06 | 5 | 6 | Area 2 | UG/KG | <6250 |
| B093 | B093-10 | 1/5/06 | 10 | 11 | Area 2 | UG/KG | <6250 |
| B094 | B094-2 | 1/5/06 | 2 | 3 | Area 2 | UG/KG | 306250 |
| B094 | B094-5 | 1/5/06 | 5 | 6 | Area 2 | UG/KG | 140000 |
| B094 | B094-10 | 1/5/06 | 10 | 11 | Area 2 | UG/KG | 41250 |
| B095 | B095-2 | 1/4/06 | 2 | 3 | Area 2 | UG/KG | 322500 |
| B095 | B095-5 | 1/4/06 | 5 | 6 | Area 2 | UG/KG | <6250 |
| B095 | B095-10 | 1/4/06 | 10 | 11 | Area 2 | UG/KG | <6250 |
| B096 | B096-2 | 12/28/05 | 2 | 3 | Area 2 | UG/KG | 273750 |
| B096 | B096-5 | 12/28/05 | 5 | 6 | Area 2 | UG/KG | <6250 |
| B096 | B096-10 | 12/28/05 | 10 | 11 | Area 2 | UG/KG | <6250 |
| B097 | B097-2 | 1/5/06 | 2 | 3 | Area 2 | UG/KG | 202500 |
| B097 | B097-5 | 1/5/06 | 5 | 6 | Area 2 | UG/KG | <6250 |
| B097 | B097-10 | 1/5/06 | 10 | 11 | Area 2 | UG/KG | <6250 |
| B098 | B098-2 | 1/4/06 | 2 | 3 | Area 2 | UG/KG | 908750 |
| B098 | B098-5 | 1/4/06 | 5 | 6 | Area 2 | UG/KG | <6250 |
| B098 | B098-10 | 1/4/06 | 10 | 11 | Area 2 | UG/KG | <6250 |
| B099 | B099-2 | 1/3/06 | 2 | 3 | Area 2 | UG/KG | 37500 |
| B099 | B099-5 | 1/3/06 | 5 | 6 | Area 2 | UG/KG | 7500 |
| B099 | B099-10 | 1/3/06 | 10 | 11 | Area 2 | UG/KG | <6250 |
| B100 | B100-2 | 1/10/06 | 2 | 3 | Area 2 | UG/KG | 42500 |
| B100 | B100-5 | 1/10/06 | 5 | 6 | Area 2 | UG/KG | 8000 |
| B100 | B100-10 | 1/10/06 | 10 | 11 | Area 2 | UG/KG | 8750 |
| B101 | B101-2 | 1/10/06 | 2 | 3 | Area 2 | UG/KG | 6750 |
| B101 | B101-5 | 1/10/06 | 5 | 6 | Area 2 | UG/KG | <6250 |
| B101 | B101-10 | 1/10/06 | 10 | 11 | Area 2 | UG/KG | 7500 |
| B102 | B102-2 | 1/9/06 | 2 | 3 | Area 2 | UG/KG | 388750 |
| B102 | B102-5 | 1/9/06 | 5 | 6 | Area 2 | UG/KG | 8750 |
| B102 | B102-10 | 1/9/06 | 10 | 11 | Area 2 | UG/KG | 8875 |
| B103 | B103-2 | 1/6/06 | 2 | 3 | Area 2 | UG/KG | 6875 |
| B103 | B103-5 | 1/6/06 | 5 | 6 | Area 2 | UG/KG | 6250 |
| B103 | B103-10 | 1/6/06 | 10 | 11 | Area 2 | UG/KG | 8750 |
| B104 | B104-2 | 2/3/06 | 2 | 3 | Area 2 | UG/KG | 7000 |
| B104 | B104-5 | 2/3/06 | 5 | 6 | Area 2 | UG/KG | <6250 |
| B104 | B104-10 | 2/3/06 | 10 | 11 | Area 2 | UG/KG | <6250 |
| B105 | B105-2 | 1/10/06 | 2 | 3 | Area 2 | UG/KG | <6250 |
| B105 | B105-5 | 1/10/06 | 5 | 6 | Area 2 | UG/KG | 11250 |
| B105 | B105-10 | 1/10/06 | 10 | 11 | Area 2 | UG/KG | 7125 |
| B106 | B106-2 | 12/29/05 | 2 | 3 | Area 2 | UG/KG | 142500 |
| B106 | B106-5 | 12/29/05 | 5 | 6 | Area 2 | UG/KG | 70000 |
| B106 | B106-10 | 12/29/05 | 10 | 10.5 | Area 2 | UG/KG | <6250 |
| B107 | B107-2 | 1/4/06 | 2 | 3 | Area 2 | UG/KG | 67500 |
| B107 | B107-5 | 1/4/06 | 5 | 6 | Area 2 | UG/KG | 37500 |
| B107 | B107-10 | 1/4/06 | 10 | 11 | Area 2 | UG/KG | <6250 |
| B108 | B108-2 | 1/9/06 | 2 | 3 | Area 2 | UG/KG | <6250 |
| B108 | B108-5 | 1/9/06 | 5 | 6 | Area 2 | UG/KG | 6250 |
| B108 | B108-10 | 1/9/06 | 10 | 11 | Area 2 | UG/KG | <6250 |
| B109 | B109-2 | 1/4/06 | 2 | 3 | Area 2 | UG/KG | 98750 |
| B109 | B109-5 | 1/4/06 | 5 | 6 | Area 2 | UG/KG | <6250 |
| B109 | B109-10 | 1/4/06 | 10 | 11 | Area 2 | UG/KG | <6250 |
| B110 | B110-2 | 12/28/05 | 2 | 3 | Area 2 | UG/KG | <6250 |
| B110 | B110-5 | 12/28/05 | 5 | 6 | Area 2 | UG/KG | <6250 |
| B110 | B110-10 | 12/28/05 | 10 | 11 | Area 2 | UG/KG | <6250 |
| B111 | B111-2 | 12/28/05 | 2 | 3 | Area 2 | UG/KG | 210000 |
| B111 | B111-5 | 12/28/05 | 5 | 6 | Area 2 | UG/KG | 103750 |
| B111 | B111-10 | 12/28/05 | 10 | 11 | Area 2 | UG/KG | 7500 |
| B112 | B112-2 | 12/29/05 | 2 | 3 | Area 2 | UG/KG | 8375 |
| B112 | B112-5 | 12/29/05 | 5 | 6 | Area 2 | UG/KG | 7000 |
| B112 | B112-10 | 12/29/05 | 10 | 11 | Area 2 | UG/KG | 7125 |

**Table B8**
**Results of TPHmo Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Motor Oil Range Organics |
|---|---|---|---|---|---|---|---|
| B113 | B113-2 | 12/29/05 | 2 | 3 | Area 2 | UG/KG | 27500 |
| B113 | B113-5 | 12/29/05 | 5 | 6 | Area 2 | UG/KG | 6250 |
| B113 | B113-10 | 12/29/05 | 10 | 11 | Area 2 | UG/KG | <6250 |
| B114 | B114-2 | 1/3/06 | 2 | 3 | Area 2 | UG/KG | 648750 |
| B114 | B114-5 | 1/3/06 | 5 | 6 | Area 2 | UG/KG | 161250 |
| B114 | B114-10 | 1/3/06 | 10 | 11 | Area 2 | UG/KG | 7500 |
| B115 | B115-2 | 1/3/06 | 2 | 3 | Area 2 | UG/KG | 605000 |
| B115 | B115-5 | 1/3/06 | 5 | 6 | Area 2 | UG/KG | <6250 |
| B115 | B115-10 | 1/3/06 | 10 | 11 | Area 2 | UG/KG | 461250 |
| B116 | B116-2 | 1/4/06 | 2 | 3 | Area 2 | UG/KG | <6250 |
| B116 | B116-5 | 1/4/06 | 5 | 6 | Area 2 | UG/KG | <6250 |
| B116 | B116-10 | 1/4/06 | 10 | 11 | Area 2 | UG/KG | <6250 |
| B117 | B117-2 | 1/6/06 | 2 | 3 | Area 2 | UG/KG | 7500 |
| B117 | B117-5 | 1/6/06 | 5 | 6 | Area 2 | UG/KG | 9250 |
| B117 | B117-10 | 1/6/06 | 10 | 11 | Area 2 | UG/KG | 6625 |
| B118 | B118-2 | 1/6/06 | 2 | 3 | Area 2 | UG/KG | 10000 |
| B118 | B118-5 | 1/6/06 | 5 | 6 | Area 2 | UG/KG | 11875 |
| B118 | B118-10 | 1/6/06 | 10 | 11 | Area 2 | UG/KG | 7875 |
| B119 | B119-2 | 1/27/06 | 2 | 3 | Area 2 | UG/KG | 30000 |
| B119 | B119-5 | 1/27/06 | 5 | 6 | Area 2 | UG/KG | <6250 |
| B119 | B119-10 | 1/27/06 | 10 | 11 | Area 2 | UG/KG | 6875 |
| B120 | B120-2 | 1/30/06 | 2 | 3 | Area 4 | UG/KG | <6250 |
| B120 | B120-5 | 1/30/06 | 5 | 6 | Area 4 | UG/KG | <62500 |
| B120 | B120-10 | 1/30/06 | 10 | 11 | Area 4 | UG/KG | <62500 |
| B121 | B121-2 | 2/1/06 | 2 | 3 | Area 4 | UG/KG | 23750 |
| B121 | B121-5 | 2/1/06 | 5 | 6 | Area 4 | UG/KG | 10400000 |
| B121 | B121-10 | 2/1/06 | 10 | 11 | Area 4 | UG/KG | 32500 |
| B122 | B122-2 | 1/23/06 | 2 | 3 | Area 4 | UG/KG | 797500 |
| B122 | B122-5 | 1/23/06 | 5 | 6 | Area 4 | UG/KG | 4020000 |
| B122 | B122-10 | 1/23/06 | 10 | 11 | Area 4 | UG/KG | <6250 |
| B123 | B123-2 | 1/20/06 | 2 | 3 | Area 4 | UG/KG | 124000 |
| B123 | B123-5 | 1/20/06 | 5 | 6 | Area 4 | UG/KG | 1080000 |
| B123 | B123-10 | 1/19/06 | 11 | 12 | Area 4 | UG/KG | 569000 |
| B124 | B124-2 | 1/16/06 | 2 | 3 | Area 4 | UG/KG | 2587500 |
| B124 | B124-5 | 1/16/06 | 5 | 6 | Area 4 | UG/KG | 6500 |
| B124 | B124-10 | 1/16/06 | 10 | 11 | Area 4 | UG/KG | 6375 |
| B125 | B125-2 | 1/20/06 | 2 | 3 | Area 4 | UG/KG | 168750 |
| B125 | B125-5 | 1/20/06 | 5 | 6 | Area 4 | UG/KG | 7000 |
| B125 | B125-10 | 1/20/06 | 10 | 11 | Area 4 | UG/KG | <6250 |
| B126 | B126-2 | 1/20/06 | 2 | 3 | Area 4 | UG/KG | 572500 |
| B126 | B126-5 | 1/20/06 | 5 | 6 | Area 4 | UG/KG | 105000 |
| B126 | B126-10 | 1/20/06 | 10 | 11 | Area 4 | UG/KG | <6250 |
| B127 | B127-2 | 1/18/06 | 2 | 3 | Area 4 | UG/KG | 7500 |
| B127 | B127-5 | 1/18/06 | 5 | 6 | Area 4 | UG/KG | 8750 |
| B127 | B127-10 | 1/18/06 | 10 | 11 | Area 4 | UG/KG | <6250 |
| B128 | B128-2 | 2/1/06 | 2 | 3 | Area 4 | UG/KG | 1780000 |
| B128 | B128-5 | 2/1/06 | 5 | 6 | Area 4 | UG/KG | 165000 |
| B128 | B128-10 | 2/1/06 | 10 | 11 | Area 4 | UG/KG | 8500 |
| B129 | B129-2 | 1/18/06 | 2 | 3 | Area 4 | UG/KG | 67500 |
| B129 | B129-5 | 1/18/06 | 5 | 6 | Area 4 | UG/KG | 18750 |
| B129 | B129-10 | 1/18/06 | 10 | 11 | Area 4 | UG/KG | <6250 |
| B130 | B130-2 | 1/19/06 | 2 | 3 | Area 4 | UG/KG | 3050000 |
| B130 | B130-5 | 1/19/06 | 5 | 6 | Area 4 | UG/KG | 70000 |
| B130 | B130-10 | 1/19/06 | 10 | 11 | Area 4 | UG/KG | 46250 |
| B131 | B131-2 | 1/19/06 | 2 | 3 | Area 4 | UG/KG | <6250 |
| B131 | B131-5 | 1/19/06 | 5 | 6 | Area 4 | UG/KG | <6250 |
| B131 | B131-10 | 1/19/06 | 10 | 11 | Area 4 | UG/KG | <6250 |
| B132 | B132-2 | 1/19/06 | 2 | 3 | Area 4 | UG/KG | <6250 |
| B132 | B132-5 | 1/19/06 | 5 | 6 | Area 4 | UG/KG | 6625 |
| B132 | B132-10 | 1/19/06 | 10 | 11 | Area 4 | UG/KG | <6250 |
| B134 | B134-2 | 1/23/06 | 2 | 3 | Area 4 | UG/KG | 21250 |
| B134 | B134-5 | 1/23/06 | 5 | 6 | Area 4 | UG/KG | <6250 |
| B134 | B134-10 | 1/23/06 | 10 | 11 | Area 4 | UG/KG | <6250 |
| B135 | B135-2 | 1/16/06 | 2 | 3 | Area 4 | UG/KG | 9000 |
| B135 | B135-5 | 1/16/06 | 5 | 6 | Area 4 | UG/KG | <6250 |
| B135 | B135-10 | 1/16/06 | 10 | 11 | Area 4 | UG/KG | <6250 |
| B136 | B136-2 | 1/12/06 | 2 | 3 | Area 4 | UG/KG | 148750 |

**Table B8**
**Results of TPHmo Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Motor Oil Range Organics |
|---|---|---|---|---|---|---|---|
| B136 | B136-5 | 1/12/06 | 5 | 6 | Area 4 | UG/KG | <125000 |
| B136 | B136-10 | 1/12/06 | 10 | 11 | Area 4 | UG/KG | 182500 |
| B137 | B137-2 | 1/13/06 | 2 | 3 | Area 4 | UG/KG | 202500 |
| B137 | B137-5 | 1/13/06 | 5 | 6 | Area 4 | UG/KG | 95000 |
| B137 | B137-10 | 1/13/06 | 10 | 11 | Area 4 | UG/KG | <6250 |
| B139 | B139-2 | 1/13/06 | 2 | 3 | Area 4 | UG/KG | 276250 |
| B139 | B139-5 | 1/13/06 | 5 | 6 | Area 4 | UG/KG | <6250 |
| B139 | B139-10 | 1/13/06 | 10 | 11 | Area 4 | UG/KG | 41250 |
| B140 | B140-2 | 1/31/06 | 2 | 3 | Area 4 | UG/KG | 401250 |
| B140 | B140-5 | 1/31/06 | 5 | 6 | Area 4 | UG/KG | 336250 |
| B140 | B140-10 | 1/31/06 | 10 | 11 | Area 4 | UG/KG | <6250 |
| B141 | B141-2 | 1/30/06 | 2 | 3 | Area 3 | UG/KG | 77500 |
| B141 | B141-5 | 1/30/06 | 5 | 6 | Area 3 | UG/KG | 91250 |
| B141 | B141-10 | 1/30/06 | 10 | 11 | Area 3 | UG/KG | <6250 |
| B142 | B142-2 | 1/31/06 | 2 | 3 | Area 3 | UG/KG | 53750 |
| B142 | B142-5 | 1/31/06 | 5 | 6 | Area 3 | UG/KG | 216250 |
| B142 | B142-10 | 1/31/06 | 10 | 11 | Area 3 | UG/KG | 127500 |
| B143 | B143-2 | 1/18/06 | 2 | 3 | Area 3 | UG/KG | 300000 |
| B143 | B143-5 | 1/18/06 | 5 | 6 | Area 3 | UG/KG | 43750 |
| B143 | B143-10 | 1/18/06 | 10 | 11 | Area 3 | UG/KG | 12500 |
| B144 | B144-2 | 1/13/06 | 2 | 3 | Area 3 | UG/KG | 473750 |
| B144 | B144-5 | 1/13/06 | 5 | 6 | Area 3 | UG/KG | 2275000 |
| B144 | B144-10 | 1/13/06 | 10 | 11 | Area 3 | UG/KG | 11875 |
| B145 | B145-2 | 1/19/06 | 2 | 3 | Area 3 | UG/KG | 40000 |
| B145 | B145-5 | 1/19/06 | 5 | 6 | Area 3 | UG/KG | <6250 |
| B145 | B145-10 | 1/19/06 | 10 | 11 | Area 3 | UG/KG | 6500 |
| B146 | B146-2 | 1/27/06 | 2 | 3 | Area 3 | UG/KG | <6250 |
| B146 | B146-5 | 1/27/06 | 5 | 6 | Area 3 | UG/KG | <6250 |
| B146 | B146-10 | 1/27/06 | 10 | 11 | Area 3 | UG/KG | 6500 |
| B147 | B147-2 | 2/1/06 | 2 | 3 | Area 3 | UG/KG | <6250 |
| B147 | B147-5 | 2/1/06 | 5 | 6 | Area 3 | UG/KG | <125000 |
| B147 | B147-10 | 2/1/06 | 10 | 11 | Area 3 | UG/KG | 43750 |
| B148 | B148-2 | 1/23/06 | 2 | 3 | Area 3 | UG/KG | 2380000 |
| B148 | B148-5 | 1/23/06 | 5 | 6 | Area 3 | UG/KG | 456250 |
| B148 | B148-10 | 1/23/06 | 10 | 11 | Area 3 | UG/KG | 7500 |
| B149 | B149-2 | 1/23/06 | 2 | 3 | Area 3 | UG/KG | 632000 |
| B149 | B149-5 | 1/23/06 | 5 | 6 | Area 3 | UG/KG | 1080000 |
| B149 | B149-10 | 1/23/06 | 10 | 11 | Area 3 | UG/KG | 2237500 |
| B150 | B150-2 | 1/20/06 | 2 | 3 | Area 3 | UG/KG | 180000 |
| B150 | B150-5 | 1/20/06 | 5 | 6 | Area 3 | UG/KG | 128750 |
| B150 | B150-10 | 1/20/06 | 10 | 11 | Area 3 | UG/KG | <2500000 |
| B151 | B151-2 | 1/19/06 | 2 | 3 | Area 4 | UG/KG | 46250 |
| B151 | B151-5 | 1/19/06 | 5 | 6 | Area 4 | UG/KG | 1625000 |
| B151 | B151-10 | 1/19/06 | 10 | 11 | Area 4 | UG/KG | <6250 |
| B152 | B152-2 | 1/20/06 | 2 | 3 | Area 3 | UG/KG | 4440000 |
| B152 | B152-5 | 1/20/06 | 5 | 6 | Area 3 | UG/KG | <312500 |
| B152 | B152-10 | 1/20/06 | 10 | 11 | Area 3 | UG/KG | <6250 |
| B153 | B153-2 | 1/20/06 | 2 | 3 | Area 3 | UG/KG | 1425000 |
| B153 | B153-5 | 1/20/06 | 5 | 6 | Area 3 | UG/KG | 150000 |
| B153 | B153-10 | 1/20/06 | 10 | 11 | Area 3 | UG/KG | 1246250 |
| B154 | B154-2 | 1/16/06 | 2 | 3 | Area 3 | UG/KG | 2820000 |
| B154 | B154-5 | 1/16/06 | 5 | 6 | Area 3 | UG/KG | 7500 |
| B154 | B154-10 | 1/16/06 | 10 | 11 | Area 3 | UG/KG | 10000 |
| B155 | B155-2 | 1/30/06 | 2 | 3 | Area 3 | UG/KG | 1190000 |
| B155 | B155-5 | 1/30/06 | 5 | 6 | Area 3 | UG/KG | <312500 |
| B155 | B155-10 | 1/30/06 | 10 | 11 | Area 3 | UG/KG | <625000 |
| B156 | B156-2 | 1/13/06 | 2 | 3 | Area 3 | UG/KG | 291250 |
| B156 | B156-5 | 1/13/06 | 5 | 6 | Area 3 | UG/KG | 8875 |
| B156 | B156-10 | 1/13/06 | 10 | 11 | Area 3 | UG/KG | 470000 |
| B158 | B158-2 | 1/30/06 | 2 | 3 | Area 3 | UG/KG | <6250 |
| B158 | B158-5 | 1/30/06 | 5 | 6 | Area 3 | UG/KG | 60000 |
| B158 | B158-10 | 1/30/06 | 10 | 11 | Area 3 | UG/KG | <6250 |
| B159 | B159-2 | 1/31/06 | 2 | 3 | Area 3 | UG/KG | <6250 |
| B159 | B159-5 | 1/31/06 | 5 | 6 | Area 3 | UG/KG | 120000 |
| B159 | B159-10 | 1/31/06 | 10 | 11 | Area 3 | UG/KG | <125000 |
| B160 | B160-2 | 1/31/06 | 2 | 3 | Area 3 | UG/KG | 6750 |
| B160 | B160-5 | 1/31/06 | 5 | 6 | Area 3 | UG/KG | 7125 |

**Table B8**
**Results of TPHmo Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Motor Oil Range Organics |
|---|---|---|---|---|---|---|---|
| B160 | B160-10 | 1/31/06 | 10 | 11 | Area 3 | UG/KG | <6250 |
| B161 | B161-2 | 1/13/06 | 2 | 3 | Area 3 | UG/KG | 12500 |
| B161 | B161-5 | 1/13/06 | 5 | 6 | Area 3 | UG/KG | 1925000 |
| B161 | B161-10 | 1/13/06 | 10 | 11 | Area 3 | UG/KG | <6250 |
| B162 | B162-2 | 1/16/06 | 2 | 3 | Area 3 | UG/KG | <6250 |
| B162 | B162-5 | 1/16/06 | 5 | 6 | Area 3 | UG/KG | <6250 |
| B162 | B162-10 | 1/16/06 | 10 | 11 | Area 3 | UG/KG | 11750 |
| B163 | B163-2 | 1/16/06 | 2 | 3 | Area 3 | UG/KG | <6250 |
| B163 | B163-5 | 1/16/06 | 5 | 6 | Area 3 | UG/KG | 8125 |
| B163 | B163-10 | 1/16/06 | 10 | 11 | Area 3 | UG/KG | <625000 |
| B164 | B164-2 | 1/16/06 | 2 | 3 | Area 3 | UG/KG | <6250 |
| B164 | B164-5 | 1/16/06 | 5 | 6 | Area 3 | UG/KG | 7500 |
| B164 | B164-10 | 1/16/06 | 10 | 11 | Area 3 | UG/KG | 145000 |
| B165 | B165-2 | 1/23/06 | 2 | 3 | Area 3 | UG/KG | 11375 |
| B165 | B165-5 | 1/23/06 | 5 | 6 | Area 3 | UG/KG | 506250 |
| B165 | B165-10 | 1/23/06 | 10 | 11 | Area 3 | UG/KG | 6875 |
| B166 | B166-2 | 1/24/06 | 2 | 3 | Area 3 | UG/KG | <6250 |
| B166 | B166-5 | 1/24/06 | 5 | 6 | Area 3 | UG/KG | <6250 |
| B166 | B166-10 | 1/24/06 | 10 | 11 | Area 3 | UG/KG | <6250 |
| B167 | B167-2 | 1/17/06 | 2 | 3 | Area 3 | UG/KG | 6750 |
| B167 | B167-5 | 1/17/06 | 5 | 6 | Area 3 | UG/KG | <6250 |
| B167 | B167-10 | 1/17/06 | 10 | 11 | Area 3 | UG/KG | <6250 |
| B168 | B168-2 | 1/17/06 | 2 | 3 | Area 3 | UG/KG | 2830000 |
| B168 | B168-5 | 1/17/06 | 5 | 6 | Area 3 | UG/KG | 6250 |
| B168 | B168-10 | 1/17/06 | 10 | 11 | Area 3 | UG/KG | 18750 |
| B169 | B169-2 | 1/17/06 | 2 | 3 | Area 3 | UG/KG | 5810000 |
| B169 | B169-5 | 1/17/06 | 5 | 6 | Area 3 | UG/KG | 38750 |
| B169 | B169-10 | 1/17/06 | 10 | 11 | Area 3 | UG/KG | <6250 |
| B170 | B170-2 | 1/18/06 | 2 | 3 | Area 3 | UG/KG | 16250 |
| B170 | B170-5 | 1/18/06 | 5 | 6 | Area 3 | UG/KG | 11875 |
| B170 | B170-10 | 1/18/06 | 10 | 11 | Area 3 | UG/KG | 365000 |
| B171 | B171-2 | 1/11/06 | 2 | 3 | Area 3 | UG/KG | 843750 |
| B171 | B171-5 | 1/11/06 | 5 | 6 | Area 3 | UG/KG | 160000 |
| B171 | B171-10 | 1/11/06 | 10 | 11 | Area 3 | UG/KG | 210000 |
| B172 | B172-2 | 1/12/06 | 2 | 3 | Area 3 | UG/KG | 1056250 |
| B172 | B172-5 | 1/12/06 | 5 | 6 | Area 3 | UG/KG | <6250 |
| B172 | B172-10 | 1/12/06 | 10 | 11 | Area 3 | UG/KG | <6250 |
| B173 | B173-2 | 1/12/06 | 2 | 3 | Area 3 | UG/KG | <6250 |
| B173 | B173-5 | 1/12/06 | 5 | 6 | Area 3 | UG/KG | <6250 |
| B173 | B173-10 | 1/12/06 | 10 | 11 | Area 3 | UG/KG | <6250 |
| B174 | B174-2 | 1/12/06 | 2 | 3 | Area 3 | UG/KG | 625000 |
| B174 | B174-5 | 1/12/06 | 5 | 6 | Area 3 | UG/KG | <6250 |
| B174 | B174-10 | 1/12/06 | 10 | 11 | Area 3 | UG/KG | <6250 |
| B175 | B175-2 | 2/7/06 | 2 | 3 | Area 3 | UG/KG | <6250 |
| B175 | B175-5 | 2/7/06 | 5 | 6 | Area 3 | UG/KG | 107500 |
| B175 | B175-10 | 2/7/06 | 10 | 11 | Area 3 | UG/KG | 6250 |
| B176 | B176-2 | 2/7/06 | 2 | 3 | Area 3 | UG/KG | 422500 |
| B176 | B176-5 | 2/7/06 | 5 | 6 | Area 3 | UG/KG | 875000 |
| B176 | B176-10 | 2/7/06 | 10 | 11 | Area 3 | UG/KG | 266250 |
| B177 | B177-2 | 2/2/06 | 2 | 3 | Area 3 | UG/KG | <6250 |
| B177 | B177-5 | 2/2/06 | 5 | 6 | Area 3 | UG/KG | 28750 |
| B177 | B177-10 | 2/2/06 | 10 | 11 | Area 3 | UG/KG | <6250 |
| B178 | B178-2 | 2/2/06 | 2 | 3 | Area 3 | UG/KG | 101250 |
| B178 | B178-5 | 2/2/06 | 5 | 6 | Area 3 | UG/KG | <6250 |
| B178 | B178-10 | 2/2/06 | 10 | 11 | Area 3 | UG/KG | 7500 |
| B179 | B179-2 | 1/26/06 | 2 | 3 | Area 3 | UG/KG | 1250000 |
| B179 | B179-5 | 1/26/06 | 5 | 6 | Area 3 | UG/KG | 846250 |
| B179 | B179-10 | 1/26/06 | 10 | 11 | Area 3 | UG/KG | <312500 |
| B180 | B180-2 | 1/26/06 | 2 | 3 | Area 3 | UG/KG | <6250 |
| B180 | B180-5 | 1/26/06 | 5 | 6 | Area 3 | UG/KG | <6250 |
| B180 | B180-10 | 1/26/06 | 10 | 11 | Area 3 | UG/KG | 6500 |
| B181 | B181-2 | 2/6/06 | 2 | 3 | Area 3 | UG/KG | 13750 |
| B181 | B181-5 | 2/6/06 | 5 | 6 | Area 3 | UG/KG | 3087500 |
| B181 | B181-10 | 2/6/06 | 10 | 11 | Area 3 | UG/KG | 7000 |
| B182 | B182-2 | 1/24/06 | 2 | 3 | Area 3 | UG/KG | 7125 |
| B182 | B182-5 | 1/25/06 | 5 | 6 | Area 3 | UG/KG | 388750 |
| B182 | B182-10 | 1/25/06 | 10 | 11 | Area 3 | UG/KG | 7000 |

**Table B8**
**Results of TPHmo Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Motor Oil Range Organics |
|---|---|---|---|---|---|---|---|
| B183 | B183-2 | 1/25/06 | 2 | 3 | Area 3 | UG/KG | 2500000 |
| B183 | B183-5 | 1/25/06 | 5 | 6 | Area 3 | UG/KG | 1050000 |
| B183 | B183-10 | 1/25/06 | 10 | 11 | Area 3 | UG/KG | 14500000 |
| B184 | B184-2 | 1/25/06 | 2 | 3 | Area 3 | UG/KG | 2162500 |
| B184 | B184-5 | 1/25/06 | 5 | 6 | Area 3 | UG/KG | 13750 |
| B184 | B184-10 | 1/25/06 | 10 | 11 | Area 3 | UG/KG | 6625 |
| B185 | B185-2 | 1/26/06 | 2 | 3 | Area 3 | UG/KG | 1562500 |
| B185 | B185-5 | 1/26/06 | 5 | 6 | Area 3 | UG/KG | 9750 |
| B185 | B185-10 | 1/26/06 | 10 | 11 | Area 3 | UG/KG | <6250 |
| B186 | B186-2 | 1/27/06 | 2 | 3 | Area 3 | UG/KG | 248750 |
| B186 | B186-5 | 1/27/06 | 5 | 6 | Area 3 | UG/KG | <6250 |
| B186 | B186-10 | 1/27/06 | 10 | 11 | Area 3 | UG/KG | <6250 |
| B187 | B187-2 | 1/27/06 | 2 | 3 | Area 3 | UG/KG | 28750 |
| B187 | B187-5 | 1/27/06 | 5 | 6 | Area 3 | UG/KG | <6250 |
| B187 | B187-10 | 1/27/06 | 10 | 11 | Area 3 | UG/KG | 50000 |
| B188 | B188-2 | 2/7/06 | 2 | 3 | Area 2 | UG/KG | <6250 |
| B188 | B188-5 | 2/7/06 | 5 | 6 | Area 2 | UG/KG | 4560000 |
| B188 | B188-10 | 2/7/06 | 10 | 11 | Area 2 | UG/KG | 147500 |
| B189 | B189-2 | 2/7/06 | 2 | 3 | Area 2 | UG/KG | 11250 |
| B189 | B189-5 | 2/7/06 | 5 | 6 | Area 2 | UG/KG | 335000 |
| B189 | B189-10 | 2/7/06 | 10 | 11 | Area 2 | UG/KG | 21250 |
| B190 | B190-2 | 2/8/06 | 2 | 3 | Area 2 | UG/KG | <6250 |
| B190 | B190-5 | 2/8/06 | 5 | 6 | Area 2 | UG/KG | <6250 |
| B190 | B190-10 | 2/8/06 | 10 | 11 | Area 2 | UG/KG | <6250 |
| B191 | B191-2 | 2/1/06 | 2 | 3 | Area 2 | UG/KG | 310000 |
| B191 | B191-5 | 2/1/06 | 5 | 6 | Area 2 | UG/KG | <125000 |
| B191 | B191-10 | 2/1/06 | 10 | 11 | Area 2 | UG/KG | 323000 |
| B192 | B192-2 | 2/1/06 | 2 | 3 | Area 2 | UG/KG | 601250 |
| B192 | B192-5 | 2/1/06 | 5 | 6 | Area 2 | UG/KG | 7125 |
| B192 | B192-10 | 2/1/06 | 10 | 11 | Area 2 | UG/KG | <6250 |
| B193 | B193-2 | 2/6/06 | 2 | 3 | Area 3 | UG/KG | 23750 |
| B193 | B193-5 | 2/6/06 | 5 | 6 | Area 3 | UG/KG | 9125 |
| B193 | B193-10 | 2/6/06 | 10 | 11 | Area 3 | UG/KG | 7250 |
| B194 | B194-2 | 2/3/06 | 2 | 3 | Area 3 | UG/KG | 158750 |
| B194 | B194-5 | 2/3/06 | 5 | 6 | Area 3 | UG/KG | <6250 |
| B194 | B194-10 | 2/3/06 | 10 | 11 | Area 3 | UG/KG | 4280000 |
| B195 | B195-2 | 2/3/06 | 2 | 3 | Area 3 | UG/KG | 93750 |
| B195 | B195-5 | 2/3/06 | 5 | 6 | Area 3 | UG/KG | 6500 |
| B195 | B195-10 | 2/3/06 | 10 | 11 | Area 3 | UG/KG | <6250 |
| B196 | B196-2 | 1/25/06 | 2 | 3 | Area 3 | UG/KG | <6250 |
| B196 | B196-5 | 1/25/06 | 5 | 6 | Area 3 | UG/KG | <6250 |
| B196 | B196-10 | 1/25/06 | 10 | 11 | Area 3 | UG/KG | 7750 |
| B197 | B197-2 | 2/1/06 | 2 | 3 | Area 3 | UG/KG | 6625 |
| B197 | B197-5 | 2/1/06 | 5 | 6 | Area 3 | UG/KG | <6250 |
| B197 | B197-10 | 2/1/06 | 10 | 11 | Area 3 | UG/KG | <6250 |
| B198 | B198-2 | 1/26/06 | 2 | 3 | Area 3 | UG/KG | <6250 |
| B198 | B198-5 | 1/26/06 | 5 | 6 | Area 3 | UG/KG | <6250 |
| B198 | B198-10 | 1/26/06 | 10 | 11 | Area 3 | UG/KG | <6250 |
| B199 | B199-2 | 1/23/06 | 2 | 3 | Area 3 | UG/KG | 416250 |
| B199 | B199-5 | 1/23/06 | 5 | 6 | Area 3 | UG/KG | 1700000 |
| B199 | B199-10 | 1/23/06 | 10 | 11 | Area 3 | UG/KG | 748750 |
| B200 | B200-2 | 1/24/06 | 2 | 3 | Area 3 | UG/KG | <6250 |
| B200 | B200-5 | 1/24/06 | 5 | 6 | Area 3 | UG/KG | <6250 |
| B200 | B200-10 | 1/24/06 | 10 | 11 | Area 3 | UG/KG | <6250 |
| B201 | B201-2 | 1/25/06 | 2 | 3 | Area 3 | UG/KG | <6250 |
| B201 | B201-5 | 1/25/06 | 5 | 6 | Area 3 | UG/KG | <6250 |
| B201 | B201-10 | 1/25/06 | 10 | 11 | Area 3 | UG/KG | <6250 |
| B202 | B202-2 | 1/25/06 | 2 | 3 | Area 3 | UG/KG | 6875 |
| B202 | B202-5 | 1/25/06 | 5 | 6 | Area 3 | UG/KG | 6375 |
| B202 | B202-10 | 1/25/06 | 10 | 11 | Area 3 | UG/KG | <6250 |
| B203 | B203-2 | 2/7/06 | 2 | 3 | Area 3 | UG/KG | 997500 |
| B203 | B203-5 | 2/7/06 | 5 | 6 | Area 3 | UG/KG | 25500000 |
| B203 | B203-10 | 2/7/06 | 10 | 11 | Area 3 | UG/KG | 121250 |
| B204 | B204-2 | 2/6/06 | 2 | 3 | Area 3 | UG/KG | 7625 |
| B204 | B204-5 | 2/6/06 | 5 | 6 | Area 3 | UG/KG | 5350000 |
| B204 | B204-10 | 2/6/06 | 10 | 11 | Area 3 | UG/KG | <6250 |
| B205 | B205-2 | 2/7/06 | 2 | 3 | Area 3 | UG/KG | 370000 |

**Table B8**
**Results of TPHmo Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Motor Oil Range Organics |
|---|---|---|---|---|---|---|---|
| B205 | B205-5 | 2/7/06 | 5 | 6 | Area 3 | UG/KG | 6750 |
| B205 | B205-10 | 2/7/06 | 10 | 11 | Area 3 | UG/KG | 47500 |
| B206 | B206-2 | 2/8/06 | 2 | 3 | Area 2 | UG/KG | 107500 |
| B206 | B206-5 | 2/8/06 | 5 | 6 | Area 2 | UG/KG | <6250 |
| B206 | B206-10 | 2/8/06 | 10 | 11 | Area 2 | UG/KG | <6250 |
| B207 | B207-2 | 2/8/06 | 2 | 3 | Area 2 | UG/KG | 536250 |
| B207 | B207-5 | 2/8/06 | 5 | 6 | Area 2 | UG/KG | <6250 |
| B207 | B207-10 | 2/8/06 | 10 | 11 | Area 2 | UG/KG | <6250 |
| B208 | B208-2 | 1/31/06 | 2 | 3 | Area 2 | UG/KG | 225000 |
| B208 | B208-5 | 1/31/06 | 5 | 6 | Area 2 | UG/KG | <6250 |
| B208 | B208-10 | 1/31/06 | 10 | 11 | Area 2 | UG/KG | <6250 |
| B209 | B209-2 | 1/31/06 | 2 | 3 | Area 2 | UG/KG | 547500 |
| B209 | B209-5 | 1/31/06 | 5 | 6 | Area 2 | UG/KG | 342500 |
| B209 | B209-10 | 1/31/06 | 10 | 11 | Area 2 | UG/KG | 2175000 |
| B210 | B210-2 | 1/31/06 | 2 | 3 | Area 3 | UG/KG | 412500 |
| B210 | B210-5 | 1/31/06 | 5 | 6 | Area 3 | UG/KG | 6625 |
| B210 | B210-10 | 1/31/06 | 10 | 11 | Area 3 | UG/KG | <6250 |
| B211 | B211-2 | 2/6/06 | 2 | 3 | Area 3 | UG/KG | 662500 |
| B211 | B211-5 | 2/6/06 | 5 | 6 | Area 3 | UG/KG | 893750 |
| B211 | B211-10 | 2/6/06 | 10 | 11 | Area 3 | UG/KG | 127500 |
| B212 | B212-2 | 1/24/06 | 2 | 3 | Area 3 | UG/KG | 6375 |
| B212 | B212-5 | 1/24/06 | 5 | 6 | Area 3 | UG/KG | 8250 |
| B212 | B212-10 | 1/24/06 | 10 | 11 | Area 3 | UG/KG | <6250 |
| B213 | B213-2 | 2/6/06 | 2 | 3 | Area 3 | UG/KG | 40000 |
| B213 | B213-5 | 2/6/06 | 5 | 6 | Area 3 | UG/KG | 8750 |
| B213 | B213-10 | 2/6/06 | 10 | 11 | Area 3 | UG/KG | 7500 |
| B214 | B214-2 | 1/23/06 | 2 | 3 | Area 3 | UG/KG | 2725000 |
| B214 | B214-5 | 1/23/06 | 5 | 6 | Area 3 | UG/KG | 7250 |
| B214 | B214-10 | 1/23/06 | 10 | 11 | Area 3 | UG/KG | 7250 |
| B215 | B215-2 | 2/3/06 | 2 | 3 | Area 3 | UG/KG | 85000 |
| B215 | B215-5 | 2/3/06 | 5 | 6 | Area 3 | UG/KG | <6250 |
| B215 | B215-10 | 2/3/06 | 10 | 11 | Area 3 | UG/KG | <6250 |
| B216 | B216-2 | 2/2/06 | 2 | 3 | Area 3 | UG/KG | 7625 |
| B216 | B216-5 | 2/2/06 | 5 | 6 | Area 3 | UG/KG | 6250 |
| B216 | B216-10 | 2/2/06 | 10 | 11 | Area 3 | UG/KG | <6250 |
| B217 | B217-2 | 1/24/06 | 2 | 3 | Area 3 | UG/KG | <6250 |
| B217 | B217-5 | 1/24/06 | 5 | 6 | Area 3 | UG/KG | <6250 |
| B217 | B217-10 | 1/24/06 | 10 | 11 | Area 3 | UG/KG | <6250 |
| B218 | B218-2 | 2/8/06 | 2 | 3 | Area 3 | UG/KG | 883750 |
| B218 | B218-5 | 2/8/06 | 5 | 6 | Area 3 | UG/KG | 707500 |
| B218 | B218-10 | 2/8/06 | 10 | 11 | Area 3 | UG/KG | <6250 |
| B219 | B219-2 | 1/26/06 | 2 | 3 | Area 3 | UG/KG | 7000 |
| B219 | B219-5 | 1/26/06 | 5 | 6 | Area 3 | UG/KG | <6250 |
| B219 | B219-10 | 1/26/06 | 10 | 11 | Area 3 | UG/KG | <6250 |
| B220 | B220-2 | 1/26/06 | 2 | 3 | Area 3 | UG/KG | 2325000 |
| B220 | B220-5 | 1/26/06 | 5 | 6 | Area 3 | UG/KG | 150000 |
| B220 | B220-10 | 1/26/06 | 10 | 11 | Area 3 | UG/KG | <6250 |
| B221 | B221-2 | 1/27/06 | 2 | 3 | Area 2 | UG/KG | <6250 |
| B221 | B221-5 | 1/27/06 | 5 | 6 | Area 2 | UG/KG | 6250 |
| B221 | B221-10 | 1/27/06 | 10 | 11 | Area 2 | UG/KG | <6250 |
| B222 | B222-2 | 2/3/06 | 2 | 3 | Area 2 | UG/KG | <6250 |
| B222 | B222-5 | 2/3/06 | 5 | 6 | Area 2 | UG/KG | <6250 |
| B222 | B222-10 | 2/3/06 | 10 | 11 | Area 2 | UG/KG | <6250 |
| B223 | B223-2 | 2/3/06 | 2 | 3 | Area 2 | UG/KG | <6250 |
| B223 | B223-5 | 2/3/06 | 5 | 6 | Area 2 | UG/KG | <6250 |
| B223 | B223-10 | 2/3/06 | 10 | 11 | Area 2 | UG/KG | <6250 |
| B224 | B224-05 | 1/21/08 | 5 | 6 | Area 1 | UG/KG | 4550000 |
| B226 | B226-5 | 1/18/08 | 5 | 6 | Area 1 | UG/KG | 94600 |
| B226 | B226-10 | 1/18/08 | 9 | 10 | Area 1 | UG/KG | 71200 |
| B227 | B227-5 | 1/21/08 | 5 | 6 | Area 1 | UG/KG | 1139000 |
| B227 | B227-10 | 1/21/08 | 10 | 11 | Area 1 | UG/KG | 1790000 |
| B228 | B228-05 | 1/18/08 | 5 | 6 | Area 1 | UG/KG | 4190000 |
| B228 | B228-10 | 1/18/08 | 10 | 11 | Area 1 | UG/KG | 1420200 |
| B229 | B229-05 | 1/18/08 | 5 | 6 | Area 1 | UG/KG | 1146000 |
| B229 | B229-10 | 1/18/08 | 10 | 11 | Area 1 | UG/KG | 602000 |
| B230 | B230-5 | 1/17/08 | 5 | 6 | Area 1 | UG/KG | 26000 |
| B230 | B230-10 | 1/17/08 | 9 | 10 | Area 1 | UG/KG | 694900 |

**Table B8**
**Results of TPHmo Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Motor Oil Range Organics |
|---|---|---|---|---|---|---|---|
| B232 | B232-05 | 1/21/08 | 5 | 6 | Area 3 | UG/KG | 177400 |
| B232 | B232-10 | 1/21/08 | 10 | 11 | Area 3 | UG/KG | 980 |
| B234 | B234-05 | 1/23/08 | 5 | 6 | Area 4 | UG/KG | 136000 |
| B235 | B235-5 | 1/25/08 | 5 | 6 | Area 4 | UG/KG | 360 |
| B235 | B235-10 | 1/25/08 | 9 | 10 | Area 4 | UG/KG | 234000 |
| B236 | B236-05 | 1/22/08 | 5 | 6 | Area 3 | UG/KG | 706000 |
| B236 | B236-10 | 1/22/08 | 10 | 11 | Area 3 | UG/KG | 3153 |
| B237 | B237-5 | 1/23/08 | 5 | 6 | Area 3 | UG/KG | 5650000 |
| B237 | B237-10 | 1/23/08 | 10 | 11 | Area 3 | UG/KG | 2400000 |
| B238 | B238-5 | 1/25/08 | 5 | 6 | Area 3 | UG/KG | 1100000 |
| B238 | B238-10 | 1/25/08 | 10 | 11 | Area 3 | UG/KG | 649000 |
| B239 | B239-05 | 1/22/08 | 5 | 6 | Area 3 | UG/KG | 1350000 |
| B240 | B240-10 | 1/22/08 | 9 | 10 | Area 3 | UG/KG | 39500 |
| B241 | B241-5 | 1/23/08 | 5 | 6 | Area 3 | UG/KG | 20500 |
| B241 | B241-10 | 1/23/08 | 10 | 11 | Area 3 | UG/KG | 310 |
| B242 | B242-05 | 1/25/08 | 5 | 6 | Area 3 | UG/KG | 1510000 |
| B243 | B243-05 | 1/25/08 | 5 | 6 | Area 3 | UG/KG | 600000 |
| B243 | B243-10 | 1/25/08 | 10 | 11 | Area 3 | UG/KG | 7100000 |
| B246 | B246-5 | 1/15/08 | 5 | 6 | Area 1 | UG/KG | 209000 |
| B246 | B246-10 | 1/15/08 | 10 | 11 | Area 1 | UG/KG | 3140000 |
| B247 | B247-05 | 1/17/08 | 5 | 6 | Area 1 | UG/KG | 183000 |
| B249 | B249-05 | 1/14/08 | 5 | 6 | Area 1 | UG/KG | 36800 |
| B249 | B249-10 | 1/14/08 | 10 | 11 | Area 1 | UG/KG | 1235 |
| B250 | B250-05 | 1/16/08 | 5 | 6 | Area 1 | UG/KG | 39900 |
| B252 | B252-5 | 1/15/08 | 5 | 6 | Area 1 | UG/KG | 16200 |
| B253 | B253-05 | 1/31/08 | 5 | 6 | Area 4 | UG/KG | 7286000 |
| B253 | B253-10 | 1/31/08 | 10 | 11 | Area 4 | UG/KG | 1321000 |
| B254 | B254-05 | 2/5/08 | 5 | 6 | Area 4 | UG/KG | 35500 |
| B255 | B255-05 | 1/31/08 | 5 | 6 | Area 3 | UG/KG | 360000 |
| B257 | B257-05 | 1/30/08 | 5 | 6 | Area 3 | UG/KG | 6140000 |
| B257 | B257-10 | 1/30/08 | 10 | 11 | Area 3 | UG/KG | 367800 |
| B258 | B258-05 | 1/31/08 | 5 | 6 | Area 3 | UG/KG | 305100 |
| B258 | B258-10 | 1/31/08 | 10 | 11 | Area 3 | UG/KG | 1752500 |
| B260 | B260-05 | 2/1/08 | 5 | 6 | Area 3 | UG/KG | 922000 |
| B261 | B261-5 | 1/21/09 | 4.5 | 5.5 | Area 3 | UG/KG | 18800000 |
| B263 | B263-05 | 2/4/08 | 5 | 6 | Area 3 | UG/KG | 1132000 |
| B266 | B266-10 | 1/14/08 | 10 | 11 | Area 1 | UG/KG | 1270 |
| B271 | B271-10 | 1/14/08 | 10 | 11 | Area 1 | UG/KG | 1224 |
| B272 | B272-5 | 1/14/08 | 5 | 6 | Area 1 | UG/KG | 711 |
| B272 | B272-10 | 1/14/08 | 10 | 11 | Area 1 | UG/KG | 2080 |
| B274 | B274-05 | 1/14/08 | 5 | 6 | Area 1 | UG/KG | 411000 |
| B274 | B274-10 | 1/14/08 | 10 | 11 | Area 1 | UG/KG | 536000 |
| B275 | B275-5 | 1/14/08 | 5 | 6 | Area 1 | UG/KG | 2732 |
| B275 | B275-10 | 1/14/08 | 10 | 11 | Area 1 | UG/KG | 2230 |
| B276 | B276-05 | 2/4/08 | 5 | 6 | Area 3 | UG/KG | 1120000 |
| B277 | B277-5 | 1/16/08 | 5 | 6 | Area 3 | UG/KG | 482910 |
| B277 | B277-10 | 1/16/08 | 10 | 11 | Area 3 | UG/KG | 1900 |
| B278 | B278-5 | 1/16/08 | 5 | 6 | Area 1 | UG/KG | 9630000 |
| B278 | B278-10 | 1/16/08 | 10 | 11 | Area 1 | UG/KG | 3925000 |
| B279 | B279-5 | 1/16/08 | 5 | 6 | Area 1 | UG/KG | 2220000 |
| B279 | B279-10 | 1/16/08 | 10 | 11 | Area 1 | UG/KG | 5560000 |
| B280 | B280-5 | 1/16/08 | 5 | 6 | Area 1 | UG/KG | 833000 |
| B280 | B280-10 | 1/16/08 | 10 | 11 | Area 1 | UG/KG | 4960000 |
| B281 | B281-5 | 1/14/08 | 5 | 6 | Area 1 | UG/KG | 1888.4 |
| B281 | B281-10 | 1/14/08 | 10 | 11 | Area 1 | UG/KG | 1052100 |
| B282 | B282-05 | 1/28/08 | 5 | 6 | Area 1 | UG/KG | 50700 |
| B282 | B282-10 | 1/28/08 | 10 | 11 | Area 1 | UG/KG | 3440 |
| B283 | B283-05 | 1/29/08 | 5 | 6 | Area 1 | UG/KG | 364000 |
| B284 | B284-05 | 1/28/08 | 5 | 6 | Area 2 | UG/KG | 216000 |
| B285 | B285-05 | 1/28/08 | 5 | 6 | Area 2 | UG/KG | 591000 |
| B285 | B285-10 | 1/28/08 | 10 | 11 | Area 2 | UG/KG | 2009 |
| B286 | B286-5 | 1/22/09 | 5 | 6 | Area 2 | UG/KG | 486000 |
| B286 | B286-10 | 1/22/09 | 10 | 11 | Area 2 | UG/KG | 868000 |
| B287 | B287-5 | 1/22/08 | 5 | 6 | Area 2 | UG/KG | 59400 |
| B287 | B287-10 | 1/22/08 | 10 | 11 | Area 2 | UG/KG | 125000 |
| B289 | B289-5 | 1/28/08 | 5 | 6 | Area 2 | UG/KG | 64600 |
| B290 | B290-5 | 1/28/08 | 5 | 6 | Area 2 | UG/KG | 1250000 |

**Table B8**
**Results of TPHmo Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Motor Oil Range Organics |
|---|---|---|---|---|---|---|---|
| B290 | B290-10 | 1/28/08 | 10 | 11 | Area 2 | UG/KG | 1720000 |
| B291 | B291-10 | 1/29/08 | 10 | 11 | Area 2 | UG/KG | 95400 |
| B292 | B292-5 | 1/22/09 | 5 | 6 | Area 2 | UG/KG | 831000 |
| B292 | B292-10 | 1/22/09 | 10 | 11 | Area 2 | UG/KG | 204500 |
| B294 | B294-05 | 1/31/08 | 4.5 | 5 | Area 2 | UG/KG | 166600 |
| B294 | B294-10 | 1/31/08 | 10 | 11 | Area 2 | UG/KG | 397000 |
| B295 | B295-5 | 1/22/09 | 5 | 6 | Area 2 | UG/KG | 14200 |
| B297 | B297-5 | 1/20/09 | 4.5 | 5.5 | Area 2 | UG/KG | 14800 |
| B299 | B299-5 | 1/19/09 | 5 | 6 | Area 4 | UG/KG | 892000 |
| B299 | B299-10 | 1/19/09 | 9.5 | 10.5 | Area 4 | UG/KG | 9794000 |
| B301 | B301-05 | 2/6/08 | 5 | 6 | Area 4 | UG/KG | 107400 |
| B301 | B301-10 | 2/6/08 | 10 | 11 | Area 4 | UG/KG | 900 |
| B303 | B303-05 | 1/28/08 | 5 | 6 | Area 4 | UG/KG | 3578000 |
| B303 | B303-10 | 1/28/08 | 10 | 11 | Area 4 | UG/KG | 3076000 |
| B304 | B304-5 | 1/19/09 | 4.5 | 5.5 | Area 3 | UG/KG | 95600 |
| B305 | B305-5 | 1/19/09 | 4.5 | 5.5 | Area 3 | UG/KG | 167400 |
| B306 | B306-05 | 1/31/08 | 5 | 6 | Area 3 | UG/KG | 156000 |
| B306 | B306-10 | 1/31/08 | 10 | 11 | Area 3 | UG/KG | 276000 |
| B307 | B307-5 | 1/28/08 | 5 | 6 | Area 3 | UG/KG | 5300 |
| B307 | B307-10 | 1/28/08 | 10 | 11 | Area 3 | UG/KG | 3500 |
| B308 | B308-05 | 1/30/08 | 5 | 6 | Area 3 | UG/KG | 876000 |
| B309 | B309-5 | 1/19/09 | 4.5 | 5.5 | Area 3 | UG/KG | 38200 |
| B310 | B310-05 | 2/4/08 | 5 | 6 | Area 3 | UG/KG | 110000 |
| B311 | B311-05 | 2/5/08 | 5 | 6 | Area 3 | UG/KG | 3270000 |
| B315 | B315-05 | 1/30/08 | 4.5 | 5.5 | Area 3 | UG/KG | 1330000 |
| B315 | B315-10 | 1/30/08 | 10 | 11 | Area 3 | UG/KG | 3580000 |
| B316 | B316-05 | 1/30/08 | 4.5 | 5.5 | Area 3 | UG/KG | 1059000 |
| B316 | B316-10 | 1/30/08 | 10 | 11 | Area 3 | UG/KG | 6810000 |
| B317 | B317-05 | 1/29/08 | 4.5 | 5.5 | Area 3 | UG/KG | 1760 |
| B317 | B317-10 | 1/29/08 | 10 | 11 | Area 3 | UG/KG | 1640 |
| B318 | B318-05 | 1/28/08 | 4.5 | 5.5 | Area 2 | UG/KG | 171000 |
| B319 | B319-10 | 1/21/09 | 10 | 11 | Area 2 | UG/KG | 37800 |
| B320 | B320-10 | 1/29/08 | 10 | 11 | Area 3 | UG/KG | 695000 |
| B322 | B322-05 | 2/1/08 | 5 | 6 | Area 3 | UG/KG | 833000 |
| B323 | B323-05 | 1/28/08 | 4.5 | 5.5 | Area 3 | UG/KG | 70200 |
| B324 | B324-00 | 4/8/08 | 0 | 0.5 | Area 4 | UG/KG | 249900 |
| B325 | B325-00 | 4/8/08 | 0 | 0.5 | Area 4 | UG/KG | 265000 |
| B326 | B326-00 | 4/8/08 | 0 | 0.5 | Area 4 | UG/KG | 65500 |
| B-401 | LL_B-401-1_100611 | 10/6/11 | 0.5 | 1 | Area 2 | UG/KG | 340000 |
| B-401 | LL_B-401-3_100611 | 10/6/11 | 2.5 | 3 | Area 2 | UG/KG | 86000 |
| B-401 | LL_B-401-6_100611 | 10/6/11 | 5.5 | 6 | Area 2 | UG/KG | <10000 |
| B-401 | LL_B-401-9_100611 | 10/6/11 | 8.5 | 9 | Area 2 | UG/KG | <10000 |
| B-402 | LL_B-402-1_100611 | 10/6/11 | 0.5 | 1 | Area 2 | UG/KG | 1600000 |
| B-402 | LL_B-402-3_100611 | 10/6/11 | 2.5 | 3 | Area 2 | UG/KG | 410000 |
| B-402 | LL_B-402-6_100611 | 10/6/11 | 5.5 | 6 | Area 2 | UG/KG | <10000 |
| B-402 | LL_B-402-9_100611 | 10/6/11 | 8.5 | 9 | Area 2 | UG/KG | <10000 |
| B-403 | LL_B-403-1_100711 | 10/7/11 | 0.5 | 1 | Area 2 | UG/KG | 400000 |
| B-403 | LL_B-403-3_100711 | 10/7/11 | 2.5 | 3 | Area 2 | UG/KG | 1100000 |
| B-403 | LL_B-403-6_100711 | 10/7/11 | 5.5 | 6 | Area 2 | UG/KG | 100000 |
| B-403 | LL_B-403-9_100711 | 10/7/11 | 8.5 | 9 | Area 2 | UG/KG | <10000 |
| B-404 | LL_B-404-1_100711 | 10/7/11 | 0.5 | 1 | Area 2 | UG/KG | 30000000 |
| B-404 | LL_B-404-3_100711 | 10/7/11 | 2.5 | 3 | Area 2 | UG/KG | 8300000 |
| B-404 | LL_B-404-6_100711 | 10/7/11 | 5.5 | 6 | Area 2 | UG/KG | 2900000 |
| B-404 | LL_B-404-9_100711 | 10/7/11 | 8.5 | 9 | Area 2 | UG/KG | 8200000 |
| B-405 | LL_B-405-1_100711 | 10/7/11 | 0.5 | 1 | Area 2 | UG/KG | 5600000 |
| B-405 | LL_B-405-3_100711 | 10/7/11 | 2.5 | 3 | Area 2 | UG/KG | 7000000 |
| B-406 | LL_B-406-1_100711 | 10/7/11 | 0.5 | 1 | Area 2 | UG/KG | 3400000 |
| B-406 | LL_B-406-3_100711 | 10/7/11 | 2.5 | 3 | Area 2 | UG/KG | 3100000 |
| B-406 | LL_B-406-6_100711 | 10/7/11 | 5.5 | 6 | Area 2 | UG/KG | 3200000 |
| B-406 | LL_B-406-9_100711 | 10/7/11 | 8.5 | 9 | Area 2 | UG/KG | 6400000 |
| B-407 | LL_B-407-1_100711 | 10/7/11 | 0.5 | 1 | Area 2 | UG/KG | 6400000 |
| B-407 | LL_B-407-3_100711 | 10/7/11 | 2.5 | 3 | Area 2 | UG/KG | 4000000 |
| B-407 | LL_B-407-6_100711 | 10/7/11 | 5.5 | 6 | Area 2 | UG/KG | 1800000 |
| B-407 | LL_B-407-9_100711 | 10/7/11 | 8.5 | 9 | Area 2 | UG/KG | 1700000 |
| B-408 | LL_B-408-1_100711 | 10/7/11 | 0.5 | 1 | Area 2 | UG/KG | 740000 |
| B-408 | LL_B-408-3_100711 | 10/7/11 | 2.5 | 3 | Area 2 | UG/KG | 470000 |
| B-408 | LL_B-408-6_100711 | 10/7/11 | 5.5 | 6 | Area 2 | UG/KG | 240000 |

**Table B8**
**Results of TPHmo Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Motor Oil Range Organics |
|---|---|---|---|---|---|---|---|
| B-408 | LL_B-408-9_100711 | 10/7/11 | 8.5 | 9 | Area 2 | UG/KG | 41000 |
| B-409 | LL_B-409-1_100711 | 10/7/11 | 0.5 | 1 | Area 2 | UG/KG | 1600000 |
| B-409 | LL_B-409-3_100711 | 10/7/11 | 2.5 | 3 | Area 2 | UG/KG | 460000 |
| B-409 | LL_B-409-6_100711 | 10/7/11 | 5.5 | 6 | Area 2 | UG/KG | 1700000 |
| B-409 | LL_B-409-9_100711 | 10/7/11 | 8.5 | 9 | Area 2 | UG/KG | 4500000 |
| B-410 | LL_B-410-1_100711 | 10/7/11 | 0.5 | 1 | Area 2 | UG/KG | 850000 |
| B-410 | LL_B-410-3_100711 | 10/7/11 | 2.5 | 3 | Area 2 | UG/KG | 1900000 |
| B-410 | LL_B-410-6_100711 | 10/7/11 | 5.5 | 6 | Area 2 | UG/KG | 20000 |
| B-410 | LL_B-410-9_100711 | 10/7/11 | 8.5 | 9 | Area 2 | UG/KG | 640000 |
| B-411 | LL_B-411-1_100611 | 10/6/11 | 0.5 | 1 | Area 1 | UG/KG | 120000 |
| B-411 | LL_B-411-3_100611 | 10/6/11 | 2.5 | 3 | Area 1 | UG/KG | 99000 |
| B-411 | LL_B-411-6_100611 | 10/6/11 | 5.5 | 6 | Area 1 | UG/KG | 50000 |
| B-411 | LL_B-411-9_100611 | 10/6/11 | 8.5 | 9 | Area 1 | UG/KG | <10000 |
| B-412 | LL_B-412-1_100611 | 10/6/11 | 0.5 | 1 | Area 1 | UG/KG | 180000 |
| B-412 | LL_B-412-3_100611 | 10/6/11 | 2.5 | 3 | Area 1 | UG/KG | 440000 |
| B-412 | LL_B-412-6_100611 | 10/6/11 | 5.5 | 6 | Area 1 | UG/KG | 27000 |
| B-412 | LL_B-412-9_100611 | 10/6/11 | 8.5 | 9 | Area 1 | UG/KG | <10000 |
| B-413 | LL_B-413-1_100611 | 10/6/11 | 0.5 | 1 | Area 1 | UG/KG | 1500000 |
| B-413 | LL_B-413-3_100611 | 10/6/11 | 2.5 | 3 | Area 1 | UG/KG | 11000000 |
| B-413 | LL_B-413-6_100611 | 10/6/11 | 5.5 | 6 | Area 1 | UG/KG | 2700000 |
| B-413 | LL_B-413-9_100611 | 10/6/11 | 8.5 | 9 | Area 1 | UG/KG | 9200000 |
| B-414 | LL_B-414-1_100611 | 10/6/11 | 0.5 | 1 | Area 1 | UG/KG | 1200000 |
| B-414 | LL_B-414-3_100611 | 10/6/11 | 2.5 | 3 | Area 1 | UG/KG | <10000 |
| B-414 | LL_B-414-6_100611 | 10/6/11 | 5.5 | 6 | Area 1 | UG/KG | 19000 |
| B-414 | LL_B-414-9_100611 | 10/6/11 | 8.5 | 9 | Area 1 | UG/KG | 270000 |
| B-415 | LL_B-415-1_100611 | 10/6/11 | 0.5 | 1 | Area 1 | UG/KG | 140000 |
| B-415 | LL_B-415-3_100611 | 10/6/11 | 2.5 | 3 | Area 1 | UG/KG | 390000 |
| B-415 | LL_B-415-6_100611 | 10/6/11 | 5.5 | 6 | Area 1 | UG/KG | 180000 |
| B-415 | LL_B-415-9_100611 | 10/6/11 | 8.5 | 9 | Area 1 | UG/KG | 18000 |
| B-416 | LL_B-416-1_100611 | 10/6/11 | 0.5 | 1 | Area 1 | UG/KG | 4800000 |
| B-416 | LL_B-416-3_100611 | 10/6/11 | 2.5 | 3 | Area 1 | UG/KG | <10000 |
| B-416 | LL_B-416-6_100611 | 10/6/11 | 5.5 | 6 | Area 1 | UG/KG | <10000 |
| B-416 | LL_B-416-9_100611 | 10/6/11 | 8.5 | 9 | Area 1 | UG/KG | <10000 |
| B-417 | LL_B-417-1_100611 | 10/6/11 | 0.5 | 1 | Area 1 | UG/KG | <10000 |
| B-417 | LL_B-417-3_100611 | 10/6/11 | 2.5 | 3 | Area 1 | UG/KG | 220000 |
| B-417 | LL_B-417-6_100611 | 10/6/11 | 5.5 | 6 | Area 1 | UG/KG | 2100000 |
| B-417 | LL_B-417-9_100611 | 10/6/11 | 8.5 | 9 | Area 1 | UG/KG | 3300000 |
| B-418 | LL_B-418-1_100611 | 10/6/11 | 0.5 | 1 | Area 1 | UG/KG | 440000 |
| B-418 | LL_B-418-3_100611 | 10/6/11 | 2.5 | 3 | Area 1 | UG/KG | 180000 |
| B-418 | LL_B-418-6_100611 | 10/6/11 | 5.5 | 6 | Area 1 | UG/KG | 640000 |
| B-418 | LL_B-418-9_100611 | 10/6/11 | 8.5 | 9 | Area 1 | UG/KG | <10000 |
| B-419 | LL_B-419-1_100611 | 10/6/11 | 0.5 | 1 | Area 1 | UG/KG | 360000 |
| B-419 | LL_B-419-3_100611 | 10/6/11 | 2.5 | 3 | Area 1 | UG/KG | <10000 |
| B-419 | LL_B-419-6_100611 | 10/6/11 | 5.5 | 6 | Area 1 | UG/KG | <10000 |
| B-419 | LL_B-419-9_100611 | 10/6/11 | 8.5 | 9 | Area 1 | UG/KG | <10000 |
| B-420 | LL_B-420-1_100611 | 10/6/11 | 0.5 | 1 | Area 1 | UG/KG | 84000 |
| B-420 | LL_B-420-3_100611 | 10/6/11 | 2.5 | 3 | Area 1 | UG/KG | <10000 |
| B-420 | LL_B-420-6_100611 | 10/6/11 | 5.5 | 6 | Area 1 | UG/KG | 96000 |
| B-420 | LL_B-420-9_100611 | 10/6/11 | 8.5 | 9 | Area 1 | UG/KG | <10000 |
| B-421 | LL_B-421-1_100511 | 10/5/11 | 0.5 | 1 | Area 3 | UG/KG | 440000 |
| B-421 | LL_B-421-3_100511 | 10/5/11 | 2.5 | 3 | Area 3 | UG/KG | <10000 |
| B-421 | LL_B-421-6_100511 | 10/5/11 | 5.5 | 6 | Area 3 | UG/KG | <10000 |
| B-421 | LL_B-421-9_100511 | 10/5/11 | 8.5 | 9 | Area 3 | UG/KG | <10000 |
| B-422 | LL_B-422-1_100511 | 10/5/11 | 0.5 | 1 | Area 3 | UG/KG | 110000 |
| B-422 | LL_B-422-3_100511 | 10/5/11 | 2.5 | 3 | Area 3 | UG/KG | 73000 |
| B-422 | LL_B-422-6_100611 | 10/6/11 | 5.5 | 6 | Area 3 | UG/KG | 140000 |
| B-422 | LL_B-422-9_100611 | 10/6/11 | 8.5 | 9 | Area 3 | UG/KG | 220000 |
| B-423 | LL_B-423-1_100711 | 10/7/11 | 0.5 | 1 | Area 3 | UG/KG | 170000 |
| B-423 | LL_B-423-3_100711 | 10/7/11 | 2.5 | 3 | Area 3 | UG/KG | 290000 |
| B-423 | LL_B-423-6_100711 | 10/7/11 | 5.5 | 6 | Area 3 | UG/KG | 160000 |
| B-423 | LL_B-423-9_100711 | 10/7/11 | 8.5 | 9 | Area 3 | UG/KG | 70000 |
| B-424 | LL_B-424-1_100511 | 10/5/11 | 0.5 | 1 | Area 3 | UG/KG | 620000 |
| B-424 | LL_B-424-3_100511 | 10/5/11 | 2.5 | 3 | Area 3 | UG/KG | 500000 |
| B-424 | LL_B-424-6_100511 | 10/5/11 | 5.5 | 6 | Area 3 | UG/KG | 160000 |
| B-424 | LL_B-424-9_100511 | 10/5/11 | 8.5 | 9 | Area 3 | UG/KG | 130000 |
| B-425 | LL_B-425-1_100511 | 10/5/11 | 0.5 | 1 | Area 3 | UG/KG | 1900000 |
| B-425 | LL_B-425-3_100511 | 10/5/11 | 2.5 | 3 | Area 3 | UG/KG | 2200000 |

**Table B8**
**Results of TPHmo Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Motor Oil Range Organics |
|---|---|---|---|---|---|---|---|
| B-425 | LL_B-425-6_100511 | 10/5/11 | 5.5 | 6 | Area 3 | UG/KG | 240000 |
| B-425 | LL_B-425-9_100511 | 10/5/11 | 8.5 | 9 | Area 3 | UG/KG | 3400000 |
| B-426 | LL_B-426-1_100511 | 10/5/11 | 0.5 | 1 | Area 3 | UG/KG | 1800000 |
| B-426 | LL_B-426-3_100511 | 10/5/11 | 2.5 | 3 | Area 3 | UG/KG | 19000 |
| B-426 | LL_B-426-6_100511 | 10/5/11 | 5.5 | 6 | Area 3 | UG/KG | 59000 |
| B-426 | LL_B-426-9_100511 | 10/5/11 | 8.5 | 9 | Area 3 | UG/KG | 63000 |
| B-427 | LL_B-427-1_100511 | 10/5/11 | 0.5 | 1 | Area 3 | UG/KG | 1600000 |
| B-427 | LL_B-427-3_100511 | 10/5/11 | 2.5 | 3 | Area 3 | UG/KG | 27000 |
| B-427 | LL_B-427-6_100511 | 10/5/11 | 5.5 | 6 | Area 3 | UG/KG | <10000 |
| B-427 | LL_B-427-9_100511 | 10/5/11 | 8.5 | 9 | Area 3 | UG/KG | <10000 |
| B-428 | LL_B-428-1_100511 | 10/5/11 | 0.5 | 1 | Area 3 | UG/KG | 9700000 |
| B-428 | LL_B-428-3_100511 | 10/5/11 | 2.5 | 3 | Area 3 | UG/KG | 2000000 |
| B-428 | LL_B-428-6_100511 | 10/5/11 | 5.5 | 6 | Area 3 | UG/KG | 690000 |
| B-428 | LL_B-428-9_100511 | 10/5/11 | 8.5 | 9 | Area 3 | UG/KG | 390000 |
| B-429 | LL_B-429-1_100511 | 10/5/11 | 0.5 | 1 | Area 3 | UG/KG | 1500000 |
| B-429 | LL_B-429-3_100511 | 10/5/11 | 2.5 | 3 | Area 3 | UG/KG | 330000 |
| B-429 | LL_B-429-6_100511 | 10/5/11 | 5.5 | 6 | Area 3 | UG/KG | <10000 |
| B-429 | LL_B-429-9_100511 | 10/5/11 | 8.5 | 9 | Area 3 | UG/KG | <10000 |
| B-430 | LL_B-430-1_100511 | 10/5/11 | 0.5 | 1 | Area 3 | UG/KG | 1100000 |
| B-430 | LL_B-430-3_100511 | 10/5/11 | 2.5 | 3 | Area 3 | UG/KG | 550000 |
| B-430 | LL_B-430-6_100511 | 10/5/11 | 5.5 | 6 | Area 3 | UG/KG | 340000 |
| B-430 | LL_B-430-9_100511 | 10/5/11 | 8.5 | 9 | Area 3 | UG/KG | 260000 |
| S001 | S001-0" | 12/4/07 | 0 | 0.5 | Area 4 | UG/KG | 1038000 |
| S002 | S002-0" | 12/4/07 | 0 | 0.5 | Area 4 | UG/KG | 1123000 |
| S003ALT | S003ALT-0" | 12/20/07 | 0 | 0.5 | Area 4 | UG/KG | 921000 |
| S004 | S004-0" | 1/4/08 | 0 | 0.5 | Area 4 | UG/KG | 716300 |
| S004 | S004-12" | 1/4/08 | 1 | 1.5 | Area 4 | UG/KG | 19500 |
| S005 | S005-0" | 12/18/07 | 0 | 0.5 | Area 4 | UG/KG | 3400000 |
| S006 | S006-0" | 12/17/07 | 0 | 0.5 | Area 4 | UG/KG | 2330000 |
| S006 | S006-12" | 12/17/07 | 1 | 1.5 | Area 4 | UG/KG | 3780000 |
| S007 | S007-0" | 12/17/07 | 0 | 0.5 | Area 4 | UG/KG | 7110000 |
| S008 | S008-0" | 12/17/07 | 0 | 0.5 | Area 4 | UG/KG | 798000 |
| S009 | S009-0" | 12/17/07 | 0 | 0.5 | Area 4 | UG/KG | 373000 |
| S009 | S009-12" | 12/17/07 | 1 | 1.5 | Area 4 | UG/KG | 521000 |
| S010 | S010-6'' | 1/19/09 | 0.5 | 1 | Area 4 | UG/KG | 1272200 |
| S011 | S011-0" | 12/17/07 | 0 | 0.5 | Area 4 | UG/KG | 5130000 |
| S011 | S011-12" | 12/17/07 | 1 | 1.5 | Area 4 | UG/KG | 4390000 |
| S012 | S012B-0" | 12/18/07 | 0 | 0.5 | Area 4 | UG/KG | 2184000 |
| S013 | S013-0" | 1/4/08 | 0 | 0.5 | Area 4 | UG/KG | 1340000 |
| S014 | S014-0" | 12/4/07 | 0 | 0.5 | Area 4 | UG/KG | 435000 |
| S015 | S015-0" | 12/4/07 | 0 | 0.5 | Area 4 | UG/KG | 7030000 |
| S016 | S016B-0" | 1/2/08 | 0 | 0.5 | Area 4 | UG/KG | 9680000 |
| S016 | S016B-12" | 1/2/08 | 1 | 1.5 | Area 4 | UG/KG | 2960 |
| S017 | S017-0" | 12/4/07 | 0 | 0.5 | Area 4 | UG/KG | 1244000 |
| S018 | S018-0" | 12/20/07 | 0 | 0.5 | Area 4 | UG/KG | 302700 |
| S019 | S019-0" | 12/18/07 | 0 | 0.5 | Area 4 | UG/KG | 669000 |
| S020 | S020-0" | 12/18/07 | 0 | 0.5 | Area 4 | UG/KG | 14500000 |
| S020 | S020-12" | 12/18/07 | 1 | 1.5 | Area 4 | UG/KG | 11000000 |
| S021 | S021-6'' | 1/19/09 | 0.5 | 1 | Area 4 | UG/KG | 669000 |
| S022 | S022-0" | 12/17/07 | 0 | 0.5 | Area 4 | UG/KG | 1041000 |
| S023 | S023-0" | 12/17/07 | 0 | 0.5 | Area 3 | UG/KG | 764000 |
| S024 | S024-0" | 12/17/07 | 0 | 0.5 | Area 3 | UG/KG | 93300 |
| S025 | S025-0" | 12/18/07 | 0 | 0.5 | Area 3 | UG/KG | 10800000 |
| S025 | S025-12" | 12/18/07 | 1 | 1.5 | Area 3 | UG/KG | 1530000 |
| S026 | S026-0" | 12/18/07 | 0 | 0.5 | Area 3 | UG/KG | 9350000 |
| S026 | S026-12" | 12/18/07 | 1 | 1.5 | Area 3 | UG/KG | 16800000 |
| S027 | S027-0" | 12/20/07 | 0 | 0.5 | Area 3 | UG/KG | 13650000 |
| S028 | S028-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | 272000 |
| S029 | S029-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | 18200000 |
| S029 | S029-18" | 12/4/07 | 1.5 | 2 | Area 3 | UG/KG | 5480000 |
| S030 | S030-12" | 12/4/07 | 1 | 1.5 | Area 3 | UG/KG | 20200000 |
| S031 | S031-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | 3390000 |
| S032 | S032-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | 3850000 |
| S033 | S033-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | 8620000 |
| S034 | S034-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | 3290000 |
| S035 | S035-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | 10900000 |
| S036 | S036-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | 14500000 |

**Table B8**
**Results of TPHmo Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Motor Oil Range Organics |
|---|---|---|---|---|---|---|---|
| S037 | S037-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | 27400000 |
| S037 | S037-20" | 12/4/07 | 1.67 | 2.167 | Area 3 | UG/KG | 198000 |
| S038 | S038-0" | 12/20/07 | 0 | 0.5 | Area 3 | UG/KG | 2317000 |
| S039 | S039-0" | 1/2/08 | 0 | 0.5 | Area 3 | UG/KG | 2120000 |
| S039 | S039-12" | 1/2/08 | 1 | 1.5 | Area 3 | UG/KG | 1790000 |
| S040 | S040-0" | 12/20/07 | 0 | 0.5 | Area 3 | UG/KG | 1009000 |
| S040 | S040-12" | 12/20/07 | 1 | 1.5 | Area 3 | UG/KG | 2880000 |
| S041 | S041-0" | 1/30/08 | 0 | 0.5 | Area 3 | UG/KG | 319000 |
| S042 | S042-0" | 1/30/08 | 0 | 0.5 | Area 3 | UG/KG | 9310000 |
| S042 | S042-12" | 1/30/08 | 1 | 1.5 | Area 3 | UG/KG | 9160000 |
| S043 | S043-0" | 1/30/08 | 0 | 0.5 | Area 3 | UG/KG | 192000 |
| S044 | S044-0" | 12/20/07 | 0 | 0.5 | Area 3 | UG/KG | 1059000 |
| S045 | S045-0" | 12/20/07 | 0 | 0.5 | Area 3 | UG/KG | 257500 |
| S046 | S046-0" | 12/20/07 | 0 | 0.5 | Area 3 | UG/KG | 7630000 |
| S047 | S047-6" | 1/20/09 | 0.5 | 1 | Area 3 | UG/KG | 8320000 |
| S048 | S048-0" | 1/7/08 | 0 | 0.5 | Area 3 | UG/KG | 22900000 |
| S049 | S049-6" | 1/20/09 | 0.5 | 1 | Area 3 | UG/KG | 1200000 |
| S050 | S050-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | 2414000 |
| S051 | S051-0" | 12/20/07 | 0 | 0.5 | Area 3 | UG/KG | 520000 |
| S052 | S052-0" | 12/20/07 | 0 | 0.5 | Area 3 | UG/KG | 1217000 |
| S052 | S052-12" | 12/20/07 | 1 | 1.5 | Area 3 | UG/KG | 1480000 |
| S053 | S053-0" | 12/20/07 | 0 | 0.5 | Area 3 | UG/KG | 9000000 |
| S053 | S053-12" | 12/20/07 | 1 | 1.5 | Area 3 | UG/KG | 811000 |
| S054 | S054-0" | 1/30/08 | 0 | 0.5 | Area 3 | UG/KG | 1555000 |
| S055 | S055-0" | 1/30/08 | 0 | 0.5 | Area 3 | UG/KG | 1168000 |
| S055 | S055-12" | 1/30/08 | 1 | 1.5 | Area 3 | UG/KG | 1167000 |
| S056 | S056-0" | 1/30/08 | 0 | 0.5 | Area 3 | UG/KG | 538000 |
| S056 | S056-12" | 1/30/08 | 1 | 1.5 | Area 3 | UG/KG | 246600 |
| S057 | S057-0" | 1/30/08 | 0 | 0.5 | Area 3 | UG/KG | 549000 |
| S058 | S058-0" | 2/1/08 | 0 | 0.5 | Area 3 | UG/KG | 1770000 |
| S059 | S059-0" | 2/1/08 | 0 | 0.5 | Area 3 | UG/KG | 247000 |
| S059 | S059-12" | 2/1/08 | 1 | 1.5 | Area 3 | UG/KG | 295200 |
| S060 | S060-0" | 12/13/07 | 0 | 0.5 | Area 3 | UG/KG | 2940000 |
| S060 | S060-18" | 12/13/07 | 1.5 | 2 | Area 3 | UG/KG | 26800000 |
| S061 | S061-0" | 12/13/07 | 0 | 0.5 | Area 3 | UG/KG | 2022000 |
| S063 | S063-0" | 12/14/07 | 0 | 0.5 | Area 3 | UG/KG | 191000 |
| S064 | S064-0" | 12/14/07 | 0 | 0.5 | Area 3 | UG/KG | 490000 |
| S064 | S064-18" | 12/14/07 | 1.5 | 2 | Area 3 | UG/KG | 88000 |
| S065 | S065-0" | 2/1/08 | 0 | 0.5 | Area 3 | UG/KG | 77400 |
| S065 | S065-12" | 2/1/08 | 1 | 1.5 | Area 3 | UG/KG | 11700 |
| S066 | S066-0" | 12/14/07 | 0 | 0.5 | Area 3 | UG/KG | 1522000 |
| S067 | S067-0" | 12/14/07 | 0 | 0.5 | Area 3 | UG/KG | 710600 |
| S068 | S068-0" | 12/13/07 | 0 | 0.5 | Area 3 | UG/KG | 497000 |
| S069 | S069-0" | 12/13/07 | 0 | 0.5 | Area 3 | UG/KG | 1032000 |
| S070 | S070-0" | 12/13/07 | 0 | 0.5 | Area 3 | UG/KG | 682000 |
| S071B | S071B-12" | 12/21/07 | 1 | 1.5 | Area 3 | UG/KG | 4460 |
| S072 | S072-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | 475000 |
| S073 | S073-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | 344400 |
| S074 | S074-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | 4730000 |
| S075 | S075-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | 4320000 |
| S076 | S076-6'' | 1/22/09 | 0.5 | 1 | Area 3 | UG/KG | 39800000 |
| S078 | S078-0" | 2/1/08 | 0 | 0.5 | Area 3 | UG/KG | 222000 |
| S078 | S078-12" | 2/1/08 | 1 | 1.5 | Area 3 | UG/KG | 2220 |
| S080 | S080-0" | 2/1/08 | 0 | 0.5 | Area 3 | UG/KG | 4080000 |
| S081 | S081-0" | 2/1/08 | 0 | 0.5 | Area 3 | UG/KG | 404300 |
| S082 | S082-0" | 12/13/07 | 0 | 0.5 | Area 3 | UG/KG | 5558000 |
| S083 | S083-0" | 12/13/07 | 0 | 0.5 | Area 3 | UG/KG | 9210000 |
| S083 | S083-15" | 12/13/07 | 1.25 | 1.75 | Area 3 | UG/KG | 17470000 |
| S084 | S084-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | 10410000 |
| S085 | S085-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | 2524000 |
| S086 | S086-6" | 1/20/09 | 0.5 | 1 | Area 3 | UG/KG | 799000 |
| S087 | S087-0" | 12/13/07 | 0 | 0.5 | Area 3 | UG/KG | 3150000 |
| S088 | S088-0" | 1/2/08 | 0 | 0.5 | Area 3 | UG/KG | 3240000 |
| S089 | S089-0" | 1/2/08 | 0 | 0.5 | Area 3 | UG/KG | 97300 |
| S090 | S090-0" | 12/13/07 | 0 | 0.5 | Area 3 | UG/KG | 9970000 |
| S090 | S090-18" | 12/13/07 | 1.5 | 2 | Area 3 | UG/KG | 5090000 |
| S091 | S091-0" | 2/1/08 | 0 | 0.5 | Area 3 | UG/KG | 17600000 |

**Table B8**
**Results of TPHmo Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Motor Oil Range Organics |
|---|---|---|---|---|---|---|---|
| S092 | S092-0" | 12/13/07 | 0 | 0.5 | Area 3 | UG/KG | 795400 |
| S093 | S093-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | 2284000 |
| S094 | S094-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | 75500 |
| S095 | S095-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | 662000 |
| S096 | S096-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | 418000 |
| S097 | S097-6" | 1/20/09 | 0.5 | 1 | Area 3 | UG/KG | 1657600 |
| S098 | S098-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | 59100 |
| S099 | S099-0" | 12/13/07 | 0 | 0.5 | Area 3 | UG/KG | 46500 |
| S100 | S100-0" | 12/13/07 | 0 | 0.5 | Area 3 | UG/KG | 225700 |
| S101 | S101-0" | 12/13/07 | 0 | 0.5 | Area 3 | UG/KG | 2208000 |
| S102 | S102-0" | 12/13/07 | 0 | 0.5 | Area 3 | UG/KG | 5270000 |
| S102 | S102-15" | 12/13/07 | 1.25 | 1.75 | Area 3 | UG/KG | 1443000 |
| S103 | S103-0" | 1/3/08 | 0 | 0.5 | Area 2 | UG/KG | 2370000 |
| S103 | S103-12" | 1/3/08 | 1 | 1.5 | Area 2 | UG/KG | 394100 |
| S105 | S105-0" | 1/31/08 | 0 | 0.5 | Area 2 | UG/KG | 8480000 |
| S106 | S106-6'' | 1/22/09 | 0.5 | 1 | Area 2 | UG/KG | 77000 |
| S106 | S106-12'' | 1/22/09 | 1 | 1.5 | Area 2 | UG/KG | 47300 |
| S108 | S108-0" | 12/20/07 | 0 | 0.5 | Area 2 | UG/KG | 4040000 |
| S109 | S109-0" | 1/31/08 | 0 | 0.5 | Area 2 | UG/KG | 22690000 |
| S109 | S109-12" | 1/31/08 | 1 | 1.5 | Area 2 | UG/KG | 12000000 |
| S110 | S110-6'' | 1/22/09 | 0.5 | 1 | Area 2 | UG/KG | 16500000 |
| S111 | S111-0" | 12/21/07 | 0 | 0.5 | Area 2 | UG/KG | 10330000 |
| S111 | S111-12" | 12/21/07 | 1 | 1.5 | Area 2 | UG/KG | 1590000 |
| S112 | S112-6'' | 1/22/09 | 0.5 | 1 | Area 2 | UG/KG | 11210000 |
| S113 | S113-0" | 1/31/08 | 0 | 0.5 | Area 2 | UG/KG | 1274000 |
| S113 | S113-12" | 1/31/08 | 1 | 1.5 | Area 2 | UG/KG | 2270000 |
| S114 | S114-0" | 1/29/08 | 0 | 0.5 | Area 2 | UG/KG | 102370 |
| S115 | S115-0" | 1/29/08 | 0 | 0.5 | Area 2 | UG/KG | 29650000 |
| S116 | S116-0" | 1/29/08 | 0 | 0.5 | Area 2 | UG/KG | 1506000 |
| S117 | S117-0" | 1/31/08 | 0 | 0.5 | Area 2 | UG/KG | 520 |
| S118 | S118-6'' | 1/22/09 | 0.5 | 1 | Area 2 | UG/KG | 43700 |
| S119 | S119-0" | 1/4/08 | 0 | 0.5 | Area 2 | UG/KG | 576000 |
| S119 | S119-12" | 1/4/08 | 1 | 1.5 | Area 2 | UG/KG | 22500 |
| S120 | S120-0" | 1/4/08 | 0 | 0.5 | Area 2 | UG/KG | 424000 |
| S121 | S121-0" | 1/4/08 | 0 | 0.5 | Area 2 | UG/KG | 3360000 |
| S121 | S121-12" | 1/4/08 | 1 | 1.5 | Area 2 | UG/KG | 2980000 |
| S123 | S123-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | 278600 |
| S124 | S124-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | 2453000 |
| S125 | S125-0" | 1/29/08 | 0 | 0.5 | Area 1 | UG/KG | 2189000 |
| S126 | S126-0" | 1/7/08 | 0 | 0.5 | Area 1 | UG/KG | 2562000 |
| S126 | S126-12" | 1/7/08 | 1 | 1.5 | Area 1 | UG/KG | 4376000 |
| S127 | S127-0" | 2/1/08 | 0 | 0.5 | Area 3 | UG/KG | 2690000 |
| S130 | S130-0" | 1/7/08 | 0 | 0.5 | Area 3 | UG/KG | 10160000 |
| S130 | S130-12" | 1/7/08 | 1 | 1.5 | Area 3 | UG/KG | 2270000 |
| S131 | S131-0" | 1/7/08 | 0 | 0.5 | Area 1 | UG/KG | 9310000 |
| S132 | S132-0" | 1/3/08 | 0 | 0.5 | Area 1 | UG/KG | 78700 |
| S133 | S133B-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | 8410000 |
| S133 | S133B-12" | 11/29/07 | 1 | 1.5 | Area 1 | UG/KG | 9860000 |
| S134 | S134-0" | 1/7/08 | 0 | 0.5 | Area 1 | UG/KG | 2782000 |
| S135 | S135-6'' | 1/19/09 | 0.5 | 1 | Area 1 | UG/KG | 23500 |
| S136 | S136-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | 38700000 |
| S136 | S136-24" | 11/29/07 | 2 | 2.5 | Area 1 | UG/KG | 5870000 |
| S137 | S137-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | 10500000 |
| S138 | S138-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | 13600000 |
| S138 | S138-18" | 11/29/07 | 1.5 | 2 | Area 1 | UG/KG | 19700000 |
| S139 | S139-12" | 11/29/07 | 1 | 1.5 | Area 1 | UG/KG | 13300000 |
| S139 | S139-24" | 11/29/07 | 2 | 2.5 | Area 1 | UG/KG | 1503500 |
| S140 | S140-12" | 11/29/07 | 1 | 1.5 | Area 1 | UG/KG | 66900 |
| S141 | S141-0" | 1/7/08 | 0 | 0.5 | Area 3 | UG/KG | 857000 |
| S141 | S141-12" | 1/7/08 | 1 | 1.5 | Area 3 | UG/KG | 101600 |
| S142 | S142-0" | 1/7/08 | 0 | 0.5 | Area 3 | UG/KG | 8070000 |
| S143 | S143-0" | 1/7/08 | 0 | 0.5 | Area 3 | UG/KG | 186600 |
| S144B | S144B-0" | 1/31/08 | 0 | 0.5 | Area 3 | UG/KG | 1227000 |
| S144B | S144B-12" | 1/31/08 | 1 | 1.5 | Area 3 | UG/KG | 880000 |
| S145 | S145-0" | 1/7/08 | 0 | 0.5 | Area 3 | UG/KG | 548400 |
| S145 | S145-12" | 1/7/08 | 1 | 1.5 | Area 3 | UG/KG | 491000 |
| S146 | S146-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | 2501000 |

**Table B8**
**Results of TPHmo Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Motor Oil Range Organics |
|---|---|---|---|---|---|---|---|
| S147 | S147-12" | 11/29/07 | 1 | 1.5 | Area 1 | UG/KG | 1218000 |
| S148 | S148-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | 829000 |
| S149 | S149-12" | 11/29/07 | 1 | 1.5 | Area 1 | UG/KG | 20100000 |
| S150 | S150-12" | 11/29/07 | 1 | 1.5 | Area 1 | UG/KG | 2020000 |
| S151 | S151-12" | 11/29/07 | 1 | 1.5 | Area 1 | UG/KG | 2307000 |
| S152 | S152-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | 4170000 |
| S153 | S153-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | 2555000 |
| S154 | S154-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | 1024000 |
| S155 | S155B-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | 1130000 |
| S156 | S156-0" | 1/7/08 | 0 | 0.5 | Area 3 | UG/KG | 1029000 |
| S157 | S157-0" | 1/2/08 | 0 | 0.5 | Area 3 | UG/KG | 197300 |
| S158 | S158-0" | 12/17/07 | 0 | 0.5 | Area 3 | UG/KG | 6440000 |
| S158 | S158-12" | 12/17/07 | 1 | 1.5 | Area 3 | UG/KG | 6200000 |
| S159 | S159-0" | 12/17/07 | 0 | 0.5 | Area 3 | UG/KG | 337000 |
| S160 | S160-0" | 1/7/08 | 0 | 0.5 | Area 3 | UG/KG | 437600 |
| S161 | S161B-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | 154700 |
| S162 | S162-12" | 11/29/07 | 1 | 1.5 | Area 1 | UG/KG | 1690000 |
| S162 | S162-24" | 11/29/07 | 2 | 2.5 | Area 1 | UG/KG | 2640 |
| S163 | S163-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | 10110 |
| S164 | S164-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | 2522000 |
| S165 | S165-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | 7460000 |
| S166 | S166-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | 1810000 |
| S167 | S167-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | 320300 |
| S168 | S168-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | 2500000 |
| S169 | S169-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | 2148000 |
| S170 | S170-0" | 1/7/08 | 0 | 0.5 | Area 3 | UG/KG | 1463000 |
| S171 | S171-0" | 12/17/07 | 0 | 0.5 | Area 3 | UG/KG | 3610000 |
| S171 | S171-12" | 12/17/07 | 1 | 1.5 | Area 3 | UG/KG | 69890000 |
| S172 | S172-0" | 12/17/07 | 0 | 0.5 | Area 3 | UG/KG | 2780000 |
| S173 | S173-0" | 12/17/07 | 0 | 0.5 | Area 3 | UG/KG | 3140000 |
| S174 | S174-0" | 12/14/07 | 0 | 0.5 | Area 3 | UG/KG | 687000 |
| S175A | S175A-0" | 1/7/08 | 0 | 0.5 | Area 3 | UG/KG | 2950000 |
| S175B | S175B-0" | 1/31/08 | 0 | 0.5 | Area 3 | UG/KG | 1733000 |
| S176 | S176-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | 2072000 |
| S177 | S177-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | 1884000 |
| S178 | S178-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | 1123000 |
| S179 | S179-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | 755000 |
| S180 | S180-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | 337200 |
| S181 | S181-0" | 1/31/08 | 0 | 0.5 | Area 3 | UG/KG | 221000 |
| S182 | S182-0" | 12/14/07 | 0 | 0.5 | Area 3 | UG/KG | 2320000 |
| S183 | S183-0" | 12/17/07 | 0 | 0.5 | Area 3 | UG/KG | 615000 |
| S184 | S184-0" | 12/14/07 | 0 | 0.5 | Area 3 | UG/KG | 1322000 |
| S185 | S185-6'' | 1/19/09 | 0.5 | 1 | Area 3 | UG/KG | 3975000 |
| S186 | S186-0" | 1/31/08 | 0 | 0.5 | Area 3 | UG/KG | 587000 |
| S187 | S187-0" | 1/4/08 | 0 | 0.5 | Area 1 | UG/KG | 2100 |
| S188 | S188-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | 109900 |
| S189 | S189-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | 120800 |
| S190 | S190-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | 1563000 |
| S191 | S191-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | 7570000 |
| S192 | S192-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | 5350000 |
| S193 | S193-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | 89300 |
| S194 | S194-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | 926000 |
| S195 | S195-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | 3096000 |
| S196 | S196-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | 3620000 |
| S196 | S196-18" | 11/26/07 | 1.5 | 2 | Area 1 | UG/KG | 2610000 |
| S197 | S197-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | 128000 |
| S198 | S198-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | 651000 |
| S199 | S199-12" | 11/26/07 | 1 | 1.5 | Area 1 | UG/KG | 4020000 |
| S199 | S199-24" | 11/26/07 | 2 | 2.5 | Area 1 | UG/KG | 1360000 |
| S200 | S200-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | 3048000 |
| S201 | S201-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | 23400000 |
| S201 | S201-18" | 11/26/07 | 1.5 | 2 | Area 1 | UG/KG | 4150000 |
| S202 | S202-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | 231400 |
| S203 | S203-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | 765000 |
| S204 | S204-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | 523000 |
| S205 | S205-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | 975000 |
| S206 | S206-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | 733000 |

**Table B8**
**Results of TPHmo Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

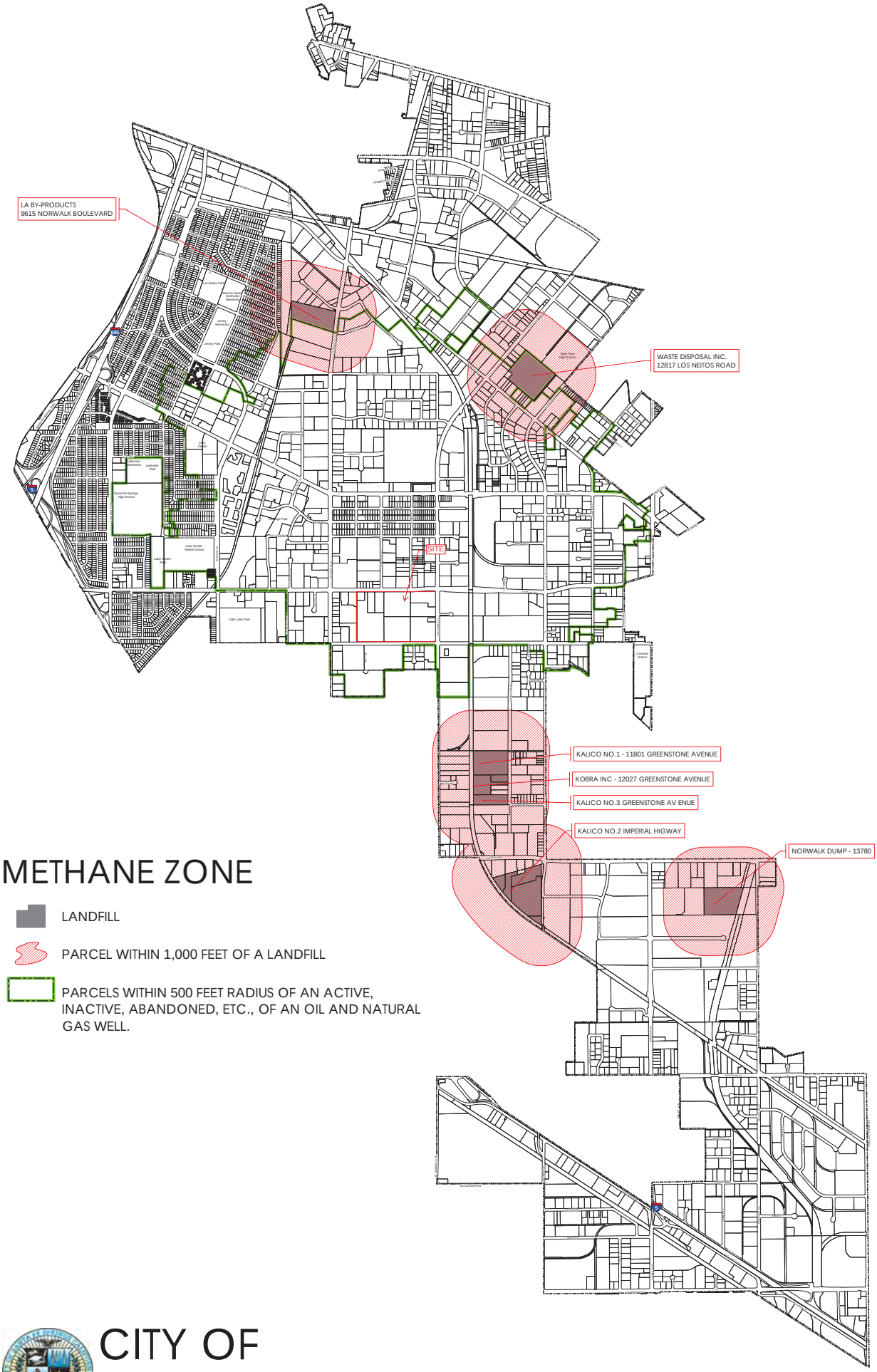
| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Motor Oil Range Organics |
|---|---|---|---|---|---|---|---|
| S207 | S207-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | 479500 |
| S208 | S208-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | 4845000 |
| S209 | S209-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | 3520000 |
| S210 | S210-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | 7460000 |
| S211 | S211-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | 3670000 |
| S212 | S212-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | 1159000 |
| S213 | S213-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | 12540000 |
| S214 | S214-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | 738000 |
| S215 | S215-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | 130300 |
| S216 | S216-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | 66200 |
| S217 | S217-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | 534000 |
| S218 | S218-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | 117200 |
| S219 | S219-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | 535000 |
| S220 | S220-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | 597000 |
| S221 | S221-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | 489600 |
| S222 | S222-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | 54100 |
| S223 | S223-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | 1797000 |
| S224 | S224-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | 11230000 |
| S225 | S225-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | 2135000 |
| S226 | S226-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | 996000 |
| S227 | S227-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | 497000 |
| S228 | S228-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | 13880000 |
| S229 | S229-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | 1040000 |
| S230 | S230-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | 2700 |
| S230 | S230-12" | 11/28/07 | 1 | 1.5 | Area 1 | UG/KG | 22800 |
| S231 | S231-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | 532900 |
| S232 | S232-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | 423600 |
| S233 | S233-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | 3260000 |
| S234 | S234-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | 77900 |
| S235 | S235-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | 171300 |
| S236 | S236-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | 527000 |
| S237 | S237-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | 661000 |
| S238 | S238-0" | 1/28/08 | 0 | 0.5 | Area 2 | UG/KG | 139400 |
| S239 | S239-0" | 1/28/08 | 0 | 0.5 | Area 2 | UG/KG | 45000 |
| S239 | S239-12" | 1/30/08 | 1 | 1.5 | Area 2 | UG/KG | 69600 |
| S240 | S240-6" | 1/20/09 | 0.5 | 1 | Area 2 | UG/KG | 1847500 |
| S241 | S241-6" | 1/20/09 | 0.5 | 1 | Area 2 | UG/KG | 1180700 |
| S242 | S242-0" | 1/29/08 | 0 | 0.5 | Area 2 | UG/KG | 371400 |
| S244 | S244-0" | 1/28/08 | 0 | 0.5 | Area 2 | UG/KG | 320500 |
| S245 | S245-0" | 1/28/08 | 0 | 0.5 | Area 2 | UG/KG | 10400 |
| S246 | S246-0" | 1/29/08 | 0 | 0.5 | Area 2 | UG/KG | 289200 |
| S247 | S247-0" | 1/29/08 | 0 | 0.5 | Area 2 | UG/KG | 352200 |
| S248 | S248-0" | 1/28/08 | 0 | 0.5 | Area 2 | UG/KG | 552000 |
| S249 | S249-0" | 1/28/08 | 0 | 0.5 | Area 2 | UG/KG | 377000 |
| S250 | S250-12" | 1/30/08 | 1 | 1.5 | Area 2 | UG/KG | 117600 |
| S251 | S251-0" | 1/28/08 | 0 | 0.5 | Area 2 | UG/KG | 268800 |
| S251 | S251-6" | 1/20/09 | 0.5 | 1 | Area 2 | UG/KG | 355700 |
| S252 | S252-0" | 1/29/08 | 0 | 0.5 | Area 2 | UG/KG | 198900 |
| S253 | S253-0" | 1/29/08 | 0 | 0.5 | Area 2 | UG/KG | 219600 |
| S254 | S254-0" | 1/29/08 | 0 | 0.5 | Area 2 | UG/KG | 483000 |
| S254 | S254-12" | 1/30/08 | 1 | 1.5 | Area 2 | UG/KG | 279400 |
| S256 | S256-0" | 1/31/08 | 0 | 0.5 | Area 2 | UG/KG | 2170000 |
| S257 | S257-0" | 1/3/08 | 0 | 0.5 | Area 2 | UG/KG | 57100 |
| S258 | S258-0" | 1/3/08 | 0 | 0.5 | Area 2 | UG/KG | 549000 |
| S259 | S259-0" | 1/31/08 | 0 | 0.5 | Area 2 | UG/KG | 1217000 |
| S260 | S260-0" | 1/3/08 | 0 | 0.5 | Area 2 | UG/KG | 19800 |
| S261 | S261-0" | 12/21/07 | 0 | 0.5 | Area 3 | UG/KG | 5160000 |
| S262 | S262-0" | 12/13/07 | 0 | 0.5 | Area 3 | UG/KG | 3745000 |
| S263 | S263-0" | 2/1/08 | 0 | 0.5 | Area 3 | UG/KG | 32300 |
| S264 | S264-0" | 1/3/08 | 0 | 0.5 | Area 3 | UG/KG | 702000 |
| S264 | S264-12" | 1/3/08 | 1 | 1.5 | Area 3 | UG/KG | 11300000 |
| S265 | S265-6" | 1/20/09 | 0.5 | 1 | Area 3 | UG/KG | 2775000 |
| S266 | S266-0" | 12/14/07 | 0 | 0.5 | Area 3 | UG/KG | 64800 |
| S267 | S267-0" | 1/4/08 | 0 | 0.5 | Area 3 | UG/KG | 1170000 |
| S268 | S268-0" | 1/2/08 | 0 | 0.5 | Area 3 | UG/KG | 1213000 |
| S268 | S268-12" | 1/2/08 | 1 | 1.5 | Area 3 | UG/KG | 1358000 |
| S269 | S269-0" | 12/4/07 | 0 | 0.5 | Area 3 | UG/KG | 2058000 |

**Table B8**
**Results of TPHmo Analysis in Shallow Soil**
**Former Powerine Refinery**
**Santa Fe Springs, CA**

| Location | Sample | Date Collected | Depth Start | Depth End | Site Risk Area | Units | Motor Oil Range Organics |
|---|---|---|---|---|---|---|---|
| S270 | S270-0" | 12/17/07 | 0 | 0.5 | Area 4 | UG/KG | 630000 |
| S271 | S271-0" | 1/4/08 | 0 | 0.5 | Area 1 | UG/KG | 292000 |
| S272 | S272-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | 54700 |
| S273 | S273-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | 827000 |
| S274 | S274-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | 436000 |
| S274 | S274-12" | 11/29/07 | 1 | 1.5 | Area 1 | UG/KG | 6630 |
| S275 | S275-0" | 11/29/07 | 0 | 0.5 | Area 3 | UG/KG | 2878500 |
| S275 | S275-12" | 11/29/07 | 1 | 1.5 | Area 3 | UG/KG | 3807600 |
| S276 | S276-0" | 11/29/07 | 0 | 0.5 | Area 1 | UG/KG | 722000 |
| S277 | S277-0" | 1/31/08 | 0 | 0.5 | Area 2 | UG/KG | 516000 |
| S278 | S278-0" | 1/31/08 | 0 | 0.5 | Area 2 | UG/KG | 1047000 |
| S279 | S279-0" | 12/20/07 | 0 | 0.5 | Area 2 | UG/KG | 165100 |
| S280 | S280-0" | 1/3/08 | 0 | 0.5 | Area 2 | UG/KG | 322000 |
| S281 | S281-0" | 2/1/08 | 0 | 0.5 | Area 2 | UG/KG | 680000 |
| S282 | S282-6" | 1/20/09 | 0.5 | 1 | Area 2 | UG/KG | 1432600 |
| S282 | S282-12" | 1/20/09 | 1 | 1.5 | Area 2 | UG/KG | 1520000 |
| S283 | S283-0" | 1/29/08 | 0 | 0.5 | Area 2 | UG/KG | 5150000 |
| S284 | S284-0" | 1/29/08 | 0 | 0.5 | Area 2 | UG/KG | 79600 |
| S284 | S284-12" | 1/30/08 | 1 | 1.5 | Area 2 | UG/KG | 671000 |
| S285 | S285-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | 1326000 |
| S286 | S286-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | 891000 |
| S287 | S287-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | 6450000 |
| S287 | S287-12" | 11/26/07 | 1 | 1.5 | Area 1 | UG/KG | 2620000 |
| S288 | S288-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | 742000 |
| S289 | S289-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | 872000 |
| S290 | S290-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | 396000 |
| S291 | S291-0" | 1/7/08 | 0 | 0.5 | Area 4 | UG/KG | 894000 |
| S292 | S292-6'' | 1/19/09 | 0.5 | 1 | Area 1 | UG/KG | 248600 |
| S293 | S293-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | 20900000 |
| S294 | S294-0" | 11/26/07 | 0 | 0.5 | Area 1 | UG/KG | 6910000 |
| S295 | S295-6" | 11/26/07 | 0.5 | 1 | Area 1 | UG/KG | 11140000 |
| S296 | S296-0" | 11/28/07 | 0 | 0.5 | Area 1 | UG/KG | 995000 |
| S296 | S296-18" | 11/28/07 | 1.5 | 2 | Area 1 | UG/KG | 781000 |
| S297 | S297-6" | 1/20/09 | 0.5 | 1 | Area 3 | UG/KG | 756600 |
| S297 | S297-12" | 1/20/09 | 1 | 1.5 | Area 3 | UG/KG | 4522000 |
| S298 | S298-0 | 12/4/07 | 0 | 0.5 | Area 4 | UG/KG | 17500000 |
| VE1 | LL_VE1_10_052611_01 | 5/26/11 | 9.5 | 10 | Area 3 | UG/KG | <10000 |

**Notes**
UG/KG micrograms per kilogram

# APPENDIX C
# CITY OF SANTA FE SPRINGS METHANE REGULATIONS




# METHANE ZONE

LANDFILL

PARCEL WITHIN 1,000 FEET OF A LANDFILL

PARCELS WITHIN 500 FEET RADIUS OF AN ACTIVE, INACTIVE, ABANDONED, ETC., OF AN OIL AND NATURAL GAS WELL.

# CITY OF SANTA FE SPRINGS

N

0 2,000 4,000 Feet

**OILFIELD SITE PLAN REVIEW**
**POLICIES AND PROCEDURES**

The following policies and procedures are intended as guidelines to assist the City of Santa Fe Springs effectively review site plan applications involving new development projects over, around, and nearby active and inactive oil wells on a site.

Formerly, a comprehensive Site Plan Review was performed by California Division of Oil and Gas and Geothermal Resources (DOGGR) on an applicantõs (developerõs) behalf. In 2010, notice was provided by DOGGR that these Site Plan Reviews will no longer be provided and that the local permitting agency (City or County) shall assume this responsibility. DOGGR will continue the responsibility of permitting and approving the abandonment or re-working of all oil wells.

**Documents that shall be included for Site Plan Review By the City of Santa Fe Springs (City)**

1. **Site Plan Review Application** --- Site plan review application form provided by the City and attached hereto as Exhibit A. All site plan review requests must be submitted on this form.

2. **OG 159 Certificate** --- This document is prepared and issued by DOGGR showing oil wells were properly abandoned to current DOGGR standards. Note: Current abandonments range from approximately the mid-1980õs to 2010. As of 2011, DOGGR is beginning to require a õzonal isolationò plug in the abandonment of oil wells --- which essentially amounts to a 4th concrete plug being placed during the abandonment process (versus the previous 3 concrete plugs).

3. **Site Plan Layout** --- A to-scale, engineered exhibit shall accompany the site plan review application which shall show proposed development in relation to all on-site oil wells. The oil well locations shall be printed in table format on the Site Plan layout and include GPS coordinates and DOGGR well name and number as well as API Number. The Site Plan layout shall be signed and stamped by a Registered Civil Engineer.

4. **Evidence of Vent Cone Installation** --- When applicable evidence shall be included with the Site Plan review application documenting that a vent cone was installed over an abandoned oil well. All vent cone installations shall be witnessed and approved by SFS Fire Department with a form

which includes the name of the oil well, API number, and date of vent cone installation. SFS Fire shall sign-off only after a vent cone is installed and before any backfilling of dirt/soil is allowed.

Note: It may also be allowed that Vent Cone installation be completed after site plan review. If so, the vent cone installation and evidence must be completed prior to the issuance of building permits by the City of Santa Fe Springs.

**<u>Procedures for Site Plan Review</u>**

1. It shall be the responsibility of the applicant to verify through DOGGR the status and location of all oil wells on site. All oil wells on site will be uncovered and inspected by a registered petroleum engineer or other qualified individual. All exposed wells will be tested and the precise GPS location of the wells will be recorded. The engineer will prepare a report describing the condition of the wells and recommend any remedial action needed in order to bring the well(s) into compliance with DOGGR standards.

2. Any oil well **WITHIN** 10-feet of a proposed structure must be abandoned to current DOGGR standards.
    - A vent cone will be required in addition to a methane test within 1 year prior to issuance of a building permit.

    - The applicant has the following options:
        i. Adjust site plan to conform to printed DOGGR minimum standards for setbacks: The ñ10/10/50/Openò Rule. See attached layout and description as Exhibit B. Note: At the discretion of the City of Santa Fe Springs, a vent cone and methane test may be required before building permit issuance where sensitive land uses are concerned, e.g. residences, hospitals, restaurants.
        ii. Re-Abandon the oil well to current standards. This would allow applicant to not only build within 10-feet of well, but also over a well. Note: vent cone and methane test will be required.

3. If an oil well is **OUTSIDE** of 10-feet from a proposed structure the report prepared by the petroleum engineer will be used to determine any remedial action that needs to be taken. At a minimum, the wells must be exposed and a methane test conducted to determine whether or not the wells are leaking.

4 If a site plan review (or a portion of the site plan review) has been disapproved by the City, the applicant has the following options:
    - Re-abandon the oil well(s) in accordance with DOGGR standards and obtain OG159 certificate(s) for the well(s); or,
    - Adjust the site plan to the satisfaction of City as Site Plan reviewer to provide safe-distance from proposed buildings.

5. All proposed buildings must be setback from active oil wells in accordance with applicable building and fire codes.

## City Approval of Site Plan Review Application General Conditions

The developer/applicant will be responsible to provide evidence to the Department of Planning and Development and the Fire Department that all mitigation measures determined by the Site Plan Review have been complied with (e.g. vent cones and methane tests) prior to issuance of a building permit and that the site plan as approved in the Site Plan Review Approval is consistent with the permit request.
Note: any discrepancies will not be the Cityôs responsibility. If Site Plan Review is included as part of building plans and permitting process, it will be the applicant/developers responsibility to ensure that the final site plan takes into account any changes/alterations/modifications made during the Site Plan Review process.

## Building Permit Issuance Checklist

The normal building permit issuance checklist items will apply: grading certification, compaction certification from soils engineer, planning department authorization for compliance with site plan and building elevations.

The following will also be required:

1. City Site Plan Review Approval as outlined above. The form is completed and signed and the site plan approval matches the area on the site for which a building permit is being issued.
2. Evidence of Vent Cone Installation ï it is possible that this evidence is not completed during site plan review. It is the responsibility of the developer/applicant to provide the Department of Planning and Development with evidence (on a per-oil well basis) that SFS Fire Department has witnessed the installation of the vent cone and is properly vented to the surface.
3. Evidence of a methane test to ensure that the oil well is not leaking. This test must be performed by a register petroleum engineer or qualified independent 3rd Party. It must be performed within 1-year prior to the date of building permit issuance and written evidence shall be provided from 3rd

party to verify that the on-site oil well is not leaking. The evidence shall include date of test, oil well name and number, oil well API number, plus name, qualifications, and signature of the party that performed the test.

**Before Building Final (Job Card) Completion for Residential Projects**

In addition to completing the required construction practices per the Building Inspector, the job card should not be completed until developer/applicant has provided Planning, Building and Fire Departments with the acceptable copies of the following:

1. Evidence of Oil Well Disclosure and Locations recorded. The applicant shall submit to the City (and then record with the County Recorders) a site location map showing oil wells within a 50-foot radius for each residential homeowners property prior to building final (job card completion). This map shall include the property being acquired (or job card final) with oil well locations within a 50-ft radius so that it is clear to potential buyers and to future buyers where any former oil wells are in relation to that individualôs property. (Attached is an example as Exhibit C).

ORDINANCE NO. 955

AN ORDINANCE OF THE CITY OF SANTA FE SPRINGS AMENDING SECTION 117.131 OF THE CITY CODE RELATING TO SOIL GASES

THE CITY COUNCIL OF THE CITY OF SANTA FE SPRINGS DOES HEREBY ORDAIN AS FOLLOWS:

Section 1. Section 117.131 of the City Code is hereby amended tc read as follows:

(A) A soils gas investigation shall be required as part of the granting of a subdivision map, conditional use permit, development plan approval, or building permit for construction of a new building, when the property in question falls within the methane zone of the city.

(B) A soil gas investigation shall be required when the level of total petroleum hydrocarbon contamination in the soil exceeds 20,000 parts per million.

(C) A soils gas investigation shall also be required for all existing structures within the methane zone when there is a change of ownership of the property, or when new construction takes place which is equal to or greater than 25% of the assessed value of the building.

(D) The methane zone is that area depicted on the attached map found in division (M) of this section. The methane zone encompasses land in the city which is within 1,000 feet of a landfill or within 250 feet of an existing or abandoned oil well.

(E) On all properties where a soils gas investigation is required the following minimum mitigation measures shall be implemented:

(1) New construction.

(a) Prior to construction, install a minimum of two soil gas monitoring wells. Depending on the size of the lot, the Fire Chief may require the installation of additional wells;

(b) Perform initial monitaring of the subsoil to determine levels of soil gases. Far initial monitoring, each of the wells shall be sampled at least two times within a period of seven days.

(c) If the initial monitoring reveals methane levels of less than 25% of the Lower Explosive Limit (i.e., 1.25% by volume in air or 12,500ppm/v), a cross ventilation system shall be installed in the new building. VENTILATION is defined as vents in the roof area and near the floor. There shall be four roof vents and four wall vents for the first 10,000 square feet of building space and one roof vent and one wall vent for each additional 10,000 square feet or fraction thereof. As an option, the building owner may install a passive venting system that provides a rate of four air changes per hour or a methane barrier. All office space shall be mechanically or naturally ventilated per the requirements of the city's Building Code. Permanently installed monitoring wells shall be monitored quarterly for one year.

(d) If the quarterly monitoring reveals methane levels of less than 25% of the Lower Explosive Limit (i.e., 1.25% by volume in air or 12,500ppm/v) during the first year, the system shall be monitored annually thereafter. In cases where methane levels are less than 2.5% of the Lower Explosive Limit (i.e. .125% by volume in air or 1250ppm/v) the Fire Chief may waive by request the annual monitoring requirement.

(e) If the initial monitoring reveals methane in excess of 25% of the Lower Explosive Limit (i.e., 1.25% by volume in air or 12,500ppm/v), or if these levels are detected while the building is under construction or after it has been completed, a protective mitigation system shall be installed. The proposed system shall be recommended and presented by a registered engineer to the Fire Department for approval. Protection may take the form of an active venting system, or a mechanical air exchange system that provides a rate of four air exchanges per hour. If feasible, a methane barrier may be installed. Other alternatives, at the discretion of the registered engineer, may also be submitted for approval. Permanently installed monitoring wells shall be monitored quarterly for one year;

(f) In extraordinary cases, e.g., where methane in excess of 25% of the Lower Explosive Limit (i.e., 1.25% by volume in air, or 12,500ppm/v) can be demonstrated to be a non-repetitive incident, a registered engineer may request a waiver by the Fire Chief for the installation of a protective mitigation system. The granting of the waiver shall be at the discretion of the Fire Chief.

(2) Existing structures.

(a) Install a minimum of two soil gas monitoring wells. Depending on the size of the lot, the Fire Chief may require the installation of additional wells;

(b) Perform initial monitoring of the subsoil to determine levels of soil gases. For initial monitoring each of the wells shall be sampled at least two times within a period of seven days;

(c) If the initial monitoring reveals methane levels of less than 25% of the Lower Explosive Limit (i.e., 1.25% by volume in air or 12,500ppm/v), manitor for methane quarterly for one year;

(d) If the quorterly monitoring reveals methane levels of less than 25% of the Lower Explasive Limit (i.e., 1.25% by volume in air or 12,500ppm/v) during the first year, the system shall be monitored annually thereafter. In cases where methane levels are less than 2.5% of the Lower Explosive Limit (i.e. .125% by volume in air or 1250ppm/v) the Fire Chief may waive by request the annual monitoring requirement;

(e) If the initial or subsequent monitoring reveals methane in excess of 25% of the Lower Explosive Limit (i.e., 1.25% by valume in air or 12,500ppm/v), a protective mitigation system shall be installed. The proposed system shall be recommended and presented by a registered engineer to the Fire Department for approval. Protection may take the form of an active venting system that provides a rate of four air exchanges per hour, a gas detection system, or a cross ventilation system with vents in the roof area and near the flaor. For cross ventilatian there shall be four roof vents and four wall vents for the first 10,000 square feet of building space and one roof vent and one wall vent for each additional 10,000 square feet or fraction thereof. Permanently installed monitoring wells shall be monitored quarterly for one year;

(F) Based on the results of the soils gas investigation or on information available on surrounding properties, property owners shall take such other mitigation measures as required by the Fire Chief.

(G) Where gas detection systems are used, they shall be designed by and installed under the supervision of registered engineers. The design and installation shall be inspected and approved by the Fire Deportment. Following installation, a readily visible sign shall be posted which reads:

"Gas Detection Alarm. In the event of an alarm, evacuate the building and call the Fire Department, 911. Do not disconnect under penalty of law."

(H) The property owner shall provide access for the Fire Department to the alarm panel and the building in which it is installed as well as the olarm reset code by means of an approved key box system. Keys shall be clearly and permanently identified.

(I) The building owner shall be responsible for assuring that annual inspections of the permanent monitoring wells and gas mitigation systems are completed. Reports of these inspections shall be conducted and submitted by a registered engineer. A fine shall be charged, as established by resolution of the City Council, for each gas mitigation system found to be inoperative or where the required identifying sign has been removed.

(J) Where new development takes place in the methone zone and which incorporotes sensitive land uses (e.g., places of public assembly, hospitals, restaurants, schools, and the like), a methane barrier or other venting system may be required regardless of the methane levels detected. Invoking this requirement is at the discretion of the Fire Chief.

(K) Residential properties located within the methane zone are exempt from the provisions of this section, except in coses where the public health and welfare are threatened, methane protection may be required. Invoking this requirement is at the discretion of the Fire Chief.

(L) For properties where soil gas investigations are required, the property owner shall submit a soil gas work plan to the Fire Department for review, approval and permitting prior to commencing any work, and prior to issuance of building permits. The design of systems for property within 1,000 feet of a landfill shall be in accordance with the requirements of the County Department of Public Works and City Fire Department. All other systems shall be designed in accordance with the requirements for the Fire Department. A fee shall be charged, as set forth in the Building Code or by resalution of the City Council, for the service provided in this section.

(M) All methane monitoring reports required by this section shall be sent to the Fire Chief with copies to the Department of Planning and Development.

(N) The city methane gas map is adopted by reference as if set forth in full in this section. A copy of the city methane gas map is available for public inspection at city offices during regular business hours.

Section 2. The City Clerk shall certify to the adoption of this Ordinance, and shall cause the same to be posted in at least three (3) public places in the City, such posting to be completed not later than fifteen (15) days after passage hereof.

PASSED AND ADOPTED THIS 8th day of April, 2004.

AYES: Councilmembers Gonzalez, Kernes, Putnam, Serrano, Mayor Velasco

NOES: None

ABSENT: None

Gustavo R. Velasco
MAYOR

ATTEST:

Marilyn Jaxson
CITY CLERK

# APPENDIX D
# CRETERIA FOR SELECTION OF REMEDIAL ACTION ALTERNATIVES AND TECHNOLOGY DESCRIPTIONS

## Criteria for Selection of Remedial Action Alternatives

1. Protection of human health and the environment, which is characterized by:
   - The ability to effectively reduce, through mitigation of source or exposure route, the theoretical cancer risk to future receptors below $1 \times 10^{-5}$ for commercial and construction workers, and to below $1 \times 10^{-6}$ for residential receptors;
   - The ability to effectively reduce, through mitigation of source or exposure route, the calculated hazard index to future receptors below 1.0;
   - The ability to minimize, through mitigation of source or through the control of continued release, the impairment of natural resources; and
   - The ability to minimize the toxilogical or physical risk to workers and the surrounding environment during implementation of the selected RAA technology.

2. Attain media cleanup standards, which is characterized by:
   - The ability to achieve TRCs, as a predicted likelihood, based on "state-of-the-practice" knowledge and publications on RAAs under evaluation; and
   - The ability to which the success of the RAA can be measured via confirmation sampling.

3. Control the sources of release, which is characterized by:
   - The ability to mitigate or contain any remaining and ongoing source of contaminant distribution to the surrounding environment, which includes areas outside of the Site.

4. Comply with applicable waste management regulations, which is characterized by:
   - The ability of the RAA to be implemented such that it complies with all applicable or relevant and appropriate requirements (ARARs); and
   - The ability of the RAA to allow for the management of waste generated as a result of remedy according to the State and Federal codes governing waste management, such as RCRA.

5. Short and long-term effectiveness, which is characterized by:
   - The ability of the RAA technology to meet TRCs in the near-term, defined herein as approximately six months; and
   - The ability of the RAA technology to maintain contaminant concentrations in various media below TRCs for an extended period of time, defined herein as 30 years.

6. Reduction of toxicity, mobility, and volume of contaminants, which is characterized by:
    - The degree to which the RAA technology actually decreases the hazard itself, as opposed to controlling the exposure; and
    - The estimated degree of permanence of the reduction.

7. Long-term reliability, which is characterized by:
    - The confidence in the ability of the RAA to maintain levels of contamination in various media below the TRCs, based on "state-of-the-practice" knowledge and published data, in various media for an extended period of time, defined herein as 30 years.

8. Implementability, which is characterized by:
    - The feasibility or level of ease with which the RAA can be enacted, taking into account the complexity of the technology, the availability of materials and equipment, various Site-related physical constraints, required additional components, energy and utility needs, and the level of effort required to conduct operational, maintenance, and/or monitoring activities.

9. Cost, which is characterized by:
    - Estimated initial capital cost; and
    - Estimated 30-year life cost for operation and maintenance (O&M).

**Technology descriptions**

1. No Action: This alternative represents the de minimis approach whereby no remedy is advanced and contamination is left to degrade over time via natural mechanisms. Based on levels and types of contamination, this may result in no effect at all on the toxicity, mobility, or volume of contaminated media, or could result in the worsening of certain conditions, such as soil continuing to leach contamination into groundwater over time. This alternative typically carries with it legal implications, due to the lack of action towards administrative cleanup orders, may face public opposition, and could result in fines. Compared to active remedial alternatives, the costs of taking no action are very low.

2. Excavation with off-site disposal: This alternative for shallow soil (0-10 ft) describes the proposed removal action under which shallow soil exceeding designated cleanup goals would be directly removed and transported to an off-site disposal facility. After clearing subsurface obstructions, soil in areas delineated for removal would be would be excavated, stockpiled, and profiled for disposal. Based upon contaminant concentrations, stockpiles would be combined or segregated according to disposal facility requirements. The selection of disposition facilities would be based upon the results of profile samples, however it is anticipated that the soil from this site will be considered non-hazardous and could be sent for thermal treatment or buried as landfill daily cover. Once approved for off-site transport, haul trucks would be loaded, covered, and manifested for delivery to the soil's final destination. This alternative may or may not treat or reduce the contamination, but removes the source of contamination from the site with high certainty. Compared with other types of treatment technologies, the cost of excavation and off-site disposal are relatively high. Excavation is a relatively short duration remedial approach.

3. Excavation with on-site treatment: This alternative for shallow soil (0-10 ft) describes the proposed removal action under which shallow soil exceeding designated cleanup goals would be directly removed, treated on-site to meet pre-determined levels for acceptable re-use, and then used to backfill the excavations. After clearing subsurface obstructions, soil in areas delineated for removal would be would be excavated and stockpiled. If subjected to vapor treatment, the soil would be stockpiled in long shallow rows on top of impervious surface. The rows would be piled around vapor extraction piping and covered with plastic sheeting. The soil would undergo vapor treatment until certain cleanup goals are reached. If subjected to thermal treatment, an on-site soil

furnace would be used to thermally treat the stockpiled soil in batches. Once completed with the treatment, either vapor or thermal, the soil would be tested. Soil passing established benchmarks would be cleared for placement and compaction, backfilling the excavations. This alternative can be costly and time consuming. This approach can be difficult to permit with the SCAQMD and can be time-costly, as idle construction equipment awaits clearance of soil under treatment. This approach does not treat some compounds, such as metals and heavy oils. This approach removes contamination from the site with only moderate certainty, since in theory, some of the soil be replaced may not meet cleanup goals. No future liability associated with the off-site burial of contamination in a landfill would accompany this alternative. Compared with other types of treatment technologies, the cost of excavation and on-site treatment are relatively high. Excavation is a relatively short duration remedial approach.

4. Soil Cap: This alternative for shallow soil (0-10 ft) describes the removal action under which an impermeable (such as asphalt) cover is placed over contaminated soil for the purpose of 1) limiting the potential pathways for future receptors to be exposed to the contaminated soil and 2) limiting the infiltration of precipitation which can mobilize soil contamination and cause leaching to groundwater. A cap of this type is typically protected by an covenant recorded in the property deed, indicating that it is a permanent feature that must be maintained in place. The effectiveness of a soil cap varies, depending upon the characteristics, concentration, and mobility of the contamination, as well as by the degree to which it is kept in good condition. A soil cap can be an effective interim solution if no funds are available to commence soil remediation, or if impacts are minor and the only concern for the regulatory agency is limiting downward migration to groundwater. Compared with other types of alternatives, the costs for a soil cap are relatively low, but it must be maintained, which generates maintenance costs that can add up over time. In most cases, a soil cap can be installed quickly. A typical asphalt repair/replacement schedule is every 5 to 10 years, depending on use.

5. Soil Vapor Extraction: This alternative for deep soil (10-100 ft) describes the removal action by which vertical vapor suction wells are installed within areas requiring treatment and subjected to vacuum in order to pull contaminants from the subsurface. Above ground, vapor treatment devices, such as thermal burners or carbon filters are applied to clean the extracted vapors prior to their discharge to the atmosphere. This technology can only be applied where contaminants are volatile (i.e., easily evaporated). Toxic vapor treatment permits are required by the SCAQMD and can delay projects.

This approach is relatively well researched and an established technology. The capital cost of equipment is typically moderate, however depending upon contaminants and concentrations, operation and maintenance costs can become costly over time. The typical soil vapor extraction operational time is 2-3 years.

6. Bioventing: This alternative for deep soil (10-100 ft) describes the removal action by which vertical vapor air injection and air evacuation wells are installed within areas requiring treatment and subjected to positive/negative pressure in order to provide oxygen to aerobic microorganisms for the purpose of enhancing and maintaining the biotic degradation of contaminants in the subsurface. Above ground, vapor treatment devices, such as thermal burners or carbon filters are applied to clean the low flow of extracted vapors prior to their discharge to the atmosphere. This technology can only be applied where contaminants are aerobically biodegradable. Toxic vapor treatment permits are required by the SCAQMD and can delay projects. This approach is relatively well researched and an established technology. The capital cost of equipment is typically low, however depending upon contaminants and concentrations, operation and maintenance costs can become costly over time. The typical bioventing operational time is 2-4 years.

7. Deep Excavation: This alternative for deep soil (10-100 ft) describes the removal action by which deep soil is excavated and removed for off-Site disposal. The technique for excavating soil at depth is to use a bucket auger, which drills out soil vertically using a large diameter auger, and can reach extended depths, limited simply by the length of the axial steel shaft that advances the auger. Excavated holes are immediately backfilled with either clean fill or slurry, so that the equipment and personnel can safely operate, moving on to the next boring. Successive boring advancements are used to carve out the entirety of the excavation extents. Deep excavation via bucket auger can be a slow process. Large-scale or very deep excavation operations can take months to complete, whereas the same volume of soil in a shallow setting could be excavated using traditional means in only days. Based upon contaminant concentrations, stockpiles would be combined or segregated according to disposal facility requirements. The selection of disposition facilities would be based upon the results of profile samples, however it is anticipated that the soil from this site will be considered non-hazardous and could be sent for thermal treatment or buried as landfill daily cover. Once approved for off-site transport, haul trucks would be loaded, covered, and manifested for delivery to the soil's final destination. This approach is relatively well researched and an established technology. This alternative may or may not treat or reduce the contamination, but removes the source of contamination from the site with high

certainty. Compared with other types of treatment technologies, the cost of deep excavation and off-site disposal are very high. Deep excavation is a moderate duration remedial approach.

8. Thermal Treatment: This alternative for deep soil (10-100 ft) describes the removal action by which heat is used to thermally destruct as well as enhance the vapor recovery of volatile chemicals. As with SVE, vertical vapor suction wells are installed within areas requiring treatment and subjected to vacuum in order to pull contaminants from the subsurface, but are supplemented by similarly-installed vertical heat probes that raise the temperature of the soil in the subsurface. Thermal enhancement can also be applied using the injection of steam, although this is less common. Above ground, vapor treatment devices, such as thermal burners or carbon filters are applied to clean the extracted vapors prior to their discharge to the atmosphere. Special versions of this off-gas treatment equipment are required to deal with the high temperatures of incoming vapor and fire/explosion protective devices must be used where this technology is applied on flammable materials such as gasoline. This technology can only be applied where contaminants are volatile (i.e., easily evaporated). Toxic vapor treatment permits are required by the SCAQMD and can delay projects. The capital cost of wells, heating probes, and equipment is high and operations costs are also very high due to the use of electricity to generate the heat. This technology has several benefits: first, the level of certainty in achieving cleanup goals is very high; second, the time to complete remediation is relatively short, as the heat greatly enhances the recovery and destruction of the contamination; third, latent heat remaining after the system is deactivated and demobilized encourages biological kinetics which can take care of residual contamination. The typical duration of a thermal treatment project is 1 year. This technology is considered relatively innovative, but is gaining recognition with regulatory agencies.

9. Pump and Treat: This alternative for saturated zone remediation describes the removal action by which groundwater pumping wells are used to extracted contaminated water, making it accessible for above-ground treatment. After conducting pump tests and other studies, locations are selected for the installation of pumping wells such that the maximum contamination can be captured with the minimum amount of otherwise clean groundwater, within the zone of treatment. Submersible pumps are installed within these wells, which direct pre-determined flow rates of groundwater towards a single receiving treatment plant. The treatment plant is equipped with pumps, controls, tanks, filters, and/or other treatment mechanisms sufficient to meet discharge water quality goals. Pump and treat systems typically discharge to surface water bodies (i.e., storm

drains, for instance) under permit by the National Pollution Discharge Elimination System (NPDES) regulatory body, which in this case is the RWQCB. A pump and treat system is, by its nature, inefficient, in that it captures contaminants in a very diluted form, eliminating a small mass of contaminants by treating a very large volume of groundwater. The spacing and screen design for pumping wells must be carefully selected and a thorough understanding of the Site hydrogeology is required. This approach is relatively well researched and an established technology. Permitting, construction, and operation costs of pump and treat systems are all relatively high. The typical life of a pump and treat remedial alternative is 7 to 15 years.

10. Air Sparging – This alternative for saturated zone remediation describes the removal action by which atmospheric air is injected at high flow rates into the contaminated aquifer for the purpose of volatilizing dissolved-phase contaminants, whereby they are captured in the vadose zone above by a soil vapor extraction system. Above ground, vapor treatment devices, such as thermal burners or carbon filters are applied to clean the extracted vapors prior to their discharge to the atmosphere. This technology can only be applied where contaminants are volatile (i.e., easily evaporated). Toxic vapor treatment permits are required by the SCAQMD and can delay projects. No WDR permits are required for the injection of air. The spacing of air sparging wells must be carefully selected, and a good understanding of the hydrogeology is required. This approach is relatively well researched and an established technology. The capital cost of equipment is typically moderate, however depending upon contaminants and concentrations, operation and maintenance costs can become costly over time. The typical air sparge/vapor extraction operational time is 2-3 years.

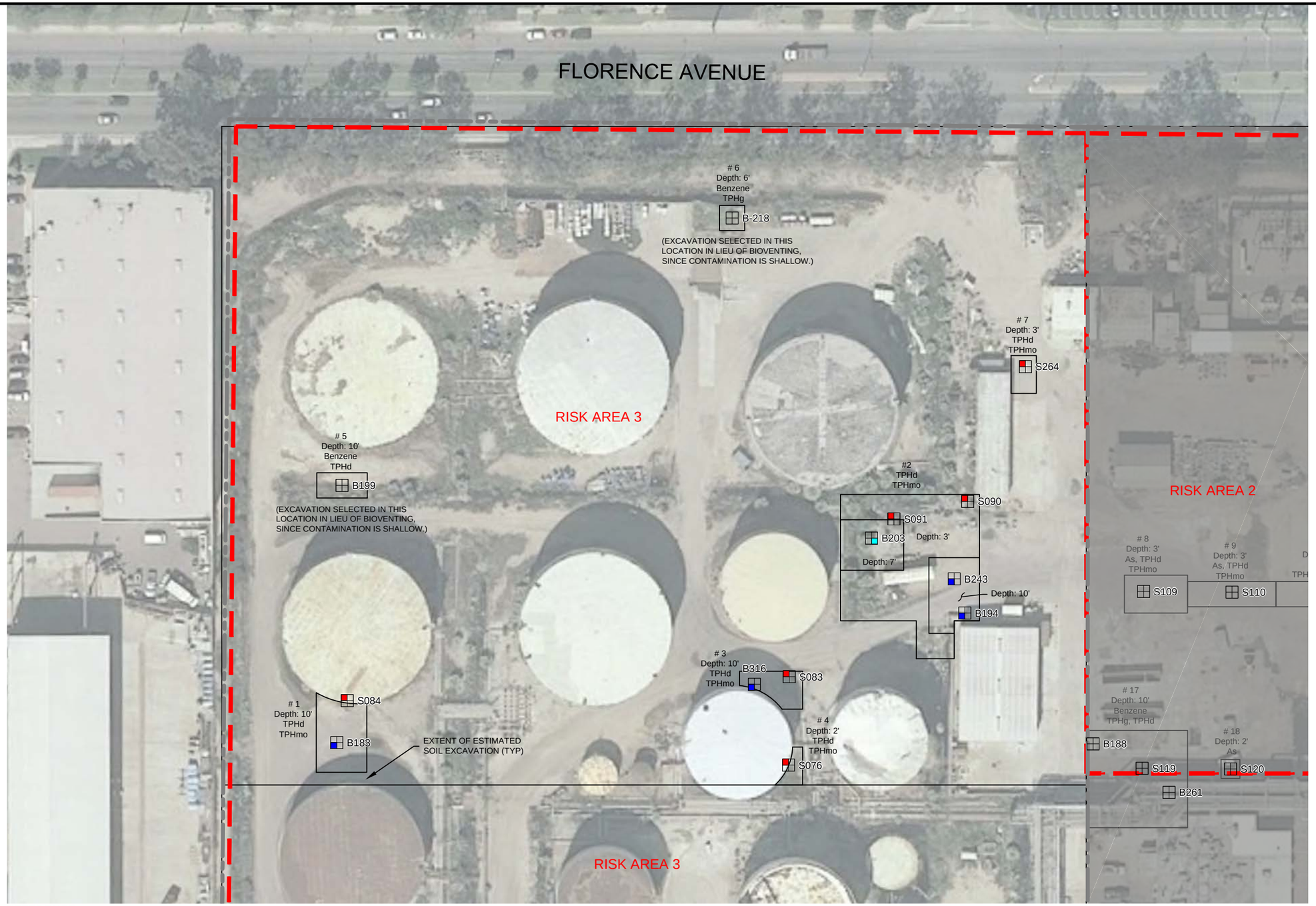
11. Chemical Oxidation – This alternative for saturated zone remediation describes the removal action by which oxygen-releasing compounds are injected into the aquifer to raise dissolved oxygen levels and oxidation-reduction potential for the purpose of spurring enhanced aerobic biological degradation of petroleum hydrocarbons and VOCs. These materials can be injected through either temporary or permanent injection wells. Injection materials can be oxygen or ozone gas, as well as solids or liquids such as hydrogen peroxide or Oxygen Release Compound® (ORC®). The selection of whether permanent or temporary injection infrastructure is selected will depend on the transmissivity of the aquifer soils, the concentrations of dissolved-phase contaminants, the access availability to the area, and the selected substrate type. Above-ground infrastructure required ranges from no infrastructure at all (injected ORC, for instance, injected through temporary probes) to requiring an equipment compound, permanent injection wells and transference piping (oxygen gas injection, for instance). A WDR

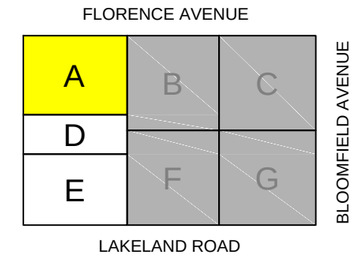
permit is required for this type of in-situ remediation. This approach is relatively well researched and an established technology. The capital cost for this alternative ranges from moderate to high, depending on several factors. The largest determining factors in cost are typically contaminant concentrations and access. The duration of the remedial effort is typically between 6 months to several years.

12. Biosparging – This alternative for saturated zone remediation describes the removal action by which atmospheric air is introduced to the impacted area at low flow rates for the purpose of introducing oxygen to aerobic microorganisms, enhancing and maintaining the biotic degradation of petroleum hydrocarbon and VOCs. This approach is relatively well researched and an established technology. It can only be applied where contaminants are aerobically biodegradable, and relies in part on natural processes, which can be unpredictable. Biosparging employs injection wells at lower density than air sparging or chemical oxidation. Vapor extraction wells, again at lower density spacing than with air sparging, typically accompany biosparging wells but operate at lower flow rates thereby limiting the size/capacity of off-gas treatment equipment. Toxic vapor treatment permits are required by the SCAQMD and can delay projects. No WDR permits are required for the injection of air. Capital costs for the installation of treatment wells and air injection equipment are low to moderate.

13. Monitored Natural Attenuation: This alternative for saturated zone remediation describes the removal action by which naturally occurring aerobic microorganisms are allowed to degrade petroleum hydrocarbons and VOCs without any artificial enhancements such as oxygen or nutrients. This approach is relatively well researched and an established technology. The success of this technology is dependent upon the aquifer's chemistry, since oxygen is typically consumed quickly and secondary ions are necessary to contribute to the oxidation process. These include sulfate, nitrate, and iron ions. This approach is generally more effective at sites exhibiting very low relative concentrations of contaminants, where natural process do not become overwhelmed by oxygen demand and where levels of contaminants are not toxic to the bacteria. Natural attenuation exhibits a very low cost, however is time intensive. More commonly, natural attenuation is more appropriately relied upon to "finish" a groundwater remediation project after more aggressive technologies have been applied and have achieved a level of success that is close the final goal.

# APPENDIX E
# SITE PLANS SHOWING SHALLOW SOIL EXCAVATIONS



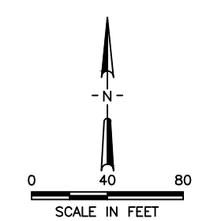




KEYMAP FOR SITE SECTIONS

## REPORTING LIMITS

| | | | |
|---|---|---|---|
| ARSENIC (As) | ≥ | 13.0 | mg/kg |
| BENZENE | ≥ | 4.0 | mg/kg |
| DIBENZO (D(a,h)a) | ≥ | 0.6 | mg/kg |
| LEAD (Pb) | ≥ | 320* | mg/kg |
| TPHg | ≥ | 2,500 | mg/kg |
| TPHd | ≥ | 5,000 | mg/kg |
| TPHmo | ≥ | 10,000 | mg/kg |

*SEE EXPLANATION IN SECTION 4.2




REFERENCE:
THIS FIGURED DERIVED FROM MUREX 2013. LOCATIONS ARE APPROXIMATE

No warranty is made by Stantec as to the accuracy, reliability, or completeness of these data. Original data were compiled from various sources. This information may not meet National Map Accuracy Standards. This product was developed electronically, and may be updated without notification. Any reproduction may result in a loss of scale and or information.

LEGEND:

SITE PROPERTY/BOUNDARY LINE

REDEVELOPMENT AREA LINE

OVER REPORTING LIMIT 0.0' - 1.5' BGS

OVER REPORTING LIMIT 6.0' - 10.5' BGS

S025 SAMPLE ID

OVER REPORTING LIMIT 1.5' - 3.0' BGS

OVER REPORTING LIMIT 3.0' - 6.0' BGS

GRAY SHADED AREA IS FORMER REFINERY PROPERTY NOT ADDRESSED BY THIS RAP

Stantec
25864-F BUSINESS CENTER DRIVE
REDLANDS, CALIFORNIA 92374
PHONE:(909) 335-6116 FAX:(909) 556-6516

FOR:
FORMER POWERINE REFINERY
PARCELS 8009-022-017, 029, 030 & 031
13345 LAKELAND ROAD
SANTA FE SPRINGS, CALIFORNIA

SITE PLAN SHOWING
SITE SECTION 'A' PROPOSED
SHALLOW SOIL EXCAVATION

FIGURE: E1

| JOB NUMBER: | DRAWN BY: | CHECKED BY: | APPROVED BY: | DATE: |
|---|---|---|---|---|
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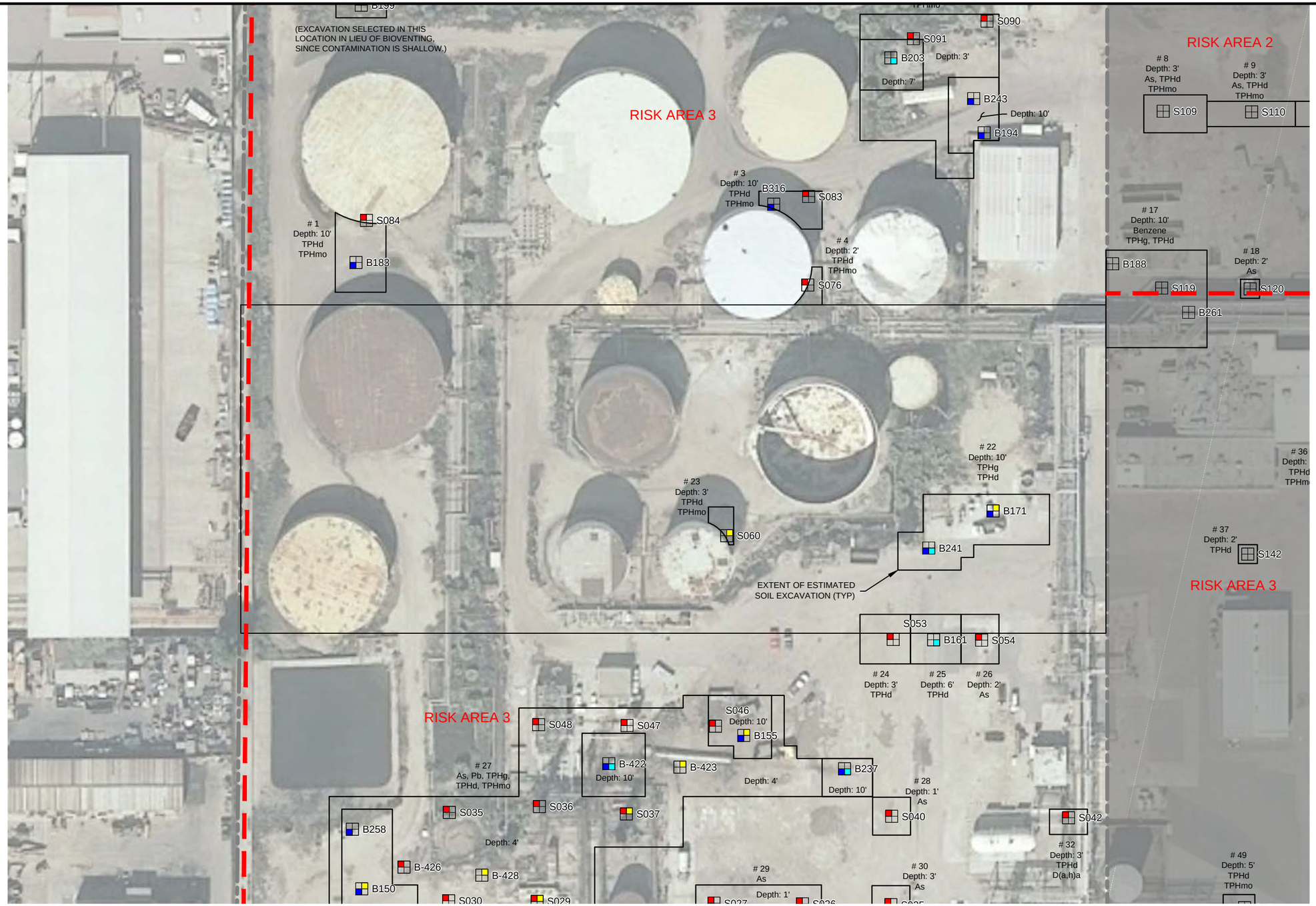
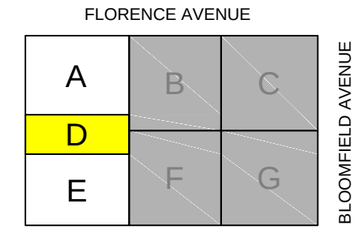


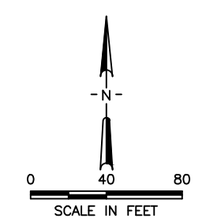




KEYMAP FOR SITE SECTIONS

## REPORTING LIMITS

| | | | |
|---|---|---|---|
| ARSENIC (As) | ≥ | 13.0 | mg/kg |
| BENZENE | ≥ | 4.0 | mg/kg |
| DIBENZO (D(a,h)a) | ≥ | 0.6 | mg/kg |
| LEAD (Pb) | ≥ | 320* | mg/kg |
| TPHg | ≥ | 2,500 | mg/kg |
| TPHd | ≥ | 5,000 | mg/kg |
| TPHmo | ≥ | 10,000 | mg/kg |

*SEE EXPLANATION IN SECTION 4.2




REFERENCE:
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LEGEND:

SITE PROPERTY/BOUNDARY LINE
REDEVELOPMENT AREA LINE

OVER REPORTING LIMIT 0.0' - 1.5' BGS
OVER REPORTING LIMIT 1.5' - 3.0' BGS
S025 SAMPLE ID
OVER REPORTING LIMIT 6.0' - 10.5' BGS
OVER REPORTING LIMIT 3.0' - 6.0' BGS

GRAY SHADED AREA IS FORMER REFINERY PROPERTY NOT ADDRESSED BY THIS RAP

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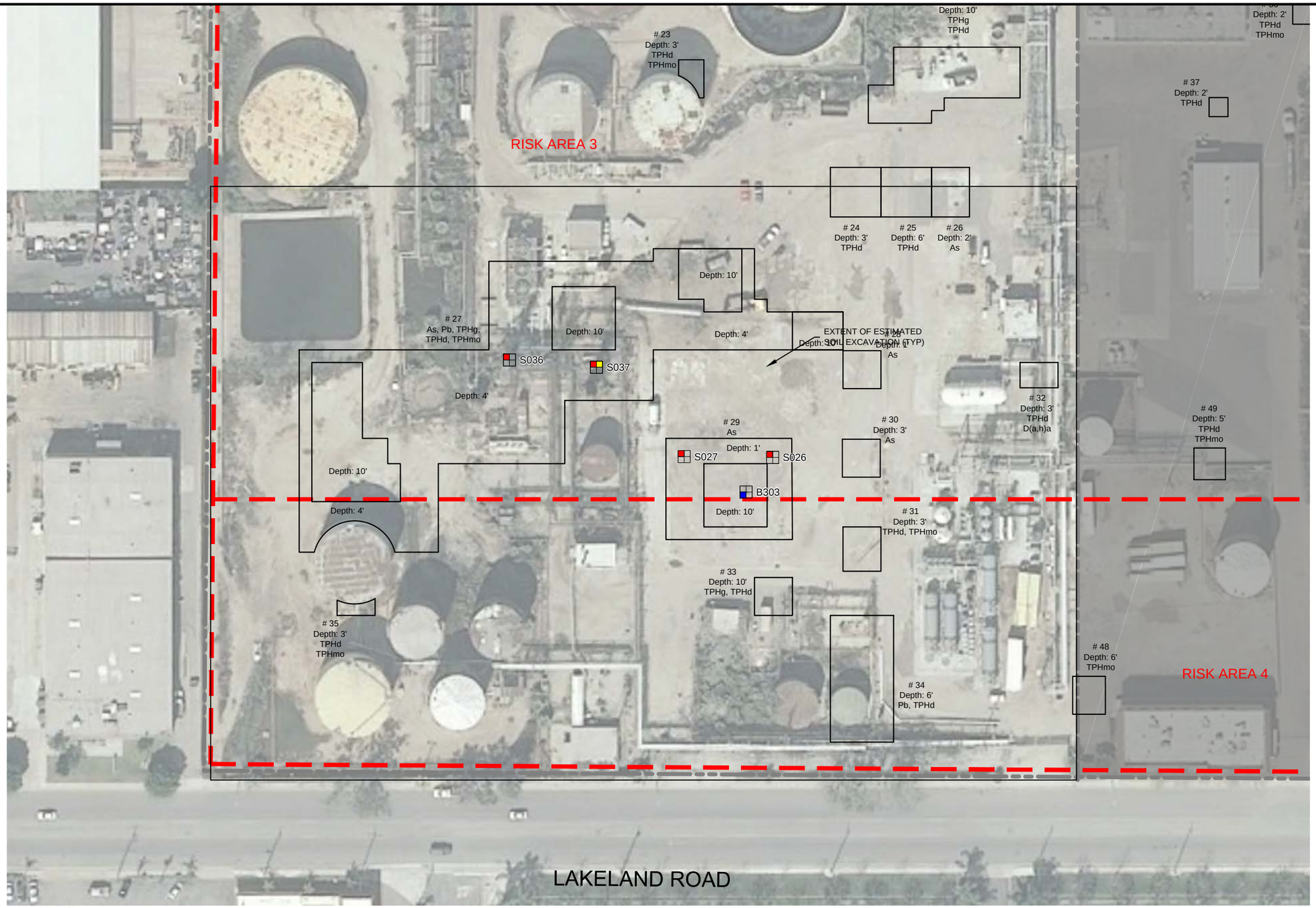
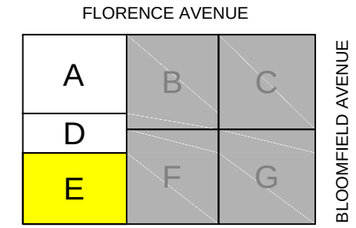
FOR:
FORMER POWERINE REFINERY
PARCELS 8009-022-017, 029, 030 & 031
13345 LAKELAND ROAD
SANTA FE SPRINGS, CALIFORNIA

SITE PLAN SHOWING
SITE SECTION 'D' PROPOSED
SHALLOW SOIL EXCAVATION

FIGURE: E2

| JOB NUMBER: | DRAWN BY: | CHECKED BY: | APPROVED BY: | DATE: |
|---|---|---|---|---|
| 185803065 | JBL | RN | KM | 08/13/13 |




KEYMAP FOR
SITE SECTIONS

## REPORTING LIMITS

| | | | |
|---|---|---|---|
| ARSENIC (As) | ≥ | 13.0 | mg/kg |
| BENZENE | ≥ | 4.0 | mg/kg |
| DIBENZO (D(a,h)a) | ≥ | 0.6 | mg/kg |
| LEAD (Pb) | ≥ | 320* | mg/kg |
| TPHg | ≥ | 2,500 | mg/kg |
| TPHd | ≥ | 5,000 | mg/kg |
| TPHmo | ≥ | 10,000 | mg/kg |

*SEE EXPLANATION IN SECTION 4.2

N

0 40 80
SCALE IN FEET

REFERENCE:
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LEGEND:

SITE PROPERTY/BOUNDARY LINE
REDEVELOPMENT AREA LINE

OVER REPORTING LIMIT 0.0' - 1.5' BGS
OVER REPORTING LIMIT 1.5' - 3.0' BGS
S025 SAMPLE ID
OVER REPORTING LIMIT 6.0' - 10.5' BGS
OVER REPORTING LIMIT 3.0' - 6.0' BGS

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13345 LAKELAND ROAD
SANTA FE SPRINGS, CALIFORNIA

SITE PLAN SHOWING
SITE SECTION 'E' PROPOSED
SHALLOW SOIL EXCAVATION

FIGURE: E3

| JOB NUMBER: | DRAWN BY: | CHECKED BY: | APPROVED BY: | DATE: |
|---|---|---|---|---|
| 185803065 | JBL | RN | KM | 08/13/13 |

# APPENDIX F
# HEALTH AND SAFETY PLAN

Health and Safety Plan to be Provided by Selected Remediation Contractor

# APPENDIX G
# SOIL MANAGEMENT AND DUST MONITORING PLAN

# Soil Management Plan

**for**

**Former Powerine Refinery**

Prepared By

MUREX environmental, inc

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Particulate Monitoring Form

# 1.0 INTRODUCTION

This Soil Management Plan (SMP) has been prepared by Murex Environmental, Inc. (Murex) for proposed activities at the former Powerine refinery located at 12345 Lakeland Road in Santa Fe Springs, California (Site, see **Figure 1**) on behalf of Lakeland Development Company (Lakeland).

The Site is approximately 55 acres in size and is bordered to the north by Florence Avenue, to the south by Lakeland Road, and to the east by Bloomfield Avenue (**Figure 1**). The Site is bordered on all sides by commercial and industrial properties.

The Site was operated as an oil refinery from the 1930s until July 1995. Oil-production-related structures such as ponds and aboveground holding tanks may have also been located onsite during these years (Haley & Aldrich, Inc. [Haley & Aldrich], 2005). The refinery ceased operations in July 1995. Since then, refinery structures, such as tanks, overhead piping, and other infrastructure, have been removed in stages. The remaining refinery structures are scheduled to be removed for reuse elsewhere or recycling prior to the redevelopment of the property for commercial/industrial use.

Previous refining operations included processing crude oil into several grades of fuel including kerosene, leaded gasoline and aviation fuel, unleaded gasoline, jet fuel, high and low-sulfur diesel, fuel oil, and petroleum coke. Soil and groundwater quality beneath and in proximity to the Site have been impacted by accidental spills. Soil and groundwater investigations are being conducted pursuant to a CAO No. 97-118 issued by the LARWQCB to Powerine Oil Company (CENCO Refining Company) in 1997 (Haley & Aldrich, 2005).

## 1.1 Soil Conditions

In general, chemicals of concern (COCs) at the Site include TPH as various mixtures, VOCs, PAHs, and petroleum product additives and processing chemicals (including metals and other VOCs).

The Site subsurface is divided into the following major horizons for purposes of remedy selection: 1) shallow soil (0 to approximately 10 ft-bgs); 2) deep soil (10 to approximately 90 to 100 ft-bgs, the approximate depth to groundwater); and 3) groundwater.

The shallow zone extends from ground surface to approximately 10 ft-bgs. Based upon the findings of the HRA and the HRA Addendum, COCs in the surface soil samples include TPHg

(gasoline-range organics [GRO]), TPHd (diesel-range organics, [DRO]), and TPHmo (motor oil-range organics [MRO]), VOCs, dibenzo(a,h)anthracene, lead, and arsenic.

## 1.2 Purpose & Scope

Given the likelihood of encountering soil containing hazardous materials during major earthwork performed on-Site, this plan has been designed to guide construction and earthwork contractors in the best management practices (BMPs) for excavations, utility installations, grading, compaction, and other earthwork activities.

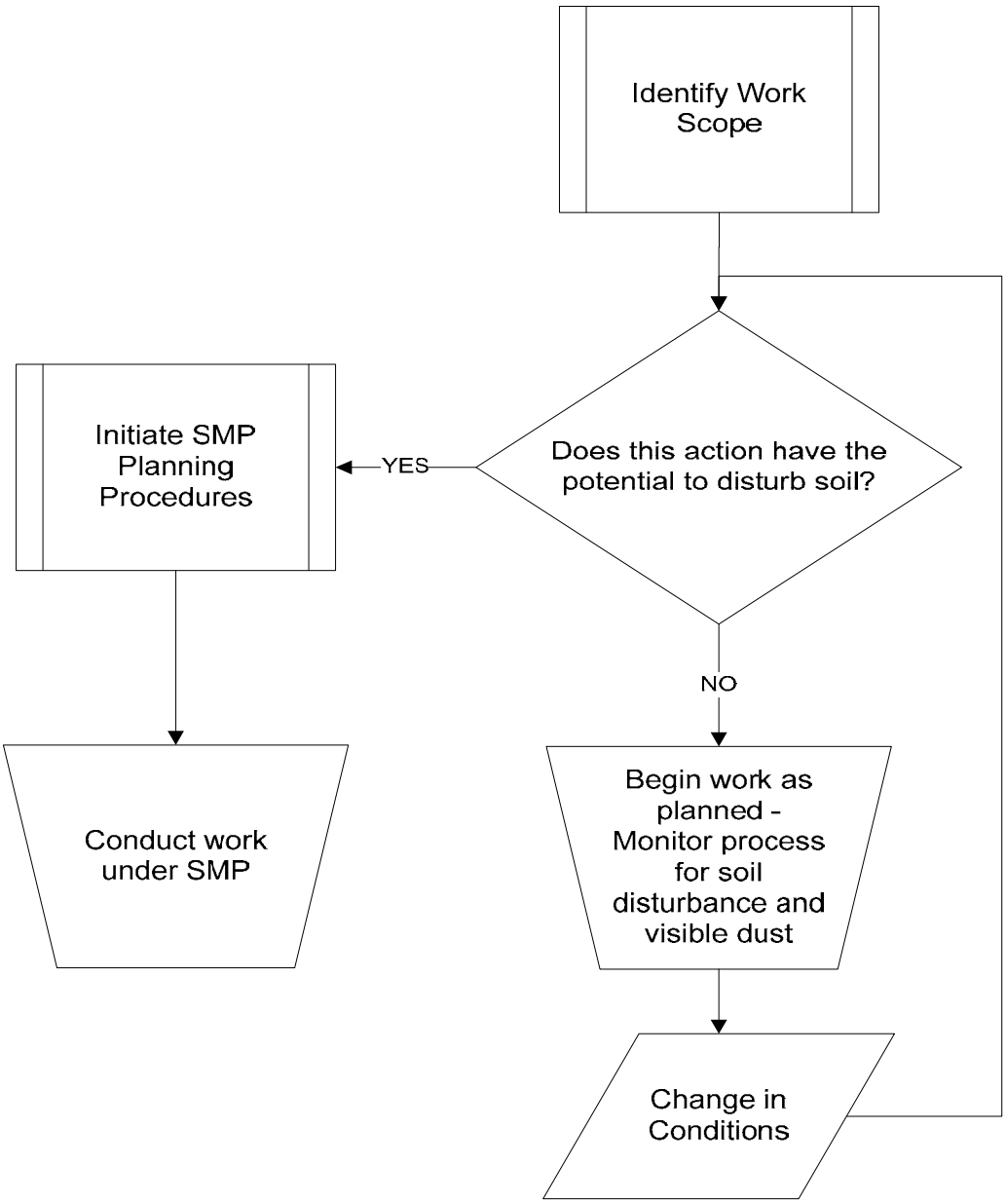
This SMP contains the following information:

- A summary of Site topography and soil conditions;
- Decision matrix for the application of the SMP procedures;
- Description of applicable earthwork and maintenance activities that will trigger the SMP procedures;
- Health & safety procedures for worker safety, personal protective equipment, and training;
- Air pollution measurement and control measures for compliance with SCAQMD Rules 403 and 1166;
- Stormwater pollution control measures and best management practices (BMPs) to prevent runoff;
- Truck traffic planning procedures;
- Recommended Site security procedures;
- Stockpile management;
- Stockpile profiling;
- Decontamination procedures; and
- Record keeping procedures.

This SMP is organized into procedures for conducting construction activity in clean fill, and provides contingencies for the management of contaminated soil and groundwater, should it be encountered.

## 2.0 SMP APPROACH

The following decision tree describes the use of the SMP, as a guidebook that should be consulted for any activities, construction or otherwise, that have the potential to expose or disturb soil containing hazardous substances:



## 2.1 Earthwork Activities

Activities that disturb contaminated soil can lead to the exposure of construction workers and the public. Such exposure includes dermal contact, inhalation of dust, or the spread of potentially contaminated soil off-Site, through wind-blown dust or storm water run-off. Typically, excavation, grading and the installation of utility pipelines, such as sewer and storm drain, have the greatest potential for soil disturbance and worker exposure.

## 2.2 Applicable Regulations

The following regulations, rules, and guidelines will apply to earthwork activities where soil may potentially be impacted by petroleum hydrocarbons.

### 2.2.1 Health & Safety

This SMP has been prepared to provide standard procedures for the management of clean fill on a construction Site, where the possibility exists of encountering contaminated fill and native soil. Therefore, it is recommended that contractors will be responsible for operating in accordance with the most current requirements of Title 8, California Code of Regulations, section 5192 (8 CCR 5192) and Title 29, Code of Federal Regulations, section 1910.120 (29 CFR 1910.120), Standards for Hazardous Waste Operations and Emergency Response (HAZWOPER).

On-Site personnel are responsible for operating in accordance with all applicable regulations of the Occupational Safety and Health Administration (OSHA) outlined in 8 CCR General Industry and Construction Safety Orders and 29 CFR 1910 and 29 CFR 1926, Construction Industry Standards, as well as other applicable federal, state and local laws and regulations. All personnel shall operate in compliance with all California OSHA requirements.

In addition, workers designated as those who will excavate, manage, stockpile, or transport impacted soils should carefully comply with the Site-specific health and safety plan (HASP). The HASP provides guidelines on how to direct the work, personnel monitoring procedures, and sets action levels for chemical exposure. Workers operating under the HASP should be trained under a 40-hour OSHA HAZWOPER curriculum, and have the proper personal protective equipment available, as prescribed in the HASP.

### 2.2.2 Air Pollution Control

South Coast Air Quality Management District (AQMD) has rules, which address excavation of petroleum-impacted soil (Rule 1166) and fugitive dust (Rules 402 and 403). Rule 1166 also applies to the excavation of soils containing volatile organic compounds (VOCs) and

will be considered as a part of the contingency portion of this SMP, as the oily soils reportedly contain detectable concentrations of VOCs.

Rule 402 prohibits the discharge into the air from any source air contaminants or other material that would cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health, or safety of any such person or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property.

Several elements of Rule 403, such as protocols for mitigation of potential fugitive dust emissions, have been incorporated into this SMP. Excavation, loading, and transport of impacted soils shall be in compliance with AQMD Rule 403 prevention, reduction, and mitigation measures for fugitive dust emissions. However, notification of AQMD is required only for large operations (disturbing more than 50 acres or moving more than 5,000 CY per day). Therefore, no notification or filing of a Fugitive Dust Emission Control Plan is required due to project size.

### 2.2.3 Storm Water

Storm Water Pollution Prevention (SWPP) measures (such as sandbags surround the area of disturbed earth, etc.) will be installed by the contractor and inspected by a registered professional civil engineer prior to the start of earthwork at the Site. A SWPP plan will be written in a manner which best management practices (BMPs) for earthwork at urban sites are presented in depth. The soil excavator will be responsible for maintaining the SWPP measures that are installed at the start of work, and throughout the duration of the project, until the Site's permanent storm water management system is fully operational.

Typical SWPP measures and SWPP plan requirements for construction at sites with potentially impacted soil are discussed in Section 4.

### 2.2.4 Truck Traffic Plan

If major truck traffic is expected as a result of soil conveyance, it is likely that the City of Santa Fe Springs will require a truck traffic plan be filed for a truck traffic permit. Plans must include the number and size of trucks that will transport the soil each day during work, and include the path by which the trucks will travel, in order to ensure City approval of truck traffic corridors, and so that truck traffic does not cause undue nuisance to residential neighborhoods. In the case of the proposed work at the Site, no major truck traffic is anticipated. A truck traffic plan, if required, will be filed with the City of Santa Fe Springs when the gradings are pulled.

# 3.0 IDENTIFICATION OF IMPACTED SOIL

The following section describes how workers can recognize the presence of petroleum-impacted soil.

## 3.1 Initial Screening

As earthwork activities commence, it is recommended that caution be exercised in opening large areas of open soil face at once. Excavations, especially deeper excavations, such as those for footings, grading, or utility installation should proceed slowly at first in each new section of the Development Area. This is to allow the identification of hazardous substances in soil prior to exposing large quantities to the atmosphere.

Hazardous materials such as petroleum hydrocarbons and VOCs are often seen or detected by their odor initially.

As organic chemicals such as petroleum hydrocarbons and VOCs degrade in moist soil over time, oxygen is metabolized, and soil typically becomes dark in color (darker than the surrounding soil that does not contain these compounds). Depending on the original color of the soil, impacted soil can often be grey to dark grey, dark brown, or black.

Impacted soil may also be discovered when excavations uncover objects, such as piping, once used to convey petroleum products. Other clues can include pieces of asphalt (once used to coat oil reservoir berms) or concrete and wood (used to construct the reservoirs and roofs).

In addition to visual clues, several types of individual chemical compounds associated with the natural weathering of petroleum hydrocarbons give off a strong olfactory response once uncovered.

Once discovered, earthwork in the area should be monitored by a qualified environmental professional to ensure worker safety and proper documentation. If a hazardous material is encountered, work will cease until a direct reading device such as a PID can be used to assess the material for VOCs and TPH. Once inspected by an environmental professional and the soil is determined not to contain hazardous substances, work may continue using existing work crews and procedures under the oversight of the environmental professional.

# 4.0 MANAGEMENT OF IMPACTED SOIL

Planning for work to be conducted under the SMP will result in properly trained personnel conducting the work, and that the work will be conducted so as to limit the potential exposure of workers to hazardous substances in soil as well as appropriate handling and management of disturbed soil. This section describes Site procedures required for managing impacted soil once it is suspected to be or is discovered in an active work area.

## 4.1 Security Measures

The work areas should be delineated in such a way so as to preserve the safety of the public at large. Appropriate barriers and/or privacy fencing will be installed prior to beginning the excavation process to ensure that the work areas are secure and safe. To ensure trespassers or unauthorized personnel are not allowed near work areas, security measures may include, but are not limited to:

- Maintaining a visitor's log. Visitors shall have prior approval from the Site manager to enter the Site. Visitors shall not be permitted to enter the Site without first receiving site-specific health and safety information from the Site safety coordinator.
- Installing barrier fencing to restrict access to sensitive areas such as exclusion zones.
- Providing adequate Site security to ensure unauthorized personnel have no access to work areas and/or impacted materials.
- Before leaving the Site, visitors must sign out in the visitor's log.
- Maintaining a safe and secure work area, including areas where equipment is stored or placed, at the close of each workday.

Persons requesting Site access will be required to demonstrate a valid purpose for access and if access to work areas and/or impacted materials is planned, provide appropriate documentation to demonstrate they have received proper training required by the Site-specific HASP.

The following sections describe the various required components for adherence to this SMP.

## 4.2 Health & Safety

Work activities involving the excavation or disturbance of soil in areas potentially impacted by hazardous substances will be conducted in accordance with health and safety protocols

in Title 29 CFR, Section 1910.120 and 8 CCR 5144 and 5192. Workers involved in the activities will be trained and certified under OSHA, 40-hour hazardous waste operations (HAZWOPER) course content, and led by a qualified individual or agency. In addition, the planning and training for Site-specific actions as well as the HASP will include:

- Identification and description of potentially hazardous substances that may be encountered during field investigation activities;
- Specification of personal protective equipment (PPE) and clothing for the Site activities; and
- Training on measures that may be implemented in the event of an emergency.

A Site safety meeting will be held with project personnel and subcontractors prior to commencing fieldwork. The meeting will cover potential physical and chemical hazards and outlined measures to be taken in the event of an emergency.

## 4.3 Storm Water Pollution Prevention (SWPP)

A Storm Water Pollution Prevention Plan (SWPPP) will be written by a registered professional civil engineer with a Qualified SWPPP Developer (QSD) certification. The SWPPP shall include detailed information on all potential pollutant releases and their sources. Any sources of sediment resulting from construction activity will also be characterized with their respective control measures. Site BMP controls shall be fully detailed and supported with calculations. Stabilization BMPs for eliminating post-construction pollutants will also be outlined and explained. BMP selection, usage, and maintenance will demonstrate compliance with the requirements of the General Permit.

Typical SWPP measures for construction at sites with potentially impacted soil include:

- Sand bag barricades surrounding the work areas to prevent storm water from washing soil off-Site;
- Silt filters installed at storm drain inlets;
- Crushed rock or rumble plates at Site entry/exit points, to shake loose soil from truck tires;
- An inspector stationed at truck entry/exit points to sweep and clear loose soil from large trucks;
- Street cleaning trucks, which pick up the soil that is tracked outside the entry/exit points;
- Waterproof soil storage bins for impacted soils;

- Plastic sheeting placed under and weighted over stockpiles of segregated soil pending profiling or disposal; and
- Inspection and re-adjustment of SWPP measures during and after rain events or periods of heavy wind by a QSD certified registered professional civil engineer.

## 4.4 Procedures for Soil Management

Overall, the goals of proper soil management are 1) the reduction in mobility of potentially contaminated soil, 2) reduction of construction/facility worker exposure to potentially contaminated soil, 3) reduction of off-Site receptor exposure to potentially contaminated soil, and 4) maintaining control of potentially contaminated soil.

Once moved from its location, or otherwise disturbed, soil containing hazardous substances is considered a waste product, and should not be re-used as backfill. However, if it is not necessary to disturb soil that has been identified as impacted, there are circumstances in which the soil may be left in place. These decisions should be made by a qualified environmental professional, such as a registered civil engineer, and in consultation with the appropriate regulatory agency. The segregation, stockpiling, profiling, and disposal procedures for impacted waste soil are outlined below.

Where excavation is necessary, the excavated soil will be removed in a manner that reduces the potential to generate particulates and dust from excavation, as well as from segregated and stockpiled soils.

The figure on Page 5, Section 2.0, displays a procedural decision tree for impacted soil management, which can act as a guide for the environmental oversight professional or Site superintendent on the Project.

Dust mitigation procedures, soil stockpile management procedures, and procedures for sampling, conducted in order to screen, segregate, and determine disposition of excavated soil are described below.

### 4.4.1 Dust Control, Measurement, & Compliance

The most prevalent mechanism for unplanned mobility and exposure is dust generation, and therefore, many of the recommended procedures involve the control of dust at the site of the operation.

The AQMD is the regulatory agency that administers limits on the release of air contaminants, including particulate matter released from construction activities.

According to AQMD Rule 403 (Fugitive Dust), construction operations should be conducted in such a way as to reduce the amount of particulate matter entrained in the ambient air as a result of fugitive dust sources. Included in Rule 403 are Best Available Control Measures related to construction activities (see Table 1 of Rule 403 in **Appendix H**). This table should be referred to as a guide.

In order to comply with Rule 403, measures will be implemented to:

1. Prevent dust from remaining visible in the atmosphere beyond the fence line of the Site.
2. Minimize fugitive dust by using best available control measures.
3. Prevent particulate matter from exceeding 50 micrograms per cubic meter ($\mu g/m^3$).

Several dust control measures may be implemented during excavation activities. In general, the most widely used dust suppression technique is spray water, and therefore, construction or excavation activities should plan to have both a water source and delivery method available at the location of the work.

Dust suppression during excavation will be performed by lightly spraying or misting the work areas with water. Water mist may also be used on soil placed in dump trucks prior to transporting the material to an off-Site facility.

Equipment and vehicles used to load and move the impacted soil will be operated at speeds that minimize generating airborne particulates. During soil transfer operations, the distance that soil is dropped onto stockpiles or into trucks will be minimized and soil transfer will take place on the leeward side of trucks and/or stockpiles to reduce the potential to generate particulates. If possible, soil stockpiles will be placed in areas that are shielded from prevailing winds. During transport of impacted soil off-Site, transport trucks will cover their loads with a wind dust cover to reduce the potential for generating particulates. Excavation activities will not be conducted in times of high wind conditions (i.e., winds exceeding 25 miles per hour in excess of 15 minutes).

Work will be stopped if wind speeds exceed 25 miles per hour sustained for 15 minutes or longer. Work will resume when wind speeds have decreased to less than 25 miles per hour on a sustained basis.

Additional control measures are listed section 5, Dust Monitoring Plan.

### 4.4.2 Stockpile Management

Soil material will be placed in containers and stockpiles as appropriate. Stockpiles may be placed directly on relatively impermeable surfaces such as asphalt and concrete, if available. Polyethylene sheeting will be placed between exposed earth and stockpile soils. Each stockpile not contained in a roll-off bin will be covered with polyethylene sheeting, and a perimeter berm will be constructed to minimize the possibility of stormwater run-on or runoff that would be a mechanism for transporting potentially-impacted soils. In addition, the sheeting for stockpiles potentially exposed to precipitation will be anchored to the berm. Stockpile covers and berms will be maintained until the soil is characterized and disposed. Containers and stockpiles will be profiled in accordance with the section shown below.

During stockpiling of soils, fugitive dust will be mitigated by spraying the stockpiles with water, and keeping the stockpiles covered with sheet plastic when not in use.

### 4.4.3 Container and Stockpile Sampling and Analysis

Each roll-off bin or stockpile generated during work will be sampled for waste profiling purposes. Arrangements for appropriate off-Site disposal will be made accordingly.

**Container Sampling**

For 8- and 20-cubic-yard roll-off bins, collect two discrete soil samples from at or near the centroids of each half of the bin, at a minimum.

**Stockpile Sampling**

In general, the number of stockpile samples will be determined in accordance with the following, and any other facility requirements.

- Collect a minimum of two discrete random soil samples from stockpiles that are 100 cubic yards or less in volume.
- Collect one additional soil sample per 100 cubic yards of stockpiled material between 100 and 500 cubic yards of soil.

Discrete samples will be collected from random locations within the stockpile. Because stockpile geometry may vary considerably, professional judgment should be used in selecting discrete sampling locations with the objective of generating representative analytical data. Samples will be collected using a hand auger or similar equipment. Samples should not be collected from depths less than 12 inches from the exposed surface

of the stockpile. Discrete samples should not be combined (composited) but, rather, should be kept discrete for waste classification and testing.

#### 4.4.4 Waste Profiling

Prior to loading and transportation from the Site to the disposal facility, impacted soil excavated will be profiled according to the requirements of the disposal facility. Based on the findings of previous investigations in the vicinity of the Development Area, it is anticipated that the profile samples will be analyzed for the following:

- TPH by EPA method 8015M;
- VOCs by EPA method 8021;
- CAM 17 Metals by EPA method 6010B/7400;
- Soluble metals by the waste extraction test (WET) for individual metals that exceed 10 times the associated California Code of Regulations (CCR) Title 22 Total Threshold Limit Concentration (TTLC); and
- PAHs by EPA 8270.

Profiling will be accomplished by submitting analytical data from stockpile samples collected during material handling. If additional profiling is required from the stockpiled soil, sample frequency as well as possible additional selected analysis methods will be chosen based upon requests by the disposal facility.

The samples will be collected using a hand trowel, placed in 8-ounce glass jars, and placed in coolers for shipment. Chain-of-custody records are used to document sample collection and shipment to laboratory for analysis. Each cooler containing samples for analyses will be accompanied by a chain-of-custody record. The chain-of-custody record will identify the contents of each shipment and maintain the custodial integrity of the samples.

#### 4.4.5 Waste Transportation and Disposal

During transport or off-Site disposal activities, trucks will enter the Site assisted by a flag person to affect safe entry onto the Site. Trucks will be temporarily staged on-Site outside of the excavation area, trucks not certified as clean diesel will not be allowed to idle in the staging area but rather start and stop the engine to minimize atmospheric impacts and facilitate communication with the truck boss. As one truck is loaded and departs the Site, the next truck will move into the soil staging area to be loaded. Vehicles on the property will be required to maintain slow speeds (i.e., less than 5 miles per hour) for safety purposes and for dust control measures.

Before exiting the work area, the vehicle's tires will be inspected to ensure that soil remains on-Site. The cleanup/decontamination area will be established as close to the loading area as possible to minimize spreading of soil. Before trucks leave the Site, the contractor will be responsible for inspecting each truck to ensure that the payloads are adequately covered, the trucks are brushed clean of soil that may have fallen on the outside of the truck, and that the soil is properly manifested.

The trucks will vacate the property with the assistance of a flag person so drivers can safely merge into traffic.

Transportation of waste soil will be conducted under appropriate manifest, for the type of disposition. Disposal of waste will be in accordance with applicable State and Federal waste regulations, including the Resource Conservation and Recovery Act (RCRA).

Waste manifests, whether hazardous or non-hazardous, will be completed and signed by an authorized owner representative.

#### 4.4.6 Decontamination

Entry to the work area where the contaminated materials are encountered should be limited to essential personnel to avoid unnecessary exposure and related transfer of potential impacted soil. In unavoidable circumstances, equipment or truck(s) should be decontaminated in a designated decontamination area before leaving the Site.

Disposable equipment intended for one time use will not be decontaminated, but will be packaged for appropriate disposal. Relatively small equipment that comes into direct contact with potentially impacted soil or water will be decontaminated as described below.

1. Non-phosphate detergent and tap water wash, using a brush if necessary
2. Tap-water rinse
3. Initial deionized/distilled water rinse

Decontamination will occur prior to and after each designated use of a piece of equipment. Larger equipment, such as trucks and excavators that come into direct contact with potentially impacted soil or water will be decontaminated prior to leaving the Site to prevent the off-Site tracking of impacted soil. Trucks will be visually inspected before leaving the Site and any dirt adhering to the exterior surfaces will be brushed off and collected on plastic sheeting. The storage bins or beds of the trucks will be inspected to

ensure the loads are properly covered and secured. Excavation equipment surfaces will also be brushed off prior to removing it from the exclusion zone.

Equipment will be decontaminated in a pre-designated area on pallets or plastic sheeting. After decontamination, large-sized equipment shall be stored on plastic sheeting in non-impacted areas. Decontaminated small-sized equipment shall be stored in plastic bags. Any materials to be stored for more than a few hours shall also be covered.

Decontamination wash water will be collected and stored in drums, labeled, and profiled as potentially hazardous waste.

#### 4.4.7 Recordkeeping

Documentation of field conditions and mitigation procedures will be noted in daily field reports. Field notes will document where, when, how, and from whom project information was obtained. Entries will be complete and accurate enough to permit reconstruction of field activities.

Entries of activities will be recorded daily in the field notes and at a minimum will include the following:

- Site name and address;
- Recorder's name;
- Team members and their responsibilities;
- Time of Site arrival and time of departure from the Site;
- Other personnel on-Site;
- Summary of any on-Site meetings;
- Quantity of soils excavated and general description of soil and soil location;
- Quantity of soils temporarily stored on-Site, showing a sketch of the stockpile locations;
- Type and quantity of soils shipped by each transporter and manifest numbers associated with shipments;
- Deviations from this SMP;
- Personnel records;
- Monitoring results/records;
- Wind direction and relative speed;
- Levels of safety protection; and
- Calibration readings for any equipment used, and equipment model and serial numbers.

# 5.0 DUST MONITORING PLAN

This Dust Monitoring Plan (DMP) describes air monitoring for particulate matter (fugitive dust) during implementation of the VOC and TPH-impacted soil excavation activities at the Site in Santa Fe Springs, California. The dust monitoring activities will be conducted to:

- Comply with the AQMD Rule 403 as amended 3 June 2005; and
- Protect worker and community health.

Specifically, this DMP includes descriptions of:

- The Site and the proposed excavation and soil management activities;
- Implementation of AQMD Rule 403 monitoring;
- AQMD Rule 403 dust mitigation actions;
- AQMD Rule 403 recordkeeping requirements;
- Action levels for worker and community health;
- Implementation of worker and community health dust monitoring;
- Worker and community health dust mitigation actions; and
- Other worker and community health recordkeeping.

A copy of AQMD Rule 403 is presented in **Appendix H** of the RAP.

## 5.1 Soil Excavation and Management

It is proposed that heavy excavation equipment such as excavators, backhoes, front-end loaders, and scrapers will be used during this operation. Excavated soils will be temporarily stockpiled in an on-Site staging area for which will be placed in trucks under manifest for transport to an appropriately regulated facility.

## 5.2 Adjacent Properties

The Site is bordered on all sides by commercial and industrial properties. Residential properties lie within approximately 1/2-mile distance from the Site.

## 5.3 AQMD Rule 403 Monitoring

The purpose of Rule 403 is to reduce the amount of particulate matter entrained in the ambient air as a result of anthropogenic fugitive dust sources by requiring actions to prevent, reduce, or mitigate fugitive dust emissions. Rule 403 applies to the soil remediation activities since excavating and backfilling can generate fugitive dust. The Site

is considered to be a "small site" under this Rule, based on the criteria that the disturbed area is less than 50 acres and that more than 5,000 cubic yards will not be exported on three or more days within one year. As outlined in Rule 403, "small" sites need only follow Table 1 of Rule 403.

In order to comply with Table 1 of Rule 403, the following measures will be implemented:

- Conduct observations for visible dust;
- Prevent dust from remaining visible in the atmosphere beyond the fence line of the Site;
- Minimize dust generation by using best available control measures; and
- Mitigate visible fugitive dust, if detected.

The AQMD Rule 403 (d) (3) states that no person shall cause or allow PM10 (particulate matter less than 10 microns in diameter) levels to exceed 50 micrograms per cubic meter ($\mu g/m^3$) when measured over a 5-hour period. The PM10 levels are determined by weighing the difference between upwind and downwind samples captured by high volume particulate filters over a 5-hour period. At its discretion, AQMD may conduct particulate sampling at any site where fugitive dust emissions are suspected.

### 5.3.1 Observations

In general, the approach to Rule 403 monitoring will be to implement routine dust control measures identified as best available control measures in Table 1 of the AQMD Rule 403 Handbook. The excavation contractor will be responsible for implementing dust control measures on a daily basis. Murex will be present to observe the excavation and soil management activities, and conduct air monitoring and recordkeeping activities, and will immediately notify the excavation contractor if visible dust emissions exceed 100 feet in length in any direction.

### 5.3.2 Dust Control Measures

As described in Table 1 of the Rule 403 Handbook, the following best available control measures will be conducted during the excavation activities:

- Pre-apply water to depth of proposed cuts.
- Re-apply water as necessary to maintain soils in a damp condition to ensure that visible emissions do not exceed 100 feet in any direction. An odor suppressant may also be used that act as an additional control agent for fugitive dust generation.

If visible dust is observed, the excavation contractor will implement dust control mitigation measures as summarized in Table 2 of Rule 403; which includes increasing dust control measures until no visible dust is observed. If additional watering is conducted and is ineffective or cannot be implemented satisfactorily (e.g., with no runoff or discharge from the Site), then these operations will be discontinued and alternative dust suppression measures will be implemented.

### 5.3.3 Recordkeeping

The AQMD does not require record keeping on sites defined by Rule 403 as "small" sites. However, Murex personnel will take field notes to document the observed field activities.

## 5.4 Site-Specific Worker and Community Health Air Quality Monitoring

During soil excavation and stockpiling activities, ambient air monitoring will be implemented to:

- Monitor potential on-Site impacts to ambient air from the work activities,
- Monitor potential off-Site (community) impacts during the work activities, and
- Assess whether mitigation measures are necessary to protect worker and/or community health.

### 5.4.1 Site Perimeter and Occupied Areas Air Quality Monitoring Calculations

TPH, VOCs, PAHs, and heavy metals may be bound to dust particles emitted from the Site during excavation activities. As such, particulate matter (PM) concentration levels have been derived for the protection of onsite workers and the community.

Rule 403 specifies that the perimeter PM action level for nuisance dust monitoring is 0.05 $mg/m^3$ greater than the measured upwind background level, based on a 15-minute time weighted average. To ensure that this concentration is protective enough for fugitive dust generated from impacted soil at the Site, the concentration was compared to separate PM concentration calculations developed for benz(a)anthracene, benzo(a)pyrene, dibenz(ah)anthracene, arsenic, and lead. A PM level of 0.05 $mg/m^3$ was used as the limit for fenceline concentrations for off-site residents and level of 5 $mg/m^3$ was used for on-site workers (industrial). The PM concentrations protective of chemical exposure based on the maximum soil concentration for each of the four areas were calculated using the following equation:

$$PM_{PCE} = RSL/[C_{maxsoil} \times (10^{-6}\ mg/kg) \times (1000\ \mu g/mg)]$$

Where $PM_{PCE}$ is the PM concentration protective of chemical exposure (mg/m$^3$), RSL is either the residential or industrial air risk-based screening level (mg/kg), and $C_{maxsoil}$ is the maximum soil concentration for the site area (mg/kg). The USEPA air RSLs are used for each chemical except arsenic and lead. For arsenic, the residential and industrial air RSLs are estimated using the CalEPA IUR for arsenic (CalEPA, 2012). For lead, the USEPA National Ambient Air Quality Standard (NAAQS) for lead of 0.15 µg/m$^3$ was used for both the residential and industrial exposure scenarios.

If the $PM_{PCE}$ is greater than or equal to the respective PM level, then the air concentrations for a particular chemical are expected to be at or below the respective RSL when the PM concentrations are at or below the respective PM dust level. For example, under a residential scenario, the maximum soil concentration of benzo(a)pyrene in Area 1 of 5.2 mg/kg results in a PM concentration protective of chemical exposure of 0.17 mg/m$^3$, which is higher than the residential PM level of 0.05 mg/m$^3$. This means that when PM concentrations are at or below 0.05 mg/m$^3$, the benzo(a)pyrene air concentrations are expected to be below the residential RSL of 0.00087 µg/m$^3$. The PM concentrations protective of human health for residential and industrial exposures are presented in **Tables I and II**.

In addition, the maximum soil concentration protective of the residential and industrial inhalation pathways at the respective PM concentration were calculated for each chemical using the following equation:

$$C_{soilPM} = [RSL \times (0.001\ mg/\mu g)]/[PM \times (10^{-6}\ kg/mg)]$$

Where $C_{soilPM}$ is the maximum soil concentration protective of the inhalation pathway at the PM level (mg/kg); RSL is the residential or industrial RSL (mg/m$^3$); and PM is the residential or industrial PM level (0.05 or 5 mg/m$^3$, respectively). This soil concentration is the greatest level that would result in an air concentration for a chemical that is below its respective RSL when the PM concentration is at the respective PM level.

### 5.4.2 Equipment

A MIE Personal DataRAM (or equivalent) will be used for monitoring total dust and to assess the Site perimeter and worker action levels. The DataRAM is a portable real time particulate monitor with a concentration measurement range of 0.001 milligrams per cubic meter (mg/m$^3$) to 400 mg/m$^3$ at an accuracy of ±5%. This instrument has a particulate size range of maximum response of 0.1 to 10 microns. The calibration performed by the DataRAM manufacturer will be verified using a certified calibration bag at the beginning of each workday in accordance with the procedures specified by the manufacturer. Calibration logs will be maintained for each day.

A Noavalynx Model 110-WS-16 modular weather station (or equivalent) will be used to record wind speed, wind direction, temperature, relative humidity, and barometric pressure. The weather station can record wind speeds from 0 to 99.9 mph with an accuracy of ±3%. The weather station will be set up in a location near the soil remediation areas where interference from structures or trees will be minimal.

### 5.4.3 Measurement Frequency and Locations

Measurements will be taken throughout the workday as described in the following sections.

**Site Perimeter**

Dust level measurement frequency for Site perimeters will be every 15 minutes during work activities. The 15-minute time weighted average (TWA15) dust concentration will be recorded by the DataRAMs.

Measurement locations at Site perimeters will be based on prevailing wind direction with monitoring points established within 5 to 15 degrees of the measured upwind/downwind direction. Monitoring locations may be moved throughout the day based on wind direction. Perimeter monitoring locations include:

- One upwind location just inside the property boundary, and
- One downwind location just inside the property boundary.

**Areas Occupied by Workers**

Dust level measurement frequency for areas occupied by workers will be continuous. When the 5 $mg/m^3$ action level is detected in the work area, an audible alarm will sound. Readings will be then monitored for a 5-minute period to determine if the measurement above the action level is sustained. Similarly, if the 15 $mg/m^3$ action level is reached in the work area, an audible alarm will sound and then readings will be monitored for 5 minutes to determine if levels are sustained.

### 5.4.4 Mitigation Measures

If Site action levels are reached, the mitigation measures described below will be implemented.

**Site Perimeter**

If the difference in the TWA15 total dust readings between the upwind and downwind fence line locations is greater than 0.05 $mg/m^3$, excavation activities will be stopped and

dust suppression activities will be conducted until the TWA15 total dust readings are less than the action level.

**Areas Occupied by Workers**

If the total dust readings in the work areas are greater than 5 mg/m$^3$ sustained for more than five minutes, dust suppression activities will be conducted. If the readings are greater than 15 mg/m$^3$ sustained for greater than 5 minutes following dust suppression activities, the excavation activities will be stopped and workers will leave the work area (exclusion zone defined by the HASP), or workers shall don full-face air-purifying respirators supplied with HEPA cartridges, until dust levels are reduced. Specific personal protective equipment (PPE) is identified in the HASP.

### 5.4.5 Recordkeeping

The instruments will be calibrated at the beginning of each workday and the time and name of field personnel will be recorded. In addition, weather conditions at the Site will be recorded each day. Measurements will be documented for each reading at each designated monitoring location.

The following information will be recorded for each instrument reading:

- Date and time of reading,
- Reading location (e.g., upwind, downwind),
- Reading zone (e.g., upwind, downwind), and
- Concentration reading.

## 6.0 REFERENCES

1. Haley & Aldrich, Inc. 2005. *Additional Site Investigation Workplan, Cenco Refining Company*, 12345 Lakeland Road, Santa Fe Springs, California. Prepared for Isola & Bowers, LLP. May 9.

**Table I. Estimation of PM Concentrations Protective of Chemical Exposures for Residential Exposure (Fenceline)**

| Chemical | Maximum Soil Concentration (mg/kg) | | | | PM Concentration ($mg/m^3$) | Residential Air RSL ($\mu g/m^3$)[a] | PM Concentration Protective of Chemical Exposure ($mg/m^3$)[b] | | | | Max Soil Concentration Protective of Residential Inhalation Pathway at PM Level (mg/kg)[c] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | **Area 1** | **Area 2** | **Area 3** | **Area 4** | | | **Area 1** | **Area 2** | **Area 3** | **Area 4** | |
| Benz(a)anthracene | 7.2 | 11 | 7.4 | 1.03 | 0.05 | 8.70E-03 | 1.2 | 0.79 | 1.2 | 8.4 | 174 |
| Benzo(a)pyrene | 5.2 | 5.9 | 5.1 | 0.83 | 0.05 | 8.70E-04 | 0.17 | 0.15 | 0.17 | 1.0 | 17.4 |
| Dibenz(ah)anthracene | 0.53 | 0.57 | 3.5 | 0.62 | 0.05 | 8.00E-04 | 1.5 | 1.4 | 0.23 | 1.3 | 16.0 |
| Arsenic | 13.5 | 28.1 | 40.9 | 11.9 | 0.05 | 4.40E-04 | **0.033** | **0.016** | **0.011** | **0.037** | 8.8 |
| Lead | 4240 | 4690 | 47300 | 3810 | 0.05 | 1.50E-01 | **0.035** | **0.032** | **0.0032** | **0.039** | 3000 |

a Value for arsenic calculated based on Cal-EPA toxicity criteria; Value for lead is NAAQS of 0.15 $\mu g/m^3$.

b Values in bold are less than the PM dust level of 0.05 $mg/m^3$ indicating that the air concentration associated with the maximum soil concentration for the area may exceed the residential air RSL.
c The soil concentration that results in an air concentration less than the residential air RSL when the dust is at the PM dust level of 0.05 $mg/m^3$.

PM Concentration Protective of Chemical Exposure = (Residential Air RSL)/[(Maximum Soil Concentration) x (1E-6 mg/kg) x (1000 µg/mg)]
Max Soil Concentration Protective of Residential Inhalation Pathway at PM Level = [Residential Air RSL x (0.001 mg/µg) ]/[PM Concentration x (1E-6 kg/mg)]

**Table II. Estimation of PM Concentrations Protective of Chemical Exposures for Commercial/Industrial Exposure (on-site)**

| Chemical | Maximum Soil Concentration (mg/kg) | | | | PM Concentration ($mg/m^3$) | Industrial Air RSL ($\mu g/m^3$)[a] | PM Concentration Protective of Chemical Exposure ($mg/m^3$)[b] | | | | Max Soil Concentration Protective of Industrial Inhalation Pathway at PM Level (mg/kg)[c] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | **Area 1** | **Area 2** | **Area 3** | **Area 4** | | | **Area 1** | **Area 2** | **Area 3** | **Area 4** | |
| Benz(a)anthracene | 7.2 | 11 | 7.4 | 1.03 | 5 | 1.10E-01 | 15 | 10 | 15 | 107 | 22.0 |
| Benzo(a)pyrene | 5.2 | 5.9 | 5.1 | 0.83 | 5 | 1.10E-02 | **2.1** | **1.9** | **2.2** | 13 | 2.2 |
| Dibenz(ah)anthracene | 0.53 | 0.57 | 3.5 | 0.62 | 5 | 1.00E-02 | 19 | 18 | **2.9** | 16 | 2.0 |
| Arsenic | 13.5 | 28.1 | 40.9 | 11.9 | 5 | 2.90E-03 | **0.21** | **0.10** | **0.071** | **0.24** | 0.58 |
| Lead | 4240 | 4690 | 47300 | 3810 | 5 | 1.50E-01 | **0.035** | **0.032** | **0.0032** | **0.039** | 30.0 |

a Value for arsenic calculated based on Cal-EPA toxicity criteria; Value for lead is NAAQS of 0.15 $\mu g/m^3$.

b Values in bold are less than the PM dust level of 5 $mg/m^3$ indicating that the air concentration associated with the maximum soil concentration for the area may exceed the industrial air RSL.
c The soil concentration that results in an air concentration less than the residential air RSL when the dust is at the nuisance dust level of 5 $mg/m^3$.

PM Concentration Protective of Chemical Exposure = (Industrial Air RSL)/[(Maximum Soil Concentration) x (1E-6 mg/kg) x (1000 µg/mg)]
Max Soil Concentration Protective of Industrial Inhalation Pathway at PM Level = [Industrial Air RSL x (0.001 mg/µg) ]/[PM Concentration x (1E-6 kg/mg)]

**Particulate Monitoring Form**
**Former Powerine Refinery**
**12345 Lakeland Road, Santa Fe Springs, California**

**Date:** **Recorded by:**

| Time | Wind Direction/ Speed | Upwind | | Downwind | | Difference | |
|---|---|---|---|---|---|---|---|
| | | Concentration ($mg/m^3$) | TWA ($mg/m^3$) | Concentration ($mg/m^3$) | TWA ($mg/m^3$) | Concentration ($mg/m^3$) | TWA ($mg/m^3$) |
| | | | | | | | |
| | | | | | | | |
| | | | | | | |

# APPENDIX H
# SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT RULE 403

(Adopted May 7, 1976) (Amended November 6, 1992)
(Amended July 9, 1993) (Amended February 14, 1997)
(Amended December 11, 1998)(Amended April 2, 2004)
(Amended June 3, 2005)

**RULE 403. FUGITIVE DUST**

(a) Purpose

The purpose of this Rule is to reduce the amount of particulate matter entrained in the ambient air as a result of anthropogenic (man-made) fugitive dust sources by requiring actions to prevent, reduce or mitigate fugitive dust emissions.

(b) Applicability

The provisions of this Rule shall apply to any activity or man-made condition capable of generating fugitive dust.

(c) Definitions

(1) ACTIVE OPERATIONS means any source capable of generating fugitive dust, including, but not limited to, earth-moving activities, construction/demolition activities, disturbed surface area, or heavy- and light-duty vehicular movement.

(2) AGGREGATE-RELATED PLANTS are defined as facilities that produce and / or mix sand and gravel and crushed stone.

(3) AGRICULTURAL HANDBOOK means the region-specific guidance document that has been approved by the Governing Board or hereafter approved by the Executive Officer and the U.S. EPA. For the South Coast Air Basin, the Board-approved region-specific guidance document is the Rule 403 Agricultural Handbook dated December 1998. For the Coachella Valley, the Board-approved region-specific guidance document is the Rule 403 Coachella Valley Agricultural Handbook dated April 2, 2004.

(4) ANEMOMETERS are devices used to measure wind speed and direction in accordance with the performance standards, and maintenance and calibration criteria as contained in the most recent Rule 403 Implementation Handbook.

(5) BEST AVAILABLE CONTROL MEASURES means fugitive dust control actions that are set forth in Table 1 of this Rule.

(6) BULK MATERIAL is sand, gravel, soil, aggregate material less than two inches in length or diameter, and other organic or inorganic particulate matter.

(7) CEMENT MANUFACTURING FACILITY is any facility that has a cement kiln at the facility.

(8) CHEMICAL STABILIZERS are any non-toxic chemical dust suppressant which must not be used if prohibited for use by the Regional Water Quality Control Boards, the California Air Resources Board, the U.S. Environmental Protection Agency (U.S. EPA), or any applicable law, rule or regulation. The chemical stabilizers shall meet any specifications, criteria, or tests required by any federal, state, or local water agency. Unless otherwise indicated, the use of a non-toxic chemical stabilizer shall be of sufficient concentration and application frequency to maintain a stabilized surface.

(9) COMMERCIAL POULTRY RANCH means any building, structure, enclosure, or premises where more than 100 fowl are kept or maintained for the primary purpose of producing eggs or meat for sale or other distribution.

(10) CONFINED ANIMAL FACILITY means a source or group of sources of air pollution at an agricultural source for the raising of 3,360 or more fowl or 50 or more animals, including but not limited to, any structure, building, installation, farm, corral, coop, feed storage area, milking parlor, or system for the collection, storage, or distribution of solid and liquid manure; if domesticated animals, including horses, sheep, goats, swine, beef cattle, rabbits, chickens, turkeys, or ducks are corralled, penned, or otherwise caused to remain in restricted areas for commercial agricultural purposes and feeding is by means other than grazing.

(11) CONSTRUCTION/DEMOLITION ACTIVITIES means any on-site mechanical activities conducted in preparation of, or related to, the building, alteration, rehabilitation, demolition or improvement of property, including, but not limited to the following activities: grading, excavation, loading, crushing, cutting, planing, shaping or ground breaking.

(12) CONTRACTOR means any person who has a contractual arrangement to conduct an active operation for another person.

(13) DAIRY FARM is an operation on a property, or set of properties that are contiguous or separated only by a public right-of-way, that raises cows or

produces milk from cows for the purpose of making a profit or for a livelihood. Heifer and calf farms are dairy farms.

(14) DISTURBED SURFACE AREA means a portion of the earth's surface which has been physically moved, uncovered, destabilized, or otherwise modified from its undisturbed natural soil condition, thereby increasing the potential for emission of fugitive dust. This definition excludes those areas which have:

(A) been restored to a natural state, such that the vegetative ground cover and soil characteristics are similar to adjacent or nearby natural conditions;

(B) been paved or otherwise covered by a permanent structure; or

(C) sustained a vegetative ground cover of at least 70 percent of the native cover for a particular area for at least 30 days.

(15) DUST SUPPRESSANTS are water, hygroscopic materials, or non-toxic chemical stabilizers used as a treatment material to reduce fugitive dust emissions.

(16) EARTH-MOVING ACTIVITIES means the use of any equipment for any activity where soil is being moved or uncovered, and shall include, but not be limited to the following: grading, earth cutting and filling operations, loading or unloading of dirt or bulk materials, adding to or removing from open storage piles of bulk materials, landfill operations, weed abatement through disking, and soil mulching.

(17) DUST CONTROL SUPERVISOR means a person with the authority to expeditiously employ sufficient dust mitigation measures to ensure compliance with all Rule 403 requirements at an active operation.

(18) FUGITIVE DUST means any solid particulate matter that becomes airborne, other than that emitted from an exhaust stack, directly or indirectly as a result of the activities of any person.

(19) HIGH WIND CONDITIONS means that instantaneous wind speeds exceed 25 miles per hour.

(20) INACTIVE DISTURBED SURFACE AREA means any disturbed surface area upon which active operations have not occurred or are not expected to occur for a period of 20 consecutive days.

(21) LARGE OPERATIONS means any active operations on property which contains 50 or more acres of disturbed surface area; or any earth-moving operation with a daily earth-moving or throughput volume of 3,850 cubic

meters (5,000 cubic yards) or more three times during the most recent 365-day period.

(22) OPEN STORAGE PILE is any accumulation of bulk material, which is not fully enclosed, covered or chemically stabilized, and which attains a height of three feet or more and a total surface area of 150 or more square feet.

(23) PARTICULATE MATTER means any material, except uncombined water, which exists in a finely divided form as a liquid or solid at standard conditions.

(24) PAVED ROAD means a public or private improved street, highway, alley, public way, or easement that is covered by typical roadway materials, but excluding access roadways that connect a facility with a public paved roadway and are not open to through traffic. Public paved roads are those open to public access and that are owned by any federal, state, county, municipal or any other governmental or quasi-governmental agencies. Private paved roads are any paved roads not defined as public.

(25) $PM_{10}$ means particulate matter with an aerodynamic diameter smaller than or equal to 10 microns as measured by the applicable State and Federal reference test methods.

(26) PROPERTY LINE means the boundaries of an area in which either a person causing the emission or a person allowing the emission has the legal use or possession of the property. Where such property is divided into one or more sub-tenancies, the property line(s) shall refer to the boundaries dividing the areas of all sub-tenancies.

(27) RULE 403 IMPLEMENTATION HANDBOOK means a guidance document that has been approved by the Governing Board on April 2, 2004 or hereafter approved by the Executive Officer and the U.S. EPA.

(28) SERVICE ROADS are paved or unpaved roads that are used by one or more public agencies for inspection or maintenance of infrastructure and which are not typically used for construction-related activity.

(29) SIMULTANEOUS SAMPLING means the operation of two $PM_{10}$ samplers in such a manner that one sampler is started within five minutes of the other, and each sampler is operated for a consecutive period which must be not less than 290 minutes and not more than 310 minutes.

(30) SOUTH COAST AIR BASIN means the non-desert portions of Los Angeles, Riverside, and San Bernardino counties and all of Orange

County as defined in California Code of Regulations, Title 17, Section 60104. The area is bounded on the west by the Pacific Ocean, on the north and east by the San Gabriel, San Bernardino, and San Jacinto Mountains, and on the south by the San Diego county line.

(31) STABILIZED SURFACE means any previously disturbed surface area or open storage pile which, through the application of dust suppressants, shows visual or other evidence of surface crusting and is resistant to wind-driven fugitive dust and is demonstrated to be stabilized. Stabilization can be demonstrated by one or more of the applicable test methods contained in the Rule 403 Implementation Handbook.

(32) TRACK-OUT means any bulk material that adheres to and agglomerates on the exterior surface of motor vehicles, haul trucks, and equipment (including tires) that have been released onto a paved road and can be removed by a vacuum sweeper or a broom sweeper under normal operating conditions.

(33) TYPICAL ROADWAY MATERIALS means concrete, asphaltic concrete, recycled asphalt, asphalt, or any other material of equivalent performance as determined by the Executive Officer, and the U.S. EPA.

(34) UNPAVED ROADS means any unsealed or unpaved roads, equipment paths, or travel ways that are not covered by typical roadway materials. Public unpaved roads are any unpaved roadway owned by federal, state, county, municipal or other governmental or quasi-governmental agencies. Private unpaved roads are all other unpaved roadways not defined as public.

(35) VISIBLE ROADWAY DUST means any sand, soil, dirt, or other solid particulate matter which is visible upon paved road surfaces and which can be removed by a vacuum sweeper or a broom sweeper under normal operating conditions.

(36) WIND-DRIVEN FUGITIVE DUST means visible emissions from any disturbed surface area which is generated by wind action alone.

(37) WIND GUST is the maximum instantaneous wind speed as measured by an anemometer.

(d) Requirements

(1) No person shall cause or allow the emissions of fugitive dust from any active operation, open storage pile, or disturbed surface area such that:

(A) the dust remains visible in the atmosphere beyond the property line of the emission source; or

(B) the dust emission exceeds 20 percent opacity (as determined by the appropriate test method included in the Rule 403 Implementation Handbook), if the dust emission is the result of movement of a motorized vehicle.

(2) No person shall conduct active operations without utilizing the applicable best available control measures included in Table 1 of this Rule to minimize fugitive dust emissions from each fugitive dust source type within the active operation.

(3) No person shall cause or allow $PM_{10}$ levels to exceed 50 micrograms per cubic meter when determined, by simultaneous sampling, as the difference between upwind and downwind samples collected on high-volume particulate matter samplers or other U.S. EPA-approved equivalent method for $PM_{10}$ monitoring. If sampling is conducted, samplers shall be:

(A) Operated, maintained, and calibrated in accordance with 40 Code of Federal Regulations (CFR), Part 50, Appendix J, or appropriate U.S. EPA-published documents for U.S. EPA-approved equivalent method(s) for $PM_{10}$.

(B) Reasonably placed upwind and downwind of key activity areas and as close to the property line as feasible, such that other sources of fugitive dust between the sampler and the property line are minimized.

(4) No person shall allow track-out to extend 25 feet or more in cumulative length from the point of origin from an active operation. Notwithstanding the preceding, all track-out from an active operation shall be removed at the conclusion of each workday or evening shift.

(5) No person shall conduct an active operation with a disturbed surface area of five or more acres, or with a daily import or export of 100 cubic yards or more of bulk material without utilizing at least one of the measures listed in subparagraphs (d)(5)(A) through (d)(5)(E) at each vehicle egress from the site to a paved public road.

(A) Install a pad consisting of washed gravel (minimum-size: one inch) maintained in a clean condition to a depth of at least six inches and extending at least 30 feet wide and at least 50 feet long.

(B) Pave the surface extending at least 100 feet and at least 20 feet wide.

(C) Utilize a wheel shaker/wheel spreading device consisting of raised dividers (rails, pipe, or grates) at least 24 feet long and 10 feet wide to remove bulk material from tires and vehicle undercarriages before vehicles exit the site.

(D) Install and utilize a wheel washing system to remove bulk material from tires and vehicle undercarriages before vehicles exit the site.

(E) Any other control measures approved by the Executive Officer and the U.S. EPA as equivalent to the actions specified in subparagraphs (d)(5)(A) through (d)(5)(D).

(6) Beginning January 1, 2006, any person who operates or authorizes the operation of a confined animal facility subject to this Rule shall implement the applicable conservation management practices specified in Table 4 of this Rule.

(e) Additional Requirements for Large Operations

(1) Any person who conducts or authorizes the conducting of a large operation subject to this Rule shall implement the applicable actions specified in Table 2 of this Rule at all times and shall implement the applicable actions specified in Table 3 of this Rule when the applicable performance standards can not be met through use of Table 2 actions; and shall:

(A) submit a fully executed Large Operation Notification (Form 403 N) to the Executive Officer within 7 days of qualifying as a large operation;

(B) include, as part of the notification, the name(s), address(es), and phone number(s) of the person(s) responsible for the submittal, and a description of the operation(s), including a map depicting the location of the site;

(C) maintain daily records to document the specific dust control actions taken, maintain such records for a period of not less than three years; and make such records available to the Executive Officer upon request;

(D) install and maintain project signage with project contact signage that meets the minimum standards of the Rule 403 Implementation Handbook, prior to initiating any earthmoving activities;

(E) identify a dust control supervisor that:

(i) is employed by or contracted with the property owner or developer;

(ii) is on the site or available on-site within 30 minutes during working hours;

(iii) has the authority to expeditiously employ sufficient dust mitigation measures to ensure compliance with all Rule requirements;

(iv) has completed the AQMD Fugitive Dust Control Class and has been issued a valid Certificate of Completion for the class; and

(F) notify the Executive Officer in writing within 30 days after the site no longer qualifies as a large operation as defined by paragraph (c)(18).

(2) Any Large Operation Notification submitted to the Executive Officer or AQMD-approved dust control plan shall be valid for a period of one year from the date of written acceptance by the Executive Officer. Any Large Operation Notification accepted pursuant to paragraph (e)(1), excluding those submitted by aggregate-related plants and cement manufacturing facilities must be resubmitted annually by the person who conducts or authorizes the conducting of a large operation, at least 30 days prior to the expiration date, or the submittal shall no longer be valid as of the expiration date. If all fugitive dust sources and corresponding control measures or special circumstances remain identical to those identified in the previously accepted submittal or in an AQMD-approved dust control plan, the resubmittal may be a simple statement of no-change (Form 403NC).

(f) Compliance Schedule

The newly amended provisions of this Rule shall become effective upon adoption. Pursuant to subdivision (e), any existing site that qualifies as a large operation will have 60 days from the date of Rule adoption to comply with the notification and recordkeeping requirements for large operations. Any Large Operation

Notification or AQMD-approved dust control plan which has been accepted prior to the date of adoption of these amendments shall remain in effect and the Large Operation Notification or AQMD-approved dust control plan annual resubmittal date shall be one year from adoption of this Rule amendment.

(g) Exemptions

(1) The provisions of this Rule shall not apply to:

(A) Dairy farms.

(B) Confined animal facilities provided that the combined disturbed surface area within one continuous property line is one acre or less.

(C) Agricultural vegetative crop operations provided that the combined disturbed surface area within one continuous property line and not separated by a paved public road is 10 acres or less.

(D) Agricultural vegetative crop operations within the South Coast Air Basin, whose combined disturbed surface area includes more than 10 acres provided that the person responsible for such operations:

(i) voluntarily implements the conservation management practices contained in the Rule 403 Agricultural Handbook;

(ii) completes and maintains the self-monitoring form documenting sufficient conservation management practices, as described in the Rule 403 Agricultural Handbook; and

(iii) makes the completed self-monitoring form available to the Executive Officer upon request.

(E) Agricultural vegetative crop operations outside the South Coast Air Basin whose combined disturbed surface area includes more than 10 acres provided that the person responsible for such operations:

(i) voluntarily implements the conservation management practices contained in the Rule 403 Coachella Valley Agricultural Handbook; and

(ii) completes and maintains the self-monitoring form documenting sufficient conservation management practices, as described in the Rule 403 Coachella Valley Agricultural Handbook; and

(iii) makes the completed self-monitoring form available to the Executive Officer upon request.

(F) Active operations conducted during emergency life-threatening situations, or in conjunction with any officially declared disaster or state of emergency.

(G) Active operations conducted by essential service utilities to provide electricity, natural gas, telephone, water and sewer during periods of service outages and emergency disruptions.

(H) Any contractor subsequent to the time the contract ends, provided that such contractor implemented the required control measures during the contractual period.

(I) Any grading contractor, for a phase of active operations, subsequent to the contractual completion of that phase of earth-moving activities, provided that the required control measures have been implemented during the entire phase of earth-moving activities, through and including five days after the final grading inspection.

(J) Weed abatement operations ordered by a county agricultural commissioner or any state, county, or municipal fire department, provided that:

(i) mowing, cutting or other similar process is used which maintains weed stubble at least three inches above the soil; and

(ii) any discing or similar operation which cuts into and disturbs the soil, where watering is used prior to initiation of these activities, and a determination is made by the agency issuing the weed abatement order that, due to fire hazard conditions, rocks, or other physical obstructions, it is not practical to meet the conditions specified in clause (g)(1)(H)(i). The provisions this clause shall not exempt the owner of any property from stabilizing, in accordance with paragraph (d)(2), disturbed surface areas which have been created as a result of the weed abatement actions.

(K) sandblasting operations.

(2) The provisions of paragraphs (d)(1) and (d)(3) shall not apply:

(A) When wind gusts exceed 25 miles per hour, provided that:

(i) The required Table 3 contingency measures in this Rule are implemented for each applicable fugitive dust source type, and;

(ii) records are maintained in accordance with subparagraph (e)(1)(C).

(B) To unpaved roads, provided such roads:

(i) are used solely for the maintenance of wind-generating equipment; or

(ii) are unpaved public alleys as defined in Rule 1186; or

(iii) are service roads that meet all of the following criteria:

(a) are less than 50 feet in width at all points along the road;

(b) are within 25 feet of the property line; and

(c) have a traffic volume less than 20 vehicle-trips per day.

(C) To any active operation, open storage pile, or disturbed surface area for which necessary fugitive dust preventive or mitigative actions are in conflict with the federal Endangered Species Act, as determined in writing by the State or federal agency responsible for making such determinations.

(3) The provisions of (d)(2) shall not apply to any aggregate-related plant or cement manufacturing facility that implements the applicable actions specified in Table 2 of this Rule at all times and shall implement the applicable actions specified in Table 3 of this Rule when the applicable performance standards of paragraphs (d)(1) and (d)(3) can not be met through use of Table 2 actions.

(4) The provisions of paragraphs (d)(1), (d)(2), and (d)(3) shall not apply to:

(A) Blasting operations which have been permitted by the California Division of Industrial Safety; and

(B) Motion picture, television, and video production activities when dust emissions are required for visual effects. In order to obtain this exemption, the Executive Officer must receive notification in writing at least 72 hours in advance of any such activity and no nuisance results from such activity.

(5) The provisions of paragraph (d)(3) shall not apply if the dust control actions, as specified in Table 2, are implemented on a routine basis for

each applicable fugitive dust source type. To qualify for this exemption, a person must maintain records in accordance with subparagraph (e)(1)(C).

(6) The provisions of paragraph (d)(4) shall not apply to earth coverings of public paved roadways where such coverings are approved by a local government agency for the protection of the roadway, and where such coverings are used as roadway crossings for haul vehicles provided that such roadway is closed to through traffic and visible roadway dust is removed within one day following the cessation of activities.

(7) The provisions of subdivision (e) shall not apply to:

(A) officially-designated public parks and recreational areas, including national parks, national monuments, national forests, state parks, state recreational areas, and county regional parks.

(B) any large operation which is required to submit a dust control plan to any city or county government which has adopted a District-approved dust control ordinance.

(C) any large operation subject to Rule 1158, which has an approved dust control plan pursuant to Rule 1158, provided that all sources of fugitive dust are included in the Rule 1158 plan.

(8) The provisions of subparagraph (e)(1)(A) through (e)(1)(C) shall not apply to any large operation with an AQMD-approved fugitive dust control plan provided that there is no change to the sources and controls as identified in the AQMD-approved fugitive dust control plan.

(h) Fees

Any person conducting active operations for which the Executive Officer conducts upwind/downwind monitoring for $PM_{10}$ pursuant to paragraph (d)(3) shall be assessed applicable Ambient Air Analysis Fees pursuant to Rule 304.1. Applicable fees shall be waived for any facility which is exempted from paragraph (d)(3) or meets the requirements of paragraph (d)(3).

**TABLE 1**
**BEST AVAILABLE CONTROL MEASURES**
**(Applicable to All Construction Activity Sources)**

| Source Category | Control Measure | Guidance |
|---|---|---|
| Backfilling | 01-1 Stabilize backfill material when not actively handling; and<br>01-2 Stabilize backfill material during handling; and<br>01-3 Stabilize soil at completion of activity. | ✓ Mix backfill soil with water prior to moving<br>✓ Dedicate water truck or high capacity hose to backfilling equipment<br>✓ Empty loader bucket slowly so that no dust plumes are generated<br>✓ Minimize drop height from loader bucket |
| Clearing and grubbing | 02-1 Maintain stability of soil through pre-watering of site prior to clearing and grubbing; and<br>02-2 Stabilize soil during clearing and grubbing activities; and<br>02-3 Stabilize soil immediately after clearing and grubbing activities. | ✓ Maintain live perennial vegetation where possible<br>✓ Apply water in sufficient quantity to prevent generation of dust plumes |
| Clearing forms | 03-1 Use water spray to clear forms; or<br>03-2 Use sweeping and water spray to clear forms; or<br>03-3 Use vacuum system to clear forms. | ✓ Use of high pressure air to clear forms may cause exceedance of Rule requirements |
| Crushing | 04-1 Stabilize surface soils prior to operation of support equipment; and<br>04-2 Stabilize material after crushing. | ✓ Follow permit conditions for crushing equipment<br>✓ Pre-water material prior to loading into crusher<br>✓ Monitor crusher emissions opacity<br>✓ Apply water to crushed material to prevent dust plumes |

**TABLE 1**
**BEST AVAILABLE CONTROL MEASURES**
**(Applicable to All Construction Activity Sources)**

| Source Category | Control Measure | Guidance |
|---|---|---|
| Cut and fill | 05-1 Pre-water soils prior to cut and fill activities; and<br>05-2 Stabilize soil during and after cut and fill activities. | ✓ For large sites, pre-water with sprinklers or water trucks and allow time for penetration<br>✓ Use water trucks/pulls to water soils to depth of cut prior to subsequent cuts |
| Demolition – mechanical/manual | 06-1 Stabilize wind erodible surfaces to reduce dust; and<br>06-2 Stabilize surface soil where support equipment and vehicles will operate; and<br>06-3 Stabilize loose soil and demolition debris; and<br>06-4 Comply with AQMD Rule 1403. | ✓ Apply water in sufficient quantities to prevent the generation of visible dust plumes |
| Disturbed soil | 07-1 Stabilize disturbed soil throughout the construction site; and<br>07-2 Stabilize disturbed soil between structures | ✓ Limit vehicular traffic and disturbances on soils where possible<br>✓ If interior block walls are planned, install as early as possible<br>✓ Apply water or a stabilizing agent in sufficient quantities to prevent the generation of visible dust plumes |
| Earth-moving activities | 08-1 Pre-apply water to depth of proposed cuts; and<br>08-2 Re-apply water as necessary to maintain soils in a damp condition and to ensure that visible emissions do not exceed 100 feet in any direction; and<br>08-3 Stabilize soils once earth-moving activities are complete. | ✓ Grade each project phase separately, timed to coincide with construction phase<br>✓ Upwind fencing can prevent material movement on site<br>✓ Apply water or a stabilizing agent in sufficient quantities to prevent the generation of visible dust plumes |

**TABLE 1**
**BEST AVAILABLE CONTROL MEASURES**
**(Applicable to All Construction Activity Sources)**

| Source Category | Control Measure | Guidance |
|---|---|---|
| Importing/exporting of bulk materials | 09-1 Stabilize material while loading to reduce fugitive dust emissions; and<br>09-2 Maintain at least six inches of freeboard on haul vehicles; and<br>09-3 Stabilize material while transporting to reduce fugitive dust emissions; and<br>09-4 Stabilize material while unloading to reduce fugitive dust emissions; and<br>09-5 Comply with Vehicle Code Section 23114. | ✓ Use tarps or other suitable enclosures on haul trucks<br>✓ Check belly-dump truck seals regularly and remove any trapped rocks to prevent spillage<br>✓ Comply with track-out prevention/mitigation requirements<br>✓ Provide water while loading and unloading to reduce visible dust plumes |
| Landscaping | 10-1 Stabilize soils, materials, slopes | ✓ Apply water to materials to stabilize<br>✓ Maintain materials in a crusted condition<br>✓ Maintain effective cover over materials<br>✓ Stabilize sloping surfaces using soil binders until vegetation or ground cover can effectively stabilize the slopes<br>✓ Hydroseed prior to rain season |
| Road shoulder maintenance | 11-1 Apply water to unpaved shoulders prior to clearing; and<br>11-2 Apply chemical dust suppressants and/or washed gravel to maintain a stabilized surface after completing road shoulder maintenance. | ✓ Installation of curbing and/or paving of road shoulders can reduce recurring maintenance costs<br>✓ Use of chemical dust suppressants can inhibit vegetation growth and reduce future road shoulder maintenance costs |

**TABLE 1**
**BEST AVAILABLE CONTROL MEASURES**
**(Applicable to All Construction Activity Sources)**

| Source Category | Control Measure | Guidance |
|---|---|---|
| Screening | 12-1 Pre-water material prior to screening; and<br>12-2 Limit fugitive dust emissions to opacity and plume length standards; and<br>12-3 Stabilize material immediately after screening. | ✓ Dedicate water truck or high capacity hose to screening operation<br>✓ Drop material through the screen slowly and minimize drop height<br>✓ Install wind barrier with a porosity of no more than 50% upwind of screen to the height of the drop point |
| Staging areas | 13-1 Stabilize staging areas during use; and<br>13-2 Stabilize staging area soils at project completion. | ✓ Limit size of staging area<br>✓ Limit vehicle speeds to 15 miles per hour<br>✓ Limit number and size of staging area entrances/exists |
| Stockpiles/<br>Bulk Material<br>Handling | 14-1 Stabilize stockpiled materials.<br>14-2 Stockpiles within 100 yards of off-site occupied buildings must not be greater than eight feet in height; or must have a road bladed to the top to allow water truck access or must have an operational water irrigation system that is capable of complete stockpile coverage. | ✓ Add or remove material from the downwind portion of the storage pile<br>✓ Maintain storage piles to avoid steep sides or faces |

**TABLE 1**
**BEST AVAILABLE CONTROL MEASURES**
**(Applicable to All Construction Activity Sources)**

| Source Category | Control Measure | Guidance |
|---|---|---|
| Traffic areas for construction activities | 15-1 Stabilize all off-road traffic and parking areas; and<br>15-2 Stabilize all haul routes; and<br>15-3 Direct construction traffic over established haul routes. | ✓ Apply gravel/paving to all haul routes as soon as possible to all future roadway areas<br>✓ Barriers can be used to ensure vehicles are only used on established parking areas/haul routes |
| Trenching | 16-1 Stabilize surface soils where trencher or excavator and support equipment will operate; and<br>16-2 Stabilize soils at the completion of trenching activities. | ✓ Pre-watering of soils prior to trenching is an effective preventive measure. For deep trenching activities, pre-trench to 18 inches soak soils via the pre-trench and resuming trenching<br>✓ Washing mud and soils from equipment at the conclusion of trenching activities can prevent crusting and drying of soil on equipment |
| Truck loading | 17-1 Pre-water material prior to loading; and<br>17-2 Ensure that freeboard exceeds six inches (CVC 23114) | ✓ Empty loader bucket such that no visible dust plumes are created<br>✓ Ensure that the loader bucket is close to the truck to minimize drop height while loading |
| Turf Overseeding | 18-1 Apply sufficient water immediately prior to conducting turf vacuuming activities to meet opacity and plume length standards; and<br>18-2 Cover haul vehicles prior to exiting the site. | ✓ Haul waste material immediately off-site |

**TABLE 1**
**BEST AVAILABLE CONTROL MEASURES**
**(Applicable to All Construction Activity Sources)**

| Source Category | Control Measure | | Guidance |
|---|---|---|---|
| Unpaved roads/parking lots | 19-1 | Stabilize soils to meet the applicable performance standards; and | ✓ Restricting vehicular access to established unpaved travel paths and parking lots can reduce stabilization requirements |
| | 19-2 | Limit vehicular travel to established unpaved roads (haul routes) and unpaved parking lots. | |
| Vacant land | 20-1 | In instances where vacant lots are 0.10 acre or larger and have a cumulative area of 500 square feet or more that are driven over and/or used by motor vehicles and/or off-road vehicles, prevent motor vehicle and/or off-road vehicle trespassing, parking and/or access by installing barriers, curbs, fences, gates, posts, signs, shrubs, trees or other effective control measures. | |

## Table 2
## DUST CONTROL MEASURES FOR LARGE OPERATIONS

| FUGITIVE DUST SOURCE CATEGORY | CONTROL ACTIONS | |
|---|---|---|
| **Earth-moving (except construction cutting and filling areas, and mining operations)** | (1a) | Maintain soil moisture content at a minimum of 12 percent, as determined by ASTM method D-2216, or other equivalent method approved by the Executive Officer, the California Air Resources Board, and the U.S. EPA. Two soil moisture evaluations must be conducted during the first three hours of active operations during a calendar day, and two such evaluations each subsequent four-hour period of active operations; OR |
| | (1a-1) | For any earth-moving which is more than 100 feet from all property lines, conduct watering as necessary to prevent visible dust emissions from exceeding 100 feet in length in any direction. |
| **Earth-moving: Construction fill areas:** | (1b) | Maintain soil moisture content at a minimum of 12 percent, as determined by ASTM method D-2216, or other equivalent method approved by the Executive Officer, the California Air Resources Board, and the U.S. EPA. For areas which have an optimum moisture content for compaction of less than 12 percent, as determined by ASTM Method 1557 or other equivalent method approved by the Executive Officer and the California Air Resources Board and the U.S. EPA, complete the compaction process as expeditiously as possible after achieving at least 70 percent of the optimum soil moisture content. Two soil moisture evaluations must be conducted during the first three hours of active operations during a calendar day, and two such evaluations during each subsequent four-hour period of active operations. |

**Table 2 (Continued)**

| FUGITIVE DUST SOURCE CATEGORY | CONTROL ACTIONS | |
|---|---|---|
| **Earth-moving: Construction cut areas and mining operations:** | (1c) | Conduct watering as necessary to prevent visible emissions from extending more than 100 feet beyond the active cut or mining area unless the area is inaccessible to watering vehicles due to slope conditions or other safety factors. |
| **Disturbed surface areas (except completed grading areas)** | (2a/b) | Apply dust suppression in sufficient quantity and frequency to maintain a stabilized surface. Any areas which cannot be stabilized, as evidenced by wind driven fugitive dust must have an application of water at least twice per day to at least 80 percent of the unstabilized area. |
| **Disturbed surface areas: Completed grading areas** | (2c) | Apply chemical stabilizers within five working days of grading completion; OR |
| | (2d) | Take actions (3a) or (3c) specified for inactive disturbed surface areas. |
| **Inactive disturbed surface areas** | (3a) | Apply water to at least 80 percent of all inactive disturbed surface areas on a daily basis when there is evidence of wind driven fugitive dust, excluding any areas which are inaccessible to watering vehicles due to excessive slope or other safety conditions; OR |
| | (3b) | Apply dust suppressants in sufficient quantity and frequency to maintain a stabilized surface; OR |
| | (3c) | Establish a vegetative ground cover within 21 days after active operations have ceased. Ground cover must be of sufficient density to expose less than 30 percent of unstabilized ground within 90 days of planting, and at all times thereafter; OR |
| | (3d) | Utilize any combination of control actions (3a), (3b), and (3c) such that, in total, these actions apply to all inactive disturbed surface areas. |

**Table 2 (Continued)**

| FUGITIVE DUST SOURCE CATEGORY | CONTROL ACTIONS | |
|---|---|---|
| **Unpaved Roads** | (4a) | Water all roads used for any vehicular traffic at least once per every two hours of active operations [3 times per normal 8 hour work day]; OR |
| | (4b) | Water all roads used for any vehicular traffic once daily and restrict vehicle speeds to 15 miles per hour; OR |
| | (4c) | Apply a chemical stabilizer to all unpaved road surfaces in sufficient quantity and frequency to maintain a stabilized surface. |
| **Open storage piles** | (5a) | Apply chemical stabilizers; OR |
| | (5b) | Apply water to at least 80 percent of the surface area of all open storage piles on a daily basis when there is evidence of wind driven fugitive dust; OR |
| | (5c) | Install temporary coverings; OR |
| | (5d) | Install a three-sided enclosure with walls with no more than 50 percent porosity which extend, at a minimum, to the top of the pile. This option may only be used at aggregate-related plants or at cement manufacturing facilities. |
| **All Categories** | (6a) | Any other control measures approved by the Executive Officer and the U.S. EPA as equivalent to the methods specified in Table 2 may be used. |

**TABLE 3**
**CONTINGENCY CONTROL MEASURES FOR LARGE OPERATIONS**

| FUGITIVE DUST SOURCE CATEGORY | CONTROL MEASURES |
|---|---|
| **Earth-moving** | (1A) Cease all active operations; OR<br>(2A) Apply water to soil not more than 15 minutes prior to moving such soil. |
| **Disturbed surface areas** | (0B) On the last day of active operations prior to a weekend, holiday, or any other period when active operations will not occur for not more than four consecutive days: apply water with a mixture of chemical stabilizer diluted to not less than 1/20 of the concentration required to maintain a stabilized surface for a period of six months; OR<br>(1B) Apply chemical stabilizers prior to wind event; OR<br>(2B) Apply water to all unstabilized disturbed areas 3 times per day. If there is any evidence of wind driven fugitive dust, watering frequency is increased to a minimum of four times per day; OR<br>(3B) Take the actions specified in Table 2, Item (3c); OR<br>(4B) Utilize any combination of control actions (1B), (2B), and (3B) such that, in total, these actions apply to all disturbed surface areas. |
| **Unpaved roads** | (1C) Apply chemical stabilizers prior to wind event; OR<br>(2C) Apply water twice per hour during active operation; OR<br>(3C) Stop all vehicular traffic. |
| **Open storage piles** | (1D) Apply water twice per hour; OR<br>(2D) Install temporary coverings. |
| **Paved road track-out** | (1E) Cover all haul vehicles; OR<br>(2E) Comply with the vehicle freeboard requirements of Section 23114 of the California Vehicle Code for both public and private roads. |
| **All Categories** | (1F) Any other control measures approved by the Executive Officer and the U.S. EPA as equivalent to the methods specified in Table 3 may be used. |

## Table 4
## (Conservation Management Practices for Confined Animal Facilities)

| SOURCE CATEGORY | CONSERVATION MANAGEMENT PRACTICES |
|---|---|
| **Manure Handling**<br><br>**(Only applicable to Commercial Poultry Ranches)** | (1a) Cover manure prior to removing material off-site; AND<br>(1b) Spread the manure before 11:00 AM and when wind conditions are less than 25 miles per hour; AND<br>(1c) Utilize coning and drying manure management by removing manure at laying hen houses at least twice per year and maintain a base of no less than 6 inches of dry manure after clean out; or in lieu of complying with conservation management practice (1c), comply with conservation management practice (1d).<br>(1d) Utilize frequent manure removal by removing the manure from laying hen houses at least every seven days and immediately thin bed dry the material. |
| **Feedstock Handling** | (2a) Utilize a sock or boot on the feed truck auger when filling feed storage bins. |
| **Disturbed Surfaces** | (3a) Maintain at least 70 percent vegetative cover on vacant portions of the facility; OR<br>(3b) Utilize conservation tillage practices to manage the amount, orientation and distribution of crop and other plant residues on the soil surface year-round, while growing crops (if applicable) in narrow slots or tilled strips; OR<br>(3c) Apply dust suppressants in sufficient concentrations and frequencies to maintain a stabilized surface. |
| **Unpaved Roads** | (4a) Restrict access to private unpaved roads either through signage or physical access restrictions and control vehicular speeds to no more than 15 miles per hour through worker notifications, signage, or any other necessary means; OR<br>(4b) Cover frequently traveled unpaved roads with low silt content material (i.e., asphalt, concrete, recycled road base, or gravel to a minimum depth of four inches); OR<br>(4c) Treat unpaved roads with water, mulch, chemical dust suppressants or other cover to maintain a stabilized surface. |
| **Equipment Parking Areas** | (5a) Apply dust suppressants in sufficient quantity and frequency to maintain a stabilized surface; OR<br>(5b) Apply material with low silt content (i.e., asphalt, concrete, recycled road base, or gravel to a depth of four inches). |

# APPENDIX I
# SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT RULE 1166

(Adopted August 5, 1988)(Amended July 14, 1995)(Amended May 11, 2001)

# RULE 1166. VOLATILE ORGANIC COMPOUND EMISSIONS FROM DECONTAMINATION OF SOIL

(a) Applicability

This rule sets requirements to control the emission of Volatile Organic Compounds (VOC) from excavating, grading, handling and treating VOC-contaminated soil as a result of leakage from storage or transfer operations, accidental spillage, or other deposition.

(b) Definitions

(1) EXCAVATION is the process of digging out and removing materials, including any material necessary to that process such as the digging out and removal of asphalt or concrete necessary to expose, dig out and remove known VOC contaminated soil.

(2) GRADING is the process of leveling off to produce a smooth surface including the removal of any material necessary to that process such as asphalt and concrete necessary to expose known VOC contaminated soil.

(3) SOIL DECONTAMINATION MEASURE is any process approved by the Executive Officer to remediate, destroy, remove, or encapsulate VOC and VOC-contaminated soil.

(4) UNDERGROUND STORAGE TANK means any one or combination of tanks, including pipes connected thereto, which is used for the storage of organic liquid which is more than 50% beneath the surface of the ground.

(5) VOC CONTAMINATED SOIL is a soil which registers a concentration of 50 ppm or greater of Volatile Organic Compounds as measured before suppression materials have been applied and at a distance of no more than three inches from the surface of the excavated soil with an organic vapor analyzer calibrated with hexane.

(6) VOC CONTAMINATED SOIL MITIGATION PLAN is a plan to minimize VOC emissions to the atmosphere during excavation and any subsequent handling of VOC-contaminated soil.

(7) VOLATILE ORGANIC COMPOUND (VOC) is any volatile compound of carbon, excluding methane, carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, ammonium carbonate, and exempt compounds. Exempt compounds are defined in Rule 102—Definition Of Terms.

(8) VOLATILE ORGANIC MATERIALS include gasoline, diesel, crude oil, lubricant, waste oil, adhesive, paint, stain, solvent, resin, monomer, and/or any other material containing VOC.

(c) Requirements

(1) A person excavating an underground storage tank and/or transfer piping storing or previously storing VOC materials, or excavating or grading soil containing VOC materials shall:

(A) Apply for, obtain and operate pursuant to a mitigation plan approved by the Executive Officer prior to commencement of excavation or handling. The mitigation plan general requirement and application requirements are found in Attachment A to this rule. A copy of the approved plan must be on site during the entire excavation period.

(B) Notify the Executive Officer at least 24 hours prior to excavation using a form approved by the Executive Officer which is fully completed.

If the excavation does not commence on start date, renotification is required.

An alternative notification procedure may be authorized for multiple excavations within a single facility, with prior written approval from the Executive Officer.

(C) Monitor for VOC contamination pursuant to subdivision (e), at least once every 15 minutes commencing at the beginning of excavation or grading and record all VOC concentration readings in a format approved by the Executive Officer; and

(D) When VOC-contaminated soil is detected during excavation or grading:

(i) Implement the approved mitigation plan (Attachment A).

(ii) Notify the Executive Officer within 24 hours of detection of VOC-contaminated soil.

(iii) Monitor and record VOC concentration readings as prescribed in the plan. Monitoring records must be kept available on site.

(iv) Keep calibration records for all monitoring instruments available on site.

(2) A person handling VOC-contaminated soil at or from an excavation or grading site shall:

(A) Segregate VOC-contaminated stockpiles from non-VOC contaminated stockpiles such that mixing of the stockpiles does not take place.

(B) Spray VOC-contaminated soil stockpiles with water and/or approved vapor suppressant and cover them with plastic sheeting for all periods of inactivity lasting more than one hour.

(C) Conduct a daily visual inspection of all covered VOC contaminated soil stockpiles to ensure the integrity of the plastic covered surfaces. A daily inspection record must be maintained on site.

(D) Comply with the provisions in subparagraph (c) (1)(A) and clause (c)(1)(D)(i).

(E) Maintain a record of the identification and business addresses of the generator, transporter and storage/treatment facilities. Such record shall be signed by each party at the time custody is transferred.

(F) Treat or remove contaminated soil from an excavation or grading site within 30 days from the time of excavation.

(3) If the VOC concentration in the excavated soil is measured at greater than 1000 ppm, spray the soil with water or vapor suppressant and:

(A) As soon as possible, but not more than 15 minutes, place the soil in sealed containers, or

(B) As soon as possible, but not more than 15 minutes, load into trucks, moisten with additional water, cover and transport off site, or

(C) Implement other alternative storage methods approved in writing by the Executive Officer.

(4) A person treating VOC-contaminated soil shall:

(A) Obtain a permit to construct and operate treatment equipment, as applicable, from the Executive Officer, and

(B) Implement VOC-contaminated soil decontamination measures, as approved by the Executive Officer in writing, which result in Best Available Control Technology applied during all segments, and which include, but are not limited to, at least one of the following:

(i) Installation and operation of an underground VOC collection system and a disposal system prior to excavation.

(ii) Collection and disposal of the VOC from the excavated soil on-site using equipment approved by the Executive Officer.

(iii) Any equivalent VOC-contaminated soil control measure previously approved in writing by the Executive Officer.

(5) A person shall not engage in or allow any on-site or off-site spreading, grading or screening of VOC-contaminated soil, which results in uncontrolled evaporation of VOC to the atmosphere.

(6) Loading trucks for contaminated soil must meet the following:

(A) The truck and trailer shall be adequately tarped prior to leaving the site; no excavated materials shall extend above the sides or rear of the truck or trailer to prevent soil spillage during transport, and

(B) The exterior of the truck, trailer and tires shall be cleaned off prior to the truck leaving the site.

(d) Exemptions

(1) The provisions of this rule shall not apply to the following:

(A) Excavation, handling, and treating of less than one (1) cubic yard of contaminated soil.

(B) Removal of soil for sampling purposes.

(C) Accidental spillage of five (5) gallons or less of VOC containing material.

(2) The provisions of paragraphs (c)(1) and (c)(2) shall not apply to soil excavation or handling as a result of an emergency as declared by an authorized health officer, agricultural commissioner, fire protection officer, or other authorized agency officer. Whenever possible, the Executive Officer shall be notified by telephone prior to commencing such excavation. The Executive Officer shall be notified in writing no later than 48 hours following such excavation. Written notification shall include written emergency declaration from the authorized officer.

(e) Test Methods

(1) A person shall measure excavated soils for volatile organic compounds to determine contamination by:

(A) Using an organic vapor analyzer calibrated with hexane, complying with 40 CFR Part 60 Appendix A, EPA Reference Method 21 Section 3 or any equivalent method with prior approval in writing by the Executive Officer. If other calibrating gases are used, then the measured readings shall be correlated to and expressed as hexane.

(B) Placing the probe inlet at a distance of no more than three inches from the surface of the excavated soil and while slowly moving the probe across the soil surface, observe the instrument readout. If an increased meter reading is observed, continue to sample the excavated soil until the maximum meter reading is obtained. Leave the probe inlet at this maximum reading location for approximately double the instrument response time. If the maximum observed meter reading is greater than the 50 ppm standard in the regulation, record and report the results.

(2) The presence of VOC in stored or spillage materials shall be determined by SCAQMD Method 313 [Determination of Presence of Volatile Organic Compounds (VOC) in Headspace] and/or Method 304 (Determination of Volatile Organic Compounds in Various Materials) contained in the SCAQMD "Laboratory Methods of Analysis for Enforcement Samples" manual.

(f) Enforcement

(1) Violation of any provision of this rule or the violation of the approved mitigation plan shall be grounds for the Executive Officer to amend or revoke the mitigation plan, in addition to penalties provided by the Health & Safety Code.

(2) If the owner or operator is served with a Notice of Violation for creating a public nuisance, the owner or operator shall suspend operation until the public nuisance is mitigated to the satisfaction of the Executive Officer.

ATTACHMENT A
GENERAL MITIGATION PLANS REQUIREMENTS

VOC Contaminated Soil Mitigation Plans shall be written to minimize VOC emissions to the atmosphere during excavation, grading, handling and treatment of VOC contaminated soil. VOC Contaminated Soil Mitigation Plans shall consist of three types: Various Locations, Site Specific and Facility Treatment.

(1) General Requirements

(A) A plan is not transferable.

(B) A person responsible for the excavation, grading or handling of VOC contaminated soil must be completely familiar with the plan and must adhere to the plan requirement. The Executive Officer may require that the plan be signed by the owner and/or operator.

(C) A plan may be amended upon renewal.

(D) Permission to excavate, grade or handle VOC contaminated soil may be withdrawn by the District upon a finding by the Executive Officer that the excavation, grading or handling of the VOC contaminated soil is causing a public nuisance or violating other AQMD rules or regulations.

(2) Various Location Plans:

(A) Shall be limited to the excavation of 2000 cubic yards or less of VOC contaminated soil in any consecutive 12 month period at the same site.

(B) Shall not be used in conjunction with any other various location plan at the same site within a consecutive 12-month period.

(C) Shall expire after one year from issuance unless renewed.

(D) Shall not be issued for nor used for operations that involve grading, soil treatment or remediation, or landfills.

(3) Site Specific Plans:

(A) Shall be for excavation of greater than 2000 cubic yards of VOC contaminated soil.

(B) Shall be issued for specific excavation or grading locations for a period not to exceed two years.

(C) Shall not be renewable.

(4) Facility Treatment Plans:

(A) Shall be issued for a treatment facility at a permanent location.

(B) Shall expire after one year from issuance unless renewed.

(5) Applications for Site Specific Plans shall contain as a minimum:

(A) Reasons for excavation or grading.

(B) Cause of VOC soil contamination and history of the site.

(C) Description of tanks or piping associated with the soil contamination.

(D) An estimate of the amount of contaminated soil.

(E) The operating schedule for excavation and removal.

(F) Description of how the excavation or grading will be conducted.

(G) Description of mitigation measures for dust, odors and VOC.

(H) Details of disposal of VOC contaminated soil, including the ultimate receptor.

(I) Description of monitoring equipment and techniques.

(J) A map showing the facility layout, property line, and surrounding area up to 2500 feet away, and including any schools, residential areas or other sensitive receptors such as hospitals or locations where children or elderly people live or work.

(K) Designation of a person who can conduct a site inspection with the Executive Officer prior to issuance of the plan.

(6) Applications for Facility Treatment Plans shall at a minimum:

(A) Include a list of all AQMD permits to construct or operate which have been issued for that treatment and control equipment.

(B) Provide for the implementation of VOC-contaminated soil decontamination measures, as approved by the Executive Officer in writing, which result in Best Available Control Technology during all operations.

(C) Provide a map showing the facility layout including the location of all proposed VOC and non-VOC contaminated soil stockpiles.

(D) Specify the total amount of VOC contaminated soil proposed to be stockpiled on site.

(E) Provide for VOC contaminated soil stockpiles to be kept moist with water or suppressant and be covered to prevent fugitive emissions.

(F) Provide for VOC contaminated soil stockpiles to be segregated from non-VOC contaminated soil stockpiles.

(G) Provide for maintenance of records for stockpiles according to the source name, address and dates of reception.

(H) Provide for records of the generator, transporter and storage/treatment facilities and indicate their identification and business addresses. Such records shall be signed by each party at the time custody is transferred.

(I) Provide a map showing the facility layout, property line, and surrounding area up to 2500 feet away, and including any schools, residential area or other sensitive receptors such as hospitals, or locations where children or elderly people live or work.

(J) Designation of a person who can conduct a site inspection with the Executive Officer prior to issuance of the plan.

(K) Specify the operating schedule and maximum amount of VOC-contaminated soil proposed to be remediated on a daily basis.

(7) In approving a plan, the Executive Officer require reasonable conditions deemed necessary to ensure the operations comply with the plan and AQMD rules. The conditions may include, but shall not be limited to, procedures for ensuring responsibility for the implementation of the plan, accessibility to the site for AQMD staff, notification of actions required by the plan, identification of emission receptors, monitoring and testing, suppression and covering of stockpiles, prevention of public nuisance from VOC or dust emissions, prevention of fugitive emissions of VOC contaminated soil, loading of truck trailers, and disposal and treatment.

(8) In approving a plan, the Executive Officer may require any records deemed necessary to be maintained by the operator to demonstrate compliance with the plan. Such records shall be retained for at least 2 years and be made available to the Executive officer upon request.