Treadwell&Rollo

5 May 2003
Project No. 3433.04

Mr. Barney Chan
Alameda Health Care Services Agency
1131 Harbor Bay Parkway, 2nd Floor
Alameda, California 94502

Subject: Soil Management and Removal Plan
Mandela Gateway Redevelopment Site
Seventh Street and Mandela Parkway
Oakland, California

Dear Mr. Chan:

Enclosed is our revised *Soil Management and Removal Plan* (SMRP) for the proposed construction activities at the Mandela Gateway Redevelopment Site in Oakland, California. As qualified persons, we judge the soil management measures identified, if completed, will mitigate significant environmental or health and safety risks likely to be caused by potentially hazardous materials in or on the property in question.

We appreciate the opportunity to work with you on this project. If you have any questions, please call.

Sincerely yours,
TREADWELL & ROLLO, INC.

REGISTERED GEOLOGIST
GROVER BUHR
No. 5596
STATE OF CALIFORNIA

Grover Buhr, R.G.
Senior Geologist

for Philip G. Smith, R.E.A. II, C.P.G.S.
Principal

34330424.OAK

Attachment

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SOIL MANAGEMENT AND REMOVAL PLAN
MANDELA GATEWAY REDEVELOPMENT SITE
SEVENTH STREET AND MANDELA PARKWAY
Oakland, California

Alameda Health Care Services Agency
Alameda, California

5 May 2003
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SEVENTH STREET AND MANDELA PARKWAY
Oakland, California

Revised 5 May 2003

EXECUTIVE SUMMARY

This Soil Management and Removal Plan (SMRP) presents the measures recommended by Treadwell & Rollo to protect construction workers and future site users from risks associated with the presence of chemical compounds and metals in the soil at the Mandela Gateway Redevelopment Site property located at Seventh Street and Mandela Parkway in Oakland, California. Plans are to redevelop the site for mixed commercial and affordable residential use. A total of 69 and 113 residential units are planed the West and East Blocks, respectively, with common areas, commercial buildings, and parking structures.

The site consists of approximately 5.2 acres of relatively flat land in two areas: the West Block bordered by Seventh Street, Center Street, Eighth Street and Mandela Parkway, and the East Block bordered by Seventh Street, Mandela Parkway and Eighth Street. The site was previously a combination of vacant and commercial properties and parking lots located in a mixed commercial and residential area in west Oakland, and will be redeveloped with multi-story at-grade structures that will include parking garages, retail space, and residential units.

The West Block was previously occupied by the Westwood Gardens apartment complex, which has been demolished. The former apartment complex consisted of four 3-story, multi-unit residential buildings, a central partially-paved plaza area, a driveway/parking area, a paved basketball court and landscaped areas. The East Block was occupied in the western part by J&A Truck Repair (J&A). The rest of the site was formerly occupied by a CalTrans Park and Ride parking lot (CalTrans lot) and a portion of a parking lot owned by Armored Transport Systems, Inc. A portion of the Nimitz Freeway previously ran above the site, but was removed after the

1989 Loma Prieta earthquake. All subsurface structures associated with former site uses, and pile caps associated with the former freeway, have been removed.

Sampling and analysis of soil in the West Block indicated lead and pesticides are present in the shallow soils. These chemicals were found in some soil samples at concentrations exceeding calculated remedial target levels for future residential and commercial receptors, based on a site-specific risk assessment entitled *Human Health Risk Assessment, Mandela Gateway Redevelopment Site, Seventh Street and Mandela Parkway, Oakland, California* (HHRA), *24 March 2003,* prepared by Treadwell & Rollo, Inc. In addition, some chemical concentrations detected in soils in some areas of the West Block indicate that if such soils were to be excavated, they would need to be managed as a California hazardous waste.

In the East Block, lead was detected at concentrations that exceed calculated remedial target levels for future residential receptors in shallow soils in the J&A lot and in the former parking lots. Total Petroleum Hydrocarbons, quantified as motor oil (TPH-mo), were detected in several locations at concentrations greater than the Risk-Based Screening Level (RBSL) developed by the Regional Water Quality Control Board, San Francisco Bay Region (RWQCB). As in the West Block, concentrations detected in some areas indicate that some soils will need to be managed as hazardous waste if excavated.

Site-specific, carcinogenic-based and noncancer-hazard-based soil remedial target levels were developed based on the results of the Human Health Risk Assessment (Treadwell & Rollo, 2003). Potentially exposed populations used in the HHRA included construction workers, residents, and commercial/industrial workers. Exposure pathways included inhalation, ingestion, and direct contact. The HHRA indicated that pesticides in soil in the West Block (including Parcel A) and lead in both the West and East Blocks were the primary contributors to risk for the residential receptors evaluated. Site-specific residential exposure levels were calculated for lead and pesticides.

This SMRP provides procedures for soil management to be approved by the Alameda County Health Care Services Agency (ACHCSA) and implemented by the site owner and contractor. Soil management procedures will be conducted whenever soil is disturbed or exposed, such as during excavation and construction in connection with and following development. Soil with residual chemicals will either be removed to risk-based levels in several areas of the site, as at Parcel A in the West Block and in the landscaped areas and the front and back yards of the residential units in other parts of the site, or capped by building slabs, pavement, or clean soil, precluding direct contact of site occupants with subsurface soils. Parcel A will be mitigated to allow development without deed restrictions. Excavated soil determined to contain contaminants above risk-based levels and below hazardous waste criteria will be reused in the West Block (excluding Parcel A) and capped beneath building foundations, paved areas, or clean soil. The areas where known contaminants will be capped include the podium area of the West Block. In the East Block, some soils containing lead exceeding the remedial target level and TPH-mo exceeding the RBSL may be left in place. All areas of known contamination exceeding the remedial target level for lead and RBSL for TPH-mo in the East Block have been or will be removed. A deed restriction will be recorded against each of these parcels to prevent future uncontrolled disturbance of these capped areas.

SOIL MANAGEMENT AND REMOVAL PLAN
MANDELA GATEWAY REDEVELOPMENT SITE
SEVENTH STREET AND MANDELA PARKWAY
Oakland, California

Revised 5 May 2003

1.0 INTRODUCTION

This Soil Management and Removal Plan (SMRP) presents the measures recommended by Treadwell & Rollo to protect construction workers and future site users from risks associated with the presence of chemical compounds and metals in the soil at the Mandela Gateway Redevelopment Site property located at Seventh Street and Mandela Parkway in Oakland, California (Figure 1). This SMRP was prepared by Treadwell & Rollo for Mandela Gateway Associates, and supercedes previous SMRPs and SMRP addenda previously submitted to the Alameda County Health Care Services Agency (ACHCSA) for the site. Although this site is not under an administrative order by local or state environmental regulatory agencies, copies of the previous environmental investigation reports have been submitted to the ACHCSA for review and comment. The ACHCSA will review and approve this SMRP.

The site consists of two areas: the block bordered by Seventh Street, Center Street, Eighth Street and Mandela Parkway ("West Block"), and the partial block bordered by Seventh Street, Mandela Parkway and Eighth Street ("East Block"), as shown on Figures 1 and 2. The site was formerly a combination of vacant and commercial properties and parking lots located in a mixed commercial and residential area in west Oakland. Mandela Gateway Associates intends to redevelop the site with multi-story at-grade structures that will include parking garages, retail space, and affordable residential units.

The northern portion of the West Block, identified as Parcel A, will be developed with for-sale single family town homes, with the remainder of the West Block and the entirety of the East Block developed with rental residential and retail facilities. Soil impacted by contaminants at

Parcel A will be removed to risk-based levels to allow the parcel to be developed without deed restrictions.

Excavated soil containing contaminants exceeding hazardous waste criteria will be removed from the remainder of the West Block and the entirety of the East Block, as will soil in landscaped areas impacted by contaminants at concentrations exceeding accepted risk-based screening levels. Soil containing contaminants at concentrations below hazardous waste criteria, but above accepted risk-based screening levels, may be reused as engineered fill, and will be capped by either appropriately-engineered building foundations, pavement, or clean fill to prevent the exposure of site occupants to the contaminants.

2.0 BACKGROUND

The site encompasses an area of approximately 5.2 acres. The West Block is currently vacant and was previously occupied by the Westwood Gardens apartment complex, which has been demolished (Figure 2). The former apartment complex consisted of four 3-story, multi-unit residential buildings, a central partially-paved plaza area, a driveway/parking area, a paved basketball court, and landscaped areas. The western portion of the East Block was occupied by J&A Truck Repair (J&A), which was dismantled in early April 2003. The J&A lot consisted of a main service building and several sheds, with concrete or asphalt pavement covering the remainder of the lot. The remainder of the East Block was formerly occupied by a CalTrans Park and Ride parking lot (CalTrans lot), which has been demolished, and a portion of a parking lot owned by Armored Transport Systems, Inc. (AT Systems). A portion of the Cypress Freeway previously ran above the CalTrans site, but was removed after the 1989 Loma Prieta earthquake. All subsurface structures associated with former site uses, and pile caps associated with the former freeway, have been removed.

The site is in an area of Oakland that historically has been residential, commercial and light industrial. Adjacent property uses are residential to the north, residential and commercial to the

west, commercial to the east, and parking, automotive repair and a Bay Area Rapid Transit (BART) station to the south.

The subject property is at an elevation of approximately 11 to 16 feet above Mean Sea Level (NGVD, 1929). The ground surface at the site and general vicinity is relatively flat. Previous investigations in the site vicinity indicate groundwater flows to the southwest, toward the Oakland Inner Harbor.

Sampling and analysis of soil in the West Block indicated lead and pesticides are present in the shallow soils. These chemicals were found in some soil samples at concentrations exceeding calculated remedial target levels for future residential and commercial receptors, based on a site-specific risk assessment that is documented in the Treadwell & Rollo report titled *Human Health Risk Assessment, Mandela Gateway Redevelopment Site, Seventh Street and Mandela Parkway, Oakland, California* (HHRA), 24 March 2003 (Treadwell & Rollo, 2003b). In addition, some chemical concentrations detected in soils in some areas of the West Block indicate that if such soils were to be excavated, they would need to be managed as a California hazardous waste.

In the East Block, lead was detected at concentrations that exceed calculated remedial target levels for future residential receptors in shallow soils in the J&A lot and in the former parking lots. Total Petroleum Hydrocarbons, quantified as motor oil (TPH-mo), were detected in several locations at concentrations greater than the Risk-Based Screening Level (RBSL) developed by the Regional Water Quality Control Board, San Francisco Bay Region (RWQCB). As in the West Block, concentrations detected in some areas indicate that some soils will need to be managed as hazardous waste if excavated.

Soil and groundwater sampling and analytical results have previously been reported in the 2 August 2002 Treadwell & Rollo report titled *Phase I and II Environmental Site Assessment, Mandela Gateway Redevelopment Site, Seventh Street and Mandela Parkway, Oakland, California* (Treadwell & Rollo, 2002), and the 10 March 2003 Treadwell & Rollo letter report to Mr. Barney Chan of the ACHCSA titled *Data Summary, Mandela Gateway Redevelopment Site,*

Seventh and Mandela Parkway, Oakland, California (Treadwell & Rollo, 2003a). An initial Draft SMRP was submitted to ACHCSA on 24 March 2003, with additional information responding to ACHCSA data requests submitted on 11 and 16 April 2003.

3.0 PROJECT DESCRIPTION

Plans are to redevelop the site for mixed commercial and affordable residential use. The general plan of the development is shown in Figure 3. A lot-line adjustment has been used to alter the property line in the East Block relative to the AT Systems site. There will be a total of 69 and 113 residential units in the West and East Blocks, respectively. The development is divided into two separate phases. Phase 1, the main development, will include the entire East Block property and the southern 70 percent of the West Block (which excludes Parcel A) and will start construction in Spring 2003. Phase 2, the northern part of the West Block ("Parcel A" on Figure 3) will be single-family townhouses, and will be constructed in Fall 2003.

The townhouses in Parcel A on the West Block will be split level, 2-1/2-story, wood-framed buildings founded on post-tensioned concrete slabs-on-grade. These units will be individually sold as single-family townhome residences. Finished grade is expected to be at or close to the current grade along Eighth Street.

The Phase 1 development on the West Block (which excludes Parcel A) will consist of an L-shaped building that will occupy the south and east portion of the block, an at-grade asphalt-paved parking lot accessed from Center Street, and a private street. The L-shaped building will consist of what is commonly referred to as a "podium" structure. The ground floor of the podium structure will consist of a concrete slab-on-grade floor and reinforced cast-in-place concrete or concrete masonry unit (CMU) walls. The first floor ceiling will consist of a post-tensioned concrete podium slab that will be used to support wood-framed residences above. The east half of the podium will be used as a parking garage, except for an occupied retail space that will be constructed on Seventh Street. The west portion of the podium building includes a drugstore with a separate loading dock that is accessed from Center Street. Several 2- to 3-story

wood-framed apartment buildings and a children's play area will be constructed above both portions of the podium.

The West Block podium building will be supported on spread footings with a concrete slab-on-grade floor. To provide adequate bearing support, the existing soil will be overexcavated to a depth of two feet below the proposed bottom-of-footing elevation; the lower foot of soil will be scarified and recompacted in-place. The overexcavation (to the top of the scarified soil) will extend about 3.5 feet below ground surface (bgs) (as it currently exists) under the proposed parking garage and small retail space, and about 5.25 feet bgs under the proposed drug store. Recompacted soils will consist of either previously-excavated on-site soils that are determined to be re-usable (based on the results of hazardous waste characteristic testing) or imported clean fill. These areas of overexcavation, and their planned depths, are shown in Figure 3.

The soil subgrade in the parking lot will be raised 1 to 2 feet. Prior to placing fill, the existing soil subgrade will be scarified to a depth of 6 to 8 inches, moisture-conditioned, and recompacted.

Development on the East Block will include multiple building types. The largest building will be constructed in the southeast corner of the block and will consist of a podium structure with 2 to 3 levels of wood-framed residences above. The ground floor for this building will generally be used for parking, although portions of the first floor fronting on Seventh Street will be used as occupied retail and administrative spaces. The foundation system for the podium structure will be similar to the podium structure on the West Block. The soil beneath the footings will be overexcavated to a depth of two feet beneath the proposed bottom-of-footing elevations, with the lower eight inches scarified and recompacted in-place. The total depth of excavation will be approximately 3.25 feet below the proposed parking garage and administration offices and five feet beneath the retail space on Seventh Street. Recompacted soils will consist of either previously-excavated on-site soils that are determined to be re-usable (based on the results of hazardous waste characteristic testing) or imported clean fill. As with the West Block, the areas and depths of planned overexcavation and reuse on the East Block are shown on Figure 3.

A town square with open space and children play areas will be constructed adjacent to the podium structure in the East Block. The southern portion of the town square will match the existing site grade, and the northern portion of the square will rise up to four feet from existing site grade. The town square will be surrounded by 2- to 3-story, wood-framed, townhouse-style, for-rent residential buildings. An asphalt-paved private street and several townhouses will be constructed north of the podium structure and town square. The soil subgrade for these buildings will be raised 1 to 2.5 feet above existing site grades. Along Eighth Street, three 2-story, wood-framed for-rent residential buildings will also be constructed. The pad elevation for these buildings will be near existing site grades. Where the new townhouses and/or private drive are constructed, the soil subgrade will be scarified to a depth of 8 to 12 inches, moisture-conditioned, and recompacted in place. Scarification, moisture conditioning, and recompaction will also be required prior to fill placement.

Other proposed improvements on the sites include recreation areas, community rooms, pedestrian walkways, and landscaped areas. Prior to construction, an existing 7.5 to 9.5-foot deep sanitary sewer line will be abandoned and relocated along the proposed east (adjusted) property line. The former sanitary sewer line, which extends beneath the proposed footprint of the east block podium and townhouses, will be filled with concrete grout and abandoned in-place.

4.0 SITE HISTORY

Based on the Treadwell & Rollo Phase I and Phase II ESA, past site uses included residential and commercial activities (Treadwell & Rollo, 2002). Before the 1940's, the site was primarily residential, with minor light industrial use (e.g., pre-1900's planing mill and machine shop along Center Street in the West Block). In the 1940's, the West Block of the site was occupied by U.S. Marine Corps military housing, while the East Block was predominantly private residences with a few retail stores, a restaurant, an automobile garage and a pipe-valve and pipe-fitting business. By the late 1950's, the East Block had been vacated and was being used as a highway construction yard for the Nimitz Freeway, which was constructed as an elevated highway over a

portion of the East Block. In the 1970's, the Westwood Gardens apartment complex was constructed on the West Block. The East Block remained a highway construction yard until the late 1970's, when it's western portion began to house a series of truck repair businesses. In 1989, the Cypress Freeway, covering a portion of the East Block, was destroyed in the Loma Prieta earthquake. In the 1990's, the portion of the East Block formerly covered by the Freeway was converted into a CalTrans parking lot. The West Block remained the Westwood Gardens apartment complex and was occupied until 2002. All structures on both the West and East Blocks have been removed.

5.0 SOIL MANAGEMENT CRITERIA

The purpose of this SMRP is to provide procedures for soil management to be approved by the ACHCSA and implemented by the site owner and contractor. As described in detail below, soil management procedures will be conducted whenever soil is disturbed or exposed, such as during demolition of existing foundations and excavation of existing subsurface structures, and excavation and construction during and following development. Soil with residual chemicals will either be removed to risk-based levels in several areas of the site, including Parcel A in the West Block and landscaped areas and the front and backyards of the residential units, or capped by building slabs, pavement, or two feet of clean soil, precluding direct contact with subsurface soils.

5.1 Risk-Based Remedial Target Levels

Site-specific, carcinogenic-based and noncancer-hazard-based soil remedial target levels were developed based on the results of the HHRA (Treadwell & Rollo, 2003b). Potentially exposed populations (receptors) used in the HHRA included construction workers, residents, and commercial/industrial workers. Exposure pathways included inhalation, ingestion, and direct contact. The HHRA indicated that pesticides in soil in the West Block (including Parcel A) and lead in both the West and East Blocks were the primary contributors to risk for the residential receptors evaluated. In addition, total petroleum hydrocarbons quantified as motor oil were

found to exceed risk-based levels recommended by the RWQCB at several locations in the East Block. Remedial target levels were developed by identifying the primary risk drivers for soil based on the following criteria:

- If the total theoretical chemical excess cancer risk for a future resident exceeded "one in a million" (1E-06), then target remedial levels for chemicals with individual estimated excess cancer risks greater than "five in ten million" (5E-07) were developed.
- If the total theoretical chemical noncancer hazard index for a future resident exceeded 1.0, then target concentrations for chemicals with individual hazard quotients greater than 0.2 were developed.

Cancer risk-based and noncancer hazard index-based target concentrations were developed for each identified chemical of potential concern by calculating the ratio of the exposure point concentration to the calculated chemical-specific estimated excess cancer risk or hazard quotient for soil used in the HHRA. The ratios were then multiplied by the target risk level of 1E-06 for cancer risk-based target concentrations and by a value of 1.0 for hazard index-based target concentrations to yields target levels for individual chemicals. In order to account for cumulative excess cancer risks and noncancer hazards, the target levels (based on single chemical target risk/noncancer hazard) were divided by the number of target levels developed to yield target levels resulting in a total excess cancer risk of 1E-06 or a total noncancer hazard of 1.0. For example, at the West Block, target levels were developed for aldrin and dieldrin separately based on each chemical causing an excess cancer risk of 1E-06. In order to reach a total cancer risk of 1E-06, the target levels for aldrin and dieldrin were divided by two.

5.1.3 Pesticides

Table 1 presents risk levels for pesticides detected in soil meeting the above-criteria for the following:

- West Block (exclusive of Parcel A) – Excess Cancer Risk-Based Levels (based on soil direct contact exposure);

- Parcel A of the West Block – Excess Cancer Risk-Based Levels (based on inclusion of ingestion of homegrown produce exposure due to the contemplated development of back yards for the for-sale residential units in Parcel A, as well as soil direct contact exposure);
- Parcel A of the West Block – Hazard Index Levels (based on inclusion of ingestion of homegrown produce exposure, as well as soil direct contact exposure).

The Excess Cancer Risk-Based Levels and the Hazard Index Levels for Parcel A of the West Block incorporate ingestion of homegrown produce as a potential exposure pathway. Potential exposure to residual chemicals in subsurface soil from ingestion of homegrown produce is dependent primarily upon root zone uptake of the produce. A depth of 1.5 feet was considered the soil depth at which root zone uptake would be applicable. Based upon communications with Mr. R. Brewer, Associate Engineering Geologist of the San Francisco Bay Regional Water Quality Control Board (RWQCB) on 1 May 2003, the 1.5-foot depth is appropriate. Therefore, the appropriate risk-based levels for soil from the ground surface to a depth of 1.5 feet at Parcel A of the West Block are the levels that include both homegrown produce exposure and soil direct contact exposure. The appropriate risk-based levels for soil deeper than a depth of 1.5 feet are the "West Block – Excess Cancer Risk-Based Levels", which take into account direct contact exposures.

As discussed in Section 7.0, to be conservative this SMRP will use the risk-based remedial target levels associated with ingestion of home-grown produce, associated with the upper 1.5 feet of soil, for soil to 2.0 feet bgs in Parcel A and landscaped parts of the rest of the West Block.

5.1.2 Lead

Site-specific remedial target levels for lead were developed based on the HHRA. Soil concentrations greater than 347 milligrams per kilogram (mg/kg) may represent a potential significant risk to residential receptors, assuming no ingestion of homegrown produce (applicable to soil deeper than 1.5 feet in Parcel A, the front and backyard areas of the East Block, and those areas of the West Block and East Block that will not include at-grade, for-sale

residential units with backyard areas). If ingestion of homegrown produce is assumed (applicable to Parcel A of the West Block), soil concentrations greater than 261 mg/kg in soil from the ground surface to a depth of 1.5 feet may represent a potential significant risk to residential receptors. Based on our discussions with the ACHCSA and with Mr. Brewer of the RWQCB the more conservative unrestricted residential use target level for lead of 255 mg/kg will be used for Parcel A and for all landscaped areas on both blocks. As discussed in Section 7.0, to be conservative this SMRP will use the risk-based remedial target levels associated with ingestion of home-grown produce, associated with the upper 1.5 feet of soil, for soil to 2.0 feet bgs in Parcel A and landscaped parts of the rest of the West Block.

5.1.3 Petroleum Hydrocarbons

Total Petroleum Hydrocarbons (TPH) were detected in soil samples in both the West Block and East Block. TPH were not addressed in the HHRA because TPH actually represents complex mixtures of individual chemicals, and the calculation of compound-specific risk concentrations is impractical. Therefore, concentrations of detected TPH were compared with "Risk-Based Screening Levels" (RBSLs) developed by RWQCB. The RWQCB developed the RBSLs to conservatively indicate contaminant concentrations below which no mitigative action will generally need to be taken to address risk to public health or the environment, or to meet other regulatory standards. The RBSLs used in this SMRP for TPH are: TPH quantified as gasoline (TPH-g) – 400 mg/kg; TPH quantified as diesel (TPH-d) – 500 mg/kg; and TPH quantified as motor oil (TPH-mo) – 500 mg/kg. These RBSLs apply to residential land-use scenarios for surface soils (soil shallower than approximately ten feet) in areas where shallow groundwater is not considered a potential source of drinking water (as in this case).

5.2 Evaluation of Excavated On-Site Soils

Due to the presence of residual levels of pesticides and lead in soils in localized areas of the site, soils to be excavated either for geotechnical purposes as part of the planned redevelopment or to satisfy target remedial levels will require sampling and analysis for hazardous waste characterization purposes according to the procedures presented below. Excavated soils that are

determined to be hazardous waste or that otherwise contain lead at levels exceeding 350 mg/kg (see below) or parts per million (ppm) shall be managed as hazardous waste and disposed off-site at an appropriately-licensed disposal facility. In-place geotechnical conditioning of soil, such as by scarification, moisture treatment, and/or compaction in place shall not be subject to these sampling and testing requirements.

The hazardous waste criteria include the Total Threshold Limit Concentration (TTLC), Soluble Threshold Limit Concentration (STLC) and the Federal Regulatory Level (RL), as set forth in Title 22 of the California Code of Regulations (CCR). The TTLC specifies in mg/kg the total concentration of a substance in soil that, if present, will require the soil to be disposed as a California hazardous waste. The STLC specifies in milligrams per liter (mg/l) the concentration of the soluble fraction of a substance in soil, as determined by the California Waste Extraction Test (WET), that will, if present, require the soil to be disposed as a California hazardous waste. The RL specifies in mg/l the concentration of the soluble fraction of a substance in soil, as determined by the Toxicity Characteristic Leaching Procedure (TCLP), that characterize the soil to be disposed as a Federal, or Resource Conservation and Recovery Act (RCRA), hazardous waste.

Based on the chemical data collected at the site and the results of the HHRA, the chemicals of concern at the site include pesticides, lead, and TPH. TTLCs for pesticides detected at the site include:

aldrin	1.4 mg/kg	dieldrin	8.0 mg/kg
endrin	0.2 mg/kg	alpha-BHC (lindane)	4.0 mg/kg
4,4-DDT; 4,4-DDE; 4,4-DDD			1.0 mg/kg

STLCs for pesticides at the site include:

aldrin	0.14 mg/l	dieldrin	0.8 mg/l
endrin	0.02 mg/l	alpha-BHC (lindane)	0.4 mg/l
4,4-DDT; 4,4-DDE; 4,4-DDD			0.1 mg/l.

The RLs for pesticides found at the site are 0.02 mg/l for endrin and 0.4 mg/l for alpha-BHC (lindane). RLs have not been promulgated for the other pesticides found.

For lead, the TTLC is 1,000 mg/kg, the STLC is 5.0 mg/l, and the RL is 5.0 mg/l.

In addition, Section 25157.8 of the California Health and Safety Code requires that waste containing certain metals (copper, lead, nickel) above specified levels must be disposed in Class I hazardous waste disposal facilities, even if the waste does not meet the criteria for hazardous waste. Certain Class II landfills have obtained variances to this rule, such that they can accept lead exceeding 350 mg/kg if the results of solubility testing indicate that the soil does not qualify as a hazardous waste (i.e., soluble lead less than 5 mg/l).

No regulatory standards for characterizing the toxicity of TPH have been promulgated. Rather, if TPH concentrations in soil are greater than 1,000 mg/kg, waste disposal facilities sometimes require the soil to be tested for the characteristic of ignitability to determine if the soil is a hazardous waste.

6.0 SITE INVESTIGATIONS, LOCALIZED EXCAVATIONS, AND INITIAL SOIL PROFILING

Soil characterization and management activities conducted at Mandela Gateway in support of this development have included collecting and analyzing soil from the surface, in borings, and in test trenches; excavating localized areas of soil with contaminants above remedial target levels; and profiling soil excavated for construction of the podium structures. This section summarizes these activities and discusses the results of soil and groundwater analysis.

Since January 2002, Professional Services, Inc. (PSI), and Treadwell & Rollo have completed a series of environmental investigations to evaluate shallow subsurface soil conditions and possible impacts to groundwater. These investigations have included a total of 61 soil borings and test trenches in both blocks. The boring and trench sample locations for these investigations,

with respect to site use, are shown in Figure 4. Chemical data collected during these investigations are presented in Tables 2 through 9. These data were previously reported in the PSI investigation report (PSI, 2002), the Treadwell & Rollo Phase I and Phase II ESA (Treadwell & Rollo, 2002), and the Treadwell & Rollo letter dated 10 March 2003 titled *Data Summary, Mandela Gateway Redevelopment Site, Seventh Street and Mandela Parkway, Oakland, California* (Treadwell & Rollo, 2003a). An investigation of shallow soil in the former J&A area in the East Block has also been completed.

As the result of requests made by ACHCSA at meetings during March and April 2003, several localized excavations were conducted in both the West and East Blocks. These excavations were performed from 7 to 15 April in the West Block to remove soil containing pesticides and/or lead at concentrations above their respective hazardous waste and risk-based remedial target levels. From 7 through 29 April in the East Block, areas were excavated to remove soil containing lead and/or TPH-mo at concentrations above their risk-based remedial target levels (for lead) or RBSL (for TPH-mo). Confirmation samples taken in these excavations were analyzed for pesticides, lead, and/or TPH-mo, based on the indications of previous sampling in those locations. The locations of these excavations, with analytical results of samples collected during their completion, are shown in Figures 5 (West Block) and 6 (East Block).

Additional excavations have been performed in both blocks for construction reasons. In the West Block, soil in the podium area (see Figure 3) has been excavated to approximately 3.5 feet bgs (in the eastern part) and 5.25 feet (in the western part), stockpiled, and profiled to determine its suitability for reuse or disposal. In the East Block, pile caps from the former Cypress Structure viaduct have been excavated and removed from the site. Soil excavated during removal of these pile caps has been profiled and either disposed off site as hazardous waste or is currently stockpiled on site for reuse.

6.1 Subsurface Conditions

The site is generally underlain by about 2 to 6 feet of fill, except in the eastern part of the CalTrans lot, where the fill may be up to eight feet thick. The fill generally consists of loose to medium dense sand with silt and silty sand and varying amounts of debris, including bricks, shells, and metal. On the East Block, the fill may contain debris from the former Cypress Freeway and Kirkham Street, including abandoned utilities, concrete foundations, and other debris.

The fill is underlain by native sand (referred to as Merritt Sand) with varying amounts of silt and clay to the maximum depth of the test borings (16 feet). The sand contains clayey fines (particles passing the No. 200 sieve) and is lightly cemented below the water table.

Groundwater was measured in the borings at depths ranging from about 8 to 12 feet bgs, which corresponds to elevations of about +3.5 to –3 feet (City of Oakland datum). These do not represent stabilized groundwater measurements and therefore could not be used to estimate groundwater flow direction. Based on data from a nearby site located at 800 Center Street, groundwater flows toward the southwest (Treadwell & Rollo, 2002).

6.2 West Block Soil Conditions and Localized Excavations

In the West Block, a total of 30 soil borings have been advanced to sample soil and groundwater. The borings extended to depths ranging from 5 to 16 feet bgs. A total of 80 soil samples and two groundwater samples were collected and analyzed from these borings. Soil samples were tested for the 17 California Assessment Metals (CAM 17), as well as soluble lead, petroleum hydrocarbons, and organochlorine pesticides. Not all of the samples were analyzed for each of these parameters. The locations and analytical results for these samples are shown on Figure 5. Analytical results are also posted in Tables 2 through 5.

Total lead (defined as the total of soluble and insoluble forms) was found in 78 of 80 soil samples collected and analyzed in the West Block. Typically, the higher concentrations of lead

were detected in the upper two feet (i.e., 0 to 2.0 feet bgs) of soil. Total lead concentrations ranged from 1.6 mg/kg to 320 mg/kg, with one sample at 1,400 mg/kg detected in the southwest corner of the West Block.

Organochlorine pesticides were detected in 23 of 32 samples collected in the West Block (including Parcel A). Samples were collected at a maximum depth of 2.5 feet bgs. Eight pesticides were detected: aldrin, dieldrin, endrin, endrin ketone, 4,4-DDD, 4,4-DDT, 4,4-DDE, and alpha-BHC (a species of lindane). The pesticides were typically detected in the upper foot of soil; however, pesticides were detected in two samples at 2.5 feet bgs. **The profiling results of soil recently excavated in the podium area and stockpiled on site indicate that low levels of pesticides may be detected at depths up to five feet bgs (see Section 6.2.3)**

Minor concentrations of petroleum hydrocarbons were detected in 11 samples collected in the West Block. The detected hydrocarbons were TPH-d or TPH-mo. The concentrations ranged from 1.3 mg/kg to 170 mg/kg, well below the residential RBSLs for these compounds of 500 mg/kg, each.

6.2.1 Parcel A Conditions

Ten soil borings were advanced at Parcel A. Soil analytical results for these borings are shown on Figure 5 and presented in Table 2 for lead, Table 3 for pesticides, Table 4 for CAM 17/Luft 5 metals (exclusive of lead), and Table 5 for organic compounds (exclusive of pesticides). Pesticides (aldrin, dieldrin, and/or DDT) were detected at concentrations greater than the Parcel A remedial target levels (which take into account ingestion of home-grown produce) in six of eight samples collected at less than one foot bgs. Between one and two feet bgs, aldrin, dieldrin and/or DDT were detected at concentrations greater than the Parcel A remedial target levels in three borings. **Below two feet bgs, pesticides were detected in boring WB-1, with aldrin and dieldrin at concentrations greater than the Parcel A remedial target levels. The WB-1 aldrin concentration of 4,800 ug/kg at 2.5 feet bgs exceeds the TTLC of 1,400 ug/kg.**

No samples collected from the Parcel A portion of the West Block contained lead at a concentration greater than the remedial target level of 255 mg/kg. However, of 18 samples tested from less than two feet bgs, 12 had lead concentrations greater than 50 mg/kg, indicating that testing by the WET method may result in soluble lead concentrations greater than the STLC. In boring WB-9 at 1.0 to 1.5 feet bgs, total lead was 180 mg/kg. This sample was tested for soluble lead using the WET method, with a result of 8.5 mg/l, exceeding the STLC value of 5. mg/l. This sample was also tested for the RCRA RL by the TCLP, with the result non-detect, indicating that the soil at this location, if excavated, would not qualify as a Federal hazardous waste.

Because of the concentrations of aldrin and dieldrin at WB-1, soil was initially excavated to a depth of three feet bgs in a square measuring six feet by six feet. The location and extent of this excavation are shown in Figure 5. Confirmation samples were collected in each sidewall at two feet bgs (WB1CS-N1-2.0 in the north wall, etc.) and in the base of the excavation (WB1CS-B-3.0). Lead was detected in the north and west wall at 280 mg/kg and 160 mg/kg, respectively. Aldrin and dieldrin were detected in the north wall at 19 ug/kg and 17 ug/kg, respectively. In the base of the excavation, lead was detected at 1.9 mg/kg and pesticides were not detected. The excavation was extended to the north, west, and east, with each wall sampled for pesticides and the north wall tested for lead. Lead was then detected in the north wall at 51 ug/kg and aldrin and dieldrin detected at two feet bgs in each wall (N,W,E) at concentrations ranging from 10 ug/kg to 75 ug/kg. Because the concentrations had decreased to less than hazardous waste levels, and the concentrations in the base of the excavation are lower than remedial target levels, the excavation has been discontinued pending the general soil removal in Parcel A, at which time additional confirmation sampling will be performed (see Section 7.1.1). Excavated soil has been stockpiled adjacent to the excavation pending disposal off site (see Figure 6).

6.2.2 Central/Southern West Block Conditions

Twenty soil borings were advanced in the central/southern part of the West Block (south of Parcel A) and 54 soil samples collected (Figure 5). Of the 17 samples tested, pesticides were

detected in 12 (see Figure 5 and Table 3). In this part of the site, the remedial target levels are higher (aldrin – 10 ug/kg, dieldrin – 11 ug/kg, DDT – 500 ug/kg) than for Parcel A, because the levels were calculated excluding ingestion of homegrown produce (there are no yards planned for the residential units in this area). Aldrin, dieldrin, endrin, or DDT exceeded their respective remedial target levels in six borings (B-11, B-12, WB-3, WB-5, WB-6, and WB-10). In WB-5, aldrin at 1,700 ug/kg exceeded the TTLC of 1,400 ug/kg, and in B-12, endrin at 1,300 ug/kg exceeded the TTLC of 200 ug/kg. WB-6, in the footprint of the podium area, has been excavated and removed as part of the podium excavation (see Section 6.2.3).

To address pesticide exceedances of the remedial target levels in areas to be landscaped, soil was excavated for off-site disposal at WB-3, WB-10, and B-12 (Figure 5). Soil excavated from these areas has been stockpiled in the northwest corner of Parcel A pending disposal off site (see Figure 6). The stockpile was placed on and covered by visqueen tarpaulins.

WB-3 and WB-10 are located at the north edge of the proposed parking lot where a landscaped strip is planned. On 7 April 2003, this strip was excavated to a depth of 1.5 feet bgs, a width of six feet and a length of 60 feet. The base of the excavation was sampled for lead and pesticides, resulting in lead concentrations of 1.6 mg/kg at both locations, and aldrin at 3.4 ug/kg. Other pesticides were not detected. The area of WB-3 was then excavated down to a depth of 2.5 feet bgs for a width of six feet and a length of 30 feet. Re-testing for pesticides in the base of the excavation indicated the presence of aldrin at 18 ug/kg. This area will be below a minimum of two feet of clean fill after completion of the planned development.

On 10 April, the location of B-12 was excavated for disposal off site to a depth of 1.5 feet bgs in a square six feet by six feet. Sampling in the base and sides resulted in aldrin and dieldrin not detected, but endrin, DDT and DDE were detected in the east sidewall at 11, 81, and 55 ug/kg, respectively, and DDT and DDE were detected in the base at 4.2 and 2.7 ug/kg, respectively. Because these concentrations were so greatly reduced from the surface concentrations, and because the area is within the excavation sloping for the podium excavation, this excavation was discontinued with the removal of the soil with the high concentrations of endrin, DDT, and DDE.

The soil in this area has since been excavated to a depth of approximately three feet bgs as part of the podium area excavation.

At WB-5, in the western part of the podium area, soil was excavated on 7 April for disposal off site to remove aldrin and dieldrin concentrations of 1,700 ug/kg and 910 ug/kg, respectively. The excavation initially measured six feet by six feet by three feet deep. Sidewall samples and the bottom sample showed aldrin and dieldrin concentrations ranging up to 370 ug/kg and 230 ug/kg, respectively. The excavation was then extended, first out three feet in the east, west and south directions and to 4.5 feet bgs. At this depth, the sidewall samples showed non-detect for the pesticides, but the base sample resulted in aldrin at 610 ug/kg and dieldrin at 230 ug/kg. The excavation was then increased to a depth of six feet bgs, where pesticides were not detected.

In the central/southern part of the West Block, two samples exceeded the remedial target level for lead of 255 mg/kg (WB-4-1.0 at 320 mg/kg and B-11-0.5 at 1,400 mg/kg). B-11-0.5 is also the only sample in which lead exceeded the California hazardous waste criterion for total lead (TTLC) of 1,000 mg/kg, or the California HSC Section 25157.8 disposal restriction concentration of 350 mg/kg. These locations were both excavated in six foot by six foot squares. WB-4 was excavated to a depth of two feet bgs, where sidewall and base samples yielded lead results ranging from 1.8 mg/kg to 39 mg/kg. B-11 was excavated to a depth of one foot bgs, where sidewall and base samples yielded lead results ranging from 2.4 mg/kg to 82 mg/kg. Based on these confirmation sample results, these excavations were discontinued.

Soluble lead was tested in 12 soil samples. Four of the samples tested exceeded the California hazardous waste criterion for soluble lead (STLC) of 5.0 mg/l. Three of these samples were encountered at less than two feet bgs. For comparison purposes, the total lead concentrations ranged from 81 to 320 mg/kg in the samples where soluble lead exceeded the STLC. Three samples were tested using the TCLP, to compare with the Federal hazardous waste criterion (RL) for soluble lead. All three samples were below the RL.

6.2.3 Podium Area Excavations in the West Block

From 21 through 30 April, soil in the podium area was excavated and stockpiled for profiling. The soil was removed from the area in depth-specific lifts and placed in stockpiles shown on Figure 6. Soil to a depth of one foot bgs was first excavated over the podium footprint and stockpiled on visqueen tarpaulin on Parcel A (Stockpile 1). Soil from the depth of one to two feet bgs (with respect to original grade) was then excavated and placed in the stockpile in the planned parking lot area (Stockpile 2), as shown in Figure 6. Remaining soil in the eastern part of the podium was then excavated to approximately 3.5 feet bgs and placed in a stockpile (Stockpile 3a) adjacent to Stockpile 1. After soil samples were collected from Stockpile 3a, soil in the area of the planned drugstore was excavated to approximately 5.25 feet bgs and placed on a tarpaulin on top of the Stockpile 3a (Stockpile 3b). The soil volumes of these respective stockpiles are approximately 1,370 cy each for Stockpiles 1 and 2, 500 cy for Stockpile 3a, and 2,000 cy for Stockpile 3b.

To evaluate whether this soil would need to be disposed off site (if qualifying as a hazardous waste) or reused under the podium, soil in each of the four stockpiles was sampled at a frequency of one four-point composite sample for every 500 cubic yards (cy) (See Appendix A, Stockpile Confirmation Sampling, for an explanation of the stockpile characterization program.). The samples were collected from the locations shown in Figure 6. In addition to the samples that were composited in the laboratory, some discrete samples were analyzed separately for lead and pesticides. The analytical results for these samples are presented in Tables 2 and 3.

Analytical results for composite samples from Stockpile 1 indicated total lead at 42, 29, and 12 mg/kg in the western (sample SPWB1PS1,2,3,4), central (sample SPWB1PS5,6,7,8), and eastern third (sample SPWB1PS9,10,11,12), respectively, of the stockpile. Pesticide analyses in these samples indicated aldrin ranging from 110 to 440 ug/kg, dieldrin ranging from 96 to 290 ug/kg, and DDT ranging from less than 50 ug/kg to 55 ug/kg. Subsequent analysis of sample SPWB1PS9,10,11,12 by the WET method resulted in a soluble lead concentration of 6.6 mg/l, indicating that the eastern third of the stockpile may require disposal off site as a

hazardous waste. The western and central thirds (approximately 930 cy) are not hazardous waste, but the pesticide concentrations exceed the risk-based remedial target levels and will require capping if reused on site. Analytical results for Stockpile 2 reported lead at concentrations ranging from less than 1.0 to 26 mg/kg. Stockpile 2 pesticide concentrations were: aldrin ranged from less than 2.0 to 47 ug/kg, with one outlier of 260 ug/kg; dieldrin ranged from 2.2 to 24 ug/kg, with two outliers of 100 and 170 ug/kg; and DDT ranged from less than 2.0 to 14 ug/kg. Based on these results, this soil does not qualify as a hazardous waste, but because of the presence of pesticides will require capping if left on site.

Analytical results for Stockpile 3a reported lead at 17 mg/kg. Stockpile 3a and 3b pesticide concentrations were: aldrin ranged from2.0 to 160 ug/kg, with one outlier of 430 ug/kg; dieldrin ranged from less than 2.0 to 140 ug/kg; endrin ranged from less than 2.0 to 2.8 ug/kg; and DDT ranged from less than 2.0 to 5.6 ug/kg. Based on these results, this soil does not qualify as a hazardous waste, but because of the presence of pesticides will require capping if left on site.

6.3 East Block Soil Conditions and Localized Excavations

In the East Block, a total of 45 soil borings have been advanced to sample soil and groundwater, 31 in the earlier investigations by PSI and Treadwell & Rollo, 6 in the post-demolition investigation of the J&A lot, and 8 in the recent investigation of the planned landscaped area along Eighth Street on the East Block. The borings extended to depths ranging from 3 feet to 12 feet bgs. Soil samples were also collected to depths of 1.5 feet bgs from three trenches excavated for an independent archaeological investigation. Localized removals of areas of elevated concentrations of lead and/or TPH-mo have been completed in 16 locations, with confirmation samples collected at each. A total of 213 soil samples and nine groundwater samples were collected and analyzed from the 45 borings, three trenches, and localized excavations on the East Block. Soil samples were tested for the CAM 17 metals (including soluble lead), petroleum hydrocarbons, VOCs, ethylene glycol, and organochlorine pesticides. Not all of the samples were analyzed for each of these parameters. Analytical results for these

samples are presented in Table 6 for lead and Table 7 for organic compounds. The locations of these samples and their analytical results are shown on Figure 7.

6.3.1 General East Block Conditions

Similar to the West Block, total lead was found in most soil samples collected and analyzed from the East Block. Typically, the higher concentrations were detected in the upper two feet of soil (i.e., 0.0 to 2.0 feet bgs). Total lead concentrations were less than 255 mg/kg in 85 percent of all samples collected, and less than 500 mg/kg in 95 percent of samples. Lead was detected at a concentration greater than 1,000 mg/kg, the TTLC, in four samples, with the highest reported concentration being 2,280 mg/kg. In areas where all samples are greater than 1,000 mg/kg and 70 percent of samples greater than 255 mg/kg, soil has been removed from the site by excavation of pile caps or localized areas of elevated concentrations (see section 6.3.2 below).

Soluble lead was tested in 19 samples, of which nine exceeded the STLC. For comparison purposes, these samples contained total lead concentrations ranging from 81 to 485 mg/kg. Five samples were tested using the TCLP, to compare with the Federal hazardous waste criterion for soluble lead. All five samples were below the Federal RL.

Total Petroleum Hydrocarbons (TPH) quantified as gasoline (TPH-g), diesel (TPH-d), and motor oil (TPH-mo) were tested in soil samples in the East Block. TPH-g were tested in 39 samples and detected in four samples at concentrations ranging from 0.0125 to 0.479 mg/kg. TPH-d were tested in 52 samples and detected in 39 samples at concentrations ranging from 1.1 mg/kg to 1,500 mg/kg. TPH-mo were tested in 106 samples and detected in 21 samples at concentrations ranging from 19 mg/kg to 18,000 mg/kg. In seven of these samples, TPH-d and TPH-mo were detected in one and seven samples, respectively, at concentrations greater than 500 mg/kg, their RBSLs. These locations have been addressed by focussed excavations (see Section 6.3.2 below); the soil will be disposed off site.

6.3.2 Localized Excavations

Twenty pile caps from the former Nimitz Freeway have been excavated and disposed off site. The excavations for these pile caps are shown in Figure 7. Approximately 1,250 cy of soil were excavated with these pile caps, stockpiled adjacent to the excavations, and profiled for disposal or reuse. Based on the profiling results, 1,050 cy were transported off site for disposal as hazardous waste, based on content of soluble lead. Approximately 200 cy were characterized as non-hazardous and were used to backfill their respective excavations.

In the podium area of the East Block at EB-9, PB-17, and PB-19, soil was excavated on 7 April to remove elevated levels of lead (350 mg/kg in EB-9, 485 mg/kg in PB-17, and 2,280 mg/kg in PB-19). These locations were excavated in six foot by six foot squares. EB-9 was excavated to a depth of three feet bgs, where sidewall and base samples yielded lead results ranging from 3.3 mg/kg to 26 mg/kg. PB-17 was excavated to a depth of three feet bgs, where sidewall and base samples yielded lead results ranging from 1.4 mg/kg to 5.6 mg/kg. PB-19 was excavated to a depth of three feet bgs, where sidewall and base samples yielded lead results ranging from 1.7 mg/kg to 84 mg/kg. These excavations were therefore discontinued. The soil from these excavations is stored in a stockpile in the northwest part of the site pending disposal off site.

At T-5E, lead was found at 570 mg/kg in T-5E. The soil at this location was excavated to three feet bgs in a six foot by six foot square. Confirmation sampling in the walls and base of the excavation yielded lead results ranging from 2.5 mg/kg to 28 mg/kg. Excavation at this location was therefore discontinued. The soil from these excavations is stored in a stockpile in the northwest part of the site pending disposal off site.

At Boring B-3 in the eastern portion of the East Block podium area, soil was excavated on 7 April to remove elevated levels of TPH-mo (530 mg/kg), and lead. This location was excavated in a six foot by six foot square to a depth of three feet bgs, where sidewall and base samples yielded lead results ranging from 1.5 mg/kg to 190 mg/kg and TPH-mo below reportable levels or non-detect (ND). Therefore, this excavation was discontinued. The soil

from this excavation is stored in a stockpile in the northwest part of the site pending disposal off site.

In the northern portion of the East Block at EBB-8, EBB-10 and EBB-11 in the landscape area, soil was excavated on 29 April to remove elevated levels of lead (390 mg/kg in EBB-8, 330 mg/kg in EBB-10 and 1800 mg/kg in EBB-11). These locations were excavated in six foot by six foot squares. EBB-8 was excavated to a depth of one foot bgs, EBB-10 and EBB-11 were excavated to a depth of three feet bgs. At EBB-10, confirmation samples yielded lead concentrations ranging from 2.0 to 14 mg/kg. At EBB-11, confirmation samples yielded lead concentrations ranging from 1.5 to 1.8 mg/kg. As a result, these focussed excavations have been discontinued and the excavated soil is stored in a stockpile in the northwest part of the site pending disposal off site.

At EBB-8, confirmation samples yielded a lead concentration of 370 mg/kg in the north wall of the excavation at 0.5 feet bgs. Confirmation samples in the other sidewalls and excavation bottom were 140 mg/kg or less. The north wall of this excavation will be further excavated and confirmation samples collected during the week of 5 May.

EB-1, located in the northeastern portion of the East Block landscape area, was excavated to remove elevated levels of lead (230 mg/kg total lead and 11 mg/l soluble (STLC)), and TPH-mo (800 mg/kg). This location was excavated in a six foot by six foot square, to a depth of one and a half feet bgs, and was extended south and east because of elevated lead levels. Confirmation samples in the east and south walls have yielded lead concentrations of 280 and 620 mg/kg, respectively. **The east and south walls will be further excavated and confirmation samples collected during the week of 5 May.**

6.3.3 J&A Lot Investigations and Localized Excavations

In the former location of the J&A Truck Repair facility, 10 soil borings were initially advanced to sample soil and groundwater. The borings extended to depths ranging from 2 feet to 5 feet

bgs. A total of 26 soil samples and two groundwater samples were collected and analyzed from the 10 borings. Soil samples were tested for the LUFT 5 metals (including soluble lead), petroleum hydrocarbons, VOCs, ethylene glycol, and organochlorine pesticides. Not all of the samples were analyzed for each of these parameters.

Lead was found in all soil samples collected and analyzed. Typically, the higher concentrations were detected in the upper two feet of soil. Total lead concentrations ranged from 1.5 mg/kg to 1,700 mg/kg. Of the samples tested, four contained lead at concentrations greater than the risk-based remedial target level of 255 mg/kg. Three of these samples were collected in the upper two feet of soil, while one was collected at 2.5 feet bgs. One sample contained total lead exceeding the TTLC. Soluble lead was tested in five samples, of which none exceeded the STLC. TPH-g, TPH-d, and TPH-mo were tested in 17 soil samples at the J&A lot. TPH-g was not detected. TPH-d was detected in 13 samples at concentrations ranging from 1.1 mg/kg to 280 mg/kg. TPH-mo was detected in 4 samples at concentrations ranging from 89 mg/kg to 3,200 mg/kg. In three of these samples, TPH-mo was detected at concentrations greater than 500 mg/kg, the RBSL for TPH-mo in residential-use soil.

The J&A lot was closed on 31 March 2003 when the company vacated the premises. RC Knapp was retained to proceed with demolition of the buildings and removal of the asphalt lot and concrete foundations. Upon completion of the building demolition and removal of all equipment, structures, and pavement from the site, Mr. K. Matthews, Hazardous Materials Inspector for the Oakland Fire Department, inspected the site on 10 April 2003. On 30 April 2003, Mr. Matthews issued a closure letter for the J&A Trucking facility at this address (the business has moved to a new address). This letter is included in Appendix B.

After completion of the building demolition and asphalt removal, six additional soil borings were advanced to test for the presence of lead and TPH-mo from soil under the site. Soil was also tested from an area adjacent to the fence located along the western edge of the site where motor oil was visible following J&B's departure from the property (the "FLW" area). Based on

the results from the previous and additional borings, localized areas were identified where soil required removal due to elevated levels of lead and TPH-mo.

The FLW excavation in the northwestern part of the J&A lot is the site of a small, localized oil spill that was excavated on 18 April to remove elevated levels of TPH-mo (18,000 mg/kg) and TPH-d (1,500 mg/kg). This location was excavated in a four foot by four foot square, to a depth of two feet bgs, and was extended on 29 April to the north and east because of elevated TPH-mo and TPH-d levels. The results of confirmation sampling for this expanded excavation ranged from 3.4 to 47 mg/kg for lead and non-detect for TPH-d and TPH-mo. This excavation was therefore discontinued.

At B-5, B-7, B-8, EBB4, EBB6, B-24 and EB-11, soil was excavated to remove elevated levels of TPH-mo (2,300 mg/kg in B-5, 280 mg/kg in B-7, 530 mg/kg in B-8, and 3,200 mg/kg in EB-11), and lead (960 mg/kg in B-7, 1,700 mg/kg in B-8, 460 mg/kg in EBB4, 820 mg/kg in EBB6, 520 mg/kg in B-24 and 420 mg/kg in EB-11). These locations were excavated in six foot by six foot squares. The results of these excavations are:

- B-5 was excavated to a depth of two feet bgs, where sidewall and base samples yielded TPH-mo results ranging non-detect to 71 mg/kg and lead results ranging from 4.1 mg/kg to 20 mg/kg. This excavation was therefore discontinued.
- B-7 was excavated to a depth of three feet bgs, where sidewall and base samples yielded non-detected TPH-mo and lead ranging from 1.6 mg/kg to 5.7 mg/kg. This excavation was therefore discontinued.
- B-8 was excavated to a depth of three feet bgs, where sidewall and base samples yielded non-detected TPH-mo and lead ranging from 1.6 mg/kg to 110 mg/kg. This excavation was therefore discontinued.
- B-24 was excavated to a depth of two feet bgs, where sidewall and base samples yielded non-detected TPH-mo and lead ranging from 3 mg/kg to 14 mg/kg. This excavation was therefore discontinued.

- EBB-6 was excavated to a depth of two feet bgs, where sidewall and base samples yielded non-detected TPH-mo and lead ranging from 1.7 to 150 mg/kg. This excavation was therefore discontinued.
- EBB-4 was excavated to a depth of two feet bgs, where sidewall and base samples yielded non-detected TPH-mo and lead ranging from 3.5 to 670 mg/kg (in the south wall). This focussed excavation will be expanded to the south during the week of 5 May.

6.4 Groundwater Results and Discussion

Groundwater samples were collected in the West Block in the northwest and southeast corners (B-10 and B-12, respectively). Groundwater samples were analyzed for the RCRA 8 metals, Total Petroleum Hydrocarbons, the fuel components benzene, toluene, ethyl benzene, and xylenes (BTEX compounds), and other volatile organic compounds (VOCs). The groundwater analytical results are shown in Figure 8. In B-10, the VOCs toluene and xylenes were detected at 1.8 ug/l and 1.6 ug/l, respectively. These concentrations are well below the RBSLs for these chemicals. Zinc was detected in B-10 at 26 ug/l, which is below the risk-based level for human toxicity value used for developing the RBSLs, which is 5,000 ug/l. No TPH-g, TPH-d, TPH-mo, or VOCs other than toluene and xylenes were detected in B-10. In the groundwater sample from B-12, zinc was detected at 16 ug/l, below the threshold concentration cited above. No TPH-g, TPH-d, TPH-mo, VOCs or metals other than zinc were detected in this sample.

Groundwater samples were collected from Borings B-5 and B-7 in the East Block. Samples were analyzed for LUFT 5 metals, TPH-g, TPH-d, TPH-mo and VOCs. Cadmium, chromium, lead, TPH-g and TPH-mo were not detected. Nickel was detected in both samples, at 11 and 16 ug/l, which is below the nickel risk-based level for human toxicity value used for developing the RBSLs (100 ug/l). Zinc was detected at 23 ug/l and 27 ug/l. If the shallow groundwater was a potential drinking water source, an RBSL value based on human toxicity could be used, which at 5,000 ug/l is more than two orders of magnitude greater than the concentrations found at the site. TPH-d were detected in groundwater samples collected from B-5 and B-7 at concentrations of

180 ug/l and 94 ug/l, respectively, which are below the RBSL of 640 ug/l. The VOC 1,2-dichloroethane (1,2-DCA) was detected in B-5 at a concentration of 2.1 ug/l, well below the RBSL of 500 ug/l. No other VOCs were detected.

7.0 SOIL MANAGEMENT PROCEDURES

The results of our environmental investigations and soil removal actions, and previous investigations by others, indicate that shallow soils in some parts of the site contained residual levels of pesticides, lead, and TPH in soils that exceed the remedial target levels. Such soils would need to be managed appropriately during construction and subsequent development of the site for residential and commercial use. In the West Block, shallow soils containing pesticides at concentrations exceeding risk-based remedial target levels, particularly in Parcel A, will require appropriate management to mitigate potential adverse health risks associated with such impacted soils. In the East Block, shallow soils in certain locations contained lead at concentrations exceeding the remedial target levels, particularly in the central and southwestern part of the block, which would also need to be managed appropriately to mitigate potential adverse health risks associated with such impacted soils. In addition, TPH-mo was found in several locations in the East Block at concentrations exceeding the residential RBSLs. The presence of these residual chemicals requires planning and implementing specific soil management procedures to mitigate potential health and safety concerns as part of the site development activities. The risk to workers during construction of the development is addressed by health and safety procedures described below in Section 7.5.

Due to the presence of residual levels of pesticides and lead in soils in localized areas of the site, soils to be excavated either for geotechnical purposes as part of the planned redevelopment or to satisfy remedial target levels will need to be sampled and analyzed for hazardous waste characterization purposes according to the procedures presented below. Excavated soils that are determined to be hazardous waste or that otherwise contain lead at levels exceeding 350 ppm (hereinafter collectively referred to as the "excavated soil regulatory criteria") shall be managed as hazardous waste and disposed off-site at an appropriately-licensed disposal facility.

Because a substantial volume of soil containing contaminants that exceed the risk-based remedial target levels has already been removed from both the West and East Blocks of the site, remaining soil management actions needed include removal of contaminants from areas where the development will be for unrestricted use (Parcel A) or landscaped areas in other parts of the site, and capping and recording a deed restriction in the West Block (exclusive of Parcel A) and East Block where contaminants in soil are known to or may exceed the remedial target goals. **The areas already excavated for off-site removal include the areas of focussed excavations and pile cap excavations in both the West and East Blocks.** The areas of planned removal of elevated concentrations of pesticides or lead include Parcel A on the West Block and the landscaped areas of the West and East Blocks. Figure 9 conceptually shows the planned areas where known concentrations exceeding the remedial target levels for lead or pesticides will be capped. The areas where known contaminants will be capped include the podium area of the West Block. In the East Block, some soils containing lead exceeding the remedial target level and TPH-mo exceeding the RBSL may be left in place. All areas of known contamination exceeding the remedial target levels in the East Block have been or will be removed. These actions are described in detail in this section.

In the West Block, three development areas are indicated: 1) Parcel A, where at-grade development requires no excavation for geotechnical reasons, but chemical exceedances of risk-based remedial target levels will mandate the removal of impacted soil to allow site closure without a deed restriction; 2) the at-grade parking lot, where soil will not be excavated and additional fill will be added under the future asphalt cap, and landscaped areas where soil impacted by contaminants exceeding risk-based target levels will be removed and replaced with two feet of clean fill; and 3) the building area, where, for geotechnical reasons, the soil will be excavated to the depths shown on the figure, and either reused as backfill or disposed off site, depending on whether the excavated soils contain levels of pesticides or lead in excess of the applicable excavated soil regulatory criteria.

In the East Block, the site is divided into two components (see Figure 3, 8): 1) the northern half, where at-grade development will require no excavation (including also the future residential

building along Mandela Parkway near Seventh Street), except for utility excavations; and 2) the southern half, including the "Town Square", the podium parking area and the buildings along Seventh Street. For geotechnical reasons, the soil in the podium parking area and under the buildings along Seventh Street will be excavated to the depths shown on Figure 3, and either reused as backfill or disposed off site, depending on whether the excavated soils contain levels of lead in excess of the applicable excavated soil regulatory criteria. Soil in landscaped areas impacted by contaminants at concentrations exceeding risk-based target levels will be excavated and replaced with clean fill.

The soil management procedures that will be used to address these issues are defined below for the different areas. These measures, when implemented, will be protective of human health and the environment by either removing soil with lead, pesticides or TPH-mo at concentrations exceeding applicable remedial target levels in Parcel A and in landscaped areas of the West Block and East Block or, alternately, by preventing complete exposure pathways to future site users associated with the planned redevelopment to underlying impacted soil in the paved and built areas of the central/southern part of the West Block (excluding Parcel A) and in the East Block, combined with a deed restriction to prevent future uncontrolled disturbance of the pavement and building foundations in these areas. + landscaped areas ?

7.1 West Block

In the West Block, soil management procedures will be performed based on the future use and construction activities in Parcel A, where the proposed development will consist of for-sale residential at-grade town homes, and in the remainder of the block, where the proposed development will preclude any direct human contact with residual chemicals in soils.

7.1.1 Parcel A

Parcel A will be developed as for-sale single-family townhomes built at-grade on post-tensioned slab foundations. Assuming the current grade is maintained, the upper 8-to-12 inches of soil would typically be scarified and recompacted. However, as shown in Figure 5, residual pesticide

concentrations exceed the remedial target levels in nine locations in the depth intervals from the surface to two feet bgs. The three samples shown in the depth interval from 1.0 to 2.0 feet bgs represent samples that were collected from 1.0 to 1.5 feet bgs. (One deeper sample, collected between 2.0 and 3.0 feet bgs (WB-1-2.5), exceeded pesticide remedial target levels (Figure 5). Soil in the area of this sample has been removed to a depth of 3 feet bgs.)

According to Mr. R. Brewer of the RWQCB, 1.5 feet of clean soil is required to be protective of human health using the home-grown food ingestion pathway model. In order to provide a margin of conservancy, **soil at Parcel A will be excavated and removed to a depth of 2.0 feet bgs.** Confirmation samples will be collected at two feet bgs as described below.

The soil management procedures to be implemented will include the following.

- To remove the pesticides above remedial target levels, existing soils will be excavated to a depth of 2 feet bgs and stockpiled. Stockpiles must be placed on plastic tarpaulins and also covered with tarpaulins when not in active use (i.e., being added to or removed).
- The stockpiles will be profiled for off-site disposal by sampling at a frequency of one four-point composite sample for no more than 500 cubic yards (cy) of soil. (See Appendix A for a discussion of the development of this soil sampling protocol). Profiling samples will be analyzed for pesticides, total lead and soluble lead. Any soil to be disposed off-site must be taken to an appropriately-licensed disposal facility.
- **Fill soil must not contain detectable pesticides, or lead above the remedial target level of 255 mg/kg.** Such soils may consist of either excavated soils obtained from the southern part of the West Block that do not contain levels of chemicals in excess of the applicable excavated soil regulatory criteria or remedial target levels, or clean soils imported from off-site.
- Following removal of the upper 2 feet of soil, confirmation samples will be collected from the floor of the excavation, at 50-foot centers, to confirm that residual pesticides levels do not exceed the risk-based remedial target levels which do not address ingestion

of home-grown vegetables (because such soil is below the 1.5-foot plant root uptake depth): aldrin – 10 ug/kg, dieldrin – 11 ug/kg, DDT – 500 ug/kg. Areas of exceedance will be removed by executing a six-foot by six-foot square to six inches bgs with a second confirmation sample collected from the floor of this secondary excavation. This action will be continued until acceptable pesticide levels are attained or the excavation has reached four feet bgs.

7.1.2 West Block Area (Excluding Parcel A)

The remainder of the West Block (excluding Parcel A) will be developed as part of the main Mandela Gateway project. With the exception of landscaped areas that will have two feet of clean fill, the presence of residual levels of pesticides and lead in soil in this area will require that such soil be capped with building foundations or pavement to preclude direct human contact with the underlying soil, coupled with the recording of a deed restriction against this area of the West Block (which excludes Parcel A) property. This area is divided into the at-grade parking lot area and the building area.

- At-grade parking lot: The parking lot will be constructed slightly above current grade, with the sub-grade elevation raised about 1 foot on the west, 2 feet in the center, and 1.5 feet on the east. With the exception of two locations at the planned landscaped strip on the north and the WB-4 focussed excavation, both areas that have been excavated and removed, neither pesticides nor lead exceed remedial target levels, based on sampling to date. Therefore, the remaining soil in the parking lot area will be scarified and recompacted for sub-grade without additional sampling.
- Building area: Because the structure's foundation includes spread footings, for geotechnical purposes the soils in the building footprint will require excavation, backfilling and recompaction to depths ranging from 1.25 to 5.25 feet bgs. The 8 to 12 inches of soil in the base of the excavation will be scarified and recompacted. Lead was found to exceed the remedial target level of 347 mg/kg and hazardous waste criteria in Boring B-11. This area has been over-excavated to remove the contamination present (see Section 6.2.2). Pesticides exceeded the remedial target levels in WB-5 and B-12

(which is adjacent to a landscaped area at the southeast corner of the building). These areas have also been over-excavated to remove the contamination present (see Section 6.2.2). The landscaped areas on the east side of the building will be within the sloped area for the excavation and this soil will be excavated and profiled for disposal off-site, as well.

Soil excavated for the podium structure has been excavated and segregated as described in Section 6.2.3. As noted in that section, soil from 0.0 to 1.0 foot bgs, soil from 1.0 to 2.0 feet bgs, and soil from more than 2.0 feet bgs have been stockpiled separately and sampled for profiling, to determine which portions of the soil that will be reused in the podium area as backfill or disposed off site. Profiling samples have been collected at a frequency of one four-point composite for approximately 500 cy, although a number of discrete samples have also been analyzed.

- Utility Trenches: Excavation will be performed in the private street for utilities, with excavated soil profiled to evaluate its reuse as backfill or off-site disposal, depending on whether the excavated soils contain levels of chemicals in excess of the applicable excavated soil regulatory criteria. Soil excavated from trenches for utility installation must be stockpiled pending hazardous waste profiling and disposition. Soil from less than two feet bgs will be stockpiled separately from deeper excavated soil. Stockpiles will be placed on plastic tarpaulins and will also be covered with tarpaulins when not in active use (i.e., being added to or removed). The stockpiles of soil from less than two feet bgs will be profiled by sampling at a frequency of one four-point composite sample for every 500 cubic yards (cy) of soil. Profiling samples will be analyzed for total lead, soluble lead, and pesticides. Soil that exceeds the applicable excavated soil regulatory criteria or the remedial target levels will be disposed off-site at an appropriate disposal facility. Soil that does not exceed these criteria will be reused for backfilling the utility excavation. Soil from more than two feet bgs may be used to backfill the utility excavations without additional testing.

7.2 East Block

The East Block is subdivided into the southern and northern areas. The northern area, which exhibits lower levels of residual chemicals in shallow soils than in the southern area, will be developed with ground-level residential units, roadways, walkways and landscaped areas. The southern half will be developed with ground-level retail and parking in the area of the former CalTrans parking lot and with outside, ground-level community use in the area of the former J&A Trucking facility. With the exception of landscaped areas that will have two feet of clean fill, the presence of residual levels of lead and TPH-mo in soil will require that such soil be capped with building foundations or pavement to preclude direct human contact with the underlying soil, coupled with the recording of a deed restriction against the East Block property.

7.2.1 Northern Half

This area will be developed with at-grade residential units, pavement and landscaped areas. The buildings will be built on post-tensioned slabs at-grade. For the purposes of soil management, the three-story residential building on Mandela Parkway near the corner of Seventh Street is included in this area (Figure 9). The civil engineering plan indicates no change in pad elevation along Eighth Street and up to 2.5 feet of added fill for the buildings along Mandela Parkway. Required grading work in this area entails scarifying and recompacting the uppermost 8 to 12 inches of soil. Three utility trenches will be excavated to depths approximately seven feet bgs in the private roadway.

Based on the development plan and the existing chemical data, the following soil management procedures will be followed:

- Soil in landscaped areas will be removed as needed and replaced with clean fill. A minimum of 2 feet of clean fill will be used. These include the landscaped areas along Eighth Street and the yards adjacent to the apartments and townhouses along the private roadway.

- With the exceptions of landscaped areas and focussed excavations that have been completed or are being completed, soils in the Northern Half that will be scarified and recompacted will require no additional chemical testing or special handling procedures and will be left in place. This is due to the general absence of contaminants exceeding remedial target levels and the fact that the area will be capped by pavement and/or building foundations.
- Soil excavated from trenches for utility installation has been profiled and will be reused based on the laboratory data. The soil from less than two feet bgs was stockpiled separately from deeper excavated soil on plastic tarpaulins and covered. The stockpiles of soils from less than two feet bgs were profiled by sampling at a frequency of one four-point composite sample for every 500 cubic yards (cy) of soil. Soil from greater than two feet bgs has been used to backfill the utility excavations without additional testing.

7.2.2 Southern Half

The southern half of the East Block is divided into the Town Square area on the west and the Building area on the east. The Town Square area will be developed as a central mixed landscape and walkway area surrounded by pavement. As shown in Figure 9, the existing grade in the southwest part of the Town Square area will be unchanged, while up to two feet of soil will be removed from the southeast area and up to two feet of clean fill will be added to the northern part. The Building area will consist of a podium structure requiring excavation and recompaction of soil for geotechnical purposes. Additional characterization will be conducted in each area as part of the soil management procedures described below.

- Town Square: The Town Square area includes a large part of the former J&A lot. Four localized areas of contamination in the Town Square area have been excavated and removed. After grading, confirmation samples will be collected to two feet bgs in the landscaped areas in a grid on 50-foot centers and analyzed for TPH-mo and lead. Additional excavation will be performed, if necessary, if TPH-mo is found above 500 mg/kg or lead is found above 255 mg/kg. A minimum of two feet of clean soil will be

maintained in all landscaped areas.

Based on analytical results, excavated soil will be either reused as fill in the podium area or disposed off site at an appropriately licensed disposal facility.

- Building area: Because this structure will be developed on spread footings, for geotechnical purposes, the soils in the building footprint will require excavation, backfilling and recompaction to depths ranging from 3.25 to 4.75 feet bgs, as shown in Figure 9. The 8 to 12 inches of soil in the base of the excavation will be scarified and recompacted.

  As shown in Figure 7, lead was detected in some soil samples within and bordering the planned excavation at concentrations that exceed both the applicable excavated soil regulatory criteria and remedial target level to depths of three feet bgs. Because the planned excavation will be sloped on the west, north, and east sides, soils at the perimeter will be excavated and managed similar to soils within the footprint of the excavation. Soils will be excavated and segregated separately as follows: soil from 0.0 to 1.0 foot bgs will be excavated and stockpiled, followed by soil from 1.0 to 2.0 feet bgs, then soil from 2.0 to 3.0 feet bgs, and soil from deeper than 3.0 feet bgs. Soil excavated from each depth zone will be excavated and stockpiled separately. All stockpiles will be placed on plastic tarpaulins and also covered with tarpaulins when not in active use (i.e., being added to or removed). The stockpiles with soil from 0 to 3.0 feet bgs will be profiled for hazardous waste characteristics. Because no soils sampled at depths greater than 3.0 feet bgs exceeded the applicable excavated soil regulatory criteria or remedial target level, soils excavated from depths greater than 3.0 feet bgs may be used to backfill the excavation without additional testing. Soils excavated from depths less than 3.0 feet bgs will be profiled by sampling at a frequency of one four-point composite sample for every 500 cubic yards (cy) of soil. Profiling samples will be analyzed for total lead and soluble lead. Soil that exceeds the applicable excavated soil regulatory criteria or the remedial

target level will be disposed off site at an appropriate disposal facility. Soil that does not exceed these criteria may be reused for backfilling the excavation.

7.3 General Soil Management Procedures

The planned construction activities will disturb a portion of the underlying soil during demolition, excavation, and grading activities. Soil movement during construction will include excavation, grading, stockpiling, loading, and backfilling. The original and final locations of soils excavated and reused on site will be documented. This documentation, including all analytical test results, will be kept on record by the contractor and provided to the site owner at completion. These test results must accompany and be part of the maintenance records for future site use.

During construction activities, general soil management procedures will be used to prevent significant exposure to site workers and the public. The procedures are designed to control exposure by dermal contact, ingestion and inhalation of dust particles. Procedures to control exposure by dermal contact and ingestion will be specified in a site-specific health and safety plan (see Section 7.5). Soil management procedures will be observed by a third party separate from the contractor for documentation that procedures are accurately followed.

7.3.1 Dust Control

To control exposure by dust inhalation, dust control measures must be implemented to reduce exposure both on and off site. These measures are typically performed by the excavation contractor and may include moisture-conditioning the soil, using dust suppressants or by covering the exposed soil with plastic sheeting. These dust control measures will be performed throughout demolition, excavation and grading. The standard of monitoring will be to prevent visibly entrained dust.

7.3.2 Soil Sampling and Analysis

During construction, soils will be sampled in-situ and from stockpiles for characterization and soil profiling purposes. Samples will be analyzed by a State of California Certified analytical laboratory. Analytical testing methods will follow SW-846, *Test Methods for Evaluating Solid Waste*, (USEPA, 2003). Laboratory quality assurance/quality control procedures will be documented and retained with project records.

7.3.3 Soil Profiling and Disposal

Soils to be disposed off site will be profiled based on available data from samples already collected, on WET and TCLP testing of archived samples, future stockpile composite samples, and additional samples from ongoing investigations. Soil classified as California hazardous waste will be transported either out of state to an appropriate licensed facility or to a Class I disposal facility in California. Soil requiring off-site disposal for construction reasons, which is profiled as non-hazardous, will be transported and disposed at a licensed Class II disposal facility. All soil for off site disposal will be transported under appropriate manifest or bill-of-lading protocol. All manifests must be retained as part of the SMRP documentation procedures.

7.4 Groundwater Management

Groundwater is not expected to be generated during site construction. However, if it is, the groundwater will either be disposed of in the sanitary or stormwater sewer system under permit with the appropriate regulatory agency or recycled at a licensed and permitted facility.

7.5 Health and Safety Issues

There may be the potential for chemically-impacted soils to affect construction workers at the site. The routes of potential pesticide or lead exposure could be through three pathways: 1) dermal (skin) contact with the soil, 2) inhalation of dusts and/or vapors, and 3) ingestion of the soil. The routes of potential exposure to trace levels of volatile organic compounds (VOCs) in

groundwater could be through two pathways: 1) short-term dermal contact with standing water in excavations, and 2) short-term inhalation of vapors from standing water in excavations.

The most likely potential for human exposure to the contaminants will be during soil excavation and grading operations. Because on-site materials may contain lead and other chemicals in excess of Proposition 65 guidelines, it is recommended that proper health and safety procedures, as well as warning requirements, be implemented during construction. The potential health risk to on-site construction workers and the public will be minimized by developing a comprehensive health and safety plan (HSP), prepared by a certified industrial hygienist who represents the site contractors. The site contractor will be responsible for establishing and maintaining proper health and safety procedures to minimize worker and public exposure to site contaminants during construction.

The HSP will describe the health and safety training requirements, specific personal hygiene, and monitoring equipment that will be used during construction to protect and verify the health and safety of the construction workers and the general public from exposure to constituents in the soil.

A site health and safety officer (HSO) should be on site at all times during excavation activities to ensure that all health and safety measures are maintained. The HSO will have authority to direct and stop (if necessary) all construction activities in order to ensure compliance with the HSP. The health and safety protocols used to minimize exposure to contaminants by construction workers during construction activities must be followed until all impacted soil is either removed or capped in accordance with this SMRP.

7.6 Site Capping and Deed Restriction

Where soils are to be left in place containing residual levels of pesticides or lead at concentrations above the risk-based remedial target levels or TPH-mo above the RBSL, capping of such soils and the imposition of deed restrictions will be required. In the West Block, all

chemicals above the applicable risk-based remedial target levels will be removed in Parcel A to a depth of at least 2 feet bgs. Thus, no cap or deed restriction will be required for the Parcel A site. In the remaining part of the West Block (excluding Parcel A), pesticide concentrations below hazardous waste concentrations but above site-specific remedial target levels have been found in excavated soil. Because it is economically impractical to remove all minimally-impacted soil from this portion of the West Block and replace with imported fill, an equally-protective remedy consisting of capping of such soil with building foundations or pavement to preclude direct human contact with the underlying soil, coupled with the recording of a deed restriction, is required for the portion of the West Block that does not include Parcel A. As previously noted, although a deed restriction would apply to this portion of the West Block, soil in the upper 2 feet in landscaped areas will consist of clean fill, and thus will not contain residual chemicals above remedial target levels.

In the East Block, some soils containing lead exceeding the remedial target level and TPH-mo exceeding the RBSL may be left in place. In such locations, the risk of direct contact with these underlying soils by future site users will be mitigated by capping these localized areas with building foundations or pavement. As a result, a deed restriction will be recorded against the East Block parcel. As previously noted, although a deed restriction would apply to the entire East Block, soil in the upper 2 feet in landscaped areas will consist of clean fill, and thus will not contain residual chemicals above remedial target levels.

Deed restrictions may include a restriction on conducting excavations in capped areas, as well as specific reporting requirements to ACHCSA. In addition, a site maintenance plan will need to be prepared to provide for the long-term maintenance of the building slabs and pavement in such areas.

7.7 Documentation of SMRP Implementation

The owner will provide a third-party report certifying that soil management activities followed the procedures outlined in this SMRP. This report will present a chronology of the relevant

construction events, a summary of analytical data, and a description of all mitigation activities taken during construction. It will also include a statement that indicates the activities have been performed in accordance with this SMRP.

7.8 Maintenance Requirements

The objective of these maintenance requirements is to ensure that any capping of soils in the West and East Blocks by means of either building slabs or pavement will remain effective during the site's use and occupancy period. The property owner and operator will maintain this SMRP, maintenance work plans, and maintenance records in a readily accessible on-site location and shall be responsible for informing any employee or contractor who will perform below-grade construction of the environmental conditions, soil management concerns, and health and safety requirements stipulated in this SMRP.

These measures will also be enforced during any post-development construction activities such as utility line repair, building expansion, and other activities that may disturb the underlying chemically-impacted soils. To maintain the integrity of the overlying cap materials and to protect future site workers who may disturb such cap materials, the following procedures will be adhered to by the property owner and/or operator of the site:

- Require the preparation of a specific work plan that includes a description of the proposed construction activities, soil management and removal plan, and health and safety plan.
- Direct any contractor or employee who disturbs the encapsulating layer (i.e., building slabs or pavement) and is engaged in any excavation or earth movement at the property to comply with the appropriate local, State, and Federal regulations.
- Direct any contractor or employee engaged in any activities that involve penetrating the encapsulating layer to repair the disturbed area to its original capped condition as soon as is practical.

- Control dust by wetting and protect exposed or excavated soil from stormwater run-on and run-off during the period of excavation, soil movement, or exposure.
- Determine by appropriate testing whether any excess material removed from the site is a hazardous waste pursuant to State or Federal hazardous waste criteria. This material must be managed in accordance with all appropriate regulations.
- Prepare a report that describes the maintenance activities related to the encapsulating layer or excavation of soil.

REFERENCES

Professional Service Industries (PSI), 2002, *Draft Hazardous Waste Preliminary Site Investigation Workplan To Number 04-44680K-GL Contract Number 43A0078, 7th & Mandela, Park & Ride Lot, Oakland, California*, 19 February 2002

Treadwell & Rollo, 2003b, *Human Health Risk Assessment, Mandela Gateway Redevelopment Site, Seventh Street and Mandela Parkway, Oakland, California*, 24 March 2003

Treadwell & Rollo, 2003a, *Data Summary, Mandela Gateway Redevelopment Site, Seventh Street and Mandela Parkway, Oakland, California* (Readable & Rollo, 2003a) letter report dated 10 March 2003

Treadwell & Rollo, 2002, titled *Phase I and II Environmental Site Assessment, Mandela Gateway Redevelopment Site, Seventh Street and Mandela Parkway, Oakland, California*, 2 August 2002.

TABLE 1
RISK-BASED REMEDIAL TARGET LEVELS
Mandela Gateway Redevelopment Site
Oakland, California

Soil Chemicals	West Block Target Soil Level at INDIVIDUAL 1E-06 Excess Cancer Risk (mg/kg)	West Block Target Soil Level at TOTAL 1E-06 Excess Cancer Risk (mg/kg)		West Block, Parcel A Target Soil Level at INDIVIDUAL 1E-06 Excess Cancer Risk (mg/kg)	West Block, Parcel A Target Soil Level at TOTAL 1E-06 Excess Cancer Risk (mg/kg)		West Block, Parcel A Target Soil Level at INDIVIDUALNoncancer Hazard Equal to 1	West Block, Parcel A Target Soil Level at TOTAL Noncancer Hazard Equal to 1
Aldrin	0.031	0.010		0.0002	0.00004		0.013	0.006
Alpha-BHC (Lindane)	NA	NA		NA	NA		NA	NA
DDD	NA	NA		NA	NA		NA	NA
DDE	NA	NA		0.019	0.005		NA	NA
DDT	1.5	0.5		0.019	0.005		NA	NA
Dieldrin	0.033	0.011		0.0004	0.0001		0.010	0.005
Endrin	NA	NA		NA	NA		NA	NA
Endrin Ketone	NA	NA		NA	NA		NA	NA

mg/kg = milligrams per kilogram
NA = Not Applicable

Note: Lead Target Level = 255 mg/kg, based on recommendation of Alameda County Health Care Services Aqgency

TABLE 2
MANDELA GATEWAY
SOIL ANALYTICAL RESULTS - LEAD
WEST BLOCK
Mandela Gateway Redevelopment Site
Oakland, California

Phase of Investigation	Sample ID	Sample Date	LEAD (Total) mg/kg	LEAD (STLC) mg/l	LEAD (TCLP) mg/l
2002 T&R Investigation	B-10-0.5	5/4/02	140	--	--
	B-10-1.5	5/4/02	99	--	--
	B-10-2.5	5/4/02	< 5.0	--	--
	B-11-0.5	5/4/02	**1,400**	--	--
	B-11-1.5	5/4/02	11	--	--
	B-11-2.5	5/4/02	< 5.0	--	--
	B-12-0.5	5/4/02	210	--	--
	B-12-1.5	5/4/02	12	--	--
	B-13-0.5	5/4/02	140	--	--
	B-13-1.5	5/4/02	43	--	--
	B-13-2.5	5/4/02	5.6	--	--
	B15-0.0	8/13/02	110	--	--
	B15-1.5	8/13/02	5.9	--	--
	B16-0	8/13/02	150	--	--
	B16-1.5	8/13/02	15	--	--
	B17-0	8/13/02	150	--	--
	B17-1.5	8/13/02	2.4	--	--
	B18-0	8/13/02	120	--	--
	B18-1.5	8/13/02	2.4	--	--
	B19-0	8/13/02	130	--	--
	B19-1.5	8/13/02	61	--	--
	B20-0.0	8/13/02	160	--	--
	B20-1.5	8/13/02	110	--	--
	B21-0	8/13/02	220	--	--
	B21-1.5	8/13/02	3.5	--	--
	B22-0	8/13/02	220	--	--
	B22-1.5	8/13/02	190	--	--
2003 T&R Investigation	WB-1-1.0	2/18/03	9.9	0.56	--
	WB-1-2.5	2/18/03	49		
	WB-1-5.0	2/18/03	6.8	--	--
	WB-2-1.0	2/18/03	11	< 0.5	--
	WB-2-2.5	2/18/03	55	--	--
	WB-2-5.0	2/18/03	4.1	--	--
	WB-3-1.0	2/18/03	15	< 0.5	--
	WB-3-2.5	2/18/03	94	--	--
	WB-3-5.0	2/18/03	8.0	--	--
	WB-4-1.0	2/19/03	**320**	63	< 0.5
	WB-4-2.5	2/19/03	2.3	--	--
	WB-4-5.0	2/19/03	2.3	--	--
	WB-5-1.0	2/18/03	14	< 0.5	--
	WB-5-2.5	2/18/03	15	0.74	--
	WB-5-5.0	2/18/03	2.5	--	--
	WB-6-1.0	2/18/03	*65*	3.8	--
	WB-6-2.5	2/18/03	3.4	--	--
	WB-6-5.0	2/18/03	2.9	--	--
	WB-7-1.0	2/18/03	220	11	< 0.5
	WB-7-2.5	2/18/03	3.3	--	--
	WB-7-5.0	2/18/03	1.5	--	--
	WB-8-0.5	2/18/03	15	0.71	--
	WB-8-1.5	2/18/03	2.7	--	--
	WB-8-5.0	2/18/03	1.7	--	--
	WB-9-1.0	2/18/03	180	8.5	0.72
	WB-9-2.5	2/18/03	12	--	--

TABLE 2
MANDELA GATEWAY
SOIL ANALYTICAL RESULTS - LEAD
WEST BLOCK
Mandela Gateway Redevelopment Site
Oakland, California

Phase of Investigation	Sample ID	Sample Date	LEAD (Total) mg/kg	LEAD (STLC) mg/l	LEAD (TCLP) mg/l
2003 T&R Investigation	WB-9-5.0	2/18/03	1.9	--	--
	WB-10-1.0	2/18/03	--	--	--
	WB-10-2.5	2/18/03	37	--	--
	WB-10-5.0	2/18/03	44	--	--
	WB-11-1.0	2/18/03	5.7	1.3	--
	WB-11-2.5	2/18/03	150	10	--
	WB-11-5.0	2/18/03	2.3	--	--
	WB-12-1.0	2/18/03	94	--	--
	WB-12-5.0	2/18/03	1.9	--	--
	WB-13-1.0	2/18/03	11	--	--
	WB-13-2.5	2/18/03	47	--	--
	WB-13-5.0	2/18/03	2.7	--	--
	WB-14-1.0	2/19/03	81	6.2	--
	WB-14-2.5	2/19/03	130	--	--
	WB-14-5.0	2/19/03	1.6	--	--
	WB-15-1.0	2/19/03	20	--	--
	WB-15-2.5	2/19/03	1.9	--	--
	WB-15-5.0	2/19/03	2.3	--	--
	WB-16-1.0	2/18/03	11	--	--
	WB-16-2.5	2/18/03	24	--	--
	WB-16-5.0	2/18/03	1.3	--	--
	WB-17-0.5	2/18/03	8.5	--	--
	WB-17-1.5	2/18/03	29	--	--
	WB-17-5.0	2/18/03	2.8	--	--
	WB-18-1.0	2/18/03	45	2	--
	WB-18-2.5	2/18/03	100	--	--
	WB-18-5.0	2/18/03	11	--	--
WB1 Focussed Excavation	WB1CS-N1-2.0	4/7/03	**280**	--	--
	WB1CS-S1-2.0	4/7/03	64	--	--
	WB1CS-E1-2.0	4/7/03	4.6	--	--
	WB1CS-W1-2.0	4/7/03	160	--	--
	WB1CS-B-3.0	4/7/03	1.9	--	--
	WB1CS-N2-2.0	4/10/03	51	--	--
	WB1CS-W2-2.0	4/10/03	--	--	--
	WB1CS-E2-2.0	4/10/03	--	--	--
WB5 Focussed Excavation	WB5CS-N1-2.5	4/7/03	10	--	--
	WB5CS-S1-2.5	4/7/03	11	--	--
	WB5CS-E1-2.5	4/7/03	22	--	--
	WB5CS-W1-2.5	4/7/03	23	--	--
	WB5CS-B-3.0	4/7/03	43	--	--
WB3 Focussed Excavation	WB3CS-B-1.5	4/7/03	1.6	--	--
WB10 Focussed Excavation	WB10CS-B-1.5	4/7/03	1.6	--	--
B11 Focussed Excavation	B11CS-N1-0.5	4/7/03	23	--	--
	B11CS-S1-0.5	4/7/03	82	--	--
	B11CS-E1-0.5	4/7/03	4.2	--	--
	B11CS-W1-0.5	4/7/03	41	--	--
	B11CS-B-1.0	4/7/03	2.4	--	--
B12 Focussed Excavation	B12CS-W1-1.0	4/10/03	5.2	--	--
	B12CS-N1-1.0	4/10/03	40	--	--
	B12CS-E1-1.0	4/10/03	140	--	--
	B12CS-S1-1.0	4/10/03	210	--	--
	B12CS-B-1.5	4/10/03	2	--	--

TABLE 2
MANDELA GATEWAY
SOIL ANALYTICAL RESULTS - LEAD
WEST BLOCK
Mandela Gateway Redevelopment Site
Oakland, California

Phase of Investigation	Sample ID	Sample Date	LEAD (Total) mg/kg	LEAD (STLC) mg/l	LEAD (TCLP) mg/l
WB4 Focussed Excavation	WB4CS-N1-1.5	4/15/03	1.9	--	--
	WB4CS-S1-1.5	4/15/03	2	--	--
	WB4CS-E1-1.5	4/15/03	39	--	--
	WB4CS-W1-1.5	4/15/03	2.1	--	--
	WB4CS-B-2.0	4/15/03	1.8	--	--
Stockpile #1 Profile Sample	SPWB1PS1,2,3,4	4/16/03	42	--	--
	SPWB1PS5,6,7,8	4/16/03	29	--	--
	SPWB1PS9,10,11,12	4/16/03	120	--	--
Stockpile #2 Profile Sample	SPWB2PS1,2,3,4	4/17/03	< 1.0	--	--
	SPWB2PS5,6,7,8	4/17/03	7.7	--	--
	SPWB2PS9,10,11,12	4/17/03	26	--	--
	SPWB2PS13,14,15,16	4/17/03	20	--	--
Focussed Stockpile Sample	HSP1,2,3,4	4/17/03	32	--	--
Area OBOC Stockpile Sample	OBOC-1,2,3,4	4/22/03	17	--	--

Notes:
ug/kg - micrograms per kilogram; > 1.0 - Not detected at detection limit given; nd - not detected,
<1.0 - not detected at or above laboratory reporting limit provided
-- - not analyzed
Bold - Lead concentration greater than 255 mg/kg, risk based level provided by Alameda County Health Services Agency

TABLE 3
SOIL ANALYTICAL RESULTS - PESTICIDES
WEST BLOCK
Mandela Gateway Redevelopment Site
Oakland, California

Phase of Investigation	Sample ID	Sample Date	Aldrin ug/kg	Dieldrin ug/kg	Endrin* ug/kg	4,4 -DDD ug/kg	4,4 -DDT ug/kg	4,4 -DDE ug/kg	alpha-BHC ug/kg
2002 T&R Investigation	B-10-0.5	5/4/02	< 10	**170**	< 10	< 10	12	< 10	< 10
	B-10-2.5	5/4/02	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
	B-11-0.5	5/4/02	< 10	**28**	< 10	< 10	< 10	< 10	< 10
	B-11-2.5	5/4/02	< 2.5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.5
	B-12-0.5	5/4/02	< 500	< 500	1,300	< 500	**5,400**	**2,500**	< 500
	B-12-1.5	5/4/02	< 2.0	< 2.0	6.4	2.2	29	24	< 2.0
	B-13-0.5	5/4/02	< 10	< 10	< 10	< 10	**19**	**15**	< 10
	B15-0.0	8/13/02	<10	**16**	<10	< 10	**16**	<10	<10
	B16-0	8/13/02	<10	**18**	<10	< 10	<10	<10	<10
	B16-1.5	8/13/02	<10	**14**	<10	< 10	<10	<10	<10
	B17-0	8/13/02	<10	<10	<10	< 10	<10	<10	<10
	B18-0	8/13/02	<10	<10	<10	< 10	<10	<10	<10
	B19-0	8/13/02	<10	**25**	<10	< 10	<10	<10	<10
	B19-1.5	8/13/02	<10	<10	<10	< 10	<10	<10	<10
	B20-0.0	8/13/02	<10	<10	<10	< 10	**22**	<10	<10
	B20-1.5	8/13/02	<10	<10	<10	< 10	**21**	<10	<10
	B21-0	8/13/02	<10	<10	<10	< 10	150	170	<10
	B21-1.5	8/13/02	<10	<10	<10	< 10	<10	<10	<10
	B22-0	8/13/02	<10	<10	<10	< 10	25	10	<10
	B22-1.5	8/13/02	<10	<10	<10	< 10	10	<10	<10
2003 T&R Investigation	WB-1-1.0	2/18/03	**190**	**230**	58	< 10	< 10	< 10	< 10
	WB-1-2.5	2/18/03	**4,800**	**1,900**	< 500	< 500	< 500	< 500	< 500
	WB-2-1.0	2/18/03	4.0	3.5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
	WB-3-1.0	2/18/03	**220**	**360**	< 50	< 50	< 50	< 50	< 50
	WB-3-2.5	2/18/03	3.1	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
	WB-5-1.0	2/18/03	**1,700**	**910**	< 100	< 100	< 100	< 100	< 100
	WB-5-2.5	2/18/03	**50**	**15**	< 2	< 2	< 2	< 2	< 2
	WB-6-1.0	2/18/03	2.5	**11**	< 2.0	< 2.0	< 2.0	**4.3**	< 2.0
	WB-7-1.0	2/18/03	< 10	< 10	< 10	< 10	240	200	< 10
	WB-8-0.5	2/18/03	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
	WB-9-1.0	2/18/03	< 2.0	**3.0**	< 2.0	< 2.0	**20**	2.5	< 2.0
	WB-10-1.0	2/18/03	**27**	**23**	< 2.0	< 2.0	2.3	2.7	2.2
WB1 Focussed Excavation	WB1CS-N1-2.0	4/7/03	**19**	**17**	< 10	< 10	< 10	< 10	< 10
	WB1CS-S1-2.0	4/7/03	< 10	< 10	< 10	< 10	< 10	< 10	< 10
	WB1CS-E1-2.0	4/7/03	**2.8**	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
	WB1CS-W1-2.0	4/7/03	< 10	< 10	< 10	< 10	**15**	< 10	< 10
	WB1CS-B-3.0	4/7/03	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
	WB1CS-N2-2.0	4/10/03	**63**	**75**	< 10	< 10	< 10	< 10	< 10
	WB1CS-W2-2.0	4/10/03	**13**	**10**	< 10	< 10	< 10	< 10	< 10
	WB1CS-E2-2.0	4/10/03	**53**	**25**	< 10	< 10	< 10	< 10	< 10
WB5 Focussed Excavation	WB5CS-N1-2.5	4/7/03	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
	WB5CS-S1-2.5	4/7/03	**45**	**18**	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
	WB5CS-E1-2.5	4/7/03	**240**	**230**	< 20	< 20	< 20	< 20	< 20
	WB5CS-W1-2.5	4/7/03	**370**	**160**	< 20	< 20	< 20	< 20	< 20
	WB5CS-B-3.0	4/7/03	**26**	**13**	< 10	< 10	< 10	< 10	< 10
	WB5CS-E2-2.5	4/10/03	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
	WB5CS-W2-2.5	4/10/03	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
	WB5CS-S2-2.5	4/10/03	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
	WB5CS-B-5.0	4/10/03	**610**	**230**	< 50	< 50	< 50	< 50	< 50
	WB5CS-B-6.0	4/15/03	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0

TABLE 3
SOIL ANALYTICAL RESULTS - PESTICIDES
WEST BLOCK
Mandela Gateway Redevelopment Site
Oakland, California

Phase of Investigation	Sample ID	Sample Date	Aldrin ug/kg	Dieldrin ug/kg	Endrin* ug/kg	4,4 -DDD ug/kg	4,4 -DDT ug/kg	4,4 -DDE ug/kg	alpha-BHC ug/kg
WB3 Focussed Excavation	WB3CS-B-1.5	4/7/03	**3.4**	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
	WB3CS-B-2.5	4/10/03	**18**	< 10	< 10	< 10	< 10	< 10	< 10
WB10 Focussed Excavation	WB10CS-B-1.5	4/7/03	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
B11 Focussed Excavation	B11CS-N1-0.5	4/7/03	< 10	< 10	< 10	< 10	< 10	< 10	< 10
	B11CS-S1-0.5	4/7/03	< 10	< 10	< 10	< 10	< 10	< 10	< 10
	B11CS-E1-0.5	4/7/03	< 10	< 10	< 10	< 10	< 10	< 10	< 10
	B11CS-W1-0.5	4/7/03	< 10	< 10	< 10	< 10	< 10	< 10	< 10
	B11CS-B-1.0	4/7/03	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
B12 Focussed Excavation	B12CS-W1-1.0	4/10/03	< 10	< 10	< 10	< 10	< 10	< 10	< 10
	B12CS-N1-1.0	4/10/03	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
	B12CS-E1-1.0	4/10/03	< 10	< 10	**11**	< 10	**81**	**55**	< 10
	B12CS-S1-1.0	4/10/03	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
	B12CS-B-1.5	4/10/03	< 2.0	< 2.0	< 2.0	< 2.0	**4.2**	**2.7**	< 2.0
Stockpile #1 Profile Sample	SPWB1PS1,2,3,4	4/16/03	**440**	**290**	< 50	< 50	**55**	< 50	< 50
	SPWB1PS5,6,7,8	4/16/03	**350**	**220**	< 50	< 50	< 50	< 50	< 50
	SPWB1PS9,10,11,12	4/16/03	**110**	**96**	< 50	< 50	120	< 50	< 50
Stockpile #2 Profile Sample	SPWB2PS1,2,3,4	4/17/03	**7.7**	**5.8**	< 2.0	< 2.0	**2.3**	< 2.0	< 2.0
	SPWB2PS5,6,7,8	4/17/03	**8.2**	**8.9**	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
	SPWB2PS9,10,11,12	4/17/03	**17**	**18**	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
	SPWB2PS13,14,15,16	4/17/03	**5**	**7.3**	< 2.0	< 2.0	**3.1**	< 2.0	< 2.0
	SPWB2PS1	4/17/03	5.1	5.8	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
	SPWB2PS2	4/17/03	7.6	5.6	< 2.0	< 2.0	2.3	< 2.0	< 2.0
	SPWB2PS3	4/17/03	9.3	7.3	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
	SPWB2PS4	4/17/03	7.3	6.1	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
	SPWB2PS5	4/17/03	**16**	**24**	2.4	< 2.0	2.5	< 2.0	< 2.0
	SPWB2PS6	4/17/03	2.9	2.2	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
	SPWB2PS7	4/17/03	4.1	3.5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
	SPWB2PS8	4/17/03	3.9	3.2	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
	SPWB2PS9	4/17/03	**47**	**100**	< 20	< 20	< 20	< 20	< 20
	SPWB2PS10	4/17/03	**23**	**11**	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
	SPWB2PS11	4/17/03	5.2	7.3	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
	SPWB2PS12	4/17/03	3.8	5.2	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
	SPWB2PS13	4/17/03	8.7	**17**	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
	SPWB2PS14	4/17/03	**260**	**170**	< 20	< 20	< 20	< 20	< 20
	SPWB2PS15	4/17/03	ND	2.3	< 2.0	< 2.0	5.6	3	< 2.0
	SPWB2PS16	4/17/03	ND	2.5	< 2.0	< 2.0	2.2	< 2.0	< 2.0
Hotspot Stockpile Sample	HSP1,2,3,4	4/17/03	**1900**	**1100**	< 200	< 200	< 200	< 200	< 200
Area OBOC Stockpile Sample	OBOC-1,2,3,4	4/22/03	**63**	**35**	< 2.0	< 2.0	**2.3**	< 2.0	< 2.0
Stockpile OA Profile Sample	OA-1,2,3,4	4/25/03	**23**	**16**	< 2.0	< 2.0	2.3	< 2.0	< 2.0
	OA-5,6,7,8	4/25/03	**39**	**34**	< 2.0	< 2.0	5.8	< 2.0	< 2.0
	OA-9,10,11,12	4/25/03	**160**	**91**	< 20	< 20	< 20	< 20	< 20
	OA-13,14,15,16	4/25/03	**30**	**22**	< 2.0	< 2.0	2.7	< 2.0	< 2.0
	OA-1	4/25/03	**31**	**15**	< 2.0	< 2.0	4.3	< 2.0	< 2.0
	OA-2	4/25/03	**130**	**99**	< 10	< 10	< 10	< 10	< 10
	OA-3	4/25/03	**26**	**11**	< 2.0	< 2.0	3	< 2.0	< 2.0
	OA-4	4/25/03	**42**	**37**	< 2.0	< 2.0	4.7	< 2.0	< 2.0
	OA-5	4/25/03	2	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
	OA-6	4/25/03	**76**	**34**	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
	OA-7	4/25/03	**54**	**54**	2.8	< 2.0	14	< 2.0	< 2.0
	OA-8	4/25/03	**78**	**33**	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
	OA-9	4/25/03	**140**	**140**	< 10	< 10	32	< 10	< 10

TABLE 3
SOIL ANALYTICAL RESULTS - PESTICIDES
WEST BLOCK
Mandela Gateway Redevelopment Site
Oakland, California

Phase of Investigation	Sample ID	Sample Date	Aldrin ug/kg	Dieldrin ug/kg	Endrin* ug/kg	4,4 -DDD ug/kg	4,4 -DDT ug/kg	4,4 -DDE ug/kg	alpha-BHC ug/kg
Stockpile OA Profile Sample	OA-10	4/25/03	**430**	**130**	< 20	< 20	< 20	< 20	< 20
	OA-11	4/25/03	7	7.1	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
	OA-12	4/25/03	**74**	**49**	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
	OA-13	4/25/03	**11**	6.5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
	OA-14	4/25/03	**29**	**14**	< 2.0	< 2.0	2.5	< 2.0	< 2.0
	OA-15	4/25/03	**94**	**53**	< 10	< 10	< 10	< 10	< 10
	OA-16	4/25/03	**21**	**13**	< 2.0	< 2.0	2.7	< 2.0	< 2.0

Notes:
ug/kg = micrograms per kilogram; > 1.0 - Not detected at detection limit given; nd - not detected,
<1.0 = not detected at or above laboratory reporting limit provided
-- = not analyzed
endrin* = includes both endrin and endrin ketone
Bold - Concentration greater than risk-based remedial target level

TABLE 4
SOIL ANALYTICAL RESULTS - CAM 17/LUFT5 METALS*
WEST BLOCK
Mandela Gateway Redevelopment Site
Oakland, California

Phase of Investigation	Sample ID	Sample Date	Antimony mg/kg	Arsenic mg/kg	Barium mg/kg	Beryllium mg/kg	Cadmium mg/kg	Chromium mg/kg	Cobalt mg/kg	Copper mg/kg	Molybdenum mg/kg	Nickel mg/kg	Selenium mg/kg	Silver mg/kg	Thallium mg/kg	Vanadium mg/kg	Zinc mg/kg	Mercury mg/kg
	WB-1-1.0	2/18/03	< 2.0	**3.6**	250	0.72	1.5	8.8	5.5	14	< 1.0	17	< 2.0	< 1.0	< 1.0	17	35	0.97
	WB-2-1.0	2/18/03	< 2.0	**3.4**	300	0.7	**1.8**	7.8	9.6	11	< 1.0	22	< 2.0	< 1.0	< 1.0	15	40	*2.2*
	WB-3-1.0	2/18/03	< 2.0	**3.6**	180	0.69	1.6	10	9.5	19	< 1.0	18	< 2.0	< 1.0	< 1.0	19	39	1.5
2003 T & R	WB-4-1.0	2/19/03	< 2.0	**4.5**	83	< 0.5	**1.8**	20	4.2	17	< 1.0	15	< 2.0	< 1.0	< 1.0	19	110	0.22
Investigation	WB-5-1.0	2/18/03	< 2.0	**3.8**	160	0.72	1.5	8.8	8.7	16	< 1.0	17	< 2.0	< 1.0	< 1.0	19	40	0.88
	WB-6-1.0	2/18/03	< 2.0	**2.8**	90	< 0.5	1.2	22	3.9	17	< 1.0	16	< 2.0	< 1.0	< 1.0	19	83	0.21
	WB-8-0.5	2/18/03	< 2.0	**3.4**	180	0.65	1.6	11	7.7	12	< 1.0	19	< 2.0	< 1.0	< 1.0	19	41	*2.2*
	WB-9-1.0	2/18/03	< 2.0	**3.2**	87	< 0.5	1.5	27	3.8	19	< 1.0	18	< 2.0	< 1.0	< 1.0	20	140	0.19

Results in units at top: mg/kg - milligrams per kilogram
> 1.0 - Not detected at detection limit given, -- Not analyzed
Bold - Result exceeds USEPA Residential PRG; *Italics* - Result exceeds 10-times STLC
* CAM 17/LUFT 5 Metals exclusive of Lead

TABLE 5
MANDELA GATEWAY
SOIL ANALYTICAL RESULTS - ORGANIC COMPOUNDS
WEST BLOCK
Mandela Gateway Redevelopment Site
Oakland, California

Phase of Investigation	Sample ID	Sample Date	TPH-g mg/kg	TPH-d mg/kg	TPH-mo mg/kg
2002 T&R Investigation	B-10-3.5	5/4/02	--	< 1.0	< 50
	B-12-1.5	5/4/02	--	< 1.0	< 50
2003 T&R Investigation	WB-1-1.0	2/18/03	< 1.0	22	85
	WB-2-1.0	2/18/03	< 1.0	3.3	< 50
	WB-3-1.0	2/18/03	< 1.0	2.3	< 50
	WB-5-1.0	2/18/03	< 1.0	14	< 50
	WB-8-0.5	2/18/03	< 1.0	5.7	< 50
	WB-8-1.5	2/18/03	< 1.0	1.9	< 50
	WB-8-5.0	2/18/03	< 1.0	1.0	< 50
	WB-9-1.0	2/18/03	< 1.0	14	170
	WB-9-2.5	2/18/03	< 1.0	2.5	< 50
	WB-9-5.0	2/18/03	< 1.0	1.3	< 50
	WB-17-0.5	2/18/03	< 1.0	3.7	< 50

Notes:
mg/kg = milligrams per kilogram
<1.0 = not detected at or above laboratory reporting limit provided
-- = not analyzed
TPH-g = Total petroleum hydrocarbons quantified as gasoline
TPH-d = Total petroleum hydrocarbons quantified as diesel fuel
TPH-mo = Total petroleum hydrocarbons quantified as motor oil

TABLE 6
SOIL ANALYTICAL RESULTS - LEAD
EAST BLOCK
Mandela Gateway Redevelopment Site
Oakland, California

Phase of Investigation	Sample ID	Sample Date	LEAD (Total) mg/kg	LEAD (STLC) mg/l	LEAD (TCLP) mg/l
2002 PSI Investigation	PB-14-2	1/8/02	98	1.42	--
	PB-14-5	1/8/02	2.0	--	--
	PB-14-8	1/8/02	7.0	--	--
	PB-15-5	1/8/02	< 2.0	--	--
	PB-15-8	1/8/02	2.0	--	--
	PB-16-3	1/8/02	6.0	--	--
	PB-16-10	1/8/02	3.0	--	--
	PB-17-2	1/8/02	**485**	38.7	--
	PB-17-5	1/8/02	2.0	--	--
	PB-17-8	1/8/02	21	--	--
	PB-18-5	1/8/02	< 2.0	--	--
	PB-18-8	1/8/02	172	1.48	--
	PB-19-2	1/8/02	**2,280**	--	0.21
	PB-19-5	1/8/02	3.0	--	--
	PB-19-8	1/8/02	2.0	--	--
	PB-20-5	1/8/02	3.0	--	--
	PB-20-12	1/8/02	2.0	--	--
2002 T&R Investigations	B-1-0.5	5/4/02	19	--	--
	B-1-2.5	5/4/02	< 5.0	--	--
	B-2-0.5	5/4/02	**550**	--	--
	B-2-2.5	5/4/02	91	--	--
	B-3-0.5	5/4/02	110	--	--
	B-3-2.5	5/4/02	66	--	--
	B-4-0.5	5/4/02	8.5	--	--
	B-4-2.5	5/4/02	< 5.0	--	--
	B-5-0.5	5/4/02	130	--	--
	B-5-1.5	5/4/02	33	--	--
	B-5-3.5	5/4/02	5.2	--	--
	B-6-0.5	5/4/02	**830**	--	--
	B-6-2.5	5/4/02	< 5.0	--	--
	B-7-0.5	5/4/02	21	--	--
	B-7-1.5	5/4/02	**960**	--	--
	B-8-0.5	5/4/02	150	--	--
	B-8-1.5	5/4/02	**1,700**	--	--
	B-8-2.5	5/4/02	3.4	--	--
	B-9-0.5	5/4/02	1.5	--	--

TABLE 6
SOIL ANALYTICAL RESULTS - LEAD
EAST BLOCK
Mandela Gateway Redevelopment Site
Oakland, California

Phase of Investigation	Sample ID	Sample Date	LEAD (Total) mg/kg	LEAD (STLC) mg/l	LEAD (TCLP) mg/l
	B-9-1.5	5/4/02	150	--	--
	B-9-2.5	5/4/02	2.1	--	--
	B-14-0.5	5/4/02	7.0	--	--
	B-14-2.5	5/4/02	2.2	--	--
	B-23-0.5	8/13/02	48	--	--
	B-23-1.5	8/13/02	18	--	--
	B-24-0.5	8/13/02	**520**	--	--
	B-24-1.5	8/13/02	62	--	--
	B-25-0.5	8/13/02	47	--	--
	B-25-1.5	8/13/02	49	--	--
	T-4E-0.5	7/1/02	180	--	--
	T-4E-1.5	7/1/02	**380**	--	--
	T-4W-0.5	7/1/02	220	--	--
	T-4W-1.5	7/1/02	140	--	--
	T-5E-0.5	7/2/02	150	--	--
	T-5E-1.5	7/3/02	**570**	--	--
	T-5W-0.5	7/2/02	24	--	--
	T-5W-1.5	7/3/02	**520**	--	--
	T-8E-0.5	7/1/02	130	--	--
	T-8E-1.5	7/1/02	50	--	--
	T-8W-0.5	7/1/02	71	--	--
	T-8W-1.5	7/1/02	160	--	--
	EB-1-1.0	2/18/03	73	--	--
	EB-1-2.5	2/18/03	230	11	< 0.5
	EB-1-5.0	2/18/03	2.4	--	--
	EB-2-0.0	2/18/03	4.9	< 0.5	--
	EB-2-1.5	2/18/03	2.3	--	--
	EB-2-5.0	2/18/03	3.1	--	--
	EB-3-1.0	2/19/03	1.6	< 0.5	--
	EB-3-2.5	2/19/03	37	0.9	--
	EB-3-5.0	2/19/03	2.6	--	--
	EB-4-0.0	2/18/03	**280**	22	< 0.5
	EB-4-1.5	2/18/03	**320**	9.3	< 0.5
	EB-4-5.0	2/18/03	4.4	< 0.5	--
	EB-5-1.0	2/19/03	81	6.5	--
	EB-5-2.5	2/19/03	2.0	--	--

TABLE 6
SOIL ANALYTICAL RESULTS - LEAD
EAST BLOCK
Mandela Gateway Redevelopment Site
Oakland, California

Phase of Investigation	Sample ID	Sample Date	LEAD (Total) mg/kg	LEAD (STLC) mg/l	LEAD (TCLP) mg/l
2003 T&R Investigation	EB-5-5.0	2/19/03	2.4	--	--
	EB-6-1.0	2/19/03	170	7.3	--
	EB-6-2.5	2/19/03	21	1.6	--
	EB-6-5.0	2/19/03	1.6	< 0.50	--
	EB-7-1.0	2/19/03	53	4.5	--
	EB-7-2.5	2/19/03	120	--	--
	EB-7-5.0	2/19/03	2.2	--	--
	EB-8-1.0	2/18/03	14	--	--
	EB-8-2.5	2/18/03	4.0	--	--
	EB-8-5.0	2/18/03	1.7	--	--
	EB-9-1.0	2/18/03	**300**	12	< 0.5
	EB-9-2.5	2/18/03	**350**	12	--
	EB-9-5.0	2/18/03	1.9	--	--
	EB-10-1.0	2/19/03	5.3	--	--
	EB-10-2.5	2/19/03	60	--	--
	EB-10-5.0	2/19/03	2.1	--	--
	EB-11-1.0	2/19/03	24	2.4	--
	EB-11-2.5	2/19/03	**420**	29	--
	EB-11-5.0	2/19/03	2.0	--	--
2003 J&A Investigation	FLWN1-1.5	4/18/03	**270**	--	--
	FLWN2-1.5	4/29/03	47	--	--
	FLWS1-1.5	4/18/03	8.2	--	--
	FLWE1-1.5	4/18/03	**490**	--	--
	FLWE2-1.5	4/29/03	3.4	--	--
	FLWW1-1.5	4/18/03	4.2	--	--
	EBB1-0.5	4/21/03	13	--	--
	EBB1-1.5	4/21/03	61	--	--
	EBB2-0.5	4/21/03	90	--	--
	EBB2-1.5	4/21/03	43	--	--
	EBB3-0.5	4/21/03	50	--	--
	EBB3-1.5	4/21/03	2	--	--
	EBB4-0.5	4/21/03	**460**	--	--
	EBB4-1.5	4/21/03	180	--	--
	EBB5-0.5	4/21/03	8.1	--	--
	EBB5-1.5	4/21/03	2.4	--	--
	EBB6-0.5	4/21/03	3.7	--	--

TABLE 6
SOIL ANALYTICAL RESULTS - LEAD
EAST BLOCK
Mandela Gateway Redevelopment Site
Oakland, California

Phase of Investigation	Sample ID	Sample Date	LEAD (Total) mg/kg	LEAD (STLC) mg/l	LEAD (TCLP) mg/l
2003 North Landscaped Area Investigation	EBB6-1.5	4/21/03	**820**	--	--
	EBB6-3.5	4/21/03	1.7	--	--
	EBB7-0.5	4/22/03	81	--	--
	EBB7-2.0	4/21/03	6.6	--	--
	EBB8-0.5	4/22/03	**390**	--	--
	EBB8-2.0	4/21/03	25	--	--
	EBB9-0.5	4/22/03	140	--	--
	EBB9-2.0	4/21/03	180	--	--
	EBB10-0.5	4/22/03	140	--	--
	EBB10-2.0	4/21/03	**330**	--	--
	EBB11-0.5	4/22/03	47	--	--
	EBB11-2.0	4/21/03	**1,800**	--	--
	EBB12-0.5	4/22/03	84	--	--
	EBB12-2.0	4/21/03	22	--	--
	EBB13-0.5	4/22/03	100	--	--
	EBB13-2.0	4/21/03	1.4	--	--
	EBB15-0.5	4/22/03	140	--	--
	EBB15-2.0	4/21/03	130	--	--
EB1 Focussed Excavation	EB1CS-E1-1.5	4/7/03	240	--	--
	EB1CS-E2-1.5	4/10/03	**280**	--	--
	EB1CS-W1-1.5	4/7/03	**350**	--	--
	EB1CS-W2-1.5	4/10/03	190	--	--
	EB1CS-B-2.0	4/7/03	120	--	--
EB9 Focussed Excavation	EB9CS-N1-2.5	4/7/03	26	--	--
	EB9CS-S1-2.5	4/7/03	24	--	--
	EB9CS-E1-2.5	4/7/03	21	--	--
	EB9CS-W1-2.5	4/7/03	26	--	--
	EB9CS-B-3.0	4/7/03	3.3	--	--
PB17 Focussed Excavation	PB17CS-N1-2.5	4/7/03	2.5	--	--
	PB17CS-S1-2.5	4/7/03	5.6	--	--
	PB17CS-E1-2.5	4/7/03	1.9	--	--
	PB17CS-W1-2.5	4/7/03	2.6	--	--
	PB17CS-B-3.0	4/7/03	1.4	--	--

TABLE 6
SOIL ANALYTICAL RESULTS - LEAD
EAST BLOCK
Mandela Gateway Redevelopment Site
Oakland, California

Phase of Investigation	Sample ID	Sample Date	LEAD (Total) mg/kg	LEAD (STLC) mg/l	LEAD (TCLP) mg/l
PB19 Focussed Excavation	PB19CS-N1-2.5	4/7/03	29	--	--
	PB19CS-S1-2.5	4/7/03	20	--	--
	PB19CS-E1-2.5	4/7/03	84	--	--
	PB19CS-W1-2.5	4/7/03	1.7	--	--
	PB19CS-B-3.0	4/7/03	5.1	--	--
B3 Focussed Excavation	B3CS-N1-2.5	4/7/03	1.6	--	--
	B3CS-S1-2.5	4/7/03	1.5	--	--
	B3CS-E1-2.5	4/7/03	1.6	--	--
	B3CS-W1-2.5	4/7/03	1.6	--	--
	B3CS-B-3.0	4/7/03	190	--	--
B24 Focussed Excavation	B24N1-1.5	4/18/03	14	--	--
	B24S1-1.5	4/18/03	7.5	--	--
	B24W1-1.5	4/18/03	14	--	--
	B24E1-1.5	4/18/03	9.5	--	--
	B24B-2.0	4/18/03	3	--	--
B5 Focussed Excavation	B5N1-1.5	4/18/03	18	--	--
	B5S1-1.5	4/18/03	6.4	--	--
	B5E1-1.5	4/18/03	14	--	--
	B5W1-1.5	4/18/03	20	--	--
	B5B-2.0	4/18/03	4.1	--	--
EB11 Focussed Excavation	EB11N1-2.5	4/18/03	**670**	--	--
	EB11N2-2.5	4/29/03	7.7	--	--
	EB11W1-2.5	4/18/03	110	--	--
	EB11S1-2.5	4/18/03	7.3	--	--
	EB11E1-2.5	4/18/03	7.8	--	--
	EB11B-3.0	4/18/03	1.6	--	--
B7 Focussed Excavation	B7N1-2.5	4/18/03	2.3	--	--
	B7S1-2.5	4/18/03	2.5	--	--
	B7W1-2.5	4/18/03	5.7	--	--
	B7E1-2.5	4/18/03	1.7	--	--
	B7B-3.0	4/18/03	1.6	--	--
B8 Focussed Excavation	B8N1-2.5	4/18/03	1.8	--	--
	B8S1-2.5	4/18/03	2	--	--
	B8W1-2.5	4/18/03	1.6	--	--
	B8E1-2.5	4/18/03	29	--	--
	B8B-3.0	4/18/03	110	--	--

TABLE 6
SOIL ANALYTICAL RESULTS - LEAD
EAST BLOCK
Mandela Gateway Redevelopment Site
Oakland, California

Phase of Investigation	Sample ID	Sample Date	LEAD (Total) mg/kg	LEAD (STLC) mg/l	LEAD (TCLP) mg/l
EBB4 Focussed Excavation	EBB4N1-1.0	4/29/03	220	--	--
	EBB4S1-1.0	4/29/03	**670**	--	--
	EBB4W1-1.0	4/29/03	190	--	--
	EBB4E1-1.0	4/29/03	170	--	--
	EBB4B-1.5	4/29/03	3.5	--	--
EBB6 Focussed Excavation	EBB6N1-2.5	4/29/03	150	--	--
	EBB6S1-2.5	4/29/03	1.8	--	--
	EBB6W1-2.5	4/29/03	1.8	--	--
	EBB6E1-2.5	4/29/03	2	--	--
	EBB6B-3.0	4/29/03	1.7	--	--
EBB8 Focussed Excavation	EBB8N1-0.5	4/29/03	**370**	--	--
	EBB8S1-0.5	4/29/03	70	--	--
	EBB8W1-0.5	4/29/03	130	--	--
	EBB8E1-0.5	4/29/03	46	--	--
	EBB8B-1.0	4/29/03	140	--	--
EBB10 Focussed Excavation	EBB10N1-2.5	4/29/03	4	--	--
	EBB10S1-2.5	4/29/03	14	--	--
	EBB10W1-2.5	4/29/03	5	--	--
	EBB10E1-2.5	4/29/03	7.7	--	--
	EBB10B-3.0	4/29/03	2	--	--
EBB11 Focussed Excavation	EBB11N1-2.5	4/29/03	1.7	--	--
	EBB11S1-2.5	4/29/03	1.5	--	--
	EBB11W1-2.5	4/29/03	1.8	--	--
	EBB11E1-2.5	4/29/03	1.7	--	--
	EBB11B-3.0	4/29/03	1.6	--	--
T5E Focussed Excavation	T5EN1-1.5	4/29/03	11	--	--
	T5ES1-1.5	4/29/03	4.4	--	--
	T5EW1-1.5	4/29/03	3.4	--	--
	T5EE1-1.5	4/29/03	28	--	--
	T5EB-2.0	4/29/03	2.5	--	--

Results in units at top: mg/kg - milligrams per kilogram; mg/l - milligrams per liter
> 1.0 - Not detected at detection limit given, -- Not analyzed
"B-1-0.5", "EB-1-1.0" - Boring sample collected by Treadwell & Rollo
"T-5E-0.5" - Trench sample collected by Treadwell & Rollo
Bold - Risk based level provided by Alameda County Health Care Services Agency

TABLE 7
SOIL ANALYTICAL RESULTS - CAM 17/LUFT 5*
EAST BLOCK
Mandela Gateway Redevelopment Site
Oakland, California

Phase of Investigation	Sample ID	Sample Date	Antimony mg/kg	Arsenic mg/kg	Barium mg/kg	Beryllium mg/kg	Cadmium mg/kg	Chromium mg/kg	Chromium (VI) mg/kg	Cobalt mg/kg	Copper mg/kg	Molybdenum mg/kg	Nickel mg/kg	Selenium mg/kg	Silver mg/kg	Thallium mg/kg	Vanadium mg/kg	Zinc mg/kg	Mercury mg/kg
2002 T&R Investigation	PB-14-2	1/8/02	< 4.0	< 4.0	< 80	< 2.0	< 2.0	38.3	--	< 10.0	50.7	< 5.0	33.5	< 2.0	< 4.0	< 4.0	< 20	179	< 0.3
	PB-14-5	1/8/02	< 4.0	< 4.0	< 80	< 2.0	< 2.0	27.4	--	< 10.0	4.9	< 5.0	18.8	< 2.0	< 4.0	< 4.0	22	14	< 0.3
	PB-14-8	1/8/02	< 4.0	< 4.0	< 80	< 2.0	< 2.0	44.4	--	< 10.0	6	< 5.0	29.4	< 2.0	< 4.0	< 4.0	27	24	< 0.3
	PB-15-5	1/8/02	< 4.0	< 4.0	< 80	< 2.0	< 2.0	22	--	< 10.0	4.8	< 5.0	11.9	< 2.0	< 4.0	< 4.0	< 20	11	< 0.3
	PB-15-8	1/8/02	< 4.0	< 4.0	< 80	< 2.0	< 2.0	26.6	--	< 10.0	5.6	< 5.0	27	< 2.0	< 4.0	< 4.0	22	18	< 0.3
	PB-16-10	1/8/02	< 4.0	< 4.0	< 80	< 2.0	< 2.0	54.2	--	< 10.0	7.3	< 5.0	32.5	< 2.0	< 4.0	< 4.0	28	--	< 0.3
	PB-16-3	1/8/02	< 4.0	< 4.0	< 80	< 2.0	< 2.0	24	< 10	< 10.0	5.6	< 5.0	14.3	< 2.0	< 4.0	< 4.0	< 20	16	< 0.3
	PB-17-2	1/8/02	< 4.0	**4.5**	210	< 2.0	< 2.0	21.7	--	< 10.0	50.2	< 5.0	14.7	< 2.0	< 4.0	< 4.0	< 20	314	0.4
	PB-17-5	1/8/02	< 4.0	< 4.0	< 80	< 2.0	< 2.0	22.9	< 10	< 10.0	5	< 5.0	13.6	< 2.0	< 4.0	< 4.0	< 20	11	< 0.3
	PB-17-8	1/8/02	< 4.0	< 4.0	< 80	< 2.0	< 2.0	24.8	--	< 10.0	9.6	< 5.0	15.7	< 2.0	< 4.0	< 4.0	< 20	35	< 0.3
	PB-18-5	1/8/02	< 4.0	< 4.0	< 80	< 2.0	< 2.0	20.5	--	< 10.0	4.7	< 5.0	13.2	< 2.0	< 4.0	< 4.0	< 20	11	< 0.3
	PB-18-8	1/8/02	< 4.0	**4.7**	124	< 2.0	< 2.0	32.1	< 10	< 10.0	46.8	< 5.0	20.4	< 2.0	< 4.0	< 4.0	20	237	0.9
	PB-19-2	1/8/02	< 4.0	**4.6**	744	< 2.0	2.5	27.6	--	< 10.0	76.3	< 5.0	22.1	< 2.0	< 4.0	< 4.0	32	995	< 0.3
	PB-19-5	1/8/02	< 4.0	< 4.0	< 80	< 2.0	< 2.0	20.3	--	< 10.0	5.1	< 5.0	12	< 2.0	< 4.0	< 4.0	< 20	15	< 0.3
	PB-19-8	1/8/02	< 4.0	< 4.0	< 80	< 2.0	< 2.0	25.7	--	< 10.0	5.3	< 5.0	25.4	< 2.0	< 4.0	< 4.0	20	17	< 0.3
	PB-20-12	1/8/02	< 4.0	< 4.0	< 80	< 2.0	< 2.0	31.6	< 10	< 10.0	6.2	< 5.0	27.7	< 2.0	< 4.0	< 4.0	25	20	< 0.3
	PB-20-5	1/8/02	< 4.0	< 4.0	< 80	< 2.0	< 2.0	22.8	--	< 10.0	8.3	< 5.0	12.8	< 2.0	< 4.0	< 4.0	< 20	14	< 0.3
	B-5-0.5	5/4/02	--	--	--	--	**3.2**	10	--	--	--	--	12	--	--	--	--	120	--
	B-5-3.5	5/4/02	--	--	--	--	1	21	--	--	--	--	13	--	--	--	--	16	--
	B-7-0.5	5/4/02	--	--	--	--	**2.4**	4.7	--	--	--	--	7.4	--	--	--	--	65	--
	B-7-1.5	5/4/02	--	--	--	--	1.6	20	--	--	--	--	16	--	--	--	--	290	--
	B-8-0.5	5/4/02	--	--	--	--	**2.3**	21	--	--	--	--	19	--	--	--	--	140	--
	B-8-2.5	5/4/02	--	--	--	--	0.91	20	--	--	--	--	13	--	--	--	--	19	--
	B-9-0.5	5/4/02	--	--	--	--	1.7	< 1.0	--	--	--	--	1.5	--	--	--	--	25	--
	B-9-2.5	5/4/02	--	--	--	--	0.97	22	--	--	--	--	14	--	--	--	--	13	--
	B-23-0.5	8/13/02	--	--	--	--	**3.2**	--	--	--	--	--	--	--	--	--	--	--	--
	B-24-0.5	8/13/02	--	--	--	--	**3**	--	--	--	--	--	--	--	--	--	--	--	--
	B-25-0.5	8/13/02	--	--	--	--	**2.1**	--	--	--	--	--	--	--	--	--	--	--	--
2003 T&R Investigation	EB-1-1.0	2/18/03	< 2.0	**6.9**	82	< 0.5	**2.7**	12	--	6.2	23	< 1.0	12	< 2.0	< 1.0	< 1.0	26	100	0.45
	EB-2-0.0	2/18/03	< 2.0	**2.6**	72	< 0.5	0.86	25	--	5.4	6.3	< 1.0	17	< 2.0	< 1.0	< 1.0	18	21	<.05
	EB-10-1.0	2/19/03	< 2.0	**6.5**	77	< 0.5	**2.6**	2.3	--	5.4	13	< 1.0	5.8	< 2.0	< 1.0	< 1.0	22	72	0.17
	EB-6-1.0	2/19/03	< 2.0	**4.8**	65	< 0.5	**1.9**	47	--	7.6	150	< 1.0	54	< 2.0	< 1.0	< 1.0	24	80	0.19
	JAWG1-0.0	4/14/03	--	--	--	--	4	24	--	--	--	--	200	--	--	--	--	3500	--

Results in units at top: mg/kg - milligrams per kilogram; mg/l - milligrams per liter
> 1.0 - Not detected at detection limit given, -- Not analyzed
"B-1-0.5", "WB-1-1.0" - Boring sample collected by Treadwell & Rollo
Bold - Result exceeds USEPA Residential PRG; *Italics* - Result exceeds 10-times STLC
Underline - Result exceeds STLC; (Parens) - Exceeds TTLC
* CAM 17/LUFT 5 Metals exclusive of Lead, but including Chromium (VI)

TABLE 8
SOIL ANALYTICAL RESULTS - ORGANIC COMPOUNDS
EAST BLOCK
Mandela Gateway Redevelopment Site
Oakland, California

Phase of Investigation	Sample ID	Sample Date	TPH-g mg/kg	TPH-d mg/kg	TPH-mo mg/kg	BTEX ug/kg	Other VOCs ug/kg	Ethylene Glycol mg/kg
2002 PSI Investigation	PB-14-2	1/8/02	0.125	23	19	--	--	--
	PB-14-5	1/8/02	< 0.06	11	< 10	--	--	--
	PB-14-8	1/8/02	0.276	11	< 10	--	--	--
	PB-15-5	1/8/02	0.479	15	< 10	--	--	--
	PB-15-8	1/8/02	< 0.06	< 10	< 10	--	--	--
	PB-16-2	1/8/02	< 0.06	--	--	--	nd	nd
	PB-16-3	1/8/02	< 0.06	< 10	< 10	--	--	--
	PB-16-10	1/8/02	< 0.06	27	< 10	--	--	--
	PB-17-2	1/8/02	< 0.06	19	62.9	--	nd	nd
	PB-17-5	1/8/02	< 0.06	15	< 10	--	--	--
	PB-17-8	1/8/02	< 0.06	23	44	--	--	--
	PB-18-5	1/8/02	< 0.06	< 10	< 10	--	--	--
	PB-18-8	1/8/02	0.243	51	66	--	--	--
	PB-19-2	1/8/02	< 0.06	16	19	--	nd	nd
	PB-19-5	1/8/02	< 0.06	< 10	< 10	--	--	--
	PB-19-8	1/8/02	< 0.06	< 10	< 10	--	--	--
	PB-20-5	1/8/02	< 0.06	29	< 10	--	--	--
	PB-20-12	1/8/02	< 0.06	<10	< 10	--	--	--
2002 T&R Investigation	B-1-0.5	5/4/02	--	49	250	--	--	--
	B-1-2.5	5/4/02	--	< 1.0	< 50	--	--	--
	B-2-3.5	5/4/02	--	< 1.0	< 50	--	--	--
	B-3-2.5	5/4/02	--	40	530	--	--	--
	B-5-0.5	5/4/02	--	130	2,300	--	--	--
	B-5-1.5	5/4/02	< 1.0	2.6	< 50	--	nd	< 25
	B-5-3.5	5/4/02	< 1.0	< 1.0	< 50	--	--	--
	B-6-0.5	5/4/02	--	21	380	--	--	--
	B-7-0.5	5/4/02	--	16	280	--	--	--
	B-7-1.5	5/4/02	< 1.0	7.6	< 50	--	nd	< 25
	B-8-0.5	5/4/02	< 1.0	130	530	--	nd	< 25
	B-8-2.5	5/4/02	< 1.0	1.1	< 50	--	nd	< 25
	B-9-0.5	5/4/02	< 1.0	4.1	< 50	--	nd	< 25
	B-9-2.5	5/4/02	< 1.0	< 1.0	< 50	--	nd	< 25
	B-14-3.5	5/4/02	--	< 1.0	< 50	--	--	--
	B-23-1.5	8/13/02	<1.0	<1.0	< 50	< 5	--	--
	B-24-1.5	8/13/02	<1.0	3.4	< 50	< 5	--	--
	B-25-1.5	8/13/02	<1.0	<1.0	< 50	< 5	--	--
2003 T&R Investigation	EB-1-1.0	2/18/03	< 1.0	160	800	--	< 2.0	< 2.0
	EB-1-2.5	2/18/03	< 1.0	4.5	< 50	--	--	--
	EB-3-2.5	2/19/03	< 1.0	1.7	< 50	--	--	--
	EB-3-5.0	2/19/03	< 1.0	9.5	89	--	--	--
	EB-5-2.5	2/19/03	< 1.0	1.4	< 50	--	--	--
	EB-5-5.0	2/19/03	< 1.0	2.7	< 50	--	--	--
	EB-6-1.0	2/19/03	< 1.0	5.8	< 50	--	< 2.0	< 2.0
	EB-7-1.0	2/19/03	< 1.0	5.2	74	--	--	--
	EB-7-2.5	2/19/03	< 1.0	3.1	< 50	--	--	--
	EB-11-1.0	2/19/03	< 1.0	280	3,200	--	--	--
2003 J&A Investigation	JAFLW1-0.0	4/14/03	ND	1500	18000	--	--	--
	EBB1-0.5	4/21/03	--		< 50	--	--	--
	EBB1-1.5	4/21/03	--	6.3	< 50	--	--	--
	EBB2-1.5	4/21/03	--	2	< 50	--	--	--
	EBB3-1.5	4/21/03	--	2.7	< 50	--	--	--
	EBB4-1.5	4/21/03	--	4	< 50	--	--	--
	EBB5-1.5	4/21/03	--	1.2	< 50	--	--	--
	EBB6-1.5	4/21/03	--	4.5	< 50	--	--	--
EB1 Focussed Excavation	EB1CS-N1-1.5	4/7/03	--	--	< 50	--	--	--
	EB1CS-S1-1.5	4/7/03	--	--	160	--	--	--
	EB1CS-E1-1.5	4/7/03	--	--	< 50	--	--	--
	EB1CS-W1-1.5	4/7/03	--	--	210	--	--	--
	EB1CS-B-2.0	4/7/03	--	--	< 50	--	--	--
B3 Focussed Excavation	B3CS-N1-2.5	4/7/03	--	--	< 50	--	--	--
	B3CS-S1-2.5	4/7/03	--	--	< 50	--	--	--
	B3CS-E1-2.5	4/7/03	--	--	< 50	--	--	--
	B3CS-W1-2.5	4/7/03	--	--	< 50	--	--	--
	B3CS-B-3.0	4/7/03	--	--	< 50	--	--	--
FLW Focussed Excavation	FLWN1-1.5	4/18/03	--	--	< 50	--	--	--
	FLWN2-1.5	4/29/03	--	--	< 50	--	--	--
	FLWS1-1.5	4/18/03	--	--	< 50	--	--	--
	FLWE1-1.5	4/18/03	--	--	1500	--	--	--
	FLWE2-1.5	4/29/03	--	--	< 50	--	--	--
	FLWW1-1.5	4/18/03	--	--	< 50	--	--	--
	FLWB-2.0	4/18/03	--	--	< 50	--	--	--
B24 Focussed Excavation	B24N1-1.5	4/18/03	--	--	< 50	--	--	--
	B24S1-1.5	4/18/03	--	--	< 50	--	--	--
	B24W1-1.5	4/18/03	--	--	< 50	--	--	--
	B24E1-1.5	4/18/03	--	--	< 50	--	--	--
	B24B-2.0	4/18/03	--	--	< 50	--	--	--
B5 Focussed Excavation	B5N1-1.5	4/18/03	--	--	< 50	--	--	--
	B5S1-1.5	4/18/03	--	--	< 50	--	--	--
	B5E1-1.5	4/18/03	--	--	< 50	--	--	--
	B5W1-1.5	4/18/03	--	--	71	--	--	--
	B5B-2.0	4/18/03	--	--	< 50	--	--	--

TABLE 8
SOIL ANALYTICAL RESULTS - ORGANIC COMPOUNDS
EAST BLOCK
Mandela Gateway Redevelopment Site
Oakland, California

Phase of Investigation	Sample ID	Sample Date	TPH-g mg/kg	TPH-d mg/kg	TPH-mo mg/kg	BTEX ug/kg	Other VOCs ug/kg	Ethylene Glycol mg/kg
EB11 Focussed Excavation	EB11N1-2.5	4/18/03	--	--	160	--	--	--
	EB11N2-2.5	4/29/03	--	--	< 50	--	--	--
	EB11W1-2.5	4/18/03	--	--	< 50	--	--	--
	EB11S1-2.5	4/18/03	--	--	< 50	--	--	--
	EB11E1-2.5	4/18/03	--	--	< 50	--	--	--
	EB11B-3.0	4/18/03	--	--	< 50	--	--	--
B7 Focussed Excavation	B7N1-2.5	4/18/03	--	--	< 50	--	--	--
	B7S1-2.5	4/18/03	--	--	< 50	--	--	--
	B7W1-2.5	4/18/03	--	--	< 50	--	--	--
	B7E1-2.5	4/18/03	--	--	< 50	--	--	--
	B7B-3.0	4/18/03	--	--	< 50	--	--	--
B8 Focussed Excavation	B8N1-2.5	4/18/03	--	--	< 50	--	--	--
	B8S1-2.5	4/18/03	--	--	< 50	--	--	--
	B8W1-2.5	4/18/03	--	--	< 50	--	--	--
	B8E1-2.5	4/18/03	--	--	< 50	--	--	--
	B8B-3.0	4/18/03	--	--	< 50	--	--	--
EBB4 Focussed Excavation	EBB4N1-1.0	4/29/03	--	--	< 50	--	--	--
	EBB4S1-1.0	4/29/03	--	--	< 50	--	--	--
	EBB4W1-1.0	4/29/03	--	--	< 50	--	--	--
	EBB4E1-1.0	4/29/03	--	--	< 50	--	--	--
	EBB4B-1.5	4/29/03	--	--	< 50	--	--	--
EBB6 Focussed Excavation	EBB6N1-2.5	4/29/03	--	--	< 50	--	--	--
	EBB6S1-2.5	4/29/03	--	--	< 50	--	--	--
	EBB6W1-2.5	4/29/03	--	--	< 50	--	--	--
	EBB6E1-2.5	4/29/03	--	--	< 50	--	--	--
	EBB6B-3.0	4/29/03	--	--	< 50	--	--	--

Results in units at top: mg/kg - milligrams per kilogram; ug kg - micrograms per kilogram;
> 1.0 - Not detected at detection limit given; nd - not detected, detection limit varies; -- Not analyzed
"B-1-0.5", "EB-1-1.0" - Boring sample collected by Treadwell & Rollo; "T-5E-0.5" - Trench sample collected by Treadwell & Rollo; "PB-14-2" - Boring sample collected by PSI; TPH-g - Total Petroleum Hydrocarbons quantified as gasoline;
TPH-d,-mo - Total Petroleum Hydrocarbons quantified as diesel and motor oil, respectively
BTEX - benzene, toluene, ethyl benzene, xylenes; VOCs - volatile organic compounds;
* "endrin" includes both endrin and endrin ketone
Bold - Result exceeds USEPA Residential PRG; *Italics* - Result exceeds 10-times STLC;
Underline - Result exceeds STLC; (Parens) - Exceeds TTLC

TABLE 9
GROUNDWATER ANALYTICAL RESULTS - METALS
EAST AND WEST BLOCK
Mandela Gateway Redevelopment Site
Oakland, California

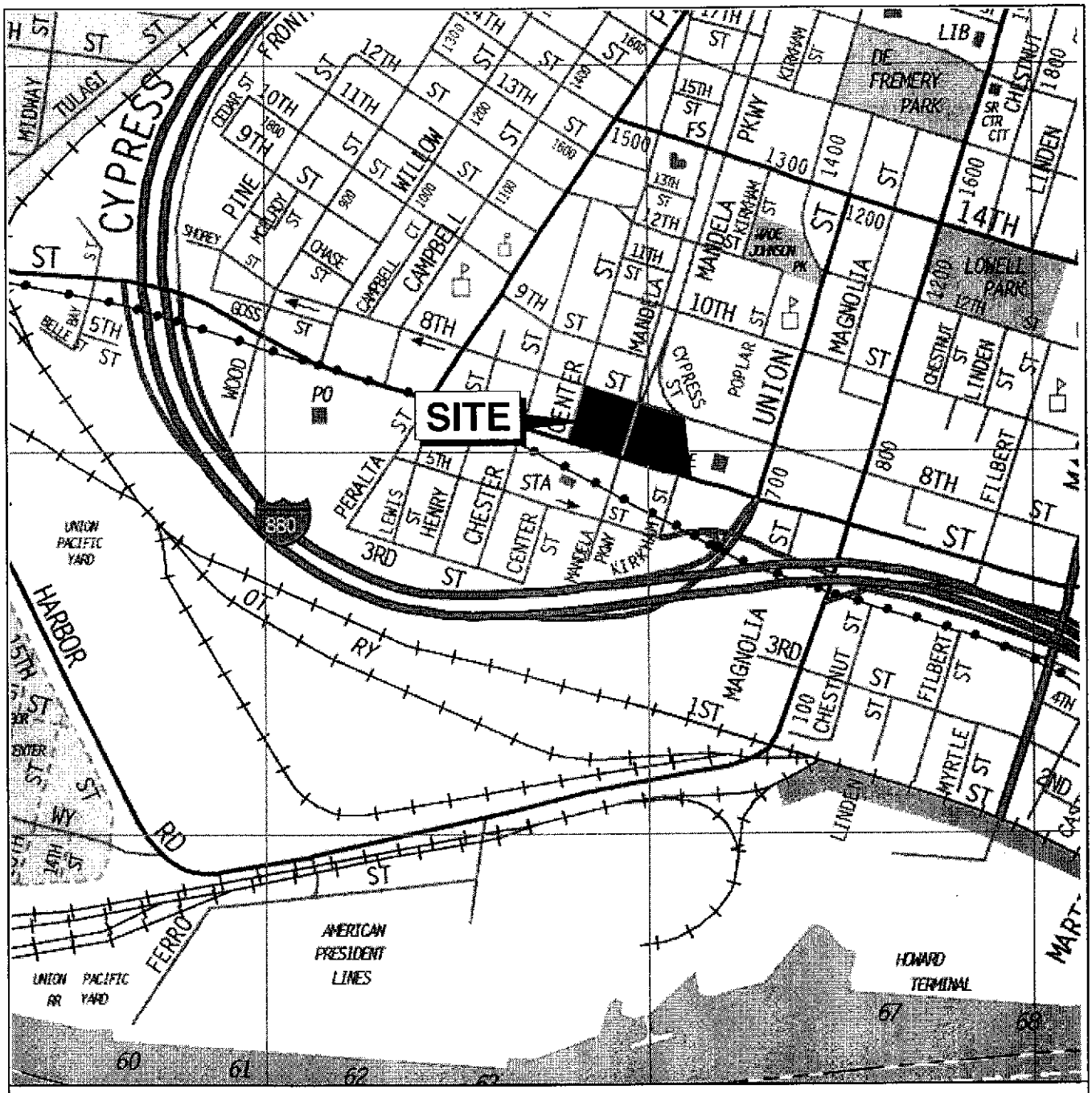
Sample ID	Sample Date	Cadmium ug/l	Chromium ug/l	Lead ug/l	Nickel ug/l	Zinc ug/l	Barium ug/l	Cobalt ug/l	Molybdenum ug/l
B-5-GW	5/4/02	< 2	< 5	< 5	11	23	--	--	--
B-7-GW	5/4/02	< 2	< 5	< 5	16	27	--	--	--
B-10-GW	5/4/02	< 2	< 5	< 5	< 5	26	--	--	--
B-12-GW	5/4/02	< 2	< 5	< 5	< 5	16	--	--	--
PB-14-W	1/8/02	nd	nd	nd	17	nd	42	19	16
PB-15-W	5/4/02	nd	nd	nd	42	nd	105	9	3
PB-16-W	5/4/02	nd	nd	nd	37	nd	52	31	43
PB-17-W	5/4/02	nd	nd	nd	58	nd	89	57	50
PB-18-W	5/4/02	nd	nd	nd	21	nd	46	17	59
PB-19-5	1/8/02	nd	nd	nd	65	nd	102	76	54
PB-20-8	1/8/02	nd	nd	nd	35	nd	112	44	15

Results in units at top: ug/l - micrograms per liter
> 1.0 - Not detected at detection limit given, -- Not analyzed
"B-5-GW" - Groundwater sample collected by Treadwell & Rollo
"PB-14-W" - Groundwater sample collected by PSI
The following metals were also analyzed by PSI and were not detected: Antimony, Arsenic, Beryllium, Copper, Mercury, Selenium, Silver, Thallium and Vanadium

TABLE 10
GROUNDWATER ANALYTICAL RESULTS - ORGANIC COMPOUNDS
Mandela Gateway Redevelopment Site
Oakland, California
East and West Block

Sample ID	Sample Date	TPH-G mg/l	TPH-D mg/l	TPH-MO mg/l	Toluene ug/l	Ethyl Benzene ug/l	Xylenes ug/l	1,2-DCA ug/l	Other VOCs
B-5-GW	5/4/02	50	180	< 640	< 0.5	< 0.5	< 1	2.1	nd
B-7-GW	5/4/02	< 50	94	< 630	< 0.5	< 0.5	< 1	< 0.5	nd
B-10-GW	5/4/02	< 50	< 60	< 600	1.8	< 0.5	1.6	< 0.5	nd
B-12-GW	5/4/02	< 50	< 59	< 590	< 0.5	< 0.5	< 1	< 0.5	nd
PB-14-W	1/8/02	< 0.05	< 0.05	< 0.05	nd	nd	nd	nd	nd
PB-15-W	5/4/02	< 0.05	< 0.05	< 0.05	nd	nd	nd	nd	nd
PB-16-W	5/4/02	< 0.05	< 0.05	< 0.05	nd	nd	nd	nd	nd
PB-17-W	5/4/02	< 0.05	< 0.05	< 0.05	1.0	1.0	nd	nd	nd
PB-18-W	5/4/02	< 0.05	< 0.05	< 0.05	nd	nd	nd	nd	nd
PB-19-5	1/8/02	< 0.05	< 0.05	< 0.05	nd	nd	nd	nd	nd
PB-20-8	1/8/02	< 0.05	< 0.05	< 0.05	nd	nd	nd	nd	nd

Results in units at top: mg/l - milligrams per liter, ug/l - micrograms per liter
> 1.0 - Not detected at detection limit given, nd - Not detected, detection limit varies, -- Not analyzed
"B-5-GW" - Groundwater sample collected by Treadwell & Rollo
"PB-14-W" - Groundwater sample collected by PSI
TPH-G - Total Petroleum Hydrocarbons quantified as gasoline BTEX - benzene, toluene, ethyl benzene, xylenes
TPH-D and -MO - Total Petroleum Hydrocarbons quantified as diesel and motor oil, respectively
1,2-DCA - 1,2-dichloroethane



Base map: The Thomas Guide
Alameda County
1999

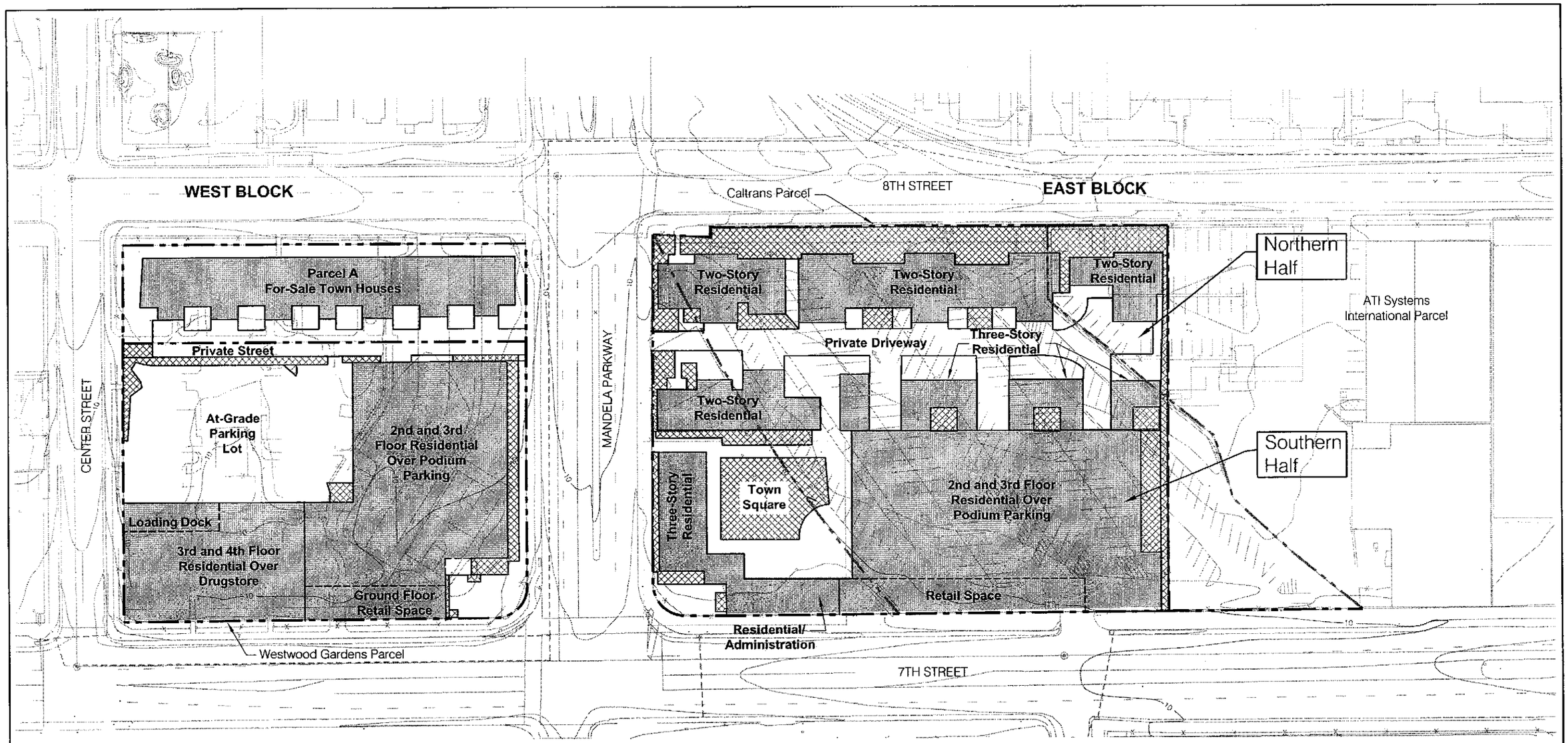
No scale

MANDELA GATEWAY
Oakland, California

SITE LOCATION MAP

Treadwell&Rollo

Date 03/12/03	Project No. 3433.04	Figure 1



EXPLANATION

- Existing property line
- Proposed lot line adjustment
- Proposed building
- Landscaped Areas or Mixed Landscape and Walkways

0 80 Feet

Approximate scale

Reference: 1. DK Associates, "Topographic Survey - Mandela Gateway", May 30, 2002.
2. Site plan prepared by Michael Willis Architects, dated 11 July 2002.

343304_PROPOSED DEVELOPMENT.DGW

MANDELA GATEWAY
Oakland, California

PROPOSED DEVELOPMENT

Date 02/28/03	Project No. 3433.04	Figure 2

Treadwell&Rollo

WEST BLOCK

EAST BLOCK

8TH STREET

Caltrans Parcel

CENTER STREET

MANDELA PARKWAY

Parcel A
For-Sale Town Houses

0

Private Street

At-Grade Parking Lot

+1

+1.5

+2

2nd and 3rd Floor Residential Over Podium Parking

(-3.5)

Loading Dock

3rd and 4th Floor Residential Over Drugstore

(-5.25)

(-1.25) Ground Floor Retail Space

Westwood Gardens Parcel

Two-Story Residential

Private Driveway

Three-Story Residential

Two-Story +1 Residential

+2.5

Three-Story Residential

+4

Town Square

-2

(-3.25)

2nd and 3rd Floor Residential Over Podium Parking

(-4.75) Retail Space

Residential/ Administration

Northern Half

Southern Half

ATI Systems International Parcel

7TH STREET

10

EXPLANATION

+1 Areas of net cut or fill (in feet)

(-5.25) Depth of excavation in podium areas (in feet)

Proposed building

Landscaped Areas or Mixed Landscape and Walkways

Existing property lines

Former property lines

Reference: 1. DK Associates, "Topographic Survey - Mandela Gateway", May 30, 2002.
2. Site plan prepared by Michael Willis Architects, dated 11 July 2002.

0 80 Feet

Approximate scale

343304_PLANNED DEVELOPMENT.DGW

MANDELA GATEWAY
Oakland, California

PLANNED DEVELOPMENT

Date 05/02/03 | Project No. 3433.04 | Figure 3

Treadwell&Rollo

EXPLANATION

- Boundary of subject properties
- B-1 — Approximate location of borings by Treadwell & Rollo, Inc., 4 May 2002 and 13 August 2002
- EB-1 — Approximate location of borings by Treadwell & Rollo, Inc., 18 and 19 February 2003
- EBB-1 — Approximate location of surface samples and borings by Treadwell & Rollo, Inc., April 2003
- T-4 — Approximate location of trench samples
- Previous boring by PSI, 8 January 2002

Residential
Former Gas Station
Residential
800 Clute St
MANDELA PARKWAY
Residential
Vacant
EIGHTH STREET
CENTER STREET
Commercial
B-15 B-16 WB-9 B-10 WB-1 B-19 B-17 B-13 B-20 B-18 WB-3 WB-2 WB-10 WB-11 WB-12 B-21 WB-18 WB-8 WB-4 WB-13 WB-14 WB-17 B-22 WB-15 WB-5 WB-16 B-12 B-11 WB-6 WB-7
EB-1 EBB-7 EBB-9 EBB-13 EBB-15 EBB-11 EBB-8 EBB-10 EBB-12 PB-16 T-8W T-8E EB-7 EB-8 EBB-3 PB-20 B-2 B-4 FLW B-9 EB-3 EB-2 T-5W T-5E B-1 PB-17 PB-15 Caltrans Parking EB-9 AT Systems International B-7 B-8 EBB-2 PB-19 EBB-4 EB-11 EB-4 EBB-6 B-6 B-3 EBB-1 EBB-5 B-25 EB-10 T-4W T-4E B-23 B-24 PB-18 EB-6 B-14 PB-14 B-5 J&A Truck Repair EB-5
WEST BLOCK
EAST BLOCK
SEVENTH STREET
BART Station and Parking
Automotive Repairs and Parking
Parking

N

0 80 Feet
Approximate scale

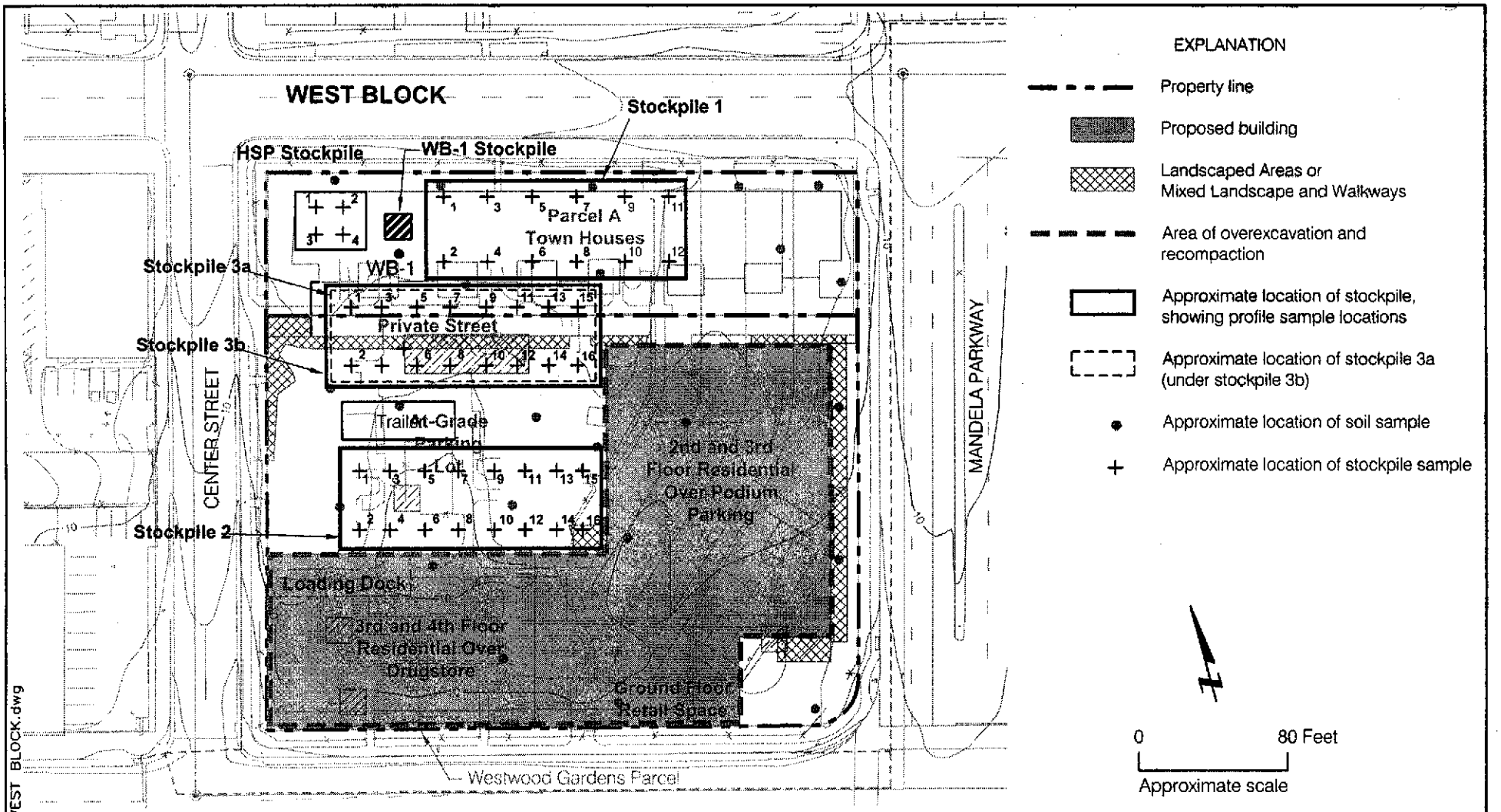
MANDELA GATEWAY
Oakland, California

SAMPLE LOCATIONS

Date 05/05/03	Project No. 3433.02	Figure 4

Treadwell&Rollo

343302_PROP_SOIL SAMP RESULT_v2.DWG



343304_STOCKPILE LOCATION_WEST BLOCK.dwg

STOCKPILE VOLUMES

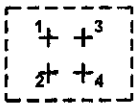
1 From 0-1 ft Podium Area 1370 cy

2 From 1-2 ft Podium Area 1370 cy

3a From 2-3.5 ft in eastern Podium Area 500 cy

3b From 2-5.25 ft in western Podium Area 2000 cy

STOCKPILE 3a SAMPLE PLAN



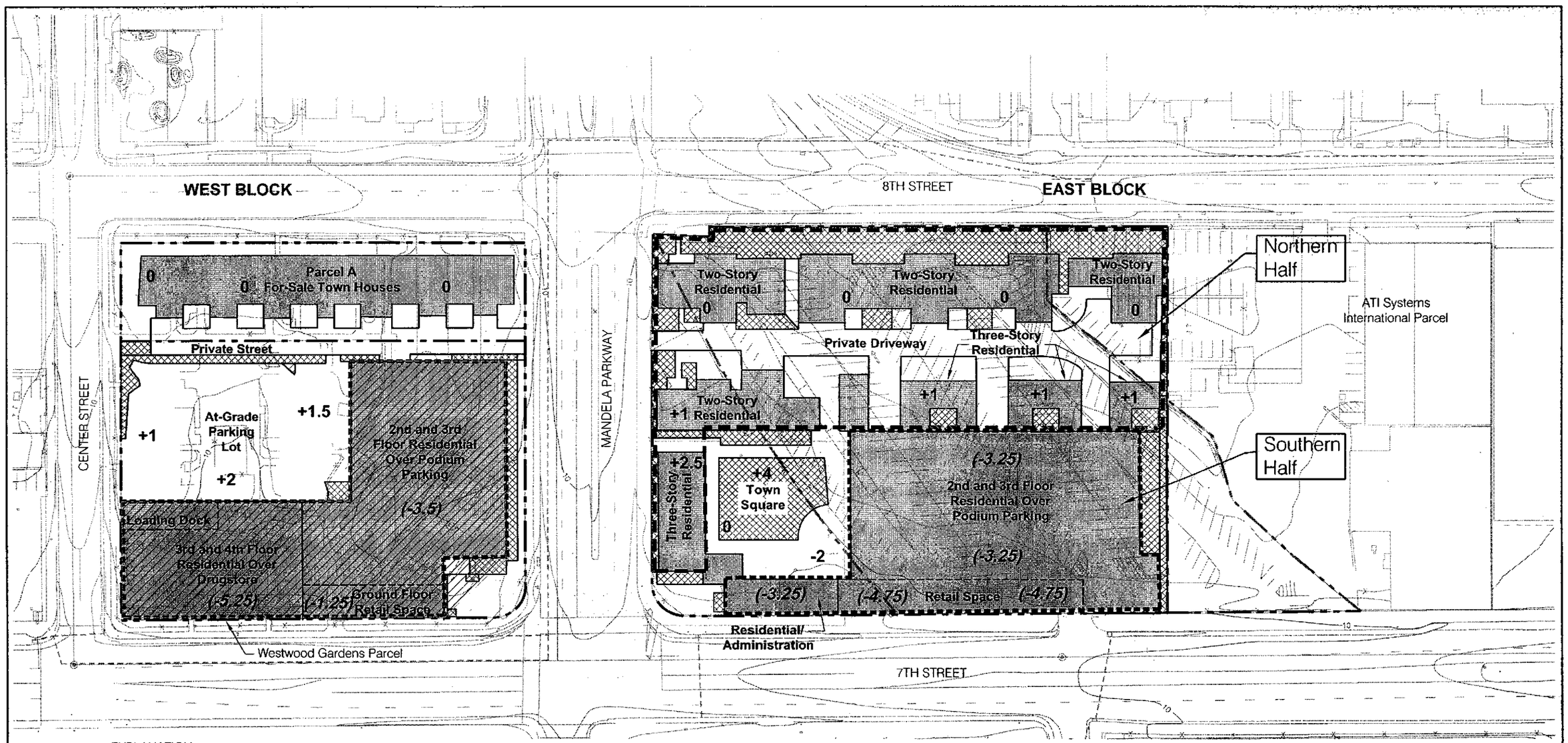
Reference: 1. DK Associates, "Topographic Survey - Mandela Gateway", May 30, 2002.
2. Site plan prepared by Michael Willis Architects, dated 11 July 2002.

MANDELA GATEWAY
Oakland, California

STOCKPILE LOCATIONS, WEST BLOCK
5 MAY 2003

Date 05/05/03	Project No. 3433.04	Figure 6

Treadwell&Rollo



EXPLANATION

- **+1** Areas of net cut or fill (in feet)
- ***(-5.25)*** Depth of excavation and backfilling in podium areas (in feet)
- Existing property lines
- Former property lines
- Areas of overexcavation and redepositing of soil in podium areas
- Proposed building
- Landscaped Areas or Mixed Landscape and Walkways
- Areas where known exceedances of remedial target levels will be capped

Note: Areas of known exceedances of remedial target levels in the East Block have been removed in focussed excavations or will be removed during the week of 5 May 2003 by expansion of ongoing focussed excavations.

0 80 Feet
Approximate scale

Reference: 1. DK Associates, "Topographic Survey - Mandela Gateway", May 30, 2002.
2. Site plan prepared by Michael Willis Architects, dated 11 July 2002.

MANDELA GATEWAY
Oakland, California

SOIL MANAGEMENT

Date 05/05/03	Project No. 3433.04	Figure 9

Treadwell&Rollo

3433304__FIG__9__SOIL MANAGEMENT.DWG

Treadwell&Rollo

APPENDIX A

Stockpile Confirmation Sampling

APPENDIX A
Stockpile Confirmation Sampling

Treadwell & Rollo has proposed to chemically profile stockpiled soil at the Mandela Gateway site by collecting and analyzing four-point composite samples for each 500 cubic yards (cy) of soil. Chemical analyses for lead, pesticides, and TPH-mo will be performed, depending on the specific stockpile. Stockpiled soil from the excavation of soil at the West Block podium and retail/residential building areas and the East Block podium, retail, and residential areas is proposed to be reused as recompacted engineered fill. These areas will be capped with buildings or pavement, and deed restrictions explaining the residual soil contamination levels will be recorded.

Alameda County Health Care Services Agency (ACHCSA) requested in April 2003 that the use of four-point composite sampling for each 500 cy be justified. Their concern was that 500 cy volumes may be too large to give confidence that a statistically-significant number of samples were being collected.

After comparing the number of soil samples collected and analyzed at the site to the frequency of sampling protocols described in the U. S. EPA's *Test Methods for Evaluating Soil,* we believe that the sampling protocol described in the SMRP is appropriate for the assessment and management of soils to be excavated and reused at the site. Specific points supporting our opinion are as follows:

1. With the exception of Parcel A of the West Block and the various planned landscaped areas, all soil will be capped by the overlying buildings and paved areas, and deed restrictions will be filed to prevent inappropriate disturbance of the cap. Therefore, there will be no exposure pathway to future site users or the public. While no additional samples are necessary to quantify the environmental risk, soil that is excavated will be profiled for disposal purposes.

2. Using the methodology in Section 9 of the UJ.S. Environmental Protection Agency's *Test Methods for Evaluating Solid Waste* (Office of Solid Waste and Emergency Response, SW-

846, November 1986), we performed a statistical analysis of the lead chemical data in the podium areas of each block, after excavating the specific "hot spots" and performing confirmation sampling. The analysis included selecting the data set and specifying a target level, then finding the mean, standard deviation, variance, and T value for the number of samples collected. These values were then used to calculate the number of samples needed to characterize the data set and the 95 % Upper Confidence Level (UCL) for the data set.

For the data sets used, we removed the values originally reported for each hot spot, because the soil has been removed and is no longer representative of site conditions. For the Target Level for lead, we have used 255 milligrams per kilogram (mg/kg).

The sampling strategy is driven by the specified target level and its relationship to the data set being used. If most or all of the data set is lower than the target level, the number of samples required for adequate characterization is relatively lower. If most or all of the data set is higher than the target level, the number of samples required for adequate characterization is relatively higher. In addition, the data is correlated to the 95% UCL of the bell curve. The 95% UCL given with the data set reflects the characterization of the site to a 95% UCL.

The data sets and statistical calculations for the East and West Blocks are shown on the attached table. These calculations show the number of samples required on each block to adequately characterize the site are 0.1 samples for the West Block and 1.7 samples for the East Block. Although these numbers are impractically low, they are based on the statistical analysis of the data as related to the target level, and reflect the consistancy of the analytical data that indicate soil concentrations generally lower than the Target Level, as explained above.

To further evaluate the adequacy of the data sets, a 95% UCL was determined for each block. The purpose of the UCL is to correlate the number of samples taken with the Target Level

concentration. If the UCL is above the Target Level, the number of samples collected has not adequately characterized the site; if the UCL is below the Target Level, the number of samples collected has adequately characterized the site. On the West block the 95% UCL is 48 (rounded up), and on the East block the 95% UCL is 162 (rounded up). These numbers are well below 255, and therefore indicate an adequate characterization of the Mandela Gateway site.

3. A comparison of the number of soil samples collected at the West and East Blocks (as of early April 2003) with the number of soil samples recommended by the Regional Water Quality Control Board (RWQCB) in their internal memo *Characterization and Reuse of Petroleum Hydrocarbon Impacted Soil as Inert Waste, November 2002*, was made. The RWQCB protocols for soil impacted by petroleum hydrocarbons are significantly more conservative that those for lead, as lead is not volatile or mobile, and all reused soil is to be capped. None-the-less, this comparison indicated that the number of soil samples collected at the West and East Blocks exceeded the number of samples recommended in the RWQCB internal memo.

SAMPLE COUNT STATISTICAL CALCULATIONS

Mandela Gateway Redevelopment Site
Oakland, California

Treadwell&Rollo

West Block

Sample ID	Sample Date	LEAD (Total) mg/kg
B-12-0.5	5/4/02	*210*
B-12-1.5	5/4/02	12
WB-6-1.0	2/18/03	*65*
WB-6-2.5	2/18/03	3.4
WB-6-5.0	2/18/03	2.9
WB-8-0.5	2/18/03	15
WB-8-1.5	2/18/03	2.7
WB-8-5.0	2/18/03	1.7
WB-15-1.0	2/19/03	20
WB-15-2.5	2/19/03	1.9
WB-15-5.0	2/19/03	2.3
WB-16-1.0	2/18/03	11
WB-16-2.5	2/18/03	24
WB-16-5.0	2/18/03	1.3
WB-17-0.5	2/18/03	8.5
WB-17-1.5	2/18/03	29
WB-17-5.0	2/18/03	2.8
WB-18-1.0	2/18/03	45
WB-18-2.5	2/18/03	*100*
WB-18-5.0	2/18/03	11
Mean		28.48
Standard Deviation		49.56777258
Variance (S^2)		*2456.96408*
Count		20
t value		1.316
(t value)^2		1.731856
Target level		255
(RT-Mean)^2		51313.58
Number of Samples		**0.1**
t value - 95%		1.725
95% UCL		47.5943668

East Block

Sample ID	Sample Date	LEAD (Total) mg/kg
B-5-0.5	5/4/02	*130*
B-5-1.5	5/4/02	33
B-5-3.5	5/4/02	5.2
B-23-0.5	8/13/02	48
B-23-1.5	8/13/02	18
B-24-0.5	8/13/02	*520*
B-24-1.5	8/13/02	*62*
EB-4-0.0	2/18/03	*280*
EB-4-1.5	2/18/03	*320*
EB-4-5.0	2/18/03	*4.4*
EB-5-1.0	2/19/03	*81*
EB-5-2.5	2/19/03	2.0
EB-5-5.0	2/19/03	2.4
EB-6-1.0	2/19/03	*170*
EB-6-2.5	2/19/03	21
EB-6-5.0	2/19/03	1.6
EB-10-1.0	2/19/03	5.3
EB-10-2.5	2/19/03	*60*
EB-10-5.0	2/19/03	2.1
PB-18-5	1/8/02	0
PB-18-8	1/8/02	*172*
T-4E-0.5	7/1/02	*180*
T-4E-1.5	7/1/02	*380*
T-4W-0.5	7/1/02	*220*
T-4W-1.5	7/1/02	*140*
Mean		114.32
Standard Deviation		138.8811932
Variance (S^2)		*19287.9858*
Count		25
t value		1.321
(t value)^2		1.745
Target Level		255
(RT-Mean)^2		19790.86
Number of Samples		**1.7**
t value - 95%		1.708
95% UCL		161.7618156

Treadwell&Rollo

APPENDIX B

Oakland Fire Department

J &A Trucking

Closure Letter

CITY OF OAKLAND

FIRE SERVICES AGENCY - 1605 MARTIN LUTHER KING JR. WAY - OAKLAND, CALIFORNIA 94612

Office of Emergency Services

(510) 238-3938
FAX (510) 238-7761
TDD (510) 839-6451

4/30/2003

Mr. Greg Johnson
Treadwell and Rollo
501 14th Street, 3rd Fl.
Oakland, CA 94612

Re: J and A Trucking

On April 10, 2003, a site closure inspection was conducted at J and A Trucking, located at 1370 7th Street. Activities at J and A Trucking had involved the use of compressed gasses for welding, and the generation and storage of used motor oil and used-antifreeze. The site survey confirmed that all of the aforementioned hazardous material and hazardous waste were removed from the site. The Oakland Fire Department, Hazardous Material Management Program henceforth will consider the 1370 7th Street address to be inactive with respect to J and A Trucking.

Sincerely,

Keith L. Matthews
Hazardous Material Inspector

Cc:

Leroy Griffin, Hazardous Material Management Program Manager
Henry Renteria, Director, Office of Emergency Services