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Transmittal

TO: Mr. Barney Chan
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

FROM: Meredith Durant
DATE: 6 June 2005
K/J #: 000128.00
SUBJECT: Report – 901 Embarcadero, Oakland

VIA: ☐ Fax ## pgs. (inc. cover) ☒ USPS ☐ Other (please specify)

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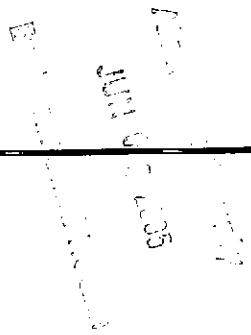

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REMARKS: Barney –
The enclosed copy of the Summary Report on Subsurface Investigation and Remediation at 901 Embarcadero in Oakland is provided in response to your request on 4 June 2005.

Signed: Meredith G. Durant
Meredith Durant

Copies to:

RO2462

Kennedy/Jenks Consultants

Engineers & Scientists

622 Folsom Street
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13 July 2004

Mr. Barney M. Chan
Hazardous Materials Specialist
Environmental Health Service Administration
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

Subject: Subsurface Investigation and Remediation
901 Embarcadero, Oakland, California
K/J 000128.00

Dear Mr. Chan:

This letter is submitted by Kennedy/Jenks Consultants (Kennedy/Jenks), on behalf of Praxair, Inc. (Praxair), to document a telephone conversation between Meredith Durant of Kennedy/Jenks and you on 7 July 2004. On behalf of Praxair, Kennedy/Jenks telephoned you to inquire about the status of your review of the *Summary Report on Subsurface Investigation and Remediation* (Report) which was submitted to the Alameda County Health Care Services Agency in early June 2004. The Report summarized the subsurface investigation and remediation activities performed at 901 Embarcadero in Oakland (the Site).

During our telephone conversation, you mentioned possible differences of opinion between Praxair and the owner of the Site, the Port of Oakland (the Port). Please understand that draft copies of all of the technical reports, including the recently submitted Report, prepared to document investigation and remediation activities at the Site have been provided to representatives of the Port for review and comment. Moreover, comments provided to Praxair by Port representatives have been considered, and in most cases, addressed or incorporated into the draft reports. The Port's comments were also obtained and considered during preparation of various work plans for subsurface investigation activities, and there was extensive communication, including responses to Port requests, between representatives of Praxair and the Port during the building demolition activities in the fall of 2003.

I appreciate that you have a heavy workload at this time. However, Praxair is anxious to obtain closure on its only real estate matter with the Port. We would greatly appreciate receiving a response from you regarding the Report and Praxair's request for a finding of No Further Action regarding chemical concentrations in soils and groundwater as these apply to industrial sites, no later than 31 August 2004.

If you have any questions regarding the Report or any of the previously submitted technical reports, please call either Nick DiFranco of Praxair at (732) 738-3424 or me at (415) 243-2534. Thank you for your attention to this request.

Very truly yours,

KENNEDY/JENKS CONSULTANTS

Meredith G. Durant

Meredith G. Durant, P.E.
Project Manager

cc: Nick DiFranco, Praxair, Inc.
John Sibley, Praxair, Inc.
Diane Heinze, Port of Oakland
Michele Heffes, Port of Oakland
Jeriann Alexander, Fugro West

Kennedy/Jenks Consultants

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Summary Report on Subsurface Investigation and Remediation
901 Embarcadero, Oakland, California

2 June 2004

Prepared for

Praxair, Inc.
P.O. Box 237
Keasbey, New Jersey 08832

K/J Project No. 000128.00

Table of Contents

List of Tables ..... *ii*

List of Figures ..... *ii*

Section 1: Introduction and Background 1

1.1 Site Description 1
1.2 Summary of Site History 1
1.3 Previous Subsurface Investigations and Remediation 2
1.3.1 Summary of Activities 2
1.3.2 Soil Sampling 3
1.3.3 Groundwater Sampling 3
1.3.4 Soil Excavation 3
1.3.5 Evaluation Criteria 3
1.4 Site Status 4
1.5 Purpose 4

Section 2: Summary of Site Investigation Findings and Remediation Activities 6

2.1 Soil Sample Analytical Results, Remediation, and Site Status 6
2.1.1 Total Petroleum Hydrocarbons 6
2.1.2 Volatile Organic Compounds 7
2.1.3 Semi-Volatile Organic Compounds 8
2.1.4 Polychlorinated Biphenyls 8
2.1.5 Metals 8
2.1.6 pH 9
2.2 Groundwater Analytical Results and Site Status 9
2.2.1 Total Petroleum Hydrocarbons 9
2.2.2 Volatile Organic Compounds 10
2.2.3 Polychlorinated Biphenyls 10
2.2.4 Metals 10
2.2.5 pH 11

Section 3: Overall Conclusions and Recommendations 12

References *13*

List of Tables

1 Summary of Soil Boring Locations
2 Soil Sample Analytical Results – Organic Compounds
3 Soil Sample Analytical Results – Metals
4 Groundwater Sample Analytical Results – Organic Compounds
5 Groundwater Sample Analytical Results – Metals
6 Sample Analytical Results – pH
7 Areas with Potential Concern for Soil Impacts
8 Areas with Potential Concern for Groundwater Impacts

List of Figures

1 Site Location Map
2 Site Plan Prior to Demolition Activities
3 Soil and Groundwater Sampling Locations
4 Soil Excavation Areas and Confirmation Sampling Locations
5 Sump Post-Excavation Sidewall Sample Locations

Section 1: Introduction and Background

This Summary Report on Subsurface Investigation and Remediation (Report) was prepared by Kennedy/Jenks Consultants (Kennedy/Jenks) and is submitted to the Alameda County Health Care Services Agency (County) on behalf of Praxair, Inc. (Praxair). This Report summarizes activities and analytical results from soil and groundwater characterization at 901 Embarcadero in Oakland (the Site).

The data summarized herein has been previously submitted to the County in several technical reports, as discussed in Section 1.3.

1.1 Site Description

The Site is located within an industrial area of Oakland that was historically and is currently used for mixed commercial, industrial manufacturing, warehousing, and shipping. The Site is located in an area of level topography with an elevation of approximately 10 feet above mean sea level. The Site is located adjacent to the south side of the Embarcadero, a major surface street/truck route. Immediately north of the Embarcadero is US Highway 880 and the Union Pacific railroad tracks. The estuary (Inner Harbor) between Oakland and Alameda Island is approximately 300 feet south of the Site. Figure 1 presents a site location map and Figure 2 presents a site plan prior to hazardous materials closure and demolition activities.

The Site is approximately 7.7 acres in size. Ground level at the Site is somewhat elevated relative to surrounding roadways. The Site is owned by the Port of Oakland (Port).

According to representatives of the Port, the Site and surrounding area were created by placing fill on marsh and mudflat areas. Fill was initially placed in the Site vicinity during the 1930s and 1940s to raise the grade and provide level staging areas for activities associated with the 9th Avenue terminal. Additional fill was placed on the Site in late 1954 to provide a level area for construction of the Liquid Carbonic facility. The available information indicates that the fill placed at the Site in 1954 was homogenous material and that it was placed under the observation of an engineering consultant (Fugro West 2004).

Praxair is the successor to the former Liquid Carbonic Corporation (Liquid Carbonic), which in approximately 1954 to 1955, entered into a 50-year lease of the Site with the Port. In 1998, Praxair subleased the Site to Alliance Gas Products (Alliance), a subsidiary of International Gas & Cryogenics. Alliance relocated in early March 2002. The Site is currently vacant.

1.2 Summary of Site History

Review of aerial photos and Sanborn maps indicate that the eastern portion of the Site was occupied by the Interlocking Stone & Gilro Machine Company and a railroad spur in the early portion of the 1900s. The Site was vacant for a time, until the mid-1950s, when the former Building 1 was constructed for use by Liquid Carbonic.

Liquid Carbonic initially used the Site for the manufacture of liquid and solid carbon dioxide (dry ice). Gaseous carbon dioxide was generated through the combustion of natural gas.

Various processes were employed to collect and purify the carbon dioxide gas and compressors were utilized to create liquid carbon dioxide and dry ice.

In the early 1970s, an alternate local source of gaseous carbon dioxide made its onsite generation no longer economical. The carbon dioxide gas generating equipment was removed from the Site. The facility was converted to produce acetylene gas, which was generated at the Site until early 2002. The production of acetylene gas resulted in the generation of lime (calcium hydroxide) as a coproduct. The available information indicates that the lime slurry generated at the Site was accumulated in onsite holding tanks and belowgrade sumps until the lime slurry was removed by a third party for reuse. Other activities at the Site included packaging and distribution of industrial gases such as carbon dioxide, nitrogen, oxygen, and argon.

1.3 Previous Subsurface Investigations and Remediation

1.3.1 Summary of Activities

Four underground storage tanks (USTs), including two diesel USTs, one gasoline UST and one acetone UST were removed from the Site during 1989 and 1990. Diesel- and gasoline-impacted soils were encountered at the diesel dispenser and gasoline tank excavations, respectively. No acetone-impacted soils were encountered at the former acetone tank. Groundwater samples collected from the excavation beneath the gasoline tank indicated the presence of hydrocarbons in water. After installation and monitoring of three groundwater monitoring wells in 1995 and 1996 at the Site, the Alameda County Department of Environmental Health allowed the groundwater monitoring to be discontinued and the wells were decommissioned by pressure grouting (Golden Gate Tank Removal 1997).

Data from these monitoring wells indicate that the total dissolved solids (TDS) concentrations in groundwater at the Site exceed 3,000 milligrams per liter (mg/l), and thus groundwater at the Site is not considered suitable by the State Water Resources Control Board (SWRCB) for domestic or municipal water supply purposes (SWRCB 1988).

Based upon visual observations of Alliance's operations at the Site in 2000, and in response to requests from the Port and the County, Praxair agreed to perform additional subsurface investigation and remediation activities at the Site, as summarized in the following previously submitted reports:

- *Phase I Environmental Site Assessment, 901 Embarcadero, Oakland* (Kennedy/Jenks 2000)
- *Subsurface Characterization at 901 Embarcadero, Oakland* (Kennedy/Jenks 2001)
- *Report on Hazardous Materials Closure Activities at 901 Embarcadero, Oakland* (Kennedy/Jenks 2002)
- *Soil Excavation and Additional Characterization at 901 Embarcadero, Oakland* (Kennedy/Jenks 2003)

- *Report on Additional Remedial Activities at 901 Embarcadero, Oakland* (Kennedy/Jenks 2004a)
- *Report on Demolition Activities at 901 Embarcadero, Oakland* (Kennedy/Jenks 2004b)

Soil and groundwater sampling was conducted between May 2001 and February 2003. A total of 42 soil borings were advanced at the Site, with the collection of 43 soil samples and 21 groundwater samples. Details regarding the subsurface investigation activities were previously submitted to the County (Kennedy/Jenks 2001, 2002, 2003) and are further discussed in Section 2.

1.3.2 Soil Sampling

The soil boring locations and sampling rationale are summarized in Table 1 and the soil boring locations are shown on Figure 3. Soil samples were submitted for analysis of parameters based upon available information regarding adjacent activities. These parameters included one or more of the following: total petroleum hydrocarbons quantified as gasoline, diesel, and motor oil (TPHg, TPHd, and TPHmo), volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), polychlorinated biphenyls (PCBs), metals and/or mercury, and pH. The soil boring and confirmation sample analytical results are summarized in Tables 2, 3, and 6. As described below, these tables also include analytical results from confirmation soil samples collected following subsequent soil excavation activities.

1.3.3 Groundwater Sampling

Groundwater samples were submitted for analysis of parameters based upon site-specific activities. These parameters included one or more of the following: TPHd with and without silica gel cleanup, TPHmo with silica gel cleanup, VOCs, PCBs, total and dissolved metals, and pH. The groundwater sample analytical results are summarized in Tables 4, 5, and 6.

1.3.4 Soil Excavation

Based on the analytical results of the subsurface investigation activities and as a precaution to remove chemical residues that may have been present in surface soil due to historic activities, limited soil excavation was conducted in three locations at the Site in March, April, and October 2003. The soil excavation areas and confirmation soil sampling locations are shown on Figures 4 and 5, and analytical results are summarized in Tables 2, 3, and 6. Details regarding the soil excavation activities and soil confirmation sampling were previously submitted to the County (Kennedy/Jenks 2003, 2004a) and are further discussed in Section 2.

1.3.5 Evaluation Criteria

As noted previously, analytical results from groundwater samples collected from groundwater monitoring wells previously located at the Site indicate that TDS concentrations exceed 3,000 mg/l. On the basis of these results, shallow groundwater at the Site is not considered suitable for domestic or municipal water supply purposes. Specifically, shallow groundwater at the Site is not considered to be potential source of drinking water.

The Site was leased from the Port in the late 1950s as a previously occupied industrial property. Praxair's objective was to return the Site to the Port in an environmental condition comparable to that at the time of initial leasing. To evaluate the need for further assessment or remediation activities, analytical results from soil samples were compared to Environmental Screening Levels (ESLs) for industrial/commercial land uses as set forth in Table B of the *Screening for Environmental Concerns at Sites with Contaminated Soil Groundwater, Interim Final – July 2003* by the California Regional Water Quality Control Board, San Francisco Bay Region (RWQCB 2003). Table B includes ESLs for shallow soils at sites where groundwater is not considered to be a potential source of drinking water.

Similarly, analytical results from groundwater samples were compared to the ESLs set forth in Table B. As set forth in the RWQCB ESL document, the groundwater screening levels presented in Table B are derived from Table F-1b of the same document. These ESLs assume future discharge of groundwater to surface water and consider protection of aquatic habitat, nuisance and potential volatilization of organic compounds into indoor air.

1.4 Site Status

Alliance removed its operations from the Site in early 2002. Some process equipment, including several aboveground bulk liquid storage tanks, four aboveground lime/water decant tanks, the acetylene generation equipment, a small cooling tower and cylinder filling piping, remained at the Site. In June 2002, Praxair removed remaining process equipment and piping from the Site. The removal of equipment and hazardous material is described in the *Report on Hazardous Materials Closure Activities*, submitted by Kennedy/Jenks to the City of Oakland (the City) Fire Department on 17 September 2002 (Kennedy/Jenks 2002). The hazardous materials closure activities were accepted by the City Fire Department in a letter dated 27 November 2002 (City 2002).

Site demolition activities occurred between September and December 2003. Demolition activities consisted of dismantling, demolishing, and removing the buildings, included removal of foundation piles to a depth of approximately five feet below the surrounding ground surface (bgs). Exterior structures including concrete sumps, the concrete electrical transformer pad and associated foundation piles, loading yard concrete pads, and basic utility and process pipelines were also removed from the Site. The demolition activities are described in the *Report on Demolition Activities*, submitted by Kennedy/Jenks to the Port on 27 February 2004 (Kennedy/Jenks 2004b).

The Site is owned by the Port, and is part of a 62-acre parcel that the Port is planning to sell in order to facilitate redevelopment. Following completion of the demolition activities by Praxair in December 2003, control of the Site was returned to the Port. The Site is surrounded by a chain-link fence and is currently vacant.

1.5 Purpose

Praxair does not intend to conduct further subsurface characterization or remediation activities at the Site. This Report is submitted to the County with the purpose of describing the environmental site investigation and remediation activities that have been performed by Praxair

at the Site and to request concurrence from the County that further subsurface characterization and remediation activities are not required.

Section 2: Summary of Site Investigation Findings and Remediation Activities

Based on a site reconnaissance and a review of standard environmental record sources, site reports, and regulatory agency environmental records, a number of areas where historic activities occurred were initially identified as posing potential concerns for environmental impacts at the Site (Kennedy/Jenks 2000). Soil and groundwater samples were collected in each of these areas and submitted for laboratory analysis. Summaries of actions taken to address potential concerns for soil and groundwater impacts, the results following implementation, and the current status at each of these areas are shown in Tables 7 and 8. For clarification, the soil boring locations where analytical testing was performed within each area and the specific constituents of potential concern are shown in these tables. As indicated in Tables 7 and 8, potential concerns within each area have been addressed and resolved through site investigation, remediation, and demolition activities. The aggregate results and findings of soil and groundwater sampling and remediation activities conducted at the Site since May 2001 are further discussed below.

2.1 Soil Sample Analytical Results, Remediation, and Site Status

A total of 43 soil samples were collected from 42 soil boring locations at depths ranging from the ground surface to 5.5 feet bgs and submitted for analysis of constituents of potential concern in May 2001 and February 2003. In addition, a total 36 soil confirmation samples were collected following remedial excavation and demolition activities and submitted for chemical analysis. The soil boring locations are shown on Figure 3 and the additional soil confirmation sampling locations are shown on Figures 4 and 5.

The analytical results for soil samples have been compared to ESLs for commercial/industrial land use as guidance during remedial soil excavation. As recommended in the *Screening for Environmental Concerns at Sites with Contaminated Soil Groundwater, Interim Final – July 2003* (RWQCB 2003), where analytical results for metals did not appear consistent with ESLs, background concentration data for the City were consulted. Additionally, soil sample pH was compared to the pH range provided in the *Water Quality Control Plan – San Francisco Bay Basin* (Basin Plan; RWQCB 1995). This pH range applies to surface water and groundwater, but is used in comparison with soil analytical results based upon a telephone conversation with Mr. Barney Chan of the County on 17 September 2003.

2.1.1 Total Petroleum Hydrocarbons

The soil sample analytical results for total petroleum hydrocarbons are summarized in Table 2. Four soil samples collected from three soil boring locations were submitted for analysis of TPHg by United States Environmental Protection Agency (EPA) Method 8015M. None of the samples contained concentrations of TPHg exceeding the analytical reporting limits.

Twenty-three soil samples collected from 18 soil boring locations were submitted for analysis of TPHd by EPA Method 8015M. Thirteen samples contained concentrations of TPHd exceeding

the analytical reporting limits, but only one sample from Boring KB-7 contained TPHd at a concentration exceeding the ESL for commercial/industrial land use. Based on the analytical results from Boring KB-7 and as a precaution to remove chemical residues that may be present in surface soil associated with the dust collection activities performed near Boring KB-13, soil excavation was conducted in the vicinity of these two soil borings, as shown on Figure 4. Soil confirmation samples were collected from six locations within the excavation at Boring KB-7 and a total of nine soil confirmation samples were collected from within the excavation at Boring KB-13 (two of which represent soil that was subsequently excavated and removed).

Eighteen soil samples collected from eighteen locations were submitted for analysis of TPHmo by EPA Method 8015M. Most of these locations were associated with the excavations performed to remediate shallow soil in the vicinity of Borings KB-7 and KB-13. Two soil borings (KB-35 and KB-36) were advanced on north and south sides of the former diked cooling tower to evaluate potential release of oil from an oil/water separator that historically may have been in that location. Soil samples collected from each boring at approximately 5 feet bgs were submitted for analysis of TPH and neither of the two soil samples contained TPHmo at concentrations exceeding the analytical reporting limits. Following excavation of soil beneath Building 1 to remove the foundation piles and piping beneath the floor slab, a soil sample was collected near the east end of the former diked cooling tower and belowground pipeline removed during the building demolition. Inadvertently, the silica gel cleanup step was not used to prepare this sample prior to analysis, and the sample contained 73 mg/kg of TPHd and 1,000 mg/kg of TPHmo. It is likely that, had the silica gel cleanup step been used, the reported TPH concentrations would be somewhat lower.

Soil impacted by total petroleum hydrocarbon compounds at concentrations greater than respective ESLs has been removed from the Site. The analytical data from soil boring and confirmation sampling strongly suggest that total petroleum hydrocarbon compounds are not present at concentrations exceeding respective ESLs for commercial/industrial land use in soil remaining at the Site. No further action is recommended to address total petroleum hydrocarbon compounds remaining in soil at the Site.

2.1.2 Volatile Organic Compounds

The soil sample analytical results for VOCs are summarized in Table 2. Twenty-five soil samples collected from 18 soil boring locations were submitted for analysis of VOCs by EPA Method 8260. Only one soil sample contained a VOC concentration above the analytical reporting limit. Sample KB-5A-S-3/3.5 collected from a depth of 3 to 3.5 feet bgs in Boring KB-5 contained 6 micrograms per kilogram (μg/kg) of methylene chloride. No other VOCs were detected above analytical reporting limits in this sample. The detection of methylene chloride is considered to be anomalous and may be attributable to laboratory contamination.

The analytical data strongly suggest that VOCs are not present at concentrations exceeding analytical reporting limits in soil at the Site. No further action is recommended with regard to VOCs in soil at the Site.

2.1.3 Semi-Volatile Organic Compounds

The soil sample analytical results for SVOCs are summarized in Table 2. Seven soil samples collected from five soil boring locations were submitted for analysis of SVOCs by EPA Method 8270. None of the samples contained concentrations of SVOCs exceeding the analytical reporting limits.

The analytical data strongly suggest that SVOCs are not present at concentrations exceeding analytical reporting limits in soil at the Site. No further action is recommended with regard to SVOCs in soil at the Site.

2.1.4 Polychlorinated Biphenyls

The soil sample analytical results for PCBs are summarized in Table 2. Two soil samples were analyzed for PCBs by EPA Method 8082. One soil sample was a composite of three surface soil samples collected adjacent to the three accessible sides of the concrete pad for the former electrical transformer. The other soil sample was collected near the former hydraulic elevator in the eastern loading dock of Building 1. PCBs were not detected in either sample at concentrations exceeding the analytical reporting limits.

The analytical data strongly suggest that PCBs are not present at concentrations exceeding analytical reporting limits in soil at the Site. No further action is recommended with regard to PCBs in soil at the Site.

2.1.5 Metals

The soil sample analytical results for metals are summarized in Table 3. Sixteen soil samples collected from 12 soil boring locations were submitted for analysis of metals by EPA Method 6010, and 13 soil samples collected from nine boring locations were submitted for analysis of mercury by EPA Method 7471. Each of the soil samples contained metals and mercury concentrations greater than the respective analytical reporting limits. Five samples contained arsenic concentrations greater than the ESL for commercial/industrial land use, but only the surface sample from Boring KB-7 contained arsenic at a concentration exceeding the background range. This sample also contained copper, vanadium, and zinc at concentrations greater than the ESLs for commercial/industrial land use, of which the copper and zinc concentrations were both greater than the respective background range.

Based on these analytical results, reports of historic "monkey dust" drying activities near Boring KB-11, and reports of historic paint dust handling activities near Boring KB-13, soil excavation was conducted in the vicinity of Borings KB-7, KB-11, and KB-13, as shown on Figure 4. Soil confirmation samples were collected from six locations within the excavation at Boring KB-7, a total of eight soil confirmation samples were collected from within the excavation at Boring KB-11 (two of which represent soil that was subsequently excavated and removed), and a total of nine soil confirmation samples were collected from within the excavation at Boring KB-13 (two of which represent soil that was subsequently excavated and removed). Soil confirmation sampling indicates that residual concentrations of metals in remaining soil, including mercury, at each of these locations are less than the respective ESLs for commercial/industrial land use.

Soil impacted by metals at concentrations greater than respective ESLs has been removed from the Site. The analytical data from soil boring and confirmation sampling strongly suggest that, with the exception of arsenic, metals are not present at concentrations exceeding either respective ESLs for commercial/industrial land use in soil remaining at the Site. Three samples contained arsenic at concentrations exceeding the ESL, but the detected concentrations were within the local background range for arsenic. No further action is recommended with regard to metals in soil at the Site.

2.1.6 pH

Residual lime and aboveground tanks were removed during the hazardous materials closure activities in June 2002. Belowground sumps and pits, aboveground secondary containment, and lime-impacted shallow soil were removed from the Site during demolition activities in the fall of 2003.

The soil sample analytical results for pH are summarized in Table 6. Nine soil samples collected from nine soil boring locations and 26 soil confirmation samples from five remedial or demolition excavations were submitted for analysis of pH by EPA Method 9045. Five soil samples exhibit pH greater than 8.5 (two of which represent soil that was subsequently excavated) and two soil samples exhibit pH less than 6.5. However, the average pH in remaining soil at the Site is within the range of 6.5 to 8.5. No further action is recommended with regard to soil pH at the Site.

2.2 Groundwater Analytical Results and Site Status

A total of 21 groundwater samples were collected from 19 soil boring locations in May 2001 and February 2003, and submitted for analysis of constituents of potential concern. The groundwater sampling locations are shown on Figure 3. The analytical results for groundwater samples have been compared to ESLs and Maximum Contaminant Levels (MCLs), as established by the State of California Environmental Protection Agency (Cal-EPA). Additionally, groundwater sample pH values were compared to the pH range for surface water and groundwater provided in the Basin Plan (RWQCB 1995).

2.2.1 Total Petroleum Hydrocarbons

The groundwater sample analytical results for total petroleum hydrocarbons are summarized in Table 4. Eleven groundwater samples collected in May 2001 were submitted for analysis of TPHd by EPA Method 8015M. Ten samples contained concentrations of TPHd exceeding the analytical reporting limits, but only two samples from Borings KB-13 and KB-15, respectively, contained TPHd at concentrations exceeding the ESL. Only the sample from Boring KB-13 exceeded the ESL following TPHd analysis with a silica gel cleanup preparation.

To assess the potential extent of TPH in groundwater in the vicinity of Boring KB-13, six groundwater samples from five additional soil borings were collected and analyzed in February 2003. The general groundwater flow direction at the Site is believed to be towards the Bay, and two of the February 2003 reconnaissance groundwater samples were collected from borings located between Boring KB-13 and the Bay. None of the additional samples contained TPHmo concentrations above the analytical reporting limit, and only one of the six additional samples

contained a TPHd concentration above the analytical reporting limit. The reported TPHd concentration in this sample did not exceed the ESL.

As previously described, soil containing TPH has been excavated and removed from the vicinity of Boring KB-13, thereby remediating a potential source of TPH to groundwater. The data from the five additional reconnaissance groundwater sample locations indicate that TPH in groundwater at Boring KB-13 is not migrating, and is limited in extent.

The analytical data from groundwater sampling strongly suggest that elevated concentrations of total petroleum hydrocarbon compounds in groundwater at Boring KB-15 are not anthropogenic in origin and that the TPH concentrations characterized by the groundwater sample from Boring KB-13 are limited in extent. No further action is recommended with regard to total petroleum hydrocarbon compounds in groundwater at the Site.

2.2.2 Volatile Organic Compounds

The groundwater sample analytical results for VOCs are summarized in Table 4. Twelve groundwater samples were submitted for analysis of VOCs by EPA Method 8260. Four samples contained concentrations of VOCs exceeding the analytical reporting limits, but none of the samples contained VOC concentrations exceeding the respective ESLs.

The analytical data strongly suggest that VOCs are not present at concentrations exceeding respective ESLs in groundwater at the Site. No further action is recommended with regard to VOCs in groundwater at the Site.

2.2.3 Polychlorinated Biphenyls

The groundwater sample analytical results for PCBs are summarized in Table 4. One groundwater sample was submitted for analysis of PCBs by EPA Method 8082, but did not contain concentrations of PCBs exceeding the analytical reporting limits.

The analytical data strongly suggest that PCBs are not present at concentrations exceeding analytical reporting limits in groundwater at the Site. No further action is recommended with regard to PCBs in groundwater at the Site.

2.2.4 Metals

The groundwater sample analytical results for metals are summarized in Table 5. Four groundwater samples were submitted for analysis of total metals by EPA Method 6010 in May 2001. Each of the four groundwater samples contained several metals at concentrations exceeding respective ESLs, while three of the groundwater samples contained some metals at concentrations exceeding respective MCLs. Four groundwater samples were collected from additional locations and filtered in the field using a 0.45-micron in-line filter in February 2003, and submitted for analysis of metals using EPA Method 6010. Each of these four additional groundwater samples contained dissolved metal concentrations exceeding respective ESLs, while two of the additional groundwater samples contained metal concentrations exceeding respective MCLs. Comparison of the metal concentrations measured in the unfiltered samples collected in May 2001, with the metal concentrations measured in the filtered samples collected

in February 2003, shows that the dissolved (filtered) metal concentrations are substantially lower than the total (unfiltered) metal concentrations in groundwater. This suggests that metals are predominantly associated with soil particles suspended in the unfiltered groundwater samples.

The results of dissolved groundwater analyses suggest that concentrations of metals in groundwater samples collected from the Site likely are not greater than the ambient concentrations of metals in groundwater within the vicinity of the Site. The following metal analytes were not detected in the four filtered groundwater samples at concentrations greater than the laboratory analytical reporting limits or the ESLs: antimony, barium, beryllium, cadmium, chromium, lead, mercury, molybdenum, silver, thallium, vanadium, or zinc. Although some of the groundwater samples contained dissolved metals, including arsenic, cobalt, copper, nickel and selenium, at concentrations exceeding respective ESLs, the concentration of these metals were generally less than the respective MCLs.

The Port provided Praxair representatives with a copy of a recent groundwater monitoring report for the Ninth Avenue Terminal site (Fugro West 2003) that contains analytical results for numerous groundwater monitoring wells located generally west of 901 Embarcadero. According to Port representatives, Well SCIMW-19 is the only well considered to represent background conditions for the Ninth Avenue Terminal site (Personal Communication 2004). Well SCIMW-19 has been sampled for filtered metals in August 1996 and January 1997. With data from only four reconnaissance groundwater samples from 901 Embarcadero and two samples from Well SCIMW-19, a statistical comparison was not possible. Therefore available data regarding metals concentrations in filtered samples from Well SCIMW-19 were used for general comparison purposes.

With the exception of one arsenic concentration, one barium concentration, one molybdenum concentration, and one nickel concentration (in three different samples), concentrations of metals in filtered reconnaissance groundwater samples from the Site were similar to those detected in filtered samples from Well SCIMW-19 within the Ninth Avenue Terminal site. This comparison suggests that the dissolved concentrations of metals in groundwater samples collected at the Site may be characteristic of the area-wide groundwater conditions.

The lack of corresponding metal concentrations in soil at the Site, the absence of historic Site activities that would be responsible for elevated metal concentrations in groundwater, and the generally comparable metal concentrations in a nearby offsite monitoring well suggest that the presence of metals in groundwater is not associated with the activities of Praxair or its predecessor company at the Site and may be representative of the local background concentration of metals in groundwater. No further action is recommended with regard to metals in groundwater at the Site.

2.2.5 pH

The groundwater sample analytical results for pH are summarized in Table 6. Four groundwater samples were submitted for analysis of pH by EPA Method 9045. The pH of each of the samples was within the range of 6.5 to 8.5. No further action is recommended with regard to pH of groundwater at the Site.

Section 3: Overall Conclusions and Recommendations

On the basis of the investigation and remediation activities performed by Praxair at the Site, as described more fully in the previously submitted reports, and summarized herein, we respectfully request that the County provide a finding of No Further Action regarding chemical concentrations in soil and groundwater at the Site. Supporting statements are provided below:

- Praxair is not the property owner. Praxair has fulfilled its environmental and physical site restoration responsibilities to the property owner (the Port).

- Praxair leased this Site from the Port as a previously occupied industrial property, and has returned it to the Port as an industrial property. Praxair's environmental obligations to the Port extend only to commercial/industrial standards.

- Items and areas of potential environmental concern have been removed from the Site through the hazardous materials closure and demolition activities. Soil of potential concern due to chemical concentrations was excavated and removed from the Site during 2003.

- The Port has no immediate plans for use of the Site. However in late 2003, the Port entered into an "Option to Purchase and Ground Lease Real Property" with Oakland Harbor Partners (OHP) regarding an approximately 62-acre area that extends from Oak Street to Ninth Avenue and includes the Site. Following completion and City approval of redevelopment plans, OHP intends to develop the 62-acre area as a mixed-use project that will include residential, retail and open space land components.

- With the exception of groundwater in the immediate vicinity of Boring KB-13, concentrations of organic compounds do not exceed ESLs for commercial/industrial properties. Analytical results from groundwater samples collected in five locations around Boring KB-13 in February 2003 suggest that TPHd previously detected in a reconnaissance groundwater sample collected from Boring KB-13 has not migrated very far from the location of Boring KB-13. Shallow soil containing TPHd was excavated from the vicinity of Boring KB-13, and the residual TPHd in groundwater appears to be non-mobile, therefore no further action is recommended to address organic compounds in groundwater.

- Although the concentrations of several dissolved metals in reconnaissance groundwater samples exceed the respective ESLs, there is no reason to believe that these metal concentrations, which may be representative of background conditions, are associated with activities of Praxair or its predecessor company at the Site. No further actions are recommended to address metals in soil or groundwater at the Site.

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Tables

Table 1: Summary of Soil Boring Locations

Boring Name	Date	Total Depth (ft bgs)[a]	Sampled Media	Rationale	Report Source[b]
KB-1	05/17/01	16	Soil, GW[c]	Vehicle activities (e.g. gasoline, diesel, oil, etc.) Reference point at edge of site	Kennedy/Jenks 2001
KB-2	05/18/01	0.5	Soil	Potential release from former PG&E transformer	Kennedy/Jenks 2001
KB-3	05/18/01	4	Soil	Vehicle activities (e.g. gasoline, diesel, oil, etc.)	Kennedy/Jenks 2001
KB-4	05/17/01	12	Soil, GW	Hydraulic fluid (possible PCB[d] content) Vehicle activities (e.g. gasoline, diesel, oil, etc.)	Kennedy/Jenks 2001
KB-5	05/17/01	3.5	Soil, GW	Sewer line (possible solvents content) Rail car activities	Kennedy/Jenks 2001
KB-6	05/17/01	3.5	Soil, GW	Possible location of former oil-water separator drain	Kennedy/Jenks 2001
KB-7	05/18/01	3.5	Soil	Possible historic waste dumping	Kennedy/Jenks 2001
KB-8	05/17/01	12	Soil, GW	Vehicle activities (e.g. gasoline, diesel, oil, etc.) Reference point at edge of site	Kennedy/Jenks 2001
KB-9	05/18/01	12	Soil, GW	Lime spill	Kennedy/Jenks 2001
KB-10	05/18/01	0.5	Soil	Lime spill	Kennedy/Jenks 2001
KB-11	05/18/01	1.5	Soil	Lime slurry pit Monkey Dust	Kennedy/Jenks 2001
KB-12	05/18/01	0.5	Soil	Lime spill Monkey Dust	Kennedy/Jenks 2001
KB-13	05/18/01	12	Soil, GW	Site activities, including compressor leaks, paint thinner storage, etc. Paint dust (possible metals content)	Kennedy/Jenks 2001
KB-14	05/18/01	3.5	Soil	Evaluate potential release from compressor to storm drain	Kennedy/Jenks 2001
KB-15	05/17/01	12	Soil, GW	Lime spill Site activities	Kennedy/Jenks 2001
KB-16	05/18/01	4	Soil	Vehicle activities (e.g. gasoline, diesel, oil, etc.) Possible historic waste disposal	Kennedy/Jenks 2001
KB-17	05/18/01	4	Soil	Vehicle activities (e.g. gasoline, diesel, oil etc.)	Kennedy/Jenks 2001
KB-18	05/17/01	12	Soil, GW	Vehicle activities (e.g. gasoline, diesel, oil, etc.) Cylinder/tank storage (possible metals content)	Kennedy/Jenks 2001

Table 1: Summary of Soil Boring Locations

Boring Name	Date	Total Depth (ft bgs)[a]	Sampled Media	Rationale	Report Source[b]
KB-19	05/18/01	0.5	Soil	Cylinder storage (possible metals content)	Kennedy/Jenks 2001
KB-20	05/18/01	4	Soil	Vehicle activities (e.g. gasoline, diesel, oil, etc.) Cylinder/tank storage (possible metals content)	Kennedy/Jenks 2001
KB-21	05/18/01	0.5	Soil	Cylinder storage (possible metals content)	Kennedy/Jenks 2001
KB-22	05/18/01	12	Soil, GW	Vehicle activities (e.g. gasoline, diesel, oil, etc.) Cylinder/tank storage (possible metals content)	Kennedy/Jenks 2001
KB-23	05/18/01	12	Soil, GW	Vehicle activities and maintenance (e.g. gasoline, diesel, oil, etc.)	Kennedy/Jenks 2001
KB-24	06/06/02	1.5	Soil	KB-11 Area	Kennedy/Jenks 2002
KB-25	06/06/02	0.5	Soil	KB-11 Area	Kennedy/Jenks 2002
KB-26	06/06/02	1.5	Soil	KB-11 Area	Kennedy/Jenks 2002
KB-27	02/04/03	12	GW	KB-23 Area	Kennedy/Jenks 2003
KB-28	02/04/03	12	GW	KB-15 Area	Kennedy/Jenks 2003
KB-29	02/04/03	8	GW	High pH Water Pit Area	Kennedy/Jenks 2003
KB-30	02/04/03	12	GW	Vicinity of Boring KB-13	Kennedy/Jenks 2003
KB-31	02/04/03	12	GW	Vicinity of Boring KB-13	Kennedy/Jenks 2003
KB-32	02/04/03	8	GW	Vicinity of Boring KB-13	Kennedy/Jenks 2003
KB-33	02/04/03	3	No Sample	Former Acetone Drum Area	Kennedy/Jenks 2003
KB-33A	02/05/03	4	Soil	Former Acetone Drum Area	Kennedy/Jenks 2003
KB-34	02/04/03	4	Soil	Former Acetone Drum Area	Kennedy/Jenks 2003
KB-35	02/05/03	6	Soil	Cooling Tower Outside Building 1	Kennedy/Jenks 2003
KB-36	02/05/03	6	Soil	Cooling Tower Outside Building 1	Kennedy/Jenks 2003
KB-37	02/05/03	1.5	Soil	KB-11 Area	Kennedy/Jenks 2003
KB-38	02/05/03	1.5	Soil	KB-11 Area	Kennedy/Jenks 2003
KB-39	02/05/03	1.5	Soil	KB-11 Area	Kennedy/Jenks 2003
KB-40	02/05/03	16	GW	Vicinity of Boring KB-13	Kennedy/Jenks 2003
KB-41	02/05/03	12	No Sample	Vicinity of Boring KB-13	Kennedy/Jenks 2003
KB-42	02/05/03	16	GW	Vicinity of Boring KB-13	Kennedy/Jenks 2003
SS-1	05/18/01	SDI Invert[c]	Sediment	Evaluate sediment in storm drain	Kennedy/Jenks 2001

Table 1: Summary of Soil Boring Locations

(a) ft bgs = feet below ground surface.
(b) Report Sources:
Kennedy/Jenks 2001. *Subsurface Characterization Report at 901 Embarcadero, Oakland, California*. 15 October 2001.
Kennedy/Jenks 2002. *Report on Hazardous Materials Closure Activities*. 17 September 2002.
Kennedy/Jenks 2003. *Soil Excavation and Additional Characterization at 901 Embarcadero, Oakland, California*. 2 June 2003.
(c) GW = groundwater
(d) PCB = polychlorinated biphenyls.
(e) SDI invert = depth to bottom of storm drain drop inlet.

Table 2: Soil Sample Analytical Results – Organic Compounds

Boring Name or Location	Sample ID	Depth (ft bgs)[a]	Sample Date[b]	TPHg[c] (mg/kg)[d]	TPHd[e] (mg/kg)	TPHmo[f] (mg/kg)	VOCs[g] (µg/kg)[h]	SVOCs[i] (mg/kg)	PCBs[j] (mg/kg)
ESL[k]				400	500	1,000	varies	varies	0.74
KB-1	KB-1-S-0.2/0.7	0.2–0.7	05/17/01	NA[l]	12	NA	ND[m]	NA	NA
	KB–1-S-3/3.5	3–3.5	05/17/01	NA	<1.0[n]	NA	ND	NA	NA
KB-2	KB-2-S-0/0.5	0.5	05/18/01	NA	NA	NA	NA	NA	ND[o]
KB-3	KB-3-S-3/3.5	3-3.5	05/18/01	NA	<1.0	NA	ND	NA	NA
KB-4	KB-4-S-1.0/1.5	1.0–1.5	05/17/01	NA	25	NA	ND	NA	NA
	KB-4-S-3/3.5	3-3.5	05/17/01	NA	<1.0	NA	ND	NA	ND
KB-5	KB-5A-S-3/3.5	3-3.5	05/18/01	NA	1.3	NA	6.0[p]	NA	NA
KB-6	KB-6A-S-3/3.5	3-3.5	05/18/01	<1.0	<1	NA	ND	ND[q]	NA
KB-7	KB-7-S-0/0.5[r]	0-0.5	05/18/01	<1.0	**2,500**[s]	NA	ND	ND	NA
	KB-7-S-3/3.5	3–3.5	05/18/01	<1.0	<1.0	NA	ND	ND	NA
Excavation in Vicinity of KB-7	"7" CONF-1	1	03/03/03	NA	4.5[t]	<50	NA	NA	NA
	"7" CONF-2	1	03/03/03	NA	61[t]	680	NA	NA	NA
	"7" CONF-3	1	03/03/03	NA	98[t]	790	NA	NA	NA
	"7" CONF-4	1	03/03/03	NA	2.2[t]	<50	NA	NA	NA
	"7" CONF-5	2	03/03/03	NA	1.6[t]	<50	NA	NA	NA
	"7" CONF-6	2	03/03/03	NA	1.2[t]	<50	NA	NA	NA
KB-8	KB-8-S-2/2.5	2-2.5	05/18/01	NA	<1.0	NA	ND	NA	NA
KB-11	KB-11-S-0/0.5	0-0.5	05/18/01	NA	7.8	NA	ND	ND	NA
KB-12	KB-12-S-0/0.5	0-0.5	05/18/01	NA	NA	NA	ND	NA	NA
KB-13	KB-13A-S-0/0.5[u]	0-0.5	05/18/01	NA	55	NA	ND	ND	NA
	KB-13-S-2/2.5[v]	2-2.5	05/17/01	NA	3.6	NA	ND	ND	NA
Excavation in Vicinity of KB-13	"13" CONF-1	0.5	03/03/03	NA	12[t]	160	NA	NA	NA
	"13" CONF-2	0.5	03/03/03	NA	53[t]	680	NA	NA	NA
	"13" CONF-3	0.5	03/03/03	NA	75[t]	710	NA	NA	NA
	"13" CONF-4[w]	0.5	03/03/03	NA	190[t]	**2,000**	NA	NA	NA
	"13" CONF-5	0.5	03/03/03	NA	52[t]	560	NA	NA	NA
	"13" CONF-6	0.5	03/03/03	NA	81[t]	760	NA	NA	NA
	"13" CONF-4A[x]	1	04/15/03	NA	**1,200**[t]	**8,400**	NA	NA	NA
	"13" CONF-4B-SE[y]	2.5	10/28/03	NA	10[z]	72[z]	NA	NA	NA
	"13" CONF-4B-NW[y]	2.5	10/28/03	NA	2.1[z]	<50	NA	NA	NA
KB-14	KB-14-S-3/3.5	3-3.5	05/18/01	NA	4.5	NA	NA	NA	NA
KB-15	KB-15-S-2/2.5[aa]	2–2.5	05/17/01	NA	2.3	NA	ND	NA	NA
KB-16	KB-16-S-2/2.5	2-2.5	05/18/01	NA	<1.0	NA	ND	ND	NA

Table 2: Soil Sample Analytical Results – Organic Compounds

Boring Name or Location	Sample ID	Depth (ft bgs)[a]	Sample Date[b]	TPHg[c] (mg/kg)[d]	TPHd[e] (mg/kg)	TPHmo[f] (mg/kg)	VOCs[g] (µg/kg)[h]	SVOCs[i] (mg/kg)	PCBs[j] (mg/kg)
ESL[k]				400	500	1,000	varies	varies	0.74
KB-17	KB-17-S-3/3.5	3-3.5	05/18/01	<1.0	1.4	NA	NA	NA	NA
KB-18	KB-18-S-0/0.5	0-0.5	05/18/01	NA	270	NA	ND	NA	NA
KB-20	KB-20-S-0/0.5	0-0.5	05/18/01	NA	9.0	NA	ND	NA	NA
	KB-20-S-3/3.5	3-3.5	05/18/01	NA	<1.0	NA	ND	NA	NA
KB-22	KB-22-S-0.5/1.0	0.5-1.0	05/18/01	NA	2.2	NA	ND	NA	NA
KB-23	KB-23-S-2/2.5	2-2.5	05/18/01	NA	NA	NA	ND	NA	NA
KB-33A	KB-33A-S-0.5/1.0	0.5-1.0	02/05/03	NA	NA	NA	<50[bb]	NA	NA
KB-33A	KB-33A-S-2.0/2.5	2.0/2.5	02/05/03	NA	NA	NA	<50[bb]	NA	NA
KB-34	KB-34-S-0.0/0.5	0.0-0.5	02/04/03	NA	NA	NA	<50[bb]	NA	NA
	KB-34-S-2.0/2.5	2.0/2.5	02/04/03	NA	NA	NA	<50[bb]	NA	NA
KB-35	KB-35-S-5.0/5.5	5.0/5.5	02/05/03	NA	<1.0	<50	NA	NA	NA
KB-36	KB-36-S-4.5/5.0	4.5-5.0	02/05/03	NA	<1.0	<50	NA	NA	NA
Diked Cooling Tower Post-Excavation Sidewall Near Piping	TOWER SUMP PIPE	2	11/11/03	NA	73[t]	1,000[cc]	NA	NA	NA

Table 2: Soil Sample Analytical Results – Organic Compounds

(a) ft bgs = feet below ground surface.
(b) Samples collected in 2001 were analyzed by STL Chromalab. Samples collected in 2003 were analyzed by STL San Francisco.
(c) TPHg = total petroleum hydrocarbons quantified as gasoline using EPA Method 8015.
(d) mg/kg = milligrams per kilogram.
(e) TPHd = total petroleum hydrocarbons quantified as diesel using EPA Method 8015M.
(f) TPHmo = total petroleum hydrocarbons quantified as motor oil using EPA Method 8015M.
(g) VOCs = volatile organic compounds quantified using EPA Method 8260.
(h) µg/kg = micrograms per kilogram.
(i) SVOCs = semi-volatile organic compounds quantified using EPA Method 8270.
(j) PCBs = polychlorinated biphenyls quantified using EPA Method 8082
(k) ESL = Environmental Screening Level from Table B of *Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater, Interim Final – July 2003* by the California Regional Water Quality Control Board (RWQCB). Groundwater IS NOT a current or potential source of drinking water. Values presented for commercial/industrial land uses.
(l) NA = not analyzed.
(m) ND= not detected. No analytes detected above analytical reporting limits. Analytical reporting limits for individual VOCs range from 5.0 to 50 µg/kg.
(n) < = not detected at or above the laboratory reporting limit.
(o) No analytes detected above analytical reporting limits. Analytical reporting limit for individual PCBs was 0.050 mg/kg.
(p) Methylene chloride detected at a concentration of 6.0 µg/kg. No other VOCs detected above analytical reporting limits.
(q) No analytes detected above analytical reporting limits. Analytical reporting limits for individual SVOCs range from 0.067 to 8.3 mg/kg.
(r) This sample represents initial soil conditions. Based upon analytical results from this sample, the surrounding soil was subsequently excavated in March 2003. Soil confirmation samples "7" CONF-1 through "7" CONF-6 were collected following the initial soil excavation, and represent the final post-excavation conditions of soil left in place.
(s) Bold value indicates concentration above ESL for commercial/industrial land use.
(t) Laboratory analytical report notes that "hydrocarbon reported does not match the pattern of our diesel standard".
(u) This sample represents initial soil conditions. Based upon visual assessment, the surrounding soil was subsequently excavated in March 2003. Soil confirmation samples "13" CONF-1 through "13" CONF-6 were collected following the initial soil excavation, and represent the final post-excavation conditions of soil left in place, except as noted below for soil represented by soil confirmation sample "13" CONF-4.
(v) Sample was misidentified on laboratory analytical data reports as KB-1-S-2/2.5.
(w) This sample represents interim excavation conditions. Based upon analytical results from this sample, the surrounding soil was subsequently excavated. Soil confirmation sample "13" CONF-4A was collected following the additional soil excavation.
(x) This sample represents interim excavation conditions. Based upon analytical results from this sample, the surrounding soil was subsequently excavated. Soil confirmation samples "13" CONF-4B-SE and "13" CONF-4B-NW were collected following the additional soil excavation.
(y) Samples collected following deepening of excavation at location of sample "13" CONF-4. These samples represent the final post-excavation conditions. The surrounding soil has been left in place.
(z) Sample analyzed by STL San Francisco for extractable petroleum hydrocarbons using EPA Method 8015M with silica gel cleanup.
(aa) Sample was misidentified on laboratory analytical data report as KB-15.5-4.5.
(bb) Only acetone reported.
(cc) The laboratory report indicates that surrogate recovery was not reportable due to required dilution.

Table 3: Soil Sample Analytical Results – Metals

Boring Name	Sample ID	Sample Depth (feet bgs)[a]	Sample Date[b]	Anti-mony	Ar-senic	Barium	Beryl-lium	Cad-mium	Chro-mium	Cobalt	Cop-per	Lead	Mer-cury	Molyb-denum	Nickel	Selen-ium	Silver	Thal-lium	Vana-dium	Zinc
ESL[c]				**40**	**5.5**	**1,500**	**8.0**	**7.4**	**58**	**80**	**230**	**750**	**10**	**40**	**150**	**10**	**40**	**13**	**200**	**600**
Background[d]				**5.2-7.1**	**9.3-31.0**	**NR[e]**	**0.8-1.1**	**1.5-3.3**	**59.0-142.2**	**NR**	**40.9-99.7**	**8.9-21.5**	**0.3-0.6**	**NR**	**69.7-144.3**	**4.7-7.0**	**1.5-2.2**	**8.7-42.5**	**NR**	**84.7-135.9**
KB-1	KB-1-S-0.2/0.7	0.2–0.7	05/17/01	<2.0[f]	**5.9[g]**	98	<0.50	1.1	26	7.3	21	20	NA[h]	<1.0	31	<2.0	<1.0	<1.0	29	53
	KB–1-S-3/3.5	3–3.5	05/17/01	<2.0	<1.0	14	<0.50	<0.50	24	3.5	5.1	4.0	NA	<1.0	25	<2.0	<1.0	<1.0	16	13
KB-7	KB-7-S-0/0.5[i]	0-0.5	05/18/01	<2.0	**37**	83	<0.50	2.5	45	5.5	**250**	170	NA	4.6	87	<2.0	<1.0	<1.0	**330**	**700**
	KB-7-S-3/3.5	3–3.5	05/18/01	<2.0	1.1	36	<0.50	<0.50	24	3.5	6.1	3.5	NA	<1.0	23	<2.0	<1.0	<1.0	14	12
Excavation in Vicinity of KB-7	"7" CONF-1	1	03/03/03	<2.0	4.0	72	<0.50	1.6	20	6.9	15	9.2	0.15	<1.0	23	<2.0	<1.0	<1.0	28	30
	"7" CONF-2	1	03/03/03	<2.0	4.0	73	<0.50	2.1	47	7.6	35	44	1.2	<1.0	39	<2.0	<1.0	<1.0	30	100
	"7" CONF-3	1	03/03/03	<2.0	5.4	62	<0.50	2.5	20	6.6	26	29	0.14	<1.0	17	<2.0	<1.0	<1.0	31	140
	"7" CONF-4	1	03/03/03	<2.0	2.6	78	<0.50	1.8	19	6.9	15	7.5	0.055	<1.0	27	<2.0	<1.0	<1.0	27	38
	"7" CONF-5	2	03/03/03	<2.0	3.1	55	<0.50	1.3	34	7.3	9.2	14	0.065	<1.0	47	<2.0	<1.0	<1.0	26	27
	"7" CONF-6	2	03/03/03	<2.0	3.6	37	<0.50	1.3	36	7.1	9.3	8.3	0.055	<1.0	47	<2.0	<1.0	<1.0	26	26
KB-9	KB-9-S-0/0.5	0-0.5	05/18/01	<2.0	2.0	90	<0.50	0.63	40	3.2	58	110	NA	<1.0	57	<2.0	<1.0	<1.0	21	75
KB-11	KB-11-S-0/0.5[j]	0-0.5	05/18/01	<2.0	5.0	48	<0.50	0.67	36	5.2	42	49	5.6	<1.0	27	<2.0	<1.0	<1.0	19	45
	KB-11A-1/1.5[j]	1-1.5	06/06/02	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.37	NA	NA	NA	NA	NA	NA	NA
Excavation in Vicinity of KB-11	"11" CONF-1	0.25	03/03/03	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.4	NA	NA	NA	NA	NA	NA	NA
	"11" CONF-2[k]	0.25	03/03/03	NA	NA	NA	NA	NA	NA	NA	NA	NA	4.9	NA	NA	NA	NA	NA	NA	NA
	"11" CONF-3	0.25	03/03/03	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.3	NA	NA	NA	NA	NA	NA	NA
	"11" CONF-4	1	03/03/03	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.19	NA	NA	NA	NA	NA	NA	NA
	"11" CONF-5[k]	1	03/03/03	NA	NA	NA	NA	NA	NA	NA	NA	NA	4.2	NA	NA	NA	NA	NA	NA	NA
	"11" CONF-6	1	03/03/03	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.082	NA	NA	NA	NA	NA	NA	NA
	"11" CONF-2-A[l]	0.25	04/15/03	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.5	NA	NA	NA	NA	NA	NA	NA
	"11" CONF-5-A[l]	1.5	04/15/03	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.092	NA	NA	NA	NA	NA	NA	NA
KB-12	KB-12-S-0/0.5	0-0.5	05/18/01	<2.0	1.6	68	<0.50	0.95	26	6.9	15	12	0.23	<1.0	31	<2.0	<1.0	<1.0	26	32
KB-13	KB-13A-S-0/0.5[m]	0–0.5	05/18/01	<2.0	**18**	65	<0.50	1.4	12	5.5	22	72	0.27	<1.0	12	<2.0	<1.0	<1.0	20	120
	KB-13-S-2/2.5[n]	2-2.5	05/17/01	<2.0	1.3	40	<0.50	0.75	31	6.0	19	13	NA	<1.0	40	<2.0	<1.0	<1.0	23	33
Excavation in Vicinity of KB-13	"13" CONF-1	0.5	03/03/03	<2.0	2.6	49	<0.50	1.6	23	6.4	15	9.5	0.11	<1.0	31	<2.0	<1.0	<1.0	26	34
	"13" CONF-2	0.5	03/03/03	<2.0	5.3	33	<0.50	1.4	25	5.5	14	11	<0.05	1.0	26	<2.0	<1.0	<1.0	24	81
	"13" CONF-3	0.5	03/03/03	<2.0	2.2	39	<0.50	1.5	20	5.5	15	7.9	0.071	<1.0	24	<2.0	<1.0	<1.0	23	33
	"13" CONF-4[o]	0.5	03/03/03	<2.0	1.9	20	<0.50	0.86	24	3.5	4.5	5.3	<0.05	<1.0	26	<2.0	<1.0	<1.0	20	16
	"13" CONF-5	0.5	03/03/03	<2.0	2.1	60	<0.50	2.5	27	6.1	21	9.2	0.080	<1.0	25	<2.0	<1.0	<1.0	30	96
	"13" CONF-6	0.5	03/03/03	<2.0	1.3	46	<0.50	1.5	28	5.4	12	12	<0.05	<1.0	26	<2.0	<1.0	<1.0	23	88

Table 3: Soil Sample Analytical Results – Metals

Boring Name	Sample ID	Sample Depth (feet bgs)[a]	Sample Date[b]	Anti-mony	Ar-senic	Barium	Beryl-lium	Cad-mium	Chro-mium	Cobalt	Cop-per	Lead	Mer-cury	Molyb-denum	Nickel	Selen-ium	Silver	Thal-lium	Vana-dium	Zinc
ESL[c]				**40**	**5.5**	**1,500**	**8.0**	**7.4**	**58**	**80**	**230**	**750**	**10**	**40**	**150**	**10**	**40**	**13**	**200**	**600**
Background[d]				**5.2-7.1**	**9.3-31.0**	**NR[g]**	**0.8-1.1**	**1.5-3.3**	**59.0-142.2**	**NR**	**40.9-99.7**	**8.9-21.5**	**0.3-0.6**	**NR**	**69.7-144.3**	**4.7-7.0**	**1.5-2.2**	**8.7-42.5**	**NR**	**84.7-135.9**
	"13" CONF-4-A[p]	1.0	04/15/03	<2.0	1.3	28	<0.50	0.65	22	3.7	7.2	4.8	0.081	<1.0	27	<2.0	<1.0	<1.0	14	17
KB-16	KB-16-S-2/2.5	2-2.5	05/18/01	<2.0	1.7	53	<0.50	0.82	31	7.3	14	17	NA	<1.0	42	<2.0	<1.0	<1.0	22	27
KB-18	KB-18-S-0/0.5	0-0.5	05/18/01	<2.0	4.5	130	<0.50	1.9	19	9.9	39	34	NA	<1.0	19	<2.0	<1.0	<1.0	34	67
KB-19	KB-19-S-0/0.5	0-0.5	05/18/01	<2.0	7.8	130	<0.50	2.3	33	8.2	56	130	NA	<1.0	30	<2.0	<1.0	<1.0	40	140
KB-20	KB-20-S-0/0.5	0– 0.5	05/18/01	<2.0	6.1	130	<0.50	1.4	28	9.1	27	32	NA	<1.0	28	<2.0	<1.0	<1.0	26	59
	KB-20-S-3/3.5	3–3.5	05/18/01	<2.0	1.4	14	<0.50	0.56	20	3.0	6.2	2.4	NA	<1.0	21	<2.0	<1.0	<1.0	14	12
KB-21	KB-21-S-0/0.5	0-0.5	05/18/01	<2.0	1.0	68	<0.50	1.6	22	6.5	30	54	NA	<1.0	14	<2.0	<1.0	<1.0	28	64
KB-22	KB-22-S-0.5/1.0	0.5-1.0	05/18/01	<2.0	<1.0	2.6	<0.50	<0.50	12	9.8	33	<1.0	0.26	<1.0	13	<2.0	<1.0	<1.0	8.0	3.5
KB-24	KB-24-0/0.5	0-0.5	06/06/02	NA	NA	NA	NA	NA	NA	NA	NA	NA	8.3	NA	NA	NA	NA	NA	NA	NA
	KB-24-1/1.5	1-1.5	06/06/02	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.11	NA	NA	NA	NA	NA	NA	NA
KB-25	KB-25-0/0.5	0-0.5	06/06/02	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.86	NA	NA	NA	NA	NA	NA	NA
	KB-25A-0.5	0.5	06/06/02	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.2	NA	NA	NA	NA	NA	NA	NA
KB-26	KB-26-0/0.5	0-0.5	06/06/02	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.8	NA	NA	NA	NA	NA	NA	NA
	KB-26-1/1.5	1-1.5	06/06/02	NA	NA	NA	NA	NA	NA	NA	NA	NA	4.6	NA	NA	NA	NA	NA	NA	NA
KB-37	KB-37-S-0.0/0.5	0-0.5	02/05/03	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.44	NA	NA	NA	NA	NA	NA	NA
KB-38	KB-38-S-0.0/0.5	0-0.5	02/05/03	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.5	NA	NA	NA	NA	NA	NA	NA
SS-1[q]	SS-1	SDI invert	05/18/01	<2.0	1.3	46	<0.50	<0.50	**130**	5.9	**310**	87	3.1	<1.0	22	4.7	<1.0	<1.0	58	140

Table 3: Soil Sample Analytical Results – Metals

(a) Depth below ground surface, measured in feet.
(b) Samples collected in 2001 analyzed by STL Chromalab for metals using EPA Method 3010A/3050B/6010B. Samples collected in 2002 and 2003 by STL San Francisco analyzed for mercury using EPA Method 7471A. Concentrations reported in units of milligrams per kilogram (mg/kg).
(c) ESL = Environmental Screening Level from Table B of *Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater, Interim Final – July 2003* by the California Regional Water Quality Control Board (RWQCB). Groundwater IS NOT a current or potential source of drinking water. Values presented for commercial/industrial land uses.
(d) Range of background values from City of Oakland Survey of Background Metal Concentration Studies.
(e) NR = Not reported.
(f) < = not detected at or above the laboratory reporting limit.
(g) Bold value indicates concentration above the commercial ESL.
(h) NA = not analyzed.
(i) This sample represents initial soil conditions. Based upon analytical results from this sample, the surrounding soil was subsequently excavated in March 2003. Soil confirmation samples "7" CONF-1 through "7" CONF-6 were collected following the initial soil excavation, and represent the final post-excavation conditions of soil left in place.
(j) These samples represent initial soil conditions. Based upon analytical results from these samples, the surrounding soil was subsequently excavated in March 2003. Soil confirmation samples "11" CONF-1 through "11" CONF-6 were collected following the initial soil excavation, and represent the final post-excavation conditions of soil left in place, except as noted below for soil confirmation samples "11" CONF-2 and "11" CONF-5.
(k) These samples represent interim excavation conditions. Based upon results of initial post-excavation samples, the excavation was expanded laterally at location of sample "11" CONF-2 and deeper at location of sample "11" CONF-5 in April 2003, therefore data from these samples do not represent final post-excavation conditions. Soil confirmation samples "11" CONF-2-A and "11" CONF-5-A were collected following the additional soil excavation.
(l) Samples collected following additional excavation of soil from locations of previous samples "11" CONF-2 and "11" CONF-5. These samples represent the final post-excavation conditions. The surrounding soil has been left in place.
(m) This sample represents initial soil conditions. Based upon visual assessment, the surrounding soil was subsequently excavated in March 2003. Soil confirmation samples "13" CONF-1 through "13" CONF-6 were collected following the initial soil excavation, and represent the final post-excavation conditions of soil left in place, except as noted below for soil represented by soil confirmation sample "13" CONF-4.
(n) Sample was misidentified on laboratory analytical data reports as KB-1-S-2/2.5.
(o) This sample represents interim excavation conditions. Based upon petroleum hydrocarbon analytical results from this sample (see Table 3), the surrounding soil was subsequently excavated. Soil confirmation sample "13" CONF-4A was collected following the additional soil excavation.
(p) This sample represents interim excavation conditions. Based upon petroleum hydrocarbon analytical results from this sample (see Table 3), the surrounding soil was subsequently excavated. Soil confirmation samples "13" CONF-4B-SE and "13" CONF-4B-NW were collected following the additional soil excavation, but not analyzed for metals.
(q) Sample of sediment collected from the floor of the storm drain inlet. This material was subsequently collected, removed, and disposed of off site.

Table 4: Groundwater Sample Analytical Results – Organic Compounds

Boring Name	Sample ID	Sample Date[c]	Extractable Petroleum Hydrocarbons (µg/l)[a]			Volatile Organic Compounds (µg/l)[b]						PCBs[k] (µg/l)
			TPHd[d]	TPHd (silica gel)[e]	TPHmo[f] (silica gel)	cis-1,2-DCE[g]	trans-1,2-DCE[h]	TCE[i]	PCE[j]	Vinyl Chloride	Chloroform	
MCL[l]			**NE[m]**	**NE**	**NE**	**6**	**10**	**5**	**5**	**0.5**	**100[n]**	**0.5**
ESL[o]			**640**	**640**	**640**	**590**	**590**	**360**	**120**	**4**	**340**	**0.014**
KB-1	KB-1-W	5/18/01	<50[p]	NA[q]	NA	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NA
KB-4	KB-4-W	5/17/01	58[r]	NA	NA	0.57	<0.5	0.91	<0.5	<0.5	<0.5	ND[s]
KB-5	KB-5-W	5/17/01	56[r]	NA	NA	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NA
	5/17-DUP	5/17/01	54[r]	NA	NA	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NA
KB-6	KB-6-W	5/17/01	140[r]	NA	NA	<0.5	<0.5	0.73	0.62	<0.5	4.3	NA
KB-8	KB-8-W	5/18/01	140[r]	NA	NA	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NA
KB-9	KB-9-W	5/18/01	NA	NA	NA	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NA
KB-13	KB-13-W	5/18/01	7,500[r,t]	6,200[u]	NA	17[v]	1.5	5.2	<0.5	0.95	<0.5	NA
KB-15	KB-15-W	5/17/01	770[r]	94[r]	NA	4.5	<2.0	<2.0	<2.0	<2.0	<2.0	NA
KB-18	KB-18-W	5/17/01	150[r]	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA
KB-22	KB-22-W	5/18/01	65[r]	NA	NA	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NA
KB-23	KB-23-W	5/18/01	590	<71	NA	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NA
KB-30	KB-30-W-12-A	02/04/03	NA	64[r]	<500	NA	NA	NA	NA	NA	NA	NA
KB-31	KB-31-W-12	02/04/03	NA	<62[w]	<620[w]	NA	NA	NA	NA	NA	NA	NA
KB-32	KB-32-W-8	02/04/03	NA	<56[w]	<560[w]	NA	NA	NA	NA	NA	NA	NA
KB-40	KB-40-W-16	02/05/03	NA	<57[w]	<570[w]	NA	NA	NA	NA	NA	NA	NA
	2/5 Dup	02/05/03	NA	<72[w]	<720[w]	NA	NA	NA	NA	NA	NA	NA
KB-42	KB-42-W-16	02/05/03	NA	<180[w]	<1,800[w]	NA	NA	NA	NA	NA	NA	NA

Table 4: Groundwater Sample Analytical Results – Organic Compounds

(a) Samples analyzed for extractable petroleum hydrocarbons using EPA Method 8015M. Concentrations reported in units of micrograms per liter (µg/l).
(b) Samples analyzed for volatile organic compounds using EPA Method 8260. Analytes listed if detected in any of the samples. Other analytes identified by this method were not detected above analytical reporting limits in any of the samples. Concentrations reported in units of µg/l.
(c) Samples collected in 2001 analyzed by STL Chromalab. Samples collected in 2003 analyzed by STL San Francisco.
(d) TPHd = total petroleum hydrocarbons quantified as diesel.
(e) Selected groundwater samples analyzed using a silica gel cleanup step prior to analysis.
(f) TPHmo = total petroleum hydrocarbons quantified as motor oil.
(g) cis-1,2-DCE = cis-1,2-dichloroethene.
(h) trans-1,2-DCE = trans-1,2-dichloroethene.
(i) TCE = trichloroethene.
(j) PCE = tetrachloroethene.
(k) PCBs = polychlorinated biphenyls quantified using EPA Method 8082
(l) MCL = primary maximum contaminant level from the California Code of Regulations (CCR) Section 64431.
(m) NE = not established.
(n) The MCL of 100 µg/l applies to the sum of bromodichloromethane, dibromochloromethane, bromoform and chloroform.
(o) ESL = Environmental Screening Level from Table B of *Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater, Interim Final – July 2003* by the California Regional Water Quality Control Board (RWQCB). Groundwater IS NOT a current or potential source of drinking water.
(p) < = not detected at or above the laboratory reporting limit.
(q) NA = not analyzed.
(r) Laboratory analytical report notes that "hydrocarbon reported does not match the pattern of our diesel standard".
(s) No analytes detected above analytical reporting limits. Analytical reporting limit for individual PCBs was 0.50 µg/l.
(t) Bold value indicates concentration above ESL.
(u) Laboratory analytical report notes that "hydrocarbon reported is in the late diesel range, and does not match our diesel standard".
(v) Underlined value indicates concentrations above MCL.
(w) Laboratory analytical report notes that "reporting limits raised due to reduced sample size".

Table 5: Groundwater Sample Analytical Results – Metals

Boring Name	Sample ID	Sample Date	Concentration, mg/l[a] Anti-mony	Arsenic	Barium	Beryl-lium	Cad-mium	Chro-mium	Cobalt	Copper	Lead	Mercury	Molyb-denum	Nickel	Selen-ium	Silver	Thal-lium	Vana-dium	Zinc
MCL[b]			0.006	0.05	1	0.004	0.005	0.05	NE[c]	1.3	0.015	0.002	NE	0.1	0.05	0.1[d]	0.002	NE	5.0[d]
ESL[e]			0.030	0.036	1	0.0027	0.0022	0.180	0.003	0.0031	0.0025	0.000012	0.240	0.0082	0.005	0.00019	0.020	0.019	0.081
Total Metals[f]																			
KB-1	KB-1-W	5/18/01	<0.005[g]	0.016	0.38	<0.005	<0.002	0.058[h]	**0.012**[i]	**0.029**	**0.014**	NA[j]	0.038	**0.069**	<0.005	<0.005	<0.005	**0.051**	0.067
KB-13	KB-13-WA	5/18/01	<0.005	0.022	1.7	0.0063	0.037	1.3	**0.24**	**0.54**	0.60	NA	0.0096	1.5	<0.005	<0.005	<0.005	**0.98**	**0.99**
KB-18	KB-18-W	5/17/01	<0.005	0.12	8.8	0.017	0.083	2.2	**0.44**	3.6	17	NA	<0.005	2.4	<0.005	**0.0057**	<0.005	**1.7**	**4.3**
KB-22	KB-22-W	5/18/01	<0.005	0.016	2.7	<0.005	0.012	0.42	**0.075**	**0.20**	0.24	NA	0.0061	0.40	**0.0061**	<0.005	<0.005	**0.33**	**0.32**
Dissolved Metals[k]																			
KB-27	KB-27-W-12	02/04/03	0.0076	0.025	0.38	<0.005	<0.002	<0.005	**0.015**	<0.005	<0.005	<0.0002	0.025	0.19	**0.019**	<0.005	0.0097	0.0058	<0.010
KB-28	KB-28-W-12	02/04/03	0.013	0.088	0.19	<0.005	<0.002	0.0076	**0.0058**	<0.005	<0.005	<0.0002	0.015	**0.024**	**0.02**	<0.005	0.0059	0.015	0.020
KB-29	KB-29-W-8	02/04/03	0.0096	0.034	0.065	<0.005	<0.002	<0.005	<0.005	<0.005	<0.005	<0.0002	0.011	<0.005	**0.022**	<0.005	<0.005	0.0089	<0.010
KB-30	KB-30-W-12	02/04/03	0.0092	0.021	0.079	<0.005	<0.002	<0.005	<0.005	**0.0057**	<0.005	<0.0002	0.058	**0.016**	**0.011**	<0.005	<0.005	0.011	<0.010

(a) mg/l = milligrams per liter.
(b) MCL = primary maximum contaminant level from the California Code of Regulations (CCR) Section 64431. For copper and lead, the MCL identified is the state action level from CCR Section 64672.
(c) NE = not established.
(d) Secondary MCL from the CCR Section 64449.
(e) ESL = Environmental Screening Level from Table B of *Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater, Interim Final – July 2003* by the California Regional Water Quality Control Board (RWQCB). Groundwater IS NOT a current or potential source of drinking water.
(f) Samples analyzed by STL Chromalab for 16 CAM metals using EPA Method 3010A/3050B/6010B.
(g) < = not detected at or above the laboratory reporting limit.
(h) Underlined value indicates concentrations above MCL.
(i) Bold value indicates concentration above ESL.
(j) NA = not analyzed.
(k) Samples were filtered in the field using a 0.45-micron in-line filter. Samples analyzed by STL San Francisco for 17 CAM metals using EPA Method 3010A/3050B/6010B.

Table 6: Sample Analytical Results – pH

Boring Name or Location	Sample ID	Depth (ft bgs)[a]	Sample Date	pH[b]
RWQCB Specified Limit[c]				**6.5 – 8.5**
Soil Samples				
KB-7	KB-7-S-3/3.5	3.5	05/18/01	7.1
Excavation in Vicinity of Boring KB-7	"7" CONF-1	1	03/03/03	7.6
	"7" CONF-2	1	03/03/03	7.8
	"7" CONF-3	1	03/03/03	7.9
	"7" CONF-4	1	03/03/03	7.9
	"7" CONF-5	2	03/03/03	7.6
	"7" CONF-6	2	03/03/03	7.5
KB-8	KB-8-S-2/2.5	2.5	05/18/01	7.4
KB-9	KB-9-0/0.5	0.5	05/18/01	8.1
KB-10	KB-10-S-0/0.5	0.5	05/18/01	7.5
KB-11	KB-11-S-0/0.5[d]	0.5	05/18/01	8.5
Excavation in Vicinity of Boring KB-11	"11" CONF-1	0.25	03/03/03	8.1
	"11" CONF-2[e]	0.25	03/03/03	**8.6**[f]
	"11" CONF-3	0.25	03/03/03	8.4
	"11" CONF-4	1	03/03/03	8.3
	"11" CONF-5[e]	1	03/03/03	**8.7**
	"11" CONF-6	1	03/03/03	8.1
	"11" CONF-2-A[g]	0.25	04/15/03	**9.3**
	"11" CONF-5-A[g]	1.5	04/15/03	8.3
KB-12	KB-12-S-0/0.5	0.5	05/18/01	7.9
KB-15	KB-15-S-2/2.5	2.5	05/17/01	8.4
KB-16	KB-16-S-2/2.5	2.5	05/18/01	8.0
KB-22	KB-22-S-0.5/1.0	1.0	05/18/01	7.4
Cooling Water Sump Post-Excavation Sidewalls	SP-1-N	2	10/20/03	7.5
	SP-1-S	2	10/20/03	6.3[h]
	SP-1-E	2	10/20/03	6.7
	SP-1-W	2	10/20/03	8.0
Underground Lime Slurry Pit Post-Excavation Sidewalls	SP-2-N	2	10/20/03	7.9
	SP-2-S	2	10/20/03	7.1
	SP-2-E	2	10/20/03	**8.7**
	SP-2-W	2	10/20/03	6.8
High pH Water Pit Post-Excavation Sidewalls	LP-N	2	10/20/03	5.2
	LP-S	2	10/20/03	7.2
	LP-E	2	10/20/03	**8.8**
	LP-W	2	10/20/03	7.6
Sediment Sample				
NA	SS-1[i]	SDI Invert	05/18/01	8.4

Table 6: Sample Analytical Results – pH

Boring Name or Location	Sample ID	Depth (ft bgs)[a]	Sample Date	pH[b]
Groundwater Samples				
KB-8	KB-8-W	NA	05/18/01	7.6
KB-9	KB-9-W	NA	05/18/01	7.7
KB-15	KB-15-WA	NA	05/17/01	8.0
KB-22	KB-22-W	NA	05/18/01	7.4

(a) ft bgs = feet below ground surface.
(b) Samples collected in 2001 analyzed by STL Chromalab for pH using EPA Method 9045C. Samples collected in 2003 analyzed by STL San Francisco for pH using EPA Method 9045C.
(c) Range for pH provided in the Basin Plan published by the Regional Water Quality Control Board, San Francisco Bay Region (RWQCB). This pH range applies to surface water and groundwater, but is provided in this table based upon a telephone conversation with Mr. Barney Chan of the Alameda County Health Care Services Agency on 17 September 2003.
(d) These samples represent initial soil conditions. Based upon analytical results from these samples, the surrounding soil was subsequently excavated in March 2003. Soil confirmation samples "11" CONF-1 through "11" CONF-6 were collected following the initial soil excavation, and represent the final post-excavation conditions of soil left in place, except as noted below for soil confirmation samples "11" CONF-2 and "11" CONF-5.
(e) These samples represent interim soil excavation conditions. Based upon results of initial post-excavation samples, the excavation was expanded laterally at location of sample "11" CONF-2 and deeper at location of sample "11" CONF-5 in April 2003, therefore data from these samples do not represent final post-excavation conditions. Soil confirmation samples "11" CONF-2-A and "11" CONF-5-A were collected following the additional soil excavation.
(f) Bold value indicates pH greater than RWQCB range.
(g) Samples collected following additional excavation of soil from locations of previous samples "11" CONF-2 and "11" CONF-5. These samples represent the final post-excavation conditions. The surrounding soil has been left in place.
(h) Underlined value indicates pH less than RWQCB range.
(i) Sample of sediment collected from the floor of the storm drain inlet. This material was subsequently collected, removed, and disposed of off site.

Table 7: Areas with Potential Concern for Soil Impacts

Area	Relevant Borings	Constituents of Potential Concern	Action to Address Concern	Results (Source Document)[a]	Status
Vicinity of potential historic waste handling activities near west end of railroad spur	KB-7	TPHd[b] TPHmo[c] Metals VOCs[e] SVOCs[f]	Soil sampling conducted in May 2001 Soil excavation conducted in March 2003 to address TPH and metals concentrations	Soil confirmation sampling indicates residual concentrations less than ESLs[d] for commercial/industrial land use (Kennedy/Jenks 2003)	Area remediated No further action recommended
Vicinity of former "monkey dust" handling and drying area between Building 1 and Building 2	KB-11 KB-12 KB-24 KB-25 KB-26 KB-37 KB-38	Metals (Mercury) pH	Soil sampling conducted in May 2001, June 2002, and February 2003 Soil excavation conducted in March and April 2003 to address mercury concentrations	Soil confirmation sampling indicates residual concentrations less than ESLs for commercial/industrial land use (Kennedy/Jenks 2003)	Area remediated No further action recommended
Vicinity of former dust containment bins, paint storage area, and compressor room exterior to Building 1	KB-13 KB-14	TPHd Metals VOCs (KB-13) SVOCs (KB-13	Soil sampling conducted in May 2001 Soil excavation at KB-13 conducted in March, April, and October 2003 to address TPH and metals concentrations	Soil confirmation sampling indicates residual concentrations less than ESLs for commercial/industrial land use (Kennedy/Jenks 2003, 2004a)	Area remediated No further action recommended
Former outdoor acetone drum storage area	KB-33A KB-34	Acetone	Acetone drums removed Soil sampling conducted in February 2003	Acetone not detected at concentrations exceeding analytical reporting limits (Kennedy/Jenks 2003)	Drums removed No further action recommended
Former storage of lime in belowground sumps and above ground tanks	KB-9 KB-10 KB-11 KB-12 KB-15 SP-2 series LP series	pH	Removed residual lime and aboveground tanks as part of hazardous materials closure in June 2002 Removed sumps, secondary containment, and underlying soil impacted by lime in fall of 2003	Residual lime and lime-containing structures removed Soil confirmation sampling indicates that average pH in remaining soil is within the range of 6.5 to 8.5 (Kennedy/Jenks 2003, 2002, 2004b)	Lime sources removed No further action recommended

Table 7: Areas with Potential Concern for Soil Impacts

Area	Relevant Borings	Constituents of Potential Concern	Action to Address Concern	Results (Source Document)[a]	Status
Former cooling water intake and discharge system, including underground piping and onsite storm drain drop inlets	Sediment sample SS-1	Metals Potential conduit from Site to receiving waters	Removed accumulated sediment in storm drain drop inlets in early 2002 Removed onsite portions of underground piping and plugged seaward and landward ends of remaining offsite pipe segments in fall of 2003	No direct hydraulic connection between the Site and receiving waters (Kennedy/Jenks 2004b)	Conduit closed No further action recommended
Former cooling tower immediately west of west wall of Building 1 (vicinity of potential former oil/water separator)	KB-6 KB-35 KB-36 TOWER SUMP PIPE	TPHd TPHmo	Soil sampling conducted in May 2001 and February 2003 Belowgrade structure removed in fall of 2003 Soil sample collected in November 2003 following structure demolition	TPHd and TPHmo not detected above analytical reporting limits in three soil samples collected prior to removal (Kennedy/Jenks 2003, 2001) Soil sample collected following removal of cooling tower & piping contained 1,000 mg/kg[g] of TPHmo, which is equal to the ESL for industrial/commercial land use (Kennedy/Jenks 2004b)	Cooling tower removed No further action required
Former electrical transformer enclosure	KB-2	PCBs[h]	Soil sampling conducted in May 2001 Concrete slab and foundation piles removed in fall of 2003	PCBs not detected in composite soil sample at concentrations exceeding analytical reporting limits (Kennedy/Jenks 2004b, 2001)	Item removed No further action required

Table 7: Areas with Potential Concern for Soil Impacts

Area	Relevant Borings	Constituents of Potential Concern	Action to Address Concern	Results (Source Document)[a]	Status
Former empty gas cylinder storage area along the northern portion of the Site	KB-18 KB-19 KB-20 KB-21 KB-22	Metals	Soil sampling conducted in May 2001 Empty gas cylinders removed	Arsenic detected in two soil samples at concentrations exceeding the ESL for commercial/industrial land use, but below the background concentration range for the City of Oakland[(1)] Other metals not detected at concentrations exceeding the ESLs for commercial/industrial land use (Kennedy/Jenks 2001)	Cylinders removed No further action required
Former truck maintenance shed	KB-23	VOCs	Soil sampling conducted in May 2001 Maintenance shed removed	VOCs not detected at concentrations exceeding analytical reporting limits (Kennedy/Jenks 2003)	Maintenance shed removed No further action recommended
Former hydraulic lift system associated with Building 1 loading dock	KB-4	TPHd VOCs PCBs	Soil sampling conducted in May 2001 Hydraulic fluid reservoir drained and piston removed in June 2002	TPHd not detected at concentrations exceeding ESL for commercial/ industrial land use VOCs and PCBs not detected at concentrations exceeding analytical reporting limits (Kennedy/Jenks 2001)	Hydraulic lift system and fluid reservoir removed No further action recommended
Areas of historic vehicle activities	KB-1 KB-3 KB-4 KB-8 KB-16 KB-17 KB-18 KB-20 KB-22 KB-23	TPHd VOCs SVOCs	Soil sampling conducted in May 2001	TPHd not detected at concentrations exceeding analytical reporting limits and/or ESLs for commercial/industrial land use SVOCs and VOCs not detected at concentrations exceeding analytical reporting limits (Kennedy/Jenks 2001)	No further action recommended

Table 7: Areas with Potential Concern for Soil Impacts

Area	Relevant Borings	Constituents of Potential Concern	Action to Address Concern	Results (Source Document)[a]	Status
Areas of historic rail car activities	KB-5 KB-6	TPHg[j] THPd VOCs SVOCs	Soil sampling conducted in May 2001	TPHg and TPHd not detected at concentrations exceeding analytical reporting limits and/or ESLs for commercial/industrial land use SVOCs and VOCs not detected at concentrations exceeding analytical reporting limits, with the exception of methylene chloride, which was detected at 6.0 µg/kg[k] in one soil sample (Kennedy/Jenks 2001)	No further action recommended

(a) Source Documents:
Kennedy/Jenks 2001. *Subsurface Characterization at 901 Embarcadero, Oakland.* Kennedy/Jenks Consultants. 15 October 2001.
Kennedy/Jenks 2002. *Report on Hazardous Materials Closure Activities at 901 Embarcadero, Oakland.* Kennedy/Jenks Consultants. 17 September 2002.
Kennedy/Jenks 2003. *Soil Excavation and Additional Characterization at 901 Embarcadero, Oakland.* Kennedy/Jenks Consultants. 2 June 2003.
Kennedy/Jenks 2004a. *Report on Additional Remedial Excavation Activities at 901 Embarcadero, Oakland.* Kennedy/Jenks Consultants. 8 January 2004.
Kennedy/Jenks 2004b. *Report on Demolition Activities at 901 Embarcadero, Oakland.* Kennedy/Jenks Consultants. 27 February 2004.
(b) TPHd = total petroleum hydrocarbons quantified as diesel.
(c) TPHmo = total petroleum hydrocarbons quantified as motor oil.
(d) ESL = Environmental Screening Level from Table B of *Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater, Interim Final – July 2003* by the California Regional Water Quality Control Board, San Francisco Bay Region. Groundwater IS NOT a current or potential source of drinking water.
(e) VOCs = volatile organic compounds.
(f) SVOCs = semi-volatile organic compounds.
(g) mg/kg = milligrams per kilogram.
(h) PCB = polychlorinated biphenyls.
(i) Range of background metals concentrations taken from City of Oakland Survey of Background Metal Concentrations Studies.
(j) TPHg = total petroleum hydrocarbons quantified as gasoline.
(k) µg/kg = micrograms per kilogram.

Table 8: Areas with Potential Concern for Groundwater Impacts

Area	Relevant Borings	Constituents of Potential Concern	Action to Address Concern	Results (Source Document)[a]	Status
Vicinity of former dust containment bins, paint storage area, and compressor room exterior to Building 1	KB-13 KB-30 KB-31 KB-32 KB-40 KB-42	TPHd[b] TPHmo[c] VOCs[d] Metals	Groundwater sampling conducted in May 2001 and February 2003	Boring KB-13 contained 6,200 µg/l[e] of TPHd following silica gel cleanup, which is greater than the ESL[f] TPHd concentrations in groundwater samples collected from four out of five additional locations in vicinity of Boring KB-13 were not detected at concentrations exceeding analytical reporting limits; TPHd concentration in only one groundwater sample exceeded the analytical reporting limit, but was less than the ESL TPHmo not detected at concentrations exceeding the analytical reporting limits VOCs not detected at concentrations exceeding ESLs Some metals detected at concentrations exceeding ESLs, but less than MCLs. Appear generally consistent with available background concentrations (Kennedy/Jenks 2001, 2003)	Presence of TPHd in groundwater is spatially limited No further action recommended
Former storage of lime in belowground sumps and above ground tanks	KB-9 KB-15	pH	Groundwater sampling conducted in May 2001	Groundwater sampling indicates that average pH in groundwater is within the range of 6.5 to 8.5 (Kennedy/Jenks 2001)	No further action recommended

Table 8: Areas with Potential Concern for Groundwater Impacts

Area	Relevant Borings	Constituents of Potential Concern	Action to Address Concern	Results (Source Document)[a]	Status
Former cooling tower immediately west of west wall of Building 1 (vicinity of potential former oil/water separator)	KB-6	TPHd VOCs	Groundwater sampling conducted in May 2001	TPHd and VOCs not detected at concentrations exceeding ESLs and/or analytical reporting limits (Kennedy/Jenks 2001)	No further action required
Former empty gas cylinder storage area along the northern portion of the Site	KB-18 KB-22	Metals	Groundwater sampling conducted in May 2001	Various metals detected at concentrations exceeding ESLs (Kennedy/Jenks 2001)	Although the concentrations of several metals in groundwater samples exceed the respective ESLs, there is no reason to believe that these metals concentrations are associated with activities of Praxair or its predecessor company at the Site No further action recommended
Former truck maintenance shed	KB-23	TPHd VOCs	Groundwater sampling conducted in May 2001	TPHd not detected at concentration exceeding ESL; TPH not detected at concentration exceeding analytical reporting limit, following silica gel cleanup VOCs not detected at concentrations exceeding analytical reporting limits (Kennedy/Jenks 2001)	No further action recommended
Former hydraulic lift system associated with Building 1 loading dock	KB-4	TPHd VOCs PCBs[g]	Groundwater sampling conducted in May 2001 Hydraulic fluid reservoir drained and piston removed	TPHd not detected at concentration exceeding ESLs VOCs not detected at concentrations exceeding ESLs and/or analytical reporting limits PCBs not detected at concentrations exceeding analytical reporting limits (Kennedy/Jenks 2001)	Hydraulic lift system and fluid reservoir removed No further action recommended

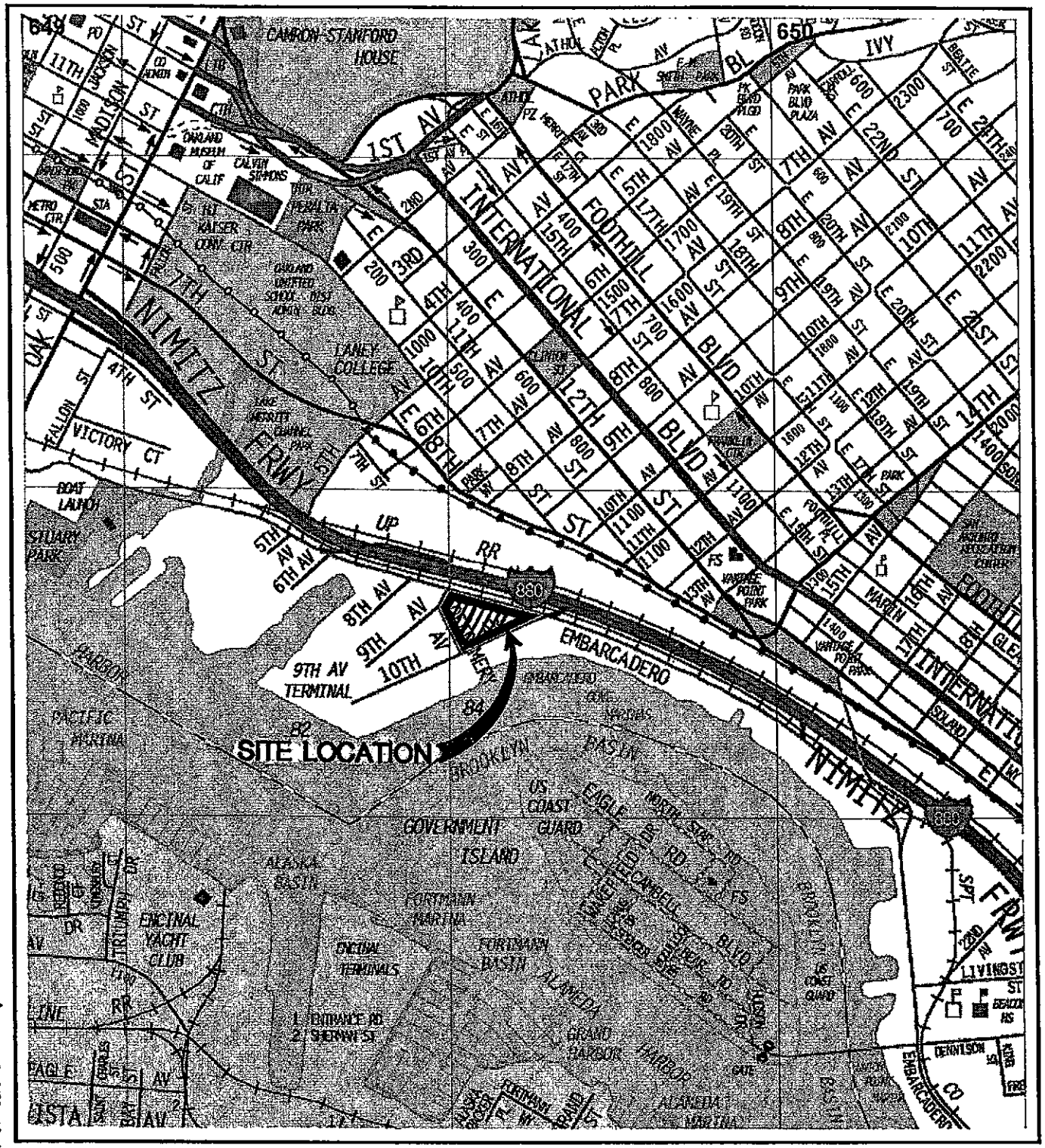
Table 8: Areas with Potential Concern for Groundwater Impacts

Area	Relevant Borings	Constituents of Potential Concern	Action to Address Concern	Results (Source Document)[a]	Status
Areas of historic vehicle activities	KB-1 KB-4 KB-8 KB-18 KB-22 KB-23	TPHd VOCs	Groundwater sampling conducted in May 2001	TPHd and VOCs not detected at concentrations exceeding analytical reporting limits and/or ESLs (Kennedy/Jenks 2001)	No further action recommended
Areas of historic rail car activities	KB-5 KB-6	TPHd VOCs	Groundwater sampling conducted in May 2001	VOCs not detected at concentrations exceeding analytical reporting limits and/or ESLs TPHd not detected at concentrations exceeding ESLs (Kennedy/Jenks 2001)	No further action recommended
Sitewide	KB-27 KB-28 KB-29 KB-30	Metals	Groundwater sampling conducted in February 2003 at request of Port of Oakland	Some metals detected at concentrations exceeding ESLs, but generally less than MCLs and generally consistent with available background concentrations (Kennedy/Jenks 2003)	Although the concentrations of several dissolved metals in reconnaissance groundwater samples exceed the respective ESLs, these concentrations may be representative of background conditions and there is no reason to believe that these metals concentrations are associated with activities of Praxair or its predecessor company at the Site No further action recommended

Table 8: Areas with Potential Concern for Groundwater Impacts

(a) Source Documents:
Kennedy/Jenks 2001. *Subsurface Characterization at 901 Embarcadero, Oakland.* Kennedy/Jenks Consultants. 15 October 2001.
Kennedy/Jenks 2003. *Soil Excavation and Additional Characterization at 901 Embarcadero, Oakland.* Kennedy/Jenks Consultants. 2 June 2003.
(b) TPHd = total petroleum hydrocarbons quantified as diesel.
(c) TPHmo = total petroleum hydrocarbons quantified as motor oil.
(d) VOC = volatile organic compound.
(e) µg/l = micrograms per liter.
(f) ESL = Environmental Screening Level from Table B of *Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater, Interim Final – July 2003* by the California Regional Water Quality Control Board, San Francisco Bay Region. Groundwater IS NOT a current or potential source of drinking water.
(g) PCB = polychlorinated biphenyl.

Figures



BASE MAP: THE THOMAS GUIDE DIGITAL EDITION, 1999 BAY AREA

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901 EMBARCADERO, OAKLAND, CALIFORNIA

SITE LOCATION MAP

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FIGURE 1

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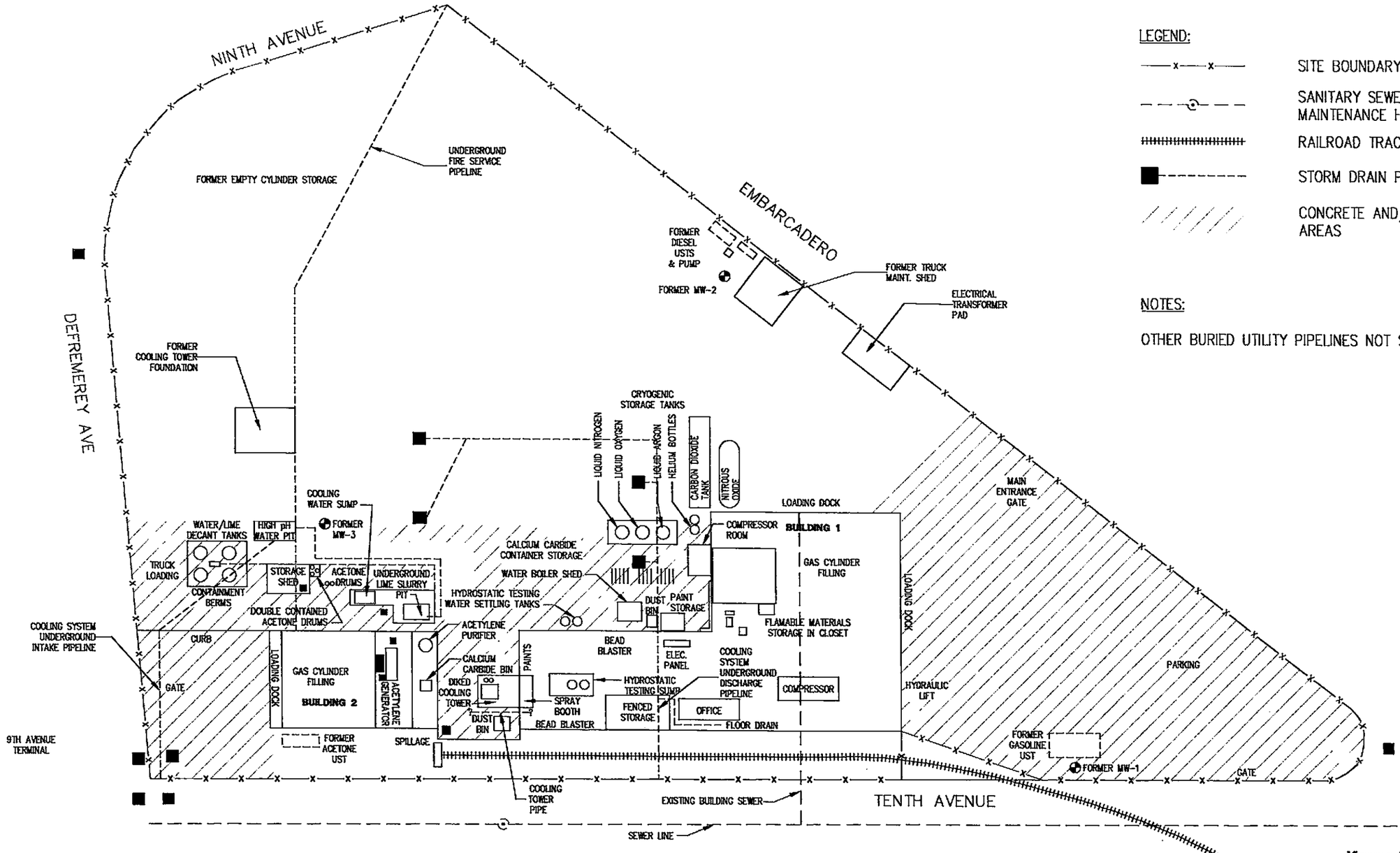

LEGEND:

- SITE BOUNDARY/FENCE
- SANITARY SEWER PIPE AND MAINTENANCE HOLE
- RAILROAD TRACK SPUR
- STORM DRAIN PIPE AND DROP INLET
- CONCRETE AND/OR ASPHALT PAVED AREAS

NOTES:

OTHER BURIED UTILITY PIPELINES NOT SHOWN.

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SITE PLAN PRIOR TO DEMOLITION ACTIVITIES

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JUNE 2004

FIGURE 2

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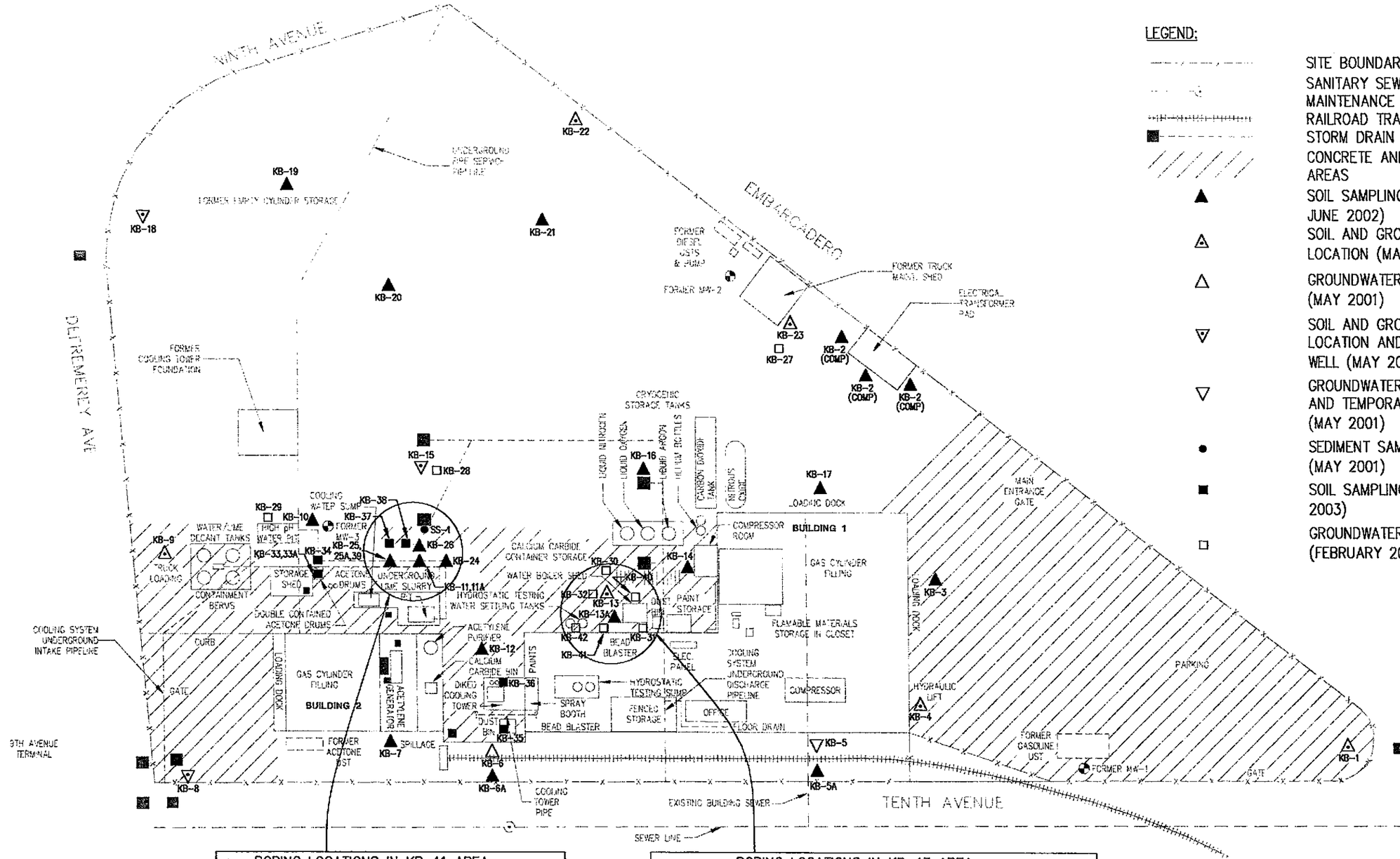

LEGEND:

- SITE BOUNDARY/FENCE
- SANITARY SEWER PIPE AND MAINTENANCE HOLE
- RAILROAD TRACK SPUR
- STORM DRAIN PIPE AND DROP INLET
- CONCRETE AND/OR ASPHALT PAVED AREAS
- ▲ SOIL SAMPLING LOCATION (MAY 2001, JUNE 2002)
- ◬ SOIL AND GROUNDWATER SAMPLING LOCATION (MAY 2001)
- △ GROUNDWATER SAMPLING LOCATION (MAY 2001)
- ▽ SOIL AND GROUNDWATER SAMPLING LOCATION AND TEMPORARY MONITORING WELL (MAY 2001)
- ▽ GROUNDWATER SAMPLING LOCATION AND TEMPORARY MONITORING WELL (MAY 2001)
- ● SEDIMENT SAMPLE FROM STORM DRAIN (MAY 2001)
- ■ SOIL SAMPLING LOCATION (FEBRUARY 2003)
- □ GROUNDWATER SAMPLING LOCATION (FEBRUARY 2003)

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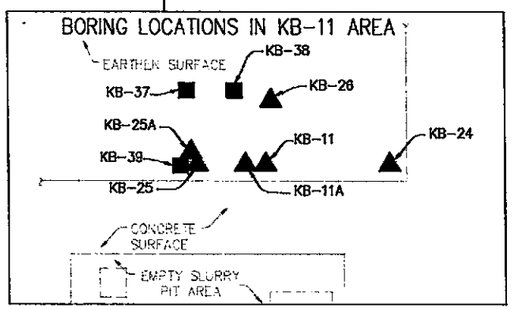
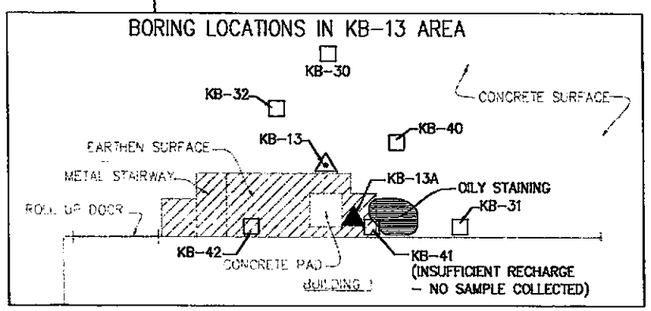
BORING LOCATIONS IN KB-11 AREA



BORING LOCATIONS IN KB-13 AREA



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SOIL AND GROUNDWATER SAMPLING LOCATIONS

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FIGURE 3

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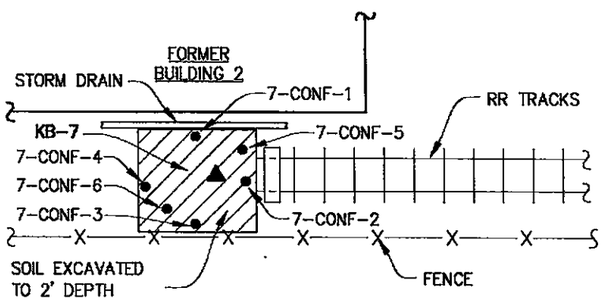
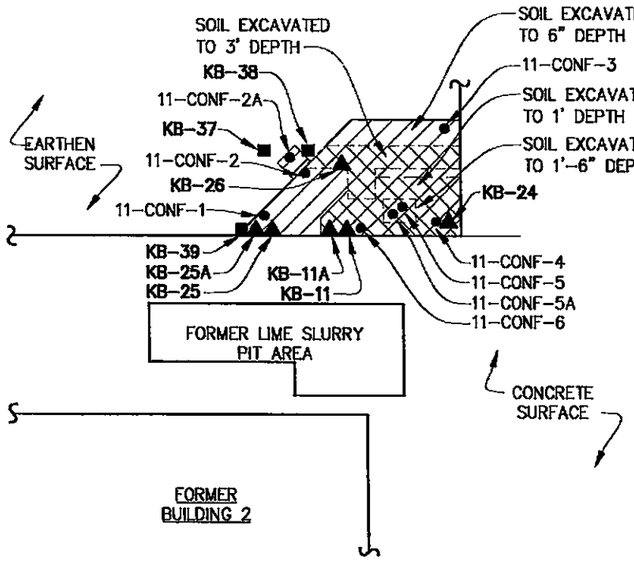
DETAIL 1

KB–7 EXCAVATION AREA



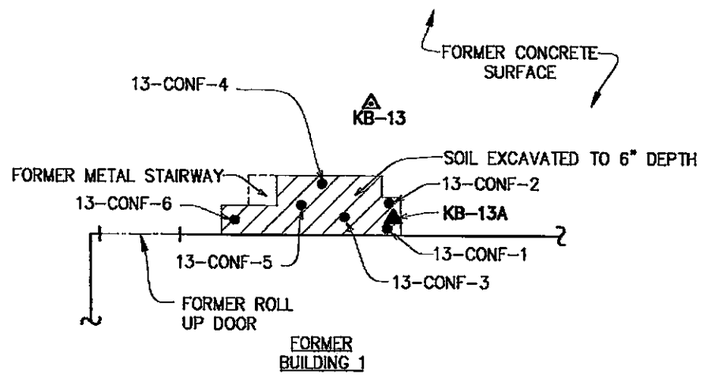
DETAIL 2

KB–11 EXCAVATION AREA



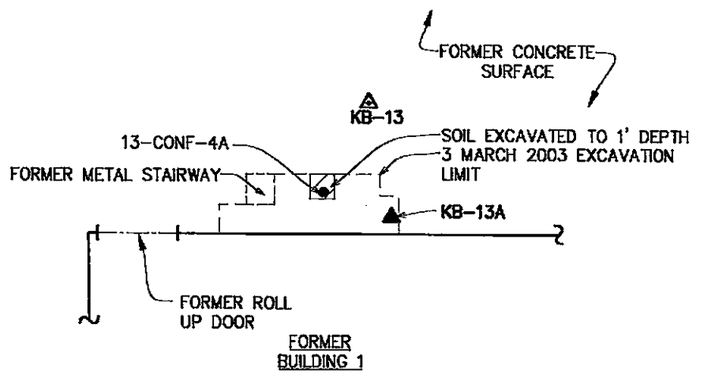
DETAIL 3–A

KB–13 EXCAVATION AREA – 3 MARCH 2003



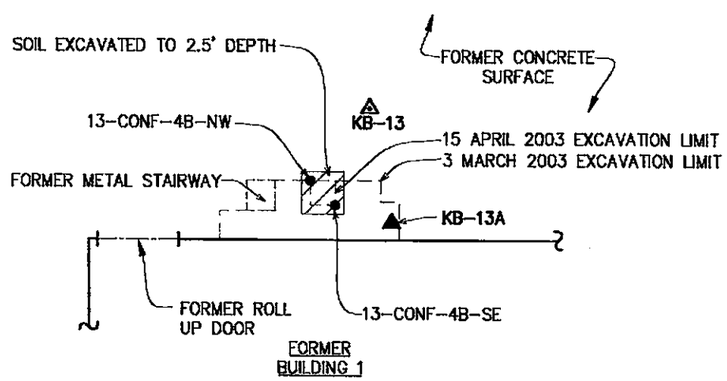
DETAIL 3–B

KB–13 EXCAVATION AREA – 15 APRIL 2003



DETAIL 3–C

KB–13 EXCAVATION AREA – 28 OCTOBER 2003



NOT TO SCALE

LEGEND

KB–13 KB–13 SOIL BORING

POST–EXCAVATION SOIL CONFIRMATION SAMPLE

EXCAVATION AREA

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SOIL EXCAVATION AREAS AND CONFIRMATION SAMPLING LOCATIONS

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FIGURE 4

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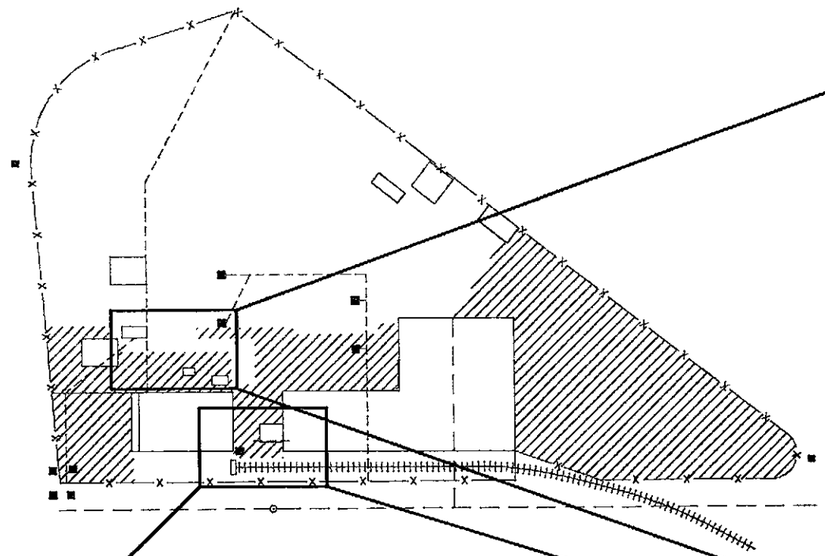

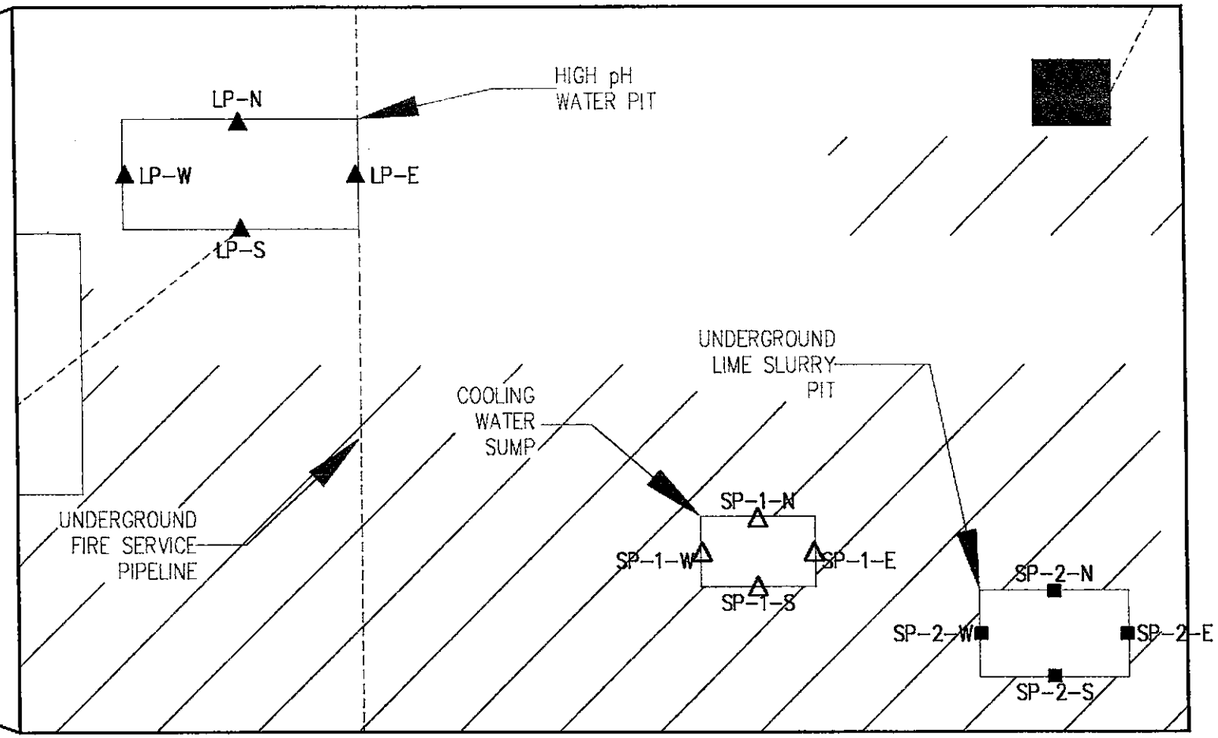

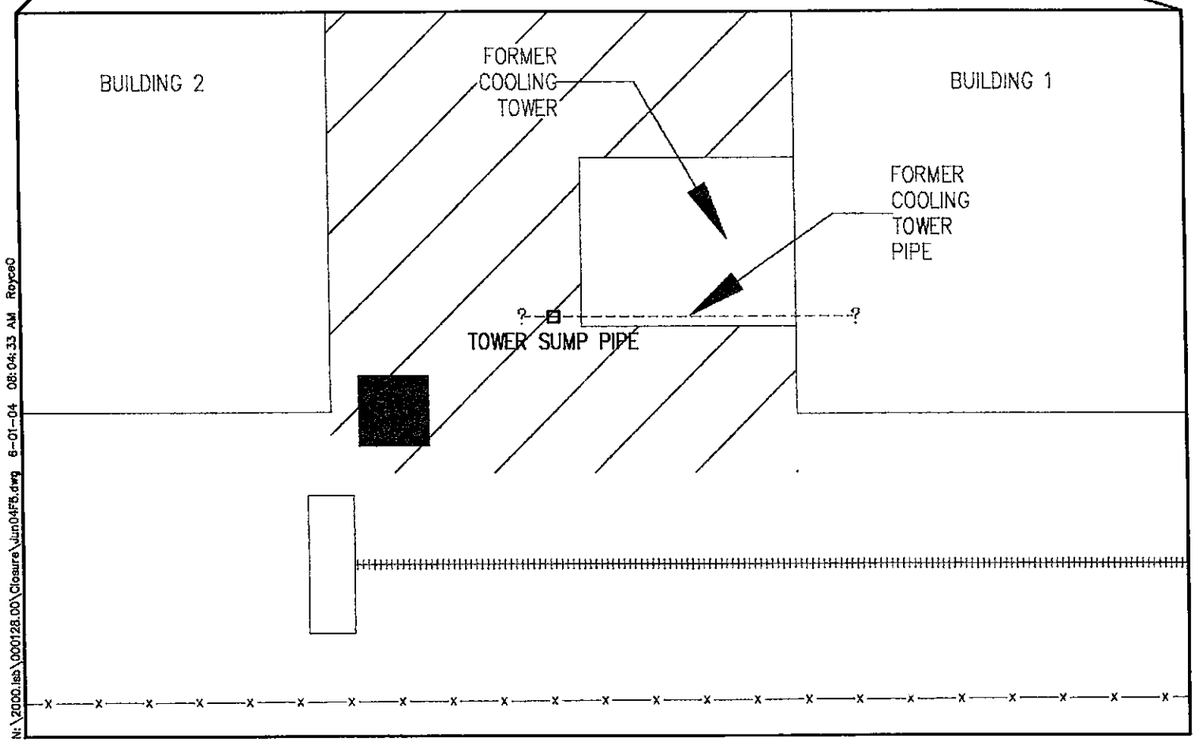

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LEGEND:

- SITE BOUNDARY/FENCE
- SANITARY SEWER PIPE AND MAINTENANCE HOLE
- RAILROAD TRACK SPUR
- STORM DRAIN PIPE AND DROP INLET
- CONCRETE AND/OR ASPHALT PAVED AREAS
- ▲ LP-N — HIGH pH WATER PIT EXCAVATION SIDEWALL SOIL SAMPLE
- △ SP-1-N — COOLING WATER SUMP EXCAVATION SIDEWALL SOIL SAMPLE
- ■ SP-2-N — UNDERGROUND LIME SLURRY PIT EXCAVATION SIDEWALL SOIL SAMPLE
- □ TOWER SUMP PIPE — DIKED COOLING TOWER SUMP EXCAVATION SIDEWALL SOIL SAMPLE

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SUMP POST-EXCAVATION SIDEWALL SAMPLE LOCATIONS

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JUNE 2004

FIGURE 5