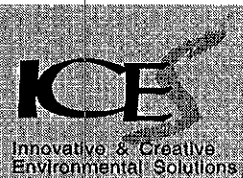


R0290

December 10, 2004

ICES 3892



Mr. Barney Chan  
Alameda County Health Care Services Agency  
Department of Environmental Health  
1131 Harbor Bay Parkway, Suite 250  
Alameda, California 94502-6577

Alameda County  
DEC 20 2004  
Environmental Health

Subject: Site Mitigation Plan  
Former Chevron Station #9-4816  
301 14th Street  
Oakland, California

Dear Barney:

Enclosed is the Site Mitigation Plan (SMP) for the proposed soil and groundwater remedial activities at the former Chevron Station located at 301 14th Street in Oakland, California ("the Site"). The purpose of the remedial activities is to remove the impacted soil and groundwater containing petroleum hydrocarbon constituents which exceed the remedial goals from the central portion of the Site.

If you have any questions or comments concerning this SMP, please do not hesitate to contact Derek Wong or me.

Sincerely,

Peng Leong,  
Principal Engineer



Enclosure

cc Mr. Peter Iwate, Kansai Development, Inc.

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94662-9288

**SITE MITIGATION PLAN**

**FORMER CHEVRON STATION #9-4816  
301 14TH STREET  
OAKLAND, CALIFORNIA**

December 10, 2004

ICES 3892

Prepared for

Peter Iwate  
Kansai Development, Inc.  
755 Sansome Street  
San Francisco, California 94111



Innovative & Creative Environmental Solutions

P. O. Box 99288 Emeryville CA 94662-9288  
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December 10, 2004

ICES 3892

**SITE MITIGATION PLAN**  
**FORMER CHEVRON STATION #9-4816**  
**301 14TH STREET**  
**OAKLAND, CALIFORNIA**

## 1.0 INTRODUCTION

At the request of Peter Iwate of Kansai Development, Inc. ("the Client"), Innovative and Creative Environmental Solutions (ICES) has prepared this Site Mitigation Plan (SMP) for the proposed soil and groundwater remedial activities at the former Chevron Station #9-4816 located at 301 14th Street in Oakland, California ("the Site"; Figure 1).

Soil and groundwater remedial activities will be implemented to remove impacted soil and groundwater containing petroleum constituents which exceed the remedial goals from the central portion of the Site. The petroleum-affected soil and groundwater were identified in previous site investigations and groundwater monitoring events conducted primarily by other parties from 1990 through 2004. The ultimate goal of the soil and groundwater remedial activities is to obtain a closure for the LUFT case at the Site.

The Environmental Screening Levels that were developed by the San Francisco Regional Water Quality Control Board for residential applications were adopted as the remedial goals for the Site (Table 1). Alameda County Health Care Services Agency (AC-HCSA) will be providing oversight for the remedial activities.

## 2.0 SITE DESCRIPTION

The Site is located on the southwest corner of 14th and Harrison Streets. The generally flat Site is approximately 100 feet wide by 150 feet long. The Site is currently paved with asphalt and used as a parking lot (Figure 2).

### 3.0 BACKGROUND

A church and two warehouses occupied the Site during the late 1800s through the early 1900s. The Site was subsequently used as a parking lot from approximately 1930 until prior to the early 1970s. A Chevron gasoline station and car wash operated at the Site thereafter until the facility was demolished in August 1989. The Chevron station had two 10,000-gallon and one 5,000-gallon underground storage tanks (USTs) which were used to store gasoline. While in operation, one of the USTs failed a tightness test in April 1988 and a product line was found to be leaking in August 1988.

Site investigations to characterize the soil and groundwater commenced in June 1990 and continued through December 2004. A summary of the soil and groundwater characterization data obtained from available and accessible documents are presented in Appendix A.

The initial site investigations indicated that petroleum hydrocarbons were encountered in the area of the USTs and easterly service island. Free product was also observed in a monitoring well (C-3) located adjacent to and south of the USTs.

The three USTs and associated piping were removed in February 1991 along with approximately 800 cubic yards of sediments containing elevated concentrations of petroleum constituents. Soil sample results indicated that there were non-detectable to 30 mg/kg of residual total petroleum hydrocarbons as gasoline (TPHg) concentrations at the sidewalls and floors of the UST excavation and product line trenches following soil removal. The excavated petroleum-affected soil was aerated to TPHg concentrations of less than 10 mg/kg and subsequently used to backfill the UST excavation.

A remedial action plan for remediating the petroleum-affected soil and groundwater at the Site was developed in February 1992. A combination of soil vapor and groundwater extraction and air sparging were conducted from March 1992 through early 1997. Approximately 32,000 pounds of petroleum hydrocarbons were reportedly removed.

An ASTM/Risk-Based Corrective Action Tier 2 assessment was performed for the Site in 1996. The risk assessment evaluated benzene as the single chemical of concern via the "groundwater to indoor air inhalation" pathway. The Site Specific Target Level was calculated as 2,600 parts per billion benzene in onsite groundwater.

ICES conducted the latest supplementary site investigation in December 2004. The purpose of the investigation was to assess the current residual petroleum constituent levels within the soil matrix at a depth of approximately 22 feet below the existing ground surface (bgs) where elevated concentrations of petroleum constituents were formerly encountered. Soil samples were collected from borings which were located at each of the four quadrants of the Site (Appendix A - Figure 1C). Laboratory analytical results indicated that the soil samples which were collected from depths of approximately 10 feet and 22 feet bgs contained non-detectable concentrations of TPHg, benzene, ethylbenzene, and methyl tertiary butyl ether (MTBE); and non-detectable to very low concentrations of toluene and xylenes.

There are currently six wells located within the Site and six wells located offsite. With the exception of wells C-3, C-8, and CR-1 groundwater samples collected from the remaining nine wells had contained non-detectable to very low concentrations of TPHg and benzene, toluene, ethylbenzene, and xylenes (BTEX) for at least the last three years.

The collective results of the site investigations and groundwater monitoring events indicate that soil and groundwater containing petroleum constituents above the remedial goals are limited to the immediate vicinity of monitoring wells C-3 and CR-1 at the central portion of the Site.

#### **4.0 REMEDIAL ACTIVITIES**

The remedial activities are focused on removing the petroleum-affected soil and groundwater from the central portion of the Site (Figure 3). The scope of work for the proposed remedial activities at the Site will consist of the following tasks:

- Task 1: Site Health and Safety Plan
- Task 2: Dust Control Measures
- Task 3: Site Preparation
- Task 4: Soil Removal
- Task 5: Groundwater Extraction
- Task 6: Soil Disposal
- Task 7: Groundwater Disposal
- Task 8: Laboratory Analyses
- Task 9: Remedial Action Implementation Report

These tasks are described in detail below:



#### **4.1 Site Health and Safety Plan (HSP)**

In accordance with Occupational Safety and Health Administration guidelines, the ICES Health and Safety Officer will develop a HSP. The HSP will include an analysis of potential hazards encountered by onsite workers conducting the proposed work, precautions to mitigate the identified hazards, and procedures to reduce the potential for offsite migration of contaminants during remedial activities.

The health and safety measures presented in the HSP will be implemented during soil and groundwater removal activities.

#### **4.2 Dust Control Measures**

The area to be excavated will initially be moisture-conditioned. The work area will also be lightly sprinkled during excavation activities (if required) to minimize airborne dust. A water hose with a spray nozzle will be used for water application in areas where access is limited.

Dust control measures will be increased (more frequent wetting and sprinkling) during the movement of dry materials and/or observation of visible dust. Equipment speed at the Site will be reduced in the event wetting with water is not effective in minimizing airborne dust. The remedial activities at the Site will be temporarily halted in the event reduction of equipment speed and soil wetting are not effective in minimizing airborne dust.

#### **4.3 Site Preparation**

Site preparation will include marking the approximate limits of the petroleum-affected soil and groundwater (Figure 3), mobilizing and installing a covered water tank at the southwestern portion of the Site, constructing a temporary polyethylene-lined stockpile pad, prewetting the excavation area, and profiling the petroleum-affected soil and groundwater at a licensed disposal and/or recycling facility.

The petroleum-affected soil and groundwater will be profiled with appropriate disposal and/or recycling facilities using laboratory results of the previous soil and groundwater samples. Profiling and acceptance of the petroleum-affected soil and groundwater prior to excavation and groundwater extraction activities are necessary to expedite soil and groundwater removal and minimize interruptions to the surrounding businesses.

#### 4.4 Soil Removal

The petroleum-affected soil will be removed using an excavator. The excavated soil will be loaded directly onto dump trucks for offsite disposal. In the event the arrival of dump trucks is delayed, the excavated soil will be temporarily stockpiled on a polyethylene-lined pad.

When the excavation approaches the marked limits, excavation sidewall and floor samples will be collected. One sidewall sample will be collected at approximately every 25-linear foot interval of excavation sidewall. One floor sample will be collected at approximately every 225 feet of excavation floor area (equivalent to a square measuring approximately 15 feet by 15 feet). Soil sampling procedures presented in Appendix B will be followed. The approximate confirmation sample locations are shown in Figure 3.

Excavation activities will cease when soil samples collected from the sidewall and floor of the excavation contain residual petroleum constituent concentrations below the remedial goals. Additional excavation and resampling will be performed at locations where petroleum constituent concentrations exceed the remedial goals. When laboratory analytical results indicate that the soil contains residual petroleum constituent concentrations that are below the remedial goals, the excavation will be backfilled and compacted with clean imported fill.

#### 4.5 Groundwater Extraction

The petroleum-affected groundwater will be removed from the floor of the excavation using a sump pump and temporarily stored in the covered water tank; and/or a vacuum truck. Groundwater samples will be collected daily to assess the effectiveness of the groundwater extraction activities. Groundwater extraction activities will be terminated when laboratory results indicate that residual petroleum constituents are below the remedial goals.

Groundwater sampling procedures presented in Appendix B will be followed.

#### 4.6 Soil Disposal

The excavated petroleum-affected soil will be loaded onto dump trucks directly from the excavation or soil stockpile for transportation to the landfill. A waste manifest will be

prepared for each truckload of petroleum-affected soil. The wheels of the trucks will be brushed and the petroleum-affected soil will be tarped prior to transporting the petroleum-affected soil offsite.

#### 4.7 Groundwater Disposal

When the water tank is full, the extracted petroleum-affected groundwater will be transferred from the water tank to a vacuum truck for transportation to the recycling/disposal facility. A waste manifest will be prepared for each truckload of petroleum-affected groundwater.

#### 4.8 Laboratory Analyses

The soil and groundwater samples will be sent to state-certified laboratory and analyzed for:

- TPHg using EPA Method 5030/GCFID, and
- BTEX and MTBE using EPA Method (8020/604)

8200

The samples will be analyzed on a 24-hour rush to normal one-week turnaround basis.

#### 4.9 Remedial Action Implementation Report (RAIP)

This task will include evaluating the field and laboratory analytical data. A written report will be prepared following completion of soil and groundwater remedial activities. The RAIP will present:

1. field activities associated with excavation and disposal of the petroleum-affected soil, and extraction and disposal of the petroleum-affected groundwater;
2. sample collection;
3. soil and groundwater sample results;
4. documentation of sample transfer under chain-of-custody protocol, and soil and groundwater transportation and disposal; and
5. conclusions regarding the remedial activities.

This report will be submitted to AC-HCSA approximately one to two weeks following completion of the field activities and receipt of laboratory analytical results.

## 5.0 IMPLEMENTATION SCHEDULE

The approximate estimated duration and tentative schedule for the pending remedial activities is presented below. The estimated durations and tentative schedule do not include work delays due to unfavorable weather conditions, acts of God, labor strikes, and other events beyond the control of ICES and the Client.

### 5.1 Estimated Durations

ACTIVITY	ESTIMATED DURATION (working days)
Task 1: Implementation of the Site Health and Safety Plan	Concurrent with Tasks 2 through 7
Task 2: Dust Control Measures	Concurrent with Tasks 3, 4, and 6
Task 3: Site Preparation	2 - 3
Task 4: Soil Removal	3 - 5
Task 5: Groundwater Extraction	10 - 15
Task 6: Soil Disposal	Concurrent with Task 4
Task 7: Groundwater Disposal	Concurrent with Task 5
Task 8: Laboratory Analyses	Concurrent with Tasks 4 and 5
Task 9: Preparation and Submittal of RAIP	5 - 8

## 5.2 Tentative Schedule

The tentative schedule is based on approval of this SMP no later than December 24, 2004.

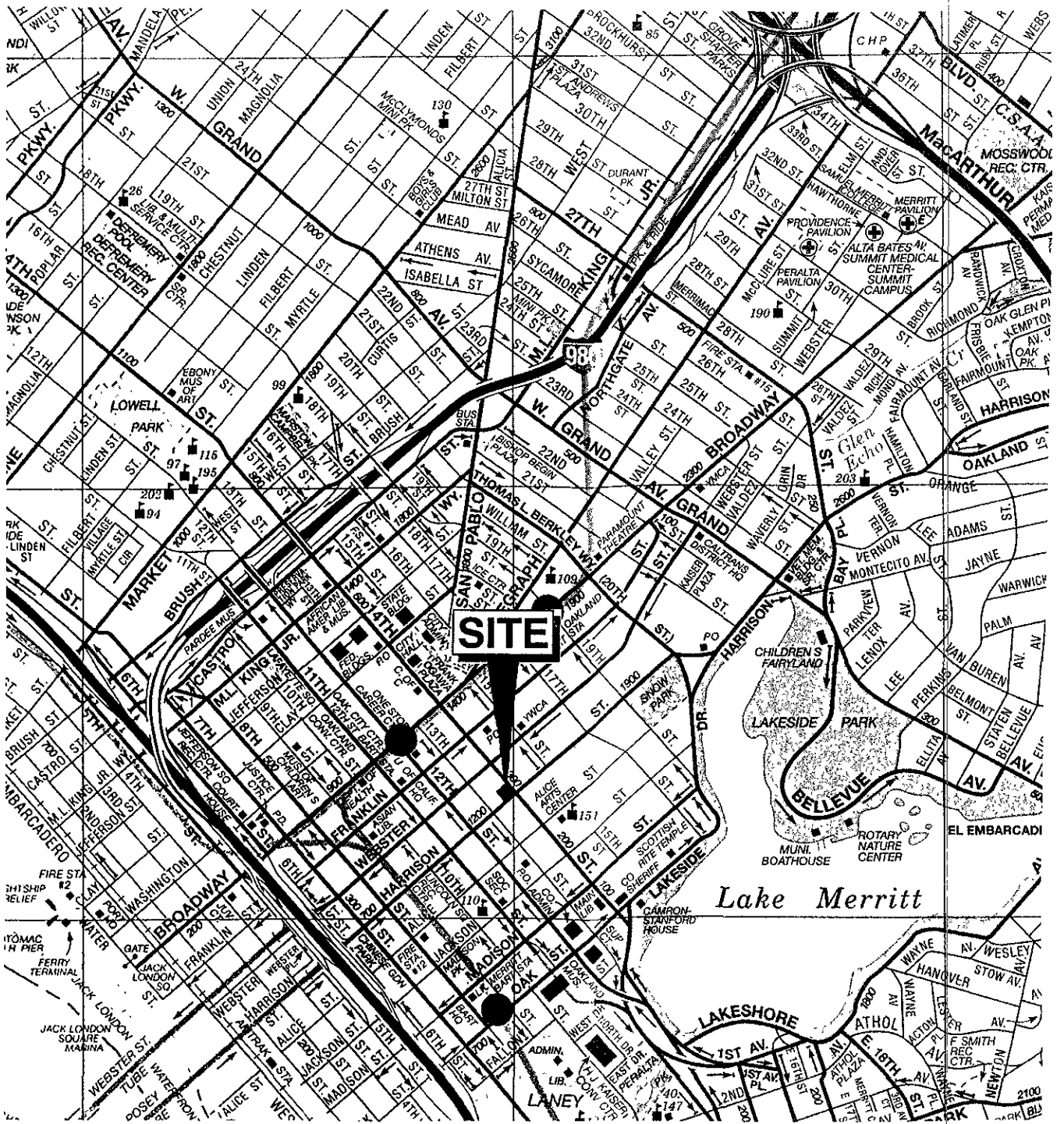
ACTIVITY	ESTIMATED COMPLETION DATE (2004/2005)
Task 1: Implementation of the Site Health and Safety Plan	Concurrent with Tasks 2 through 7
Task 2: Dust Control Measures	Concurrent with Tasks 3 and 4
Task 3: Site Preparation	Dec 29/04
Task 4: Soil Removal	Jan 05/05
Task 5: Groundwater Extraction	Jan 19/05
Task 6: Soil Disposal	Concurrent with Task 4
Task 7: Groundwater Disposal	Concurrent with Task 5
Task 8: Laboratory Analyses	Concurrent with Tasks 4 and 5
Task 9: Preparation and Submittal of RAIP	Jan 31/05

TABLE 1

REMEDIAL GOALS  
Former Chevron Station #9-4816  
301 14th Street  
Oakland, California

ANALYTE	SOIL (mg/kg)	GROUNDWATER ( $\mu$ g/L)
Gasoline	100	100
Benzene	0.044	1.0
Toluene	2.9	40
Ethylbenzene	3.3	30
Xylenes	1.5	13
MTBE	0.023	5

Note: The remedial goals are based on the San Francisco Regional Water Quality Control Board Environmental Screening Levels for residential landuse.



MAP SOURCE :  
CSAA

Scale: 1" : ± 1100'

December 2004

**ICE**  
Innovative & Creative Environmental Solutions

**SITE LOCATION**  
Former Chevron Service Station #9-4816  
301 14th Street  
Oakland, California

Figure **1**

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13th Street

14th Street

Approximate  
Property Line

Asphalt-Paved  
Parking Lot

Harrison Street

Scale: 1" = ± 50'

December 2004



## SITE PLAN

Former Chevron Service Station #9-4816  
301 14th Street  
Oakland, California

Figure 2

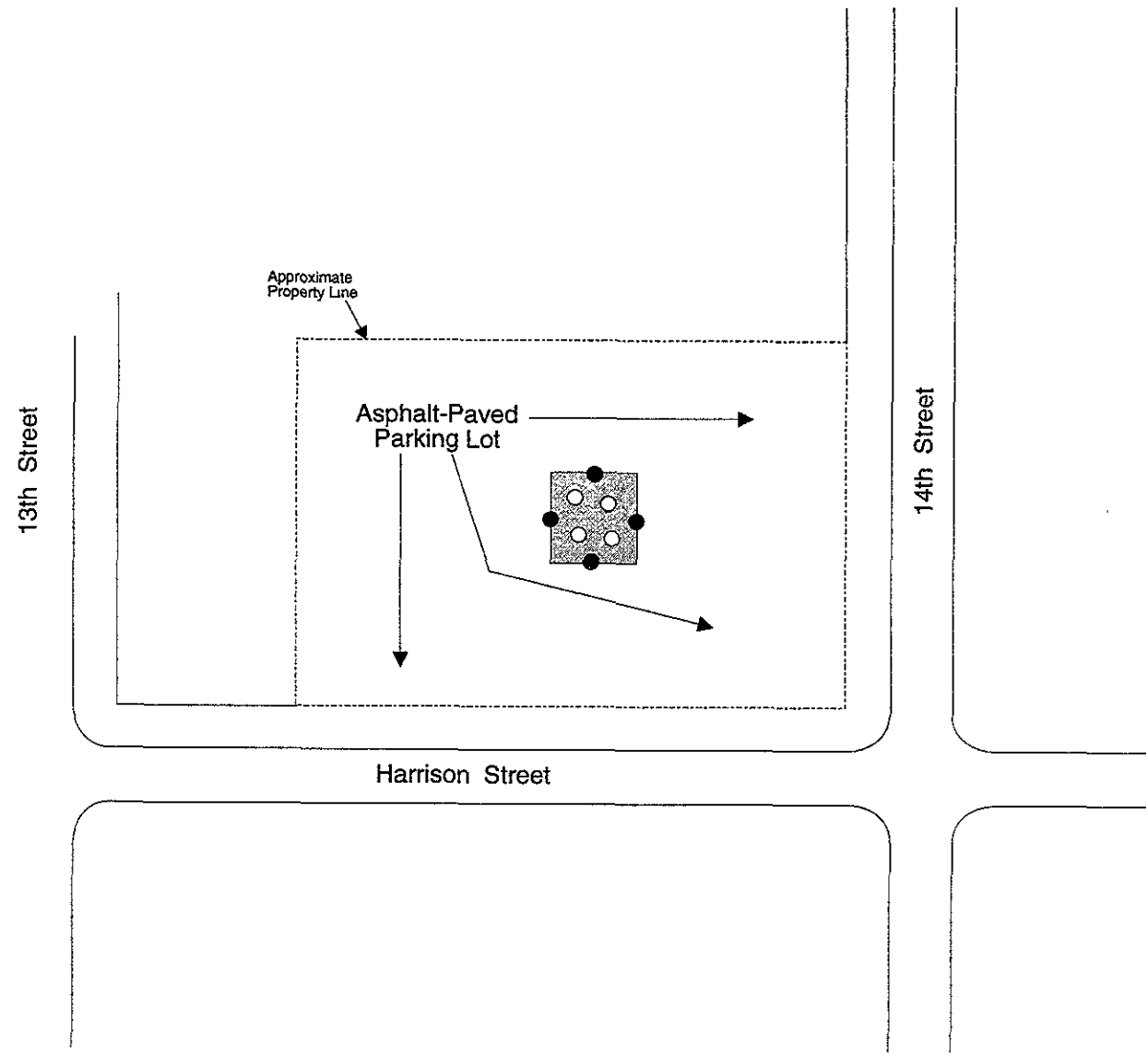
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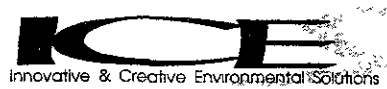
EXPLANATION:

- Confirmation Wall Sample Location
- Confirmation Floor Sample Location
- ▭ Proposed Excavation



Scale: 1" = ± 50'

December 2004



**PROPOSED EXCAVATION**  
Former Chevron Service Station #9-4816  
301 14th Street  
Oakland, California

Figure 3

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