



Atlantic Richfield Company
(a BP affiliated company)

P.O. Box 1257
San Ramon, California 94583
Phone: (925) 275-3801
Fax: (925) 275-3815

30 March 2009

Re: Work Plan for Soil & Ground-Water Investigation
Former Richfield Oil Company Service Station #472
6415 International Boulevard, Oakland, California
ACEH Case #RO0002982

RECEIVED

1:45 pm, Apr 01, 2009

Alameda County
Environmental Health



"I declare, that to the best of my knowledge at the present time, that the information and/or recommendations contained in the attached document are true and correct."

Submitted by:

Paul Supple
Environmental Business Manager

Work Plan for Soil & Ground-Water Investigation
Former Richfield Oil Company Service Station #472
6415 International Boulevard,
Oakland, California

Prepared for

Mr. Paul Supple
Environmental Business Manager
Atlantic Richfield Company
P.O. Box 1257
San Ramon, California 94583

Prepared by



1324 Mangrove Avenue, Suite 212
Chico, California 95926
(530) 566-1400
www.broadbentinc.com

30 March 2009

Project No. 09-88-601

30 March 2009

Job No. 09-88-601

Mr. Paul Supple
Environmental Business Manager
Atlantic Richfield Company (a BP affiliated company)
PO Box 1257
San Ramon, California 94583
Submitted via ENFOS

RE: Work Plan for Soil & Ground-Water Investigation
Former Richfield Oil Company Service Station No. 472
6415 International Boulevard, Oakland, California;
ACEH Case No. RO0002982

Dear Mr. Supple,

Broadbent & Associates, Inc. (BAI) is pleased to present this *Work Plan for Soil & Ground-Water Investigation* for additional subsurface characterization at the Former Richfield Oil Company Service Station No. 472, located at 6415 International Boulevard, Oakland, California (Site). BAI prepared this work plan in response to the 29 January 2009 letter request from Mr. Paresh Khatri of Alameda County Environmental Health (ACEH).

Should you have any questions concerning this work plan, please do not hesitate to contact us at (530) 566-1400.

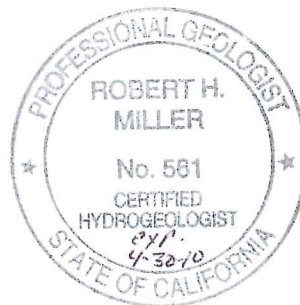
Sincerely,
BROADBENT & ASSOCIATES, INC.



Thomas A. Venus, P.E.
Senior Engineer



Robert H. Miller, P.G., C.HG.
Principal Hydrogeologist



cc: Mr. Paresh Khatri, ACEH (Submitted via ACEH ftp site)
Electronic copy uploaded to GeoTracker

**WORK PLAN FOR SOIL &
GROUND-WATER INVESTIGATION**
Former Richfield Oil Company Service Station No. 472
6415 International Boulevard, Oakland, California
Fuel Leak Case No. RO0002982

TABLE OF CONTENTS

<u>No.</u>	<u>Section</u>	<u>Page</u>
1.0	INTRODUCTION	1
2.0	SITE BACKGROUND.....	1
3.0	SITE GEOLOGY AND HYDROGEOLOGY.....	2
4.0	MONITORING WELL INSTALLATION.....	3
4.1	Proposed Well Installation Locations	3
4.2	Preliminary Activities, Local Permitting and Notification.....	3
4.3	Proposed Soil Borings	4
4.4	Monitoring Well Construction.....	4
4.5	Monitoring Well Development and Sampling	5
4.6	Well Installation Report.....	5
5.0	PROPOSED SCHEDULE	6
6.0	CLOSURE	6
7.0	REFERENCES	6

DRAWINGS

- 1- Site Location Map
- 2- Site Map with Proposed Monitoring Well Locations

APPENDICES

- A- Recent Regulatory Correspondence
- B- Tabulated Analytical Results and Soil Boring Logs from Phase II Investigation
- C- Unauthorized Release Report

WORK PLAN FOR SOIL & GROUND-WATER INVESTIGATION

Former Richfield Oil Company Service Station No. 472
6415 International Boulevard, Oakland, California
Fuel Leak Case No. RO0002982

1.0 INTRODUCTION

Broadbent & Associates, Inc. (BAI) is pleased to present this *Work Plan for Soil & Ground-Water Investigation*, for additional subsurface characterization at the Former Richfield Oil Company Service Station No. 472, located at 6415 International Boulevard, Oakland, California (Site). BAI prepared this work plan in response to the 29 January 2009 letter request from Mr. Paresh Khatri of Alameda County Environmental Health (ACEH). Specifically, the ACEH letter requested the conduct of a subsurface investigation to determine the vertical and lateral extent of soil and ground-water contamination at the Site. A copy of recent regulatory correspondence for this Site is contained in Appendix A. This work plan includes brief discussions on the Site background and previous investigations, regional and Site geology and hydrogeology, proposed scope of work, and completion schedule.

2.0 SITE BACKGROUND

The Site is a former liquor store located on the south corner of the intersection of International Boulevard and 64th Avenue in Oakland, California (Drawing 1). The Site is located in a mixed residential and commercial area. Site improvements consist of a single-story building with two metal storage containers and predominantly covered with concrete and asphalt. The Site is located on property recognized by Alameda County as Assessors Parcel Number (APN) 41-4050-21. This approximately 0.27 acre parcel is located on the south west side of International Boulevard. The Site is located in Section 16, Township 2 South, Range 3 West, relative to the Mount Diablo Baseline and Meridian of Northern California. The Site can be located on the Oakland East, California 7½-minute topographic quadrangle map of the United States Geological Survey (USGS). A Site Location Map is presented as Drawing 1.

In 1947, Richfield Oil Company purchased the property for the construction of a service station with completion taking place in 1949. The service station was operated by various Richfield Oil Company dealers from 1949 to 1970. In 1966 two 4,000 gallon and one 6,000 gallon replacement underground storage tanks (USTs) were installed on the property. Richfield Oil Company sold the property in 1971 to the Natrass Corporation.

In May 2007, AAI Environmental Corporation (AAI) conducted a Phase I Environmental Site Assessment (ESA) on the property. Work performed for Mr. Marcelo Bermudez of Freeman included review of environmental and regulatory databases and site reconnaissance prior to selling the property. AAI reported that one or two USTs were previously removed from the northeast corner of the property prior to 1976, but no soil sampling data or removal report were found to confirm the information given that no such sampling and reporting information was likely required at that time. The AAI site reconnaissance reportedly did not identify any potential concerns. However, AAI recommended a limited Phase II Environmental Site Assessment on the property to assess the former presence of the USTs.

In April 2008, GEOCON conducted a Limited Phase II Environmental Site investigation on the Site. Work was performed for Ms. Holly Moore of DGC Associates to assess the presence or absence of subsurface contamination. Work included the advancement of six soil borings (SB-1 through SB-6). Soil samples were collected from each boring and ground-water samples were collected from borings SB-1, SB-2, SB-3 and SB-5. Soil boring SB-1 was drilled on the backside of the property to assess the potential for off-site contaminant migration. Borings SB-2, SB-3, SB-5 and SB-6 were advanced in the area suspected of containing the former USTs. SB-4 was advanced to assess a former pump island. Soil samples from borings SB-1 through SB-6 contained Total Petroleum Hydrocarbons in the Gasoline Range (TPH-G) at concentrations up to 95 milligrams per kilogram (mg/kg), Total Petroleum Hydrocarbons in the Diesel Range (TPH-D) at concentrations up to 20 mg/kg, and Total Petroleum Hydrocarbons in the Motor Oil Range (TPH-MO) at concentrations up to 51 mg/kg. Ground-water samples from borings SB-1, SB-2, SB-3 and SB-5 contained TPH-G at concentrations up to 8,100 micrograms per liter ($\mu\text{g/L}$), TPH-D at concentrations up to 7,200 $\mu\text{g/L}$, and TPH-MO at concentrations up to 180 $\mu\text{mg/L}$. No concentrations of Benzene, Toluene, Ethylbenzene, or Xylenes (BTEX) were detected above the laboratory reporting limits in the soil or ground-water samples collected. Soil boring logs and tabulated analytical results from this investigation are provided within Appendix B. In a letter dated 29 January 2009, ACEH requested completion of an Unauthorized Release Report (URR), and SWI work plan. A copy of the URR is provided in Appendix C

3.0 SITE GEOLOGY AND HYDROGEOLOGY

According to the *East Bay Plain Groundwater Basin Beneficial Use Evaluation Report* (California Regional Water Quality Control Board – San Francisco Bay Region/SFRWQCB, June 1999), the Site is located within the Oakland Sub-Area of the East Bay Plain of the San Francisco Basin. The Oakland Sub-Area contains a sequence of alluvial fans. The alluvial fill thickness ranges from 300 to 700 feet deep. There are no well-defined aquitards such as estuarine muds. The largest and deepest wells in this sub-area historically pumped one to two million gallons per day at depths greater than 200 feet. Overall, sustainable yields are low due in part to low recharge potential. The Merrit sand in West Oakland was an important part of the early water supply for the City of Oakland. It is shallow (up to 60 feet), but before the turn of the last century, septic systems contaminated the water supply wells.

Throughout most of the Alameda County portion of the East Bay Plain, from Hayward north to Albany, water level contours show that the general direction of ground-water flow is from east to west or from the Hayward Fault to the San Francisco Bay. Ground-water flow direction generally correlates to topography. Flow direction and velocity are also influenced by buried stream channels that typically are oriented in an east to west direction. The nearest natural drainage is Lion Creek, located approximately 0.43 miles southwest of the Site. Lion Creek flows generally northeast to southwest near the Site vicinity. The San Leandro Bay is located approximately 1.1 miles west of the Site.

The Site elevation is approximately 24 feet above mean sea level. Based on data collected during the Phase II investigation, static ground-water on-site was encountered at approximately nine feet bgs. No historical ground-water gradient, or flow direction data is available for the Site.

According to the *East Bay Plain Groundwater Basin Beneficial Use Evaluation Report*, the City of Oakland does not have “any plans to develop local ground-water resources for drinking water purposes, because of existing or potential saltwater intrusion, contamination, or poor or limited quantity.” However, the RWQCB’s Basin Plan denotes existing beneficial uses of municipal and domestic supply (MUN), industrial process supply (PROC), industrial service supply (IND), and agricultural supply (AGR) for the East Bay Plain ground-water basin.

According to soil boring logs from the Phase II investigation, soils encountered at the Site generally consisted of sand and silty clay with clayey gravel being encountered in some borings. Gravelly sand was observed at depths between approximately six and 12 feet bgs. In soil boring SB-5, 10 feet of fill was observed. Due to the presence of the fill, SB-5 is within the assumed location of a former UST(s). Ground water was initially encountered during drilling activities at approximately 21 feet bgs and rose to approximately 9 feet bgs within the borings. Copies of the boring logs are included in Appendix B.

4.0 MONITORING WELL INSTALLATION

4.1 Proposed Well Installation Locations

To characterize the extent of ground-water contamination, BAI proposes to have Stratus Environmental Inc. (Stratus), under direct contract to Atlantic Richfield Company, install three ground-water monitoring wells. The proposed ground-water monitoring wells are to be identified as MW-1, MW-2 and MW-3. Well MW-1 is proposed to be located approximately 5 feet southwest of the sidewalk on International Boulevard and centered in the concrete area in front of the building. Assuming a ground-water flow direction towards the southwest, this upgradient well MW-1 will be located northeast of SB-4 and the former fuel dispenser island. Well MW-2 is proposed to be located approximately 10 feet in from the sidewalk on 64th Avenue and from the back of the property, southwest of SB-5 and assumed location of the former USTs. Well MW-3 is proposed to be located in the south corner of the property approximately 20 feet in from the back of the property and former store. The proposed locations for these new wells are shown on Drawing 2.

4.2 Preliminary Activities, Local Permitting and Notification

Broadbent & Associates, Inc., on behalf of Atlantic Richfield Company, already has acquired a fully executed access agreement. Prior to initiating field activities, Stratus will obtain the necessary well permits from Alameda County; prepare a site health and safety plan (HASP) for the proposed work; clear the Site for subsurface utilities; and provide 72-hour advance written notification to ACEH (email preferred to paresh.khatri@acgov.org) and BAI (email tvenus@broadbentinc.com or mobile phone 530-588-5887) prior to the start of field activities. The utility clearance will include notifying Underground Service Alert (USA) of the pending work a minimum of 48 hours prior to initiating the field investigation, and securing the services of a private utility locating company to confirm the absence of underground utilities at each boring location. Boreholes will be physically cleared to 6.5 feet bgs using hand auger or air knife methods, in accordance with the BP ground disturbance defined practice.

The Site-specific HASP will be prepared for use by personnel implementing the work plan. The HASP will address the proposed boring and monitoring well installations. A copy of the HASP

will be available on-site during work. The subcontractor(s) performing field activities will be provided with a copy of the HASP prior to initiating work. A safety tailgate meeting will also be conducted daily to review the Site hazards and drilling work scope.

4.3 Proposed Soil Borings

At the request of ACEH, the purpose of the proposed soil investigation is to determine the vertical and lateral extent of soil and ground-water contamination. Site soil conditions have been previously characterized in the Phase II site investigation, as described in the Site Background section. Specifically, the ACEH letter references elevated total petroleum hydrocarbon concentrations observed indicating that the soil and ground-water are impacted. Analytical results and soil boring logs depicting the boring locations from this previous investigation are provided in Appendix B.

A Stratus field geologist will observe a California-licensed drilling company advance the soil borings using a hollow-stem auger drilling rig to a total approximate depth of 22 feet bgs. The Phase II Investigation reported depth to first-encountered water measurements of 21 feet in borings SB-1 and SB-2, 26 feet in boring SB-3, and 14 feet in boring SB-5. Soils will be classified according to the Unified Soil Classification System (USCS), and will be examined using visual and manual methods for parameters including odor, staining, color, grain size, and moisture content. Soil samples will be collected at 1.5-foot intervals, beginning at a depth of 6.5 feet bgs following borehole clearance, until ground water is encountered (anticipated to be 6.5, 8, and possibly 9.5 and 11 ft bgs, depending upon the encountered depth of ground water). The soil samples will be submitted to the laboratory for chemical analysis.

The samples will be submitted under chain-of-custody protocol to Calscience Environmental Laboratories, Inc. (Garden Grove), a California State-certified environmental laboratory. The soil samples will be analyzed for the following: Gasoline Range Organics (GRO, C6-12), Diesel Range Organics (DRO, C12-C28) and Oil Range Organics (ORO, C26-C40) by EPA Method 8015B and BTEX by EPA Method 8260. Oxygenates are not included in the proposed soil analysis schedule due to the age of the former release.

Investigation-derived residuals will be temporarily stored on-site in 55-gallon drums, pending characterization for proper disposal. Stratus will coordinate the transportation and disposal of surplus soils and liquids to the appropriate California-regulated facilities.

4.4 Monitoring Well Construction

The wells will be constructed of threaded 4-inch diameter, Schedule 40 poly-vinyl chloride (PVC) and screened with 0.010-inch machine-cut slots. The total depth and screen interval was proposed from looking at the depth of water and the well construction on the UNOCAL #3135 Station (T0600101488) downhill of the Site and Gritit Auto Repair & Service (T0600100667) uphill of the Site. Proposed monitoring wells MW-1, MW-2 and MW-3 will contain screened intervals from 7 feet bgs to 22 feet bgs, the total depth of each well. A filter pack consisting of No.2/12 sand will be installed from total depth to two feet above the top of the well screen, which will be overlain by three feet of bentonite, and bentonite-cement grout to the surface. A traffic-rated locking vault will be installed to protect the well head.

4.5 Monitoring Well Development and Sampling

At least 48 hours after well installation the new wells will be developed. The well development process will consist of surging and bailing the well to remove fine-grained sediments from the well and sand filter pack. A minimum of three and a maximum of ten wetted casing volumes of ground water will be removed until water quality parameters have stabilized. Periodic measurements of the water quality parameters pH, temperature, conductivity, and turbidity will be recorded during the development to establish baseline values for ground water. Purge water generated during development activities will be handled according to BP protocols and procedures.

After well development, the monitoring wells will be surveyed. A California-licensed Professional Land Surveyor will be scheduled to survey the well heads for top of casing elevation with respect to mean sea level, and for lateral position using northings and eastings per NAD'88. Survey information will be uploaded to GeoTracker.

The wells will be sampled no sooner than 48 hours after well development. The sampling procedure for the wells consists of first measuring the water level and depth to bottom, and checking for the presence of separate phase hydrocarbons (free product) using an electronic oil-water interface probe. If the well does not contain free product, it will be purged of approximately three wetted casing volumes of water (or until dewatered) using a centrifugal pump, gas displacement pump, or bailer. During purging, temperature, pH, and electrical conductivity will be monitored to document that these parameters have stabilized prior to collecting samples. After purging, water levels will be allowed to partially (at least 80%) recover. Ground-water samples will be collected using a dedicated disposable bailer, placed into appropriate Environmental Protection Agency (EPA) approved containers, labeled, logged onto chain-of-custody records, and transported on ice to the laboratory. Sample labels will include sample name, sampling time and date, analytical methods, and sampler's initials. If the well contains free product, it will not be sampled and free product will be removed according to California Code of Regulations, Title 23, Division 3, Chapter 16, Section 2655, UST Regulations.

Ground-water samples will be analyzed for the following: GRO, DRO, and ORO by EPA Method 8015B; for BTEX, tert-Amyl methyl ether (TAME), tert-Butyl alcohol (TBA), Di-isopropyl ether (DIPE), 1,2-Dibromomethane (EDB), 1,2-Dichloroethane (1,2-DCA), Ethanol, Ethyl tert-butyl ether (ETBE), and MTBE by EPA Method 8260.

4.6 Well Installation Report

Upon completion of field activities and receipt of the certified field data package (including copies of permits, field data sheets, boring logs, and the laboratory analytical report with chain-of-custody documentation), BAI will prepare a Soil and Ground-Water Investigation Report. The report will document the results of the investigation, field activities, copies of required permit(s), copies of field notes, soil boring and well construction logs, laboratory analytical reports with copies of chain-of-custody records, discussion of findings, conclusions and recommendations. Deviations from the work plan or data inconsistencies will be discussed in the report.

5.0 PROPOSED SCHEDULE

The schedule for the above-noted work shall proceed as follows:

- Implement Onsite Soil Investigation – Upon approval of this work plan and obtaining the necessary permits.
- Submittal of Soil & Water Investigation Report – Within 60 days after completion of fieldwork.

In accordance with direction received from ACEH in their letter of 29 January 2009 (provided within Appendix A).

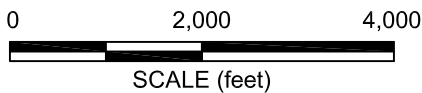
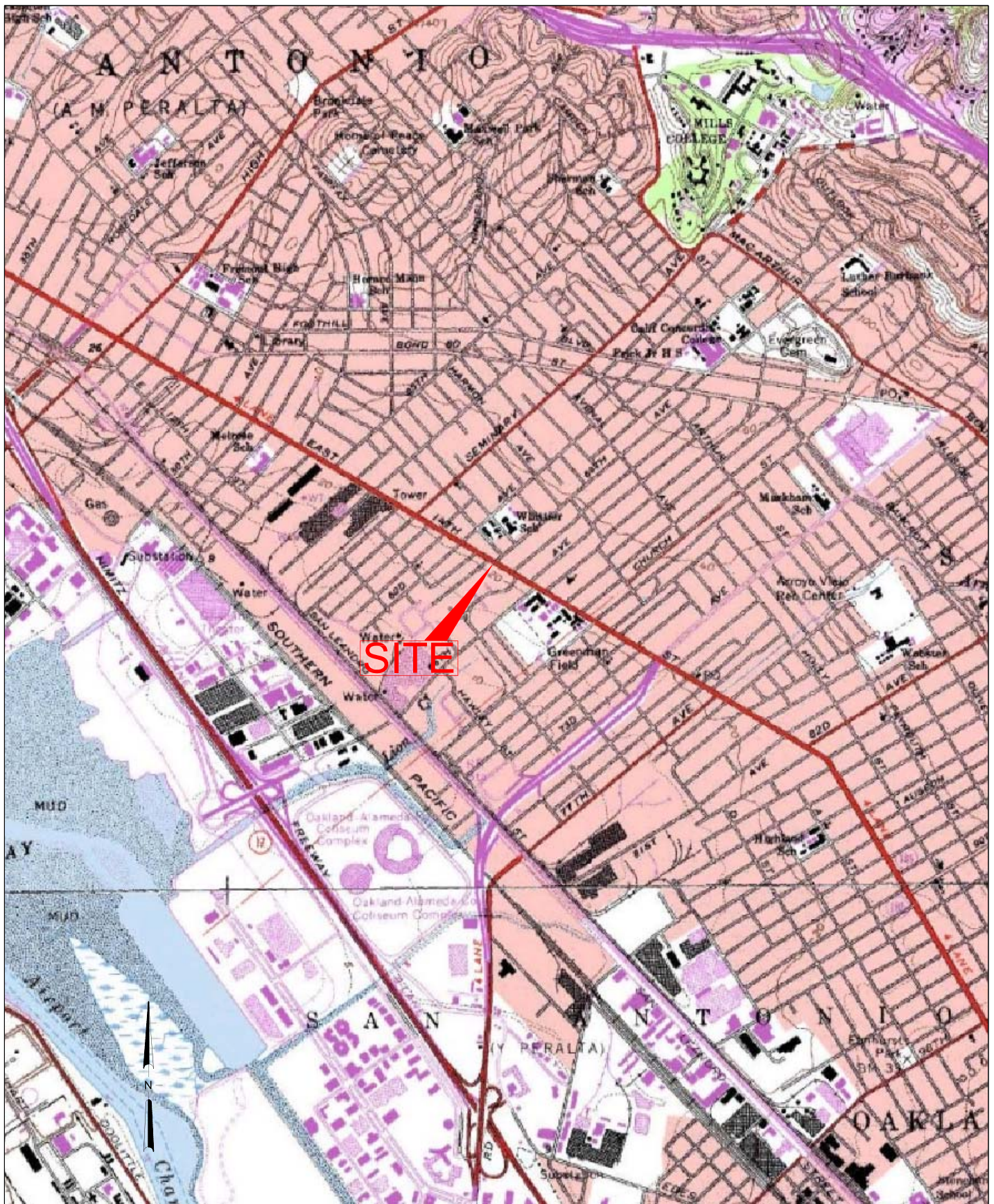
6.0 CLOSURE

The findings presented in this document are based upon: observation of field personnel from previous consultants, the points investigated, and results of laboratory tests performed by various laboratories. Our services were performed in accordance with the generally accepted standard of practice at the time this document was written. No other warranty, expressed or implied was made. This report has been prepared for the exclusive use of Atlantic Richfield Company. It is possible that variations in soil or ground-water conditions could exist beyond points explored in this investigation. Also changes in site conditions could occur in the future due to variations in rainfall, temperature, regional water usage, or other factors.

7.0 REFERENCES

GEOCON, 7 May 2008. *Limited Soil and Grab Groundwater Sampling Report, Plucky's Liquors/ Former Gasoline Station, 6415 International Boulevard, Oakland, California.*
Prepared for Ms. Holly Moore, DGC Associates.

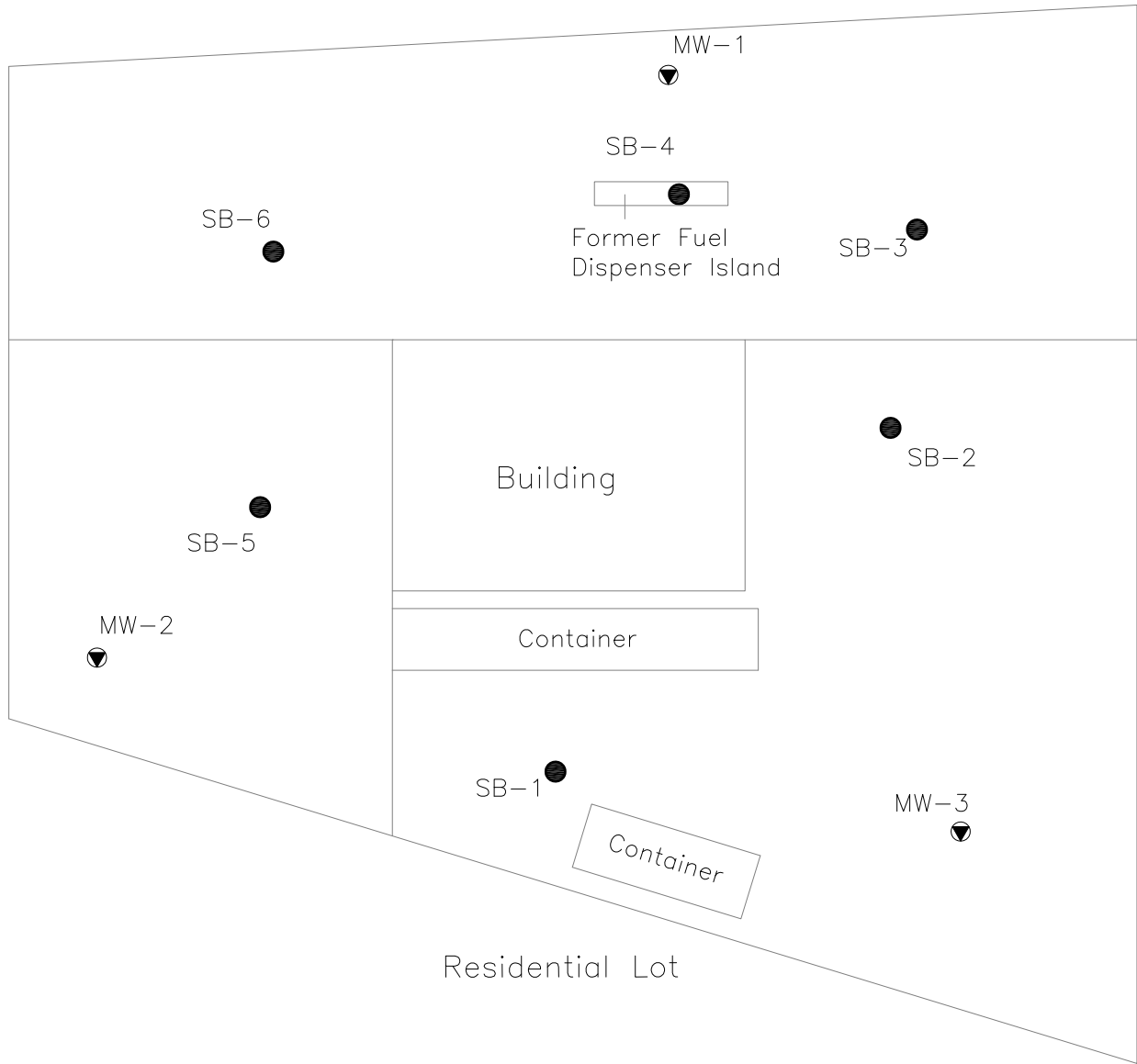
AAI, 9 May 2007. *Phase I Environmental Site Assessment Report, Former Gasoline Station Pluckey's Liquors, 6415 International Boulevard, Oakland, California.*
Prepared for Mr. Marcelo Bermudez, Freeman.



INTERNATIONAL BOULEVARD

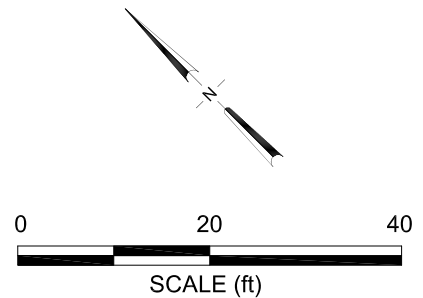
64TH AVENUE

Grocery Store



LEGEND

- ▼ Proposed Monitoring Well
- Phase II Soil Boring



NOTES: SITE MAP ADAPTED FROM GEOCON FIGURES.
SITE DIMENSIONS AND FACILITY LOCATIONS NOT VERIFIED.

APPENDIX A.

RECENT REGULATORY CORRESPONDENCE

ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
DAVID J. KEARS, Agency Director



ENVIRONMENTAL HEALTH SERVICES
ENVIRONMENTAL PROTECTION
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577
(510) 567-6700
FAX (510) 337-9335

January 29, 2009

Tracey Campbell
307 W. Fairview Blvd
Inglewood, CA 90302

James J. Weiss
6 Lagoon Vista
Tiburon, CA 94920

Jaleeza Hazzard
1722 Virginia Road
Los Angeles, CA 90012

Fabian A. Labat, Jr.
William C. Dixon
Address Unknown

Paul Supple
Atlantic Richfield Company
(A BP Affiliated Company)
P.O. Box 1257
San Ramon, CA 94583

Pluckey, Inc.
Address Unknown

Subject: Fuel Leak Case No. RO0002982 and GeoTracker Global ID T10000000417, ACRO # /
Pluckey's Liquors, 6415 International Boulevard, Oakland, CA 94621

Dear Responsible Parties:

Alameda County Environmental Health (ACEH) staff has reviewed the case file for the above-referenced site including the recently submitted document entitled, "Limited Soil and Grab Groundwater Sampling Report," dated May 7, 2008, which was prepared by Geocon Consultants for the subject site. The report documents a Phase II subsurface investigation conducted to determine soil and groundwater quality at the subject site due to its previous use as a gasoline station that utilized underground storage tanks. Geocon advanced six soil borings and collected soil and groundwater samples. Total petroleum hydrocarbons (TPH) as gasoline (g), diesel (d), and motor oil (mo) were detected in soil samples at maximum concentrations of 95 milligrams per kilogram (mg/kg), 20 mg/kg, 51 mg/kg, respectively, indicating that the soil has been impacted with petroleum hydrocarbons. "Grab" groundwater sample analytical results detected TPH-g, TPH-d, TPH-mo at maximum concentrations of 8,100 µg/L, 7,200 µg/L, and 180 µg/L, respectively, indicating that the groundwater has also been impacted with petroleum hydrocarbons. Please complete and submit an Underground Storage Tank Unauthorized Release Form (available online at http://www.swrcb.ca.gov/ust/forms/docs/unauth_release.pdf) within 30 days from the date of this letter. A Notice of Responsibility will be mailed to you within 15 days from the date of this letter.

Based on the analytical results, a subsurface investigation is required to determine the vertical and lateral extent of soil and groundwater contamination. It is recommended that a series of borings are installed prior to the installation of permanent groundwater monitoring points.

ACEH requests that you address the above-mentioned concerns and send us the technical work plan requested below.

TECHNICAL REPORT REQUEST

Please submit technical reports to ACEH (Attention: Paresh Khatri), according to the following schedule:

- **March 2, 2009** – Unauthorized Release Form
- **March 30, 2009** – Soil and Water Investigation Work Plan

These reports are being requested pursuant to California Health and Safety Code Section 25296.10. 23 CCR Sections 2652 through 2654, and 2721 through 2728 outline the responsibilities of a responsible party in response to an unauthorized release from a petroleum UST system, and require your compliance with this request.

ELECTRONIC SUBMITTAL OF REPORTS

ACEH's Environmental Cleanup Oversight Programs (LOP and SLIC) require submission of reports in electronic form. The electronic copy replaces paper copies and is expected to be used for all public information requests, regulatory review, and compliance/enforcement activities. Instructions for submission of electronic documents to the Alameda County Environmental Cleanup Oversight Program FTP site are provided on the attached "Electronic Report Upload Instructions." Submission of reports to the Alameda County FTP site is an addition to existing requirements for electronic submittal of information to the State Water Resources Control Board (SWRCB) GeoTracker website. In September 2004, the SWRCB adopted regulations that require electronic submittal of information for all groundwater cleanup programs. For several years, responsible parties for cleanup of leaks from underground storage tanks (USTs) have been required to submit groundwater analytical data, surveyed locations of monitoring wells, and other data to the GeoTracker database over the Internet. Beginning July 1, 2005, these same reporting requirements were added to Spills, Leaks, Investigations, and Cleanup (SLIC) sites. Beginning July 1, 2005, electronic submittal of a complete copy of all reports for all sites is required in GeoTracker (in PDF format). Please visit the SWRCB website for more information on these requirements (http://www.swrcb.ca.gov/ust/electronic_submittal/report_rqmts.shtml).

PERJURY STATEMENT

All work plans, technical reports, or technical documents submitted to ACEH must be accompanied by a cover letter from the responsible party that states, at a minimum, the following: "I declare, under penalty of perjury, that the information and/or recommendations contained in the attached document or report is true and correct to the best of my knowledge." This letter must be signed by an officer or legally authorized representative of your company. Please include a cover letter satisfying these requirements with all future reports and technical documents submitted for this fuel leak case.

PROFESSIONAL CERTIFICATION & CONCLUSIONS/RECOMMENDATIONS

The California Business and Professions Code (Sections 6735, 6835, and 7835.1) requires that work plans and technical or implementation reports containing geologic or engineering

evaluations and/or judgments be performed under the direction of an appropriately registered or certified professional. For your submittal to be considered a valid technical report, you are to present site specific data, data interpretations, and recommendations prepared by an appropriately licensed professional and include the professional registration stamp, signature, and statement of professional certification. Please ensure all that all technical reports submitted for this fuel leak case meet this requirement.

UNDERGROUND STORAGE TANK CLEANUP FUND

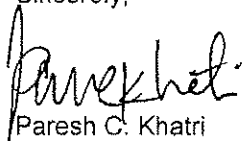
Please note that delays in investigation, later reports, or enforcement actions may result in your becoming ineligible to receive grant money from the state's Underground Storage Tank Cleanup Fund (Senate Bill 2004) to reimburse you for the cost of cleanup.

AGENCY OVERSIGHT

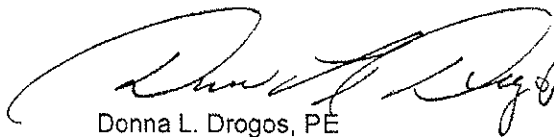
If it appears as though significant delays are occurring or reports are not submitted as requested, we will consider referring your case to the Regional Board or other appropriate agency, including the County District Attorney, for possible enforcement actions. California Health and Safety Code, Section 25299.76 authorizes enforcement including administrative action or monetary penalties of up to \$10,000 per day for each day of violation.

If you have any questions, please call me at (510) 777-2478 or send me an electronic mail message at paresh.khatri@acgov.org.

Sincerely,



Paresh C. Khatri
Hazardous Materials Specialist



Donna L. Drogos, PE
Supervising Hazardous Materials Specialist

Enclosure: ACEH Electronic Report Upload (ftp) Instructions
List of Environmental Consultants

cc: Leroy Griffin, Oakland Fire Department, 250 Frank H. Ogawa Plaza, Ste. 3341, Oakland, CA
94612-2032
Donna Drogos, ACEH
Paresh Khatri, ACEH
File

APPENDIX B.

TABULATED ANALYTICAL RESULTS AND SOIL BORING LOGS
FROM PHASE II INVESTIGATION

Table 1
Summary of Soil Sample Results
Plucky's Liquors / Former Gasoline Station
6415 International Blvd.
Oakland, California

Borehole Location	Collection Date	Depth (feet bgs)	TPHg (mg/kg)	TPHd (mg/kg)	TPHmo (mg/kg)	Benzene (ug/kg)	Toluene (ug/kg)	Ethylbenzene (ug/kg)	Total Xylenes (ug/kg)
SB-1	4/22/2008	15	7.3	6.3	5.5	<5.0	<5.0	<5.0	<15
SB-2	4/22/2008	16	21	2.6	3.5	<5.0	<5.0	<5.0	<15
SB-2	4/22/2008	20	<1.0	20	51	<5.0	<5.0	<5.0	<15
SB-3	4/22/2008	13	<1.0	5.8	5.8	<5.0	<5.0	<5.0	<15
SB-3	4/22/2008	20	<1.0	<1.0	1.6	<5.0	<5.0	<5.0	<15
SB-4	4/22/2008	8	<1.0	4.6	6.2	<5.0	<5.0	<5.0	<15
SB-5	4/22/2008	16	<1.0	7.6	6.3	<5.0	<5.0	<5.0	<15
SB-6	4/22/2008	14	95	7.8	4.4	<25	<25	<25	<75
SB-6	4/22/2008	20	<1.0	1.5	4.0	<5.0	<5.0	<5.0	<15
SB-6	4/22/2008	31	<1.0	3.2	2.7	<5.0	<5.0	<5.0	<15

Table 2
Summary of Grab Groundwater Sample Results
Plucky's Liquors / Former Gasoline Station
6415 International Blvd.
Oakland, California

Borehole Location	Collection Date	Depth (feet bgs)	TPHg (mg/l)	TPHd (mg/l)	TPHmo (mg/l)	Benzene (ug/l)	Toluene (ug/l)	Ethylbenzene (ug/l)	Total Xylenes (ug/l)
SB-1	4/22/2008	21	0.080	0.076	0.11	<0.50	<0.50	<0.50	<1.5
SB-2	4/22/2008	21	1.5	0.71	0.13	<0.50	<0.50	<0.50	<1.5
SB-3	4/22/2008	26	8.1	7.2	0.15	<5.0	<5.0	<5.0	<15
SB-5	4/22/2008	14	0.14	0.11	0.18	<0.50	<0.50	<0.50	<1.5

NOTES:

- TPHg- Total Petroleum Hydrocarbons as Gasoline
- TPHd - Total Petroleum Hydrocarbons as Diesel
- TPHmo - Total Petroleum Hydrocarbons as Motor Oil
- mg/kg- Milligrams per kilogram
- ug/kg- Micrograms per kilogram
- mg/l - Milligrams per liter
- ug/l - Micrograms per liter

PROJECT NO. E8448-06-01

				BORING NO. SB-1		SGL (USCS)	HEADSPACE (FPM)	
DEPTH IN FEET	PENETRAT. RESIST. BLOWS/FT.	SAMPLE NO.	LITHOLOGY	DATE DRILLED	WATER LEVEL (ATD)			
				EQUIPMENT	GEOPROBE	DRILLER	En Prob	
SOIL DESCRIPTION								
1			ASPHALT AND BASE ROCK					
2			Stiff, moist, black, fine Sandy CLAY, low to medium plasticity, no odor			CL		
3								
4								
5			Stiff, moist, olive, medium Sandy CLAY, low plasticity, no odor			CL		
6								
7								
8			Dense, moist to very moist, olive, Clayey coarse angular GRAVEL, no odor			GC		
9								
10								
11			Stiff, moist, yellowish red with light green, Sandy CLAY, low to medium plasticity, no odor			CL		
12								
13								
14			Dense, moist, pale green, Clayey GRAVEL, with coarse angular sand, slight plasticity, slight odor			GC		
15							CL	
16								
17			Firm to soft, moist, brown, Silty CLAY, low to medium plasticity, no odor					
18								
19								
20			Soft, very moist, brown, Silty CLAY, with interbedded clayey fine sand, low to medium plasticity, no odor					
21							CL	
22								
23								
24			BORING TERMINATED AT 24 FEET					

Figure 1, Log of Boring SB-1, page 1 of 1

ENV_NO_WELL PLUCKYS BORINGS.GPJ 05/06/08

BORING ELEVATION:	ENGINEER/GEOLOGIST: JOHN LOVE
-------------------	--------------------------------------

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES. ALL BLOW COUNTS HAVE BEEN CONVERTED TO EQUIVALENT STANDARD PENETRATION TEST (SPT) BLOW COUNTS.

PROJECT NO. E8448-06-01

DEPTH IN FEET	PENETRAT. RESIST. BLOWS/FT.	SAMPLE NO.	LITHOLOGY	BORING NO. SB-2		SOIL (USCS)	HEADSPACE (PPM)	
				DATE DRILLED 4/22/08	WATER LEVEL (ATD)			
				EQUIPMENT	GEOPROBE	DRILLER	En Prob	
SOIL DESCRIPTION								
1			ASPHALT					
2			Stiff, moist, black, fine Sandy CLAY, low to medium plasticity, no odor			CL		
3								
4								
5			Stiff, moist, olive, medium Sandy CLAY, low plasticity, no odor			CL		
6								
7								
8			Dense, moist to very moist, olive, Clayey coarse angular GRAVEL, no odor			GC		
9								
10								
11			Stiff, moist, yellowish red with light green, Sandy CLAY, low to medium plasticity, no odor			CL		
12								
13								
14			Dense, moist, pale green, Clayey GRAVEL with coarse angular sand, slight plasticity, petroleum odor			GC		
15							CL	
16								
17			Firm to soft, moist, brown, Silty CLAY, low to medium plasticity, petroleum odor					
18								
19								
20			Soft, very moist, brown, Silty CLAY with interbedded clayey fine sand, petroleum odor			CL		
21								
22								
23								
24				BORING TERMINATED AT 24 FEET				

Figure 2, Log of Boring SB-2, page 1 of 1

ENV_NO_WELL_PLUCKYS BORINGS.GPJ 05/06/08

BORING ELEVATION:	ENGINEER/GEOLOGIST: JOHN LOVE
-------------------	--------------------------------------

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES. ALL BLOW COUNTS HAVE BEEN CONVERTED TO EQUIVALENT STANDARD PENETRATION TEST (SPT) BLOW COUNTS.

PROJECT NO. E8448-06-01

DEPTH IN FEET	PENETRAT. RESIST. BLOWS/FT.	SAMPLE NO.	LITHOLOGY	BORING NO. SB-3		SOIL (USCS)	HEADSPACE (PPM)
				DATE DRILLED 4/22/08	WATER LEVEL (ATD)		
				EQUIPMENT	GEOPROBE	DRILLER	En Prob
SOIL DESCRIPTION							
1			ASPHALT				
2			Stiff, moist, black to brown, Sandy CLAY, low plasticity, no odor			CL	
3							
4			Dense, moist, brown, Clayey GRAVEL with angular sand and gravel, no odor			GC	
5							
6			Firm, moist, reddish yellow, Sandy CLAY, low to medium plasticity, no odor			CL	
7							
8			Stiff, moist, pale green, Sandy CLAY, medium plasticity, no odor			CL	
9							
10			Moist, Gravelly SAND with some clay and interbedded brick fragments, petroleum odor			SW	
11							
12			Stiff, moist, brown, Silty CLAY, medium plasticity, no odor			CL	
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							

Figure 3, Log of Boring SB-3, page 1 of 2

ENV_NO_WELL PLUCKYS BORINGS GPJ 05/06/08

BORING ELEVATION:	ENGINEER/GEOLOGIST: JOHN LOVE
-------------------	--------------------------------------

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES. ALL BLOW COUNTS HAVE BEEN CONVERTED TO EQUIVALENT STANDARD PENETRATION TEST (SPT) BLOW COUNTS.

PROJECT NO. E8448-06-01

DEPTH IN FEET	PENETRAT. RESIST. BLOW/FT.	SAMPLE NO.	LITHOLOGY	BORING NO. SB-3		SOIL (URCS)	HEADSPACE (PPM)
				DATE DRILLED 4/22/08	WATER LEVEL (ATD)		
				EQUIPMENT	GEOPROBE	DRILLER	En Prob
SOIL DESCRIPTION							
26			▼	Strong petroleum odor in groundwater			
27							
28				BORING TERMINATED AT 28 FEET			

Figure 4, Log of Boring SB-3, page 2 of 2

ENV_NO_WELL_PLUCKYS BORINGS.GPJ 05/06/08

BORING ELEVATION:

ENGINEER/GEOLOGIST: **JOHN LOVE**

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES. ALL BLOW COUNTS HAVE BEEN CONVERTED TO EQUIVALENT STANDARD PENETRATION TEST (SPT) BLOW COUNTS.

PROJECT NO. E8448-06-01

				BORING NO. SB-4		SOIL	HEADSPACE
DEPTH IN FEET	PENETRAT. RESIST. BLOWS/FT.	SAMPLE NO.	LITHOLOGY	DATE DRILLED	WATER LEVEL (ATD)	(USCS)	(PPM)
				4/22/08			
				EQUIPMENT	GEOPROBE	DRILLER	En Prob
SOIL DESCRIPTION							
1			[REDACTED]	ASPHALT AND BASE			
2				Stiff, moist, black, Sandy CLAY, medium plasticity, no odor			CL
3							
4							
5				Dense, slightly moist, fine Gravelly SAND, variegated, no odor			SW
6							
7							
8				BORING TERMINATED AT 8 FEET			

Figure 4, Log of Boring SB-4, page 1 of 1

ENV_NO_WELL PLUCKYS BORINGS.GPJ 05/06/08

BORING ELEVATION:	ENGINEER/GEOLOGIST: JOHN LOVE
-------------------	--------------------------------------

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES. ALL BLOW COUNTS HAVE BEEN CONVERTED TO EQUIVALENT STANDARD PENETRATION TEST (SPT) BLOW COUNTS.

PROJECT NO. E8448-06-01

DEPTH IN FEET	PENETRAT. RESIST. BLOWS/FT	SAMPLE NO.	LITHOLOGY	BORING NO. SB-5		SOIL (USCS)	HEADSPACE (FT)
				DATE DRILLED 4/22/08	WATER LEVEL (ATD)		
				EQUIPMENT	GEOPROBE	DRILLER	En Prob
SOIL DESCRIPTION							
1			ASPHALT AND FILL				
2							
3							
4							
5							
6							
7							
8							
9							
10							
11			Soft to stiff, saturated, brown to light green, Silty and Sandy CLAY, low plasticity, slight odor in water, no odor in soil			CL	
12							
13							
14			Dense, moist, variegated Gravelly SAND, fine gravel, well graded sand, no odor			SW	
15							
16							
BORING TERMINATED AT 16 FEET							

Figure 5, Log of Boring SB-5, page 1 of 1

ENV_NO_WELL FLUCKYS BORINGS.GPJ 05/06/08

BORING ELEVATION:	ENGINEER/GEOLOGIST: JOHN LOVE
-------------------	--------------------------------------

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES. ALL BLOW COUNTS HAVE BEEN CONVERTED TO EQUIVALENT STANDARD PENETRATION TEST (SPT) BLOW COUNTS.

PROJECT NO. E8448-06-01

DEPTH IN FEET	PENETRAT. RESIST. BLOWS/FT.	SAMPLE NO.	LITHOLOGY	BORING NO. SB-6		SOIL (USCS)	HEADSPACE (PFM)
				DATE DRILLED 4/22/08	WATER LEVEL (ATD)		
				EQUIPMENT	GEOPROBE DRILLER En Prob		
				SOIL DESCRIPTION			
1			ASPHALT AND BASE				
2			Very stiff, moist, black, Sandy CLAY, low to medium plasticity, no odor			CL	
3							
4			Dense, moist, brown, Clayey GRAVEL with angular sand, low plasticity, no odor			GC	
5							
6			Dense, moist, brown, angular Gravelly SAND, no odor			SW	
7							
8			Stiff, moist, brown with olive, Sandy CLAY, medium plasticity, no odor			CL	
9							
10			Soft				
11							
12			Slight petroleum odor				
13							
14			Pale green				
15							
16			Stiff to very stiff, moist, brown, Silty CLAY, medium plasticity, no odor			CL	
17							
18							
19							
20							
21							
22							
23							
24							

Figure 6, Log of Boring SB-6, page 1 of 2

ENV_NO_WELL PLUCKYS BORINGS.GPJ 05/06/08

BORING ELEVATION:

ENGINEER/GEOLOGIST: JOHN LOVE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES. ALL BLOW COUNTS HAVE BEEN CONVERTED TO EQUIVALENT STANDARD PENETRATION TEST (SPT) BLOW COUNTS.

DEPT IN FEET	PENET RESIS BLOWS	SAMP NO.	LITHOL	DATE DRILLED	4/22/08	WATER LEVEL (ATD)	SOIL	HEADSPACE	
				EQUIPMENT	GEOPROBE	DRILLER	En. Prob	(USCS)	(FT/IN)
SOIL DESCRIPTION									
26			[Hatched Pattern]	BORING TERMINATED AT 31 FEET					
27									
28									
29									
30									
31									

Figure 7, Log of Boring SB-6, page 2 of 2

ENV_NO_WELL PLUCKYS BORINGS GPI 05/06/08

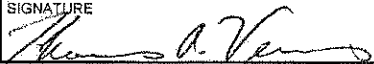
BORING ELEVATION:	ENGINEER/GEOLOGIST: JOHN LOVE
-------------------	--------------------------------------

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES. ALL BLOW COUNTS HAVE BEEN CONVERTED TO EQUIVALENT STANDARD PENETRATION TEST (SPT) BLOW COUNTS.

APPENDIX C.

UNAUTHORIZED RELEASE REPORT

UNDERGROUND STORAGE TANK UNAUTHORIZED RELEASE (LEAK)/ CONTAMINATION SITE REPORT

EMERGENCY <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		HAS STATE OFFICE OF EMERGENCY SERVICES REPORT BEEN FILED? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		FOR LOCAL AGENCY USE ONLY I HEREBY CERTIFY THAT I AM A DESIGNATED GOVERNMENT EMPLOYEE AND THAT I HAVE REPORTED THIS INFORMATION TO LOCAL OFFICIALS PURSUANT TO SECTION 25180.7 OF THE HEALTH AND SAFETY CODE.	
REPORT DATE 2/20/2009		CASE # ACEHS Leak Case #RO2982			
REPORTED BY	NAME OF INDIVIDUAL FILING REPORT Thomas A. Venus, PE		PHONE (530) 566-1400		SIGNATURE 
	REPRESENTING <input type="checkbox"/> LOCAL AGENCY <input type="checkbox"/> REGIONAL BOARD <input type="checkbox"/> OWNER/OPERATOR <input checked="" type="checkbox"/> OTHER... Consultant for potential RP		COMPANY OR AGENCY NAME Broadbent & Associates, Inc.		
ADDRESS 1324 Mangrove Ave, Suite 212 <small>STREET</small> Chico <small>CITY</small> CA <small>STATE</small> 95926 <small>ZIP</small>					
RESPONSIBLE PARTY	NAME Atlantic Richfield Company (one of six PRPs) <input type="checkbox"/> Unknown		(Also Tracey Campbell, Jaleesa Hazzard, James J. Weiss, Fabian A. Labat Jr., William C. Dixon, Pluckey Inc.)		PHONE (925) 275-3801
	ADDRESS PO Box 1257 <small>STREET</small> San Ramon <small>CITY</small> CA <small>STATE</small> 94583 <small>ZIP</small>				
SITE LOCATION	FACILITY NAME (IF APPLICABLE) Former Richfield Oil Co. Station #472		OPERATOR Richfield Oil Company		PHONE unknown
	ADDRESS 6415 International Boulevard (formerly East 14th Street) Oakland Alameda 94621 <small>STREET</small> <small>CITY</small> <small>COUNTY</small> <small>ZIP</small>				
CROSS STREET 64th Avenue					
IMPLEMENTING AGENCIES	LOCAL AGENCY AGENCY NAME Alameda County Health Care Services Agency/Environmental Health Services (ACEHS)				PHONE (510) 337-9335
	REGIONAL BOARD San Francisco Bay Region				PHONE (510) 622-2300
SUBSTANCES INVOLVED	(1) NAME gasoline		QUANTITY LOST (GALLONS) <input checked="" type="checkbox"/> Unknown		
	(2)		<input type="checkbox"/> Unknown		
DISCOVERY/ABATEMENT	DATE DISCOVERED 5/7/2008		HOW DISCOVERED <input type="checkbox"/> Tank Test <input type="checkbox"/> Tank Removal <input type="checkbox"/> Nuisance Conditions <input type="checkbox"/> Inventory Control <input checked="" type="checkbox"/> Subsurface Monitoring <input type="checkbox"/> Other...		
	DATE DISCHARGE BEGAN <input checked="" type="checkbox"/> Unknown		METHOD USED TO STOP DISCHARGE (CHECK ALL THAT APPLY) <input type="checkbox"/> Remove Contents <input checked="" type="checkbox"/> Close Tank <input type="checkbox"/> Repair Tank <input type="checkbox"/> Change Procedure <input type="checkbox"/> Replace Tank <input type="checkbox"/> Other... <input type="checkbox"/> Repair Piping		
	HAS DISCHARGE BEEN STOPPED? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		IF YES, DATE unknown		
SOURCE CAUSE	SOURCE OF DISCHARGE <input type="checkbox"/> Tank Leak <input type="checkbox"/> Piping Leak <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Other...		CAUSE(S) <input type="checkbox"/> Overfill <input type="checkbox"/> Corrosion <input type="checkbox"/> Rupture/Failure <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Spill <input type="checkbox"/> Other...		
	CHECK ONE ONLY <input type="checkbox"/> Undetermined <input type="checkbox"/> Soil Only <input checked="" type="checkbox"/> Groundwater <input type="checkbox"/> Drinking Water - (CHECK ONLY IF WATER WELLS HAVE ACTUALLY BEEN AFFECTED)				
CURRENT STATUS	CHECK ONE ONLY <input type="checkbox"/> No Action Taken <input type="checkbox"/> Case Closed (Cleanup Completed or Unnecessary) <input type="checkbox"/> Leak Being Confirmed <input checked="" type="checkbox"/> Pollution Characterization <input type="checkbox"/> Remediation Plan <input type="checkbox"/> Post Cleanup Monitoring in Progress <input type="checkbox"/> Preliminary Site Assessment Workplan Submitted <input type="checkbox"/> Cleanup Underway <input type="checkbox"/> Preliminary Site Assessment Underway				
	CHECK APPROPRIATE ACTION(S) <input type="checkbox"/> Cap Site (CD) <input type="checkbox"/> Excavate & Treat (ET) <input type="checkbox"/> Treatment at Hookup (HU) <input checked="" type="checkbox"/> Other... <input type="checkbox"/> Contamination Barrier (CB) <input type="checkbox"/> No Action Required (NA) <input type="checkbox"/> Enhanced Bio Degradation (IT) Unknown at this time <input type="checkbox"/> Vacuum Extract (VE) <input type="checkbox"/> Remove Free Product (FP) <input type="checkbox"/> Replace Supply (RS) <input type="checkbox"/> Excavate & Dispose (ED) <input type="checkbox"/> Pump & Treat Groundwater (GT) <input type="checkbox"/> Vent Soil (VS)				
COMMENTS	1/29/2009 letter from local implementing agency (ACEHS) identified Atlantic Richfield Company as one of six parties allegedly responsible for soil and ground-water contamination discovered by Geocon Consultants (Livermore, CA) during a Phase II environmental investigation (report date 5/7/2008) conducted at the Site in April 2008. The 1/29/2009 letter from ACEHS to Atlantic Richfield Company and others requested submittal of an Unauthorized Release Form on or before 3/2/2009, to which we are complying.				