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

September 3, 2009

(Paul Supple (*Sent via E-mail to: paul.supple@bp.com*)
Atlantic Richfield Company
(A BP Affiliated Company)
P.O. Box 1257
San Ramon, CA 94583

Subject: Case Closure Consideration for Fuel Leak Case No. RO0002565 and GeoTracker Global ID T0600108312, ARCO #0276, 10600 MacArthur Boulevard, Oakland, CA 94605

Dear Mr. Supple:

Alameda County Environmental Health (ACEH) staff has reviewed the case file for the above-referenced site including the recently submitted document entitled, "Response to Request for Site Conceptual Model and Soil & Water Investigation Work Plan," dated June 15, 2009, which was prepared by Broadbent & Associates, Inc. (BAI) for the subject site. In our April 16, 2009 correspondence ACEH requested justification for groundwater plume definition or a work plan to define the extent of groundwater contamination, and a Site Conceptual Model. BAI adequately justified that the contaminant plume is assessed and no further characterization appears necessary. BAI also demonstrated that contaminants of concern at the site have been naturally attenuating over time, with gasoline, benzene, and MTBE currently detected at concentrations of 4,700 µg/L, 3.5 µg/L, and 310 µg/L, respectively.

ACEH generally concurs with BAI that "monitoring natural attenuation is the most appropriate mediation method at the Site for petroleum hydrocarbon contaminants." At this time, ACEH requests that you prepare a Case Closure Summary in accordance with enclosed template so that the site may be evaluated for case closure consideration. Please submit the summary report by the date specified below.

TECHNICAL REPORT REQUEST

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

- **November 2, 2009** – Case Closure Summary Report (PDF & MS Word)

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

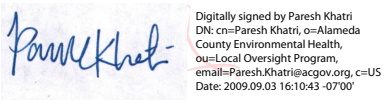
Please note that delays in investigation, later reports, or enforcement actions may result in your becoming ineligible to receive grant money from the state's Underground Storage Tank Cleanup Fund (Senate Bill 2004) to reimburse you for the cost of cleanup.

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

Enclosure: Case Closure Summary Template (Draft)
ACEH Electronic Report Upload (ftp) Instructions

cc: Tom Venus, Broadbent & Associates, Inc., 1324 Mangrove Ave., Ste 212, Chico, CA 95926 (*Sent via E-mail to*: *tvenus@broadbentinc.com*)
Leroy Griffin, Oakland Fire Department, 250 Frank H. Ogawa Plaza, Ste. 3341, Oakland, CA 94612-2032 (*Sent via E-mail to: lgriffin@oaklandnet.com*)
Donna Drogos, ACEH (*Sent via E-mail to: donna.drogos@acgov.org*)
Paresh Khatri, ACEH (*Sent via E-mail to: paresh.khatri@acgov.org*)
GeoTracker
File

Alameda County Environmental Cleanup Oversight Programs (LOP and SLIC)	**ISSUE DATE:** July 5, 2005
	REVISION DATE: March 27, 2009
	PREVIOUS REVISIONS: December 16, 2005, October 31, 2005
SECTION: Miscellaneous Administrative Topics & Procedures	**SUBJECT:** Electronic Report Upload (ftp) Instructions

The Alameda County Environmental Cleanup Oversight Programs (LOP and SLIC) require submission of all reports in electronic form to the county's ftp site. Paper copies of reports will no longer be accepted. The electronic copy replaces the paper copy and will be used for all public information requests, regulatory review, and compliance/enforcement activities.

REQUIREMENTS

- Entire report including cover letter must be submitted to the ftp site as **a single portable document format (PDF) with no password protection**. (Please do not submit reports as attachments to electronic mail.)
- It is **preferable** that reports be converted to PDF format from their original format, (e.g., Microsoft Word) rather than scanned.
- Signature pages and perjury statements **must** be included and have either original or electronic signature.
- **Do not password protect the document**. Once indexed and inserted into the correct electronic case file, the document will be secured in compliance with the County's current security standards and a password. **Documents with password protection will not be accepted**.
- Each page in the PDF document should be rotated in the direction that will make it easiest to read on a computer monitor.
- Reports must be named and saved using the following naming convention:
  RO#_Report Name_Year-Month-Date (e.g., RO#5555_WorkPlan_2005-06-14)

Additional Recommendations

- A separate copy of the tables in the document should be submitted by e-mail to your Caseworker in **Excel** format. These are for use by assigned Caseworker only.

Submission Instructions

1) Obtain User Name and Password:
   a) Contact the Alameda County Environmental Health Department to obtain a User Name and Password to upload files to the ftp site.
      i) Send an e-mail to dehloptoxic@acgov.org
         Or
      ii) Send a fax on company letterhead to (510) 337-9335, to the attention of My Le Huynh.
   b) In the subject line of your request, be sure to include **"ftp PASSWORD REQUEST"** and in the body of your request, include the **Contact Information, Site Addresses**, and the **Case Numbers (RO# available in Geotracker) you will be posting for**.

2) Upload Files to the ftp Site
   a) Using Internet Explorer (IE4+), go to ftp://alcoftp1.acgov.org
      (i) Note: Netscape and Firefox browsers will not open the FTP site.
   b) Click on File, then on Login As.
   c) Enter your User Name and Password. (Note: Both are Case Sensitive.)
   d) Open "My Computer" on your computer and navigate to the file(s) you wish to upload to the ftp site.
   e) With both "My Computer" and the ftp site open in separate windows, drag and drop the file(s) from "My Computer" to the ftp window.

3) Send E-mail Notifications to the Environmental Cleanup Oversight Programs
   a) Send email to dehloptoxic@acgov.org notify us that you have placed a report on our ftp site.
   b) Copy your Caseworker on the e-mail. Your Caseworker's e-mail address is the entire first name then a period and entire last name @acgov.org. (e.g., firstname.lastname@acgov.org)
   c) The subject line of the e-mail must start with the RO# followed by **Report Upload**. (e.g., Subject: RO1234 Report Upload) If site is a new case without an RO# use the street address instead.
   d) If your document meets the above requirements and you follow the submission instructions, you will receive a notification by email indicating that your document was successfully uploaded to the ftp site.

DRAFT

Alameda County Environmental Health

CASE CLOSURE SUMMARY
LEAKING UNDERGROUND FUEL STORAGE TANK - LOCAL OVERSIGHT PROGRAM

I. AGENCY INFORMATION Date: XXXXXXX

Agency Name: Alameda County Environmental Health	Address: 1131 Harbor Bay Parkway
City/State/Zip: Alameda, CA 94502-6577	Phone: (510) 777-2478
Responsible Staff Person: Paresh Khatri	Title: Hazardous Materials Specialist

II. CASE INFORMATION

Site Facility Name:		
Site Facility Address:		
RB Case No.:	Local Case No.:	LOP Case No.:
URF Filing Date:	Global ID No.:	APN:

Responsible Parties	Addresses	Phone Numbers

Tank I.D. No	Size in Gallons	Contents	Closed In Place/Removed?	Date
Piping				

III. RELEASE AND SITE CHARACTERIZATION INFORMATION

Cause and Type of Release:	
Site characterization complete?	Date Approved By Oversight Agency:

Monitoring wells installed?	Number:	Proper screened interval?
Highest GW Depth Below Ground Surface:	Lowest Depth:	Flow Direction:
Most Sensitive Current Use: Potential drinking water source.		

Summary of Production Wells in Vicinity: [discuss results of well survey]	
Are drinking water wells affected? Yes/No	Aquifer Name:
Is surface water affected? Yes/No	Nearest SW Name:
Off-Site Beneficial Use Impacts (Addresses/Locations):	
Reports on file? Yes/No	Where are reports filed? Alameda County Environmental Health

TREATMENT AND DISPOSAL OF AFFECTED MATERIAL

Material	Amount (Include Units)	Action (Treatment or Disposal w/Destination)	Date
Tank			
Piping			
Free Product			
Soil			
Groundwater			

MAXIMUM DOCUMENTED CONTAMINANT CONCENTRATIONS BEFORE AND AFTER CLEANUP
(Please see Attachments for additional information on contaminant locations and concentrations)

Contaminant	Soil (ppm)		Water (ppb)	
	Before	After	Before	After
TPH (Gas)	Concentration (Sample ID, Depth, Date collected)	Concentration (Sample ID, Depth, Date collected)	Concentration (Sample ID, Date collected)	Concentration (Sample ID, Date collected)
TPH (Diesel)	Concentration (Sample ID, Depth, Date collected)	Concentration (Sample ID, Depth, Date collected)	Concentration (Sample ID, Date collected)	Concentration (Sample ID, Date collected)
TPH (Motor Oil)	Concentration (Sample ID, Depth, Date collected)	Concentration (Sample ID, Depth, Date collected)	Concentration (Sample ID, Date collected)	Concentration (Sample ID, Date collected)
TRPH	Concentration (Sample ID, Depth, Date collected)	Concentration (Sample ID, Depth, Date collected)	Concentration (Sample ID, Date collected)	Concentration (Sample ID, Date collected)
Benzene	Concentration (Sample ID, Depth, Date collected))	Concentration (Sample ID, Depth, Date collected))	Concentration (Sample ID, Date collected)	Concentration (Sample ID, Date collected)
Toluene	Concentration (Sample ID, Depth, Date collected)	Concentration (Sample ID, Depth, Date collected)	Concentration (Sample ID, Date collected)	Concentration (Sample ID, Date collected)
Ethylbenzene	Concentration (Sample ID, Depth, Date collected)	Concentration (Sample ID, Depth, Date collected)	Concentration (Sample ID, Date collected)	Concentration (Sample ID, Date collected)
Xylenes	Concentration (Sample ID, Depth, Date collected)	Concentration (Sample ID, Depth, Date collected)	Concentration (Sample ID, Date collected)	Concentration (Sample ID, Date collected)
MTBE	Concentration[4] (Sample ID, Depth, Date collected)	Concentration[3] (Sample ID, Depth, Date collected)	Concentration[2] (Sample ID, Date collected)	Concentration[1] (Sample ID, Date collected)
Lead	Concentration (Sample ID, Depth, Date collected)	Concentration (Sample ID, Depth, Date collected)	Concentration (Sample ID, Date collected)	Concentration (Sample ID, Date collected)

[1]Other VOCs (groundwater µg/L after cleanup): < 20 µg/L TBA, <0.5 µg/L DIPE, <0.5 µg/L ETBE, <0.5 µg/L TAME, <0.5 µg/L EDB, <0.5 µg/L 1.2-DCA, <300 µg/L EtOH
[2]Other VOCs (groundwater ppb before cleanup): < 20 µg/L TBA, <0.5 µg/L DIPE, <0.5 µg/L ETBE, <0.5 µg/L TAME, <0.5 µg/L EDB, <0.5 µg/L 1.2-DCA, <300 µg/L EtOH
[3]Other VOCs (Soil mg/kg after cleanup): < 0.5 mg/kg TBA, <0.5 mg/kg DIPE, <0.5 mg/kg ETBE, <0.85 mg/kg TAME, <20 mg/kg EtOH
[4]Other VOCs (Soil mg/kg before cleanup): < 0.5 mg/kg TBA, <0.5 mg/kg DIPE, <0.5 mg/kg ETBE, <0.85 mg/kg TAME, <20 mg/kg EtOH

Site History and Description of Corrective Actions:

The Case Closure Summary should be clear and concise. Deviation from the recommended format will lengthen the time required for ACEH LOP review and processing. If particular details are not available or not applicable to the site for any reason, do not omit the item. Rather, provide the reasons the details are not available or applicable.

1. INITIATION OF CORRECTIVE ACTION

1.1 BACKGROUND HISTORY

Provide a brief description of site, surrounding areas, and current land use. Describe activity which discovered contamination (i.e. UST removal, upgrade, property transaction, etc.). Summarize the historical site setting and land use with respect to the source of the release. In the case of a release from an UST, the source would include the entire tank system, including all former and current tanks and associated piping. Site figures showing the historical layout and current layout are required. Present the number, size, construction, and contents of each tank historically located at the site, with the dates of installation and removal. Description of tank removal activities, with reference to site tank removal reports currently in ACEH files, should include the following.

a. Dates of the tank removals;
b. Tank size, construction, and contents;
c. Condition of tanks upon removal, such as pitting or holes;
d. Evidence of release, such as soil discoloration or odors, product in the pit;
e. Soil and groundwater samples obtained during removal, their locations, depths and results
f. Number and location of piping run and dispenser island samples; and

g. Final disposition of tanks, piping, dispensers, tank rinsate, excavated soil, and groundwater pumped from the excavation

1.2 SITE CHARACTERIZATION ACTIVITIES

Typically, a number of investigations are conducted in phases throughout the corrective action process. This section should include a brief summary of investigations performed toward defining the extent of impacts in soil and groundwater at the site. Each phase of work must be summarized chronologically, with reference to the appropriate investigation report currently in ACEH files. The summary should explain why the work was performed, if impacted areas and plume boundaries were delineated, what remediation occurred, and finally what post-remedial confirmation sampling and monitoring occurred. The summary should also address any concerns affecting the validity of data, such as wells screened below the water table, samples analyzed past recommended hold times, etc. Cumulative data tables for all soil, groundwater samples, including grab samples, and soil vapor must be included. Site figures showing all sampling locations (excavations, borings, wells, etc.) must be included.

1.3 INVESTIGATION METHODS

This section should evaluate the investigative methods used, and the validity of the data generated during corrective action. This is an evaluation of the methodology, not an evaluation of the results. At a minimum the following methods and procedures should be reviewed for appropriateness.

a. Soil sampling methodology;
b. Groundwater monitoring well design, installation, development;
c. Method used to measure groundwater elevations and gradient determination;
d. Method used to measure free product thickness;
e. Groundwater sampling methodology; and
f. Certified laboratory soil and groundwater analyses, chain-of-custody procedures, sample preservation, holding times, sample preparation methods, and detection limits

2. EXTENT OF SOIL AND GROUNDWATER POLLUTION

This section should address whether site characterization is complete. The vertical and lateral extent of soil and groundwater contamination should be defined. Graphic presentations of this data should be included and supported. An assessment should be made as to whether the location and number of soil and groundwater samples are adequate to define vertical and lateral extent of impact.

Soil

Describe how lateral and vertical extent is bound and historical and current maximum concentrations.

Groundwater

Describe how lateral and vertical extent is bound and historic and current maximum concentrations.

Soil Vapor

Describe how lateral and vertical extent is bound and historical and current maximum concentrations.

Groundwater Occurrence

First encountered versus stabilized groundwater

Hydraulic Gradient

General direction and comparison to regional groundwater gradient. Include a rose diagram to illustrate variations in flow direction.

3. BENEFICIAL USES

An evaluation should be made of all existing and potential impacts on beneficial uses of groundwater and surface water. The following information should be included.

a. An evaluation of existing beneficial uses, as contained in the San Francisco Bay, Region 2, Regional Water Quality Control Board (RWQCB) Basin Plan for the San Francisco Bay (2006), as well as all potential future beneficial uses. The RWQCB Basin Plan for currently defines the aquifers in Alameda County to be suitable for municipal supply, industrial supply and agricultural uses.

b. Well surveys (municipal, agricultural, domestic) to include discussions on the well survey search radius and methodology (i.e. which agencies were contacted, etc.).

c. Summary of factors affecting long-term fate of contaminants

4. REMEDIAL ACTIVITIES

Remedial activities performed at the site should be presented, including the following.

a. Interim remedial actions undertaken, if applicable;

b. Soil remedial methods including rationale for method selection;

c. Groundwater remedial methods (for both dissolved phase and free product) including rationale for method selection; and

d. Impact (potential and existing) of remedial actions on beneficial uses.

5. REMEDIATION EFFECTIVENESS

An evaluation should be made as to the effectiveness of all remedial activities undertaken, including the following.

a. Are final cleanup levels consistent with SWRCB Resolution 68-16 "Statement of Policy with Respect to Maintaining High Quality of Waters in California"?

b. Verification monitoring program and criteria, rationale, sampling number, frequency, and duration
c. Impact (potential and existing) of residual contamination on beneficial uses

For sites at which residual soil contamination remains in place (that has been determined not to pose a significant risk to human health or the environment in its current use) at the time of site closure consideration, please identify the locations (isoconcentration map where applicable) on a scale map, estimate the volume, and specify the concentrations. For example, 'An estimate of ____ cubic yards of soil impacted at concentrations below ____ mg/kg TPH-gasoline (TPH-diesel, TOG, etc.) remain in place at a depth of ____ feet, located in (at, beneath, etc.) the ____ area of the property (building, boundary, etc.) as shown on attached Figure ____.'

6. CONCLUSIONS

Conclusions should qualify the site as “low risk” as described in the RWQCB “Supplemental Instructions to State Water Board December 18, 1995 Interim Guidance on Required Cleanup at Low-Risk Fuel Sites”. The criteria that must be qualified are as follows.

1. The leak and ongoing sources, including free product, have been removed or remediated.

2. The site has been adequately characterized.

3. The dissolved hydrocarbon plume is not migrating (stable or decreasing).

4. No water wells, deeper drinking-water aquifers, surface water, or other sensitive receptors are likely to be impacted.

5. The site presents no significant risk to human health (see Table 1)

6. The site presents no significant risk to the environment (see Table 2).

IV. CLOSURE

Does completed corrective action protect existing beneficial uses per the Regional Board Basin Plan? Yes/No		
Does completed corrective action protect potential beneficial uses per the Regional Board Basin Plan? Yes/No		
Does corrective action protect public health for current land use? Alameda County Environmental Health staff does not make specific determinations concerning public health risk. However, based upon the information available in our files to date, it does not appear that the release would present a significant risk to human health based upon current land use and conditions.		
Site Management Requirements: City of XXXXXXX Building Department has been notified that should excavation or development of the property be proposed that may encounter impacted soil or groundwater, Alameda County Environmental Health must be notified as required by Government Code Section 65850.2.2.		
Should corrective action be reviewed if land use changes? Yes/No		
Was a deed restriction or deed notification filed? Yes/No		Date Recorded: --
Monitoring Wells Decommissioned:	Number Decommissioned:	Number Retained:
List Enforcement Actions Taken:		
List Enforcement Actions Rescinded:		

V. ADDITIONAL COMMENTS, DATA, ETC.

Considerations and/or Variances:

Currently, residual soil contamination of TPH-g and benzene at concentrations of XXX mg/kg and X.X mg/kg, respectively, was left in place near the dispenser island, and MtBE at a concentration of XX mg/kg was left in place within the former UST pit. The residual contamination does appear to pose a significant risk to the current commercial use of the site or to groundwater resources in the area. Additionally, Soil vapor sample analytical results, did not detect TPH-g, BTEX, or MtBE above the Residential Land-use Soil Gas Screening Level.

Residual concentrations of TPH-g and MtBE were/was detected in groundwater at concentrations of up to XXX µg/L and XXX µg/L, respectively, of which TPH-g exceeds the ESLs where groundwater is a potential drinking water source. The concentrations of TPH-g are expected to decrease over time as a result of biodegradation and natural attenuation processes.

Conclusion:

Alameda County Environmental Health staff consider that the levels of residual contamination do not pose a significant threat to water resources, public health and safety, and the environment based upon the information available in our files to date. No further investigation or cleanup is necessary. ACEH staff recommend case closure for this site based on the current commercial use of the site.

VI. LOCAL AGENCY REPRESENTATIVE DATA

Prepared by: Paresh Khatri	Title: Hazardous Materials Specialist
Signature:	Date:
Approved by: Donna L. Drogos, P.E.	Title: Supervising Hazardous Materials Specialist
Signature:	Date:

This closure approval is based upon the available information and with the provision that the information provided to this agency was accurate and representative of site conditions.

VII. REGIONAL BOARD NOTIFICATION

Regional Board Staff Name: Cherie McCaulou	Title: Engineering Geologist
RB Response: Concur, based solely upon information contained in this case closure summary.	Date Submitted to RB:
Signature:	Date:

VIII. MONITORING WELL DECOMMISSIONING

Date Requested by ACEH: TBD	Date of Well Decommissioning Report:	
All Monitoring Wells Decommissioned:	Number Decommissioned:	Number Retained:
Reason Wells Retained: No monitoring wells installed or retained		
Additional requirements for submittal of groundwater data from retained wells:		
ACEH Concurrence - Signature:		Date:

Attachments:
1. Tables 1 & 2 (Comparison of residual contamination to applicable ESLs or approved Cleanup Goals).
2. Site Figures.
3. Analytical Data Tables for Soil, Groundwater, Soil Vapor, Depth to Groundwater, etc.
4. Boring logs/Monitoring well construction details.

This document and the related CASE CLOSURE LETTER & REMEDIAL ACTION COMPLETION CERTIFICATE shall be retained by the lead agency as part of the official site file.

Environmental Impacts in Soil

Site Name

Address, City, California

Table 1. Comparison of Maximum Residual Soil Concentrations at the Site to Relevant Cleanup Standards (mg/kg)

	TPH-g (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl Benzene (mg/kg)	Xylenes (mg/kg)	MtBE (mg/kg)
Maximum Residual Soil Concentrations at Site in milligrams per kilogram	XX[4]	XX [4]	XX [5]	XX [4]	XX [4]	XX [6]
RWQCB, Region 2 ESLs[1]	83[3]	0.044[3]	2.9[3]	3.3[3]	2.3[3]	0.023[3]

1 Environmental Screening Levels (ESLs); Shallow Soil Screening Level for residential land use where potentially impacted groundwater is current or potential drinking water resource. Shallow soils defined as soils situated <3 meters below the ground surface. Depth to water ranges between 4.9 ft and 21.25 ft bgs.

[2] Lowest ESL value based on direct exposure scenario. Depth to water ranges between 4.9 ft and 21.25 ft bgs.

[3] Lowest ESL value based on groundwater protection (soil leaching). Depth to water ranges between 4.9 ft and 21.25 ft bgs.

[4] Soil sample collected at 12 feet bgs. Depth to water ranges between 4.9 ft and 21.25 ft bgs.

[5] Soil sample collected at 15 feet bgs. Depth to water ranges between 4.9 ft and 21.25 ft bgs.

[6] Soil sample collected at 14 feet bgs. Depth to water ranges between 4.9 ft and 21.25 ft bgs.

Environmental Impacts in Groundwater
Site Name
Address, City, California

Table 2. Comparison of Maximum Residual Groundwater Concentrations at the Site to Relevant Cleanup Standards (µg/L)

	TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl Benzene (µg/L)	Xylenes (µg/L)	MTBE (µg/L)	TBA (µg/L)
Maximum Residual Groundwater Concentrations at Site							
RWQCB Region 2 ESLs2	100[1] 1003 2104 --[6]	1.01 1702 1.0[3] 540[4] --[6]	401 402 150[3] 380,000[4] --[6]	301 302 300[3] 170,000[4] --[6]	201 202 1,800[3] 160,000[4] --[6]	5[1] 5[2] 13[3] 24,000[4]	--[1] 50,000[2] --[3] --[4]
ASTM Tier 1 Standard Human Health RBSL (Benzene)	NA	11,0005 23.86	32,800	77,500	NA	NA	NA

[1] Environmental Screening Levels (ESLs) for impacted subsurface groundwater less than 10 feet, where groundwater IS a current or potential drinking water resource
[2] Final Groundwater Screening Level, based on ceiling value (taste and odor threshold)
[3] Groundwater Screening Level, based on drinking water toxicity
[4] Groundwater Volatilization to indoor air (residential) Level,
[5] Groundwater Vapor Intrusion from groundwater to buildings (residential, chronic hazard quotient = 1)
[6] Final Groundwater Screening Level, based on Aquatic Habitat