



environmental service  
*by Papineau, R.E.A. 791*

May 18, 2012

Mr. Scott Lorenzini.  
SA Challenger, Inc.  
221 S. Figueroa  
LA-CA F3SA  
Los Angeles, CA 90012

**RECEIVED**

**9:31 am, May 23, 2012**

Alameda County  
Environmental Health

**Subject: Tract 7441–Silveria Ranch–at 6615 Tassajara Road in Dublin, Alameda County, California (the subject “Property”)**

Dear Mr. Lorenzini:

Environmental Service and Mark Armstrong, PG 6134, have prepared this letter to convey the responses to Alameda County staff’s comments contained in a letter dated May 11, 2006. Figures 1 through 4 have been prepared to illustrate the Property, former pre-grading improvements, post-grading building pads, and key locations with respect to the former underground storage tank (UST), test bores, and test pits.

1. The Levine Fricke Recon (LFR) reports were prepared for sampling conducted in November 2000 and February 2001, and the reports themselves are dated February 5, 2001, and April 16, 2001. The best available photocopies of these reports were scanned including laboratory analytical results for soil and grab groundwater samples collected from SB-1 through SB-10; soil samples collected from depths of 4, 6 and 8 feet below grade surface (bgs) immediately next to the former UST, which were labeled 0W-0N-04, 1W-0N-06, and 0W-0N-08; and, near-surface soil samples labeled HA-1, HA-2 and HA-7. Boring logs were not included in either of LFR’s reports.  
*(NOTE: Post-grading elevations have been modified during 2005-2006 in accordance with a Remedial Grading Plan. Depths in this letter refer to depths below grade surface at the time of sampling during 2000-2004.)*
2. LFR’s report dated April 16, 2001, has been scanned. Laboratory analytical test reports, tables and figures are included. Additional figures showing the relations among original site improvements, exploratory borings and test pits, the former 300-gallon gasoline UST, and post-grading improvements are presented in Figures 1-4 at the end of this letter. Based on inspection of the LFR report’s Table of Contents, there are no such sections as Sections 2.6 through 2.9. Instead, the section numbers proceed as 2.1, 2.2, and 2.3, (last section of Chapter 2.0) followed by Chapter 3.0, Sections 3.1, 3.2, etc. Also, logs for the investigative borings were not part of LFR’s report (see Item 1 above).



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3. LFR's report dated February 5, 2001, has been scanned including laboratory reports, tables and figures. Figures 1-3 and Appendix A (Laboratory Reports by Curtis & Tomkins, Ltd., Calscience Environmental Laboratories, Inc., and Environmental Micro Analysis, Inc.) are included in the scanned document.
4. LFR reported 13,000 ppb total petroleum hydrocarbons as diesel (TPHd) in the grab ground water sample collected from SB-1. A footnote to LFR's data table noted the laboratory's "Y" qualifier that the chromatogram pattern did not match a diesel pattern. The released petroleum hydrocarbon is interpreted to be aged or weathered gasoline as the analytical results detected 1,2-DCA, which was a gasoline additive added to scavenge lead and prevent fouling, and chromatogram patterns matched gasoline but did not match diesel.

The former on-site wells were scheduled for destruction and were properly destroyed in 2004 in preparation for the housing development on Tract 7441. Before well destruction, agricultural and domestic wells were sampled and tested on a voluntary basis. To clarify, test results reported in our data report dated April 27, 2004, have not been interpreted in any way, including with regard to migration of benzene or 1,2-DCA.

Grab ground water samples collected by LFR show the presence of a small plume of dissolved benzene and 1,2-DCA which extends from the former UST toward the southwest. The inferred direction of groundwater flow was illustrated by LFR in its April 16, 2001, report. The inferred direction of groundwater flow is consistent with pre-grading terrain and detected concentrations of benzene or 1,2-DCA in grab groundwater samples collected at SB-1, SB-5, SB-8, but not in the grab groundwater samples collected from SB-6, SB-7, SB-9, and SB-10.

5. A Site Conceptual Model (SCM) is presented as Attachment A. In summary, based on the available information, the SCM hypothesizes that a release occurred from the single 300-gallon UST that was de-commissioned and ultimately was removed from the Property in 2004. The former UST was de-commissioned by emptying and filling with sand. Photographs at the time of removal document presence of sand filling the UST (see Appendix B). In view of the presence of detectable concentrations of 1,2-DCA and 1,2-DCA plume "detachment" from the former UST, the release is old, most likely before 1995. In the absence of any source remaining in the soil, concentrations of benzene and 1,2-DCA are expected to have dissipated during 2000-2012 and may no longer be detectable at or above laboratory detection limits.

#### ***Available Data***

Five (5) soil samples have been collected near or beneath the former UST at depths of 4, 5, 6, 8, and 10 feet bgs. None of the soil samples was reported to contain detectable concentrations of TPHg, volatile aromatic hydrocarbons, or gasoline additives. Seven (7) grab groundwater samples have been collected at various locations directly downgradient and immediately next to the former UST (SB-1), downgradient from the former UST (SB-5 and SB-8), cross-gradient from the former UST (SB-7, SB-9, and SB-10), or upgradient from the former UST (SB-6). Maximum concentrations reported in grab groundwater samples collected in November 2000 were 71 parts per billion (ppb) as benzene, 250 ppb as ethyl benzene, 481 ppb as xylenes, 3.5 ppb as toluene, and 5.5 ppb as 1,2-DCA. All concentrations were lower than the RWQCB ESLs.



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Upper soils on the Property have been logged by ENGEO Incorporated as organic clays, clays, or silty clays of varying thickness from 4 to 10 feet. These upper soils overlie claystone, siltstone, and sandstone characterized as poorly undurated and closely fractured. First groundwater where encountered on the Property has been logged at 18.5 to 27 feet bgs (pre-grading elevation) in early spring.

**Data Used**

In place of geological information from LFR's logs, we have used alternative data available from the geotechnical investigation for Tract 7441, including logs of tests pits and bores logged by ENGEO Incorporated. Permission was given by Mr. Raymond Skinner to use the logs.

Thank you for this opportunity to continue our previous service. If you have any questions or require additional information, please contact us directly.

Sincerely,

Marc Papineau  
California REA 00791  
Project Manager

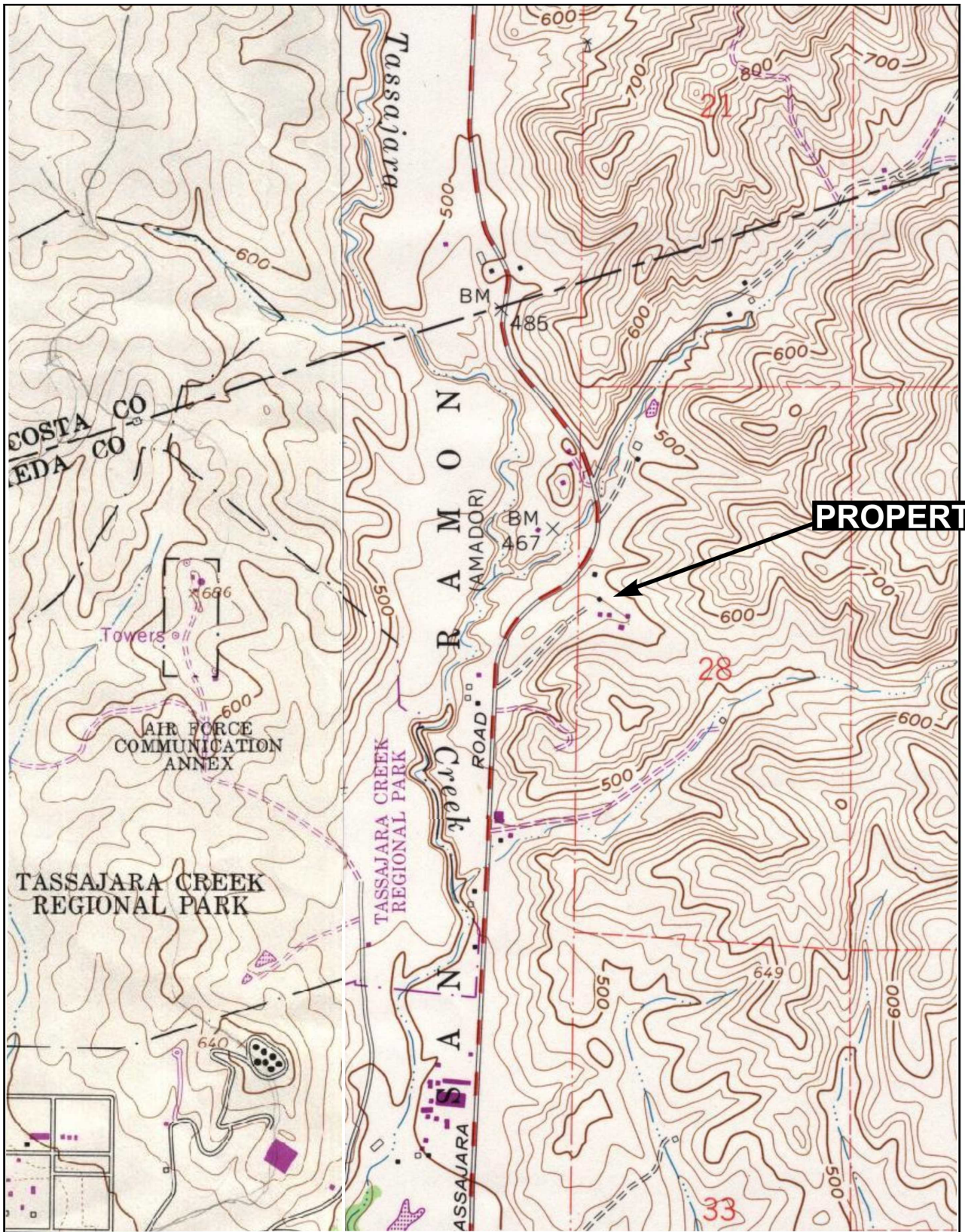


R. Mark Armstrong  
California PG 6134



Enclosures: Figures 1 – 4 (pages 4-7)  
Attachment A (Site Conceptual Model)  
Attachment B (Photographs)

cc. Ms. Cynthia L. Burch, Esq.



|  |   |   |  |
|--|---|---|--|
|  | <p><b>15</b> Years<br/> <br/>         1995-2010</p> | <p>↑<br/> <b>N</b><br/>         1:16,600<br/> <br/>         0 1000 feet</p> | <p><b>Figure 1</b><br/>         Property Location Map<br/>         6615 Tassajara Road<br/>         Dublin, California</p> |
|--|---|---|--|

**CIVIL BASE MAP SOURCE:**




Ruggeri -  
Jensen -  
Azar & Associates  
February 2004

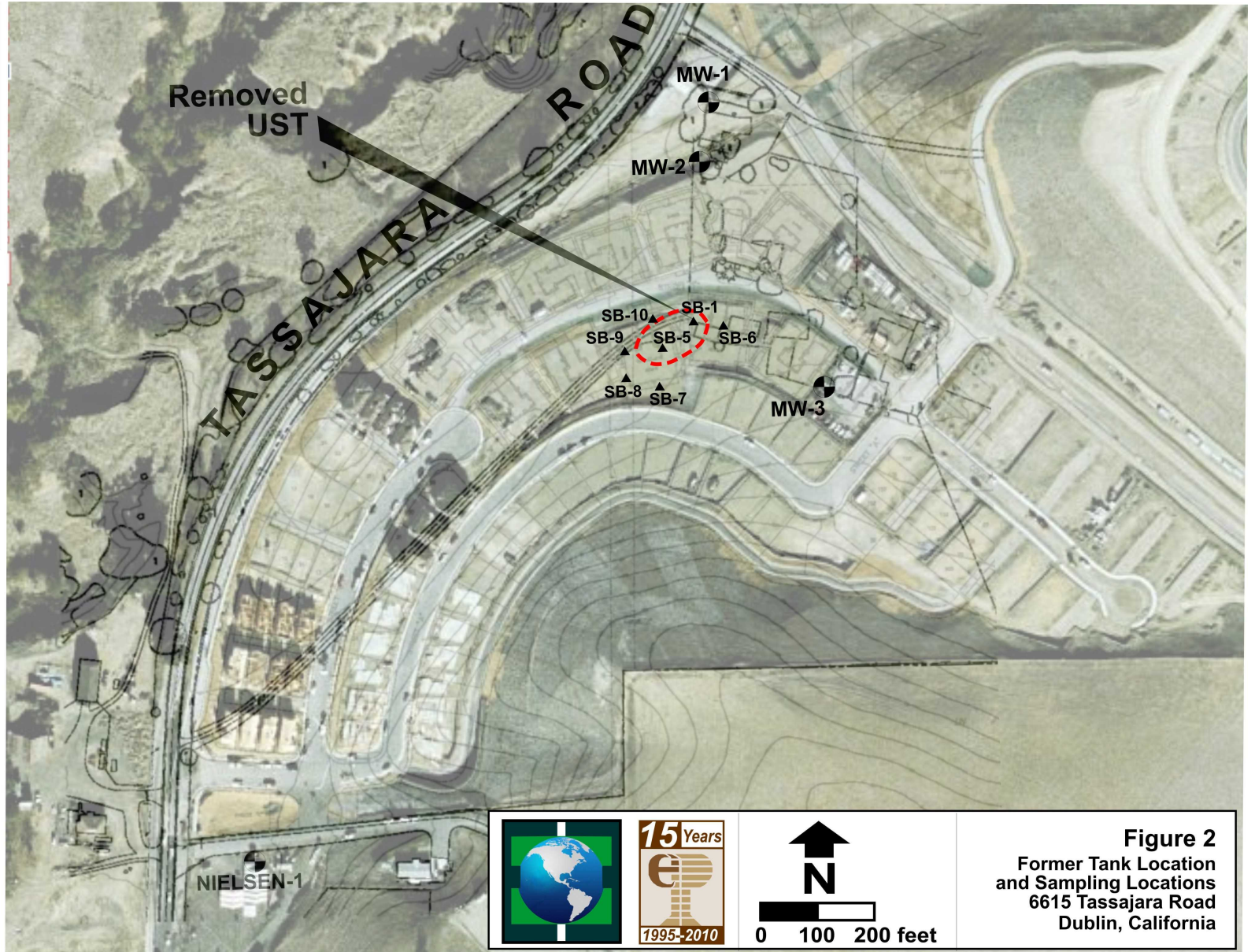
**AERIAL PHOTO SOURCE:**

TerraServer  
November 2005

NOTE:  
All locations shown are  
approximate.

**KEY**

-  Benzene 1 ppb concentration in ground water as drawn by LFR
-  Past well location
-  Grab soil or ground water sample



**Figure 2**  
Former Tank Location  
and Sampling Locations  
6615 Tassajara Road  
Dublin, California

**CIVIL BASE MAP SOURCE:**







Ruggeri -  
Jensen -  
Azar & Associates  
February 2004

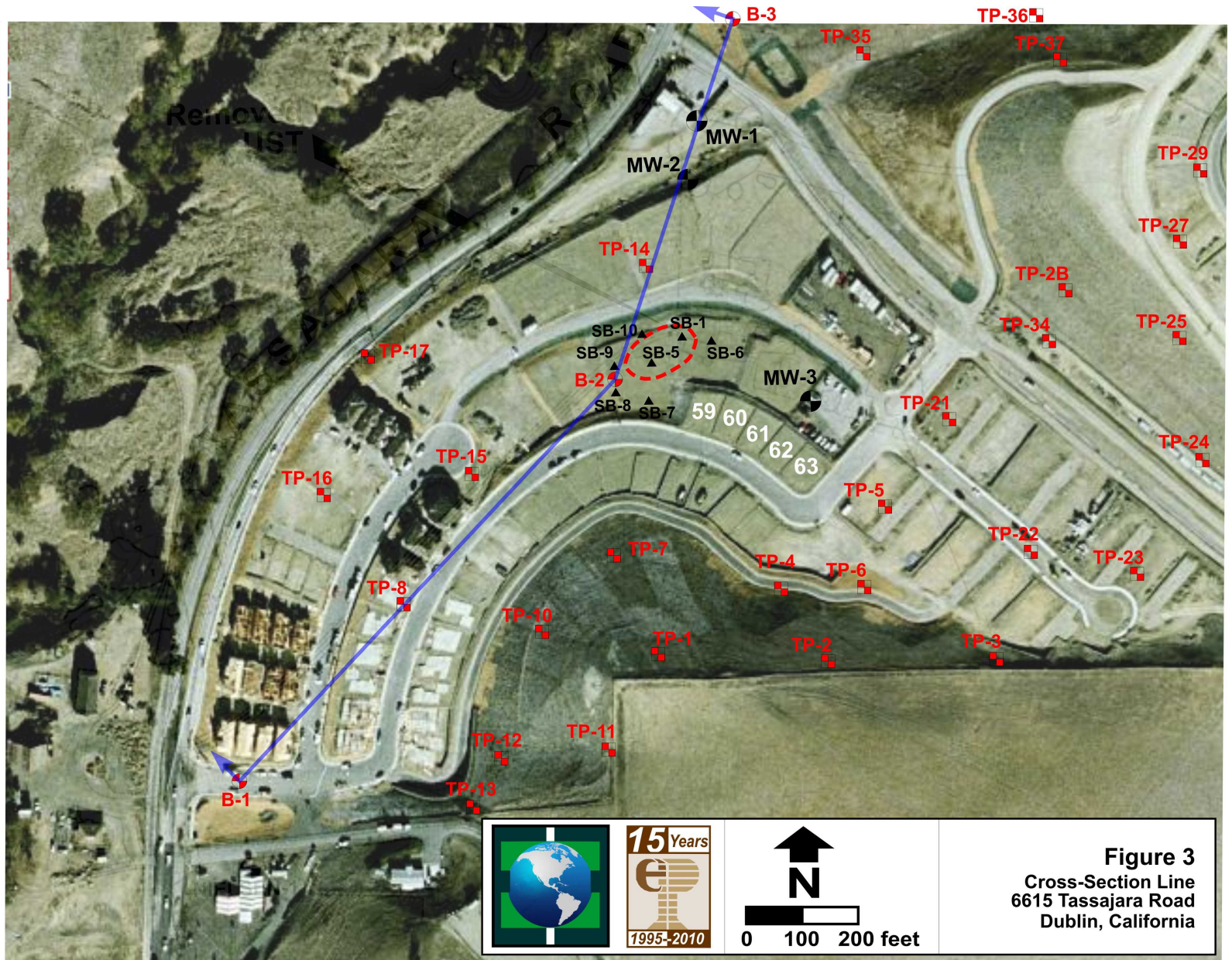
**AERIAL PHOTO SOURCE:**

TerraServer  
November 2005

NOTE:  
All locations shown are  
approximate.

**KEY**

-  Cross section line
-  Benzene 1 ppb concentration in ground water as drawn by LFR
-  Engeo test bore
-  Engeo test pit
-  Past ag well
-  Grab soil or ground water sample





Tassajara Creek

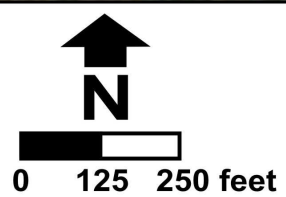
Haight house

Barn

Carport

Driveway

NOTES:  
Aerial photo date: 8-1-2002  
Scale is approximate.



**Figure 4**  
Pre-Grading Aerial View  
6615 Tassajara Road  
Dublin, California

© 2008 DigitalGlobe



6615 Tassajara Road Dublin, California  
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## ATTACHMENT A

### Site Conceptual Model<sup>version 1</sup>

Petroleum Hydrocarbon Release at 6615 Tassajara Road  
in Dublin, California

#### Current Status

The Property contains about 91 acres of former ranch land now graded or improved with a residential Planned Unit Development known as Tract 7441 in Dublin, California. The former gasoline underground storage tank (UST) was first de-commissioned by emptying and filling at an unspecified date and ultimately was removed in 2004. Former agricultural or domestic water wells were properly destroyed in 2004. These actions were performed in preparation for the housing development. The land was graded in 2005 and 2006. As part of the grading, some areas were cut and others were filled in accordance with a remedial grading plan prepared by ENGEIO Incorporated. Clean engineered fill, approximately 20 to 30 feet in thickness, was placed in the vicinity of the removed UST. Information about the subdivision and grading are from various sources including a geotechnical exploration report by ENGEIO (2001), PUD drawings by Ruggeri Jensen Azar & Associates (2003), and geotechnical monitoring and testing reports by ENGEIO (2005, 2006).

#### History

Levine Fricke Recon (“LFR”) evaluated and reported soil and ground water quality in the vicinity of the UST in two reports dated February 5, 2001, and April 16, 2001. In November 2000, soil samples were collected by LFR at proximate locations (SB-1, 0W-0N-04, 1W-0N-06, and 0W-0N-08) directly adjacent to the UST. Bore hole, SB-1 was continued to 27 feet bgs to enable collection of a grab ground water sample. Gasoline-range petroleum hydrocarbons, aromatic organic compounds and 1,2-DCA were found in the grab groundwater sample collected from SB-1 but not in the soil samples collected adjacent to the UST at depths of 4, 6, and 8 feet bgs.

The LFR reports document the drilling of borings SB-1, SB-2, SB-3, SB-4, SB-5, SB-6, SB-7, SB-8, SB-9 and SB-10. According to LFR’s report, shallow soil samples were collected at 1.5 feet bgs at SB-1, SB-2, SB-2, SB-3, SB-4, and SB-5, and shallow soil samples also were collected at HA-1 through HA-8. Only SB-1 and SB-5 were continued to groundwater in November 2000, and SB-6 through SB-10 were continued to ground water in February 2001. Concentrations of gasoline were less than detection limit and concentrations of other petroleum hydrocarbons in the near-surface samples were de minimis, where detected above the laboratory’s detection limits.

Deeper soil samples at 4, 6, and 8 feet bgs, which were labeled as 0W-0N-04, 1W-0N-04, and 0W-0N-08, were collected by LFR immediately adjacent to the UST. These soil samples were collected at the time that LFR and its subcontractor exposed the top of the tank using a backhoe on February 23, 2001. Laboratory test results for soil samples 0W-0N-04, 1W-0N-06, and 0W-0N-08, and grab ground water samples SB-1, SB-5, SB-6, SB-7, SB-8, SB-9 and SB-10 were presented in LFR’s reports.





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A ground-penetrating radar (GPR) survey was conducted to locate any other tanks. Additional tanks were not found by the GPR survey.

Deeper soil samples at 5 and 10 feet bgs, which were labeled as TP-1-5 and TP-1-10, also were collected by Environmental Service/Armstrong immediately under the UST at the time of UST removal in April 2004. Laboratory test results for soil samples TP-1-5 and TP-1-10 were less than detection limits for gasoline (TPHg), benzene, toluene, ethyl benzene, or xylenes (BTEX), MtBE, and 1,2-DCA, as reported in Environmental Service/Armstrong's data report and herein (see Table1, next page).

In summary, concentrations of TPHg, BTEX, MtBE, or 1,2-DCA, were not detected in any of the five (5) soil samples (TP-1-5, TP-1-10, 0W-0N-04, 1W-0N-06, and 0W-0N-08) collected at or very near the location of the former UST at depths of 4, 5, 6, 8, and 10 feet bgs. In November 2000 and February 2001, seven (7) grab groundwater samples were collected by LFR from bore holes SB-1, SB-5, SB-6, SB-7, SB-8, SB-9, and SB-10. Detectable concentrations were reported only in grab groundwater samples collected from SB-1, SB-5 and SB-8.

First ground water on the Property was reported by LFR in a thin sand lens at 27 feet below grade surface. The ground water samples were submitted for testing by a laboratory, and maximum detectable concentrations of TPHg were reported in the groundwater samples collected from adjacent temporarily screened bore holes SB-1 (18,000 ppb) and SB-5 (240 ppb). *(NOTE: Diesel concentrations were reported in the grab groundwater samples SB-1 and SB-5 collected by LFR; however, these results were annotated with the "Y" qualifier by the laboratory, which indicated they did not matching a diesel standard. Weathered or aged gasoline typically will have a gas chromatography response and numerical result as diesel range organics; however, this is not interpreted as a diesel release based on the chromatogram annotation and presence of gasoline anti-fouling additive 1,2-DCA.)*

Detectable concentrations of benzene were reported in the groundwater samples collected from SB-1 (71 ppb), SB-5 (3.3 ppb), and SB-8 (0.5 ppb, which is the limit of detection). Additionally, detectable concentrations of 1,2-dichloroethane (1,2-DCA) were reported in groundwater samples collected from SB-5 (5.5 ppb) and SB-8 (1.1 ppb) but not in the groundwater sample collected from SB-. LFR mapped the concentration of benzene above 1 ppb. This was a very limited footprint of about 110 feet x 70 feet.

Subsequently, in 2004, the 300-gallon underground gasoline storage tank was removed, under permit issued by Alameda County Department of Environmental Health, on April 15, 2004. Tank removal and sampling were witnessed by Ms. Bonnie Terra, Alameda County/Dublin Fire Department. Laboratory results are summarized in Table 1.

The tank was measured to be 5 feet long and approximately 36 inches diameter. It was a single-walled steel tank, in poor condition, with numerous tears and rusted through on the bottom, and it was obviously filled with sand. The tank was located outside a carport in an unpaved area (without asphalt or concrete pad), next to an unpaved gravel driveway.



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On the day of tank removal on April 15, 2004, the Photo-Ionization Detector (PID) reading inside the tank and near the sand was 0.0 parts per million by volume (ppmv). The PID had been calibrated on April 14, 2004, to an isobutylene standard, 100 ppmv.

**TABLE 1**

**Laboratory Analysis Results for Tank-Pull Soil Samples Collected on 4-15-2004**  
**6615 Tassajara Road, Dublin, California**

| Sample ID        | Analysis Results for Soil Samples Collected at Tank Removal<br>on 4-15-2004 |                 |                 |                    |                       |
|------------------|---|-----------------|-----------------|--------------------|-----------------------|
|                  | Gasoline<br>(mg/Kg)   | BTEX<br>(mg/Kg) | MtBE<br>(mg/Kg) | 1,2-DCA<br>(mg/Kg) | Total Lead<br>(mg/Kg) |
| TP-1-5           | ND  | ND (all)        | ND              | ND                 | 14                    |
| TP-1-10          | ND  | ND (all)        | ND              | ND                 | 14                    |
| STKPL-1          | ND  | ND (all)        | ND              | ND                 | 23                    |
| Reporting Limits | 1.0   | 0.005           | 0.05            | 0.005              | 5.0                   |

Source: McCampbell Analytical, Inc., DHS certification No. 1644, April 20, 2004

### **Fate and Transport**

Fate and transport of chemicals in the subsurface can be broken down into several separate process including, but not limited to, the following:

- leaching of the chemical down through the soil which is affected by soil types and adsorption;
- sorption of chemical onto soil depending on properties of the chemical and the soil;
- volatilization from free product or liquid phase into gaseous phase soil pore space;
- evapotranspiration which is affected by root growth and soil properties;
- advection with groundwater flow when the chemical impacts groundwater which is affected by groundwater flow rates and concentrations;
- dispersion which is affected by soil properties and fluctuations advection parameters (direction of ground water flow, hydraulic conductivity);
- non-advective or non-dispersive dilution during seasonal rainwater infiltration which is affected by presence of absence of a cap or cover over the source and precipitation (see also leaching); and,
- degradation which refers to chemical change, either biotic or non-biotic (hydrolysis, for example), in which pollutant concentrations decay as the original chemicals are transformed into other chemicals “decay products”).

Environmental mobility of chemicals is an important consideration in assessing or predicting exposure pathways and the human health risk of the exposure.

#### *Leaching and Dilution*

Leaching factors of a chemical downward include but is not limited to climate, soil, vegetation and concentrations of the chemical. Soil or matrix types affect the solubility of the chemical. Precipitation affects the flushing of the chemical through the soil matrix and the dilution of the chemical. Concentration, temperature and vegetation affect the evapotranspiration of the chemical. The soil or matrix and the chemical type affect the absorption of the chemical into the matrix.



Rainfall will cause the downward flushing of the chemical to the groundwater and the movement of the chemical along with the groundwater. Benzene is less sensitive to groundwater fluctuations than other chemicals (Happel et al. 1998) and typically has a more consistent concentration when groundwater fluctuates with time.

#### *Volatilization*

Volatilization results in the mass transfer from the aqueous phase to the vapor phase. Volatilization is affected by; the temperature, soil absorption and texture, depth of release, vegetation and concentration of the chemical. Benzene is volatile and readily transfers from the aqueous phase to the vapor phase.

#### *Degradation*

Degradation removes chemical mass from the system or transforms the chemicals into other chemicals, and chemical byproduct plumes may be formed. Benzene bio-remediates at different rates depending on the environment including but not limited to oxygen content. Reported intrinsic degradation rates for benzene range from 0.1% to 1% per day depending on the environment.

The lead-scavenging gasoline additive 1,2-dichloroethane (1,2-DCA) is a moderately reactive alkylating agent, thus leading to concerns about its environmental fate. Bacteria capable of metabolizing 1,2-dichloroethane have been identified. The products of dehalogenation degradation of 1,2-DCA are 2-chloroethane which degrades to chloroacetaldehyde and then to chloroacetic acid and glycolate. The rate of degradation of 1,2-DCA is believed to be typically slower than that of benzene in oxygenated environments.

### **Qualitative Conceptual Model**

The size of a chemical contamination plume reflects a balance between the rate of release of mass from a source, advection of the mass away from the source area, degradation and dispersion which remove mass and reduce plume concentration. Expansion or reduction of plume size is dependent on the balance between dissolution and advection compared to degradation and dispersion. Plume life can be viewed as follows:

1. Expansion, residual source present, mass flux exceeds attenuation
2. Stable, residual source present, mass flux in equilibrium with attenuation
3. Shrinking, residual source nearly exhausted, attenuation exceeds mass flux
4. Exhausted, average plume concentration low, final stages of source dissolution

### **Site Specific Conceptual Model**

In view of the data collected and observed condition of the sand-filled 300-gallon UST and accounts of the owner, Mr. Chris Haight, the subject petroleum release is considered to be in what is the Exhausted Stage. In soil samples collected around and under the tank the laboratories did not detect any source material (*e.g.*, petroleum hydrocarbons as gasoline or BTEX). The former UST was filled with sand and had been decommissioned by the owner years before removal in 2004. When the former UST was decommissioned is unknown, but it must have been a significant number of years before tank removal, because all of the source had been exhausted by leaching and degradation to a depth of at least 10 feet bgs.



The average 1,2-DCA and lead content in all U.S. gasoline sold after 1988 was less than 0.001 grams per liter or, equivalently, less than 1 mg/L. However, this is potentially misleading because the lead content in leaded gasoline, as opposed to all gasoline sold in the U.S., was still 26 to 210 mg/L after 1986. Certain exceptions allowing use of leaded gasoline off-road persisted into the 1990s. Practically speaking, the Clean Air Act ban on lead in gasoline was effective in 1995, leaving a 5-year phase out for refiners. Dating the time of release based on 1,2-DCA, therefore, can only be very general and approximate. This most likely year of release is prior to 1995.

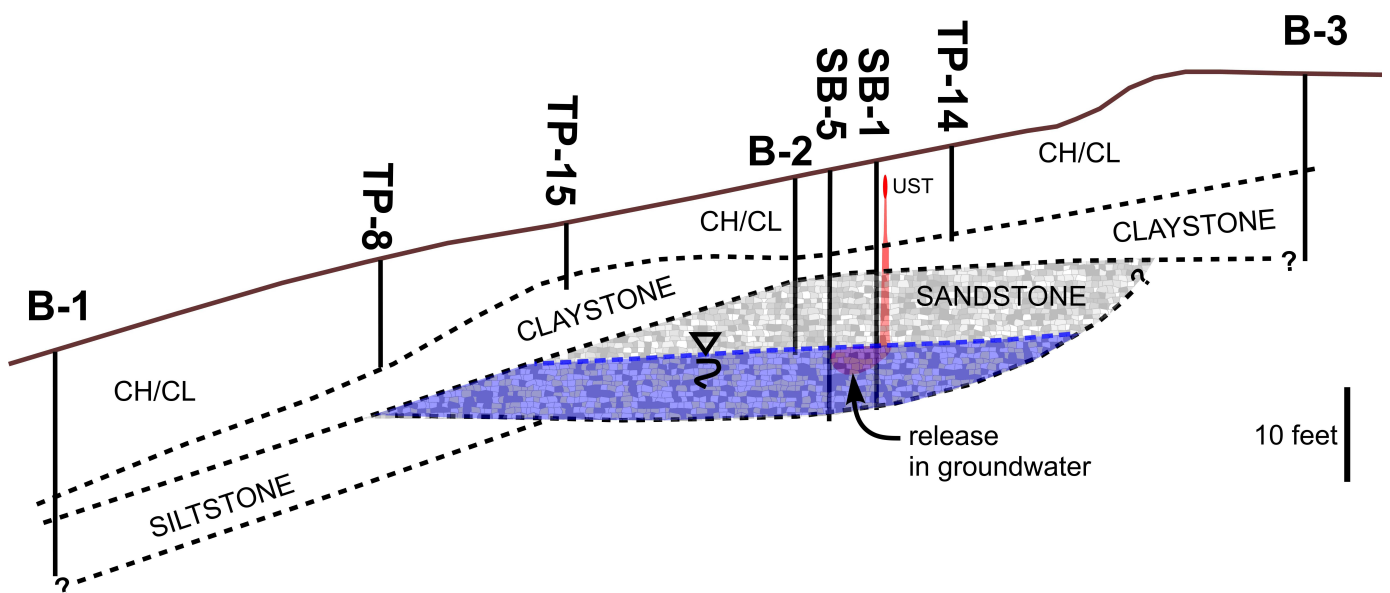
#### SOURCES:

[http://www.clemson.edu/ces/hydro/symposium/2005\\_present/Falta\\_EDB.pdf](http://www.clemson.edu/ces/hydro/symposium/2005_present/Falta_EDB.pdf)

[http://www.arb.ca.gov/fuels/gasoline/carfg1/P1\\_ch4.pdf](http://www.arb.ca.gov/fuels/gasoline/carfg1/P1_ch4.pdf)

<http://scienceprogress.org/2008/10/a-brief-history-of-lead-regulation/>

#### Idealized Cross Section



#### Source

Sampling and testing of soil samples collected around and beneath the former UST indicate that the source is exhausted. Continued degradation of the environment by the source, therefore, would be unexpected.

Assuming the source is exhausted, and in view of the concentrations reported in grab groundwater samples collected in 2001, human exposure pathways both through breathing vapors and direct contact with soil or leaching material from of the source are not credible. Direct comparisons with RWQCB screening levels for soil vapor intrusion show the vapor intrusion pathway is not credible, as reported concentrations in the grab groundwater samples are uniformly lower than the conservative levels used for screening (Table 2).



Sampling and laboratory testing performed by LFR and others at the time of tank removal indicate that the source is exhausted and that the contaminant “plume” in groundwater in February 2001 extended less than 150 feet from the original source toward the southwest.

While 1,2-DCA and benzene move generally with groundwater flow with relatively low retardation, toluene, ethylbenzene, and xylenes are highly retarded by multiplicative factors of about x 1/4 to x 1/2 relative to 1,2-DCA. For example, this means the 1,2-DCA plume could advance 150 feet while the ethylbenzene plume could advance only 40 feet. This can explain why “B” (benzene) was detected but “TEX” (toluene, ethylbenzene, and xylenes) were not detected in groundwater samples collected downgradient from SB-1. SB-5 was located about 70 feet downgradient from SB-1, and SB-8 was located about 150 feet downgradient from SB-1

In February 2001, the benzene plume extended about 110 feet southwest from the filled UST while toluene, ethylbenzene, and xylenes were not detected at any of the downgradient locations located southwest from SB-1. The 1,2-DCA plume extended slightly farther southwest to SB-8 and was already “detached” from the filled UST. “Detached” means 1,2-DCA was detected in grab groundwater samples collected from downgradient borings, SB-5 and SB-8, but the concentration of 1,2-DCA in the grab groundwater sample collected from SB-1 was less than the detection limit. The relevance of this fact is that plume detachment is typically observed after a source of release has been removed or discontinued. Plume detachment would be inconsistent with a continuing source of release from the filled UST, providing further confidence in the conceptual model that no source remains.

**TABLE 2**  
**Soil Vapor Intrusion Risk Screening Levels**  
**and Comparison to Maximum Reported Concentration in Groundwater**  
**6615 Tassajara Road, Dublin, California**

| Chemical  | ESL for GW to Avoid SVI Risk (µg/L) |            | Maximum Concentration Reported in 2001 in Grab Samples (µg/L) | Exceeds ESL? |
|---|-------------------------------------|------------|---|--------------|
|   | Residential                         | Commercial |   |              |
| Benzene   | 540                                 | 1,800      | 71  | No           |
| Toluene   | 380,000                             | 530,000    | 3.5   | No           |
| Ethylbenzene  | 170,000                             | 170,000    | 250   | No           |
| Xylenes   | 160,000                             | 160,000    | 481   | No           |
| 1,2-DCA   | 200                                 | 690        | 5.5   | No           |
| NOTES:<br>1. SVI means soil vapor intrusion.<br>2. ESL means environmental screening level. |                                     |            |   |              |
| SOURCE: RWQCB, ESLs for soil vapor intrusion pathway, 2008                                  |                                     |            |   |              |

**Groundwater Concentrations**

Groundwater pollution as mapped by LFR in 2001 had a limited footprint. This is consistent with the model that the source had been removed when the tank was originally de-commissioned years before the tank pull. Advection, decay, absorption and dilution have been reducing the plume size and this should dominate the system dynamic during the eleven years from February 2001 –



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February 2012, because the source has been exhausted. Simply put, concentrations of 1,2-DCA and BTEX in groundwater and size of the plume should, therefore, have diminished over this time.

### **Conclusion**

The site conceptual model is that the release occurred from a farm UST that was de-commissioned by emptying and filling with sand at an undetermined date before the tank was removed from the ground in 2004 and most likely before 1995. The tank was located outside a carport in an unpaved area (without asphalt or concrete pad), next to an unpaved gravel driveway. Petroleum hydrocarbons related concentrations were detected only in groundwater samples and not in any subsurface soil samples collected near or under the UST in 2001 and 2004. This is consistent with the model hypothesis that the release was old and ceased with the decommissioning of the tank. With source elimination by virtue of decommissioning the tank, plume size and concentrations should have decreased over time and possibly could be non-detectable today.

Wells associated with the former ranch and houses were properly destroyed. The land was graded in 2005 and 2006 in preparation for a housing development. As part of the grading, some areas were cut and others were filled in accordance with a remedial grading plan. About 20 to 30 feet of clean engineered fill were placed over the vicinity of the removed UST. As concentrations of petroleum residues were not detected in soil near the former UST, and as the depth to the former UST is now approximately 30 feet from existing grade surface, direct dermal contact with petroleum residues in soil is not a credible pathway for residents or maintenance workers performing landscaping or working on underground utilities. The indirect risk of soil vapor intrusion is insignificant (see Table 2). Human health risk from the groundwater, which is not being developed or used, is hypothetical and could be institutionally or voluntarily controlled (*e.g.*, by a condition, Homeowner Association covenant, deed notice or restriction).



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## **ATTACHMENT B**

### **Photographs**

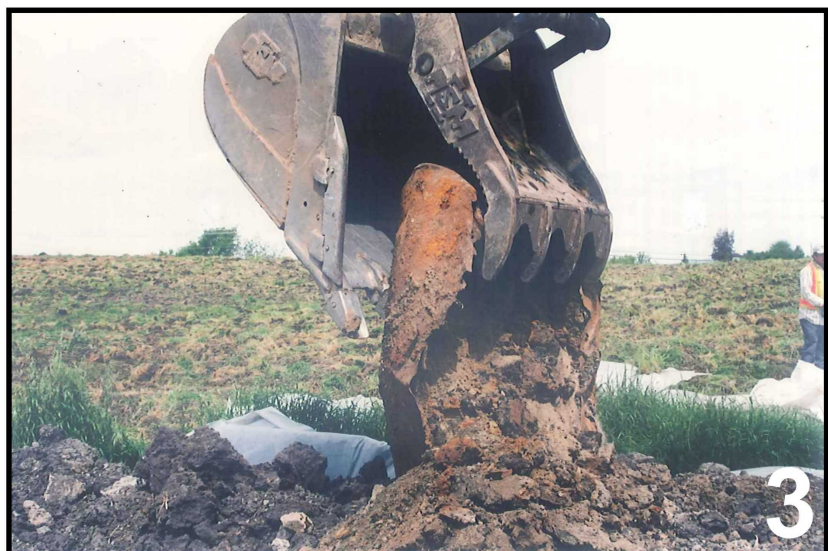
UST Loaded on the Truck  
April 15, 2004



Stockpiled Soil on Plastic  
April 15, 2004



Lifting the Tank by Excavator  
April 15, 2004





Close-Up of UST  
April 15, 2004



UST Being Lifted  
April 15, 2004



Exposed Top of UST  
April 15, 2004



Grabbing the Tank by Excavator  
April 15, 2004



Close-Up of Top of UST  
April 15, 2004



Initial Shallow Excavation  
April 15, 2004

