

ZONE 7 WATER AGENCY TOXIC SITES SURVEILLANCE 2013 ANNUAL REPORT

INTRODUCTION

Zone 7 documents and tracks polluted sites across the groundwater basin that pose a potential threat to drinking water and interfaces with lead agencies to assure the Main Basin is protected. Information is gathered from state, county, and local agencies, as well as from Zone 7's well permitting program and the State Water Resources Control Board's (SWRCB) GeoTracker website, and compiled in a GIS database. This tracking program is designated the "Toxic Sites Surveillance (TSS) Program" and a report is generated annually to give updates on the progress of the various investigations and clean-ups within Zone 7's service area.

Each site has been given a Zone 7 tracking number, which corresponds to the file number containing reports or other information about the site. In addition, all sites are reviewed and given a priority ranking based on Zone 7's assessment of the risk that each case poses to drinking water supplies. Attachment A shows the priority ranking scheme used by Zone 7. Each case is also given a status code to represent the remedial status of the site. Attachment B shows the status codes used in Zone 7's database.

Zone 7 staff may access the database at `\\zone7-file\mapinfo\Toxic\Toxsit.mdb`, using MS Access database software. The public may contact Colleen Winey at (925) 454-5064 for information regarding particular sites or to view Zone 7's Toxic Site files.

PRIMARY CONTAMINANTS

In general, the TSS program tracks two types of contamination threatening groundwater in the Livermore-Amador Groundwater Basin: fuels and industrial chemicals. The fuels are petroleum-based products that include total petroleum hydrocarbons as gasoline (TPHg), TPH as diesel (TPHd), benzene, toluene, ethylbenzene, xylenes (collectively known as BTEX), and oxygenates including methyl tertiary-butyl ether (MTBE) and tertiary-butyl alcohol (TBA). Other types of contamination, such as nitrates, are tracked as part of Zone 7's Groundwater Management Program.

A cleanup standard for TPHg or TPHd has not officially been established. Cleanup standards for TPHg and TPHd vary among the different county and local regulatory agencies, and are generally driven by the cleanup standard for BTEX and MTBE. Environmental Screening Levels (ESLs) may also be used as the cleanup goal on a site-specific basis. ESLs were established by the Regional Water Quality Control Board (RWQCB) to provide conservative screening levels for over 100 commonly found contaminants. ESLs are intended to help expedite the evaluation of potential environmental concerns at contaminated sites. ESLs address a range of media (soil, groundwater, soil gas, and indoor air) and a range of concerns (e.g., impacts to drinking water, vapor intrusion, and impacts to aquatic life). Of the BTEX constituents, benzene is considered to be the most harmful to human health and therefore has the lowest corrective

action threshold; 1 microgram per liter (µg/L) or part per billion (ppb), which is the California Maximum Contaminant Level (MCL) for benzene in drinking water.

MTBE was used as a fuel additive in gasoline between approximately 1979 and 2004; the state of California banned the use of MTBE in gasoline on January 1, 2004. MTBE is a particularly troublesome compound because it readily dissolves in groundwater creating contamination that tends to migrate faster and farther than the other fuel components. California has established a primary MCL for MTBE in drinking water of 13 µg/L (ppb) and a cleanup goal of 5 µg/L (ppb) which represents the threshold for taste and odor detection.

TBA is another oxygenate that has been detected in our groundwater basin. TBA can be manufactured and added to gasoline as an oxygenate or it can occur as a degradation product of MTBE contamination. California has established a Notification Level for TBA in drinking water and a Provisional Action Goal (PAG) of 12 µg/L (ppb) for both.

The primary industrial chemical contaminants of concern in the Tri-Valley are tetrachloroethylene (PCE), trichloroethylene (TCE), and their degradation products, such as vinyl chloride. Both chemicals are chlorinated solvents. PCE is a common chemical used in the dry cleaning of garments. TCE is a common degreaser used in the electronics, automotive and metal plating industries. The MCL for both PCE and TCE is 5 µg/L (ppb). The MCL for vinyl chloride is 0.5 µg/L (ppb). TCE, PCE, and vinyl chloride are all considered volatile organic compounds (VOCs).

UNDERGROUND STORAGE TANK CLEANUP PROGRAM

On May 1, 2012, the SWRCB adopted a Low-Threat Underground Storage Tank (UST) Case Closure Policy (Attachment C) intended to be used to allow closure of some of the low-threat cases in order to concentrate limited program funds on cases that are higher priority. The Policy includes criteria that, if met, would allow higher residual petroleum contamination to remain in soil and groundwater at certain UST or former UST sites than previously allowed while closing their cases. The criteria take into account proximity to existing supply wells and surface water bodies, but do not adequately consider future well placement or other beneficial uses. During the draft and hearing phases of the policy development, Zone 7 and others submitted written comments and oral testimony voicing concerns with the policy. However, in August 2012, the Notice of Decision was filed with the California Secretary for Natural Resources, and the Policy became effective without incorporating any of the requested changes.

In November 2012, the SWRCB approved the Plan for Implementation of Low-Threat Underground Storage Tank Case Closure Policy and Additional Program Improvements. As part of this plan, the SWRCB has been reviewing all UST cases for possible closure. This has resulted in a significant increase in case closure requests and considerations. Several of the proposed case closures are for sites that are classified by Zone 7 as “High Priority”.

2013 CASE ACTIVITY

In 2013, Zone 7 Water Agency tracked the progress of 58 active sites where contamination has been detected in groundwater or is threatening groundwater. Fourteen of these active sites have a contaminant plume which is within 2,000 feet of a municipal water supply well and are therefore classified as “High Priority” cases due to their impact or threat of impact on potable groundwater supplies. Zone 7’s database also contains 254 other contamination cases that have been either “Closed” or classified as “No Action Required” because they have been sufficiently cleaned up and/or they pose minimal threat to drinking water supplies.

Two cases, one moderate and one low priority, were added to the Zone 7 database since the publication of the Toxic Site Surveillance 2012 Annual Report in February 2013. During this same period, seven active cases were closed, and 12 more have closure requests that are being considered at the time of this report.

The locations of all the toxic sites are shown on the enclosed maps; Livermore-Figure 1, Pleasanton and Sunol-Figure 2, and Dublin-Figure 3. The maps also show each toxic site’s proximity to the Valley’s municipal water wells. Table 1 contains an informational summary for each of the 58 active sites including the case status, its priority, and which agency is responsible for providing oversight on the case. It also identifies the contaminants of concern for each case and provides brief notes regarding the case. Attachment A of this report describes the priority ranking scheme for sites and Attachment B contains the key for the Status Code designations.

New Cases:

The following two cases were added to Zone 7’s Toxic Sites database in 2013:

- Site 315: Jordan Ranch, 4233 Fallon Road, Dublin. This is a leaking UST case being overseen by ACEH. The UST has been removed and some soil and groundwater remediation has been conducted. Benzene and MTBE are present in groundwater above their respective MCLs. Quarterly groundwater and soil gas monitoring is being conducted at the site and the installation of additional soil gas monitoring wells has been approved. This site is outside the main groundwater basin and is classified as low priority.
- Site 316: Former Clorox Site, 7200 - 7208 Johnson Drive, Pleasanton. This is a solvent spill case being overseen by the Regional Water Quality Control Board (RWQCB). The case was opened in September 2013. However, a monitoring well had been installed at the site in 1997 as part of a previous investigation at the property. In 1997, TCE was detected in the monitoring well at 4,300 µg/L. During the most recent sampling, TCE was detected at 32 µg/L in the monitoring well but was not detected in any grab groundwater samples collected from temporary borings. The site is outside the main groundwater basin but the groundwater could have a beneficial use so the case is classified as moderate priority.

Case Closures:

The following Toxic Sites were granted “Case Closed” status since the last TSS Annual Report was issued. Generally, the contamination at these sites was characterized, remediated and monitored sufficiently to demonstrate that they no longer pose a risk to human health and the environment. Zone 7 Staff concurred with the lead agency’s decision to close these cases.

- Site 54: Shell #13-5783, 1801 Santa Rita Road, Pleasanton. A case closure letter was issued on March 18, 2014. This site is located over the main basin and was considered a High Priority site because it was within 2,000 feet of municipal wells Pleasanton 6 and 7. The site was actively remediated and the remaining residual contamination was shown to be stable during post-remediation monitoring. ACEH approved the case closure request after the results of Zone 7’s samples from the downgradient sentinel wells showed no signs of contamination. The contamination remaining in groundwater at the site is minimal and localized beneath the site. Staff agreed with ACEH that this site was ready for closure.
- Site 93: Chevron, #9-0917, 5280 Hopyard Road, Pleasanton. This case was closed under the State’s Low-Threat UST Case Closure Policy on October 3, 2013. The case meets the closure criteria established in the policy. This site is outside the main groundwater basin and is over 9,000 feet from the closest supply well. Staff did not oppose the closure. Residual TPHg, benzene, and MTBE remain in groundwater beneath the site at 4,600 µg/L, 24 µg/L, and 22 µg/L, respectively; however, they should continue to lessen through natural attenuation processes.
- Site 181: Unocal, #6419, 6401 Dublin Boulevard, Dublin. A case closure letter was issued on March 3, 2014. Groundwater was cleaned up to below MCLs for benzene and MTBE.
- Site 213: Parks Reserve Forces Training Area (PRFTA), 5th Street, Dublin. A case closure letter was issued on October 11, 2013. The site is a former tank farm which leaked petroleum products that contaminated soil and groundwater. Active remediation was conducted at the site but TPHd (920 µg/L), lead (83 µg/L), and arsenic (96 µg/L) remain in groundwater beneath the site. Several restrictions remain in place at the site including: 1) no residential land use is permitted at the site; 2) no shallow groundwater use is permitted at the site; 3) no grading, excavation, or subsurface activities can be conducted without a soil management plan; 4) the Regional Water Board must be notified regarding any land or groundwater use change; and 5) all monitoring wells must be decommissioned.
- Site 231: Unocal #4186, 1771 First Street, Livermore. A case closure letter was issued on January 23, 2014. The case had been considered high priority because it was around 2,000 feet from a California Water Service (CWS) municipal supply well. The case was closed under the Low-Threat UST Case Closure Policy because it meets the Scenario 2 criteria which include: a) the contaminant plume that exceeds water quality objectives is less than 250 feet in length; b) there is no free product; c) the nearest existing water

supply well or surface water body is greater than 1,000 feet from the defined plume boundary: d) the dissolved concentration of benzene (300 µg/L) is less than 3,000 µg/L, and the dissolved concentration of MTBE (170 µg/L) is less than 1,000 µg/L. ACEH also required a Compound Specific Isotope Analysis be conducted which indicated that the MTBE would continue to degrade through natural processes.

- Site 297: Pleasanton Fire Station #3, 3200 Santa Rita Road, Pleasanton. A case closure letter was issued on December 17, 2013. TPHg and TPHd remain in soil at the site at levels up to 660 and 1,200 ppm respectively. No residual contamination remains in groundwater.
- Site 304: Shell #16-5112, 4895 Hacienda Drive, Dublin. A case closure letter was issued on 11/26/13. The case was closed under the Low-Threat UST Case Closure Policy because it meets the Scenario 4 criteria. MTBE and TPH remain in groundwater; however MTBE is above the MCL only in localized areas. The site was considered low priority because it is outside the main groundwater basin.

Sites Pending Closure Review:

“Case Closure” was requested by representatives for the following Toxic Sites. At the time of this report, the Lead Agencies are considering the requests, but may ask for additional information before making their decision. Cases approved for closure by ACEH must be reviewed and accepted by RWQCB before they are officially closed.

- Site 23: South Hop Shell #13-5784, 3790 Hopyard Road, Pleasanton. ACEH is reviewing the case for closure under the Low-Threat UST Case Closure Policy. This case is designated high priority because it is within 2,000 feet of the Hopyard wellfield. The Arroyo Mocho is also downgradient from the site. Active remediation has been conducted at the site and TPH and MTBE concentrations have been significantly reduced. However, elevated TBA concentrations remain in groundwater downgradient of the site. Staff is not currently convinced the site is ready for closure and is working closely with ACEH to ensure the wellfield and arroyo are protected to the extent possible under the State Board’s Policy. More details are provided in the High Priority Sites – Pleasanton section.
- Site 73: Waste Management, 6175 South Front Road, Livermore. This case meets the criteria for Low-Threat UST Case Closure. The responsible party (RP) completed the vapor intrusion investigation requested by ACEH. ACEH agreed the site doesn't pose a risk for commercial use. If a change in land use to any residential or other conservative land use, or if redevelopment occurs, ACEH must be notified. ACEH sent out an Invitation to Comment – Potential Case Closure letter and the case closure comment period ended March 31, 2014. This site is outside the main groundwater basin and staff does not object to its closure.
- Site 96: Bay Counties Petroleum, 6310 Houston Place, Dublin. This case meets the criteria for Low-Threat UST Case Closure. ACEH issued an Invitation to Comment - Potential Case Closure and the comment period ended March 31, 2014. Active

remediation has been conducted at this site and contaminant concentrations have been reduced. This site is outside the main groundwater basin and staff does not object to its closure.

- Site 99: Arco, #6113, 785 East Stanley Boulevard, Livermore. ACEH approved the case for closure. No comments were received during the public comment period. This site is within the main groundwater basin. However, it is greater than 2,000 feet from any existing supply wells and was classified as moderate priority. In addition, the section of the Arroyo Mocho located closest to the site is a losing stream and therefore any contamination that may leave the site is not expected to be a threat to the stream. Therefore, staff could not object to its closure.
- Site 116: Rich's Chevron Service, 7007 San Ramon Road, Dublin. ACEH agreed to case closure after the results of the soil vapor survey were submitted. ACEH issued an Invitation to Comment – Potential Case Closure letter on December 19, 2013 and comments closed on February 19, 2014. This site is outside the main groundwater basin and staff does not object to its closure.
- Site 128: Laidlaw Transport, 2900 or 2908 Ladd Avenue, Livermore. ACEH had previously denied the RP's request for Low-Threat UST Case Closure Policy due to the proximity of a nearby CWS well. The nearby CWS well has since been destroyed and CWS does not plan to construct a replacement well in that area. Therefore the site now meets the State's Low-Threat Closure Criteria. This case had been designated high priority due to the proximity of municipal supply wells. More details can be found in the High Priority Sites – Livermore section.
- Site 157: Arco #6041, 7249 Village Parkway, Dublin. ACEH issued an Invitation to Comment - Potential Case Closure. No comments were received by the March 10, 2014 deadline. Closure is pending monitoring well destruction. This site is outside of the main groundwater basin and staff does not object to its closure.
- Site 195: Unocal, #7176, 7850 Amador Valley Boulevard, Dublin. ACEH issued an Invitation to Comment - Potential Case Closure. No comments were received by the January 19, 2014 deadline. Closure is pending monitoring well destructions. This site is outside of the main groundwater basin and staff does not object to its closure.
- Site 254: Mission Valley Rock & Asphalt, 7999 Athenour Way, Sunol. Case has been approved for closure with the requirement of a deed restriction and a site management plan to be in place to protect workers and visitors from the contamination that remains on site. This site is outside of the main groundwater basin and staff does not object to its closure.
- Site 290: Kinder Morgan Pipeline Leak, Iron Horse Trail, Dublin. A case closure request was submitted to RWQCB by the RP. This site is outside of the main basin and is classified as low priority. RWQCB and Zone 7 reviews are pending.

- Site 291: Perciva/Metro Valley Cleaners, 224 Rickenbacker Circle, Livermore. ACEH responded to the RP's closure request by requesting additional soil vapor sampling to confirm that soil vapor beneath the building does not pose a risk of vapor intrusion. The soil vapor sampling is pending. This site is outside of the main groundwater basin and is classified as low priority.
- Site 306: City of Dublin Civic Center, 100 Civic Plaza, Dublin. ACEH issued an Invitation to Comment - Potential Case Closure. No comments were received by the January 27, 2014 deadline. This site is outside of the main groundwater basin and staff does not object to its closure.

High Priority Sites:

The following are summaries of the "High Priority" Toxic Sites organized by the city in which they are located. A site is designated as a high priority case if the following conditions occur:

Contamination at the site is in groundwater at concentrations greater than the drinking water MCL; AND

- a) A water supply well is within 2,000 feet (ft) downgradient of the site; OR
- b) A currently used municipal or domestic aquifer is impacted or threatened by future contamination migration.

High Priority sites are typically located in the Main Basin where Zone 7 and their retailer's wells are located. However, if another type of supply well (domestic, industrial, agricultural, etc.) located outside of the Main Basin is impacted or threatened the same criteria would apply. The most recent activities are summarized in the "Current Action" sub-sections. The key for the priority numbering system can be found in Attachment A.

Livermore

SITE 62: B&C Mini Mart (Desert Petroleum)

Priority: 1A2

Background

This gas station, currently known as Valley Gas, is located at 2008 First Street in Livermore. Desert Petroleum owned and operated the site until 1994, when it filed for bankruptcy and sold the property to its current owner. The site is contaminated with TPHg, MTBE, and benzene.

Contamination was first detected at the site in 1988 in the backfill surrounding the USTs. Free product was detected in one monitoring well, MW-2. Product removal from this well began at that time and continued on a semi-monthly basis until early 1995. In March 1995, another release was reported from the site. Again free product was detected in MW-2 and product removal was performed. In 1996, all USTs were replaced with double-walled fiberglass tanks, fiberglass piping, and an automated leak detection system. Two additional monitoring wells were installed offsite at that time to further delineate the extent of the plume. Free product was detected in these wells and remedial actions were taken to remove the product from these wells.

In 1999, nine more monitoring wells were installed further downgradient to define the extent of the plume, including monitoring wells D-1 and D-2 which were completed in a lower aquifer to examine whether contamination had impacted the deeper semi-confined aquifer from which CWS wells pump.

Four multi-level wells were installed and sampled in August 2003 to replace the former long-screen wells and to help define the northern edge of the plume, leading to a site conceptual model. MTBE concentrations have fluctuated since then but MTBE was detected in the onsite well above the MCL of 13 µg/L (ppb) during a 2012 sampling event. The northern edge of the plume has migrated beyond the multi-level wells, but does not appear to be moving directly toward Cal Water's Well No. 8 (CWS-08).

A site investigation performed in March 2006 revealed a source zone area estimated to be approximately 250 feet long, extending to the northwest from the tank pit, and approximately 80 to 120 feet wide. The zone of LNAPL (light non-aqueous phase liquids or "free product") was generally confined to the lower coarse grained unit with the majority of the impacted sediment from 36 to 48 feet bgs. In August 2007, an ozone sparge/soil vapor extraction pilot test was conducted. A full-scale ozone sparge (OS) system was put into operation soon after. A rise in groundwater elevations made soil vapor extraction (SVE) less effective so the system was idled. ACEH approved an amended Corrective Action Plan (CAP) proposing target cleanup levels and an expanded SVE pilot test in September 2011 with the additional requirement of monitoring potential vapor migration. The OS system operated sporadically during 2011/12 with multiple shutdowns for maintenance and repairs.

Special Notes

Former Cal Water supply well CWS-03, the closest water supply well to the site, has been properly destroyed. However, the contamination has historically been detected within 800 feet of the next closest Cal Water municipal supply well, CWS-08, but not in samples collected from CWS-08.

Current Action

ACEH supported the RP's request for closure and issued an Invitation to Comment-Potential Case Closure letter in November 2013. During the public comment period, Zone 7 staff objected to the case closure. While the site does meet the Low-Threat UST Case Closure Policy criteria, it was based on one round of groundwater sampling. There have been fluctuations in groundwater concentrations in the past. Staff asked for confirmation sampling to be conducted prior to case closure. ACEH agreed with Zone 7's comments and has requested two additional quarters of groundwater sampling prior to reevaluating the closure request.

SITE 84: Arrow Rentals

Priority: 1A2

Background

A service station operated at the site between 1951 and 1968. In 1972, three 1,500-gallon USTs were removed from the site after they failed integrity tests. In 1985, one 1,000-gallon gasoline UST was installed in the southeastern portion of the site. Later that year, approximately 600 gallons of gasoline were accidentally dispensed into an adjacent vapor monitoring well.

Several soil and groundwater investigations were conducted between 1988 and the present, including a dual-phase extraction pilot test, and regular groundwater monitoring of several onsite and offsite monitoring wells. Investigation reports suggest that the extent of soil and groundwater impacts were limited to within 60 feet below ground surface (bgs) and up to 100 feet offsite. Groundwater monitoring reports indicate that free-phase hydrocarbons have not been observed in any monitoring well since November 2001 when 0.14 feet of hydrocarbons were measured in a well located approximately 40 feet downgradient of the impacted vapor well.

ACEH denied a request for case closure in 2005 because the contamination had not been fully characterized.

In 2006, a Dual Phase Extraction (DPE) pilot test and an air sparging pilot test were conducted at the site. Based on the pilot test results, a CAP was developed with DPE selected as the recommended remedial alternative and the possibility to add air sparging if DPE fails. The CAP was approved by ACEH in August 2007; however, installation of the DPE system was delayed until Fall 2011 in spite of several enforcement letters written to the RP by ACEH.

A DPE with air sparging system was installed and operated for 1,148 hours between Nov 15, 2011 and Feb 1, 2012. The RP shut down the system in February 2012 claiming lack of funding.

Special Notes

This site is within 2,000 feet of Cal Water municipal supply well CWS-08.

Current Action

The DPE and air sparging systems were restarted on March 21, 2012 and continue to operate. The recommendation in the 2nd Semi-annual Groundwater Monitoring & Remedial Effectiveness Report of 2013 is to continue the DPE and air sparging remediation due to its effectiveness to date. So far: 11,051 pounds (lbs) of TPHg have been removed through DPE.

SITE 111: Arco #00771

Priority: 1A2

Background

In February 1990, a limited subsurface environmental assessment conducted in the area adjacent to four gasoline USTs indicated the presence of petroleum hydrocarbon impacted soil and free product was present in groundwater beneath the site.

In December 1990, a supplemental subsurface investigation was conducted to evaluate the lateral and vertical extent of petroleum hydrocarbons in soil and ground water at the site. This investigation included the installation and sampling of monitoring wells. A sheen of free-phase product was observed in well MW-1 and 0.16 feet of product was measured in MW-2 during the first sampling event.

In 1991, an additional subsurface investigation was conducted and four additional monitoring wells were installed. Groundwater analytical results showed impacted groundwater at all the monitoring well locations. Later in 1991, a vapor extraction test suggested that SVE was an effective method to remediate subsurface soils at the site.

In April 1992 and January 1993, additional soil sampling and monitoring well installations were conducted. No hydrocarbons were detected in any of the soil and groundwater samples collected offsite.

In March 1993, an SVE system was installed. The system operated sporadically due to fluctuating groundwater conditions. The system was shut down permanently in October 1995. During its operation, the SVE system recovered a total of 56.9 lbs of hydrocarbons.

In 2006, an air sparge treatment system was installed for remediation of dissolved phase hydrocarbons. This system was operated until March 2010.

A Case Closure Request was submitted by the RP to ACEH in January 2012. The RP felt the case qualified for low-risk closure because the source has been removed, concentrations are below the draft low-risk criteria guidelines, the plume appears to be stable, and they believed there were no receptors nearby. Zone 7 notified ACEH that Cal Water operates an active municipal supply well approximately 800 feet from the site. Accordingly, ACEH denied the request for closure.

Special Notes

This site is located within 800 feet of Cal Water municipal supply well, CWS-10.

Current Action

The RP conducted a cone penetration test (CPT) investigation but was unable to collect all of the data outlined in their work plan. The RP proposed the case be reconsidered for closure under the Low-Threat UST Case Closure Policy. ACEH still feels the case is not ready for closure. The case doesn't meet the low-threat closure criteria because the plume is longer than 100 feet and there is a municipal supply well within 850 feet. ACEH requested a work plan to investigate the horizontal and vertical hydraulic gradients and the potential hydraulic connection with the nearby Cal Water well.

SITE 115: Livermore Arcade/Miller's Outpost Shopping Centers (LASC/MOSC) **Priority: 1A2**

Background

The LASC/MOSC site consists of two adjacent sites which formerly housed two dry cleaners that had various leaks/releases of PCE, a common dry-cleaning solvent, through time. In 1990, soil and groundwater investigations determined the presence of PCE and petroleum hydrocarbons in groundwater beneath the two sites. Remedial extraction wells were installed at the site later that year. In 1992, it was determined that the contamination at the LASC site had co-mingled with contamination from the dry cleaner at MOSC. Soil-vapor extraction and air sparging began in 1993 as a joint remediation effort, and continued until late 1995, when monitoring determined that the amount of PCE being extracted was no longer significant. The pump and treat extraction wells continued operations until February 1996. In 1996, a non-attainment area (NAA), with an associated risk management plan was established around the LASC/MOSC, and approved by RWQCB Order (No. 96-052). Following the establishment of the NAA, PCE contamination was detected at levels exceeding the MCL or action levels outside of the NAA, and also in minor amounts at two downgradient water supply wells operated by Cal

Water. In March 2000, the RWQCB revised the sampling requirements for the site and requested that a workplan be drafted to reinstate groundwater remediation at the site. Then in July 2003, the Water Board issued a Notice of Violation for failure to resume active remediation and submit an adequate 5-Year Status Report.

In 2004, the remedial strategy of in-situ chemical oxidation was pilot-tested using injected chemical oxidizers. Results of the pilot test showed the injection of permanganate reduced concentrations of PCE to below detection limits but a full-scale in-situ remediation project was not initiated at that time.

In 2007, a 5-Year Status Report was submitted that reported trigger level exceedences for MW-33 and CWS-14. In January 2008, Zone 7 requested that the Water Board issue a Cease and Desist Order for Violation of Order No. 96-052 and adopt a new clean up order with a more aggressive requirement for characterization and remediation. In a March 21, 2008 letter, the RWQCB approved a Contingency Plan which recalculated trigger levels of eight monitoring wells within the non-attainment area using the same method established in the original Board order, but re-calculated using data from 1992 to 2007.

In 2008, the multiple RPs collectively formed a trust, the LASC/MOSC 2008 Trust 1 (2008 Trust) to manage and coordinate the ongoing investigation and future remedial plans. In a Groundwater Investigation Report submitted in 2009, the consultant delineated the PCE plume in the shallow and deep aquifers and assessed its impact to Cal Water supply wells CWS-08, CWS-14 and CWS-31. A concept level evaluation of remedial activities was also presented in the report.

Discrete sampling near the source area to determine the vertical and lateral extent of elevated PCE concentrations (ie: greater than 50 µg/L), was performed in November 2010. Preliminary data showed that the vertical extent of the elevated concentrations was about 70 feet bgs around the source areas, though low concentrations near or below the MCL were widely scattered to about 90 ft bgs. PCE concentrations above the MCLs have migrated down gradient of the source area and are entering the top of CWS-14's well screen interval. The RWQCB required a remedial strategy be developed by March 2011 to address the elevated concentrations in the source area, the above-MCL concentrations at the distal end of the plume and measures to protect CWS-14.

In July 2011, the 2008 Trust was allowed six to ten months to complete their financial arrangements among the various trust members and to select a contractor for constructing the planned remediation system(s). In 2012, the Trust selected a new consultant who submitted a new Remedial Action Plan (RAP) for the site. The RWQCB had concerns about the RAP (as did Zone 7 and CWS) most notably: the cleanup goals for the shallow zone groundwater should have been based on drinking water standards, not vapor intrusion, and a pilot test should have been included to evaluate the effectiveness of the proposed remedial approach prior to a full-scale implementation.

Special Notes

This site is a major concern because PCE continues to impact or threaten Cal Water wells CWS-08, CWS-14 and CWS-31. CWS currently operates a granulated activated carbon (GAC) system

to remove PCE from the water produced by CWS-14 which otherwise has PCE concentrations above the MCL. The RWQCB plans to issue a new Site Cleanup Requirements Order.

Current Action

The RP's consultant revised the RAP to include drinking water cleanup goals for shallow groundwater. The RWQCB has not approved the revised RAP, but has given approval to implement portions of the RAP while its final approval is pending and the Site Cleanup Requirements Order is being revised. Some of the approved work includes: completing the data gap investigation, conducting enhanced in-situ bioremediation (EISB) and SVE pilot tests, and monitoring for potential remediation by-products. Semi-annual groundwater sampling is to continue as well.

SITE 128: Laidlaw Transport

Priority: 1C3 (closure review pending)

Background

The site is located at 2900 Ladd Avenue in Livermore and is currently occupied by Laidlaw Transit Maintenance Yard (a.k.a. the LVJUSD Bus Barn). Three former USTs were removed from the site in 1992. A fourth UST located on an adjacent LVJUSD property was also removed in 1992.

Following tank removal, numerous soil and groundwater investigations were conducted at the site to delineate the extent of impact. Groundwater monitoring and sampling continued at the site until 2003. It is unclear why the groundwater-monitoring effort was discontinued in 2003.

In November 2010, ACEH issued a Notice of Violation (NOV) to LVJUSD. In the NOV, ACEH directed that a work plan be prepared for an additional investigation to: 1) evaluate whether the existing monitoring wells act as conduits for vertical contamination migration; 2) characterize the lithologic detail and the magnitude of contamination in the shallow and deeper groundwater zones; 3) identify all water supply wells within 2000 feet of the site; and 4) comply with GeoTracker reporting requirements.

The RP submitted a Soil and Groundwater Characterization Report and Request for Low Risk Closure to ACEH in January 2012. According to the RP's report only residual hydrocarbons and BTEX remain, the plume is stable or decreasing, and the residual hydrocarbons do not threaten the public's drinking water supply. However, the report only identified one of the nearby Cal Water municipal supply wells. Zone 7 opposed closure of this case because there was another supply well (CWS-17), within 500 feet of the site, which was not previously identified by the RP. ACEH denied the RP's closure request based on this new information.

Special Notes

There were two municipal supply wells within 2,000 feet of this site. Cal Water Well CWS-12 is approximately 1,200 feet from the site. CWS-17 had been located approximately 500 feet south of the site, but was properly destroyed in February 2013.

Current Action

Cal Water determined that they would not rehabilitate CWS-17 and would not replace the well in that location. After CWS-17 was destroyed in 2013, ACEH approved the RP's closure request under the State's Low-Threat UST Case Closure Policy. A case closure letter will be issued once all the monitoring wells on site have been properly destroyed and a report submitted to ACEH.

SITE 191: Former Beacon, #3604

Priority: 1A2

Background

The site is currently an active service station and is located southwest of the Livermore Arcade Shopping Center/Miller's Outpost Shopping Center (LASC/MOSC) site (Site 115). In November 1992, three USTs were removed and replaced with new double-walled USTs. The fuel tank excavation was over-excavated removing approximately 1,200 cubic yards (cy) of contaminated soil. A confirmation soil sample contained elevated levels of TPHg, benzene, and naphthalene. Hydropunch borings were advanced to further delineate the down gradient extent of the contaminant plume. In 1995, 27 dual-completion wells (capable of soil vapor and groundwater extraction) were installed. A remediation system began operating in June 1996 and ceased in January 1997. Benzene levels had decreased from 21,000 µg/L in March 1994 to 3,900 µg/L in June 1997.

Not much progress was made between 1997 and 2003 during which time the property changed ownership twice. In September 2003, three groundwater monitoring wells were installed to determine the lateral extent of petroleum hydrocarbons. Elevated levels of TPHg were detected in 2004 and again in January 2006 which prompted ACEH to require remedial action. In September 2008, ACEH approved an Interim Remedial Action Plan to install deep monitoring wells, an oxygen injection system and an SVE system. Baseline sampling of injection wells revealed the highest concentrations of TPHg and benzene adjacent to the existing USTs. Construction of the oxygen injection and SVE systems was completed in June 2010. The SVE system operated using four wells.

In October 2010, one foot of free product was detected in injection well IP-8, which is adjacent to the existing USTs. After removal by bailing, the thickness was measured at no more than 0.02 foot. A Work Plan to perform an investigation to determine the extent of free product near the USTs was approved by ACEH.

An investigation using Membrane Interface Probe (MIP) technology was conducted in January 2011. Based on the investigation results, an offsite deep monitoring well was installed just down gradient of the USTs in April 2011. Elevated levels of TPHg (72,000 µg/L) and benzene (5,200 µg/L) were detected in the new deep zone monitoring well. Based on these elevated levels, the RP conducted an In-Situ Chemical Oxidation (ISCO) pilot test in 2012. The subsequent quarterly monitoring has shown decreases in contaminant concentrations prompting the RP to recommend continued monitoring of the groundwater and evaluation of performing ISCO events in additional wells.

Special Notes

Cal Water supply well CWS-08, is located approximately 1,600 ft down gradient from this site.

Current Actions

The RP obtained approval from ACEH for an expanded ISCO pilot test. The test was started in May 2013. The last quarterly status report was submitted in June 2013; however, the pilot test report has not yet been submitted. ACEH has issued a “Late Letter” requiring a status report to be submitted by April 30, 2014 and the Expanded ISCO Pilot Test Report by May 20, 2014.

SITE 226: Livermore Gas & Mini Mart

Priority: 1A2

Background

This gas station is located at 160 Holmes Street in Livermore. In April 1999, three gasoline USTs and one diesel UST were removed. In July 2000, three groundwater monitoring wells were installed at the site and TPHg, TPHd, benzene, and MTBE were detected in groundwater samples. At that time, the benzene and MTBE concentrations were 6,400 µg/L and 320,000 µg/L, respectively.

Three additional offsite monitoring wells and an onsite extraction well were installed at the site in 2001; however, the extraction well did not produce significant amounts of water so a groundwater extraction system was not installed. During an additional investigation in November 2005, elevated levels of TPHg, TPHd, and MTBE were detected in groundwater samples collected adjacent to the former UST pit and directly downgradient of the site in all three water bearing zones tested (at 28, 50 and 70 feet bgs).

Based on the data collected during the 2005 investigation, seven new discrete depth monitoring wells and two new extraction wells were installed in the first quarter of 2006. Additional grab groundwater samples were collected in early 2007 to help define the source area and delineate the extent of contamination. Very high MTBE and TPHg concentrations (1,500,000 µg/L and 210,000 µg/L, respectively) were detected in CP-14, located near the source area.

A DPE pilot test (a combination of soil vapor and groundwater extraction) was conducted in two new extraction wells, but there was no vapor recovery during the test so it didn't appear that SVE would be an effective remediation alternative for this site. Consequently, batch groundwater extractions began in September 2006 with ACEH approval. By the end of the first quarter of 2007, 16,652 gallons of groundwater were extracted and an estimated 0.49 lbs of TPHg, 0.033 lbs of benzene, and 2.21 lbs of MTBE were removed. An additional extraction well was installed adjacent to the location of CP-14, however a proposed groundwater extraction (GWE) only system was not approved by ACEH. As a consequence, an SVE system was approved and added in the fourth quarter of 2009. A pilot scale operation was conducted April-July 2010 resulting in a cumulative mass removal of approximately 12.95 lbs of TPHg, 0.088 lbs benzene and 44.77 lbs MTBE. The SVE system was determined to only be effective in lower groundwater elevation conditions. The SVE system has been operated intermittently when conditions are suitable.

A Remedial Implementation, consisting of three separate chemical oxidant injection events in April and May 2011 was conducted at approximately 32 locations in the area of concern. ACEH

requested that quarterly groundwater monitoring be continued at least through the first quarter of 2012 to better evaluate the effectiveness of the chemical oxidant injections. In spite of the continued monitoring request, the RP submitted a request for Low-Threat Case Closure in December 2011 which ACEH denied based on lack of plume stability and the presence of TBA beneath and downgradient of the site. ACEH also directed the RP to initiate active remedial actions to address the elevated concentrations.

Special Notes

Former Cal Water supply well CWS-03, which was approximately 1,000 feet downgradient from this site, has been taken out of service and destroyed. However, the contamination plume is within 1,500 feet of CWS supply well CWS-08.

Current Action

The RP conducted ISCO remediation at the site during the second quarter of 2013. As a result, the petroleum hydrocarbon concentrations have been significantly reduced. However, TBA concentrations remain elevated in some wells. ACEH has requested continuation of the quarterly monitoring to assess seasonal conditions but no additional remedial actions are required at this time.

SITE 238: All Rents

Priority: 1A2

Background

This site at 2247 Second Street in Livermore once housed a dry cleaner. The soil and groundwater at this site are contaminated with PCE. The RWQCB has yet to recognize this site as an official case. Contamination was detected during a Phase I/limited Phase II site assessment when the property was being sold to the present owner in 1999. PCE was detected up to 5,280 micrograms per kilogram ($\mu\text{g/kg}$) in one of the four-foot depth borings. An additional site assessment was performed in May 2000 and confirmed that the contamination had spread to groundwater. One groundwater sample at a depth of 27 ft showed a PCE concentration of 430 $\mu\text{g/L}$ and a TCE concentration of 250 $\mu\text{g/L}$. No permanent monitoring wells have been installed on the site; however, Zone 7 requested at least one downgradient well be installed subsequent to the removal of contaminated soil. The current property owner has no plans to fund clean up or investigation activities, and is researching the option of selling the property “as is.” No action has been formally requested by the RWQCB because they have not opened an official case for the site. In June 2009, Zone 7 Staff forwarded a letter to the RWQCB from the property owner indicating that prior groundwater sampling took place at the site. Information on previous dry cleaners in the vicinity from a dry cleaner survey acquired by ACEH was also provided to the RWQCB.

Special Notes

Source removal at this site could theoretically downgrade its ranking to moderate or low priority, assuming the contamination is not widespread. The property is currently occupied by “It’s All About Dancing,” a dance studio.

Current Action

Now that Potential Responsible Parties (PRP) have been identified, Zone 7 staff is urging the RWQCB to open this site as a formal case and direct corrective action. The RWQCB attributes its inactivity on this case to resource constraints. Zone 7 is considering sharing the burden of determining the potential PRP(s)'s current mailing addresses to expedite the process of opening this case.

SITE 259: Mills Square Park

Priority: 1A2

Background

This former service station site is the current location of the City of Livermore's Mills Square Park. Aerial photos indicate that the site was a retail service station from 1959 to 1973.

In 2003, a Phase I investigation and a subsurface soil and groundwater investigation were performed at the site as part of the City of Livermore's "due diligence" assessment of the property prior to their purchase. The latter investigation detected TPHd up to 42,000 µg/L, TPHg up to 18,000 µg/L, and benzene up to 140 µg/L in groundwater beneath the site.

In 2006, an additional soil investigation confirmed that TPHd and TPHg existed in soil above their respective ESLs. A geophysical survey revealed that two USTs remained at the site. These two tanks and their associated piping were removed in 2007, however, the soil samples collected during the tank removals indicated that TPHd and TPHg remained onsite above their ESLs. Groundwater samples were not collected in either of these investigations.

In 2008, another investigation was performed including soil, soil vapor and grab groundwater sampling, and the installation of three groundwater monitoring wells. TPHd up to 52,000 µg/L, TPHg up to 18,000 µg/L, and benzene up to 14 µg/L were detected in groundwater beneath the site. No fuel oxygenates (such as MTBE), were detected in any of the groundwater samples collected.

In 2010, three perched zone and six deeper zone (approximately 54 to 59 feet bgs) monitoring wells were installed to further define the extent of contamination at the site. ACEH requested that a Pilot Test Work Plan or CAP be submitted by the City of Livermore to start remediation activities at the site. In 2012, feasibility testing was conducted for enhanced bioremediation using a sulfate canister in an existing monitoring well and applying calcium sulfate dihydrate (agricultural gypsum) over the landscaped area of the park to increase the amount of sulfate in the shallow water-bearing zone. Three additional monitoring wells have been installed to monitor the effectiveness of the sulfate applications in reducing the TPH and benzene concentrations in groundwater at the site. A Human Health Risk Assessment (HHRA) prepared by the City of Livermore's consultant concluded that the levels of lead present in shallow soils would be acceptable for a child visiting the site as well as for an adult worker at the site. ACEH didn't accept the conclusions and is requiring that the shallow soil be removed. Lead was not detected in groundwater at elevated levels.

Special Notes

This site is approximately 1,500 feet from a municipal supply well operated by Cal Water, CWS-12.

Current Action

The City of Livermore performed sulfate applications to the site in September and October 2013. ACEH approved a work plan for the removal of near-surface soils at the park. The exact depth of the soil removal will be determined when the grading plans are finalized. Quarterly groundwater monitoring will continue at the site and the effectiveness of the sulfate applications will be evaluated.

Pleasanton

SITE 23: South Hop Shell

Priority: 1C3 (closure review pending)

Background

This Shell gas station is located at 3790 Hopyard Road, on the corner of Hopyard Rd. and W. Las Positas Blvd.; approximately 1,500 feet northwest of Zone 7's supply well Hopyard No. 6. In 1987, the first two of many monitoring wells were installed. Detections of TPHg and BTEX constituents caused Zone 7 to request additional monitoring wells. Three monitoring wells were installed in early 1988. Beginning in May 2001, periodic mobile groundwater extraction was conducted on several monitoring wells. The mobile groundwater extraction events were discontinued after the installation of a fixed GWE system in July 2003.

Between 2002 and 2005, site investigation work was conducted, including the installation of additional soil borings and monitoring wells to help define the extent of contamination off-site. Groundwater samples were collected from three separate water-bearing zones in the nine soil borings. Most of the detections of MTBE and TBA were in the first water bearing zone, approximately 15 to 20 feet bgs. However, these contaminants were also detected in three of 16 samples collected below the clay aquitard identified at around 50 feet bgs.

MTBE was not detected in the downgradient monitoring wells installed along the Arroyo Mocho; nor have any of the samples collected to date from the Arroyo indicated that surface water quality has been impacted by the release.

In all, the groundwater extraction and remediation system removed 7.96 lbs of hydrocarbons and 15.6 lbs of MTBE since the activation of the fixed GWE system on July 1, 2003, while influent concentrations decreased, from 3,400 ppb of MTBE in July 2003 to 2.9 ppb in March 2006. After approval from ACEH, the groundwater extraction system was shut down in May 2006 to monitor groundwater quality under non-pumping (equilibrium) conditions. Since May 2006, the concentration of TBA in downgradient, off-site well MW-6 increased from 212 ppb in April 2006 to 7,100 ppb in November 2009. While the GWE system may have been controlling plume migration, it was not achieving much mass removal.

In 2010, the State's UST Cleanup Fund performed a case review of all sites in their program and this site was considered for case closure. ACEH and Zone 7 successfully argued against the State's closure proposal. Subsequently, a Work Plan for a Feasibility Pilot Study of magnesium sulfate injection was submitted to ACEH in May 2010. Following approval, magnesium sulfate was applied to two onsite wells in the vicinity of the existing USTs. Although preliminary results indicated limited success in contaminant reduction, the specific results suggested that

magnesium sulfate injection is a viable remedial method, but that volume and frequency of application needs to be fine-tuned.

In April 2011, the RP submitted a CAP that recommended monitored natural attenuation (MNA) as the preferred remedial alternative. ACEH disagreed with the proposed alternative because of the increasing trend of TBA in downgradient well S-6. In 2012 ACEH agreed to reduce the groundwater monitoring schedule to annual sampling for all wells except well S-6. Well S-6 will continue to be sampled quarterly to assess the increasing trend of TBA concentrations.

Special Notes

The contamination appears to be approximately 1,100 ft from Zone 7's municipal supply well Hopyard Well No. 6. Very low levels of MTBE detected in Hopyard Well No. 6 during Zone 7's aquifer storage recovery (ASR) project conducted in 2001 are attributed to low levels of MTBE present in the surface water injected into the well and not from this site.

Current Action

ACEH is reviewing the case for closure under the Low-Threat UST Case Closure Policy. The RP has predicted that the groundwater concentrations will all reach water quality objectives (WQOs) by 2021 with the exception of one well. The TBA in well S-6 is predicted to reach WQOs by 2053. Groundwater monitoring was suspended during the closure review; however, the RP conducted a special sampling event on seven select wells for MTBE and TBA to confirm the trend in MTBE concentrations. Staff is not currently convinced the site is ready for closure and is working closely with ACEH to ensure the wellfield and arroyo are protected.

SITE 60: Former Steve's Exxon, #7-3399

Priority: 1A2

Background

This former Exxon gas station is located at 2991 Hopyard Road on the corner of Hopyard Rd. and Valley Ave. Pleasanton Well No. 7 is 250 ft from the site but has not operated since 1993. Zone 7's Hopyard Well No. 9 is 950 ft from the site. Contaminants at this site include TPHg, MTBE, and benzene. Quarterly groundwater sampling was initiated after free product was detected in an onsite well in 1988. Groundwater extraction and vapor recovery began shortly after and continued until June 1990 when it was terminated due to dropping groundwater levels. Vapor extraction methods were used intermittently to remove hydrocarbons from the subsurface until March 1993. In general, the majority of contamination was found in a perched aquifer that is encountered at a depth of approximately 10 ft. Some elevated levels of MTBE are documented in the 'Zone 1' aquifer at a depth of approximately 55 ft. In August 2000, three additional monitoring wells, two deep (up to 135 ft below grade) and one intermediate (70 ft below grade), were installed offsite to determine the extent of contamination and to serve as sentinel wells for municipal supply wells Pleasanton Well No. 7 and Hopyard Well No. 9.

Active groundwater remediation was restarted in March 2001. The groundwater extraction system targeted the perched (10 feet bgs) and "Zone 1" (55 feet bgs) aquifers. In March 2004, ExxonMobil requested authorization to shut down their groundwater extraction system citing low flow rates, low influent concentrations and low mass removal rates. The groundwater

extraction system was shut down in October 2004 to monitor the groundwater under non-pumping conditions after having removed a total of 0.0078 lbs of benzene and 0.782 lbs of MTBE. The groundwater extraction system was restarted in February 2007 due to trigger levels being exceeded for three consecutive quarters. As of September 2012, almost twelve million gallons of groundwater have been extracted and treated resulting in the removal of 12 lbs of TPHg, 0.24 lbs of benzene, and 13 lbs of MTBE.

An Additional Soil and Groundwater Investigation was conducted in February 2011 to further characterize the vertical extent of MTBE in the source zone especially between the perched zone and “Zone 1.” MTBE was detected in all nine soil borings and groundwater samples. In November 2012, ACEH approved the RP’s workplan for an SVE feasibility test but was unable to issue directive letters because the SWRCB had started the case closure process. The SWRCB determined that the case was ready for closure over objections by ACEH.

Special Notes

MTBE has never been detected in Hopyard Well No. 9. Hydraulic communication between Zone 7’s Hopyard 9 and the sentinel wells was confirmed in 2002. Some minor detections of MTBE had been reported in the sentinel wells in the past but they are thought to be from cross contamination during sampling and no contamination has been detected in these wells recently. Pleasanton’s Well No. 7 has been idle since 1992; however, there is potential that the well may be rehabilitated and put back in service due to the current drought conditions.

Current Action

The SWRCB had started the closure process for this site over objections by ACEH who was overseeing the case. During the public comment period, ACEH, Zone 7, and the RWQCB submitted comment letters opposing case closure at this time. Based on the information provided to them, including the drought emergency and the potential for putting Pleasanton’s Well No. 7 back online, the SWRCB decided against case closure at this time and has given directive power back to ACEH.

SITE 242: Alameda County Fairgrounds **Priority: 1A1**

Background

The Alameda County Fairgrounds is located within the Bernal Subbasin and is considered to be a small public supplier of drinking water. In December 2000, PCE was detected in the main fairgrounds well 3S/1E 20B 2 (20B2) at 5 ppb, which is the MCL established by the State. In early 2001, the well was resampled and the PCE level had risen to 16 ppb. This 500-foot deep well is within 7,000 feet of the Hopyard Well Field and within 4,000 feet of the San Francisco Public Utility Commission’s (SFPUC) well field, and is screened from 218 to 500 feet bgs. This interval overlaps the screened intervals of the municipal water supply wells in the vicinity; however, PCE contamination has not been detected in the municipal supply wells.

Zone 7 staff requested that the RWQCB make this site an official “Spills, Leaks, Investigations, and Clean-ups (SLIC)” case; however, they have been reluctant to do so without the source of contamination being identified. There are several active and former dry cleaners in the area;

however, the source of the PCE contamination has not been determined. PCE is continuing to be detected in the Fairgrounds Well, and there is some concern these concentrations could be trending upward. In 2001, Zone 7 staff sampled and analyzed a few monitoring wells existing in the area for general VOCs in an attempt to identify the source/direction of the PCE plume, but PCE was not detected in any of the samples collected.

Special Notes

Under the direction of the Department of Public Health (DPH), the Fairgrounds installed a wellhead treatment system (i.e., GAC filtration system) in June 2001. The well and treatment system are still in operation.

Current Action

Zone 7 is continuing its effort trying to convince the RWQCB that this site should be made an official SLIC case. In 2012, staff applied for a Department of Water Resources' (DWR) Local Groundwater Assistance (LGA) grant to identify potential sources of the PCE contamination detected in the Fairgrounds supply well. The application was not selected for a grant but staff will continue to look for opportunities to fund this project.

SITE 245: Hopyard Cleaners **Priority 1A2**

Background

The Hopyard Cleaners is located at 2771 Hopyard Road in Pleasanton, just southeast of Site 60, Former Steve's Exxon. VOCs were detected in two soil samples and one groundwater sample collected from beneath the concrete floor in April 2002. During a follow-up investigation in April 2003, four groundwater samples were collected from beneath the dry cleaners. PCE and its breakdown byproduct, TCE, were detected in all four groundwater samples collected. Investigations conducted between September 2003 and May 2004, detected PCE and TCE up to 3,300 µg/L and 440 µg/L, respectively in groundwater samples collected near the dry cleaners. The MCLs for PCE and TCE are both 5 µg/L.

Further investigations in January 2006, found dense non-aqueous phase liquid (DNAPL) is present at the site within the silt/clay confining zones beneath the water bearing zones. In September 2006, the RWQCB adopted a tentative order requiring the RP to finalize the site investigation, implement interim remedial actions, and propose final remedial actions.

Between 2007 and 2008 additional monitoring wells were installed and sampled both on and off-site. PCE was detected above the MCL in two zones between 20 and 60 feet bgs both on- and off-site, but not in samples collected from the residential area beyond Hopyard Road.

As a consequence, RWQCB issued Board Order R2-2008-0032 which set final site cleanup standards and required additional site investigation, implementation of a cleanup plan, and long term groundwater monitoring. RWQCB also approved a Work Plan for a SVE Treatment System using five SVE wells. Installation and startup of the SVE System was initiated in August 2008. With elevated levels of PCE in shallow groundwater, the RWQCB issued a deed restriction, which prevents use of shallow groundwater beneath the site, and prohibits sensitive

uses of the site such as day care or residential use during the remediation. Since the start of its operation in 2008, the SVE system has removed approximately 22.24 lbs of VOCs, and the groundwater-VOC plume appears to have stabilized.

A pilot study conducted in May 2010 to evaluate EISB as a method to treat the groundwater zones was successful. Third quarter 2010 performance monitoring results indicated decreasing concentrations of TCE and PCE, while concentrations of degradation products (cis 1,2-DCE and vinyl chloride) increased.

A full-scale EISB remediation program was implemented in July 2012. The program included injecting molasses into 13 injection wells. The remediation has reduced the concentrations of the original contaminants PCE and TCE. The breakdown products, including cis-1,2-DCE and vinyl chloride, are still present at elevated concentrations.

Special Notes

At this time, no outside funding source is available to assist with the investigation and clean up of “dry cleaner” cases.

Current Actions

The RWQCB has been discussing case closure options with the RP. They have requested an air and soil vapor investigation to evaluate potential vapor intrusion hazards. Groundwater monitoring is continuing on a semi-annual basis at this time.

Sunol

SITE 250: Sunol Tree Gas Station

Priority 1A1

Background

Five 15,000-gallon gasoline USTs were removed from the site in April of 2002. During the tank removal approximately 4,000 cubic yards of contaminated soil were over excavated from the pit and approximately 160,000 gallons of water impacted by hydrocarbons were removed. The onsite supply well was tested and no fuel contaminants were detected. However, elevated MTBE and TPHg concentrations were detected in soil and groundwater samples collected from borings drilled near the former USTs.

In February 2003, MTBE was detected in a domestic supply well located on the property adjacent to the Sunol Tree Station at 130 µg/L. A temporary water treatment system was installed on the neighbor’s impacted well in late 2003, but the gas station owner did not comply with ACEH’s further site characterization directives, so the contamination investigation was taken over by ACEH as an Emergency, Abandoned, Recalcitrant (EAR) UST Account.

In July 2004, ACEH installed three nested piezometers on the impacted property to help characterize the extent of contamination, and in December 2004, a new domestic supply well was installed on the neighboring property to provide a clean drinking water source for its residents. Multi-level piezometers that transect the plume were also installed in December 2004. Samples collected from these piezometers detected MTBE at levels up to 320 µg/L.

The original domestic supply well on the adjacent property continued to pump and treat the groundwater, using granulated active carbon filters, as a remedial action. However, in July 2010, ACEH issued a Notice to Comply to the new property owner and stated that the current pump and treat system was not an acceptable remedial strategy for the site. A Draft CAP screening viable remedial options was submitted to ACEH in December 2010.

In November 2011, ACEH approved the RP's Interim Remedial Action Plan (IRAP) addendum with one addition: if toxic daughter products are detected above ESLs, ACEH must be notified immediately, and contingency actions must be taken as outlined in the plan. An ozone sparging pilot test was initiated at the site in 2012. ACEH transferred oversight of the case to the RWQCB in May 2012.

Special Notes

Although this site is outside of the Main Groundwater Basin, it is within the area covered by Zone 7's Groundwater Management Plan. It is classified as a high priority site because it has impacted a domestic water supply well. A wellhead treatment system was installed at the impacted well. MTBE was not detected in any of the other water supply wells on the surrounding properties.

Current Actions

The results of the ozone sparging suggest that the contaminant concentrations have been significantly reduced. TPHg was now only detected in one well that is over 500 feet downgradient from the source area (PZ-2b). TPHg was not detected in any of the transect wells located between the source area and PZ-2b. The detection in PZ-2b may be the result of a separate release. MTBE and TBA levels are decreasing and are close to their ESLs in the wells just upgradient from the T-Bear Ranch supply well. This case does not qualify for closure under the Low-Threat UST Case Closure Policy because there is no public water system serving the area. However, the RP has requested closure under SWRCB Resolution 92-49 (Policies and Procedures for Investigation and Cleanup and Abatement of Discharges under Water Code 13304). RWQCB has not yet responded to the request.

Dublin

Although several sites in Dublin have elevated levels of MTBE (i.e., >10,000 ppb) and one has elevated levels of TCE, none are classified as High Priority because they are not near drinking water supply wells.

Other Special Sites:

The following sites are not listed as high priority sites for the endangerment of the Livermore-Amador Valley Municipal Supply; however, these sites have a high profile due to media attention, recent activities, and/or local involvement. They are not considered to be high risk to drinking water because they either are in non-municipal supply areas of the groundwater basin and/or have undergone extensive remediation.

SITE 1: Lawrence Livermore National Laboratory (LLNL) Priority 3A1

LLNL is a multipurpose research facility owned by the U.S. Department of Energy (DOE) and run by a management team which includes Bechtel National, University of California, Babcock and Wilcox, Washington Division of URS Corporation, and Battelle. Prior to its current use, the site was a Naval Air Station where aircraft maintenance was performed. The site was added to the National Priorities List (NPL) in 1984 and Superfund activities began at this time to address westward migrating VOCs present in the groundwater. An annual environmental report is produced by LLNL to update monitoring and remedial activities that are continuing at the site. Copies of this report and other environmental publications can be accessed via the Web at www-envirinfo.llnl.gov.

Since remediation began in 1989, through 2012, approximately 3,045 kg of VOCs have been removed from soil vapor and groundwater. In 2012, concentrations continued to decrease in most of the Livermore Site VOC plumes due to active remediation and the removal of more than 76 kg of VOCs from both groundwater and soil vapor. Groundwater concentration and hydraulic data indicate subtle but consistent declines in the VOC concentrations and areal extent of the contaminant plumes in 2012. Hydraulic containment along most portions of the western and southern boundaries of the site has been maintained. The latest results will be published in LLNL 2013 Annual Report due in Spring 2014.

Site 300, LLNL's Experimental Test Site, is located 12 miles east of the Livermore site in the Altamont Hills of the Diablo Range in San Joaquin and Alameda Counties. The major contaminants of concern at Site 300 are VOCs (primarily TCE), nitrate, perchlorate, RDX, tritium, depleted uranium, and metals. Site 300 is located outside of the Livermore Valley groundwater basin. The contamination plumes at Site 300 have been clearly defined and are part of an ongoing monitoring and remediation program. Annual Reports are forwarded to Zone 7 on a regular basis.

SITE 5: Sandia National Laboratory (SNL)
Priority 3A3

SNL consists of two sites of concern that are monitored on a quarterly basis: Navy Landfill and Fuel Oil Spill Site. Both sites are outside of the Main Groundwater Basin but within the area covered by Zone 7's Groundwater Management Plan. The Navy Landfill was operated from 1942 to approximately 1960, and received construction debris and soil.

Carbon tetrachloride was detected in one monitoring well at the Navy Landfill (NLF-6) in 1998. The RWQCB approved closure of the case in 1998 with conditions, including the monitoring of well NLF-6.

A diesel fuel spill occurred in 1975 at the Fuel Oil Spill Site (FOS). SNL began monitoring this site in 1985 and detected low levels of contamination. A cleanup system was installed and in 1995, bioremediation was begun. In 1999, the RWQCB allowed active remediation to cease and monitoring to continue at a reduced scale.

Sandia currently samples seven groundwater monitoring wells (two at the Fuel Oil spill site on a semi-annual basis, one at the Navy Landfill site and four along the Arroyo Seco to monitor the effect of site operations on groundwater on an annual basis). Water samples were not collected at the Fuel Oil Site for six consecutive years due to dry well conditions. The two original wells were destroyed and new deeper wells were installed and sampled in 2011. Both wells were sampled twice in 2012. TPHd was not detected in either well. The latest results of the annual sampling event at the Navy Landfill detected 1.7 µg/L of tetrachloride which is down slightly from 2011 (1.8 µg/L) but is above California's MCL of 0.5 µg/L. There was no TPH or metals above their respective MCL detected in any of the Arroyo Seco wells. An annual environmental report is produced by Sandia National Labs to provide a summary of environmental management performance and compliance efforts at its facilities. The 2013 report is due out in June 2014. The current and past reports can be accessed at www.sandia.gov/news/publications/environmental/index.html.

SITE 11: Intel Fabrication Plant 3
Priority 2A3

Intel owned and operated a semiconductor manufacturing plant at this location from 1972 to 1995. The VOC contamination is thought to have originated from a basement storage area. It is suspected that the VOCs leaked through a sump in the concrete floor. Groundwater monitoring began in 1982. In 1983, limited source removal was conducted of the subsurface soil. In 1986, a groundwater extraction and treatment system was installed and began operating onsite. In 2000, additional source area remediation of soil and groundwater was conducted to further reduce the contamination at the site. Groundwater extraction was discontinued in May 2000 after the source area remedial action began, and monitoring and contingency plans were prepared for the site. In 2003, Intel implemented an EISB project in the A-zone area in the northwestern portion of the site.

In December 2004, an Order to Amend Final Cleanup Requirements was adopted by the RWQCB. The amendment states that Intel is still responsible for site cleanup even though Mines Road, LLC has acquired the property. Following the Enhanced In-situ Bioremediation, the consultant reported a 99% reduction of VOCs in this area from 2003 to 2005. In 2005, Intel expanded these remediation measures into the B-zone area, also located in the northwest portion of the site.

The extent of the plume has been defined and monitored natural attenuation continues as the final remedial alternative for cleanup at the site as specified in RWQCB Order No. R2-2002-0053. However, in September 2012 the RP voluntarily installed a Groundwater Extraction and Treatment System using one well at the site to help expedite the groundwater cleanup. The VOC concentrations appear to have decreased as a result of this additional remediation effort. A deed restriction has been drafted to prohibit the use of groundwater until the MCLs are met and restricts the site use to industrial/commercial. The 2013 Five-Year Status Report indicates the RP will be asking the RWQCB to consider case closure after the deed restriction is finalized.

SITE 137: Busick Gearing
Priority 2A3

This site at 6341 Scarlett Court in Dublin consists of three buildings located within a light industrial/commercial area. The site was originally occupied by a metal fabrication company and then by a company that manufactured printed circuit boards. Building 2, located in the southern part of the site, had a sump that was used to collect excess fluids from the various manufacturing processes. Various VOCs leaked from this sump into the underlying soil, and then migrated to the groundwater. Contaminated soil in the sump area, was over-excavated in 1991 to a depth of 6 feet to achieve source removal; however, CPT/grab groundwater sample data collected in 2006 indicate that TCE exceeding 200 ppb extended across Interstate 580 to the south. An additional investigation to further delineate the extent of contamination was conducted in 2008. The results of the investigation were submitted in a technical report in June 2008; however, the RWQCB stated that the investigation was inadequate because it did not address the full vertical extent of the plume.

A work plan for additional subsurface investigation was submitted to the RWQCB in July 2012 and approved. The proposed investigation includes collecting both soil and groundwater samples at the source area and at the leading edge of the plume. The investigation summary reports were due in September and December 2013. To date, no reports have been submitted to GeoTracker for this work. A Supplemental Remedial Investigation Work Plan was submitted to the RWQCB in March 2014. This work plan includes additional soil and groundwater sampling in the source area, as well as an investigation into possible off-site sources that could be contributing to the contamination beneath the site.

SITE 290: Kinder Morgan Pipeline Leak
Priority 3A3

On June 15, 2006 residents of Dublin in close proximity to the South San Ramon Creek complained about a gasoline odor. A subsequent investigation by crews from Dublin Public

Works and Kinder Morgan revealed that a leak of approximately 200 gallons of refined petroleum had been released from a pipeline along the Iron Horse Trail midway between Alcosta and Amador Valley Blvd. The City of Dublin oversaw the emergency clean-up, and the RWQCB is the lead agency for the remaining investigation and cleanup. As part of this investigation and cleanup, 21 temporary wells were sampled during the fourth quarter of 2006. The concentrations of TPHg and BTEX have remained steady or decreased in all but one well, Pit-1. In August 2007, the consultant submitted a Comprehensive Site Status Report and a Request for Closure which was denied by the RWQCB. RWQCB then required that a workplan for additional investigation to determine the extent of contamination and establish quarterly monitoring of all existing monitoring wells at the site, commencing with the first quarter of 2009 be prepared. Discrete groundwater samples during the 1st quarter of 2009 revealed significant residual concentrations of total petroleum hydrocarbons and BTEX compounds in groundwater where three pits were excavated as part of the emergency cleanup action. Subsequently, the RWQCB issued a letter, requiring another Work Plan be prepared that addresses the data gaps in soil contamination assessment, and the vertical and lateral extent of groundwater contamination. Because the work and the resulting 2010 Technical Report did not address the RWQCB's requirements, the RWQCB issued a Notice of Violation. In October 2011, a Supplemental Site Assessment Report was submitted by Kinder Morgan's consultant. The report evaluated potential contamination pathways and recommends quarterly sampling in order to evaluate whether additional remediation is necessary.

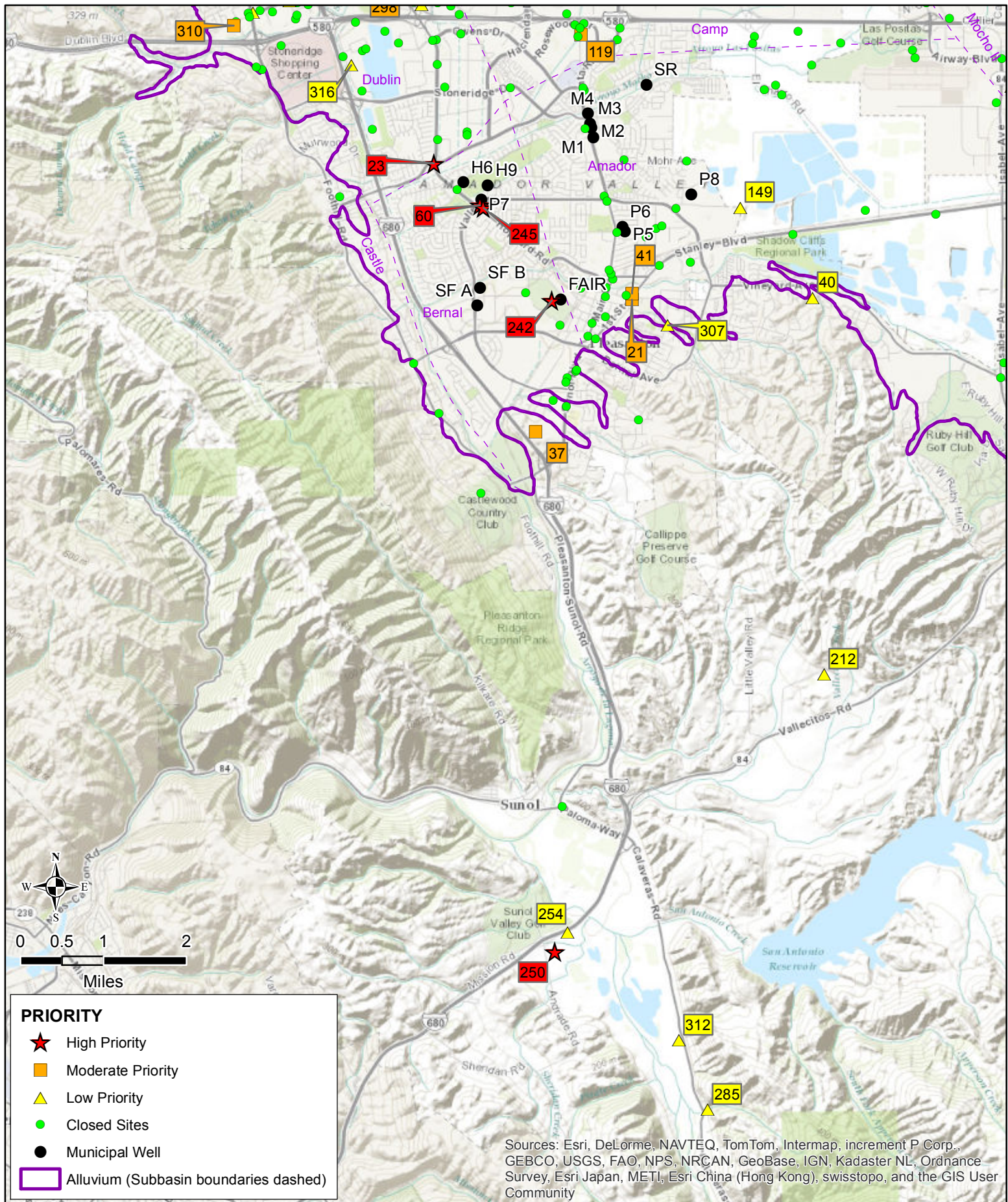
In November 2012, the RP submitted another Closure Request Report. The closure request is based on the Low-Threat Case Closure criteria adopted by the SWRCB. The report claims that the plume is stable, the portion of the plume that exceeds the clean-up goals is less than 100 feet long, and there is no free product. The RWQCB is still reviewing the closure request.

LIST OF ACRONYMS

ACEH	Alameda County Environmental Health
ASR	Aquifer Storage Recovery
bgs	Below ground surface
BTEX	Benzene, toluene, ethylbenzene, and xylenes
CAP	Corrective Action Plan
CPT	Cone penetration test
CWS	California Water Service
cy	Cubic yard
DNAPL	Dense, Non-Aqueous Phase Liquid
DOE	Department of Energy
DPE	Dual Phase Extraction
DPH	Department of Public Health
EAR	Emergency, Abandoned, Recalcitrant
EISB	Enhanced In-Situ Bioremediation
ESL	Environmental Screening Levels
GAC	Granular Activated Carbon
GWE	Groundwater Extraction
HHRA	Human Health Risk Assessment
IRAP	Interim Remedial Action Plan
ISCO	In-Situ Chemical Oxidation
kg	Kilogram
lbs	Pounds
LASC/MOSC	Livermore Arcade Shopping Center/Miller's Outpost Shopping Center
LGA	
LLNL	Local Groundwater Assistance
LNAPL	Lawrence Livermore National Laboratory
MCL	Light Non-aqueous Phase Liquid
µg/kg	Maximum Contaminant Level
	Microgram per Kilogram
µg/L	Microgram per Liter
MNA	Monitored Natural Attenuation
MIP	Membrane Interface Probe
MTBE	Methyl Tertiary-Butyl Ether
NAA	Non-Attainment Area
NOV	Notice of Violation
NPL	National Priorities List
OS	Ozone sparge
PCE	Tetrachloroethylene
ppb	Part per billion
PRFTA	Parks Reserve Forces Training Area
PRP	Potential Responsible Party
RAP	Remedial Action Plan
RP	Responsible Party
RWQCB	Regional Water Quality Control Board

SFPUC	San Francisco Public Utilities Commission
SLIC	Spills, Leaks, Investigations, and Clean-ups
SNL	Sandia National Laboratory
SVE	Soil Vapor Extraction
SWRCB	State Water Resources Control Board
TBA	Tertiary-Butyl Alcohol
TCE	Trichloroethylene
TPHd	Total Petroleum Hydrocarbons from diesel
TPHg	Total Petroleum Hydrocarbons from gasoline
TSS	Toxic Site Surveillance
UST	Underground Storage Tank
VOC	Volatile Organic Compound
WQO	Water quality objective

FIGURES AND TABLES



ZONE 7 WATER AGENCY
100 North Canyons Parkway,
Livermore, CA

DRAWN: CD/CW

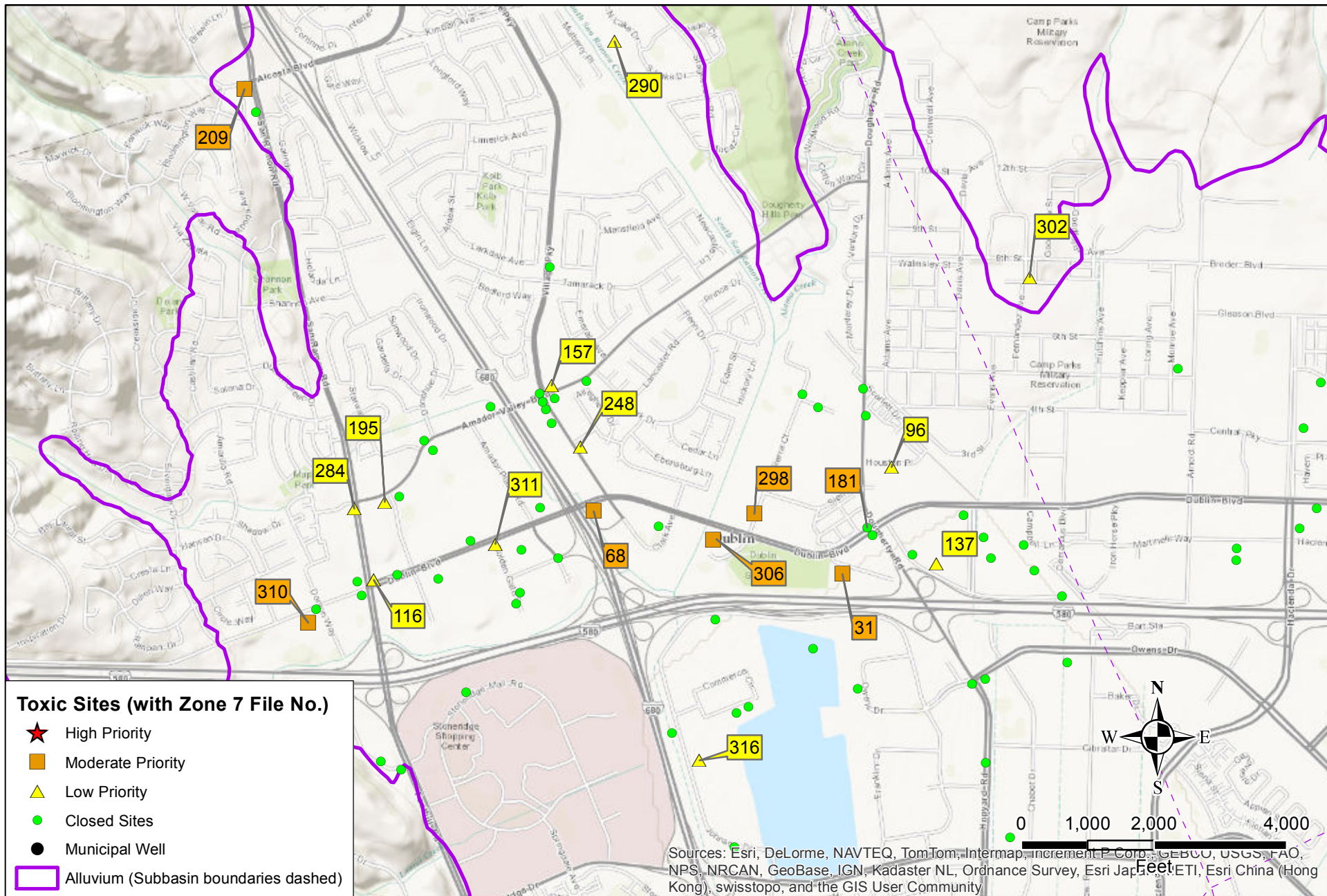
Scale: 1" = 1.5 miles

REVIEWED: MK

Date: April 15, 2014

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Figure 2
Toxic Site Surveillance
Pleasanton and Sunol Area Sites
with Zone 7 Case ID



ZONE 7 WATER AGENCY
100 North Canyons Parkway,
Livermore, CA

DRAWN: CD/CW

Scale: 1" = 2,000'

REVIEWED: MK

Date: 4/15/2014

File: E:\Toxics\Toxics - Dublin.mxd

Figure 3
Toxic Site Surveillance
Dublin Area Sites with Zone 7 Case ID
(North of Main Basin)

KEY FOR TABLE 1

The structure of the attached table is as follows:

Z7 ID - Zone 7 designation corresponds to file number in Toxic Sites Surveillance Files and the location on the site maps.

Owner - The property owner or responsible party for the contamination investigation/cleanup.

Site Name - Indicates a site name if different from the Owner Name.

Site Address

City

Chemical - The chemical(s) of concern at the site.

BENZ – benzene

CCl₄ – carbon tetrachloride

Cr(VI) – hexavalent chromium

1,2-DCE – 1,2-dichloroethene

DRO – diesel range organics

GRO - gasoline range organics

MTBE – methyl tertiary-butyl ether

NO₃ – nitrate

PCE – tetrachloroethene

TBA - tertiary-butyl alcohol

TCE – trichloroethene

TOLU – toluene

TPHg – total petroleum hydrocarbons gasoline

TPHd – total petroleum hydrocarbons diesel

TPHmo – total petroleum hydrocarbons motor oil

VC – vinyl chloride

XYL – xylenes

Concentration µg/L - The most recent concentration in groundwater in micrograms per liter (parts per billion).

Priority - The first number of the priority code indicates the whether the case is closed (0), high priority (1), moderate priority (2), or low priority (3). See Attachment A for the full list of codes and descriptions

Status - The status code is based on the RWQCB ranking of the progress of a case; see Attachment B for the full list of codes and descriptions. Zone 7 uses these additional codes to represent status:

NR - further investigation not required

ReO - reopened

Notes - Highlights current activities or concerns at a site.

Table 1 - Active Sites Summary

Z7 ID	OWNER	SITE NAME	ADDRESS	CITY	PRIORITY	STATUS	LEAD AGENCY	NOTES
1	Lawrence Livermore National Laboratory	Lawrence Livermore Lab	7000 East Avenue	Livermore	3A3	7	ACEH	3/31/14 - Due to the Federal Government shutdown during October 2013, LLNL operations were interrupted, and ground water and soil vapor treatment facilities were temporarily shutoff. Groundwater Extraction and SVE systems are operational again. In 2013, VOC concentrations declined or remained stable.
					<u>CHEMICAL</u>	<u>CONCENTRATION ug/L</u>		
					TCE	1,000		
5	Sandia National Laboratory	Sandia National Labs	7011 East Avenue	Livermore	3A3	8	RWQCB	3/31/14 - PCE = ND; Carbontetrachloride = 1.7 ppb and Trichlormethane = 0.64 ppb at Landfill. TPHd was not detected in either of the wells at the Fuel Site. Http://www.sandia.gov/news/publications/environmental/index.html
					<u>CHEMICAL</u>	<u>CONCENTRATION ug/L</u>		
					TPHd	ND		
					NO3	NS		
					CCL4	1.7		
					CR(IV)	0.0085		
11	Intel	Intel Livermore Fabrication Plant 3	250 North Mines Road	Livermore	2A3	8	RWQCB	3/31/14 - Five-Year Status Report claims that recent GW extraction remediation was effective and predicts site will reach clean-up goals prior to any potential future groundwater use, only a small source remains, a draft deed has been prepared and will be signed by the Water Board and property owner once final wording is agreed to. RP indicated it will ask for the case to be evaluated for closure.
					<u>CHEMICAL</u>	<u>CONCENTRATION ug/L</u>		
					TCE	200		
					1,2-DCE	180		
					VC	47		
					PCE	13		

<i>Z7 ID</i>	<i>OWNER</i>	<i>SITE NAME</i>	<i>ADDRESS</i>	<i>CITY</i>	<i>PRIORITY</i>	<i>STATUS</i>	<i>LEAD AGENCY</i>	<i>NOTES</i>
21	Shell Oil	First Street Shell	4212 First Street	Pleasanton	2A3	7	ACEH	2/28/14 - A TPH mass removal was conducted at the site using air sparging in combination with SVE and dual-phase extraction. During the remediation event, approximately 129 lbs of TPH were removed. The RP recommended continued quarterly gw monitoring to monitor post-remediation trends in gw. ACEH accepted therecommendations. The current property owner sent ACEH a letter stating they want the propoerty cleaned up so that no deed restrictions are required on the property.
					<i>CHEMICAL</i>			
					TPHg	2,100		
					MTBE	1,600		
					BENZ	71		
22	Chevron Environmental Management	Former Texaco/Chevron #21-1253	930 Springtown Boulevard	Livermore	3A1	7	ACEH	3/21/14 - Soil Vapor Investigation was conducted. Report concluded that soil vapor is not a risk at the site. RP will prepare a low-threat closure evaluation. Semi-annual and quarterly sampling is continuing while the evaluation is being prepared.
					<i>CHEMICAL</i>			
					TPHg	1,900		
					BENZ	43		
					MTBE	NA		
23	Shell Oil (Equilon)	South Hop Shell #13-5784	3790 Hopyard Road	Pleasanton	1C3	8	ACEH	3/11/14-ACEH is reviewing the case for closure under the low-risk UST case closure policy. The RP has predicted that the groundwater concentrations will all reach WQOs by 2021 with the exeption of one well. The TBA in well S-6 is predicted to reach WQOs by 2053. Groundwater monitoring was suspended during the closure review. The RP conducted a special sampling event on seven select wells for MTBE and TBA to confirm the trend in MTBE concentrations.
					<i>CHEMICAL</i>			
					TPHg	1,200		
					MTBE	120		
					TBA	2,500		
					BENZ	6.7		

Z7 ID	OWNER	SITE NAME	ADDRESS	CITY	PRIORITY	STATUS	LEAD AGENCY	NOTES
31	Ozzie Davis Pontiac Toyota	Dublin Toyota Pontiac	6450 Dublin Court	Dublin	2A4	7	ACEH	3/19/14 - ACEH agreed with the RP's recommendation to evaluate the case for closure following the Second Semi-Annual 2013 Groundwater Monitoring Report. The RP must include in their Report; a low-threat closure evaluation, a well survey, and a summary of the fluid vapor removal conducted at the site. The report was due 2/14/14.
					CHEMICAL	CONCENTRATION ug/L		
					TPHg	350		
					MTBE	1,000		
					BENZ	7.4		
					TBA	740		
33	Republic Services (Formerly Browning-Ferris Industries)	Vasco Road Landfill	4001 North Vasco Road	Livermore	3	5	RWQCB	3/24/14 - Annual 2013 Water Quality Self Monitoring Report on file. Some increasing trends in TDS. No VOCs detected above MCLs. Most not detected above reporting limits. This case is an ongoing self-monitoring operating landfill. There was a toxic case at the same address that was closed in 1997.
					CHEMICAL	CONCENTRATION ug/L		
					TDS	4,400		
					TPH	NA		
36	Richmond Lox/Salinas Reinforcement	Salinas Reinforcing Inc.	355 South Vasco Road	Livermore	3A3	5C	RWQCB	3/24/14 - A Groundwater Investigation and Site Status Report was submitted in December 2013. TCE was detected at up to 19,000 ug/L in groundwater. The investigation concluded that additional deeper groundwater sampling would be needed to determine extent of contamination to be remediated as well as to further investigate the potential for off-site sources. A Deeper Groundwater Investigation Work Plan was submitted to RWQCB in Feb 2014 approval is pending.
					CHEMICAL	CONCENTRATION ug/L		
					TCE	19,000		
					TPHg	NA		
					BENZ	NA		

<i>Z7 ID</i>	<i>OWNER</i>	<i>SITE NAME</i>	<i>ADDRESS</i>	<i>CITY</i>	<i>PRIORITY</i>	<i>STATUS</i>	<i>LEAD AGENCY</i>	<i>NOTES</i>
37	Applied Biosystems (formerly Kaiser Aluminum & Chemical)	Applied Biosystems	6001 (formerly 6177) Sunol Boulevard	Pleasanton	2A2	8	DTSC	2/25/14 - 5 year remedial action review report submitted by the RP showed the remediation activities are working. The RP recommended annual sampling be reduced to sampling every 5 years. DTSC approved the recommendations. An annual certification for site compliance was submitted Jan 2014. Former LUFTcase #T0600191128 was closed 7/13/2009. This case involved a diesel fuel tank spill.
					<i>CHEMICAL</i>			
					PCE	22		
					TCE	0.59		
					1,1-DCE	9.8		
40	Pleasanton Garbage Service	Old Pleasanton Landfill	2512 Vineyard Avenue and Pietronave Lane	Pleasanton	3	ReO	RWQCB	3/24/14 - 2013 Semi-Annual Discharge Monitoring Report on file.
41	Unocal (Tosco), #7376	First Pleas Unocal, #7376	4191 First Street	Pleasanton	2A3	7	RWQCB	3/18/14 - RP has requested closure based on the Low-Threat UST Case Closure Policy. One criteria is that no free product remain at the site. Some geotech work was conducted at the site in preparation for the installation of a new convenience store building. These borings encountered soil "wet with petroleum hydrocarbons". This may need further investigation to remove a potential remaining source area. RWQCB case worker was notified.
					<i>CHEMICAL</i>			
					MTBE	3,100		
					BENZ	1,500		
					TPHg	10,000		

Z7 ID	OWNER	SITE NAME	ADDRESS	CITY	PRIORITY	STATUS	LEAD AGENCY	NOTES
60	Exxon	former Steve's Exxon, #7-3399	2991 Hopyard Road	Pleasanton	1A2	7	ACEH	3/20/14 - The SWRCB had started the closure process for this site in spite of objections by ACEH who was overseeing the case. During the public comment period, ACEH, Zone 7, and the RWQCB submitted comment letters opposing case closure at this time. Based on the information provided to them, including the drought emergency and the potential to bring Pleas 7 back online, the SWRCB decided against case closure at this time and has given directive power back to ACEH.
					CHEMICAL	CONCENTRATION ug/L		
					MTBE	230		
					TPHg	210		
					BENZ	8.9		
62	Balagi Angle	Desert Petroleum/B&C Mini Mart/ B&C Mini Mart	2008 First Street	Livermore	1A2	8	ACEH	3/18/14 - ACEH considered the case for closure. During the public comment period, Zone 7 staff submitted a letter asking for additional groundwater monitoring. The case does appear to meet the low-threat closure criteria for plume length and distance from a municipal supply well. However, this was based on one round of groundwater sampling data. ACEH has requested two additional quarters of groundwater sampling to assess the plume stability before reevaluating the case for closure.
					CHEMICAL	CONCENTRATION ug/L		
					MTBE	41		
					BENZ	28		
					TPHg	720		
68	Chevron	Chevron, #9-2582 (Dublin Auto Wash)	7240 Dublin Boulevard	Dublin	2B3	7	ACEH	3/19/14 - ACEH approved a work plan for a proposed bio-organic catalyst (BOC) injection and biosparging pilot test with a Bioremediation Pilot Test Report and Updated Site Conceptual Model to be submitted no later than December 6, 2013. ACEH has not received the requested Bioremediation Pilot Test Report or Updated Site Conceptual Model. In order to regain compliance, the RP must submit the requested Bioremediation Pilot Test Report to ACEH no later than May 14, 2014.
					CHEMICAL	CONCENTRATION ug/L		
					MTBE	<450		
					BENZ	430		
					TPHg	5,700		

Z7 ID	OWNER	SITE NAME	ADDRESS	CITY	PRIORITY	STATUS	LEAD AGENCY	NOTES
73	Waste Management - California Bay Area	Waste Management	6175 South Front Road	Livermore	3C	8	ACEH	3/12/14-Case is eligible for closure. RP completed remaining vapor intrusion investigation and ACEH agreed the site doesn't pose a risk for commercial use. If a change in land use to any residential or other conservative land use, of if redevelopment occurs, ACEH must be notified. The case closure comment period ends March 31, 2014. This site is outside the main groundwater basin.
					CHEMICAL	CONCENTRATION ug/L		
					MTBE	3		
					BENZ	6		
84	Livermore Redevelopment Agency	Arrow Rentals	187 North L Street	Livermore	1A2	7	ACEH	3/6/14 - The Dual Phase Extraction System was started back up on March 21, 2012. The recommendation in the 2nd Semi-annual Groundwater Monitoring & Remedial Effectiveness Report of 2013 is to continue the DPE and air sparging remediation due to its effectiveness to date. So far: 11,051 pounds of TPHg have been removed through DPE. ACEH agrees with the recommendation to continue operating the remediation system and groundwater monitoring.
					CHEMICAL	CONCENTRATION ug/L		
					TPHg	40,000		
					TPHd	NA		
					MTBE	190		
					BENZ	15,000		
96	G&G International Holding Co.	Bay Counties Petroleum	6310 Houston Place	Dublin	3C	8	ACEH	3/19/14 - ACEH is considering this case for closure. An Invitation to Comment - Potential Case Closure was issued. The comment period ends 3/31/14. Active remediation has been conducted at this site and contaminant concentrations have been reduced. This site is outside the main groundwater basin.
					CHEMICAL	CONCENTRATION ug/L		
					MTBE	1.2		
					TPHd	470		
99	Arco	Arco, #6113	785 East Stanley Boulevard	Livermore	2C	8	ACEH	3/14/14 - Case was approved for closure. No comments were received during the public comment period. All wells are to be destroyed and a report submitted to ACEH by 5/6/14 prior to case closure. This site is greater than 2,000 feet from any supply wells and was shown not to be a threat to the Arroyo Mocho.
					CHEMICAL	CONCENTRATION ug/L		
					TPHg	13,000		
					MTBE	280		
					BENZ	3,100		

Z7 ID	OWNER	SITE NAME	ADDRESS	CITY	PRIORITY	STATUS	LEAD AGENCY	NOTES
111	Arco	Arco, #00771	899 Rincon Avenue	Livermore	1A2	7	ACEH	3/11/14-RP conducted a CPT investigation but was unable to collect all of the data outlined in their work plan. The RP proposed the case be considered for Low-Risk UST Case Closure. ACEH does not feel the case is ready because it doesn't meet the criteria for Scenarios 1-4 due to the plume being longer than 100 feet and a municipal supply well is within 850 feet. ACEH requested a work plan to investigate the horizontal and vertical hydraulic gradients and the possible connection with the nearby muni well. Work plan is due 4/25/14.
					<u>CHEMICAL</u>	<u>CONCENTRATION ug/L</u>		
					MTBE	170		
					BENZ	770		
					TPHg	5,300		
115	LASC/MOSC (Livermore Arcade)	Livermore Arcade (Miller's Outpost)	1410/1554 First Street	Livermore	1A2	5R	RWQCB	3/31/14 - RP submitted a Revised Final RAP. Zone 7 submitted a comment letter to the RWQCB. RWQCB is still finalizing the revised Site Cleanup Order. The RP was approved to start the Data Gap Investigation and Pilot Test work while the RAP approval and revised order are pending.
					<u>CHEMICAL</u>	<u>CONCENTRATION ug/L</u>		
					PCE	85		
					TCE	6.1		
					cis-1,2-DCE	210		
					Vinyl Chloride	110		
116	Chevron	Rich's Chevron Service	7007 San Ramon Road	Dublin	3C	8	ACEH	3/13/14 - ACEH supported the case closure request. An Invitation to Comment was issued 12/19/13 with comments to close on 2/19/14. This site is outside the main groundwater basin.
					<u>CHEMICAL</u>	<u>CONCENTRATION ug/L</u>		
					MTBE	<10		
					BENZ	480		
					TPHg	21,000		

<i>Z7 ID</i>	<i>OWNER</i>	<i>SITE NAME</i>	<i>ADDRESS</i>	<i>CITY</i>	<i>PRIORITY</i>	<i>STATUS</i>	<i>LEAD AGENCY</i>	<i>NOTES</i>
119	East Bay BMW	BMW	3830 Old Santa Rita Road	Pleasanton	2	3B	RWQCB	3/24/14 - The case is showing inactive in GeoTracker. In December 2013 a path to closure plan was developed. The impediments to Low-Threat Closure at this point are: 1) no site conceptual model developed; 2) soil and groundwater have not been tested for MTBE; 3) groundwater has not been investigated enough to show that the plume is stable and decreasing; and 4) vapor intrusion to indoor air has not been investigated.
					<i>CHEMICAL</i>	<i>CONCENTRATION ug/L</i>		
					TPH			
128	Livermore Valley Unified School District	Laidlaw Transport	2900 or 2908 Ladd Avenue	Livermore	1C3	8	ACEH	3/19/14-ACEH had previously denied the RP's request for low-risk closure due to the potential future pumping of a nearby CWS well. The nearby CWS well has been destroyed and CWS does not plan to construct a replacement well in that area. Therefore the site now meets the low-threat closure criteria. The monitoring wells were properly destroyed and a well destruction report was submitted to ACEH on January 23, 2014. Final closure report is pending.
					<i>CHEMICAL</i>	<i>CONCENTRATION ug/L</i>		
					MTBE	20		
					BENZ	8,700		
					TPHg	65,000		
137	Busick Air Conditioning	Busick Gearing Properties	6341 Scarlett Court	Dublin	2A3	5C	RWQCB	3/31/14 - A supplemental remedial investigation workplan was submitted to the RWQCB in March 2014. The proposed investigation includes collecting soil and GW samples at the source area and an investigation into off-site sources that could be contributing to the contamination. The original work plan was approved in April 2013 and an extension was approved for the submittal of the investigation summary reports until Sept and Dec 2013. No investigation reports have been submitted to GeoTracker.
					<i>CHEMICAL</i>	<i>CONCENTRATION ug/L</i>		
					TCE	5,200		
					PCE	120		

Z7 ID	OWNER	SITE NAME	ADDRESS	CITY	PRIORITY	STATUS	LEAD AGENCY	NOTES
149	Kaiser Sand and Gravel	Hanson Aggregates	3000 Busch Road	Pleasanton	3A1	5R	ACEH	3/13/14 - Work on the closure plan is still ongoing. Because of the expanded scope of work and the continuing field activities, the RP requested an extension to April 18, 2014 for the technical reports.
					CHEMICAL	CONCENTRATION ug/L		
					BENZ	ND		
					TPHd	50		
157	Arco	ARCO #6041	7249 Village Parkway	Dublin	3C	8	ACEH	3/19/14 - No comments were received on the Potential Case Closure by the 3/10/14 deadline. The monitoring wells need to be destroyed to continue with case closure. The Well Destruction Report is due 6/30/14.
					CHEMICAL	CONCENTRATION ug/L		
					MTBE	5.3		
					BENZ	8.6		
191	Ultramar/Tesoro No. 67076	Former Beacon, #3604	1619 First Street	Livermore	1A2	7	ACEH	3/28/14-ACEH agreed to recommendation for an expanded ISCO pilot test. The expanded pilot test was started in May 2013. The report is still pending. ACEH issued a Late Letter and has set a deadline of April 30, 2014 for the First Quarter 2014 Status Report and May 20, 2014 for the Expanded ISCO Pilot Test Report.
					CHEMICAL	CONCENTRATION ug/L		
					TPHg	12,000		
					MTBE	200		
195	Unocal (Tosco)	Unocal, #7176	7850 Amador Valley Boulevard	Dublin	3C	8	ACEH	3/12/14 - ACEH approved case closure request. No comments were received during the public comment period. All monitoring wells are to be destroyed and a report submitted by 5/11/14. This site is outside of the main groundwater basin.
					CHEMICAL	CONCENTRATION ug/L		
					TPHd	760		
					TPHg	2,400		
195	Unocal (Tosco)	Unocal, #7176	7850 Amador Valley Boulevard	Dublin	MTBE	<5	ACEH	3/12/14 - ACEH approved case closure request. No comments were received during the public comment period. All monitoring wells are to be destroyed and a report submitted by 5/11/14. This site is outside of the main groundwater basin.
					BENZ	<0.50		

Z7 ID	OWNER	SITE NAME	ADDRESS	CITY	PRIORITY	STATUS	LEAD AGENCY	NOTES
209	Shell Oil	SHELL #13-5244	8999 San Ramon Rd.	Dublin	2A	5C	ACEH	3/14/14- Semi-annual monitoring is continuing. A well survey and groundwater modeling report is due 3/4/14 to address the downgradient "deep" zone well with elevated MTBE and TBA concentrations. ACEH has also asked for a plume deliniation to help move the site toward closure.
					CHEMICAL	CONCENTRATION ug/L		
					TPHd	150		
					TPHg	780		
					TBA	67		
					MTBE	180		
212	GE Nuclear Energy	Vallecitos Nuclear Center	6705 Vallecitos Road	Sunol	3	ongoing	RWQCB	3/24/14 - This is an ongoing case for WDR permit monitoring Latest report on file in GeoTracker is the Annual Report 2013. Owner did request a decrease in sampling frequency if concentrations continue to remain stable. Response from RWQCB pending.
					CHEMICAL	CONCENTRATION ug/L		
					RAD			
					TDS	1,200		
226	Manwel Shuwyahat	Livermore Gas and Minimart	160 Holmes Street	Livermore	1A2	7	ACEH	2/24/14-RP conducted ISCO remediation at the site. Contaminant concentrations were reduced but quarterly sampling was recommended to monitor and access the effectiveness of the remediation. The Fourth Quarter 2013 Groundwater Monitoring Report shows contaminant concentrations remain reduced and recommends evaluating the case for low-risk closure after four quarters of sampling.
					CHEMICAL	CONCENTRATION ug/L		
					TPHd	580		
					BENZ	ND		
					MTBE	3,900		
					TBA	82,000		
					TPHg	430		
232	Bordoni Ranch LLC and Green Valley Corporation Tenancy in	Groth Brothers Chevrolet	59 South L Street	Livermore	3A1	8	RWQCB	3/24/14 - RWQCB prepared an Annual Estimate for Site Cleanup Program Cost Recovery Oversight for the case and only estimated 20 hours of work for the RWQCB due to the case's inactive status. Several USTs obtained case closure. T0600101656 case is closed as of 11/5/2009 with oil and grease remaining in soil up to 1,100 ppm. Remaining environmental issues are being tracked as SL0600147081
					CHEMICAL	CONCENTRATION ug/L		
					BENZ	3,100		
					MTBE	1,200		
					TPHg	61,000		
					PCE	38		

Z7 ID	OWNER	SITE NAME	ADDRESS	CITY	PRIORITY	STATUS	LEAD AGENCY	NOTES
238	All Rents	All Rents	2247 Second St	Livermore	1A2	5C	UNK	Former onsite dry cleaners identified, Permit # 20034, RWQCB informed of site
					CHEMICAL	CONCENTRATION ug/L		
					1,2-DCE	14		
					TCE	250		
					PCE	430		
242	Alameda County Fairgrounds	Fairground Main Well (3S/1E 20B 2)	4501 Pleasanton Avenue	Pleasanton	1A1	1		RWQCB informed of site. Not yet a formal case. LGA grant proposal submitted to DWR by Zone 7. If funded, the grant project would continue investigations into potential responsible parties, as well as, conduct soil gas surveys and collect groundwater samples to help delineate PCE contamination.
					CHEMICAL	CONCENTRATION ug/L		
					PCE	16		
245	Ms. Clare Leung	Hopyard Cleaners	2771 Hopyard Road	Pleasanton	1A2	7	RWQCB	3/24/14 - RWQCB approved a work plan for indoor air and vapor sampling. The RP has remediated groundwater close to cleanup goals for PCE but degradation byproducts are still above cleanup goals. The RWQCB will not close the site without consulting Zone 7.
					CHEMICAL	CONCENTRATION ug/L		
					cis-1,2-DCE	2,630		
					TCE	8.7		
					PCE	17.7		
248	Mr. Roger Woodward/Mr. Kewal Singh	Corwood Carwash	6973 Village Parkway	Dublin	3A2	8	ACEH	3/24/14 - A workplan for additional soil and groundwater investigation was submitted 2/8/12. The additional data to be collected is required for the case to be considered for closure. The report for the additional work has not been uploaded to GeoTracker or ACEH's LOP website.
					CHEMICAL	CONCENTRATION ug/L		
					BENZ	310		
					MTBE	1800		

Z7 ID	OWNER	SITE NAME	ADDRESS	CITY	PRIORITY	STATUS	LEAD AGENCY	NOTES
250	Murray Kelsoe	Sunol Tree Gas	3004 Andrade Road	Sunol	1A1	7	ACEH	3/24/14 - ACEH transferred the case to the RWQCB on 5/31/12. GeoTracker shows the new caseworker as Martin Mosonge. The ozone sparging report recommends verification monitoring of the monitoring wells for at least one more sampling event to determine if elevated MtBE concentrations in some wells will dissipate or diminished MtBE concentrations in other wells will rebound since the ozone system was turned off on January 3, 2013.
					CHEMICAL	CONCENTRATION ug/L		
					TBA	38		
					TPHg	420		
					MTBE	47		
254	Mission Valley Rock & Asphalt	Mission Valley Rock & Asphalt	7999 Athenour Way	Sunol	3C	8	ACEH	3/6/14 - Case has been approved for closure with a deed restriction and a site management plan in place to protect workers and visitors from the contamination that remains on site. A well decommissioning report is due 5/28/14.
					CHEMICAL	CONCENTRATION ug/L		
					TPHd	54,000		
					TPHg	6,800		
					BENZ	38		
					MTBE	160		
259	City of Livermore	CHEVRON #30-7233 /Mills Square Park/Performing Arts Theater	2259 First Street	Livermore	1A2	5R	ACEH	3/18/14 - ACEH conditionally approved the "Work Plan for Near-Surface Soil Removal and Surface Mitigation." The final soil removal depths will be determined later based on the proposed final grade of the site after redevelopment. ACEH has requested the following submittals: 1/30/14 – Quarterly GW Monitoring Report and Summary of Sulfate Application – 4th Quarter 2013 and 1/15/15 – Final Plans for Park Grade and Proposed Soil Sampling Depths. The RP has requested semi-annual GW monitoring.
					CHEMICAL	CONCENTRATION ug/L		
					TPHg	17,000		
					BENZ	2,600		
					TPHd	94,000		

Z7 ID	OWNER	SITE NAME	ADDRESS	CITY	PRIORITY	STATUS	LEAD AGENCY	NOTES
264	Livermore Redevelopment Agency/Signature Properties	Railroad Ave-Livermore Site	1934 - 1950 Railroad Avenue at North L Street	Livermore	2A4	1	ACEH	3/24/14 - Case inactive since 2005. ACEH transferred case to Reg Board but no case file in GeoTracker.
					CHEMICAL	CONCENTRATION ug/L		
					MTBE	280		
					BENZ	130		
					TPHg	1,200		
PCE	30							
284	Gabriel Chiu	Former Crow Canyon Dry Cleaner	7272 or 7242 San Ramon Road	Dublin	3A2	7	ACEH	3/24/14 - The RP is ready to submit a work plan for additional soil vapor investigation as discussed in a meeting with the RWQCB in November 2013. This final investigation is required before closure can be considered. The work plan can be emailed and the RWQCB will review with a quick turn around.
					CHEMICAL	CONCENTRATION ug/L		
					TCE	3		
					PCE	22		
285	Chevron	Chevron Sunol Pipeline	2793 Calaveras Road	Sunol	3A3	5R	ACEH	3/12/14-RP requested case closure in August 2013. ACEH denied the closure request due to the fact that the four monitoring wells installed in 2013 to monitor the migration of contamination. These wells have not had enough water to develop and sample since their installation. ACEH requested the RP continue to gage the wells and develop and sample as soon as there is enough water.
					CHEMICAL	CONCENTRATION ug/L		
					TPHg	27,000		
290	Kinder-Morgan Energy Partners, L.P.	Dublin-Iron Horse Trail Release	Iron Horse Trail	Dublin	3C	8	RWQCB	3/24/14-RP has requested case closure based on the Low-Threat Case Closure criteria adopted by the SWRCB. RWQCB review is pending.
					CHEMICAL	CONCENTRATION ug/L		
					TPHg	4,700		
					Benzene	350		
MTBE	ND							

<i>Z7 ID</i>	<i>OWNER</i>	<i>SITE NAME</i>	<i>ADDRESS</i>	<i>CITY</i>	<i>PRIORITY</i>	<i>STATUS</i>	<i>LEAD AGENCY</i>	<i>NOTES</i>
291	Country Club Cleaners	Perciva/Metro Valley Cleaners	224 Rickenbacker Circle	Livermore	3C	8	ACEH	3/19/14 - Low concentrations of PCE have been detected in groundwater beneath the site. However, soil vapor sampling events have displayed a high degree of variability. In order to consider the site for closure, ACEH requested that a work plan to conduct additional soil vapor sampling to confirm that soil vapor beneath the building does not pose a risk for vapor intrusion be submitted by 10/30/13. The work plan has not been submitted to GeoTracker.
					<u>CHEMICAL</u>	<u>CONCENTRATION ug/L</u>		
					PCE	4.9		
292	CW Roen	Former K&S Heavy Equipment	495 Greenville Rd.	Livermore	2A4	3A	ACEH	LPFD transferred to ACEH. Soil Contamination
					<u>CHEMICAL</u>	<u>CONCENTRATION ug/L</u>		
298	Chevron	Former Chevron Records Facility	6400 Sierra Ct	Dublin	2B4	5C	RWQCB	3/19/14 - RWQCB drafted a Tentative Order for the site and opened a public comment period ending 3/14/14. Chevron is one of several parties named in the Tentative Cleanup and Abatement Order. The Order requires clean up of the groundwater to MCLs and the soil to levels that prevent leaching to groundwater. A comment letter was submitted on behalf of Chevron. They do not feel they should be named in the final Order and they feel the clean up goals are too stringent based on the current and zoned future use of the site.
					<u>CHEMICAL</u>	<u>CONCENTRATION ug/L</u>		
					TCE	69		

Z7 ID	OWNER	SITE NAME	ADDRESS	CITY	PRIORITY	STATUS	LEAD AGENCY	NOTES
299	TDW Construction	Nica Metals	101 Greenville Rd	Livermore	3A2 <u>CHEMICAL</u>	3A <u>CONCENTRATION ug/L</u>	ACEH	5/10/10 - Site is non-compliant. Soil removal and implementation of site assessment was due May 2010. ACEH evaluating options.
					GRO	unknown		
300	Atlantic Richfield Company	ARCO #0498	286 South Livermore Ave	Livermore	2A4 <u>CHEMICAL</u>	5C <u>CONCENTRATION ug/L</u>	ACEH	3/14/14 - Additional soil and groundwater investigation was conducted including the installation of four monitoring wells. The report is still pending. Groundwater monitoring continues on a semi-annual basis.
					TPHg	810		
					BENZ	390		
					MTBE	94		
302	Federal Corrections Institution Dublin	FCI Dublin	5701 8th St	Dublin	3A1 <u>CHEMICAL</u>	3B <u>CONCENTRATION ug/L</u>	ACEH	3/24/14 - In 2010 ACEH responded to the Site Investigation Report that further investigation is needed to determine groundwater gradient and extent of contamination. Quarterly monitoring was required. The RP submitted a case closure request in Oct 2010. The case is still open and ACEH has not agreed to closure.
					TPHd	680,000		
306	City of Dublin	City of Dublin Civic Center	100 Civic Plaza	Dublin	2C <u>CHEMICAL</u>	8 <u>CONCENTRATION ug/L</u>	ACEH	3/24/14 - ACEH is considering the case for closure. A public comment period was held from 12/2/13 to 1/27/14.
					TPHg	300		

Z7 ID	OWNER	SITE NAME	ADDRESS	CITY	PRIORITY	STATUS	LEAD AGENCY	NOTES
307	City of Pleasanton Public Works	City of Pleasanton Theater Parking Lot	0 Kottinger Drive	Pleasanton	3B1	5C	ACEH	1/16/13 - Soil only case. Supplementary investigation was conducted in 7/2009. Site was hydroseeded on 10/15/2010.
					<u>CHEMICAL</u>	<u>CONCENTRATION ug/L</u>		
					TPHg			
					TPHmo			
309	7-Eleven Inc	7-Eleven #32266	1339 Vasco Road	Livermore	2A4	5C	ACEH	3/13/14-An additional monitoring well was installed off-site to define the extent of the MTBE contamination. The groundwater samples collected from the new well were non-detect for all fuel and oxegenate compounds.
					<u>CHEMICAL</u>	<u>CONCENTRATION ug/L</u>		
					TPHg	ND		
					BENZ	ND		
					TBA	12		
					MTBE	410		
310	City of Dublin	Associated Gasoline City of Dublin	11759 Dublin Blvd	Dublin	2A4	1	ACEH	3/25/14 - ACEH issued a directive letter on 1/23/13 requiring additional soil and groundwater sampling in order to case closure. No further updates are available on the GeoTracker or ACEH websites.
					<u>CHEMICAL</u>	<u>CONCENTRATION ug/L</u>		
					TPHg			
311	Crown Chevrolet	Crown Chevrolet Cadillac Isuzu	7544 Dublin Blvd	Dublin	3A1	5R	ACEH	3/18/14 - A Fact Sheet was distributed for Public Review. The Property Owner is working on setting up site controls to protect the planned development from contamination that is originating from an unknown off-site source. The controls include the installation of a reactive barrier to remove VOCs from shallow groundwater moving beneath the site and installing vapor barriers below proposed structures to filter and protect indoor air quality from vapor intrusion.
					<u>CHEMICAL</u>	<u>CONCENTRATION ug/L</u>		
					TPHg	4,900		
					TPHd	6,200		
					TPHmo	64		
					PCE	170		
					TCE	43		

<i>Z7 ID</i>	<i>OWNER</i>	<i>SITE NAME</i>	<i>ADDRESS</i>	<i>CITY</i>	<i>PRIORITY</i>	<i>STATUS</i>	<i>LEAD AGENCY</i>	<i>NOTES</i>
312	Cemex	Cemex Sunol	6527 Calaveras Road	Sunol	3A1	1	ACEH	3/21/14 - CEMEX responded to ACEH's letter asking for funds to cover oversight. They said the spill was contained and cleaned up immediately after release the same day ACEH was notified. A report was filed within two days. They don't feel there is cause to open a case for investigation/remediation.
313	Good Year Tire and Rubber Company	Just Tires	1485 First Street	Livermore	2A4	1	ACEH	3/6/14 - The ACEH approved a "Groundwater Investigation Work Plan" which included 3 grab groundwater samples to assess any potential impact to groundwater beneath the site. During the site investigation 3 borings were advanced and soil samples were collected from a moist zone but the borings weren't advanced to groundwater so no water sampels were collected. ACEH is requiring the work be redone to include 3 groundwater grab samples. Report was due 6/14/13. No reports have been uploaded to GeoTracker.
315	BJP ROF Jordan Ranch, LLC; Ravi Nandwana	Jordan Ranch	4233 Fallon Road	Dublin	3A3	5R	ACEH	3/14/14 - Soil and groundwater remediation was conducted in 2011. Quarterly groundwater and soil gas monitoring is continuing at the site. ACEH conditionally approved a work plan for additional soil gas wells to be installed. The next groundwater monitoring report is due 4/14/14.
					<i>CHEMICAL</i>	<i>CONCENTRATION ug/L</i>		
					TPHg	16,000		
					BENZ	290		
					MTBE	62		

<i>Z7 ID</i>	<i>OWNER</i>	<i>SITE NAME</i>	<i>ADDRESS</i>	<i>CITY</i>	<i>PRIORITY</i>	<i>STATUS</i>	<i>LEAD AGENCY</i>	<i>NOTES</i>
316	Johnson Drive Holdings I, LLC/Clorox Products Manufacturing	Former Clorox Site	7200 - 7208 Johnson Drive	Pleasanton	3A3	3A	RWQCB	3/31/14 - A work plan has been submitted to the RWQCB for approval. The scope of work includes: Prepare site specific health and safety plan, collect and analyze liquid samples from the leaking pipe, repair the pipe, and prepare a technical report. RWQCB approval is pending.
					<i>CHEMICAL</i>	<i>CONCENTRATION ug/L</i>		
					TCE	32		

ATTACHMENT A

KEY TO CASE PRIORITY SYSTEM

CASE PRIORITY SYSTEM

The following is the case priority system used by Zone 7. It is based on the priority system used by Alameda County Environmental Health, but modified slightly for Zone 7's purposes.

Priority 1 — High Priority Sites

A. Current Drinking Water Source — Impacted or Likely Impacted Through Future Migration

1. Currently used municipal or domestic well impacted (i.e., drinking water wells where MCLs are exceeded)
2. Currently used municipal or domestic well threatened (e.g., release site within 2000 ft of currently used well and/or possible vertical conduit exists to deep zone if deep zone currently used as drinking water source for the threatened well.
3. Currently used identified regional “sole source aquifer” impacted (i.e., MCLs exceeded at any aquifer point)
4. Other currently used municipal or domestic aquifer impacted
5. Currently used aquifer threatened by future migration (i.e., lateral pollutant transport or vertical movement through conduit)

B. Known Health/Safety/Environmental Impacts Requiring Prompt Action

1. Vapors at explosive levels in confined space (i.e., sewers or basements)
2. Vapors detected above human health safe levels at/near human receptors
3. Free product in soil/groundwater
4. SW/Aquatic/Environment impacted (sheen or habitat covered)
5. Soil quality levels exceed human health safe levels and exposure likely given existing site conditions

C. Administrative or Enforcement Need Requires Prompt Action

1. 2004 Funding available through “letter of commitment”
2. Enforcement action follow-up is necessary
3. Closure request received from RP
4. Public/RP/Political concerns require expeditious efforts

Priority 2 — Moderate Priority Sites

A. Water Resource Other than Currently Used Drinking Water Is or May Be Impacted

1. Existing beneficial use (other than municipal or domestic drinking water) impacted (e.g., agriculture, cooling water)
2. Potential or Known source of drinking water (defined by SWRCB Policy 88-63) significantly impacted with high probability of future use determined

3. Existing beneficial use threatened (requires pollutant migration study and re-prioritize)
 4. Soil contamination currently exists (requires additional investigation of GW/SW and/or soil to review threat and re-prioritize)
- B. Other Health/Safety/Environmental Impacts Exists or Is Unknown (Requires Additional Investigation (GW/SW), and/or Health or Ecological Risk Assessment)
1. Potential vapors at explosive levels in confined space
 2. Potential vapors above human health safe levels with receptors
 3. Potential free product at site
 4. Potential for migration to aquatic habitats or surface water
 5. Potential human exposure to soil above safe level
- C. Closure request being evaluated

Priority 3 — Low Priority Sites

- A. Minor or No Potential Water Resource Impact Exists
1. No designated beneficial uses of the water which is impacted
 2. Potential or Known source of drinking water (defined by SWRCB Policy 88-63) with limited or minor impacts
 3. Potential or Known source of drinking water (defined by SWRCB Policy 88-63) impacted where low probability of future use is determined
- B. Low Potential Health/Safety/Environmental Impact Exists After Investigation and, if necessary, a Health or Ecological Risk Assessment Completed and Accepted by Lead Agency
1. Soil only cases with residual contaminated soil left in place (with or without follow-up verification monitoring)
 2. Soil only cases where full cleanup to background levels is achieved
- C. Slated for Closure

Notes:

- a. A "0" is used to represent a closed site.
- b. Zone 7 ranks sites outside the main groundwater basin as Priority 2 or Priority 3 unless a water supply well is directly impacted.

ATTACHMENT B

KEY TO CASE STATUS CODES

CASE STATUS CODES

- 1 Leak Confirmed: A lab report received confirming a leak/spill from a tank.
- 3A Preliminary Site Assessment Workplan Submitted: A workplan and implementation schedule has been submitted to determine if the groundwater has been or will be impacted. This plan includes the installation of monitoring wells.
- 3B Preliminary Site Assessment Underway: Implementation of workplan. This phase of work involves determining if groundwater has been impacted. Work performed during this phase includes the installation of up to three monitoring wells in order to determine the specific gradient. At least one well should be placed within 10' of the suspected point of discharge in a verified downgradient location. Other work performed during this phase may include soil borings, soil gas surveys, additional excavation and interim remediation measures. The case would move to status 5 when the work exceeds that which was required for gradient definition and initial groundwater verification (usually the installation of more than three wells).
- 5C Pollution Characterization Underway: this phase of work involves the definition of the boundaries of the contaminated plume. In order to be a 5C the responsible party must be taking steps to further define that lateral and vertical extent of contamination in the soil and groundwater. This phase is characterized by the installation of additional monitoring wells and/or borings, aquifer tests, soil gas surveys, continual groundwater gradient determination and monitoring, and an assessment of all impacts on surface and groundwater.
- 5R Remediation workplan (Corrective Action Plan) Submitted: a proposal and implementation schedule evaluation long term remediation options have been submitted. The proposal should include a feasibility study, i.e., a remediation plan based on the consideration of a few options.
- 7 Remediation Underway: Implementation of the corrective action plan, i.e., actual remediation begins. Usually requires regulatory agency approval.
- 8 Post Remediation Monitoring Begun: Periodic groundwater or other monitoring at the site as necessary in order to verify and/or evaluate the effectiveness of remedial activities.
- CL Case Closure

ATTACHMENT C

STATE WATER RESOURCES CONTROL BOARD'S

**"LOW-THREAT UNDERGROUND STORAGE TANK
CASE CLOSURE POLICY"**

Low-Threat Underground Storage Tank Case Closure Policy

Preamble

The State Water Resources Control Board (State Water Board) administers the petroleum UST (Underground Storage Tank) Cleanup Program, which was enacted by the Legislature in 1984 to protect health, safety and the environment. The State Water Board also administers the petroleum UST Cleanup Fund (Fund), which was enacted by the Legislature in 1989 to assist UST owners and operators in meeting federal financial responsibility requirements and to provide reimbursement to those owners and operators for the high cost of cleaning up unauthorized releases caused by leaking USTs.

The State Water Board believes it is in the best interest of the people of the State that unauthorized releases be prevented and cleaned up to the extent practicable in a manner that protects human health, safety and the environment. The State Water Board also recognizes that the technical and economic resources available for environmental restoration are limited, and that the highest priority for these resources must be the protection of human health and environmental receptors. Program experience has demonstrated the ability of remedial technologies to mitigate a substantial fraction of a petroleum contaminant mass with the investment of a reasonable level of effort. Experience has also shown that residual contaminant mass usually remains after the investment of reasonable effort, and that this mass is difficult to completely remove regardless of the level of additional effort and resources invested.

It has been well-documented in the literature and through experience at individual UST release sites that petroleum fuels naturally attenuate in the environment through adsorption, dispersion, dilution, volatilization, and biological degradation. This natural attenuation slows and limits the migration of dissolved petroleum plumes in groundwater. The biodegradation of petroleum, in particular, distinguishes petroleum products from other hazardous substances commonly found at commercial and industrial sites.

The characteristics of UST releases and the California UST Program have been studied extensively, with individual works including:

- a. Lawrence Livermore National Laboratory report (1995)
- b. SB1764 Committee report (1996)
- c. UST Cleanup Program Task Force report (2010)
- d. Cleanup Fund Task Force report (2010)
- e. Cleanup Fund audit (2010)
- f. State Water Resources Control Board site closure orders
- g. State Water Resources Control Board Resolution 2009-0081

In general, these efforts have recognized that many petroleum release cases pose a low threat to human health and the environment. Some of these studies also recommended establishing "low-threat" closure criteria in order to maximize the benefits to the people of the State of California through judicious application of available resources.

The purpose of this policy is to establish consistent statewide case closure criteria for low-threat petroleum UST sites. The policy is consistent with existing statutes, regulations, State Water Board precedential decisions, policies and resolutions, and is intended to provide clear direction to responsible parties, their service providers, and regulatory agencies. The policy seeks to increase UST cleanup process efficiency. A benefit of improved efficiency is the preservation of limited resources for mitigation of releases posing a greater threat to human and environmental health.

This policy is based in part upon the knowledge and experience gained from the last 25 years of investigating and remediating unauthorized releases of petroleum from USTs. While this policy does not specifically address other petroleum release scenarios such as pipelines or above ground storage tanks, if a particular site with a different petroleum release scenario exhibits attributes similar to those which this policy addresses, the criteria for closure evaluation of these non-UST sites should be similar to those in this policy.

This policy is a state policy for water quality control and applies to all petroleum UST sites subject to Chapter 6.7 of Division 20 of the Health and Safety Code and Chapter 16 of Division 3 of Title 23 of the California Code of Regulations. The term “regulatory agencies” in this policy means the State Water Board, Regional Water Quality Control Boards (Regional Water Boards) and local agencies authorized to implement Health and Safety Code section 25296.10. Unless expressly provided in this policy, the terms in this policy shall have the same definitions provided in Chapter 6.7 of Division 20 of the Health and Safety Code and Chapter 16 of Division 3 of Title 23 of the California Code of Regulations.

Criteria for Low-Threat Case Closure

In the absence of unique attributes of a case or site-specific conditions that demonstrably increase the risk associated with residual petroleum constituents, cases that meet the general and media-specific criteria described in this policy pose a low threat to human health, safety or the environment and are appropriate for closure pursuant to Health and Safety Code section 25296.10. Cases that meet the criteria in this policy do not require further corrective action and shall be issued a uniform closure letter consistent with Health and Safety Code section 25296.10. Annually, or at the request of the responsible party or party conducting the corrective action, the regulatory agency shall conduct a review to determine whether the site meets the criteria contained in this policy.

It is important to emphasize that the criteria described in this policy do not attempt to describe the conditions at all low-threat petroleum UST sites in the State. The regulatory agency shall issue a closure letter for a case that does not meet these criteria if the regulatory agency determines the site to be low-threat based upon a site specific analysis.

This policy recognizes that some petroleum-release sites may possess unique attributes and that some site specific conditions may make case closure under this policy inappropriate, despite the satisfaction of the stated criteria in this policy. It is impossible to completely capture those sets of attributes that may render a site ineligible for closure based on this low-threat policy. This policy relies on the regulatory agency's use of the conceptual site model to identify the special attributes that would require specific attention prior to the application of low-threat criteria. In these cases, it is the regulatory agency's responsibility to identify the conditions that make closure under the policy inappropriate.

General Criteria

General criteria that must be satisfied by all candidate sites are listed as follows:

- a. The unauthorized release is located within the service area of a public water system;
- b. The unauthorized release consists only of petroleum;
- c. The unauthorized ("primary") release from the UST system has been stopped;
- d. Free product has been removed to the maximum extent practicable;
- e. A conceptual site model that assesses the nature, extent, and mobility of the release has been developed;
- f. Secondary source has been removed to the extent practicable;
- g. Soil or groundwater has been tested for methyl tert-butyl ether (MTBE) and results reported in accordance with Health and Safety Code section 25296.15; and
- h. Nuisance as defined by Water Code section 13050 does not exist at the site.

a. The unauthorized release is located within the service area of a public water system

This policy is protective of existing water supply wells. New water supply wells are unlikely to be installed in the shallow groundwater near former UST release sites. However, it is difficult to predict, on a statewide basis, where new wells will be installed, particularly in rural areas that are undergoing new development. This policy is limited to areas with available public water systems to reduce the likelihood that new wells in developing areas will be inadvertently impacted by residual petroleum in groundwater. Case closure outside of areas with a public water system should be evaluated based upon the fundamental principles in this policy and a site specific evaluation of developing water supplies in the area. For purposes of this policy, a public water system is a system for the provision of water for human consumption through pipes or other constructed conveyances that has 15 or more service connections or regularly serves at least 25 individuals daily at least 60 days out of the year.

b. The unauthorized release consists only of petroleum

For the purposes of this policy, petroleum is defined as crude oil, or any fraction thereof, which is liquid at standard conditions of temperature and pressure, which means 60 degrees Fahrenheit and 14.7 pounds per square inch absolute, including the following substances: motor fuels, jet fuels, distillate fuel oils, residual fuel oils, lubricants, petroleum solvents and used oils, including any additives and blending agents such as oxygenates contained in the formulation of the substances.

c. The unauthorized release has been stopped

The tank, pipe, or other appurtenant structure that released petroleum into the environment (i.e. the primary source) has been removed, repaired or replaced. It is not the intent of this policy to allow sites with ongoing leaks from the UST system to qualify for low-threat closure.

d. Free product has been removed to the maximum extent practicable

At petroleum unauthorized release sites where investigations indicate the presence of free product, free product shall be removed to the maximum extent practicable. In meeting the requirements of this section:

- (a) Free product shall be removed in a manner that minimizes the spread of the unauthorized release into previously uncontaminated zones by using recovery and disposal techniques appropriate to the hydrogeologic conditions at the site, and that properly treats, discharges or disposes of recovery byproducts in compliance with applicable laws;

- (b) Abatement of free product migration shall be used as a minimum objective for the design of any free product removal system; and
- (c) Flammable products shall be stored for disposal in a safe and competent manner to prevent fires or explosions.

e. A conceptual site model that assesses the nature, extent, and mobility of the release has been developed

The Conceptual Site Model (CSM) is a fundamental element of a comprehensive site investigation. The CSM establishes the source and attributes of the unauthorized release, describes all affected media (including soil, groundwater, and soil vapor as appropriate), describes local geology, hydrogeology and other physical site characteristics that affect contaminant environmental transport and fate, and identifies all confirmed and potential contaminant receptors (including water supply wells, surface water bodies, structures and their inhabitants). The CSM is relied upon by practitioners as a guide for investigative design and data collection. Petroleum release sites in California occur in a wide variety of hydrogeologic settings. As a result, contaminant fate and transport and mechanisms by which receptors may be impacted by contaminants vary greatly from location to location. Therefore, the CSM is unique to each individual release site. All relevant site characteristics identified by the CSM shall be assessed and supported by data so that the nature, extent and mobility of the release have been established to determine conformance with applicable criteria in this policy. The supporting data and analysis used to develop the CSM are not required to be contained in a single report and may be contained in multiple reports submitted to the regulatory agency over a period of time.

f. Secondary source has been removed to the extent practicable

“Secondary source” is defined as petroleum-impacted soil or groundwater located at or immediately beneath the point of release from the primary source. Unless site attributes prevent secondary source removal (e.g. physical or infrastructural constraints exist whose removal or relocation would be technically or economically infeasible), petroleum-release sites are required to undergo secondary source removal to the extent practicable as described herein. “To the extent practicable” means implementing a cost-effective corrective action which removes or destroys-in-place the most readily recoverable fraction of source-area mass. It is expected that most secondary mass removal efforts will be completed in one year or less. Following removal or destruction of the secondary source, additional removal or active remedial actions shall not be required by regulatory agencies unless (1) necessary to abate a demonstrated threat to human health or (2) the groundwater plume does not meet the definition of low threat as described in this policy.

g. Soil and groundwater have been tested for MTBE and results reported in accordance with Health and Safety Code section 25296.15

Health and Safety Code section 25296.15 prohibits closing a UST case unless the soil, groundwater, or both, as applicable have been tested for MTBE and the results of that testing are known to the Regional Water Board. The exception to this requirement is where a regulatory agency determines that the UST that leaked has only contained diesel or jet fuel. Before closing a UST case pursuant to this policy, the requirements of section 25296.15, if applicable, shall be satisfied.

h. Nuisance as defined by Water Code section 13050 does not exist at the site

Water Code section 13050 defines "nuisance" as anything which meets all of the following requirements:

- (1) Is injurious to health, or is indecent or offensive to the senses, or an obstruction to the free use of property, so as to interfere with the comfortable enjoyment of life or property.
- (2) Affects at the same time an entire community or neighborhood, or any considerable number of persons, although the extent of the annoyance or damage inflicted upon individuals may be unequal.
- (3) Occurs during, or as a result of, the treatment or disposal of wastes.

For the purpose of this policy, waste means a petroleum release.

Media-Specific Criteria

Releases from USTs can impact human health and the environment through contact with any or all of the following contaminated media: groundwater, surface water, soil, and soil vapor. Although this contact can occur through ingestion, dermal contact, or inhalation of the various media, the most common drivers of health risk are ingestion of groundwater from drinking water wells, inhalation of vapors accumulated in buildings, contact with near surface contaminated soil, and inhalation of vapors in the outdoor environment. To simplify implementation, these media and pathways have been evaluated and the most common exposure scenarios have been combined into three media-specific criteria:

1. Groundwater
2. Vapor Intrusion to Indoor Air
3. Direct Contact and Outdoor Air Exposure

Candidate sites must satisfy all three of these media-specific criteria as described below.

1. Groundwater

This policy describes criteria on which to base a determination that threats to existing and anticipated beneficial uses of groundwater have been mitigated or are de minimis, including cases that have not affected groundwater.

[State Water Board Resolution 92-49](#), *Policies and Procedures for Investigation and Cleanup and Abatement of Discharges Under Water Code Section 13304* is a state policy for water quality control and applies to petroleum UST cases. Resolution 92-49 directs that water affected by an unauthorized release attain either background water quality or the best water quality that is reasonable if background water quality cannot be restored. Any alternative level of water quality less stringent than background must be consistent with the maximum benefit to the people of the state, not unreasonably affect current and anticipated beneficial use of affected water, and not result in water quality less than that prescribed in the water quality control plan for the basin within which the site is located. Resolution No. 92-49 does not require that the requisite level of water quality be met at the time of case closure; it specifies compliance with cleanup goals and objectives within a reasonable time frame.

Water quality control plans (Basin Plans) generally establish "background" water quality as a restorative endpoint. This policy recognizes the regulatory authority of the Basin Plans but underscores the flexibility contained in Resolution 92-49.

It is a fundamental tenet of this low-threat closure policy that if the closure criteria described in this policy are satisfied at a petroleum unauthorized release site, attaining background water quality is not feasible, establishing an alternate level of water quality not to exceed that prescribed in the applicable Basin Plan is appropriate, and that water quality objectives will be attained through natural attenuation within a reasonable time, prior to the expected need for use of any affected groundwater.

If groundwater with a designated beneficial use is affected by an unauthorized release, to satisfy the media-specific criteria for groundwater, the contaminant plume that exceeds water quality objectives must be stable or decreasing in areal extent, and meet all of the additional characteristics of one of the five classes of sites listed below. A plume that is “stable or decreasing” is a contaminant mass that has expanded to its maximum extent: the distance from the release where attenuation exceeds migration.

Groundwater-Specific Criteria

- (1) a. The contaminant plume that exceeds water quality objectives is less than 100 feet in length.
b. There is no free product.
c. The nearest existing water supply well or surface water body is greater than 250 feet from the defined plume boundary.
- (2) a. The contaminant plume that exceeds water quality objectives is less than 250 feet in length.
b. There is no free product.
c. The nearest existing water supply well or surface water body is greater than 1,000 feet from the defined plume boundary.
d. The dissolved concentration of benzene is less than 3,000 micrograms per liter (µg/l), and the dissolved concentration of MTBE is less than 1,000 µg/l.
- (3) a. The contaminant plume that exceeds water quality objectives is less than 250 feet in length.
b. Free product has been removed to the maximum extent practicable, may still be present below the site where the release originated, but does not extend off-site.
c. The plume has been stable or decreasing for a minimum of five years.
d. The nearest existing water supply well or surface water body is greater than 1,000 feet from the defined plume boundary.
e. The property owner is willing to accept a land use restriction if the regulatory agency requires a land use restriction as a condition of closure.
- (4) a. The contaminant plume that exceeds water quality objectives is less than 1,000 feet in length.
b. There is no free product.
c. The nearest existing water supply well or surface water body is greater than 1,000 feet from the defined plume boundary.
d. The dissolved concentration of benzene is less than 1,000 µg/l, and the dissolved concentration of MTBE is less than 1,000 µg/l.
- (5) a. The regulatory agency determines, based on an analysis of site specific conditions that under current and reasonably anticipated near-term future scenarios, the contaminant plume poses a low threat to human health and safety and to the environment and water quality objectives will be achieved within a reasonable time frame.

Sites with Releases That Have Not Affected Groundwater

Sites with soil that does not contain sufficient mobile constituents [leachate, vapors, or light non-aqueous-phase liquids (LNAPL)] to cause groundwater to exceed the groundwater criteria in this policy shall be considered low-threat sites for the groundwater medium. Provided the general criteria and criteria for other media are also met, those sites are eligible for case closure.

For older releases, the absence of current groundwater impact is often a good indication that residual concentrations present in the soil are not a source for groundwater pollution.

2. Petroleum Vapor Intrusion to Indoor Air

Exposure to petroleum vapors migrating from soil or groundwater to indoor air may pose unacceptable human health risks. This policy describes conditions, including bioattenuation zones, which if met will assure that exposure to petroleum vapors in indoor air will not pose unacceptable health risks. In many petroleum release cases, potential human exposures to vapors are mitigated by bioattenuation processes as vapors migrate toward the ground surface. For the purposes of this section, the term “bioattenuation zone” means an area of soil with conditions that support biodegradation of petroleum hydrocarbon vapors.

The low-threat vapor-intrusion criteria described below apply to sites where the release originated and impacted or potentially impacted adjacent parcels when: (1) existing buildings are occupied or may be reasonably expected to be occupied in the future, or (2) buildings for human occupancy are reasonably expected to be constructed in the future. Appendices 1 through 4 (attached) illustrate four potential exposure scenarios and describe characteristics and criteria associated with each scenario. Petroleum release sites shall satisfy the media-specific criteria for petroleum vapor intrusion to indoor air and be considered low-threat for the vapor-intrusion-to-indoor-air pathway if:

- a. Site-specific conditions at the release site satisfy all of the characteristics and criteria of scenarios 1 through 3 as applicable, or all of the characteristics and criteria of scenario 4 as applicable; or
- b. A site-specific risk assessment for the vapor intrusion pathway is conducted and demonstrates that human health is protected to the satisfaction of the regulatory agency; or
- c. As a result of controlling exposure through the use of mitigation measures or through the use of institutional or engineering controls, the regulatory agency determines that petroleum vapors migrating from soil or groundwater will have no significant risk of adversely affecting human health.

Exception: Exposures to petroleum vapors associated with historical fuel system releases are comparatively insignificant relative to exposures from small surface spills and fugitive vapor releases that typically occur at active fueling facilities. Therefore, satisfaction of the media-specific criteria for petroleum vapor intrusion to indoor air is not required at active commercial petroleum fueling facilities, except in cases where release characteristics can be reasonably believed to pose an unacceptable health risk.

3. Direct Contact and Outdoor Air Exposure

This policy describes conditions where direct contact with contaminated soil or inhalation of contaminants volatilized to outdoor air poses a low threat to human health. Release sites where human exposure may occur satisfy the media-specific criteria for direct contact and outdoor air exposure and shall be considered low-threat if they meet any of the following:

- a. Maximum concentrations of petroleum constituents in soil are less than or equal to those listed in Table 1 for the specified depth below ground surface (bgs). The concentration limits for 0 to 5 feet bgs protect from ingestion of soil, dermal contact with soil, and inhalation of volatile soil emissions and inhalation of particulate emissions. The 5 to 10 feet bgs concentration limits protect from inhalation of volatile soil emissions. Both the 0 to 5 feet bgs concentration limits and the 5 to 10 feet bgs concentration limits for the appropriate site classification (Residential or Commercial/Industrial) shall be satisfied. In addition, if exposure to construction workers or utility trench workers are reasonably anticipated, the concentration limits for Utility Worker shall also be satisfied; or
- b. Maximum concentrations of petroleum constituents in soil are less than levels that a site specific risk assessment demonstrates will have no significant risk of adversely affecting human health; or
- c. As a result of controlling exposure through the use of mitigation measures or through the use of institutional or engineering controls, the regulatory agency determines that the concentrations of petroleum constituents in soil will have no significant risk of adversely affecting human health.

Table 1
Concentrations of Petroleum Constituents in Soil That Will Have No Significant Risk of Adversely Affecting Human Health

Chemical	Residential		Commercial/ Industrial		Utility Worker
	0 to 5 feet bgs mg/kg	Volatilization to outdoor air (5 to 10 feet bgs) mg/kg	0 to 5 feet bgs mg/kg	Volatilization to outdoor air (5 to 10 feet bgs) mg/kg	0 to 10 feet bgs mg/kg
Benzene	1.9	2.8	8.2	12	14
Ethylbenzene	21	32	89	134	314
Naphthalene	9.7	9.7	45	45	219
PAH ¹	0.063	NA	0.68	NA	4.5

Notes:

1. Based on the seven carcinogenic poly-aromatic hydrocarbons (PAHs) as benzo(a)pyrene toxicity equivalent [BaPe]. Sampling and analysis for PAH is only necessary where soil is affected by either waste oil or Bunker C fuel.
2. The area of impacted soil where a particular exposure occurs is 25 by 25 meters (approximately 82 by 82 feet) or less.
3. NA = not applicable
4. mg/kg = milligrams per kilogram

Low-Threat Case Closure

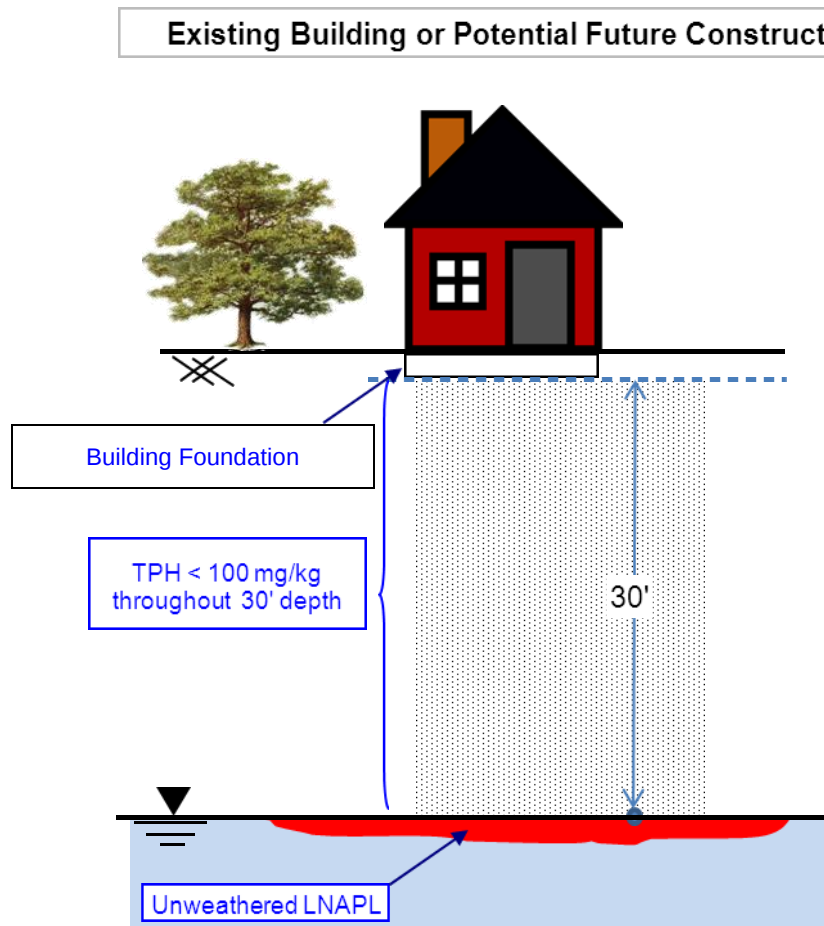
Cases that meet the general and media-specific criteria established in this policy pose a low threat to human health, safety and the environment and satisfy the case-closure requirements of Health and Safety Code section 25296.10, and case closure is consistent with State Water Board Resolution 92-49 that requires that cleanup goals and objectives be met within a reasonable time frame. If the case has been determined by the regulatory agency to meet the criteria in this policy, the regulatory agency shall notify responsible parties that they are eligible for case closure and that the following items, if applicable, shall be completed prior to the issuance of a uniform closure letter specified in Health and Safety Code section 25296.10. After completion of these items, and unless the regulatory agency revises its determination based on comments received on the proposed case closure, the regulatory agency shall issue a uniform closure letter within 30 days from the end of the comment period.

- a. Notification Requirements – Municipal and county water districts, water replenishment districts, special act districts with groundwater management authority, agencies with authority to issue building permits for land affected by the petroleum release, owners and occupants of the property impacted by the petroleum release, and the owners and occupants of all parcels adjacent to the impacted property shall be notified of the proposed case closure and provided a 60 day period to comment. The regulatory agency shall consider any comments received when determining if the case should be closed or if site specific conditions warrant otherwise.
- b. Monitoring Well Destruction – All wells and borings installed for the purpose of investigating, remediating, or monitoring the unauthorized release shall be properly destroyed prior to case closure unless a property owner certifies that they will keep and maintain the wells or borings in accordance with applicable local or state requirements.
- c. Waste Removal – All waste piles, drums, debris and other investigation or remediation derived materials shall be removed from the site and properly managed in accordance with regulatory agency requirements.

Appendix 1

Scenario 1: Unweathered* LNAPL in Groundwater

Required Characteristics of the Bioattenuation Zone



Required Characteristics of the Bioattenuation Zone:

1. The bioattenuation zone shall be a continuous zone that provides a separation of at least 30 feet vertically between the LNAPL in groundwater and the foundation of existing or potential buildings; and
2. Total TPH (TPH-g and TPH-d combined) are less than 100 mg/kg throughout the entire depth of the bioattenuation zone.

TPH = total petroleum hydrocarbons

TPH-g = total petroleum hydrocarbons as gasoline

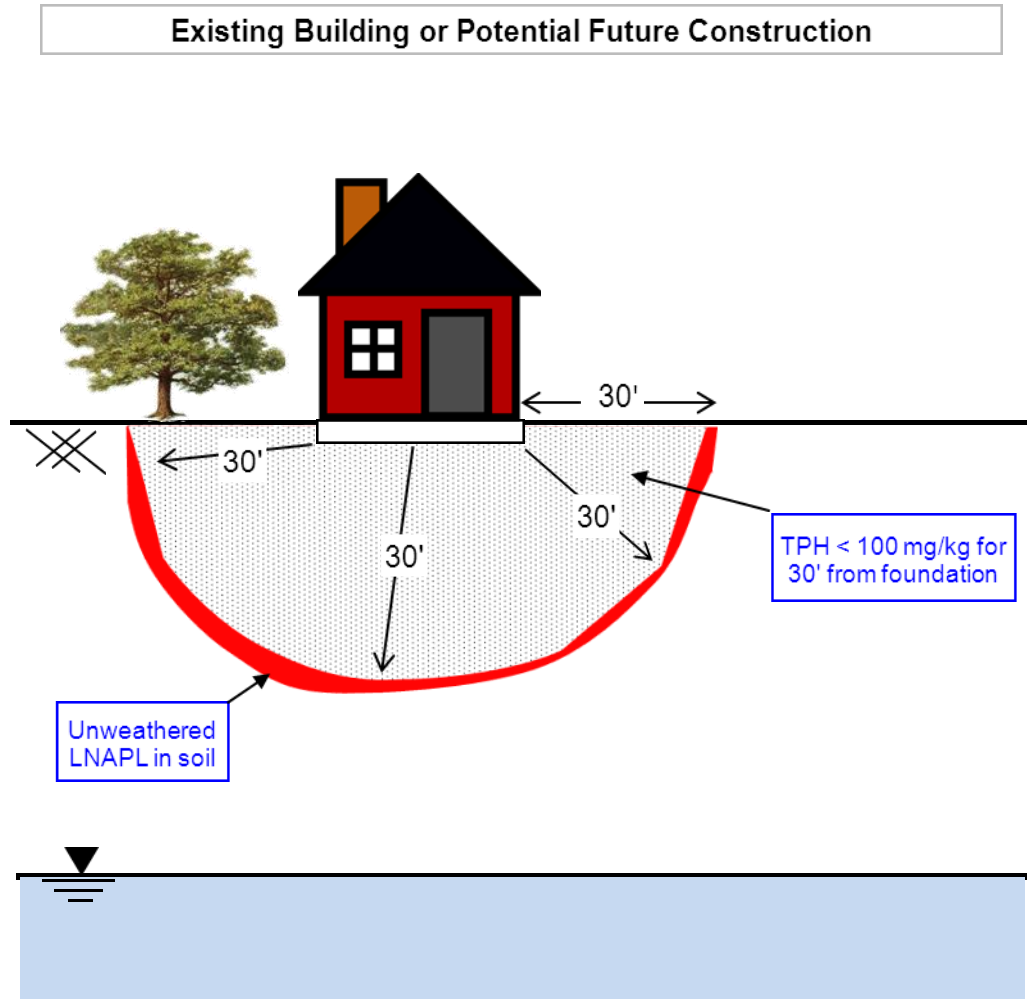
TPH-d = total petroleum hydrocarbons as diesel

*As used in this context, unweathered LNAPL is generally understood to mean petroleum product that has not been subjected to significant volatilization or solubilization, and therefore has not lost a significant portion of its volatile or soluble constituents (e.g., comparable to recently dispensed fuel).

Appendix 2

Scenario 2: Unweathered* LNAPL in Soil

Required Characteristics of the Bioattenuation Zone



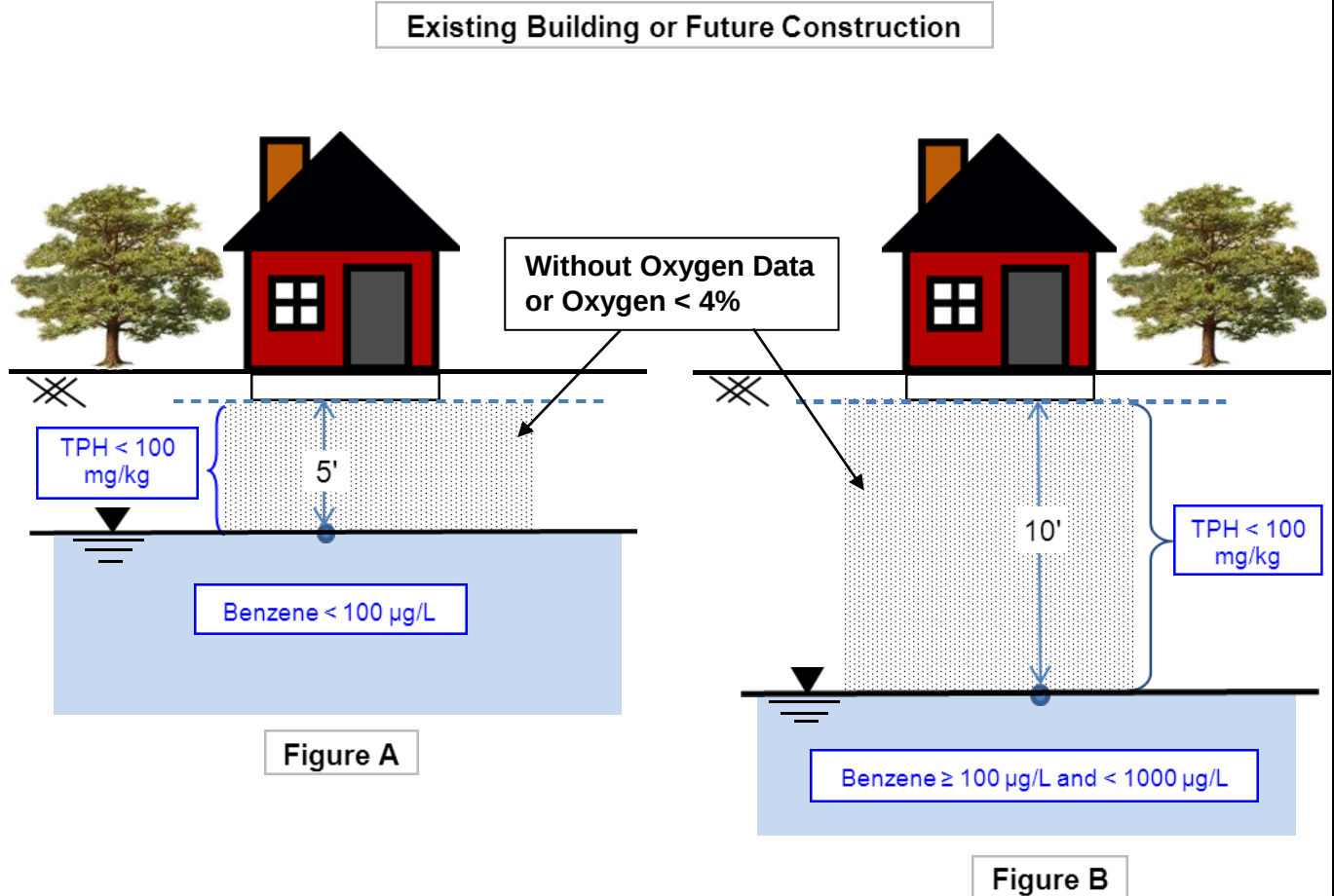
Required Characteristics of the Bioattenuation Zone:

1. The bioattenuation zone shall be a continuous zone that provides a separation of at least 30 feet both laterally and vertically between the LNAPL in soil and the foundation of existing or potential buildings, and
2. Total TPH (TPH-g and TPH-d combined) are less than 100 mg/kg throughout the entire lateral and vertical extent of the bioattenuation zone.

*As used in this context, unweathered LNAPL is generally understood to mean petroleum product that has not been subjected to significant volatilization or solubilization, and therefore has not lost a significant portion of its volatile or soluble constituents (e.g., comparable to recently dispensed fuel).

Appendix 3
Scenario 3 - Dissolved Phase Benzene Concentrations in Groundwater
(Low concentration groundwater scenarios with or without oxygen data)
(1 of 2)

Defining the Bioattenuation Zone Without Oxygen Data or Oxygen < 4%



**Required Characteristics of Bioattenuation Zone for Sites
Without Oxygen Data or Where Oxygen is < 4%**

Figure A: 1) Where benzene concentrations are less than 100 µg/L, the bioattenuation zone:

- a) Shall be a continuous zone that provides a separation of at least 5 feet vertically between the dissolved phase Benzene and the foundation of existing or potential buildings; and
- b) Contain Total TPH (TPH-g and TPH-d combined) less than 100 mg/kg throughout the entire depth of the bioattenuation zone.

Figure B: 1) Where benzene concentrations are equal to or greater than 100 µg/L but less than 1000 µg/L, the bioattenuation zone:

- a) Shall be a continuous zone that provides a separation of at least 10 feet vertically between the dissolved phase Benzene and the foundation of existing or potential buildings; and
- b) Contain Total TPH (TPH-g and TPH-d combined) less than 100 mg/kg throughout the entire depth of the bioattenuation zone.

Appendix 3

Scenario 3 - Dissolved Phase Benzene Concentrations in Groundwater (Low concentration groundwater scenarios with or without oxygen data)

(2 of 2)

Defining the Bioattenuation Zone With Oxygen $\geq 4\%$

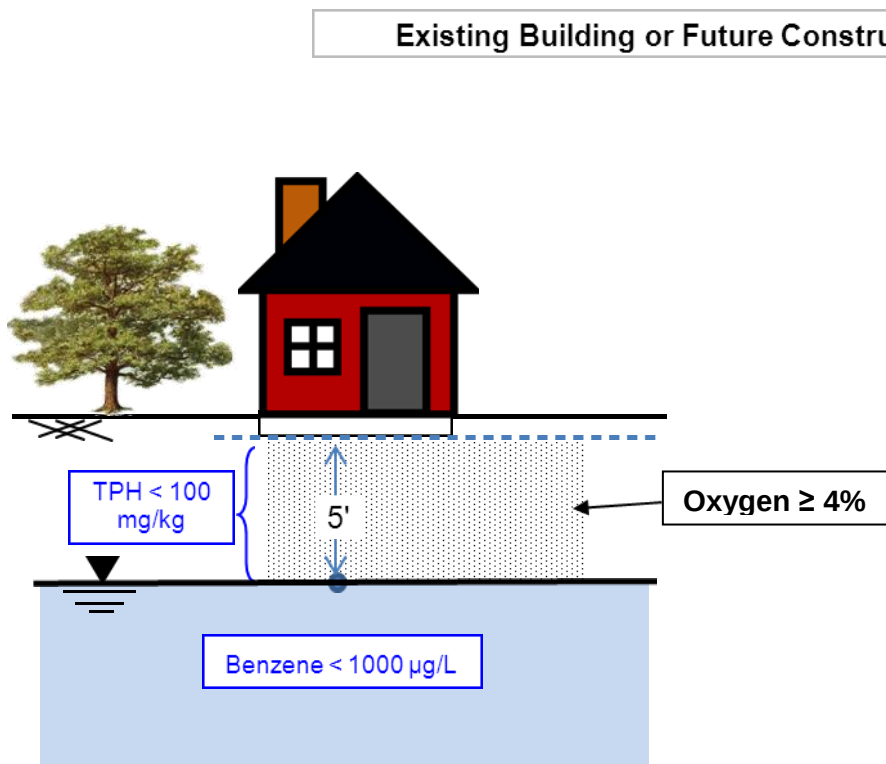


Figure C

Required Characteristics of Bioattenuation Zone for Sites With Oxygen $\geq 4\%$

Where benzene concentrations are less than 1000 $\mu\text{g/L}$, the bioattenuation zone:

1. Shall be a continuous zone that provides a separation of least 5 feet vertically between the dissolved phase Benzene and the foundation of existing or potential buildings; and
2. Contain Total TPH (TPH-g and TPH-d combined) less than 100 mg/kg throughout the entire depth of the bioattenuation zone.

Appendix 4

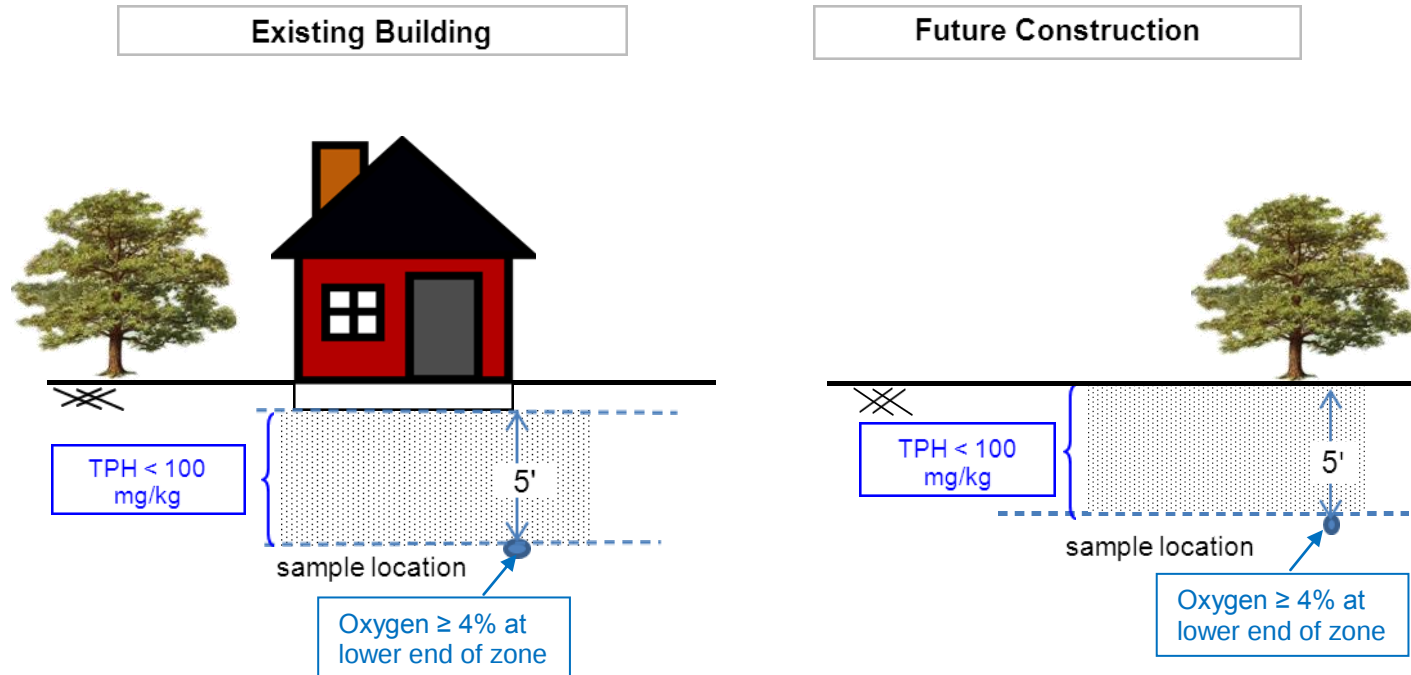
Scenario 4 - Direct Measurement of Soil Gas Concentrations (1 of 2)

Soil Gas Sampling – No Bioattenuation Zone		
Existing Building Future Construction The diagram illustrates two scenarios for soil gas sampling. On the left, an 'Existing Building' is shown with a red house. A dashed line indicates the 'Depth of Foundation'. A sample location 'a' is marked 5 feet below the foundation. On the right, 'Future Construction' is shown with a tree. A sample location 'b' is marked 5 feet below the ground surface.		
The criteria in the table below apply unless the requirements for a bioattenuation zone, established below, are satisfied. When applying the criteria below, the soil gas sample must be obtained from the following locations: a. Beneath or adjacent to an existing building: The soil gas sample shall be collected at least five feet below the bottom of the building foundation. b. Future construction: The soil gas sample shall be collected from at least five feet below ground surface.		
Soil Gas Criteria ($\mu\text{g}/\text{m}^3$)		
	No Bioattenuation Zone*	
	Residential	Commercial
Constituent	Soil Gas Concentration ($\mu\text{g}/\text{m}^3$)	
Benzene	< 85	< 280
Ethylbenzene	<1,100	<3,600
Naphthalene	< 93	< 310
*For the no bioattenuation zone, the screening criteria are same as the California Human Health Screening Levels (CHHSLs) with engineered fill below sub-slab.		

Appendix 4

Scenario 4 - Direct Measurement of Soil Gas Concentrations (2 of 2)

Soil Gas Sampling – With Bioattenuation Zone



The criteria in the table below apply if the following requirements for a bioattenuation zone are satisfied:

1. There is a minimum of five vertical feet of soil between the soil vapor measurement and the foundation of an existing building or ground surface of future construction.
2. TPH (TPHg + TPHd) is less than 100 mg/kg (measured in at least two depths within the five-foot zone.)
3. Oxygen is greater than or equal to four percent measured at the bottom of the five-foot zone.

Soil Gas Criteria ($\mu\text{g}/\text{m}^3$)

	With Bioattenuation Zone**	
	Residential	Commercial
Constituent	Soil Gas Concentration ($\mu\text{g}/\text{m}^3$)	
Benzene	< 85,000	< 280,000
Ethylbenzene	<1,100,000	<3,600,000
Naphthalene	< 93,000	< 310,000

**A 1000-fold bioattenuation of petroleum vapors is assumed for the bioattenuation zone.