

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION**

ORDER NO. R2-2016-0037

ADOPTION OF FINAL SITE CLEANUP REQUIREMENTS AND RESCISSION OF ORDER Nos. 91-016, 91-095, 92-022, 92-127, 94-042, 96-162, 97-015, 97-095, and R2-2005-0033 for: STARLINK LOGISTICS, INC. (FORMERLY, RHONE-POULENC, INC.)

for:

1990 BAY ROAD SITE
EAST PALO ALTO, SAN MATEO COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region (hereinafter Water Board), finds that:

- 1. Site Location:** The formulation of agricultural chemicals at a facility formerly located at 1990 Bay Road in East Palo Alto caused soil and groundwater pollution at both the facility and adjoining properties. Together, these properties make up the “Site” (see Figure 1). The entire Site is approximately 23 acres, encompassing all areas with arsenic concentrations greater than 20 milligrams per kilogram (mg/kg) of undried (wet) soil and sediment. This includes the 4.9-acre 1990 Bay Road property; partly-developed commercial properties to the north, south, and west; residential and mixed-use properties to the south; a portion of a Pacific Gas & Electric (PG&E) electrical substation (hereinafter the PG&E Poleyard) property to the east; and a small portion of a tidal wetland located beyond a levee east of the 1990 Bay Road property (Figure 2). For investigative and remedial purposes, the Site has been divided into Operable Units as described in finding 4 below. The Site is located about 2,000 feet west of San Francisco Bay and is bordered by a tidal wetland of the Don Edwards San Francisco Bay National Wildlife Refuge to the east.
- 2. Site History:** Arsenic-based agricultural chemicals, such as weed control compounds, were manufactured at the 1990 Bay Road property from the 1920s until the late 1960s, first by Chipman Chemical Company (Chipman) and then by Rhodia Inc. (Rhodia), which acquired Chipman in 1964. Rhodia stopped using arsenic in the late 1960s and sold the property to Zoecon Corporation (Zoecon) in 1971. Zoecon, which later became Sandoz Agro Inc. (Sandoz), manufactured non-arsenic based bio-rational insect controls at the facility from 1972 to 1994. In 1994, Rhône-Poulenc, Inc. (Rhône-Poulenc), formerly known as Rhodia, repurchased the real property from Sandoz. Catalytica, Inc. (Catalytica) leased the real property from Rhône-Poulenc and manufactured non-arsenical chemicals and pharmaceutical intermediates from 1994 until mid-2001, when the facility closed. In 2001, the property was transferred to StarLink Logistics, Inc. (SLLI), a successor to Rhône-Poulenc. The manufacturing plant and office facilities were demolished in the spring of 2002 to facilitate remaining site cleanup work. The 1990 Bay Road property is now vacant, except for an empty warehouse structure adjacent to Bay Road.
- 3. Named Dischargers:** SLLI is named as a discharger because it is the successor-in-interest to Chipman and Rhodia. Substantial evidence demonstrates that Chipman and Rhodia discharged pollutants, primarily arsenic, to soil and groundwater during their manufacturing operations at the Site. SLLI is also named a discharger because it currently owns the property upon which

discharges occurred and the discharged chemicals remain present in soil and groundwater. SLLI has knowledge of the discharges, and it has the legal ability to control the discharge.

- 4. Site Description and Operable Unit Designations:** The Site, as previously stated, is defined as areas with arsenic concentrations greater than 20 mg/kg of undried (wet) soil and sediment (Figure 2). While arsenic is the primary contaminant of concern at the Site, other metals, including cadmium, lead, zinc, mercury, and selenium, have been found at elevated concentrations as well. Arsenic is also found in shallow groundwater at the Site (Figure 3) in an area smaller than the affected soil area. No arsenic has been found in deeper groundwater aquifers.

For purposes of remedy selection and remedial planning, the Site, pursuant to Order No. 91-016, was divided into Upland and Wetland Operable Units (OUs) within the meaning of section 300.430(a)(ii) of the National Contingency Plan (NCP), 40 C.F.R. Part 300. The attached Table 1 and Figure 4 identify current OUs, subareas, and individual properties affected. Table 1 also summarizes the remedial status of properties within the Site.

a. Upland OU

The Upland OU, pursuant to Order No. 91-016, is defined to include:

- 1990 Bay Road property (approximately 4.9 acres);
- 2470 Pulgas Avenue, former Bains property (a portion of the 1.5 acre parcel);
- PG&E Poleyard, adjacent to PG&E substation (approximately 0.8 acres);
- 1950 Bay Road (aka 1980 Bay Road), former Curtaccio property (0.4 acre portion of the 1.5 acre property); and,
- North of Bay Road [0.2 acres comprised of portions of 1923 (Curtaccio), 1987 (Rogge) and 2005 (Bay Road Holdings/former Romic) Bay Road].

b. Upland OU Annex

Order No. 94-042 extended the boundary of the Upland OU, annexing portions of the Wetland OU and extending the Upland OU remedy into this area. This portion of the Site is referred to as the Upland OU Annex and consists of:

- 1175 Weeks Street, Torres property (a portion of the approximately 8.4 acre property); and,
- Non-Tidal Marsh area, which were formerly part of the PG&E property but were made part of the 1990 Bay Road property by lot line adjustment (a portion of the approximately 3.6 acre parcel).

c. South of Weeks Subarea

Additional contamination was discovered in the mid-1990s outside the previously defined southern site boundary. Order No. 97-095 expanded the Upland OU Annex to include affected properties south of Weeks Street, referred to as the South of Weeks Subarea. This area includes portions of the following properties totaling approximately 3.6 acres:

- 1200 Weeks Street (a portion of the 3.4 acre property);
- 1250 Weeks Street (approximately 0.8 acres);

- 1275 Runnymede, Wilson property (a portion of the 1.2 acre property); and,
- Ravenswood School District property (a 0.1 acre portion of the property).

d. Wetland OU

The Wetland OU (Figure 4) consists of approximately 1.9 acres of tidal wetlands, owned by the City of Palo Alto and located beyond the levee southeast of the 1990 Bay Road property. Order No. R2-2005-0033 for the Wetland OU was adopted in 2005.

A portion of the drainage canal owned by the City of Palo Alto located south of Runnymede Street was addressed in Order No. 97-095 and at that time included in the Wetland OU. Since that time, extensive sampling on this property indicated that arsenic concentrations in soil are less than 20 mg/kg. Therefore, this area is no longer considered part of the Wetland OU, and this Order formally documents removal of the area from the Wetland OU. In addition, the installation of an underground barrier wall (slurry wall) was required by the Upland OU remedy but was scheduled to be installed after implementation of the Wetland OU remedy. This schedule was modified and the underground barrier wall was installed in 2001 pursuant to a 13267 directive letter issued by the Executive Officer on February 18, 2000.

- 5. Regulatory History and Status:** Remedial activities began at the Site in 1981, when an initial investigation of the extent of arsenic in soil and groundwater was conducted. In 1985, the Site was proposed for inclusion on the National Priorities List (NPL) under the federal Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). Also in 1985, the California Department of Health Services issued Sandoz, the facility owner and operator at the time, a permit to store and treat hazardous waste under the U.S. Environmental Protection Agency's (U.S. EPA) Resource Conservation and Recovery Act (RCRA) authority (permit No. CAT000611350). In 1989, U.S. EPA formally removed the Site from consideration for the NPL.

From 1987 to 1991, the Site was under the jurisdiction of the Department of Toxic Substances Control (DTSC) pursuant to a Consent Order between DTSC, the Water Board, and Rhône-Poulenc. Lead agency status changed in January 1991 to the Water Board, and the provisions of the Consent Order were vacated by stipulation, except those referencing cost recovery.

A Record of Decision (ROD) was issued by U.S. EPA for the Upland OU in March 1992, and the selected remedial actions were incorporated into Order No. 92-022. In 1994, Order No. 94-042 modified the boundaries of the Upland OU to incorporate an additional 11.8 acres of the Site referred to as the Upland OU Annex. Order No. 94-042 served as an explanation of significant difference, thereby amending the ROD to include the Upland OU Annex. In 1997, remedial actions for an additional 3.6 acres, referred to as the South of Weeks Subarea, were required by Order No. 97-095. Order No. 97-095 also served as an explanation of significant difference, thereby further amending the ROD to include the South of Weeks Subarea.

A portion of the tidal marsh comprises the Wetland OU. Order No. 92-127 required an Ecological Assessment of the tidal marsh, which was finalized in 1998. A Feasibility Study was prepared for the Wetland OU in 2005, which was finalized in 2007. Order No. R2-2005-0033 for the Wetland OU was adopted in 2005.

In 2009, the United States Department of Justice, on behalf of U.S. EPA and the Department of the Interior, entered into a Consent Decree with SLLI to, among other things, release and agree to a covenant not to sue with SLLI with respect to Natural Resource Damages (NRD) and NRD Claims relating to the Site.

The following Water Board orders have been adopted for the Site:

- Cleanup and Abatement Order No. 82-001, adopted April 15, 1982 (requiring investigation and abatement of the vertical and lateral extent of soil, surface, and groundwater pollution);
- Cleanup and Abatement Order No. 82-002, adopted April 21, 1982;
- Cleanup and Abatement Order No. 82-005, adopted October 13, 1982;
- Cleanup and Abatement Order No. 83-012, adopted December 20, 1983;
- Waste Discharge Requirements Order No. 85-67, adopted May 15, 1985 (rescinding Order Nos. 82-001, 82-002, 82-005, and 83-012 and requiring the dischargers to conduct further site characterization, construct monitoring well systems in the shallow and deep aquifers, and submit results of groundwater sample analyses);
- Site Cleanup Requirements Order No. 91-016, adopted February 20, 1991 (rescinding and replacing Order No. 85-67 to reflect change in lead agency, to include tasks necessary to complete the Feasibility Study/Remedial Action Plan process, to update groundwater monitoring, and to ensure design of an adequate groundwater mitigation response for final site cleanup);
- Site Cleanup Requirements Order No. 91-095, adopted June 19, 1991 (amending Order No. 91-016 to add provisions for implementing an Early Action Removal Plan (EARP));
- Site Cleanup Requirements Order No. 92-022, adopted February 22, 1992 (containing the Remedial Action Plan for the Upland OU);
- Site Cleanup Requirements Order No. 92-127, adopted October 21, 1992 (amending Order Nos. 92-022, 91-095, and 91-016, to revise and consolidate tasks and due dates);
- Site Cleanup Requirements Order No. 94-042, adopted March 16, 1994 (amending Order Nos. 92-127, 92-022, 91-095, and 91-016, extending the Upland OU remedy into the Upland OU Annex area);
- Site Cleanup Requirements Order No. 96-162, adopted December 18, 1996 (amending Order Nos. 94-042, 92-127, 92-022, 91-095, and 91-016, removing Sandoz Crop Protection Corporation as a discharger);
- Cleanup and Abatement Order No. 97-015, issued March 26, 1997 (naming Torres as a discharger and setting forth the time schedule for completion of remedial action on Torres property);
- Cleanup and Abatement Order No. 97-095, issued July 16, 1997 (amending Order No. 92-022, extending the Upland OU remedy into the South of Weeks Subarea and revising the residential soil cleanup standard for arsenic from 70 mg/kg to 20 mg/kg); and,
- Cleanup and Abatement Order No. R2-2005-0033, adopted July 20, 2005 (containing the selected remedy for the Wetland OU).

- 6. Site Hydrogeology:** Two distinct water-yielding groundwater zones exist at and around the Site: a shallow zone that occurs from a depth of about 5 to 40 feet and a deep aquifer that occurs below a depth of about 160 feet. The shallow zone consists of interbedded silts, clayey silts, and sand lenses. A relatively continuous sand lens occurs at a depth of about 5 to 15 feet, and a second relatively continuous sand lens occurs at a depth of about 20 to 35 feet. The depth

interval from about 5 to 15 feet is referred to as the upper shallow groundwater zone, and the depth interval from about 20 to 35 feet is referred to as the lower shallow groundwater zone. The direction of groundwater flow in the shallow groundwater zone is generally toward the southeast to discharge areas along the sloughs in the tidal wetlands. During the dry summer months, the direction of groundwater flow shifts to a more southerly direction. Beneath the shallow groundwater zone to a depth of about 160 feet is a silty-clay and clay interval that acts as an aquitard separating the shallow zone from the deep aquifer.

- 7. Remedial Investigation:** Remedial activities began at the Site in 1981, when an initial investigation of the extent of arsenic in soil and groundwater was conducted. Arsenic is the primary contaminant of concern at the Site. Although other metals (cadmium, lead, mercury, and selenium) have been found at elevated concentrations at the Site, arsenic has been determined to be a reliable indicator of other compounds. The Remedial Investigation (RI) report for the Site was completed in 1989. The RI report contained sufficient information to select a remedy for the Upland OU but not to design and implement the remedy. As a result, extensive data collection programs were conducted in the Upland OU and the Upland OU Annex to accurately define the horizontal and vertical extent of arsenic in soil above the three threshold levels established in the 1992 ROD: 5000 mg/kg; 500 mg/kg; and 70 mg/kg.

While the results of the additional soil investigations conducted in the Upland OU, the Upland OU Annex, and the Wetland OU indicated that the northern, eastern, and western extents of arsenic in soil were defined in the RI and ROD, sampling conducted to the south indicated that arsenic existed in soil below several feet of clean fill on the southern part of the Torres property. In 1995, soil investigations were initiated in the South of Weeks Subarea to evaluate the southern extent of arsenic. Based on these investigations, the area of known arsenic concentrations in soil and groundwater expanded to include about 2.5 acres in a narrow strip along the landward side of the levee from Weeks Street to just south of Runnymede Street. Arsenic in soil in this area, for the most part, occurs beneath fill materials.

Since the 1992 ROD, samples from thousands of locations have been collected and analyzed for arsenic and other site-related constituents. Generally, soil sampling events performed on the Site since the initial investigations have been associated with the design and implementation of remedial actions on the Site. The results of these additional soil investigations did not significantly change the previously defined extent of arsenic concentration in soil. As a result of site investigations, the total areal extent of soil with arsenic concentrations in excess of 20 mg/kg prior to remediation is estimated to be about 23 acres, as shown on Figure 2. Due to the high density of sampling points, there is a high degree of confidence in the estimated extent of arsenic in soil.

The RI did not contain sufficient information to select a remedy for the Wetland OU, and, as a result, a detailed Ecological Assessment of the tidal wetlands was conducted. The Ecological Assessment of the tidal wetlands was submitted in 1994 and the Ecological Risk Assessment was finalized in 1998. Additional sampling was conducted in the tidal wetlands in April and May 2000 to define the lateral and vertical extent of arsenic and zinc within the slough sediments and in the underlying subsurface materials in the vicinity of a location of concern identified in the Ecological Assessment referred to as Slough Station 2. A total of 136 sediment samples were collected in the tidal sloughs, 41 soil samples were collected from 5 borings

advanced to 8 or 9 feet below ground surface in the immediate vicinity of Slough Station 2, and 6 additional shallow soil samples were collected for analysis of total organic carbon and particle size analysis. The sampling results indicated that the average arsenic concentrations in the slough sediments calculated from the data collected in the Ecological Assessment slightly overestimated the actual arsenic concentrations and confirmed the conclusion of the Ecological Risk Assessment that arsenic and zinc do not occur in the tidal wetlands at levels likely to cause adverse effects.

In 1985, the Water Board required that SLLI install a monitoring well network to monitor the extent of groundwater with arsenic concentrations greater than 0.05 mg/L and to confirm that contaminated groundwater is not migrating to the deep groundwater zone. Deep groundwater is monitored with respect to the background arsenic concentration in groundwater, which is 0.005 mg/L. SLLI has maintained and monitored a system of perimeter groundwater monitoring wells since 1986. The perimeter monitoring system was originally designed to meet the requirements of Order No. 85-67, which required that a system of perimeter monitoring well pairs completed in the upper and lower shallow aquifer be located within 100 feet of the 0.05 mg/L contour for arsenic.

Arsenic is found in shallow groundwater at the Site (Figure 3). Impacted groundwater only occurs in areas where soil arsenic concentrations are greater than 20 milligrams per liter (mg/L); therefore, the areal extent of arsenic in groundwater is similar, but smaller, than the areal extent in soil. Groundwater in the upper and lower shallow groundwater zones contains arsenic concentrations in excess of 0.05 mg/L. In the upper shallow groundwater zone, arsenic concentrations exceed 0.05 mg/L in an approximately 12-acre area centered on the 1990 Bay Road property and in an additional 0.5-acre narrow strip on the west side of the levee from Weeks Street to Runnymede Street. In the lower shallow groundwater zone, the areal extent of arsenic concentrations in excess of 0.05 mg/L is only about 5 acres. Thirty years of data have consistently indicated that arsenic has not migrated to the deep groundwater zone.

8. **Risk Assessment:** Risk assessments have been performed for the Site to develop site-specific screening levels for site-related constituents that were protective of human health. A risk assessment performed for the site in 1991 by PRC Environmental Management on behalf of U.S. EPA developed Health Based Goals (HBGs) for soil at the Site based on potential future residential scenarios. The protective HBGs for arsenic ranged from 20 mg/kg to 70 mg/kg depending on exposure pathways. Based on this risk assessment, an HBG of 70 mg/kg was originally selected as the cleanup standard for the Upland OU and later applied to the Upland OU Annex. The site HBG was amended in 1997 by Order No. 97-095, which concluded that the more protective cleanup standard of 20 mg/kg was appropriate for residential areas (South of Weeks Subarea) while the cleanup standard of 70 mg/kg would be appropriate for non-residential areas (Upland OU and Upland OU Annex). The residential HBG of 20 mg/kg was based on assumptions regarding residential exposure and is also consistent with background concentrations.

As part of the Five-Year Status Report in 2014, the HBGs were re-evaluated using current screening levels published by regulatory agencies. As summarized in the Five-Year Status Report, the current U.S. EPA and Water Board residential screening levels for arsenic adjusted for the site-specific 1×10^{-4} target risk are 34 mg/kg and 22 mg/kg, respectively, which are

greater than the site criterion of 20 mg/kg. However, DTSC has developed a California-specific screening level of 6.2 mg/kg adjusted for a 1×10^{-4} target risk, which is lower than the site-specific HBG. Based on a review of background concentrations in unaffected areas in the San Francisco Bay Region, the Water Board concluded that for the purpose of this cleanup, 20 mg/kg is considered background for arsenic (Order No. 92-022). Therefore, accessible arsenic in residential areas was essentially remediated to background conditions so no revision to the approach for residential areas was required.

For the industrial areas, the 2014 report summarized that the U.S. EPA and Water Board commercial/industrial screening levels for arsenic adjusted for a 1×10^{-4} target risk were 240 mg/kg and 160 mg/kg, respectively, which are above the HBG of 70 mg/kg. DTSC's California-specific screening level for arsenic is 25 mg/kg adjusted for a 1×10^{-4} target risk. All commercial/industrial areas with soil that contained arsenic concentrations greater than 70 mg/kg were capped and deed restrictions were placed on the properties, except for a small area north of Bay Road. Soil containing arsenic concentrations greater than 70 mg/kg was excavated on three properties north of Bay Road in 1992. A small area adjacent to these excavations contains soil with concentrations between 25 and 70 mg/kg. This area is in or next to the Bay Road right of way and does not present a significant risk of exposure to soil. Therefore, it was concluded that the commercial/industrial areas do not present a significant risk of exposure to soil, and no change in the site-specific commercial/industrial cleanup criterion for soil north of Bay Road was necessary.

The Ecological Assessment, the Ecological Risk Assessment, and the Endangered Species Risk Calculations that were summarized in the Feasibility Study for the Wetland OU concluded that the wetlands are healthy, and there is no evidence of significant risks to ecological receptors (including Ridgway's rail and the salt marsh harvest mouse) from the Site. The dry weight Target Low Levels in sediment were calculated based on no adverse effects to be 24 mg/kg arsenic for the marsh and 16 mg/kg arsenic for the sloughs, and 201 mg/kg zinc for the marsh and 158 mg/kg zinc for the sloughs. The area of marsh surface and slough that exceeds the Target Low Levels in soil is limited to 1.3 acres of the 90-acre Laumeister Tract. In this area, the U.S. Fish and Wildlife Service determined that there is a 25 percent loss of habitat service. The completed remedial actions in the Upland OU have eliminated or minimized the potential for future site impacts on the tidal wetlands. Other elevated sediment concentrations have been found at depths greater than 5 feet, but these sediments are not accessible to ecological receptors, which forage primarily in the top 6 inches of sediment. Therefore, quantitative remedial objectives for sediment were not developed.

Based on these conditions, remedies were selected and implemented for the five site sub-areas: the Upland OU, the Upland OU Annex, the South of Weeks Subarea, the Wetland OU, and the Groundwater Unit. These measures minimize the potential for human and environmental exposures to contaminated soil, groundwater, surface water, and dust and minimize the risk of continued spread of contamination.

- 9. Feasibility Study:** The Feasibility Study report was completed for the Upland OU in 1991. The Feasibility Study developed the selected remedy for the Upland OU, which was incorporated into the ROD. This remedy was later extended to the Upland OU Annex and, with more protective residential HBGs, to the South of Weeks Subarea.

The Feasibility Study for the Wetland OU was finalized in 2007. The Feasibility Study for the Wetland OU presented ecological and human health risk assessments for surface water and sediment in the tidal wetlands and concluded that based on the HBGs for commercial/industrial receptors, concentrations of arsenic in sediment do not represent a public health risk requiring remedial action.

10. Selected Remedies: The components of the selected remedies for soil in each of the OU and for the groundwater at the Site are described below:

a. Upland OU and Upland OU Annex Remedial Action Plan - Soil

The remedy for the Upland OU was specified in the ROD and in Order Nos. 92-022 and 94-042 for the Upland OU Annex. The remedy includes the following components:

- Remove accessible soil containing arsenic concentrations greater than 5,000 mg/kg;
- Treat accessible soil containing arsenic concentrations of 500 mg/kg or greater by means of fixation technology, with treatability goals of 5 milligrams per liter (mg/L) arsenic, 1 mg/L cadmium, 5 mg/L lead, 0.02 mg/L mercury, and 1 mg/L selenium, as measured by the federal Toxicity Characteristic Leaching Procedure (TCLP);
- Record deed restrictions for properties where soil greater than 70 mg/kg arsenic is left in place;
- Remove soil containing arsenic concentrations above 70 mg/kg from any properties that will not be deed restricted and dispose at an appropriate facility; and,
- Cap areas that contain surface soil with arsenic concentrations greater than 70 mg/kg after grading to control surface ponding and maintain surface water drainage to the southeast.

The definition of the Upland OU was modified by subsequent Water Board orders to include the Upland OU Annex and the South of Weeks Subarea.

b. South of Weeks Subarea Remedial Action Plan - Soil

The remedy for the soil in the South of Weeks Subarea (Figure 4), which was specified in Order No. 97-095, modified the existing cleanup standard for the Upland OU and Upland OU Annex of 70 mg/kg to 20 mg/kg. The plan calls for removal of soil containing greater than 20 mg/kg arsenic unless consent by the property owner is obtained. Capping, deed restrictions, and a site management plan are required where arsenic concentrations greater than 20 mg/kg remain in soil.

c. Wetland OU Remedial Action Plan – Soil

The remedy for the Wetland OU was described in Order No. R2-2005-0033 and includes the following components:

- Conduct topographic monitoring of the wetland surface near the bend in the levee every five years for thirty years. If the results indicate that natural erosion is exposing elevated concentrations of arsenic, a contingency plan will be developed. If, in 2036, after 30 years of monitoring, the results indicate that erosion is not occurring, topographic monitoring will cease; and
- Offset the reduction of wetland function due to the migration of arsenic into the sediment of the tidal wetlands by implementing 1.3 acres of the Cooley Landing Salt Pond restoration.

d. Remedial Action Plan for Groundwater

The remedy for groundwater was specified in Order Nos. 92-022 and 85-67 and included the following components:

- Groundwater monitoring of 17 perimeter shallow zone wells with a contingency plan for plume containment should further migration occur;
- Installation of a slurry wall to contain soil and shallow zone groundwater with high concentrations of arsenic after soil remediation, and phytoremediation within the slurry wall to uptake groundwater and maintain an inward hydraulic gradient; and
- Groundwater monitoring of the deep aquifer and maintain concentrations of arsenic and other chemicals of concern at background concentrations.

The contingency plan for groundwater at the Site, the Aquifer Characterization and Contingency Plan (ACCP), describes the monitoring program for the perimeter wells, the deep aquifer well, and the groundwater containment system monitoring wells as well as the criteria used to determine if monitoring data indicates potential migration of arsenic. The ACCP describes the additional investigative and statistical procedures that are required to determine if there is statistical evidence that migration of arsenic has occurred and presents the schedule for the implementation of investigations and the evaluation of data. If results of investigations indicate corrective action is appropriate, a Corrective Action Plan will be submitted to the Water Board that will specify the remedial measures that will be taken and will propose a schedule for implementation of proposed remedial actions.

11. Status of Remediation: A brief description of the remedial activities completed and remedial activities which remain to be implemented for the distinct OUs and subareas are presented in Table 1 and depicted on Figure 5. A more detailed account of remediation is presented in the April 16, 2014, Site Management Plan, which is part of the record for the Site.

12. Basis for Cleanup Standards.

a. General

State Water Resources Control Board (State Water Board) Resolution No. 68-16, "Statement of Policy with Respect to Maintaining High Quality of Waters in California," applies to this discharge. It requires maintenance of background levels of water quality unless a lesser water quality is consistent with maximum benefit to the people of the State, will not unreasonably affect present and anticipated beneficial uses, and will not result in exceedance of applicable water quality objectives. This Order and its requirements are consistent with Resolution No. 68-16.

State Water Board Resolution No. 92-49, "Policies and Procedures for Investigation and Cleanup and Abatement of Discharges Under Water Code section 13304," applies to this discharge. It directs the Regional Water Boards to set cleanup levels equal to background water quality or the best water quality which is reasonable, if background levels cannot be restored. Here, background levels cannot be restored, and the cleanup levels established in this Order are consistent with the maximum benefit to the people of the State, will not unreasonably affect present and anticipated beneficial uses of such water, and will not result in exceedance of applicable water quality objectives. This Order and its requirements are consistent with the provisions of Resolution No. 92-49, as amended.

b. Basis for Soil Cleanup Standards

The risk assessment performed in 1991 developed HBGs ranging from 20 mg/kg to 70 mg/kg for arsenic in soil at the Site based on potential future residential scenarios. An HBG of 70 mg/kg was originally selected for the Upland OU in 1992 and later applied to the Upland OU Annex. The HBG was amended in 1997 by Order No. 97-095, which concluded that the more protective HBG of 20 mg/kg was appropriate for residential areas (South of Weeks Subarea), while the HBG of 70 mg/kg was appropriate for non-residential areas (Upland OU and Upland OU Annex). The residential HBG of 20 mg/kg is also consistent with background concentrations. These HBGs were re-evaluated in subsequent Five-Year Status Reports and no revision was found to be necessary.

c. Basis for Sediment Cleanup Standards

The Ecological Assessment, the Ecological Risk Assessment, and the Endangered Species Risk Calculations concluded that the tidal wetlands are healthy, and there is no evidence of significant risks to ecological receptors (including Ridgway's rail and the salt marsh harvest mouse) from the Site. Therefore, quantitative remedial objectives for sediment were not developed.

d. Beneficial Uses

The Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) is the Water Board's master water quality control planning document. The Basin Plan was duly adopted by the Water Board and approved by the State Water Board, U.S. EPA, and the Office of Administrative Law where required. The Basin Plan defines beneficial uses and water quality objectives for waters of the State, including surface waters and groundwater.

Water Board Resolution No. 89-39, "Sources of Drinking Water," defines potential sources of drinking water to include all groundwater in the State, except where the groundwater source contains more than 3,000 mg/kg Total Dissolved Solids (TDS), high contaminant levels, or is low yield. The shallow aquifer underlying the Site, including the Wetland OU, is naturally saline and has TDS in excess of 3,000 mg/kg, and therefore would not be a suitable or potentially suitable municipal and domestic supply, even if it had not been impacted by arsenic. There are no onsite wells currently drawing water from the shallow zone for drinking water supply or other purposes.

The deep aquifer that underlies the Site is a source of drinking water and is monitored closely to ensure that it remains uncontaminated by arsenic.

The Basin Plan designates the following potential beneficial uses of groundwater underlying and adjacent to the Site:

- Industrial service supply (IND)
- Municipal and domestic water supply (MUN)
- Industrial process water (IND)
- Agricultural water supply (AG)

The existing and potential beneficial uses of nearby surface waters (San Francisco Bay, San Francisquito Creek, and associated wetlands) include:

- Industrial service supply (IND)
- Commercial and Sport Fishing (COMM)
- Water contact and non-contact recreation (REC-1)/(REC-2)
- Wildlife habitat (WILD)
- Cold freshwater and warm freshwater habitat (COLD)/(WARM)
- Fish migration and spawning (MIGR)/(SPWN)
- Navigation (NAV)
- Estuarine habitat (EST)
- Shellfish harvesting (SHELL)
- Preservation of rare and endangered species (RARE)

e. Basis for Groundwater Cleanup Standards

The groundwater cleanup standards for the Site are based on applicable water quality objectives. Cleanup to this level will protect the beneficial use of groundwater and will result in acceptable residual risk to humans. In 1985, the Water Board required that SLLI install a monitoring well network in the shallow zone to monitor the extent of groundwater with arsenic concentrations greater than 0.05 mg/L and to confirm that contaminated groundwater is not migrating laterally. A deep zone well has also been installed and monitored to ensure the deep zone remains at background levels.

- 13. Reason for this Order:** Site investigation and cleanup activities have been ongoing at the Site since the early 1980s. Since that time, the Water Board has adopted several orders to regulate investigation and cleanup activities. Substantial remedial activities have been implemented and completed for the Site. This Order supersedes and rescinds the previous orders and compiles a comprehensive set of tasks for ongoing remedial measures, long-term monitoring, and management of the Site.
- 14. Risk Management:** The Water Board considers the following human health risks to be acceptable at remediation sites: a cumulative hazard index of 1.0 or less for non-carcinogens and a cumulative excess cancer risk of 10^{-6} to 10^{-4} or less for carcinogens. The selected remedies for the Site allow for management in-place of soil exceeding these health-based criteria. This requires application of risk management measures including engineering controls (such as engineered caps on soil) and institutional controls (deed restrictions prohibiting certain land uses and requiring compliance with engineered controls) be maintained. Risk management will be required in perpetuity.
- 15. Future Changes to Cleanup Standards:** If new technical information indicates that the established cleanup standards are significantly over-protective or under-protective, the Water Board will consider revising those cleanup standards.
- 16. Basis for 13304 Order:** Water Code section 13304 authorizes the Water Board to issue orders requiring a discharger to cleanup and abate waste where the discharger has caused or permitted waste to be discharged or deposited where it is or probably will be discharged into waters of the State and creates or threatens to create a condition of pollution or nuisance.

17. **Cost Recovery:** Pursuant to Water Code section 13304, the discharger is hereby notified that the Water Board is entitled to, and may seek reimbursement for, all reasonable costs actually incurred by the Water Board to investigate unauthorized discharges of waste and to oversee cleanup of such waste, abatement of the effects thereof, or other remedial action, required by this order.
18. **California Safe Drinking Water Policy:** It is the policy of the State of California that every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes. This Order promotes that policy by requiring continued groundwater monitoring to ensure that pollution stabilization measures, including treatment, capping, subsurface barrier construction, and phytoremediation, remain effective at impeding the flow of groundwater in the shallow zone. It also requires the maintenance of background levels of contaminants in the deep zone, which is used as a drinking water source, and contains requirements for a contingency plan should background be exceeded.
19. **California Environmental Quality Act (CEQA):** This Order rescinds and replaces previous orders applicable to this Site, requires ongoing remediation to continue, and consolidates remaining deadlines in a single document. Therefore, the Order does not require additional remedial measures or tasks. The action to rescind previous orders and consolidate remaining tasks is not a project with the potential to cause a direct or reasonably foreseeable indirect physical change in the environment (Cal. Code Regs., tit. 14, § 15378). There is no possibility that the activity in question may have a significant effect on the environment (Cal. Code Regs., tit. 14, § 15061(b)(3)) .
20. **Lead Agency:** The Water Board has been acting as the lead agency pursuant to a stipulation between Rhone-Poulenc, Inc., DTSC, and the Water Board dated February 1991, vacating the August 1987 Consent Order for the Site, and to various interagency agreements. Pursuant to the South Bay Multi-Site Cooperative Agreement (MSCA) and the South Bay Ground Water Contamination Enforcement Agreement, entered into on May 2, 1985 (as subsequently amended) by the Water Board, U.S. EPA, and DTSC, the Water Board has been acting as the lead agency for the Site. MSCA terminated in July 1996. The Water Board will continue as appropriate to regulate the discharger's remediation and administer enforcement actions in accordance with CERCLA as amended by Superfund Amendments Reauthorization Act (SARA), the Water Code, the Health and Safety Code, and regulations adopted thereunder. Pursuant to CERCLA sections 104 and 122, 42 U.S.C.A. §§9604 and 9622, U.S. EPA will allow SLLI to conduct the remediation described herein.
21. **Notification:** The Water Board has notified the discharger and known interested agencies and persons of its intent under Water Code section 13304 to update site cleanup requirements for the discharge and has provided them with an opportunity to submit their written comments. U.S. EPA, DTSC, and the City of East Palo Alto have been notified regarding the requirements of this Order.
22. **Public Hearing:** The Water Board, at a public meeting, heard and considered all comments pertaining to this Order.

IT IS HEREBY ORDERED, pursuant to sections 13304 and 13267 of the California Water Code and section 25356.1 of the California Health and Safety Code, that the discharger (or its agents, successors, or assigns) shall clean up and abate the effects described in the above findings as follows:

A. PROHIBITIONS

1. The discharge of wastes or hazardous substances in a manner which will degrade water quality or adversely affect beneficial uses of waters of the State is prohibited.
2. Further significant migration of wastes or hazardous substances through subsurface transport to waters of the State is prohibited.
3. Activities associated with the subsurface investigation and cleanup that will cause significant adverse migration of wastes or hazardous substances are prohibited.

B. REMEDIAL ACTION PLANS AND CLEANUP STANDARDS

The discharger shall continue to implement the remedial actions and cleanup standards selected for the Site as described in finding 10 of this Order (Selected Remedies).

C. TASKS

1. IMPLEMENT AQUIFER CHARACTERIZATION AND CONTINGENCY PLAN (ACCP) AND SUBMIT SITE STATUS REPORTS

COMPLIANCE DATE: January 31, 2017, and annually thereafter

Comply with the ACCP (SSP&A 2014, including any amendments or revisions that have been approved by the Executive Officer), which describes the approved Groundwater Self-Monitoring Program and establishes a procedure for mitigation of groundwater if significant migration of pollutants is detected in the monitoring well network. The results of the groundwater monitoring shall be submitted in data transmittals and the Site Status and Groundwater Self-Monitoring Reports to the Water Board. On an annual basis or as specified by the Executive Officer, submit summary status reports on the progress of compliance with the requirements of this Order and propose modifications that could increase the effectiveness of final cleanup actions. The report shall be due on January 31 of each year, or as required by the Executive Officer, and shall cover the previous calendar year(s). The report shall include a summary of technical and groundwater monitoring program activities performed, community relations work performed, any issues of non-compliance with the requirements of this Order, and technical documents submitted since submittal of the previous summary report. Reports shall include information regarding the groundwater monitoring program including a tabulation of arsenic data and water-level data, plots of arsenic concentrations versus time for monitoring wells, and recommendations for modifications to monitoring and reporting.

2. IMPLEMENT WETLAND TOPOGRAPHIC MONITORING WORK PLAN AND SUBMIT REPORT

COMPLIANCE DATE: January 31, 2021, and every 5 years until 2036

Conduct and report monitoring of the wetland surface near the bend in the levee in accordance with the Wetland Topographic Monitoring Work Plan. Submit the results of the topographic monitoring in the annual groundwater monitoring reports included in Task 1.

3. IMPLEMENT SITE MANAGEMENT PLAN AND DEED RESTRICTIONS AND SUBMIT REPORT

COMPLIANCE DATE: January 31, 2017, and annually thereafter and within 15 days after becoming aware of conditions of non-compliance or as required by Executive Officer

Implement the April 17, 2014, Site Management Plan and Addendum, including subsequent amendments, addendums or revisions thereto, which have been approved in writing by the Executive Officer. Ensure that restrictions and engineering controls for the Site's properties are continuously maintained. Monitor for compliance with the conditions of the deed restrictions and Site Management Plan and report non-compliance to the Water Board within 15 days of becoming aware of the conditions of non-compliance for the following properties:

- a. 1990 Bay Road
- b. 1992 Bay Road
- c. 1980 Bay Road (portions of)
- d. 2470 Pulgas Avenue (portions of)
- e. 1175 Weeks Street
- f. 1200 Weeks Street
- g. 1250 Weeks Street
- h. 1275 Runnymede Street (portions of)

Annual summary reports shall document actions taken to comply with the Site Management Plan and Deed Restrictions and may be combined with the Annual Site Status Report.

4. SUBMIT FIVE-YEAR STATUS REPORT

COMPLIANCE DATE: January 31, 2019, and every five years thereafter

Submit a technical report acceptable to the Executive Officer containing:

- a. Results of any investigative work completed since the submission of the previous Five-Year Status Report;
- b. An evaluation of the effectiveness of the installed final cleanup measures including but not limited to:
 - i. An evaluation of the performance of the barrier wall and of phytoremediation as a dewatering system;
 - ii. An evaluation of monitoring data including a cumulative tabulation of arsenic and water level data and plots of arsenic concentrations versus time for all of the monitoring wells;
 - iii. An evaluation of compliance with the Site Management Plan;

- iv. A evaluation of compliance with deed restrictions; and
- v. Additional recommended measures to achieve final cleanup objectives and goals;
- c. Tasks and time schedule necessary to implement any additional final cleanup measures; and
- d. Recommended measures for reducing Water Board oversight.

5. IMPLEMENT REMEDIAL ACTION PLAN FOR THE 2470 PULGAS AVENUE PROPERTY (FORMER BAINS PROPERTY) AND SUBMIT REPORT

COMPLIANCE DATE: 120 days after soil becomes accessible (building demolition) or 60 days after requested by the Executive Officer, whichever comes first

When inaccessible soil beneath the warehouse structure on the 2470 Pulgas Avenue property becomes accessible (defined by building demolition), conduct an investigation and submit a technical report acceptable to the Executive Officer containing the recommended plan for remediation of soil, which implements the selected remedy for the Upland OU. The Remedial Action Plan shall include a schedule for the completion of the remedial action and the submittal of an Implementation Report.

6. IMPLEMENT REMEDIAL ACTION PLAN FOR THE 1275 RUNNYMEDE STREET PROPERTY (WILSON PROPERTY) AND SUBMIT REPORT

COMPLIANCE DATE: 120 days after soil becomes accessible (building demolition) or 60 days after requested by the Executive Officer, whichever comes first

When inaccessible soil beneath structures on the 1275 Runnymede property becomes accessible (defined by building demolition), conduct an investigation and submit a technical report acceptable to the Executive Officer containing the recommended plan for remediation of soil, which implements the selected remedy for the South of Weeks Subarea. The Remedial Action Plan shall include a schedule for the completion of the remedial action and the submittal of an Implementation Report.

7. EVALUATE NEW HEALTH CRITERIA OR NEW TECHNICAL INFORMATION

COMPLIANCE DATE: 90 days after evaluation report required by Executive Officer

Submit a technical report acceptable to the Executive Officer evaluating new health criteria or new technical information that bears on the approved remedial action plan and cleanup standards for the Site. The report shall evaluate the effect on the approved remedial action plans of revising one or more cleanup levels in response to any revisions of drinking water standards, maximum contaminant levels, or other health-based criteria. In the case of a new cleanup technology, the report should evaluate the technology using the same criteria used in the Feasibility Study. Such technical reports shall not be required unless the Executive Officer determines that the new information is reasonably likely to warrant a revision in the approved remedial action plan or cleanup levels.

8. DELAYED COMPLIANCE

If the discharger is delayed, interrupted, or prevented from meeting one or more of the completion dates specified for the above tasks, the discharger shall promptly notify the Executive Officer, and the Water Board may consider revision to this Order.

D. PROVISIONS

1. **No Nuisance:** The storage, handling, treatment, or disposal of polluted soil or groundwater shall not create a nuisance as defined in Water Code section 13050(m).
2. **Good O&M:** The discharger shall maintain in good working order and operate as efficiently as possible any facility or control system installed to achieve compliance with the requirements of this Order.
3. **Cost Recovery:** The discharger shall be liable, pursuant to Water Code section 13304, to the Water Board for all reasonable costs actually incurred by the Water Board to investigate unauthorized discharges of waste and to oversee cleanup of such waste, abatement of the effects thereof, or other remedial action, required by this Order. If the Site addressed by this Order is enrolled in a State Water Board-managed reimbursement program, reimbursement shall be made pursuant to this Order and according to the procedures established in that program. Any disputes raised by the discharger over reimbursement amounts or methods used in that program shall be consistent with the dispute resolution procedures for that program.
4. **Regulatory Authority:** The Water Board will continue as appropriate to regulate the discharger's remedial activities and administer enforcement actions in accordance with CERCLA as amended by SARA, the Water Code, the Health and Safety Code, and regulations adopted thereunder. Pursuant to CERCLA sections 104 and 122, 42 U.S.C.A. sections 9604 and 9622, U.S. EPA will allow SLLI to conduct the remediation described herein.
5. **Access to Site and Records:** In accordance with Water Code section 13267(c), the discharger shall permit the Water Board or its authorized representative:
 - a. Entry upon premises in which any pollution source exists, or may potentially exist, or in which any required records are kept, which are relevant to this Order;
 - b. Access to copy any records required to be kept under the requirements of this Order;
 - c. Inspection of any monitoring or remediation facilities installed in response to this Order; and
 - d. Sampling of any groundwater or soil that is accessible, or may become accessible, as part of any investigation or remedial action program undertaken by the discharger.
6. **Groundwater Self-Monitoring Program:** The discharger shall comply with the Groundwater Self-Monitoring Program as attached to this order and as may be amended or revised by the Executive Officer.
7. **Contractor / Consultant Qualifications:** All technical documents shall be signed by a California registered geologist, a California certified engineering geologist, or a California registered civil engineer.

- 8. Lab Qualifications:** All samples shall be analyzed by State-certified laboratories or laboratories accepted by the Water Board using approved U.S. EPA methods for the type of analysis to be performed. All laboratories shall maintain quality assurance/quality control (QA/QC) records for Water Board review. This provision does not apply to analyses that can only reasonably be performed on-site (e.g., temperature).
- 9. Document Distribution:** Copies of all correspondence, technical reports, and other documents pertaining to compliance with this Order shall be provided to the following agencies. The Executive Officer may modify this distribution list as needed.
- a. Water Board
 - b. U.S. EPA
 - c. DTSC
 - d. City of East Palo Alto- City Manager
 - e. City of East Palo Alto- Public Works Department
 - f. San Mateo County Health Services Agency
 - g. East Palo Alto Sanitary District
- 10. Reporting of Changed Owner or Operator:** The discharger shall file a technical report on any changes in site occupancy or ownership associated with the properties described in this Order.
- 11. Reporting of Hazardous Substance Release:** If any hazardous substance is discharged in or on any waters of the State, or discharged or deposited where it is, or probably will be, discharged in or on any waters of the State, the discharger shall report such discharge to the Water Board by calling (510) 622-2369.
- A written report shall be filed with the Water Board within five working days. The report shall describe: the nature of the hazardous substance, estimated quantity involved, duration of incident, cause of release, estimated size of affected area, nature of effect, corrective actions taken or planned, schedule of corrective actions planned, and persons/agencies notified.
- This reporting is in addition to reporting to the Office of Emergency Services required pursuant to the Health and Safety Code.
- 12. Rescission of Existing Orders:** Water Board Orders Nos. 91-016, 91-095, 92-022, 92-127, 94-042, 96-162, 97-015, 97-095, and R2-2005-0033 are hereby rescinded.
- 13. Periodic Review of SCR:** The Water Board will review this Order periodically and may revise it when necessary.

I, Bruce H. Wolfe, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on July 13, 2016.

Bruce H. Wolfe
Executive Officer

=====
Failure To Comply With The Requirements Of This Order May Subject You To Enforcement Action,
Including But Not Limited To: Imposition Of Administrative Civil Liability Under Water Code
Sections 13268 Or 13350, Or Referral To The Attorney General For Injunctive Relief Or Civil Or
Criminal Liability
=====

Attachments: Table 1, Site Remediation Summary
Figures 1-5
Groundwater Self-Monitoring Program

TABLES

TABLE 1**SITE REMEDIATION SUMMARY**

1990 Bay Road Site
East Palo Alto, California

Operating Unit	Property/Area	Description of Remedial Action	Date Completed
Upland Operable Unit	1990 Bay Road Property-North Area and Railroad Tracks	Removed Soil with >5000 mg/kg Arsenic	1991
		Treated Soil with >500 mg/kg Arsenic	1992
		Capped Soil with >70 mg/kg Arsenic	1993
		Recorded Deed Restriction (Number ¹ 94091057)	May 23, 1994
	1990 Bay Road Property-Plant Area	Removed Soil with >5000 mg/kg Arsenic	2002 - 2003
		Treated Soil with >500 mg/kg Arsenic	2002 - 2003
		Capped Soil with >70 mg/kg Arsenic	2003
		Recorded Deed Restriction (Number ¹ 94091057)	May 23, 1994
	PG&E Poleyard Property (1992 Bay Road)	Removed Soil with >500 mg/kg Arsenic	1992
		Capped Soil with >70 mg/kg Arsenic	1992
		Recorded Deed Restriction (Number ¹ 2001040627)	March 27, 2001
	Curtaccio Property (1980 Bay Road)	Removed Soil with >500 mg/kg Arsenic	1992
		Capped Soil with >70 mg/kg Arsenic	1993
		Recorded Deed Restriction (Number ¹ 93216751)	December 13, 1993
	Bains Property (2470 Pulgas)	Removed Accessible Soil with >500 mg/kg Arsenic	1992
		Capped Soil with >70 mg/kg Arsenic	1992
		Remove Remaining Soil with >500 mg/kg Arsenic	To Be Completed When Building Removed
		Recorded Deed Restriction (Number ¹ 93213452)	December 8, 1993
	Soil Under Bay Road Adjacent to 1990 Bay Road Property	Capped Soil with >70 mg/kg Arsenic within Easement (Pavement)	Existing
		Agreement with City on Excavation in Easement	1992
Recorded Deed Restriction (Number ¹ 96070509)		June 12, 1996	
Properties North of Bay Road	Removed Soil with >70 mg/kg Arsenic	1992	

TABLE 1**SITE REMEDIATION SUMMARY**

1990 Bay Road Site
East Palo Alto, California

Operating Unit	Property/Area	Description of Remedial Action	Date Completed	
Upland Operable Unit Annex	Torres Property (1175 Weeks Street)	Removed Soil with >5000 mg/kg Arsenic	1991	
		Treated Soil with >500 mg/kg Arsenic	1994	
		Capped Soil with >70 mg/kg Arsenic	1998 & 2002	
		Recorded Deed Restriction (Number ¹ 98090257)	June 12, 1998	
	Former PG&E Non-tidal Marsh (now part of the 1990 Bay Road Property)	Removed Soil with >5000 mg/kg Arsenic	1991	
		Removed Soil with >500 mg/kg Arsenic	1994	
		Capped Soil with >70 mg/kg Arsenic	1999	
		Recorded Deed Restriction (Number ¹ 2001040627)	March 27, 2001	
		Restored Cooley Landing Salt Pond	2000	
South of Weeks Street Subarea	Wilson Property (1275 Runnymede Street)	Removed Accessible soil with > 20 mg/kg Arsenic	1997-1998	
		Remove Remaining soil with > 20 mg/kg Arsenic	To Be Completed When Building Removed	
		Recorded Deed Restriction (Number ¹ 97150087)	Nov. 19, 1997	
	Ravenswood School District Property (1286 Runnymede)	Removed Soil with >20 mg/kg Arsenic	1997	
	Shorebreeze Property (1200 Weeks Street)	Removed Accessible Soil with >20 mg/kg Arsenic	1999	
		Recorded Deed Restriction (Number ¹ 9807589)	May 20, 1998	
	1250 Weeks Street Property	Removed Accessible Soil with >20 mg/kg Arsenic	1999	
		Capped Inaccessible Soil with >20 mg/kg Arsenic	1999	
		Recorded Deed Restriction (Number ¹ 9807589)	May 20, 1998	
	Wetland Operable Unit	Tidal Wetland	Provided 1.3-Acre Wetland Off-Set in Cooley Landing Restoration Area	2005
			Performed Baseline and Year-5 Topographical Monitoring	2006 and 2011

TABLE 1**SITE REMEDIATION SUMMARY**

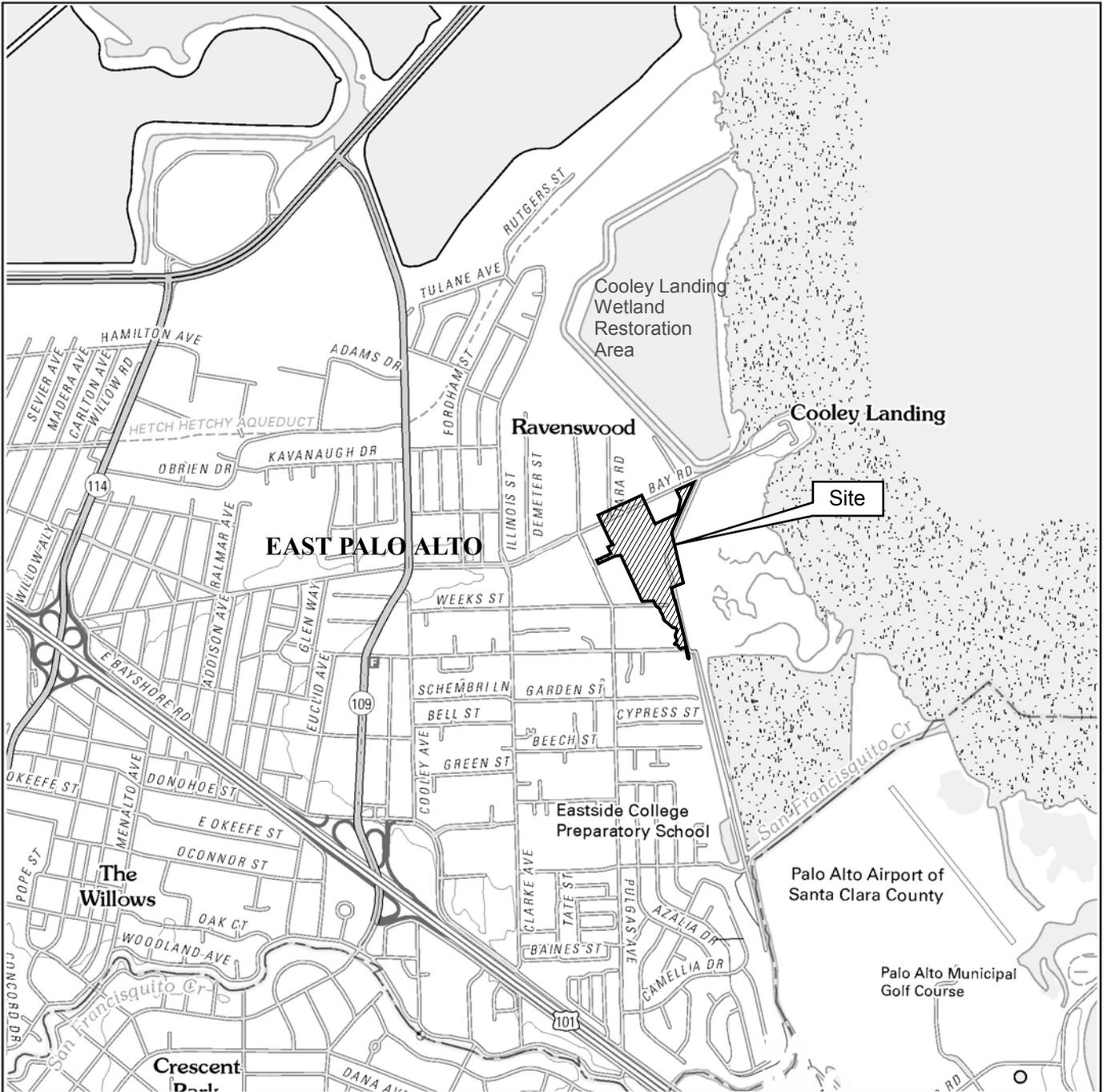
1990 Bay Road Site
 East Palo Alto, California

Operating Unit	Property/Area	Description of Remedial Action	Date Completed
Ground-water	PG&E Non-tidal Marsh and Torres Property	Phytoremediation Implemented and Expanded	1997 - Present
		Barrier Wall Installed	2001
	1250 Weeks Street Property	Sewer Backfill Barrier Installed	1999
	Plant Area Entrance	Sewer Backfill Barrier Installed	2001
	Site-Wide	Deep Aquifer Monitoring Plan Submitted	1991 ²
		Aquifer Characterization and Contingency Plan Submitted	1995 and 2013(draft)/2014(final)
		Groundwater Monitoring	1986-Present
	1990 Bay Road Property, Torres Property, 1250 Weeks Street Property, and 1275 Runnymede Property	Remediation of Abandoned Wooden Sewer Implemented	2011

Notes:

1. Document Recording Number for Official Records, County of San Mateo, California.
2. Subsequent revisions to the Deep Aquifer Monitoring Plan were included in the Aquifer Characterization and Contingency Plans.

FIGURES



Basemap from USGS National Map
 Palo Alto and Mountain View, California
 Quadrangle 2012



0 1000 2000
 SCALE IN FEET

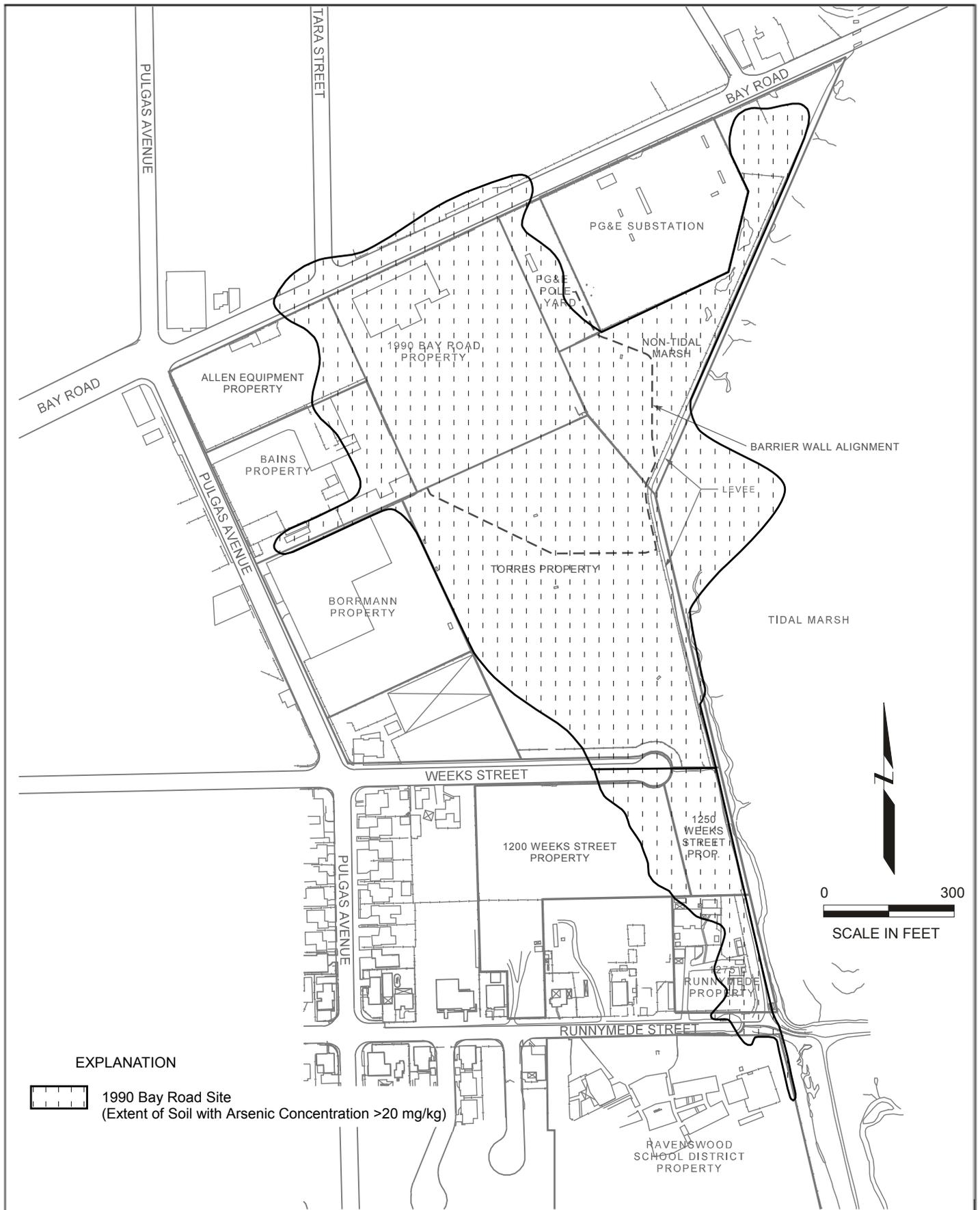


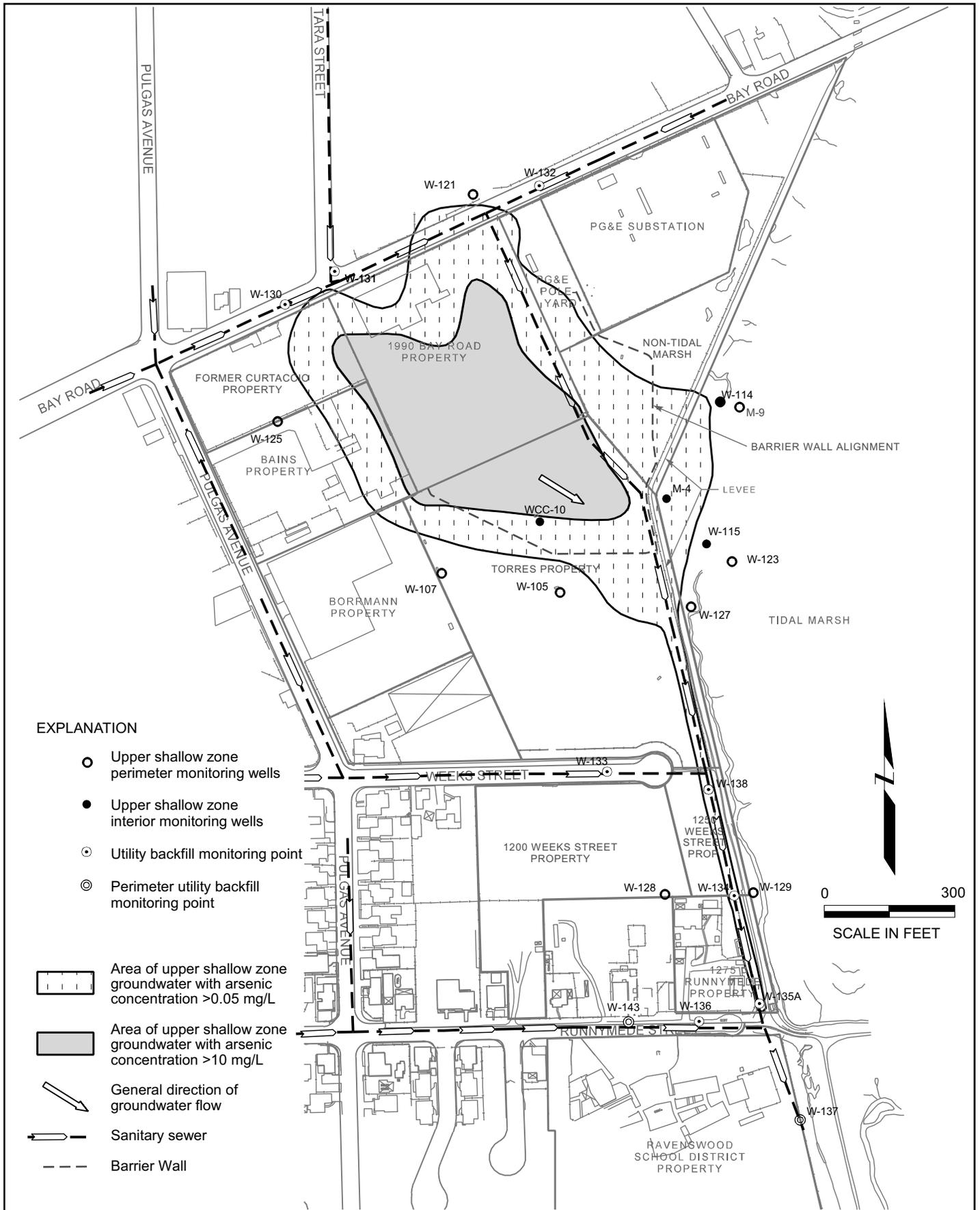
S.S. Papadopoulos & Associates, Inc.

SITE LOCATION MAP

1990 Bay Road Site
 East Palo Alto, California

Figure 1





EXPLANATION

- Upper shallow zone perimeter monitoring wells
- Upper shallow zone interior monitoring wells
- ⊙ Utility backfill monitoring point
- ⊕ Perimeter utility backfill monitoring point

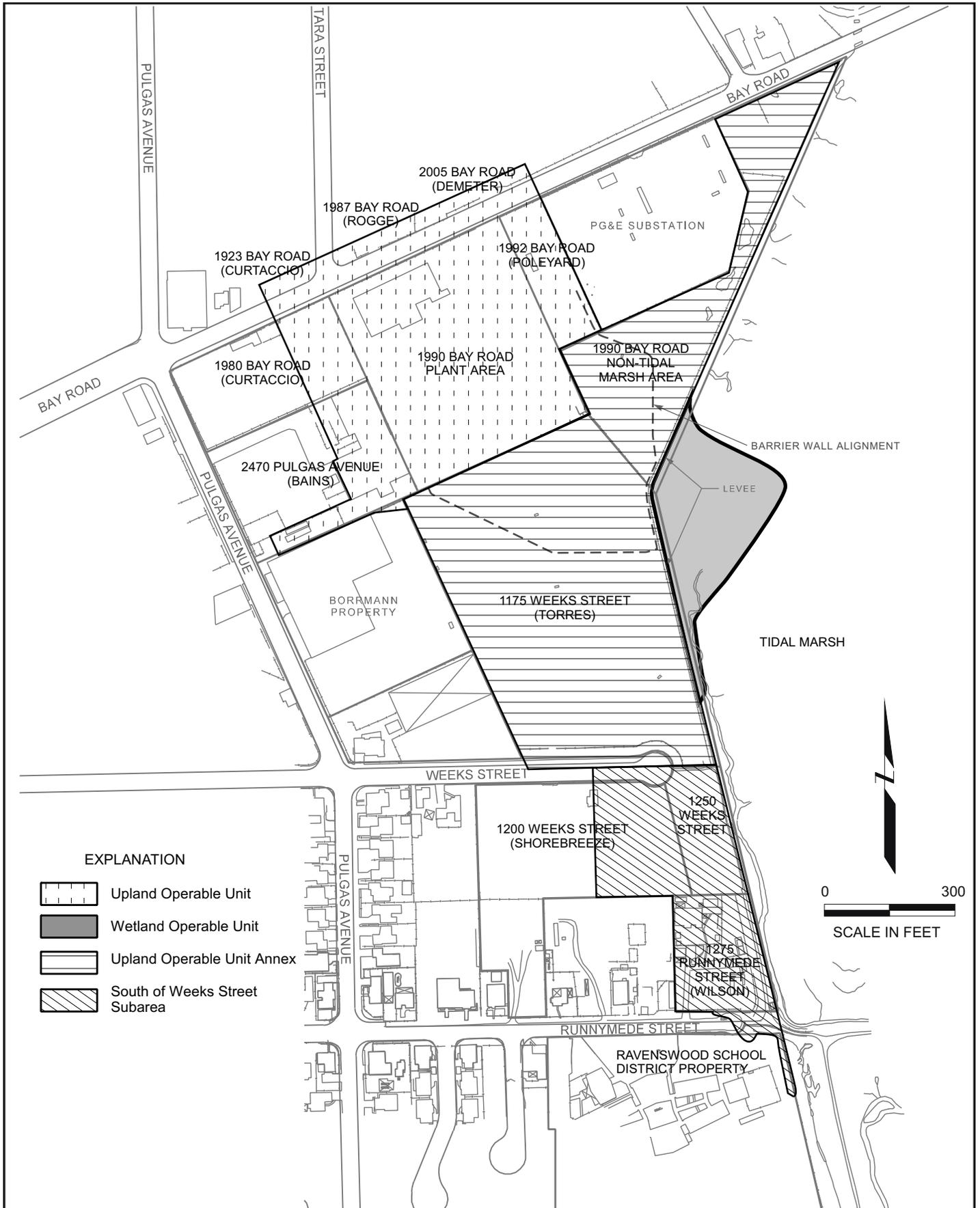
- Area of upper shallow zone groundwater with arsenic concentration >0.05 mg/L
- Area of upper shallow zone groundwater with arsenic concentration >10 mg/L
- General direction of groundwater flow
- Sanitary sewer
- Barrier Wall



EXTENT OF ARSENIC IN GROUNDWATER IN UPPER SHALLOW ZONE

1990 Bay Road Site
East Palo Alto, California

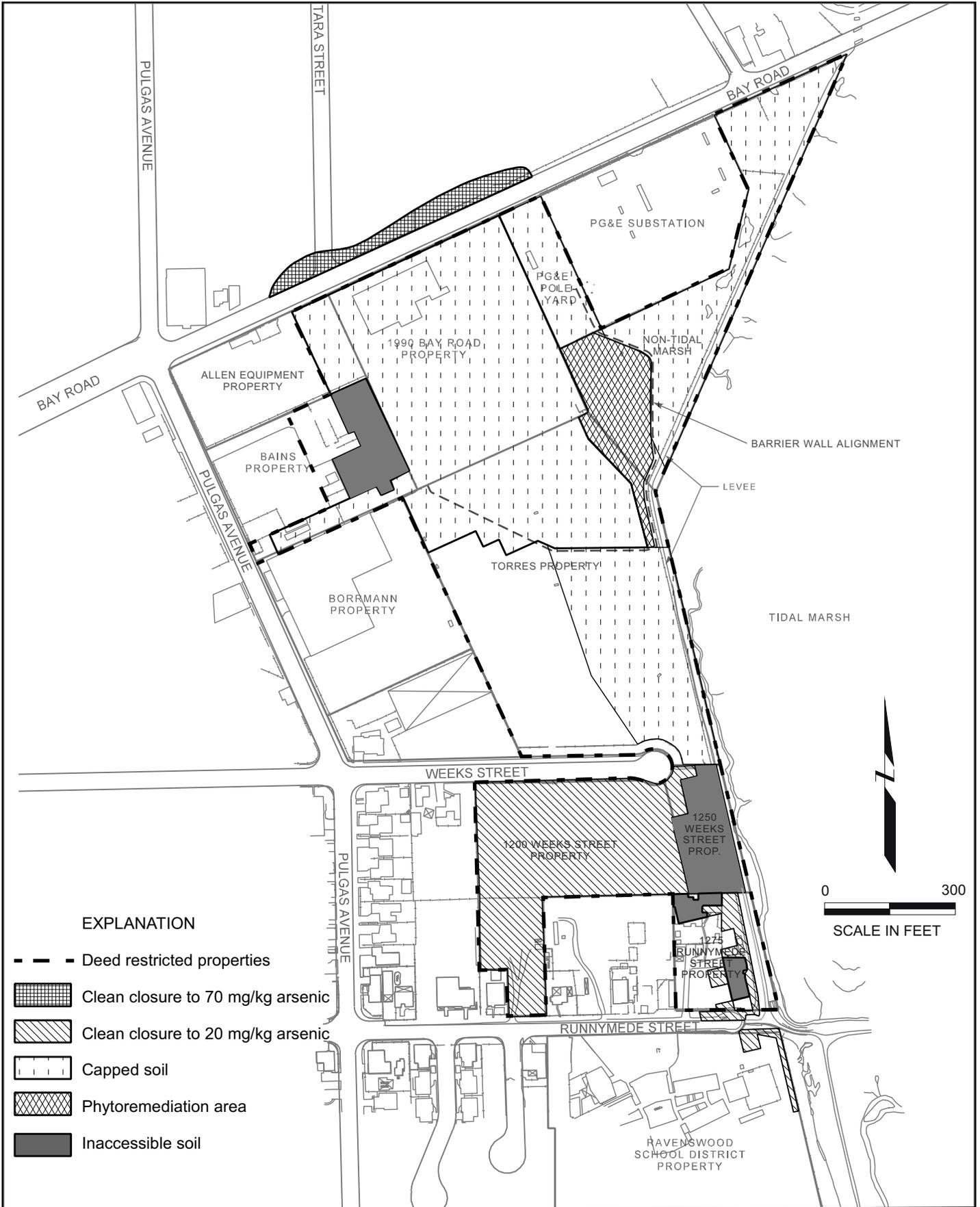
Figure 3



OPERABLE UNITS AND SUBAREAS

1990 Bay Road Site
East Palo Alto, California

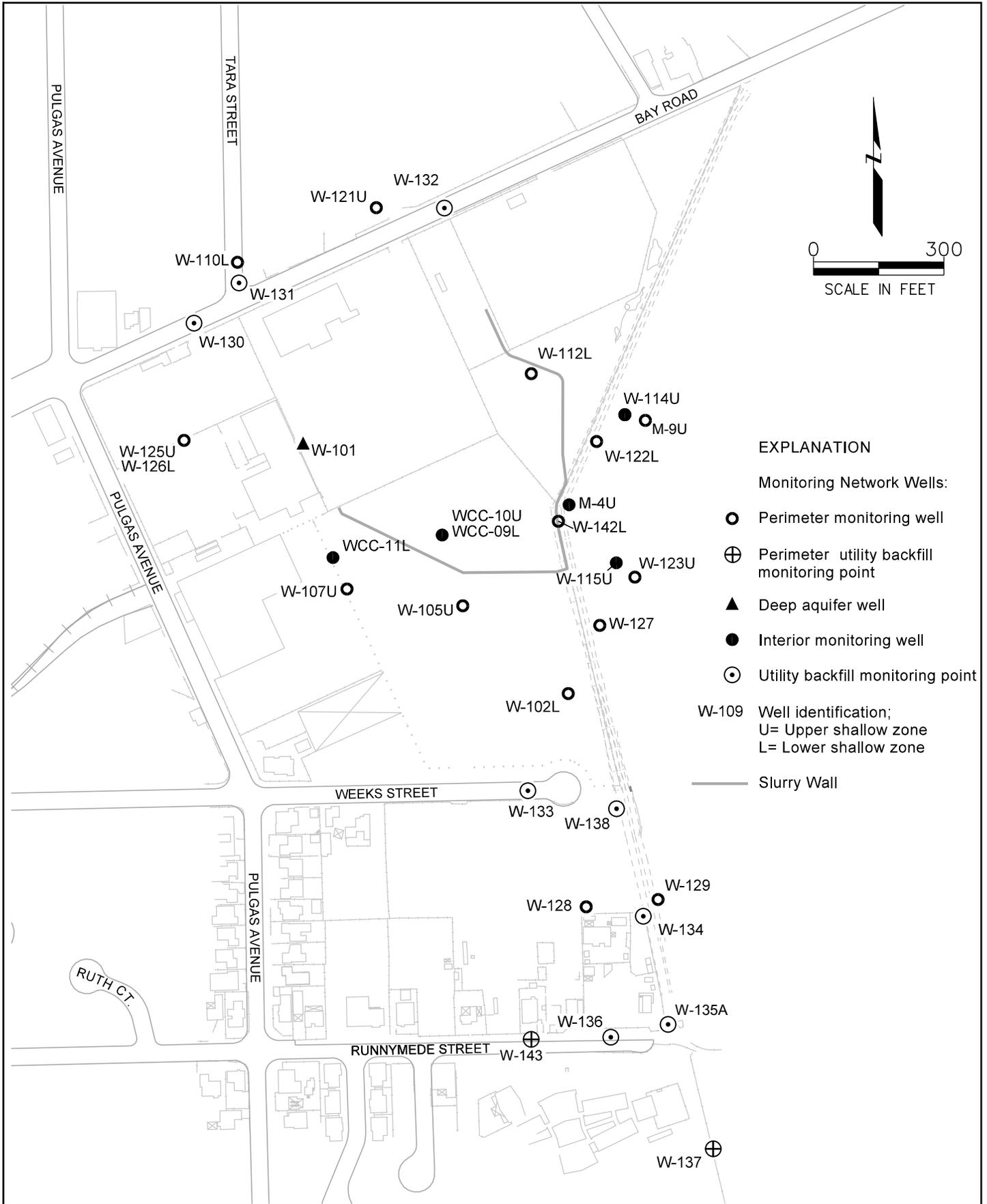
Figure 4



CURRENT STATUS OF REMEDIATION

1990 Bay Road Site
East Palo Alto, California

Figure 5



EXPLANATION

Monitoring Network Wells:

- Perimeter monitoring well
- ⊕ Perimeter utility backfill monitoring point
- ▲ Deep aquifer well
- Interior monitoring well
- ⊙ Utility backfill monitoring point

W-109 Well identification;
 U= Upper shallow zone
 L= Lower shallow zone

— Slurry Wall



S.S. Papadopoulos & Associates, Inc.

GROUNDWATER CHEMISTRY MONITORING NETWORK

1990 Bay Road Site
 East Palo Alto, California

Figure 2

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

GROUNDWATER SELF-MONITORING PROGRAM for:

STARLINK LOGISTICS, INC.

for the property located at

1990 BAY ROAD
EAST PALO ALTO
SAN MATEO COUNTY

1. **Authority and Purpose:** The Regional Water Board requires the technical reports identified in this Groundwater Self-Monitoring Program pursuant to Water Code sections 13267 and 13304. This Groundwater Self-Monitoring Program is intended to document compliance with Regional Water Board Order No. R2-2016-0037 (final site cleanup requirements).
2. **Monitoring:** The discharger shall measure groundwater elevations and collect and analyze representative samples of groundwater according to the following table:

Well ID	Groundwater Zone	Elevation Measurement Frequency	Sampling Frequency
DEEP WELL			
W-101	Deep	Annually	Biennially
PERIMETER WELLS			
M-9	Upper Shallow	Annually	Biennially
W-102	Lower Shallow	Annually	Biennially
W-105	Upper Shallow	Annually	Biennially
W-107	Upper Shallow	Annually	Biennially
W-110	Lower Shallow	Annually	Biennially
W-112	Lower Shallow	Annually	Biennially
W-121	Upper Shallow	Annually	Biennially
W-122	Lower Shallow	Annually	Biennially
W-123	Upper Shallow	Annually	Biennially
W-125	Upper Shallow	Annually	Biennially
W-126	Lower Shallow	Annually	Biennially
W-127	Upper Shallow	Annually	Biennially
W-128	Upper Shallow	Annually	Biennially
W-129	Upper Shallow	Annually	Biennially
W-137	Utility Backfill	Annually	Biennially
W-142	Lower Shallow	Annually	Biennially
W-143	Utility Backfill	Annually	Biennially

Well ID	Groundwater Zone	Elevation Measurement Frequency	Sampling ¹ Frequency
INTERIOR WELLS			
M-4	Upper Shallow	Annually	Biennially
W-114	Upper Shallow	Annually	Biennially
W-115	Upper Shallow	Annually	Biennially
WCC-09	Lower Shallow	Annually	Biennially
WCC-10	Upper Shallow	Annually	Biennially
WCC-11	Lower Shallow	Annually	Biennially
UTILITY BACKFILL MONITORING POINT			
W-130	Utility Backfill	Annually	Biennially
W-131	Utility Backfill	Annually	Biennially
W-132	Utility Backfill	Annually	Biennially
W-133	Utility Backfill	Annually	Biennially
W-134	Utility Backfill	Annually	Biennially
W-135A	Utility Backfill	Annually	Biennially
W-136	Utility Backfill	Annually	Biennially
W-138	Utility Backfill	Annually	Biennially
WATER LEVEL MONITORING WELLS			
C-26	Upper Shallow	Annually	None
W-103	Upper Shallow	Annually	None
W-104	Lower Shallow	Annually	None
W-106	Lower Shallow	Annually	None
W-111	Upper Shallow	Annually	None
W-113	Upper Shallow	Annually	None
W-118	Upper Shallow	Annually	None
W-119	Lower Shallow	Annually	None
W-120	Lower Shallow	Annually	None
W-124	Lower Shallow	Annually	None
WCC-06	Upper Shallow	Annually	None
WCC-12	Upper Shallow	Annually	None
PIEZOMETERS			
P1	Upper Shallow	Annually	None
P3	Upper Shallow	Annually	None
P4	Upper Shallow	Annually	None
P6	Upper Shallow	Annually	None
P7	Upper Shallow	Annually	None
P8	Upper Shallow	Quarterly	None
P9	Lower Shallow	Quarterly	None
P10	Upper Shallow	Quarterly	None
P11	Lower Shallow	Quarterly	None
P12	Upper Shallow	Quarterly	None
P13	Lower Shallow	Quarterly	None
CONTAINMENT/PERFORMANCE WELLS			
W-139(A)	Upper Shallow	Quarterly	None
W-140(B)	Upper Shallow	Quarterly	None
W-141(C)	Upper Shallow	Quarterly	None

1. Samples are analyzed for arsenic by EPA Method 200.8

The discharger may propose changes in the above table; any proposed changes are subject to Executive Officer approval.

3. **Annual Monitoring Reports:** The discharger shall submit a groundwater monitoring report to the Regional Water Board as part of the annual Site Status and Groundwater Monitoring Report. As required in Task 1 of the order, the report will be due on January 31st of each year and cover the previous calendar year. The reports shall include:
 - a. **Groundwater Elevations:** Groundwater elevation data shall be presented in tabular form, and a groundwater elevation map shall be prepared for each monitored water-bearing zone.
 - b. **Groundwater Analyses:** Groundwater sampling data shall be presented biennially in tabular form, and a map shall be prepared showing concentrations of arsenic, the key contaminant, for each monitored water-bearing zone, as appropriate. The report shall indicate the analytical method used, detection limits obtained for each reported constituent, and a summary of QA/QC data. Historical groundwater sampling results shall be included in the Five-Year reports. The report shall describe any significant increases in contaminant concentrations since the last report, and any measures proposed to address the increases. Supporting data, such as lab data sheets, need not be included (however, see record keeping below).
 - c. **Status Report:** The annual report shall describe relevant work completed during the reporting period and work planned for the following quarter.
4. **Violation Reports:** If the discharger violates requirements in the Site Cleanup Requirements, then the discharger shall notify the Regional Water Board office by telephone as soon as practicable once the discharger has knowledge of the violation. Regional Water Board staff may, depending on violation severity, require the discharger to submit a separate technical report on the violation within five working days of telephone notification.
5. **Other Reports:** The discharger shall notify the Regional Water Board in writing prior to any Site activities, such as construction or underground tank removal, which have the potential to cause further migration of contaminants or which would provide new opportunities for site investigation.
6. **Record Keeping:** The discharger or his/her agent shall retain data generated for the above reports, including lab results and QA/QC data, for a minimum of six years after origination and shall make them available to the Regional Water Board upon request.
7. **Groundwater Monitoring Program Revisions:** Revisions to the Groundwater Self-Monitoring Program may be ordered by the Executive Officer, either on his/her own initiative or at the request of the discharger. Prior to making revisions, the Executive

Officer will consider the burden, including costs, of associated self-monitoring reports relative to the benefits to be obtained from these reports.