Atlantic Richfield Company

Shannon Couch
Remediation Management Project Manager

PO Box 1257
San Ramon, CA
94583
Phone: (925) 275-3804
Fax: (925) 275-3815
E-Mail: shannon.couch@bp.com

March 5, 2012

Mr. Paresh Khatri
Alameda County Environmental Health Department
1131 Harbor Bay Parkway
Alameda, CA 94502-6577

Re: ARCO STATION NO. 2035
1001 San Pablo Avenue
Albany, California 94706
Alameda County Environmental Health Case No. RO0000100

Dear Mr. Khatri

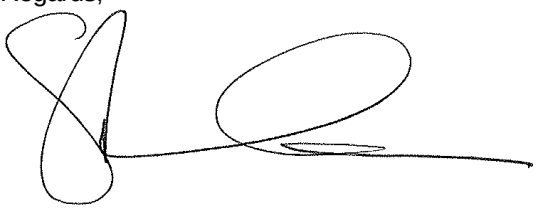
Atlantic Richfield Company (ARC) is pleased to submit this Request for No Further Action Status for ARCO Station No. 2035, located at 1001 San Pablo Avenue, Albany, California. ARC is interested in bringing forward those cases that appear to meet low-risk closure criteria, and presenting case precedents that have been established to facilitate a finding of No Further Action. We have retained Closure Solutions Incorporated (Closure Solutions) to facilitate this effort statewide, and to augment the existing project teams.

Based on our review, the environmental case at the aforementioned location does not appear to pose a significant threat to human health, environmental receptors, or reasonably anticipated beneficial uses of water. Furthermore, we believe that if this case were to be considered in relation to the decisional framework and criteria developed by the SWRCB and the SWRCB Task Forces, a finding of No Further Action would be appropriate. As such, we request that the environmental case at this facility be granted No Further Action status at this time.

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

If you have any questions or would like to discuss this matter in greater detail, please feel free to contact me via email or at the number listed above.

Regards,



Shannon Couch
Remediation Management Project Manager
Atlantic Richfield Company, a BP-affiliated company

Enclosure: Case Evaluation & Justification for No Further Action

cc: Mr. John Skance, ARC (electronic copy uploaded to ENFOS)
Mr. Matt Herrick, Broadbent & Associates, Inc. (electronic copy)

CLOSURE SOLUTIONS, INC.

March 5, 2012

Ms. Shannon Couch
Atlantic Richfield Company
P.O. Box 1257
San Ramon, California 94583

RE: CASE EVALUATION & JUSTIFICATION FOR NO FURTHER ACTION
ARCO Station No. 2035
1001 San Pablo Avenue
Albany, California 94706
ACEH Case No. RO0000100

Dear Ms. Couch:

Closure Solutions, Incorporated (Closure Solutions) is submitting this *Case Evaluation & Justification for No Further Action* for ARCO Service Station No. 2035, located at 1001 San Pablo Avenue in Albany, California (the Site, Figure 1 in Attachment A). A summary of existing Site conditions, the technical justification for a finding of No Further Action Status, and a summary of similar cases that have been closed by the State Water Resources Control Board (SWRCB) are presented in this document.

Based on recent groundwater sampling results from the Site, the constituents of concern are considered to be gasoline range organics (GRO) and benzene. Methyl tertiary butyl ether (MTBE) has been below the Water Quality Objective of 5.0 micrograms per liter (ug/L) in down-gradient wells since November 2009. Soil and groundwater analytical data indicate that residual gasoline remains in a localized area in fine-grained soil in the depth range of approximately 10 to 15 feet below ground surface (bgs) and that the dissolved-phase gasoline constituents in shallow groundwater are stable.

The data also show that there are at least two distinct hydrologic units beneath the Site: unconfined groundwater at about 5 to 10 feet bgs and groundwater under confined conditions at about 18 feet bgs and deeper. Groundwater monitoring wells installed at the Site are typically screened across the two hydrogeologic units, thus producing water quality data that has resulted in an incomplete understanding of the release and its impacts. Based on a shallow potentiometric surface for the deeper aquifer and an evaluation of analytical data from paired (shallow and deep screened) wells, there is evidence that with the exception of MTBE, the deeper groundwater encountered has not been affected by the release.

No domestic or municipal wells have been identified within a ½-mile radius of the Site and the closest surface water body appears to be the San Francisco Bay, located approximately 3,500 feet west-northwest (down-gradient/cross-gradient) of the Site.

Soil and groundwater investigations have adequately defined the residual and dissolved-phase contaminants, and further investigation or active remediation cannot be reasonably justified. Site data demonstrate that active remediation and natural attenuation processes have substantially diminished the residual hydrocarbons and Water Quality Objectives will likely be reached in a reasonable timeframe. These observations, plus several additional lines of evidence are the basis for this closure recommendation.

1.0 SITE SUMMARY

1.1 Location and Setting

The Site is located on the southeastern corner of San Pablo Avenue and Marin Avenue in Albany, California (Figure 1 in Attachment A). The land use in the immediate vicinity of the Site is mixed commercial and residential. A Shell branded gasoline service station is located north of the Site across Marin Avenue. The topography of the Site is relatively flat with an approximate elevation of 42 feet above mean sea level (USGS, Richmond Quadrangle, California).

1.2 Current Use

The Site is an active retail gasoline station and AM/PM mini-mart and currently maintains four double-walled fiberglass gasoline underground storage tanks (USTs) and associated double-walled product lines and dispensers (Figure 2 in Attachment A).

1.3 Regional Hydrogeology

The Site is located within the northwestern portion of the Berkeley Sub-Area of the San Francisco East Bay Plain Groundwater Basin[1]. The Berkeley Sub-Area contains a series of alluvial fans deposited on a west sloping bedrock surface. The alluvial deposits range in thickness from 10 to 300 feet and average 200 feet. The San Francisco Bay Regional Water Board (SFRWQCB) reports that there is no evidence that groundwater resources in the area are

[1] *East Bay Plain Groundwater Basin Beneficial Use Evaluation Report* (California Regional Water Quality Control Board – San Francisco Bay Region [SFRWQCB], June 1999)

sufficient for municipal use. In the Berkeley Sub-Area, particularly in West Berkeley, first encountered groundwater is frequently reported as being semi-confined[2].

Throughout most of the Alameda County portion of the East Bay Plain, from Hayward north to Albany, water level contours show that the general groundwater flow direction is from east to west. East Bay Plain cities do not have "…any plans to develop local groundwater resources for drinking water purposes because of existing or potential saltwater intrusion, contamination, or poor or limited quantity[13]." The SFRWQCB Basin Plan lists existing beneficial uses of site groundwater as municipal and domestic supply, industrial process supply, industrial service supply, and agricultural supply.

1.4 Local Hydrogeology

Boring logs and water level elevation data indicate that groundwater under confining conditions is typically encountered in the old alluvium hydrologic unit at about 18 to 20 feet bgs and that a separate, shallower water bearing zone is present at about 10 feet bgs. Water level elevation data and well construction details from well pairs MW-1/ MW-7 and MW-3/ MW-9 indicate a downward vertical hydraulic gradient exists between the two water bearing zones. Groundwater elevation data for the two well pairs show seasonal head differentials ranging from about 0.5 to 2 feet, equivalent to gradients in the range of 0.04 to 0.17. A hydrograph supporting this observation is presented as Figures 5.

The confined groundwater exhibits a potentiometric surface of about 10 feet bgs and is inferred to flow in a general westerly direction under a hydraulic gradient of about 0.03 feet per foot (ft/ft). The confined groundwater bearing zone is recharged via subsurface inflow and flow through wells with screens that penetrate the intervening aquitard from the shallow water-bearing zone, and discharges via subsurface out flow.

Shallow groundwater in the recent alluvium is inferred to flow in a general westerly direction under a presumed hydraulic gradient of about 0.03 ft/ft. The shallow groundwater is recharged via subsurface inflow and infiltration of surface water, and is discharged via subsurface outflow, evapotranspiration, and presumed flow to the deeper water-bearing zones via monitor wells.

Shallow groundwater underlying the Site in both the recent alluvium and old alluvium hydrologic units is not used as a source of drinking water or other beneficial uses. Local public utility companies supply local businesses and residences.

A summary of historical groundwater elevations, flow directions, and gradients is included in Attachment B.

[2] ibid.
[3] ibid.

1.5 Geology

Based on previous investigations and the USGS[4], the Site is underlain by Holocene and Pleistocene age alluvium. The Holocene is the geologic time from of the end of Pleistocene glaciation and the ensuing raise in sea level that began 10,000 years before present. The Pleistocene spans about 2.5 million years of continental glacial advances and retreats. The Holocene alluvium (recent alluvium) consists of beds and lenses of fine-grained sandy silt and clay, clayey and silty sand, and fine gravel from near surface to approximately 10 to 12 bgs. The Pleistocene alluvium (old alluvium) consists of beds and lenses of clayey to silty sand, sandy gravel, and clayey to gravelly sand from approximately 12 feet bgs to the total depth investigated (34.5 feet bgs). Geologic cross-sections are presented as Figures 1 through 4 and soil borings logs are presented in Attachment C. Monitor/remediation well construction details are included on Table 1.

1.6 Sensitive Receptors

Closure Solutions performed a Sensitive Receptor Survey in October 2011 to identify the presence of water wells within a ½-mile radius of the Site. Based on a review of well completion reports furnished by the Department of Water Resources, no wells were identified within a ½-mile radius of the Site. The nearest surface water body is the San Francisco Bay, located approximately 3,500 feet west-northwest (down-gradient/cross-gradient) of the Site.

1.7 Summary of Previous Investigations

Based on various environmental documents prepared by Atlantic Richfield Company's (ARC's) current and former consultants, Closure Solutions has prepared the following summary of previous environmental corrective actions at the Site. While Closure Solutions does not have reason to believe that the information is incorrect, Closure Solutions has not independently verified this information for accuracy. It is our understanding that:

- August 1989: Applied GeoSystems performed a limited environmental assessment at the Site. A total of five soil borings (B-1 through B-5) were advanced to a maximum depth of 20.5 feet bgs near the vicinity of the existing gasoline USTs to evaluate potential hydrocarbon impacts to soil prior to removing and replacing the USTs. Total petroleum hydrocarbons as gasoline (TPHg) was identified at a depth of 10 feet bgs in borings B-1 and B-4 at a maximum concentration of 2,400 milligrams per kilogram (mg/kg [boring B-4]).

[4] Dibblee, T.W., 1980, Preliminary geologic map of the Richmond quadrangle, Alameda and Contra Costa Counties, California: USGS Open-File Report OF-80-1100

- June 1991: RESNA Environmental (RESNA) observed the advancement of soil borings B-6 and B-7 in the area of a proposed new UST complex to evaluate for potential hydrocarbon impacts in soil. Analytical results from soil samples did not identify petroleum hydrocarbon constituents above laboratory reporting limits.

- July 1991: RESNA observed the excavation and removal of four existing USTs at the Site. Following removal, several of the tanks were reported to have visible holes. Based on the observations, approximately 350 cubic yards of hydrocarbon impacted soil to an average depth of 12 feet bgs were over-excavated from the UST pit and removed from the Site.

- October 1991: RESNA observed the installation of groundwater monitoring wells RW-1, MW-1, MW-2, and MW-3 to further evaluate the extent of petroleum hydrocarbons in soil and groundwater.

- November 1991: RESNA conducted a step-drawdown test in well RW-1 to determine the wells optimal pumping rate. Based on the step-drawdown results, an 18-hour pump and 6-hour recovery test were conducted on November 14 and 15, 1991. Wells MW-1, MW-2, and MW-3 were used as observation wells.

- August 1992: RESNA observed the advancement of eight soil borings (B-12 through B-19), six of which (B-14 through B-19) were converted into four-inch-diameter soil vapor extraction (SVE) wells (VW-1 through VW-6). Borings B-12 and B-13 were advanced in the vicinity of the of the former waste oil tank to evaluate impacts to soil from waste oil. Analytical results for collected samples from B-12 and B-13 reported low concentrations of ethylbenzene and xylenes at 9 feet bgs (B-12), TPH as diesel (TPHd) at maximum concentrations of 250 mg/kg at 9 feet bgs (B-12) and total oil and grease (TOG) at maximum concentrations of 1,800 mg/kg at 7.5 feet bgs (B-13). All other analyzed hydrocarbon constituents were below laboratory reporting limits.

- August 1992: RESNA performed a one-day SVE test to evaluate the feasibility of SVE as a remedial option. According to RESNA, based on results from the test, SVE was considered a viable remedial technology.

- November 1992: RESNA observed the installation of onsite wells MW-4 and MW-5 and offsite well MW-6 on the western side of San Pablo Avenue for the purpose of evaluating dissolved-phase gasoline constituents in the down-gradient groundwater flow direction. Analytical results from collected soil samples did not identify petroleum hydrocarbon constituents above laboratory reporting limits.

- June 1993: RESNA observed the installation of SVE wells VW-7 through VW-9 and air sparge/SVE wells AS-1 and AS-2.

- August 1993: RESNA performed an air sparge/soil vapor extraction (AS/SVE) pilot test at the Site to evaluate the feasibility of utilizing air sparging in conjunction with SVE. Results of the test indicated air sparging was a viable option.

- November 1993: Construction of a groundwater extraction system (GWE) and an AS/SVE remediation system were completed at the Site. A total of nine vapor extraction wells (VW-1 through VW-9), one groundwater extraction well (RW-1), and two air sparge wells (AS-1 and AS-2) were connected to the system. The AS/SVE system was started in December 1993, however according to historical reports the GWE system was never operated. The AS/SVE system operated intermittently through February 2004, when it was shut down due to low influent concentrations. A reported 3,967 pounds of TPHg and 528 pounds of benzene were removed from beneath the Site during AS/SVE operation.

- March 2009: Broadbent & Associates, Inc. (BAI) observed the installation of wells MW-7 through MW-9 for the purpose of evaluating the remedial effectiveness of the AS/SVE system which operated between 1993 and 2004. Based on analytical data from collected soil and groundwater samples, remediation activities were deemed successful. BAI recommended the AS/SVE system be shut down permanently and that monitored natural attenuation be continued at the Site.

- March 2011: BAI conducted a soil vapor intrusion assessment in the vicinity of the onsite building to evaluate the potential for a benzene vapor intrusion and possible vapor inhalation risk. Based on analytical data from collected soil vapor samples, BAI concluded vapor intrusion to indoor air was not a risk.

1.8 Groundwater Constituents of Concern

Petroleum hydrocarbons and some fuel additives have historically been detected in groundwater at the Site. Recent groundwater analytical data (November 2011) indicates that constituents above laboratory reporting limits at the Site are gasoline range organics (GRO), benzene, xylenes, and MTBE.

For the purposes of this Closure Request, Closure Solutions considers the Water Quality Objective for constituents of concern to be the primary maximum contaminant level (MCL). The secondary MCL is used only if applicable. If a primary or secondary MCL has not been

established, the SFRWQCB's environmental screening level (ESL) is used. Constituents that do not exhibit concentrations above the Water Quality Objectives are not considered to be constituents of concern. Analytical data reported for the November 2011 sampling event continues to show a reduction in hydrocarbon concentration, however in an effort to present the most conservative representation of subsurface conditions, groundwater data from the May 5, 2011 sampling event are used as the basis for this Closure request. The following table presents the maximum concentrations for constituents of concern as well as the Water Quality Objectives for each constituent.

Contaminant	Maximum Concentration	Water Quality Objective	Water Quality Objective Basis
GRO	1,600 ug/L	100 ug/L	SFRWQCB Environmental Screening Level
Benzene	290 ug/L	1.0 ug/L	California Primary MCL

Environmental Screening Level (ESL), from *Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater*, California Regional Water Quality Control Board San Francisco Bay Region, Interim Final - November 2007 (Revised May 2008). Table F-1a – Groundwater Screening Levels (groundwater is a current or potential drinking water resource).

GRO and benzene are considered to be the constituents of concern at the Site. Toluene, ethylbenzene, total xylenes, and MTBE are not considered constituents of concern because these constituents are typically detected at concentrations well below their respective Water Quality Objectives, where established.

1.9 Current Regulatory Status

In correspondence dated November 18, 2010, the Alameda County Environmental Health Services Agency (ACEH) concurred with BAI's R*evised Vapor Intrusion Assessment Sampling Work Plan* (Work Plan) dated November 1, 2010 and requested an investigation report be submitted by February 2011.

In 2011, BAI conducted the scope of work proposed in the Work Plan and submitted a *Vapor Intrusion Assessment Report,* dated June 13, 2011. No other recent correspondence has been submitted to the State Water Quality Control Board's (SWRCB) GeoTracker website.

2.0 ENVIRONMENTAL CONDITIONS

2.1 Extent of Groundwater Impact

Analytical data[5] suggest that the constituents of concern in soil and groundwater are GRO, and benzene. Current maximum concentrations of constituents of concern (November 2011) are reported in groundwater samples obtained from well MW-7, which appears to identify the trailing end of the groundwater hydrocarbon plume adjacent to the former UST Pit. Maximum concentrations of constituents of concern for the May 2011 event are reported in groundwater samples obtained from wells RW-1, MW-8 and S-5, presumably identifying the hydrocarbon plume leading edge. Shell Branded groundwater monitoring well S-5 is an off-Site well located cross-gradient from ARCO Station No. 2035. Based on the expanded data set, the dissolved contaminant plume is adequately delineated by the existing well network and is defined in the down-gradient direction to below laboratory reporting limits for GRO, benzene, and MTBE, by well MW-6. Reported constituent concentrations in groundwater samples from Site monitor wells exhibit an overall decreasing trend and Water Quality Objectives for GRO and benzene will be achieved within a reasonable time.

Based on the hydraulic gradient mentioned in Section 1.4, Site monitor wells with screen intervals penetrating an aquitard present at about 12 to 18 feet bgs may likely facilitate the exchange of groundwater between the shallow and deeper water-bearing zones. Constituent concentrations in groundwater samples from wells screened into the deeper (old alluvium) water-bearing zones (e.g., wells MW-1, MW-2 and MW-3) generally report concentrations below laboratory reporting limits while the wells screened in the shallow zone report elevated concentrations (e.g., MW-7 and MW-8). A groundwater Elevation Contour and Analyses Map depicting the second quarter 2011 data for both the ARCO and Shell Sites is included as Figure 2 in Attachment A. Historical groundwater monitoring data is presented in Attachment B.

2.2 Extent of Soil Impact

Approximately 350 cubic yards of soil was excavated during dispenser and piping upgrades and UST replacement in 1991 and an additional 3,967 pounds of TPHg and 528 pounds of benzene were removed as soil vapor during AS/SVE remediation between 1993 and 2004.

Remaining soil impacts are limited to the locations of the former USTs, dispenser, and product piping that were present in the northern portion of the Site. Soil impacts appear to be adequately defined both laterally and vertically by up-gradient and cross-gradient borings and are limited to the depth range of approximately 10 to 15 feet bgs. Data indicate the affected soil is contained

[5] BAI, *Fourth Quarter 2011 Semi-Annual Monitoring Report* (January 2012).

to the shallow recent alluvium hydrologic unit and adequately defined both laterally and vertically. Historical soil analytical data are presented in Tables 2 and 3. Soil sample locations are shown on Plate 3 in Attachment A.

3.0 TECHINCAL JUSTIFICATION FOR NO FURTHER ACTION

As discussed in Section 2.2, residual contaminants remain localized to the areas of the former USTs, dispensers, and product piping. Soil impacts are primarily located in fine-grained soil between approximately 10 to 15 feet bgs. As indicated by soil samples collected from borings MW-7 through MW-9, the residual hydrocarbons in on-site soil have significantly decreased since operation of the SVE system between 1997 and 2004[6].

The shallow affected groundwater is not presently used as a source of drinking water or other beneficial use, and it is highly unlikely it will be used as such in the foreseeable future. The majority of the East Bay Plain cities do not have "…any plans to develop local groundwater resources for drinking water purposes because of existing or potential saltwater intrusion, contamination, or poor or limited quantity.[7]" The Site is located in an area already serviced by a public water supply system; however, if groundwater resources were to be developed at or in the vicinity of the site, well construction standards requiring a minimum 50 foot sanitary seal would serve to isolate the shallow affected groundwater from deeper groundwater production zones.

At least two distinct hydrologic units exist beneath the Site, including an unconfined groundwater bearing zone at about 5 to 10 feet bgs, and a confined groundwater bearing zone at about 18 to 20 feet bgs. Logs of Site borings and water level elevation and water quality data support the hypothesis that two distinct water bearing zones are present at the Site. However, there is little likelihood that the deeper confined groundwater encountered in the old alluvium will be materially affected by the remaining residual petroleum hydrocarbon release provided Site wells are properly sealed.

During the March 2011 soil vapor survey, analytical results of the two soil gas samples that were collected adjacent to the existing station building were lower than the SFRWQCB ESLs indicating that vapor intrusion to indoor air is not an issue of concern at the Site. The down-gradient extent of dissolved-phase gasoline constituents in shallow groundwater is defined to below laboratory reporting limits at the location of well MW-6. Dissolved-phase gasoline constituents are stable or exhibit decreasing trends in onsite well MW-7 and peripheral wells MW-4, MW-8, RW-1 and S-5. Additionally, the Site and vicinity are paved with asphalt and

[6] Soil & Ground-Water Investigation Report, BAI, May 20, 2009
[7] *East Bay Plain Groundwater Basin Beneficial Use Evaluation Report* , SFRWQCB, 1999

concrete further protecting onsite workers from petroleum hydrocarbons remaining in the subsurface. Considering the geology, hydrology, and land use at and in the vicinity of the Site, it is not expected that residual gasoline constituents remaining in fine-grained soil and shallow groundwater would threaten human health, safety, and environmental receptors. Tabulated analytical data from the March 2011 soil vapor assessment are included in Attachment D.

4.0 QUALIFICATION AS LOW RISK CASE

Closure Solutions recognizes that SWRCB Resolutions 68-16 (Statement of Policy with Respect to Maintaining High Quality of Waters in California), 88-63 (Sources of Drinking Water), and 92-49 (Policies and Procedures for Investigation and Cleanup and Abatement of Discharges under Water Code Section 13304) require the cleanup of unauthorized releases to background concentrations or the highest water quality protective of the designated beneficial uses. Nevertheless, Closure Solutions believes that the environmental case at the subject Site should be granted No Further Action status at this time for numerous regulatory and technical reasons. These reasons are outlined in the following sections.

4.1 Existing SWRCB Closure Policy

SWRCB Resolution 68-16 resolves that any activity that produces a waste discharge will be required to meet waste discharge requirements which will result in the best practicable treatment or control of the discharge necessary to assure that the highest water quality consistent with the maximum benefit to the people of the State will be maintained. SWRCB Resolution 88-63 resolves that virtually all water in California is designated as a drinking water source. Water Code Section 13304 authorizes Regional Boards to require the complete cleanup of all waste discharged and the restoration of affected water to background conditions or the best water quality reasonable if background levels of water quality cannot be restored. SWRCB Resolution 92-49 sets forth the policies and procedures for the investigation and cleanup of discharges from leaking Underground Storage Tank cases.

Resolution 92-49 does not require, however, that the Water Quality Objectives be met at the time of site closure. Even if the requisite level of water quality has not yet been attained, a site may be closed if the level will be attained within a reasonable time frame. SWRCB Water Quality Order 98-04 (Matthew Walker) explicitly interprets a "reasonable time frame" as "anywhere from a couple of decades to hundreds of years." The Matthew Walker petition further states "…[I]f complete removal of detectable traces of petroleum hydrocarbon constituents becomes the standard for UST corrective actions, the statewide technical and economic implications will be enormous."

SWRCB Resolution 2009-042 states that "[i]t is the responsibility of Regional Water Boards, LOP agencies, and other local agencies to close UST cases that are ready for closure." This Resolution further states "[i]n previous decisions, the State Water Board, when determining a reasonable period, has considered all relevant factors including, but not limited to, existing and anticipated beneficial uses of water." Resolution 2009-081 further clarifies this issue by stating that "[i]n the orders issued by the State Water Board regarding UST case closure, several factors relevant to the particular UST case were considered, such as: (1) whether remaining petroleum constituents would migrate beyond the limited spatial extent, (2) the presence and location of drinking water wells in the area, (3) the likelihood that the impacted groundwater will be used as a source of drinking water in the reasonably foreseeable future, and (4) the protective nature of standard well-construction practices."

SWRCB Resolution 2009-042 makes it clear that the decisional framework used in previous UST closure orders interpreted a "reasonable time frame" to be the amount of time before the resource is actually used, based on *existing* or *anticipated* beneficial use. SWRCB Resolution 2009-081 clarifies that the decisional framework in UST closure orders contemplates whether the impacted groundwater will be used as a source of *drinking water* in the *foreseeable future*. These Resolutions indicate that closure policy based on "potential beneficial use" or "possible future beneficial use" is inappropriate. These Resolutions indicate that the decisional framework previously used by SWRCB when considering UST closures is based on "existing" beneficial use or "anticipated beneficial use within the foreseeable future." SWRCB Resolution 2009-081 resolves that "[w]hen considering whether a UST cleanup case should be closed, Agencies shall apply the decisional framework established in previous State Water Board UST closure orders."

4.2 Site Qualification as Low-Risk Based on 1996 Criteria

On December 8, 1995, Mr. Walter Pettit (Executive Director, SWRCB) issued an advisory to all Regional Water Quality Control Boards indicating that oversight agencies should proceed aggressively to close low risk cases. Supplemental Instructions and Interim Guidance, prepared by SFRWQCB on January 5, 1996, defined and explained low risk criteria for environmental UST cases. These low-risk criteria are presented below, with justification why each criteria element is satisfied:

1) The leak has been stopped and ongoing sources, including free product, removed or remediated to the extent practicable.

Approximately 350 cubic yards of soil was excavated during dispenser and piping upgrades and UST replacement in 1991 and an additional 3,967 pounds of TPHg and 528 pounds of benzene were removed as soil vapor during AS/SVE remediation between 1993 and 2004.

Remaining impacts are limited to the locations of the former USTs, dispenser, and product piping that were present in the northern portion of the Site. Hydrocarbon impacts appear to be adequately defined both laterally and vertically by the existing well network. Free phase product has not been observed at the Site and there is no evidence of a new release. As such, this criterion is satisfied.

2) The site has been adequately characterized.

The dissolved contaminant plume is adequately delineated by the existing well network and is defined in the down-gradient direction to below laboratory reporting limits for GRO, benzene, and MTBE, by well MW-6. Because it is not reasonably anticipated that contaminants stemming from the Site pose a threat to human health based on ingestion of groundwater or vapor inhalation, and no threat to environmental receptors appears to exist, Closure Solutions believes that the Site is adequately characterized for the purposes of evaluating site closure.

3) The dissolved contaminant plume is not migrating.

As stated previously, GRO and benzene concentrations exhibit declining trends with respect to time. A declining trend for relatively non-mobile constituents such as GRO is considered to be evidence that the overall extent of the contaminant plume is shrinking. Therefore, there is no evidence that the groundwater impacts are migrating.

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

A 2011 sensitive receptor survey did not identify any water wells within a ½ mile radius of the Site and the nearest surface water body is the San Francisco Bay, located approximately 3,500 feet west-northwest (down-gradient/cross-gradient) of the Site. The Site is located in an area already serviced by a public water supply system however, if groundwater resources were to be developed at or in the vicinity of the site, well construction standards would serve to isolate the shallow affected groundwater from deeper groundwater production zones. In addition, the majority of the East Bay Plain cities do not have "…any plans to develop local groundwater resources for drinking water purposes because of existing or potential saltwater intrusion, contamination, or poor or limited quantity."

5) The site presents no significant risk to human health.

As discussed in Section 3.0, soil vapor concentrations were not detected at or above the SFRWQCB ESL's in samples collected during BAI's 2011 investigation. Therefore, Closure

Solutions believes that the Site presents no significant risk to human health and that no further investigation is warranted.

6) The site presents no significant risk to the environment.

The groundwater plume is adequately defined and the Site appears to have been adequately remediated. The closest surface water body identified is the San Francisco Bay, located approximately 3,500 feet west-northwest (down-gradient/cross-gradient) of the Site. Due to the distance of the bay to the Site, it is not reasonably anticipated that impacted groundwater from beneath the Site presents a significant risk to the identified environmental receptor.

4.3 Site Qualification as Low-Risk Based on Groundwater Concentration

On May 19, 2009 the SWRCB formed the LUFT Task Force under Resolution 2009-042. The Task Force was directed to make recommendations to improve the Underground Storage Tank Cleanup regulatory program, including additional approaches to risk-based cleanup.

The Task Force final report (January 12, 2010) included a recommendation that cases be considered for low-risk closure if the concentration of petroleum hydrocarbons and fuel oxygenates are below the following levels:

a. 10 parts per million (ppm) for total petroleum hydrocarbon gasoline range (TPHg) and for TPH diesel range (TPHd)
b. 1 ppm for each of the individual petroleum constituents
c. 0.5 ppm for each of the individual oxygenates

It is understood that while these criteria cannot be uniformly applied to all sites, in "the vast majority of cases", unless an existing water well or surface water body is located within 1,000 feet of the source area in the down-gradient direction, cases that exhibit concentrations similar to those established above should be considered strong candidates for low-risk closure. It is also noted that "[i]n cases where the TPH concentration is high, but MTBE and benzene concentrations are low or not present above laboratory detection limits, the case should be considered to be low-risk irrespective of the TPH concentration."

Based on the May 2011 groundwater data for the Site, concentrations of GRO and benzene are currently above the Water Quality Objective, but well below the low-risk case criteria as described above. MTBE concentrations have been below the Water Quality Objective of 5.0

ug/L since November 2009. As such, the case is considered to be a strong candidate for low-risk closure.

4.4 Achievement of Water Quality Objectives Met Before Resource is Used

As discussed in Section 3.0, the down-gradient extent of dissolved-phase gasoline constituents in shallow groundwater is defined to below laboratory reporting limits at the location of well MW-6. Dissolved-phase gasoline constituents are stable or exhibit decreasing trends in peripheral wells MW-4, MW-8, RW-1 and S-5.

To estimate the amount of time necessary for existing Site constituents of concern to degrade to Water Quality Objectives, Closure Solutions performed logarithmic regression analysis using GRO and benzene data from wells MW-8, RW-1 and S-5 to represent the edges of the hydrocarbon plume. Regression analyses for GRO and benzene were not conducted on well MW-4 because concentrations were below laboratory reporting limits for more than four quarters. The results of the regression analysis are presented in Attachment E and summarized in the table below.

Well ID	Constituent	Water Quality Objective	Projected Date to Achieve Water Quality Objectives
S-5	GRO	100 ug/L	2020
S-5	Benzene	1.0 ug/ L	2018
RW-1	GRO	100 ug/ L	2012
RW-1	Benzene	1.0 ug/ L	2018
MW-8	GRO	100 ug/ L	2013
MW-8	Benzene	1.0 ug/ L	2016

The regression analysis shows that while concentrations in the center of the plume will remain elevated for some time, concentrations at the edges of the plume are decreasing, indicating that the plume is shrinking. Without additional remediation the Water Quality Objectives for GRO and benzene will be achieved within a reasonable time. Therefore, additional active remediation does not appear to be warranted.

5.0 CASE CLOSURE PRECEDENT

Numerous environmental cases have been reviewed and closed by the SWRCB under the petition process. These cases can be used to as case precedent for management and closure of environmental UST cases. A brief summary of selected SWRCB closure orders that pertain to the subject environmental case are presented below, and are merely provided to demonstrate that significant concentrations of constituents of concern may be left in place to naturally attenuate without violating Resolutions 68-16, 88-63, and 92-49:

Water Quality Order 2004-0018 (Ernest Panosian)

At the time the Ernest Panosian case was submitted for petition to the SWRCB dissolved phase contaminants had been known to extend approximately 120 feet beyond the former UST pit, and an active water supply well was known to be located approximately 500 feet upgradient of the site, and screened from 245 to 310 feet below ground surface. At the time of the petition, the primary constituents of concern were TPHg (present at 2,900 μg/L), benzene (present at 150 μg/L) and 1,2-dichloroethane (EDC) (present at 5 μg/L).

SWRCB found that "with no further regulatory action, residual detectable concentrations of benzene, EDC and TPHg present in shallow groundwater and adsorbed to shallow soils are (and will remain) limited to the immediate vicinity of the site and will continue to attenuate naturally over time with no further corrective action". SWRCB also finds that standard well construction practices that mandate surface sanitary seals will adequately protect existing or anticipated future beneficial uses of groundwater from shallow impacted groundwater such as that found at the petitioner's site. The SWRCB closed the case.

Comparative Analysis: The environmental case at 1001 San Pablo Avenue is generally similar to the Ernest Panosian case in that the contaminants are adequately delineated and not expected to migrate significantly beyond the Site boundaries. While hydrocarbon concentrations in Site wells S-5, RW-1, and MW-8 are above laboratory reporting limits, 11 years of AS/SVE operations has likely contributed to stabilizing movement of the groundwater contaminant plume, therefore, the extent of down-gradient impacted groundwater is adequately defined within the immediate vicinity of the Site. Additionally, based on natural attenuation analytical data collected to date, microbial activity and biodegradation of the hydrocarbon plume appears to be occurring and the plume is shrinking. In reference to the up-gradient well noted in the Panosian case, no drinking water wells have been identified within a ½ mile radius of the site and the nearest surface water body is the San Francisco Bay, located approximately 3,500 feet west-northwest (down-gradient/cross-gradient) of the Site.

6.0 BENEFIT OF ADDITIONAL WORK

Although concentrations of GRO and benzene are currently above Water Quality Objectives, the plumes are adequately delineated in the down-gradient direction. The concentrations exhibit decreasing trends with respect to time and the Water Quality Objectives will be achieved within a reasonable time. In addition, receptors are not reasonably anticipated to be impacted by residual concentrations at the Site. As such, the Site is adequately characterized and no further investigation appears to be warranted to evaluate potential impacts to human health or environmental receptors.

If ARC were to pursue active remediation of the contaminant plume at the Site, resumption of SVE would not be feasible since recent soil vapor samples indicate petroleum hydrocarbons are not expected to be present in significant quantities above the groundwater table. As such, the most likely remedial approach would be the implementation of an ozone sparge system. This type of system would require the installation of numerous ozone sparge wells, extensive remediation system infrastructure, equipment, and ongoing operations and maintenance for a limited period of time before Water Quality Objectives could be met. While pursuing the installation and operation of a robust ozone sparge system would be extremely costly, it is not expected that installation and operation of such a system would confer appreciable benefit to human health or environmental receptors. As noted in Water Quality Order 98-04, "[i]f the complete removal of detectable traces of petroleum hydrocarbon constituents becomes the standard for UST corrective actions, the statewide technical and economic implications will be enormous". As such, it appears that the Site specific benefit of additional work, if any, is dwarfed by the cost and statewide implications for corrective action.

7.0 CLOSURE RECOMMENDATION

This Request for No Further Action presents a summary of the current environmental status of the Site, as well as rationale justifying case closure both from technical and regulatory perspectives. In addition to the technical and regulatory justification, there are strong economic reasons for closing the case. Maintaining a backlog of open low-risk environmental cases diverts available funding from cases with significantly greater threat to human health and the environment. By closing low-risk environmental cases, the available funding for the investigation and remediation of environmental cases with significantly greater threat to human health and the environment can be increased, which will, in turn accelerate the cleanup of UST cases statewide.

The remaining groundwater impacts have been shown to be stable or attenuating to Water Quality Objectives in a reasonable period and no environmental receptors are reasonably anticipated to be impacted by the residual concentrations at the Site. As such, it does not seem reasonable that further investigation of the Site is necessary to ensure that human health and the environment are protected and active remediation of the existing contaminants cannot be justified from a technical or economic perspective. If further investigation is not warranted at the Site, then long term groundwater monitoring serves no useful purpose. ***Closure Solutions recommends and ARC formally requests that No Further Action status be granted for the environmental case at 1001 San Pablo Avenue at this time.***

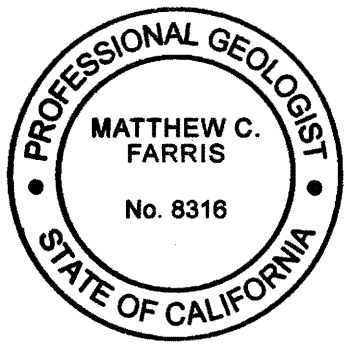
8.0 LIMITATIONS

This report is based on Site conditions, data, and other information available as of the date of the report, and the conclusions and recommendations herein are only applicable to the time frame in which the report was prepared. Background information used to prepare this report including, but not limited to, previous field measurements, analytical results, Site plans and other data have been furnished to Closure Solutions by ARC and their previous consultants. Closure Solutions has relied on this information as furnished, and is neither responsible for nor has confirmed the accuracy of this information.

If you have any questions regarding this submission, please contact the undersigned at (916) 760-7579 (mfarris@closuresolutions.com) or Ms. Kathleen Waldo at (916) 760-7025 (kwaldo@closuresolutions.com).

Sincerely,

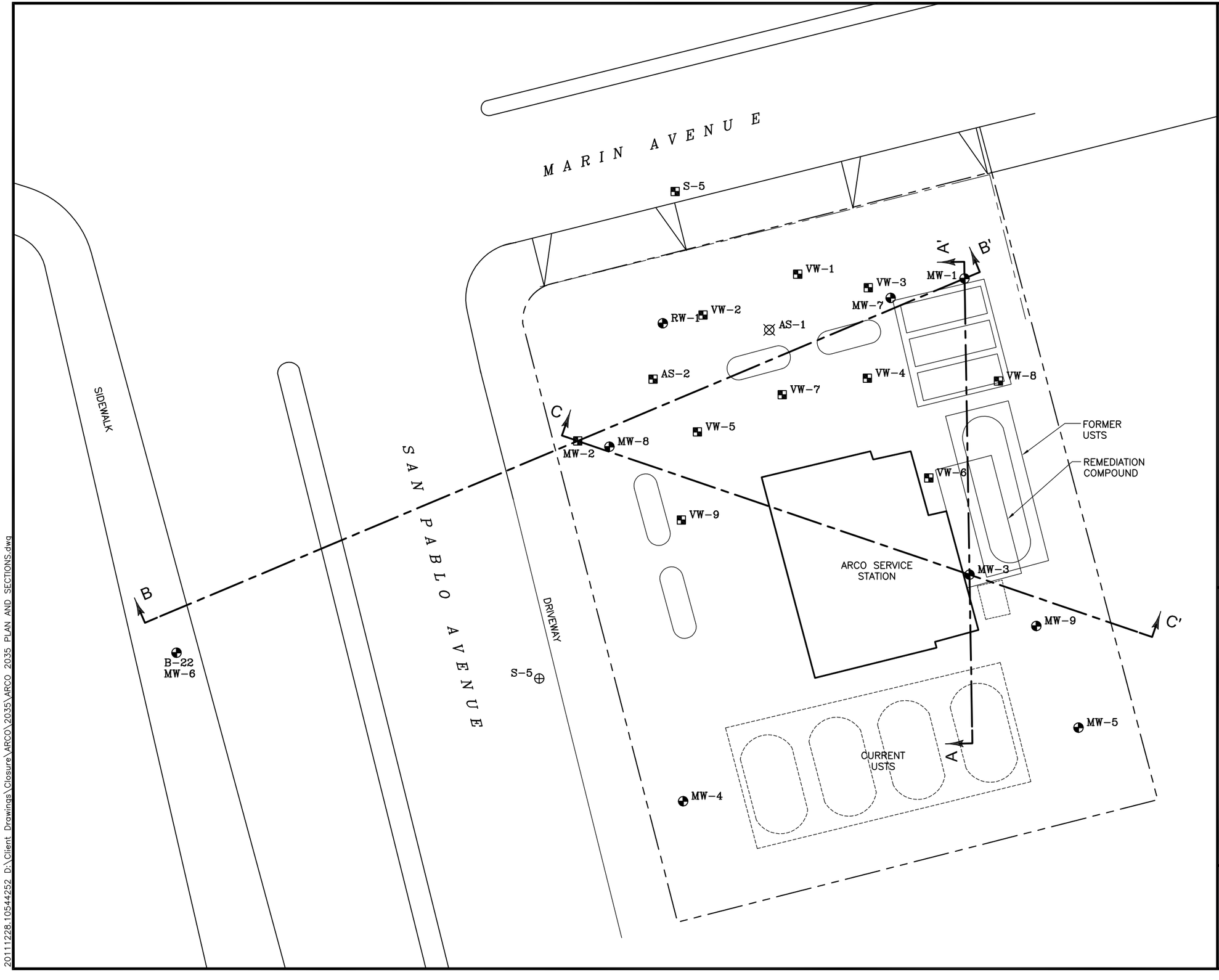
Closure Solutions, Inc.



Matthew Farris, P.G.
Project Geologist

Attachments:

Figure 1	Site Map with Cross Section Locations
Figure 2	Geologic Cross Section A – A'
Figure 3	Geologic Cross Section B – B'
Figure 4	Geologic Cross Section C – C'
Figure 5	Groundwater Elevation Graph
Table 1	Well Construction Details
Table 2	Historical Soil Analytical Data
Table 3	Additional Soil Analytical Data
Attachment A	Figures
Attachment B	Historical Groundwater Monitoring Data
Attachment C	Soil Boring Logs
Attachment D	Soil Vapor Sampling Data
Attachment E	Regression Graphs



SCALE IN FEET

0 50 100

LEGEND:

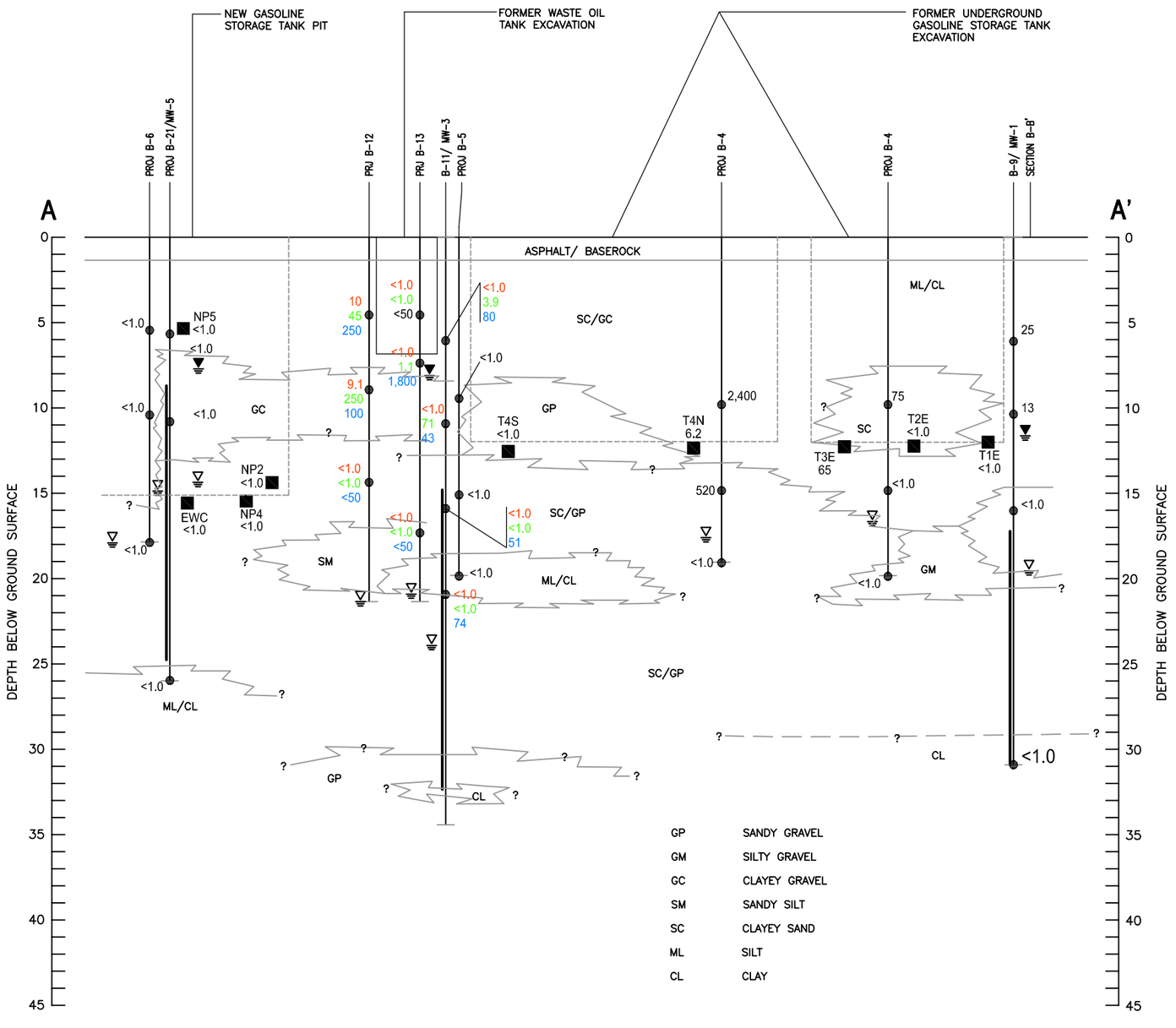
- (ARCO) MONITORING WELL
- (ARCO) VAPOR EXTRACTION WELL
- (ARCO) AIR SPARGE WELL
- (SHELL) MONITORING WELL
- A A' GEOLOGIC CROSS SECTION LOCATION

FIGURE 1

SITE MAP WITH CROSS SECTION LOCATIONS

ARCO STATION NO. 2035
1001 SAN PABLO AVENUE
ALBANY, CALIFORNIA

CLOSURE SOLUTIONS, INC.
4600 Northgate Boulevard • Suite 230
Sacramento • California • 95834
Phone: (800) 988-7880

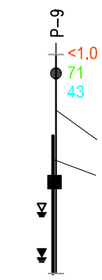


HORIZONTAL SCALE

0 15 30

2X VERTICAL EXAGGERATION

LEGEND:



LABORATORY ANALYZED SOIL SAMPLE SHOWING CONCENTRATION OF TPHg (RED), TPHd (GREEN) AND TOG (BLUE) IN PPM

PROJECTED TANK PIT SAMPLE SHOWING CONCENTRATION OF TPHg IN PPM

NOTES:

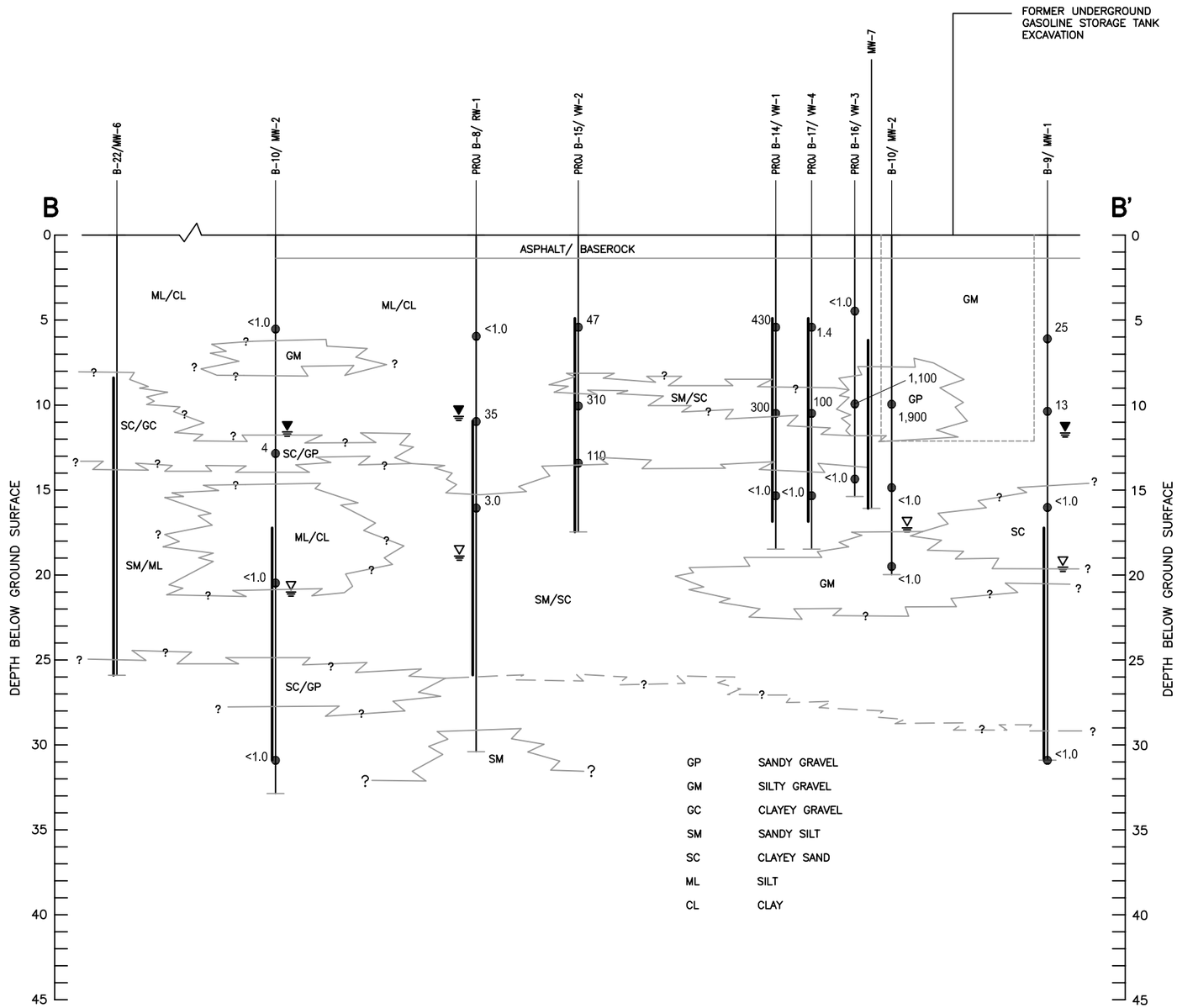
CROSS-SECTION DETAILS AND ANALYTICAL ADAPTED FROM RESNA ENVIRONMENTAL 1992/ 1993

FIGURE 2

GEOLOGIC CROSS SECTION A-A'

ARCO STATION NO. 2035
1001 SAN PABLO AVENUE
ALBANY, CALIFORNIA

CLOSURE SOLUTIONS, INC.
4600 Northgate Boulevard • Suite 230
Sacramento • California • 95834
Phone: (800) 988-7880



HORIZONTAL SCALE

0 15 30

2X VERTICAL EXAGGERATION

LEGEND:

P-9
<1.0 71 43 LABORATORY ANALYZED SOIL SAMPLE SHOWING CONCENTRATION OF TPHg (RED), TPHd (GREEN) AND TOG (BLUE) IN PPM

WELL CASING

WELL SCREEN

INITIAL WATER LEVEL IN BORING

STATIC WATER LEVEL IN WELL (2-22-93)

T4S <1.0 PROJECTED TANK PIT SAMPLE SHOWING CONCENTRATION OF TPHg IN PPM

NOTES:

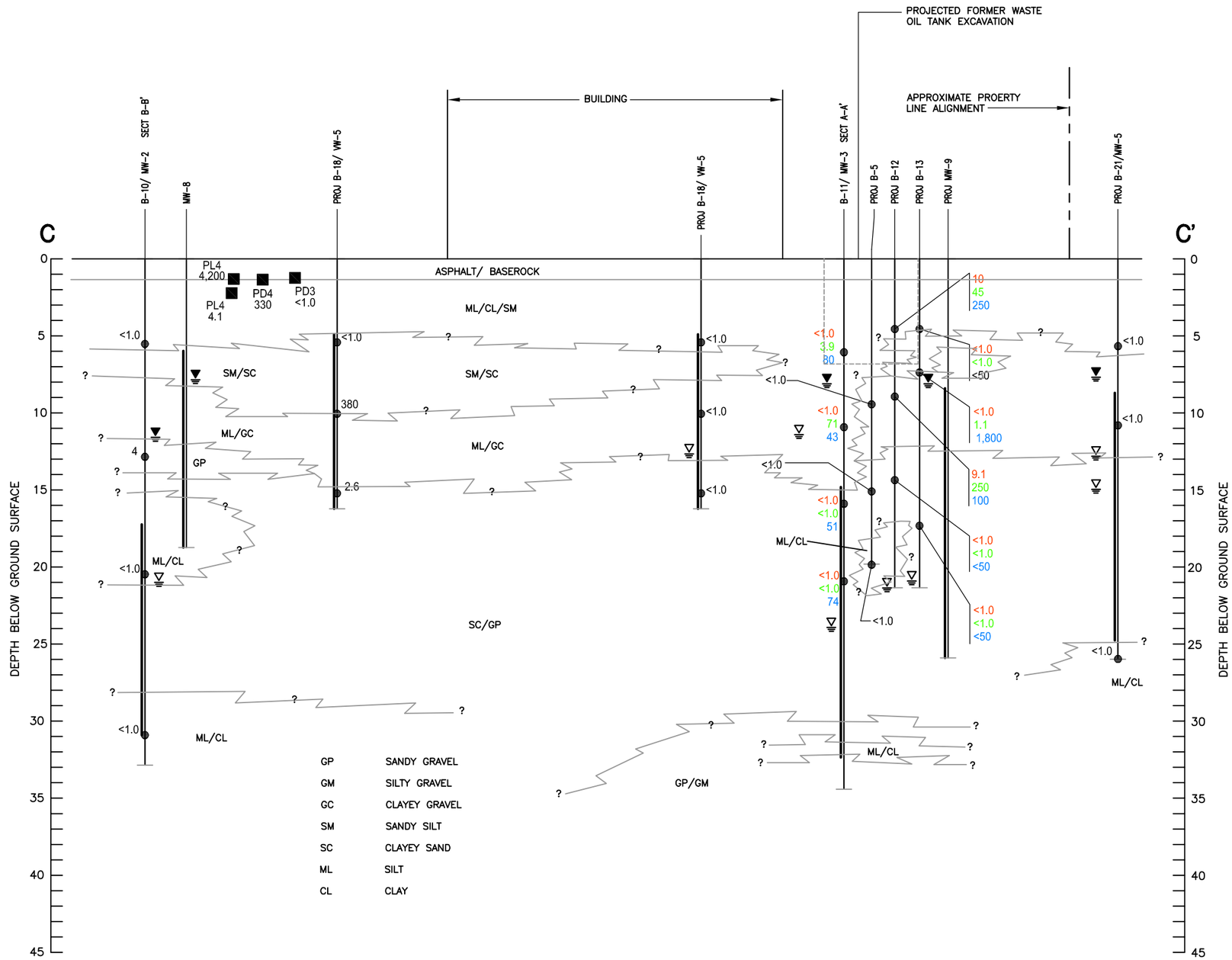
CROSS-SECTION DETAILS AND ANALYTICAL ADAPTED FROM RESNA ENVIRONMENTAL 1992/ 1993

FIGURE 3

GEOLOGIC CROSS SECTION B-B'

ARCO STATION NO. 2035
1001 SAN PABLO AVENUE
ALBANY, CALIFORNIA

CLOSURE SOLUTIONS, INC.
4600 Northgate Boulevard • Suite 230
Sacramento • California • 95834
Phone: (800) 988-7880



HORIZONTAL SCALE
0 15 30

2X VERTICAL EXAGGERATION

LEGEND:

P-9
<1.0
71
43
LABORATORY ANALYZED SOIL SAMPLE SHOWING CONCENTRATION OF TPHg (RED), TPHd (GREEN) AND TOG (BLUE) IN PPM

WELL CASING

WELL SCREEN

INITIAL WATER LEVEL IN BORING

STATIC WATER LEVEL IN WELL (2-22-93)

T4S
<1.0
PROJECTED TANK PIT SAMPLE SHOWING CONCENTRATION OF TPHg IN PPM

NOTES:

CROSS-SECTION DETAILS AND ANALYTICAL ADAPTED FROM RESNA ENVIRONMENTAL 1992/ 1993

FIGURE 4

GEOLOGIC CROSS SECTION C-C'

ARCO STATION NO. 2035
1001 SAN PABLO AVENUE
ALBANY, CALIFORNIA

CLOSURE SOLUTIONS, INC.
4600 Northgate Boulevard • Suite 230
Sacramento • California • 95834
Phone: (800) 988-7880

FIGURE 5
Groundwater Elevation Graph
ARCO Station No. 2035
1001 San Pablo Avenue, Albany, California

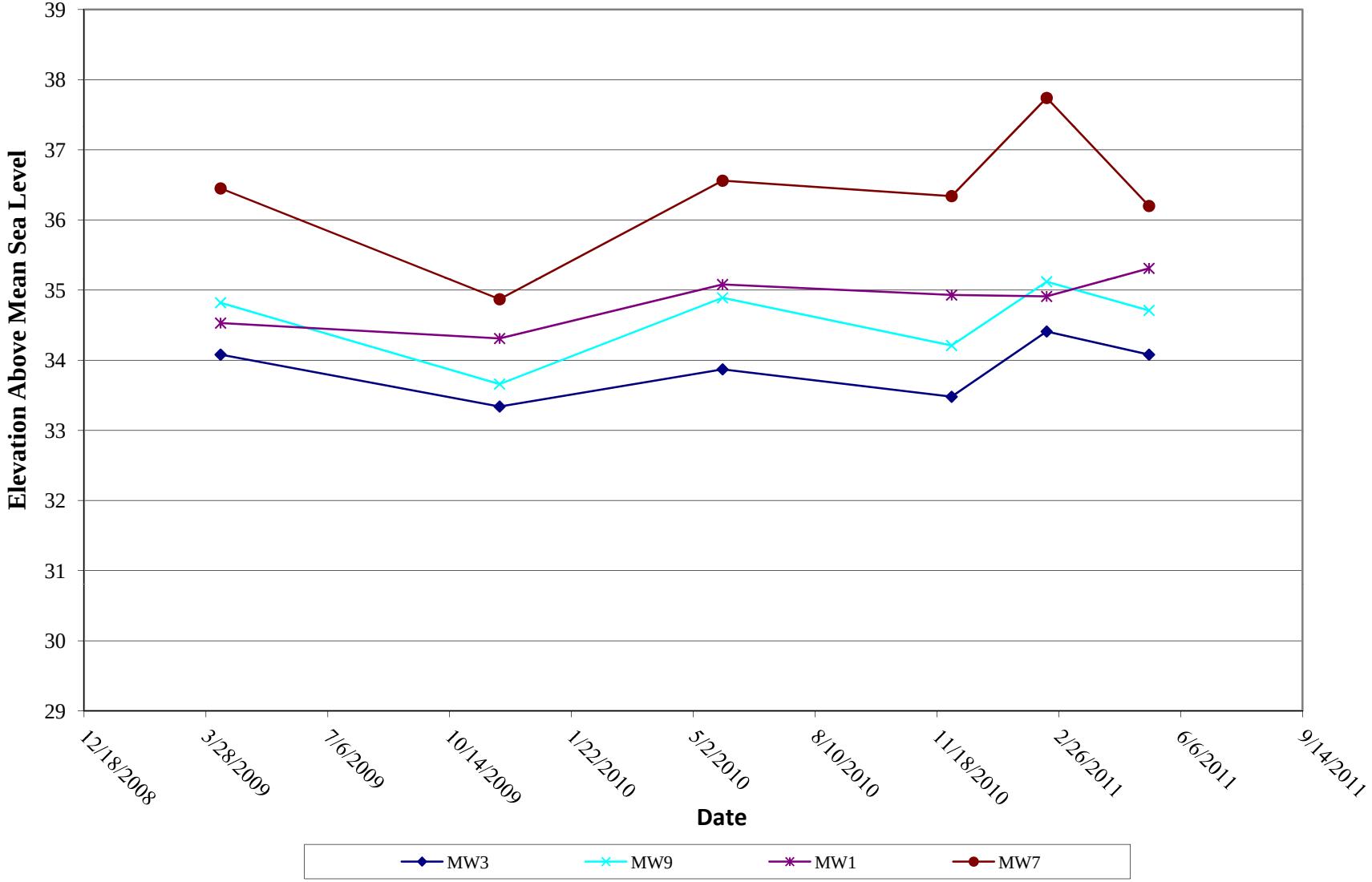


Table 1
Well Construction Details

ARCO Service Station No. 2035
1001 San Pablo Avenue
Albany, California

Well ID	Well Diameter (inches)	Total Depth (feet bgs)	Screen Interval (feet bgs)	Screen Slot Size (inches)
MW-1	2	32	15-30	0.020
MW-2	2	33	20-29	0.020
MW-3	2	34.5	13-33	0.020
MW-4	2	29	9-26	0.020
MW-5	2	26.5	8-25	0.020
MW-6	2	26.5	8-25	0.020
MW-7	2	16	6-16	0.020
MW-8	2	19	6-19	0.020
MW-9	4	16	6-16	0.020
RW-1	4	30.5	11-26	0.020

bgs = Below ground surface

Table 2
Historical Soil Analytical Data

ARCO Service Station No. 2035
1001 San Pablo Avenue
Albany, California

Sample ID	Date Sampled	Depth (feet bgs)	TPHg (mg/kg)	TPHd (mg/kg)	B (mg/kg)	T (mg/kg)	E (mg/kg)	X (mg/kg)	1,2-DCA (mg/kg)	MTBE (mg/kg)	TBA (mg/kg)	Lead (mg/kg)
S-10-B1	8/1989	10	**1,900**	--	ND<4	**15**	**8.0**	**53**	--	--	--	--
S-15-B1	8/1989	15	ND<1.0	--	ND<0.005	**0.006**	ND<0.005	ND<0.005	--	--	--	--
S-19-1/2-B1	8/1989	19.5	ND<1.0	--	ND<0.005	ND<0.005	ND<0.005	ND<0.005	--	--	--	--
S-10-B2	8/1989	10	**51**	--	**1.9**	**0.35**	**0.81**	**4.0**	--	--	--	--
S-14-1/2-B2	8/1989	14.5	ND<1.0	--	**0.063**	ND<0.005	ND<0.005	ND<0.005	--	--	--	--
S-20-B2	8/1989	20	ND<1.0	--	**0.039**	**0.044**	**0.007**	**0.041**	--	--	--	--
S-10-B3	8/1989	10	**75**	--	**3.1**	**8.2**	**1.8**	**11**	--	--	--	--
S-14-1/2-B3	8/1989	14.5	ND<1.0	--	**0.21**	ND<0.025	ND<0.025	**0.039**	--	--	--	--
S-20-B3	8/1989	20	ND<1.0	--	ND<0.005	ND<0.005	ND<0.005	ND<0.005	--	--	--	--
S-10-B4	8/1989	10	**2,400**	--	**33**	**140**	**40**	**220**	--	--	--	--
S-15-B4	8/1989	15	**520**	--	ND<1	**6.9**	**6.2**	**6.3**	--	--	--	--
S-19-B4	8/1989	19	ND<1.0	--	ND<0.005	**0.007**	ND<0.005	ND<0.005	--	--	--	--
S-9-1/2-B5	8/1989	9.5	ND<1.0	--	**0.007**	**0.006**	ND<0.005	ND<0.005	--	--	--	--
S-15-B5	8/1989	15	ND<1.0	--	ND<0.005	**0.006**	ND<0.005	ND<0.005	--	--	--	--
S-20-B5	8/1989	20	ND<1.0	--	ND<0.005	ND<0.005	ND<0.005	ND<0.005	--	--	--	--
S-51/2-B6	6/25/1991	5.5	ND<1.0	--	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	--	--	--	--
S-101/2-B6	6/25/1991	10.5	ND<1.0	--	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	--	--	--	--
S-151/2-B6	6/25/1991	15.5	ND<1.0	--	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	--	--	--	--
S-17-B6	6/25/1991	17	ND<1.0	--	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	--	--	--	--
S-51/2-B7	6/25/1991	5.5	ND<1.0	--	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	--	--	--	--
S-101/2-B7	6/25/1991	10.5	ND<1.0	--	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	--	--	--	--
S-151/2-B7	6/25/1991	15.5	ND<1.0	--	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	--	--	--	--
S-17-B7	6/25/1991	17	ND<1.0	--	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	--	--	--	--
S-181/2-B7	6/25/1991	18.5	ND<1.0	--	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	--	--	--	--

Table 2
Historical Soil Analytical Data

ARCO Service Station No. 2035
1001 San Pablo Avenue
Albany, California

Sample ID	Date Sampled	Depth (feet bgs)	TPHg (mg/kg)	TPHd (mg/kg)	B (mg/kg)	T (mg/kg)	E (mg/kg)	X (mg/kg)	1,2-DCA (mg/kg)	MTBE (mg/kg)	TBA (mg/kg)	Lead (mg/kg)
S-12-T1W	7/3/1991	12	ND<1.0	--	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	--	--	--	--
S-12-T1E	7/3/1991	12	ND<1.0	--	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	--	--	--	--
S-12-T2W	7/3/1991	12	ND<1.0	--	**0.031**	ND<0.0050	**0.0080**	ND<0.0050	--	--	--	--
S-12-T2E	7/3/1991	12	ND<1.0	--	**0.019**	ND<0.0050	ND<0.0050	ND<0.0050	--	--	--	--
S-12-T3W	7/3/1991	12	**48**	--	**1.2**	**2.4**	**1.0**	**3.8**	--	--	--	ND<0.05
S-12-T3E	7/3/1991	12	**65**	--	**0.2**	**0.51**	**0.97**	**3.9**	--	--	--	ND<0.05
S-13-T4N	7/3/1991	13	**6.2**	--	**0.45**	**0.039**	**0.18**	**0.33**	--	--	--	--
S-13-T4S	7/3/1991	13	ND<1.0	--	**0.061 [0.160]**	**0.034**	**0.0080**	**0.15 [0.430]**	--	--	--	--
S-15-EWC	7/8/1991	15	ND<1.0	--	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	--	--	--	--
S-15-SE	7/8/1991	15	ND<1.0	--	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	--	--	--	--
S-16-SW1	7/8/1991	16	ND<1.0	--	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	--	--	--	--
S-15-SW	7/8/1991	15	ND<1.0	--	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	--	--	--	--
S-15-NWC	7/8/1991	15	ND<1.0	--	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	--	--	--	--
S-15-WWC	7/8/1991	15	ND<1.0	--	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	--	--	--	--
S-15-NWF	7/8/1991	15	ND<1.0	--	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	--	--	--	--
S-9-NNW	7/8/1991	9	ND<1.0	--	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	--	--	--	--
S-8-NW	7/8/1991	8	ND<1.0	--	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	--	--	--	--
S-15-NW	7/8/1991	15	ND<1.0	--	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	--	--	--	--

Table 2
Historical Soil Analytical Data

ARCO Service Station No. 2035
1001 San Pablo Avenue
Albany, California

Sample ID	Date Sampled	Depth (feet bgs)	TPHg (mg/kg)	TPHd (mg/kg)	B (mg/kg)	T (mg/kg)	E (mg/kg)	X (mg/kg)	1,2-DCA (mg/kg)	MTBE (mg/kg)	TBA (mg/kg)	Lead (mg/kg)
S-0709-NP1 (10')	7/9/1991	10	ND<1.0	--	**0.025**	**0.027**	**0.0060**	**0.024**	--	--	--	--
S-0709-NP2 (14')	7/9/1991	14	ND<1.0	--	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	--	--	--	--
S-0709-NP3 (10')	7/9/1991	10	ND<1.0	--	ND<0.0050	**0.0050**	ND<0.0050	**0.018**	--	--	--	--
S-0709-NP4 (15')	7/9/1991	15	ND<1.0	--	**0.0050**	**0.0050**	ND<0.0050	ND<0.0050	--	--	--	--
S-0709-NP5 (5')	7/9/1991	5	ND<1.0	--	**0.012**	**0.013**	ND<0.0050	**0.0080**	--	--	--	--
S-0709-NP6 (15')	7/9/1991	15	ND<1.0	--	**0.017**	**0.021**	**0.014**	**0.056**	--	--	--	--
S-0709-NP7 (3')	7/9/1991	3	ND<1.0	--	0.0060	**0.0060**	ND<0.0050	ND<0.0050	--	--	--	--
S-0709-NP8 (14')	7/9/1991	14	ND<1.0	--	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	--	--	--	--
S-0709-NP9 (9')	7/9/1991	9	ND<1.0	--	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	--	--	--	--
S-0709-NP10 (10')	7/9/1991	10	ND<1.0	--	**0.0090**	**0.0060**	ND<0.0050	ND<0.0050	--	--	--	--
S-0709-NP11 (8')	7/9/1991	8	ND<1.0	--	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	--	--	--	--
S-0709-NP12 (14')	7/9/1991	14	ND<1.0	--	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	--	--	--	--
S-0709-NP13 (2')	7/9/1991	2	ND<1.0	--	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	--	--	--	--
S-0709-NP14 (6')	7/9/1991	6	ND<1.0	--	ND<0.0050	ND<0.0050	**0.0050**	**0.0080**	--	--	--	--
S-0709-NP15 (5')	7/9/1991	5	ND<1.0	--	ND<0.0050	ND<0.0050	ND<0.0050	**0.0060**	--	--	--	--
S-0709-NP16 (16')	7/9/1991	16	ND<1.0	--	ND<0.0050	ND<0.0050	**0.0050**	**0.0080**	--	--	--	--
S-0709-NP17 (10')	7/9/1991	10	ND<1.0	--	ND<0.0050	ND<0.0050	**0.0050**	**0.0080**	--	--	--	--
S-0709-NP18 (11')	7/9/1991	11	ND<1.0	--	ND<0.0050	ND<0.0050	**0.0050**	**0.0080**	--	--	--	--

Table 2
Historical Soil Analytical Data

ARCO Service Station No. 2035
1001 San Pablo Avenue
Albany, California

Sample ID	Date Sampled	Depth (feet bgs)	TPHg (mg/kg)	TPHd (mg/kg)	B (mg/kg)	T (mg/kg)	E (mg/kg)	X (mg/kg)	1,2-DCA (mg/kg)	MTBE (mg/kg)	TBA (mg/kg)	Lead (mg/kg)
S-21/2-PL1	7/19/1991	2.5	ND<1.0	--	ND<0.005	ND<0.005	ND<0.005	ND<0.005	--	--	--	--
S-21/2-PL2	7/19/1991	2.5	ND<1.0	--	ND<0.005	ND<0.005	ND<0.005	ND<0.005	--	--	--	--
S-1-PL3	7/19/1991	1	**1.7**	--	**0.005**	**0.02**	**0.016**	**0.12**	--	--	--	--
S-1-PL4	7/19/1991	1	**4,200**	--	**36**	**320**	**100**	**640**	--	--	--	--
S-11/2-PL4	8/9/1991	1.5	**4.1**	--	**0.21**	**0.04**	**0.15**	**0.12**	--	--	--	--
S-1-PL5	7/19/1991	1	ND<1.0	--	ND<0.005	ND<0.005	ND<0.005	ND<0.005	--	--	--	--
S-1-PL6	7/19/1991	1	ND<1.0	--	ND<0.005	ND<0.005	ND<0.005	ND<0.005	--	--	--	--
S-1-PL7	7/19/1991	1	**11**	--	**0.10**	**0.37**	**0.16**	**1.2**	--	--	--	--
S-1-PL8	7/19/1991	1	**1,900**	--	**3.6**	**28**	**29**	**200**	--	--	--	--
S-1-PL9	7/19/1991	1	**110**	--	**0.2**	**0.78**	**0.36**	**3.1**	--	--	--	--
S-1-PL10	7/19/1991	1	**84**	--	**0.09**	**0.43**	**0.72**	**2.8**	--	--	--	--
S-21/2-PD1	7/19/1991	2.5	ND<1.0	--	ND<0.005	ND<0.005	ND<0.005	ND<0.005	--	--	--	--
S-21/2-PD2	7/19/1991	2.5	ND<1.0	--	ND<0.005	ND<0.005	ND<0.005	ND<0.005	--	--	--	--
S-1-PD3	7/19/1991	1	ND<1.0	--	ND<0.005	ND<0.005	ND<0.005	ND<0.005	--	--	--	--
S-1-PD4	7/19/1991	1	**330**	--	ND<0.005	ND<0.005	ND<0.005	**12**	--	--	--	--
S-1-PD5	7/19/1991	1	ND<1.0	--	ND<0.005	ND<0.005	ND<0.005	ND<0.005	--	--	--	--
S-1-PD6	7/19/1991	1	**87**	--	**0.13**	**0.28**	**0.48**	**3.8**	--	--	--	--
S-1-PD7	7/19/1991	1	**1,000**	--	**0.35**	**2.1**	**1.1**	**47**	--	--	--	--
S-1-PD8	7/19/1991	1	ND<1.0	--	ND<0.005	ND<0.005	ND<0.005	ND<0.005	--	--	--	--

Table 2
Historical Soil Analytical Data

ARCO Service Station No. 2035
1001 San Pablo Avenue
Albany, California

Sample ID	Date Sampled	Depth (feet bgs)	TPHg (mg/kg)	TPHd (mg/kg)	B (mg/kg)	T (mg/kg)	E (mg/kg)	X (mg/kg)	1,2-DCA (mg/kg)	MTBE (mg/kg)	TBA (mg/kg)	Lead (mg/kg)
S-6-B8	10/1991	6	ND<1.0	--	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	--	--	--	--
S-11-B8	10/1991	11	**35**	--	**1.2**	**1.7**	**0.42**	**2.0**	--	--	--	--
S-16-B8	10/1991	16	**3.0**	--	**0.45**	**0.13**	**0.11**	**0.47**	--	--	--	--
*S-30-B8	10/1991	30	**240**	--	**3.6**	**5**	**4.1**	**16**	--	--	--	--
S-6-B9	10/1991	6	**25**	--	**0.60**	**0.58**	**0.44**	**1.8**	--	--	--	--
S-101/2-B9	10/1991	10.5	**13**	--	**0.74**	**0.72**	**0.18**	**0.95**	--	--	--	--
S-16-B9	10/1991	16	ND<1.0	--	**0.015**	ND<0.0050	ND<0.0050	ND<0.0050	--	--	--	--
S-31-B9	10/1991	31	ND<1.0	--	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	--	--	--	--
S-51/2-B10	10/1991	5.5	ND<1.0	--	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	--	--	--	--
S-13-B10	10/1991	13	**4.0**	--	**0.13**	**0.15**	**0.041**	**0.16**	--	--	--	--
S-201/2-B10	10/1991	20.5	ND<1.0	--	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	--	--	--	--
S-301/2-B10	10/1991	30.5	ND<1.0	--	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	--	--	--	--
S-6-B11	10/1991	6	ND<1.0	**3.9**	**0.010**	ND<0.0050	ND<0.0050	ND<0.0050	--	--	--	**7.7**
S-11-B11	10/1991	11	**110**	**71**	ND<0.0050	ND<0.0050	ND<0.0050	**0.27**	--	--	--	**5.8**
S-16-B11	10/1991	16	ND<1.0	ND<1.0	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	--	--	--	**7.5**
S-21-B11	10/1991	21	ND<1.0	ND<1.0	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	--	--	--	**7.2**

Table 2
Historical Soil Analytical Data

ARCO Service Station No. 2035
1001 San Pablo Avenue
Albany, California

Sample ID	Date Sampled	Depth (feet bgs)	TPHg (mg/kg)	TPHd (mg/kg)	B (mg/kg)	T (mg/kg)	E (mg/kg)	X (mg/kg)	1,2-DCA (mg/kg)	MTBE (mg/kg)	TBA (mg/kg)	Lead (mg/kg)
S-41/2-B12	8/1992	4.5	**10**	**45**	ND<0.0050	ND<0.0050	**0.0070**	**0.050**	--	--	--	ND<5.0
S-9-B12	8/1992	9	**9.1**	**250**	ND<0.0050	ND<0.0050	**0.0060**	**0.082**	--	--	--	ND<5.0
S-141/2-B12	8/1992	14.5	ND<1.0	ND<1.0	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	--	--	--	**7.4**
S-41/2-B13	8/1992	4.5	ND<1.0	ND<1.0	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	--	--	--	ND<5.0
S-71/2-B13	8/1992	7.5	ND<1.0	**1.1**	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	--	--	--	ND<5.0
S-171/2-B13	8/1992	17.5	ND<1.0	ND<1.0	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	--	--	--	**5.6**
S-51/2-B14	8/1992	5.5	**430**	--	**4.0**	**16**	**7.3**	**42**	--	--	--	--
S-101/2-B14	8/1992	10.5	**1,300**	--	**20**	**82**	**31**	**170**	--	--	--	--
S-151/2-B14	8/1992	15.5	ND<1.0	--	**0.012**	**0.034**	**0.011**	**0.055**	--	--	--	--
S-51/2-B15	8/1992	5.5	**47**	--	**0.22**	**0.56**	**0.76**	**4.3**	--	--	--	--
S-10-B15	8/1992	10	**310**	--	**3.8**	**15**	**7.1**	**37**	--	--	--	--
S-131/2-B15	8/1992	13.5	**110**	--	**1.5**	**4.3**	**2.1**	**12**	--	--	--	--
S-41/2-B16	8/1992	4.5	ND<1.0	--	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	--	--	--	--
S-10-B16	8/1992	10	**4,300**	--	**21**	**110**	**51**	**580**	--	--	--	--
S-141/2-B16	8/1992	14.5	ND<1.0	--	**0.010**	**0.032**	**0.018**	**0.18**	--	--	--	--
S-51/2-B17	8/1992	5.5	**1.4**	--	**0.045**	**0.0080**	ND<0.0050	**0.028**	--	--	--	--
S-101/2-B17	8/1992	10.5	**1,100**	--	**16**	**71**	**27**	**140**	--	--	--	--
S-151/2-B17	8/1992	15.5	**27**	--	**2.1**	**0.40**	**0.75**	**1.3**	--	--	--	--
S-51/2-B18	8/1992	5.5	ND<1.0	--	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	--	--	--	--
S-101/2-B18	8/1992	10.5	**380**	--	**4.8**	**21**	**8.7**	**46**	--	--	--	--
S-151/2-B18	8/1992	15.5	**2.6**	--	**0.78**	**0.48**	**0.059**	**0.29**	--	--	--	--
S-51/2-B19	8/1992	5.5	ND<1.0	--	**0.017**	**0.0090**	ND<0.0050	ND<0.0050	--	--	--	--
S-101/2-B19	8/1992	10.5	ND<1.0	--	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	--	--	--	--
S-151/2-B19	8/1992	15.5	ND<1.0	--	**0.15**	**0.012**	**0.029**	**0.032**	--	--	--	--

Table 2
Historical Soil Analytical Data

ARCO Service Station No. 2035
1001 San Pablo Avenue
Albany, California

Sample ID	Date Sampled	Depth (feet bgs)	TPHg (mg/kg)	TPHd (mg/kg)	B (mg/kg)	T (mg/kg)	E (mg/kg)	X (mg/kg)	1,2-DCA (mg/kg)	MTBE (mg/kg)	TBA (mg/kg)	Lead (mg/kg)
S-51/2-B20	11/1992	5.5	ND<1.0	--	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	--	--	--	--
S-91/2-B20	11/1992	9.5	ND<1.0	--	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	--	--	--	--
S-28-B20	11/1992	28	ND<1.0	--	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	--	--	--	--
S-51/2-B21	11/1992	5.5	ND<1.0	--	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	--	--	--	--
S-101/2-B21	11/1992	10.5	ND<1.0	--	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	--	--	--	--
S-26-B21	11/1992	26	ND<1.0	--	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	--	--	--	--
S-51/2-B22	11/1992	5.5	ND<1.0	--	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	--	--	--	--
S-111/2-B22	11/1992	11.5	ND<1.0	--	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	--	--	--	--
S-26-B22	11/1992	26	ND<1.0	--	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	--	--	--	--
S-5-B23	6/1993	5	**20**	--	**0.22**	**0.45**	**0.20**	**0.76**	--	--	--	--
S-10-B23	6/1993	10	**490**	--	**4.9**	**19**	**8.3**	**50**	--	--	--	--
S-15-B23	6/1993	15	ND<1.0	--	**0.33**	**0.012**	**0.014**	**0.014**	--	--	--	--
S-6-B24	6/1993	6	ND<1.0	--	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	--	--	--	--
S-101/2-B24	6/1993	10.5	**310**	--	**3.8**	**15**	**6.6**	**38**	--	--	--	--
S-141/2-B24	6/1993	14.5	ND<1.0	--	**0.014**	ND<0.0050	ND<0.0050	ND<0.0050	--	--	--	--
S-51/2-B25	6/1993	5.5	**630**	--	**1.7**	**0.40**	**13**	**36**	--	--	--	--
S-91/2-B25	6/1993	9.5	ND<1.0	--	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	--	--	--	--
S-15-B25	6/1993	15	ND<1.0	--	**0.017**	**0.022**	ND<0.0050	**0.014**	--	--	--	--
S-5-B26	6/1993	5	**1,600**	--	**7.7**	**45**	**28**	**170**	--	--	--	--
S-15-B26	6/1993	15	ND<1.0	--	**0.18**	**0.019**	**0.015**	**0.047**	--	--	--	--
S-31-B26	6/1993	31	ND<1.0	--	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	--	--	--	--
S-71/2-B27	6/1993	7.5	**690**	--	**7.4**	**25**	**13**	**64**	--	--	--	--
S-12-B27	6/1993	12	**660**	--	**8.8**	**33**	**14**	**76**	--	--	--	--
S-161/2-B27	6/1993	16.5	ND<1.0	--	**0.061**	**0.040**	**0.0090**	**0.040**	--	--	--	--
S-191/2-B27	6/1993	19.5	ND<1.0	--	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	--	--	--	--
S-31-B27	6/1993	31	ND<1.0	--	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	--	--	--	--

Table 2
Historical Soil Analytical Data

ARCO Service Station No. 2035
1001 San Pablo Avenue
Albany, California

Sample ID	Date Sampled	Depth (feet bgs)	TPHg (mg/kg)	TPHd (mg/kg)	B (mg/kg)	T (mg/kg)	E (mg/kg)	X (mg/kg)	1,2-DCA (mg/kg)	MTBE (mg/kg)	TBA (mg/kg)	Lead (mg/kg)
MW-7 8'	3/26/2009	8	ND<0.50	--	ND<0.0010	ND<0.0010	ND<0.0010	ND<0.0010	ND<0.0010	ND<0.0010	ND<0.010	--
MW-7 13'	3/26/2009	13	**200**	--	ND<0.10	ND<0.10	ND<0.10	ND<0.10	ND<0.10	ND<0.10	ND<1.0	--
MW-7 14'	3/26/2009	14	**860**	--	ND<0.10	ND<0.10	**1.9**	**0.10**	ND<0.10	ND<0.10	ND<1.0	--
MW-7 15'	3/26/2009	15	**5.2**	--	ND<0.0010	ND<0.0010	**0.024**	**0.020**	ND<0.0010	ND<0.0010	ND<0.010	--
MW-8 11'	3/26/2009	11	**4.1**	--	**0.51**	ND<0.10	**0.29**	**1.2**	ND<0.10	ND<0.10	ND<1.0	--
MW-8 13'	3/26/2009	13	**74**	--	**1.8**	**1.7**	**4.3**	**20**	ND<0.10	ND<0.10	ND<1.0	--
MW-8 16'	3/26/2009	16	ND<0.50	--	ND<0.0010	ND<0.0010	ND<0.0010	ND<0.0010	**0.0021**	**0.0013**	**0.068**	--
MW-8 19'	3/26/2009	19	ND<0.50	--	**0.0011**	ND<0.0010	ND<0.0010	ND<0.0010	ND<0.0010	**0.0074**	**0.021**	--
MW-9 8'	3/26/2009	8	**11**	--	ND<0.0010	ND<0.0010	ND<0.0010	ND<0.0010	ND<0.0010	ND<0.0010	ND<0.010	--
MW-9 9'	3/26/2009	9	**110**	--	ND<0.0010	**0.0013**	ND<0.0010	**0.0010**	ND<0.0010	ND<0.0010	ND<0.010	--
MW-9 11'	3/26/2009	11	**61**	--	ND<0.0010	ND<0.0010	ND<0.0010	ND<0.0010	ND<0.0010	ND<0.0010	ND<0.010	--
MW-9 13'	3/26/2009	13	ND<0.50	--	ND<0.0010	ND<0.0010	ND<0.0010	ND<0.0010	ND<0.0010	ND<0.0010	ND<0.010	--

Table 2
Historical Soil Analytical Data

ARCO Service Station No. 2035
1001 San Pablo Avenue
Albany, California

Sample ID	Date Sampled	Depth (feet bgs)	TPHg (mg/kg)	TPHd (mg/kg)	B (mg/kg)	T (mg/kg)	E (mg/kg)	X (mg/kg)	1,2-DCA (mg/kg)	MTBE (mg/kg)	TBA (mg/kg)	Lead (mg/kg)

ABBREVIATIONS:

Bold	=	Detection above laboratory reporting limits
TPHg	=	Total petroleum hydrocarbons as gasoline by EPA Method 5030/8015/8020
TPHd	=	Total petroleum hydrocarbons as diesel by EPA Method 3550/8015
B	=	Benzene by EPA Method 5030/8015/8020
T	=	Toluene by EPA Method 5030/8015/8020
E	=	Ethylbenzene by EPA Method 5030/8015/8020
X	=	Total xylenes by EPA Method 5030/8015/8020
MTBE	=	Methyl tertiary butyl ether by EPA Method 8020/8260
TBA	=	Tertiary butyl alcohol
1,2-DCA	=	1,2-Dichloroethane
bgs	=	Below ground surface
mg/kg	=	Milligrams per kilogram (parts per million [ppm])
ND<	=	Not detected at or above reporting limit
ND	=	Detection limit varied for different compounds
--	=	Constituent not analyzed
*	=	Sample collected from the satuarted zone, analyzed for site characterization purposes
[ ]	=	Result measured by EPA Method 8240
unk	=	Unknown

Background information, including but not limited to previous field measurements, analytical results, Site plans, and other data have been obtained from previous consultants, and/or third parties, in the preparation of this report. Closure Solutions has relied on this information as furnished. Closure Solutions is not responsible for, nor has it confirmed the accuracy of data collected or generated by others.

Table 3
Additional Soil Analytical Data

ARCO Service Station No. 2035
1001 San Pablo Avenue
Albany, California

Sample ID	Date Sampled	Depth (feet bgs)	TOG (mg/kg)	VOCs (mg/kg)	SVOCs (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Nickel (mg/kg)	Zinc (mg/kg)	PCBs (mg/kg)
S-13-T4S	7/3/1991	13	ND<30	ND	--	--	--	--	--	--
S-6-B11	Oct-91	6	**80**	ND	--	ND<0.50	**49**	**97**	**41**	--
S-11-B11	Oct-91	11	**43**	ND	--	ND<0.50	**80**	**77**	**69**	--
S-16-B11	Oct-91	16	**57**	ND	--	ND<0.50	**33**	**25**	**45**	--
S-21-B11	Oct-91	21	**74**	ND	--	ND<0.50	**39**	**32**	**56**	--
S-41/2-B12	Aug-92	4.5	**250**	ND	ND	ND<0.50	**59**	**58**	**40**	ND
S-9-B12	Aug-92	9	**100**	ND	ND	ND<0.50	**42**	**46**	**37**	ND
S-141/2-B12	Aug-92	14.5	ND<50	ND	ND	ND<0.50	**49**	**49**	**69**	ND
S-41/2-B13	Aug-92	4.5	ND<50	ND	ND	ND<0.50	**68**	**65**	**43**	ND
S-71/2-B13	Aug-92	7.5	**1,800**	ND	ND	ND<0.50	**51**	**81**	**46**	ND
S-171/2-B13	Aug-92	17.5	ND<50	ND	ND	ND<0.50	**43**	**51**	**69**	ND

Table 3
Additional Soil Analytical Data

ARCO Service Station No. 2035
1001 San Pablo Avenue
Albany, California

Sample ID	Date Sampled	Depth (feet bgs)	TOG (mg/kg)	VOCs (mg/kg)	SVOCs (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Nickel (mg/kg)	Zinc (mg/kg)	PCBs (mg/kg)

ABBREVIATIONS:

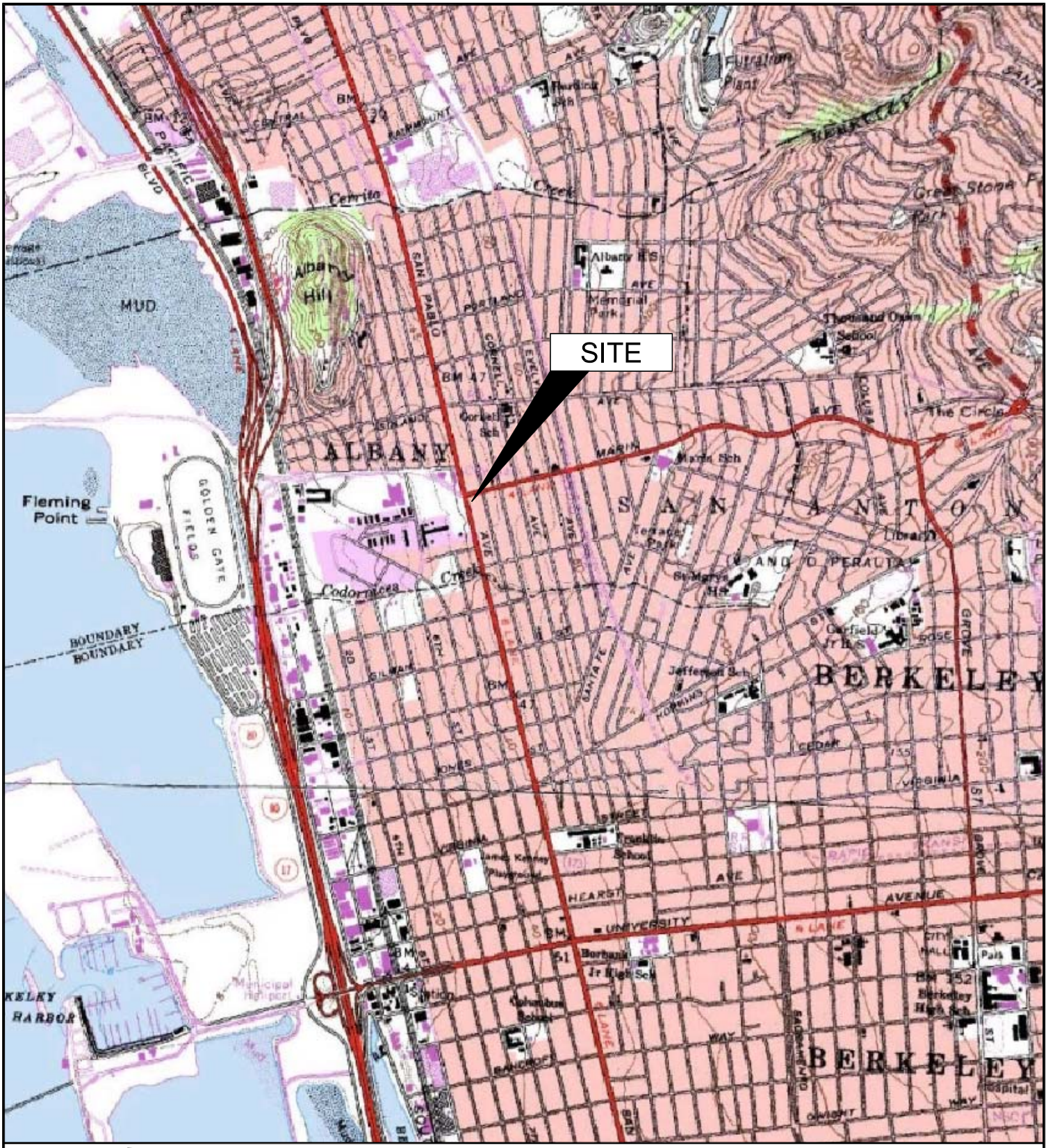
Bold	=	Detection above laboratory reporting limits
TOG	=	Total oil and grease
VOCs	=	Volatile organic compounds
SVOCs	=	Semi-volatile organic compounds
PCBs	=	Polychloro-biphenyls
bgs	=	Below ground surface
mg/kg	=	Milligrams per kilogram (parts per million [ppm])
ND<	=	Not detected at or above reporting limit
ND	=	Detection limit varied for different compounds
--	=	Constituent not analyzed

LIMITATIONS:

Background information, including but not limited to previous field measurements, analytical results, Site plans, and other data have been obtained from previous consultants, and/or third parties, in the preparation of this report. Closure Solutions has relied on this information as furnished. Closure Solutions is not responsible for, nor has it confirmed the accuracy of data collected or generated by others.

ATTACHMENT A

Figures



N

0 2000 4000

APPROXIMATE SCALE (ft)

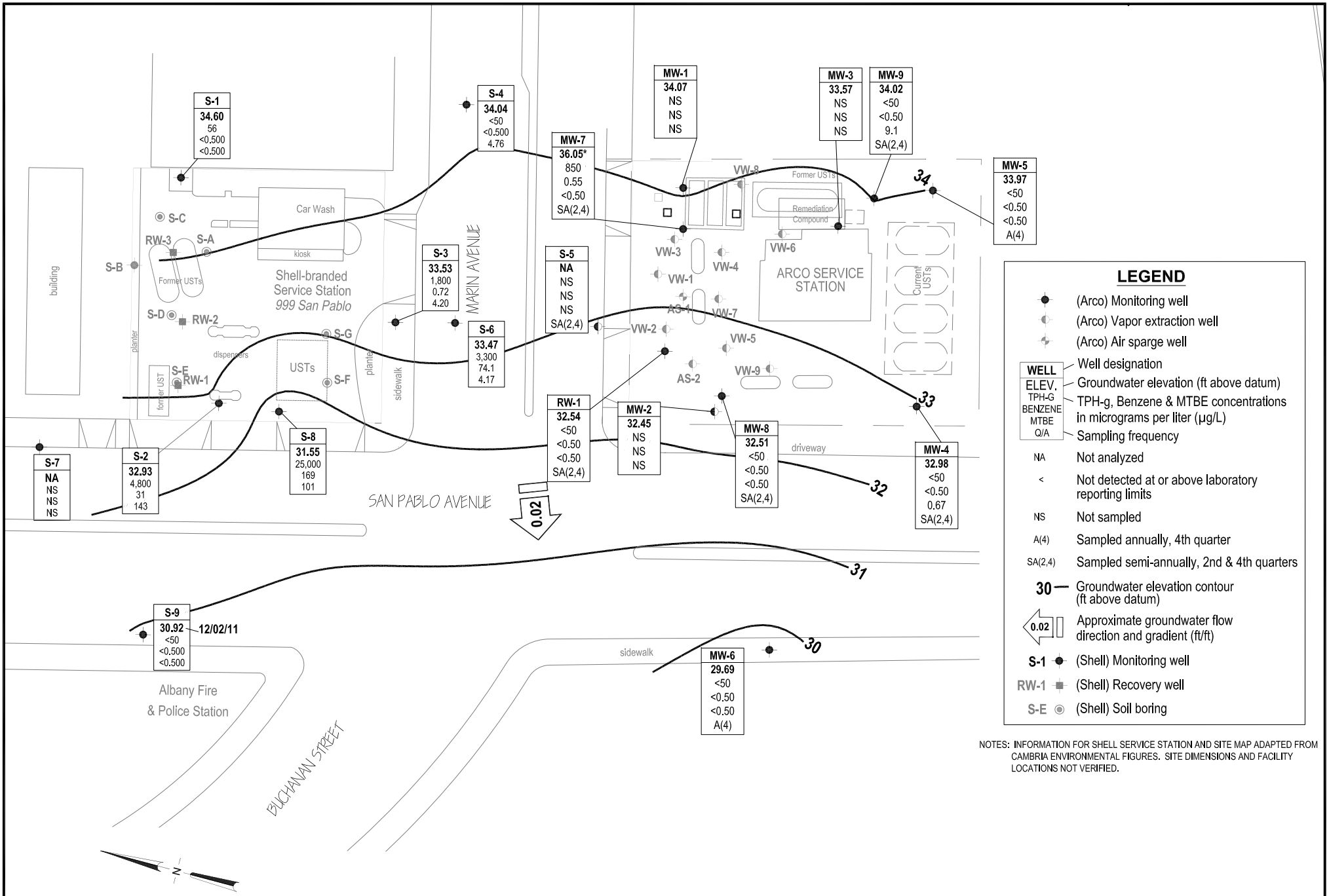
IMAGE SOURCE: USGS

BROADBENT & ASSOCIATES, INC.
ENGINEERING, WATER RESOURCES & ENVIRONMENTAL
1324 Mangrove Ave. Suite 212, Chico, CA 95926
Project No.: 06-88-610 Date: 08/7/09

ARCO Service Station #2035
1001 San Pablo Avenue
Albany, California

Site Location Map

Drawing
1



LEGEND

- (Arco) Monitoring well
- (Arco) Vapor extraction well
- (Arco) Air sparge well
- WELL / ELEV. / TPH-G / BENZENE / MTBE / Q/A — Well designation; Groundwater elevation (ft above datum); TPH-g, Benzene & MTBE concentrations in micrograms per liter (µg/L); Sampling frequency
- NA — Not analyzed
- < — Not detected at or above laboratory reporting limits
- NS — Not sampled
- A(4) — Sampled annually, 4th quarter
- SA(2,4) — Sampled semi-annually, 2nd & 4th quarters
- 30 — Groundwater elevation contour (ft above datum)
- 0.02 — Approximate groundwater flow direction and gradient (ft/ft)
- S-1 — (Shell) Monitoring well
- RW-1 — (Shell) Recovery well
- S-E — (Shell) Soil boring

NOTES: INFORMATION FOR SHELL SERVICE STATION AND SITE MAP ADAPTED FROM CAMBRIA ENVIRONMENTAL FIGURES. SITE DIMENSIONS AND FACILITY LOCATIONS NOT VERIFIED.

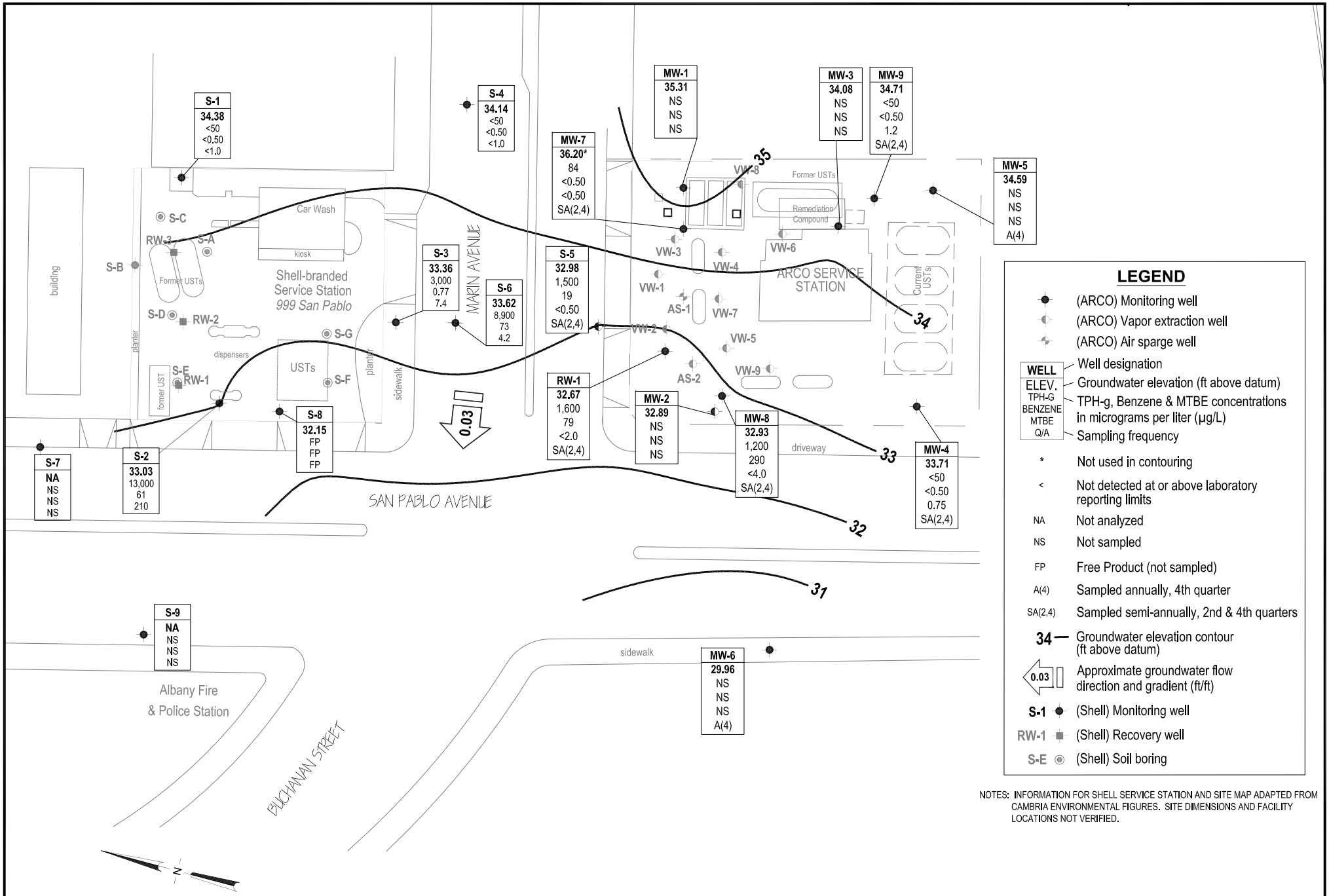
0 50 100
SCALE (ft)

BROADBENT & ASSOCIATES, INC.
ENGINEERING, WATER RESOURCES & ENVIRONMENTAL
1324 Mangrove Ave. Suite 212 Chico 95926
Project No.: 06-88-610 Date: 1/9/2012

ARCO Service Station #2035
1001 San Pablo Avenue
Albany, California

Groundwater Elevation Contours
and Analytical Summary Map
28 November 2011

Drawing
2



NOTES: INFORMATION FOR SHELL SERVICE STATION AND SITE MAP ADAPTED FROM CAMBRIA ENVIRONMENTAL FIGURES. SITE DIMENSIONS AND FACILITY LOCATIONS NOT VERIFIED.

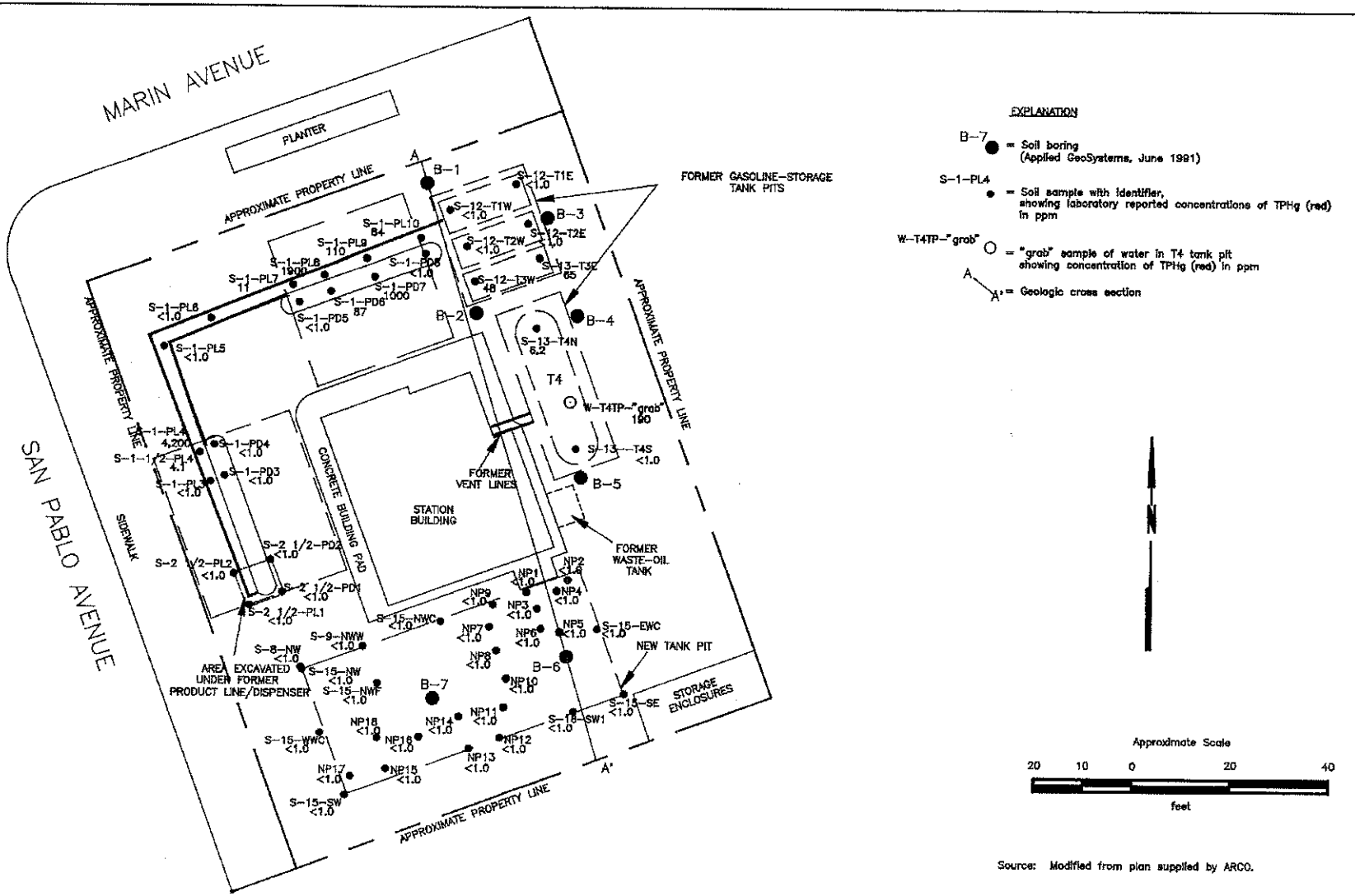
0 50 100
SCALE (ft)

BROADBENT & ASSOCIATES, INC.
ENGINEERING, WATER RESOURCES & ENVIRONMENTAL
1324 Mangrove Ave. Suite 212 Chico 95926
Project No.: 06-88-610 Date: 7/11/2011

ARCO Service Station #2035
1001 San Pablo Avenue
Albany, California

Groundwater Elevation Contours
and Analytical Summary Map
11 May 2011

Drawing
2



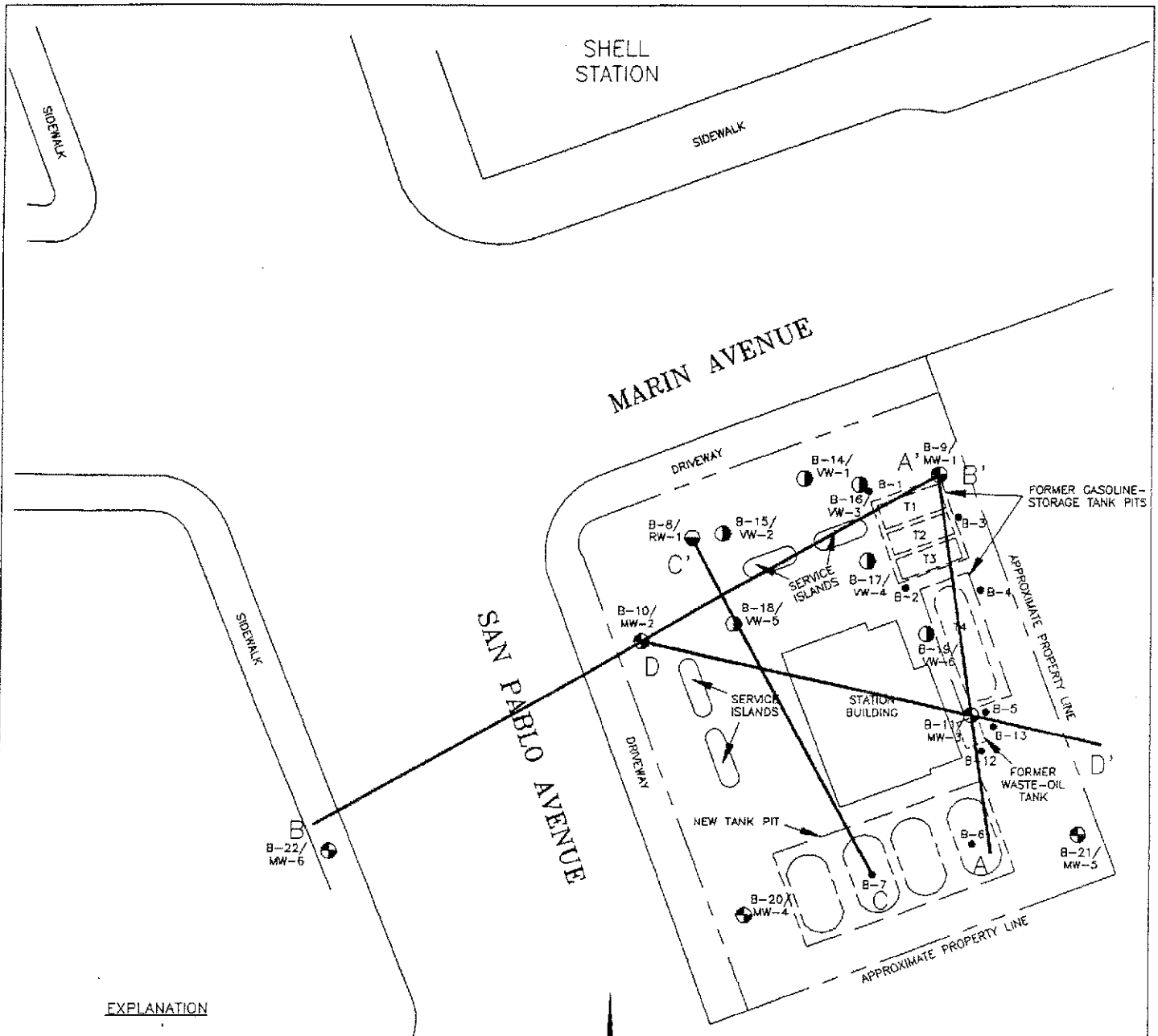
Source: Modified from plan supplied by ARCO.

Applied GeoSystems

PROJECT 69036.03

SOIL SAMPLING
ARCO Station 2035
1001 San Pablo Avenue
Albany, California

PLATE
3



EXPLANATION

B-19/VW-6 = Vapor extraction well (RESNA, Aug. 1992)

B-8/RW-1 = Recovery well (RESNA, October 1991)

B-22/MW-6 = Monitoring well (RESNA, October 1991 and November 1992)

B-13 = Soil boring (RESNA, Aug. 1989, June 1991, and Aug. 1992)

D D' = Geologic cross section

N

Approximate Scale

40 20 0 40 80

feet

Source: Surveyed by John E. Koch, Land Surveyor.

RESNA
Working to Restore Nature

PROJECT 69036.07 Drawn: 3/5/J 690367SP

GENERALIZED SITE PLAN
ARCO Station 2035
1001 San Pablo Avenue
Albany, California

PLATE
3

ATTACHMENT B

Historical Groundwater Monitoring Data

Table 1. Summary of Groundwater Monitoring Data: Relative Water Elevations and Laboratory Analyses

ARCO Service Station #2035, 1001 San Pablo Ave., Albany, CA

Well ID and Date Monitored	P/NP	TOC Elevation (feet)	Depth to Water (feet)	LNAPL Thickness (feet)	Water Level Elevation (feet)	Concentrations in µg/L						DO (mg/L)	pH	Footnote
						GRO/ TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE			
MW-1														
4/11/2002	P	41.41	10.73	0.00	30.68	800	360	<5.0	<5.0	<5.0	<50	--	--	
11/27/2002	P		10.22	0.00	31.19	<50	<0.50	<0.50	<0.50	<0.50	1.7	1.1	--	
6/3/2003	--		9.14	0.00	32.27	1,700	430	<5.0	24	11	8.6	1.7	--	
11/13/2003	P	43.55	10.17	0.00	33.38	<50	<0.50	<0.50	<0.50	<0.50	0.95	2.3	6.5	a
05/12/2004	P		9.28	0.00	34.27	120	7.2	<0.50	<0.50	<0.50	3.0	1.6	6.0	
12/01/2004	P		9.16	0.00	34.39	<50	0.94	<0.50	<0.50	1.1	2.4	5.2	6.6	
05/02/2005	P		8.58	0.00	34.97	1,300	390	<5.0	12	6.4	8.8	2.8	6.5	
11/16/2005	P		9.50	0.00	34.05	<50	<0.50	<0.50	<0.50	0.54	0.92	1.7	6.4	
5/31/2006	P		7.36	0.00	36.19	850	200	<2.5	5.4	<2.5	4.0	2.4	6.5	
12/6/2006	P		9.91	0.00	33.64	<50	0.52	<0.50	<0.50	<0.50	0.72	4.50	6.99	
5/15/2007	P		9.65	0.00	33.90	67	6.6	<0.50	<0.50	<0.50	1.8	2.43	6.96	
11/29/2007	P		9.11	0.00	34.44	<50	<0.50	<0.50	<0.50	<0.50	0.98	4.51	6.81	
5/6/2008	P		8.25	0.00	35.30	890	140	0.53	5.4	5.8	<0.50	1.89	6.61	
11/24/2008	P		10.55	0.00	33.00	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.83	6.67	
4/9/2009	--		9.02	0.00	34.53	--	--	--	--	--	--	--	--	d
11/24/2009	--		9.24	0.00	34.31	--	--	--	--	--	--	--	--	
5/26/2010	--		8.47	0.00	35.08	--	--	--	--	--	--	--	--	
11/30/2010	--		8.62	0.00	34.93	--	--	--	--	--	--	--	--	
2/16/2011	P		8.64	0.00	34.91	--	--	--	--	--	--	--	--	
5/11/2011	--		8.24	0.00	35.31	--	--	--	--	--	--	--	--	
11/28/2011	**--**		**9.48**	**0.00**	**34.07**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	
MW-2														
4/11/2002	P	40.38	11.05	0.00	29.33	<50	<0.50	<0.50	<0.50	<0.50	24	--	--	
11/27/2002	P		10.51	0.00	29.87	<50	<0.50	<0.50	<0.50	<0.50	5.4	2.6	--	
6/3/2003	--		9.78	0.00	30.60	<50	<0.50	<0.50	<0.50	<0.50	23	1.7	--	
11/13/2003	P	42.52	10.69	0.00	31.83	<50	<0.50	<0.50	<0.50	<0.50	9.5	2.3	6.5	a
05/12/2004	P		10.34	0.00	32.18	<250	<2.5	<2.5	<2.5	<2.5	27	2.2	6.6	
12/01/2004	P		10.28	0.00	32.24	<50	<0.50	<0.50	<0.50	0.70	17	3.9	6.6	
05/02/2005	P		9.50	0.00	33.02	<50	<0.50	<0.50	<0.50	<0.50	25	3.1	6.6	
11/16/2005	P		10.50	0.00	32.02	<50	<0.50	<0.50	<0.50	0.50	7.6	2.8	6.4	

Table 1. Summary of Groundwater Monitoring Data: Relative Water Elevations and Laboratory Analyses

ARCO Service Station #2035, 1001 San Pablo Ave., Albany, CA

Well ID and Date Monitored	P/NP	TOC Elevation (feet)	Depth to Water (feet)	LNAPL Thickness (feet)	Water Level Elevation (feet)	Concentrations in µg/L						DO (mg/L)	pH	Footnote
						GRO/ TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE			
MW-2 Cont.														
5/31/2006	P	42.52	10.03	0.00	32.49	<50	<0.50	<0.50	<0.50	<0.50	24	2.0	6.6	
12/6/2006	P		10.28	0.00	32.24	<50	<0.50	<0.50	<0.50	<0.50	1.6	3.72	6.91	
5/15/2007	P		10.00	0.00	32.52	<50	<0.50	<0.50	<0.50	<0.50	44	2.90	6.69	
11/29/2007	P		10.13	0.00	32.39	<50	<0.50	<0.50	<0.50	<0.50	1.9	4.83	6.89	
5/6/2008	P		9.55	0.00	32.97	<50	<0.50	<0.50	<0.50	<0.50	35	1.88	6.62	
11/24/2008	P		10.70	0.00	31.82	<50	<0.50	<0.50	<0.50	<0.50	4.3	1.83	6.74	
4/9/2009	--	42.57	9.68	0.00	32.89	--	--	--	--	--	--	--	--	d
11/24/2009	--		10.48	0.00	32.09	--	--	--	--	--	--	--	--	
5/26/2010	--		9.65	0.00	32.92	--	--	--	--	--	--	--	--	
11/30/2010	--		9.84	0.00	32.73	--	--	--	--	--	--	--	--	
2/16/2011	P		9.39	0.00	33.18	--	--	--	--	--	--	--	--	
5/11/2011	--		9.68	0.00	32.89	--	--	--	--	--	--	--	--	
11/28/2011	--		**10.12**	**0.00**	**32.45**	--	--	--	--	--	--	--	--	
MW-3														
4/11/2002	P	41.44	11.05	0.00	30.39	250	9.4	<0.50	<0.50	<0.50	120	--	--	
11/27/2002	P		10.49	0.00	30.95	<100	<1.0	<1.0	<1.0	2.5	56	2.2	--	
6/3/2003	--		9.44	0.00	32.00	130	<0.50	<0.50	<0.50	<0.50	47	4.1	--	
11/13/2003	P	43.62	10.68	0.00	32.94	53	<0.50	<0.50	<0.50	<0.50	36	3.8	6.8	a
05/12/2004	P		9.95	0.00	33.67	65	<0.50	<0.50	<0.50	<0.50	39	4.2	6.9	
12/01/2004	P		10.32	0.00	33.30	140	<0.50	<0.50	<0.50	<0.50	37	4.3	6.9	
05/02/2005	P		9.12	0.00	34.50	140	<0.50	<0.50	<0.50	<0.50	23	3.1	6.7	
11/16/2005	P		10.58	0.00	33.04	<50	<0.50	<0.50	<0.50	<0.50	32	4.1	6.5	
5/31/2006	P		9.41	0.00	34.21	<50	<0.50	<0.50	<0.50	<0.50	20	4.3	6.8	
12/6/2006	P		10.25	0.00	33.37	<50	<0.50	<0.50	<0.50	<0.50	20	2.71	7.00	
5/15/2007	P		9.70	0.00	33.92	<50	<0.50	<0.50	<0.50	<0.50	40	5.89	7.07	
11/29/2007	P		10.08	0.00	33.54	90	<0.50	<0.50	<0.50	<0.50	35	4.74	6.61	
5/6/2008	P		10.02	0.00	33.60	<50	<0.50	<0.50	<0.50	<0.50	14	2.05	6.61	
11/24/2008	P		10.80	0.00	32.82	<50	<1.0	<1.0	<1.0	<1.0	28	1.98	6.77	
4/9/2009	--	43.63	9.55	0.00	34.08	--	--	--	--	--	--	--	--	d
11/24/2009	--		10.29	0.00	33.34	--	--	--	--	--	--	--	--	

Table 1. Summary of Groundwater Monitoring Data: Relative Water Elevations and Laboratory Analyses

ARCO Service Station #2035, 1001 San Pablo Ave., Albany, CA

Well ID and Date Monitored	P/NP	TOC Elevation (feet)	Depth to Water (feet)	LNAPL Thickness (feet)	Water Level Elevation (feet)	Concentrations in µg/L						DO (mg/L)	pH	Footnote
						GRO/ TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE			
MW-3 Cont.														
5/26/2010	--	43.63	9.76	0.00	33.87	--	--	--	--	--	--	--	--	
11/30/2010	--		10.15	0.00	33.48	--	--	--	--	--	--	--	--	
2/16/2011	P		9.22	0.00	34.41	--	--	--	--	--	--	--	--	
5/11/2011	--		9.55	0.00	34.08	--	--	--	--	--	--	--	--	
11/28/2011	--		**10.06**	**0.00**	**33.57**	--	--	--	--	--	--	--	--	
MW-4														
4/11/2002	NP	40.33	10.81	0.00	29.52	<50	<0.50	<0.50	<0.50	<0.50	11	--	--	
11/27/2002	NP		10.09	0.00	30.24	<50	<0.50	<0.50	<0.50	<0.50	6.5	1.8	--	
6/3/2003	--		8.62	0.00	31.71	<250	<2.5	<2.5	<2.5	<2.5	120	1.1	--	
11/13/2003	NP	42.48	9.98	0.00	32.50	<50	<0.50	<0.50	<0.50	<0.50	20	1.3	6.2	a
05/12/2004	P		9.48	0.00	33.00	<250	<2.5	<2.5	<2.5	<2.5	79	2.9	6.6	
12/01/2004	NP		9.60	0.00	32.88	<50	<0.50	<0.50	<0.50	<0.50	1.8	1.9	6.7	
05/02/2005	NP		8.67	0.00	33.81	<50	<0.50	<0.50	<0.50	<0.50	11	2.8	6.6	
11/16/2005	NP		10.00	0.00	32.48	<50	<0.50	<0.50	<0.50	<0.50	0.93	1.7	6.3	
5/31/2006	NP		8.52	0.00	33.96	<50	<0.50	<0.50	<0.50	<0.50	2.4	1.0	7.0	
12/6/2006	NP		9.90	0.00	32.58	<50	<0.50	<0.50	<0.50	<0.50	7.8	0.85	7.10	
5/15/2007	NP		9.18	0.00	33.30	<50	<0.50	<0.50	<0.50	<0.50	2.2	1.37	6.85	
11/29/2007	NP		9.10	0.00	33.38	<50	<0.50	<0.50	<0.50	<0.50	9.1	1.81	7.14	
5/6/2008	P		9.40	0.00	33.08	<50	<0.50	<0.50	<0.50	<0.50	10	2.61	6.91	
11/24/2008	NP		10.20	0.00	32.28	<50	<0.50	<0.50	<0.50	<0.50	<0.50	2.67	6.88	
4/9/2009	P	42.51	9.00	0.00	33.51	<50	<0.50	<0.50	<0.50	<0.50	12	2.51	7.11	d
11/24/2009	P		9.89	0.00	32.62	<50	<0.50	<0.50	<0.50	<0.50	1.7	0.80	6.58	
5/26/2010	P		8.79	0.00	33.72	<50	<0.50	<0.50	<0.50	<0.50	1.4	0.98	6.0	
11/30/2010	P		9.31	0.00	33.20	--	--	--	--	--	--	1.40	6.4	f
2/16/2011	P		8.50	0.00	34.01	<50	<0.50	<0.50	<0.50	<0.50	2.1	0.91	7.1	
5/11/2011	P		8.80	0.00	33.71	<50	<0.50	<0.50	<0.50	<0.50	0.75	1.43	6.8	
11/28/2011	**P**		**9.53**	**0.00**	**32.98**	**<50**	**<0.50**	**0.61**	**<0.50**	**0.69**	**0.67**	**0.75**	**6.8**	
MW-5														
4/11/2002	NP	41.84	10.63	0.00	31.21	<50	<0.50	<0.50	<0.50	<0.50	<5.0	--	--	

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Well ID and Date Monitored	P/NP	TOC Elevation (feet)	Depth to Water (feet)	LNAPL Thickness (feet)	Water Level Elevation (feet)	Concentrations in µg/L						DO (mg/L)	pH	Footnote
						GRO/ TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE			
MW-5 Cont.														
11/27/2002	NP	41.84	10.65	0.00	31.19	--	--	--	--	--	--	--	--	
6/3/2003	--		8.92	0.00	32.92	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.8	--	
11/13/2003	NP	44.03	10.58	0.00	33.45	<50	<0.50	<0.50	<0.50	<0.50	0.79	1.4	5.7	a
05/12/2004	--		9.95	0.00	34.08	--	--	--	--	--	--	--	--	
12/01/2004	NP		10.05	0.00	33.98	<50	<0.50	<0.50	<0.50	<0.50	0.55	1.8	6.3	
05/02/2005	--		8.75	0.00	35.28	--	--	--	--	--	--	--	--	
11/16/2005	NP		10.37	0.00	33.66	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.3	6.2	
5/31/2006	--		9.07	0.00	34.96	--	--	--	--	--	--	--	--	
12/6/2006	NP		10.25	0.00	33.78	<50	<0.50	<0.50	<0.50	<0.50	0.99	1.24	6.88	
5/15/2007	--		9.51	0.00	34.52	--	--	--	--	--	--	--	--	
11/29/2007	NP		9.95	0.00	34.08	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.93	6.98	
5/6/2008	--		9.67	0.00	34.36	--	--	--	--	--	--	--	--	
11/24/2008	NP		10.62	0.00	33.41	<50	<0.50	<0.50	<0.50	<0.50	<0.50	2.43	6.52	
4/9/2009	--		12.00	0.00	32.03	--	--	--	--	--	--	--	--	d
11/24/2009	P		10.34	0.00	33.69	<50	<0.50	1.4	<0.50	<0.50	0.89	0.94	6.1	
5/26/2010	--		9.21	0.00	34.82	--	--	--	--	--	--	--	--	
11/30/2010	P		9.85	0.00	34.18	--	--	--	--	--	--	--	6.17	f
2/16/2011	P		9.01	0.00	35.02	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.23	6.9	
5/11/2011	--		9.44	0.00	34.59	--	--	--	--	--	--	--	--	
11/28/2011	**P**		**10.06**	**0.00**	**33.97**	**<50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**2.10**	**6.5**	
MW-6														
4/11/2002	NP	40.13	11.42	0.00	28.71	<50	<0.50	<0.50	<0.50	<0.50	<5.0	--	--	
11/27/2002	NP		13.11	0.00	27.02	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.3	--	
6/3/2003	--		12.48	0.00	27.65	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.1	--	
11/13/2003	NP	42.26	13.11	0.00	29.15	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.2	6.8	a
05/12/2004	--		12.68	0.00	29.58	--	--	--	--	--	--	--	--	
12/01/2004	NP		12.68	0.00	29.58	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.7	7.3	
05/02/2005	--		12.25	0.00	30.01	--	--	--	--	--	--	--	--	
11/16/2005	NP		12.98	0.00	29.28	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.2	6.7	
5/31/2006	--		12.35	0.00	29.91	--	--	--	--	--	--	--	--	

Table 1. Summary of Groundwater Monitoring Data: Relative Water Elevations and Laboratory Analyses

ARCO Service Station #2035, 1001 San Pablo Ave., Albany, CA

Well ID and Date Monitored	P/NP	TOC Elevation (feet)	Depth to Water (feet)	LNAPL Thickness (feet)	Water Level Elevation (feet)	Concentrations in µg/L						DO (mg/L)	pH	Footnote
						GRO/ TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE			
MW-6 Cont.														
12/6/2006	NP	42.26	12.98	0.00	29.28	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.24	6.86	
5/15/2007	--		12.55	0.00	29.71	--	--	--	--	--	--	--	--	
11/29/2007	NP		12.75	0.00	29.51	<50	<0.50	<0.50	<0.50	<0.50	<0.50	--	6.93	
5/6/2008	--		12.91	0.00	29.35	--	--	--	--	--	--	--	--	
11/24/2008	NP		13.20	0.00	29.06	<50	<0.50	<0.50	<0.50	<0.50	<0.50	2.28	7.25	
4/9/2009	--	42.31	12.52	0.00	29.79	--	--	--	--	--	--	--	--	d
11/24/2009	P		12.90	0.00	29.41	<50	<0.50	<0.50	<0.50	<0.50	<0.50	0.83	6.59	
5/26/2010	--		12.17	0.00	30.14	--	--	--	--	--	--	--	--	
11/30/2010	P		12.45	0.00	29.86	--	--	--	--	--	--	1.20	7.2	f
2/16/2011	P		11.95	0.00	30.36	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.02	6.9	
5/11/2011	--		12.35	0.00	29.96	--	--	--	--	--	--	--	--	
11/28/2011	**P**		**12.62**	**0.00**	**29.69**	**<50**	**<0.50**	**0.74**	**<0.50**	**0.64**	**<0.50**	**0.91**	**7.2**	
MW-7														
4/9/2009	P	43.18	6.73	0.00	36.45	4,100	5.2	1.7	21	21	<0.50	8.41	7.79	d
11/24/2009	P		8.31	0.00	34.87	2,700	4.1	1.1	3.3	3.0	<0.50	0.60	6.8	c
5/26/2010	P		6.62	0.00	36.56	1,800	1.2	0.53	2.2	0.84	<0.50	0.71	6.6	
11/30/2010	P		6.84	0.00	36.34	--	--	--	--	--	--	0.79	6.7	f
2/16/2011	P		5.44	0.00	37.74	2,000	1.4	0.84	8.0	1.4	<0.50	0.56	7.0	g
5/11/2011	P		6.98	0.00	36.20	84	<0.50	<0.50	<0.50	<0.50	<0.50	1.76	7.1	lw
11/28/2011	**P**		**7.13**	**0.00**	**36.05**	**850**	**0.55**	**1.3**	**<0.50**	**2.5**	**<0.50**	**0.38**	**7.3**	**lw**
MW-8														
4/9/2009	P	42.36	9.50	0.00	32.86	4,300	940	260	150	590	110	2.09	7.62	d
11/24/2009	P		10.25	0.00	32.11	28,000	9,900	670	1,300	2,200	<100	0.64	6.48	c
5/26/2010	P		9.25	0.00	33.11	1,400	420	<10	21	<10	<10	0.78	6.6	
11/30/2010	P		9.68	0.00	32.68	--	--	--	--	--	--	2.26	6.6	f
2/16/2011	P		8.95	0.00	33.41	960	270	<5.0	50	<5.0	<5.0	3.35	6.9	g
5/11/2011	P		9.43	0.00	32.93	1,200	290	<4.0	57	4.5	<4.0	0.94	7.2	lw
11/28/2011	**P**		**9.85**	**0.00**	**32.51**	**<50**	**<0.50**	**0.59**	**<0.50**	**0.53**	**<0.50**	**3.64**	**7.2**	
MW-9														

Table 1. Summary of Groundwater Monitoring Data: Relative Water Elevations and Laboratory Analyses

ARCO Service Station #2035, 1001 San Pablo Ave., Albany, CA

Well ID and Date Monitored	P/NP	TOC Elevation (feet)	Depth to Water (feet)	LNAPL Thickness (feet)	Water Level Elevation (feet)	Concentrations in µg/L						DO (mg/L)	pH	Footnote
						GRO/ TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE			
MW-9 Cont.														
4/9/2009	P	43.77	8.95	0.00	34.82	<50	<0.50	<0.50	<0.50	<0.50	2.1	2.81	7.58	d
11/24/2009	P		10.11	0.00	33.66	<50	<0.50	<0.50	<0.50	<0.50	3.8	--	6.3	
5/26/2010	P		8.88	0.00	34.89	<50	<0.50	<0.50	<0.50	<0.50	1.9	0.66	5.7	
11/30/2010	P		9.56	0.00	34.21	--	--	--	--	--	--	0.64	6.3	f
2/16/2011	P		8.65	0.00	35.12	<50	<0.50	<0.50	<0.50	<0.50	3.8	0.55	6.6	
5/11/2011	P		9.06	0.00	34.71	<50	<0.50	<0.50	<0.50	<0.50	1.2	1.22	6.6	
11/28/2011	**P**		**9.75**	**0.00**	**34.02**	**<50**	**<0.50**	**0.70**	**<0.50**	**0.72**	**9.1**	**0.50**	**6.8**	
RW-1														
4/11/2002	P	40.33	9.20	0.00	31.13	15,000	750	2,000	380	2,000	1,500	--	--	
11/27/2002	P		10.31	0.00	30.02	<2,500	720	<25	<25	<25	<25	1.8	--	
6/3/2003	--		9.54	0.00	30.79	470	78	0.97	4.3	9	48	1.4	--	
11/13/2003	P	42.35	10.35	0.00	32.00	130	29	<0.50	<0.50	<0.50	44	1.3	6.6	a
05/12/2004	P		9.80	0.00	32.55	<250	66	<2.5	<2.5	<2.5	<2.5	1.9	6.9	
09/02/2004	--		10.42	0.00	31.93	--	--	--	--	--	--	--	--	
10/07/2004	--		10.36	0.00	31.99	--	--	--	--	--	--	--	--	
11/04/2004	--		9.93	0.00	32.42	--	--	--	--	--	--	--	--	
12/01/2004	P		10.02	0.00	32.33	<250	96	<2.5	<2.5	<2.5	16	1.8	6.7	
05/02/2005	P		9.20	0.00	33.15	230	100	<1.0	<1.0	<1.0	50	2.5	6.6	
11/16/2005	P		10.96	0.00	31.39	<100	28	<1.0	<1.0	<1.0	32	1.0	6.5	
5/31/2006	P		9.34	0.00	33.01	320	32	<0.50	<0.50	<0.50	28	1.3	6.8	
12/6/2006	P		10.10	0.00	32.25	50	27	<0.50	<0.50	<0.50	19	1.49	7.54	
5/15/2007	P		9.42	0.00	32.93	280	32	<0.50	<0.50	<0.50	18	2.61	7.10	
11/29/2007	P		9.75	0.00	32.60	<50	14	<0.50	<0.50	<0.50	18	4.86	8.14	
5/6/2008	P		9.71	0.00	32.64	610	110	<2.5	<2.5	<2.5	2.6	2.48	6.95	
11/24/2008	P		10.48	0.00	31.87	73	31	<0.50	<0.50	<0.50	11	2.53	6.88	
4/9/2009	P	42.23	9.46	0.00	32.77	720	36	<0.50	1.0	1.2	4.0	2.58	7.73	d
11/24/2009	P		10.15	0.00	32.08	<50	2.0	<0.50	<0.50	<0.50	6.5	0.85	6.6	
5/26/2010	P		9.12	0.00	33.11	90	11	<0.50	<0.50	<0.50	0.94	1.46	6.4	
11/30/2010	P		9.38	0.00	32.85	--	--	--	--	--	--	2.10	7.2	f
2/16/2011	P		9.15	0.00	33.08	1,600	370	2.9	2.6	2.9	1.3	0.76	7.0	

Table 1. Summary of Groundwater Monitoring Data: Relative Water Elevations and Laboratory Analyses

ARCO Service Station #2035, 1001 San Pablo Ave., Albany, CA

Well ID and Date Monitored	P/NP	TOC Elevation (feet)	Depth to Water (feet)	LNAPL Thickness (feet)	Water Level Elevation (feet)	Concentrations in µg/L						DO (mg/L)	pH	Footnote
						GRO/ TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE			
RW-1 Cont.														
5/11/2011	P	42.23	9.56	0.00	32.67	1,600	79	<2.0	<2.0	2.0	<2.0	0.91	7.4	lw
11/28/2011	**P**		**9.69**	**0.00**	**32.54**	**<50**	**<0.50**	**0.54**	**<0.50**	**<0.50**	**<0.50**	**3.05**	**7.3**	
S-5														
4/11/2002	P	40.33	10.17	0.00	30.16	30,000	390	1,400	410	7,400	<500	--	--	
11/27/2002	P		9.77	0.00	30.56	55,000	1,300	450	1,400	13,000	<50	4.3	--	
6/3/2003	--		9.12	0.00	31.21	44,000	680	260	1,100	9,900	<25	1.9	--	
6/3/2003	--		9.03	0.00	31.30	44,000	680	260	1,100	9,900	<25	1.9	--	
6/3/2003	--		9.12	0.00	31.21	--	--	--	--	--	<25	1.4	--	
6/3/2003	--		9.03	0.00	31.30	--	--	--	--	--	<25	1.4	--	
11/13/2003	P	41.83	9.12	0.00	32.71	31,000	520	120	690	5,900	<50	1.4	6.5	a
05/12/2004	P		9.95	0.00	31.88	28,000	760	79	910	5,000	<50	1.9	6.6	
12/01/2004	P		9.61	0.00	32.22	26,000	1,500	64	1,400	4,000	<25	--	6.5	b
05/02/2005	P		8.80	0.00	33.03	13,000	700	18	260	1,300	<5.0	1.8	6.4	
11/16/2005	P		9.80	0.00	32.03	15,000	1,400	25	570	850	<5.0	1.1	6.3	
5/31/2006	P		8.89	0.00	32.94	9,800	170	<5.0	490	390	<5.0	1.4	6.6	
12/6/2006	P		9.65	0.00	32.18	16,000	1,100	<25	1,700	970	<25	1.23	6.95	
5/15/2007	P		8.89	0.00	32.94	10,000	140	<5.0	340	310	<5.0	3.63	7.10	
11/29/2007	P		9.48	0.00	32.35	13,000	770	8.6	500	360	<2.5	5.42	7.28	c (Benzene)
5/6/2008	P		9.30	0.00	32.53	7,400	320	2.8	580	130	<0.50	3.37	6.88	
11/24/2008	P		10.00	0.00	31.83	7,700	400	<10	390	14	<10	3.22	6.43	
4/9/2009	P		8.90	0.00	32.93	7,700	230	<10	370	35	<10	3.14	7.77	
11/24/2009	--		--	--	--	--	--	--	--	--	--	--	--	e
5/26/2010	--		--	--	--	--	--	--	--	--	--	--	--	e
11/30/2010	P		8.92	0.00	32.91	--	--	--	--	--	--	0.62	6.6	f
2/16/2011	P		8.57	0.00	33.26	2,700	26	<0.50	11	3.2	<0.50	1.34	7.5	
5/11/2011	P		8.85	0.00	32.98	1,500	19	0.58	9.7	2.2	<0.50	0.72	6.8	lw
11/28/2011	**--**		**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**e**

Symbols & Abbreviations:
-- = Not analyzed/applicable/measured/available
< = Not detected at or above laboratory reporting limit
ft bgs = Feet below ground surface
BTEX = Benzene, toluene, ethylbenzene and xylenes
DO = Dissolved oxygen
DTW = Depth to water in ft bgs
GRO = Gasoline range organics, range C4-C12
GWE = Groundwater elevation measured in ft
mg/L = Milligrams per liter
MTBE = Methyl tert butyl ether
NP = Not purged before sampling
P = Purged before sampling
TOC = Top of casing measured in ft
TPH-g = Total petroleum hydrocarbons as gasoline, analyzed using EPA Method 8015, Modified
µg/L = Micrograms per liter
SEQ/SEQM = Sequoia Analytical/Sequoia Morgan Hill Laboratories

Footnotes:
a = Site resurveyed by URS on 10/15/03 to NAVD '88
b = Sheen in well
c = Sample taken from VOA vial with air bubble >6mm
d = Well surveyed on 4/20/09
e = Well not monitored or sampled due to traffic control safety concerns
f = Samples were collected on 11/30/2010 but not able to be analyzed (frozen). Subsequent re-sampling could not occur in 4Q 2010
g = Quantitation of unknown hydrocarbon(s) in sample based on gasoline
lw = Quantitated against gasoline

Notes:
No sampling occurs at this site during the first and third quarters of each calendar year

TPH-g analyzed using EPA Method 8015, Modified and BTEX and MTBE by EPA method 8260B

Beginning in the fourth quarter 2003, the laboratory modified the reported analyte list. TPH-g was changed to GRO. The resulting data may be impacted by the potential of non-TPH-g analytes within the requested fuel range resulting in a higher concentration being reported

Beginning in the second quarter 2004, the carbon range for GRO was changed from C6-C10 to C4-C12

Values for DO and pH were obtained through field measurements

GRO analysis was completed by EPA method 8260B (C4-C12) for samples collected from the time period April 2006 through February 4, 2008. The analysis for GRO was changed to EPA method 8015B (C6-C12) for samples collected from the time period February 5, 2008 through the present

The data within this table collected prior to April 2006 was provided to Broadbent & Associates, Inc. by Atlantic Richfield Company and their previous consultants. Broadbent & Associates, Inc. has not verified the accuracy of this information

Table 2. Summary of Fuel Additives Analytical Data

ARCO Service Station #2035, 1001 San Pablo Ave., Albany, CA

Well ID and Date Monitored	Concentrations in µg/L								Footnote
	Ethanol	TBA	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB	
MW-1									
4/11/2002	--	--	<50	--	--	--	--	--	
11/27/2002	--	--	1.7	--	--	--	--	--	
6/3/2003	<1000	<200	8.6	<5.0	<5.0	<5.0	<5.0	<5.0	
11/13/2003	<100	<20	0.95	<0.50	<0.50	<0.50	--	--	
05/12/2004	<100	<20	3.0	<0.50	<0.50	<0.50	<0.50	<0.50	
12/01/2004	<100	<20	2.4	<0.50	<0.50	<0.50	<0.50	<0.50	
05/02/2005	<1,000	220	8.8	<5.0	<5.0	<5.0	<5.0	<5.0	
11/16/2005	<100	<20	0.92	<0.50	<0.50	<0.50	<0.50	<0.50	a
5/31/2006	<1,500	<100	4.0	<2.5	<2.5	<2.5	<2.5	<2.5	a
12/6/2006	<300	<20	0.72	<0.50	<0.50	<0.50	<0.50	<0.50	
5/15/2007	<300	<20	1.8	<0.50	<0.50	<0.50	<0.50	<0.50	
11/29/2007	<300	<20	0.98	<0.50	<0.50	<0.50	<0.50	<0.50	
5/6/2008	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
11/24/2008	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
MW-2									
4/11/2002	--	--	24	--	--	--	--	--	
11/27/2002	--	--	5.4	--	--	--	--	--	
6/3/2003	<100	<20	23	<0.50	<0.50	<0.50	0.94	<0.50	
11/13/2003	<100	<20	9.5	<0.50	<0.50	<0.50	--	--	
05/12/2004	<500	<100	27	<2.5	<2.5	<2.5	<2.5	<2.5	
12/01/2004	<100	<20	17	<0.50	<0.50	<0.50	0.74	<0.50	
05/02/2005	<100	75	25	<0.50	<0.50	<0.50	<0.50	<0.50	
11/16/2005	<100	<20	7.6	<0.50	<0.50	<0.50	0.79	<0.50	a
5/31/2006	<300	<20	24	<0.50	<0.50	<0.50	0.66	<0.50	a
12/6/2006	<300	<20	1.6	<0.50	<0.50	<0.50	<0.50	<0.50	a
5/15/2007	<300	<20	44	<0.50	<0.50	<0.50	1.2	<0.50	
11/29/2007	<300	<20	1.9	<0.50	<0.50	<0.50	<0.50	<0.50	
5/6/2008	<300	<10	35	<0.50	<0.50	<0.50	0.93	<0.50	
11/24/2008	<300	<10	4.3	<0.50	<0.50	<0.50	<0.50	<0.50	
MW-3									

Table 2. Summary of Fuel Additives Analytical Data

ARCO Service Station #2035, 1001 San Pablo Ave., Albany, CA

Well ID and Date Monitored	Concentrations in µg/L								Footnote
	Ethanol	TBA	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB	
MW-3 Cont.									
4/11/2002	--	--	120	--	--	--	--	--	
11/27/2002	--	--	56	--	--	--	--	--	
6/3/2003	<100	<20	47	<0.50	<0.50	<0.50	<0.50	<0.50	
11/13/2003	<100	<20	36	<0.50	<0.50	<0.50	--	--	
05/12/2004	<100	<20	39	<0.50	<0.50	<0.50	<0.50	<0.50	
12/01/2004	<100	<20	37	<0.50	<0.50	<0.50	<0.50	<0.50	
05/02/2005	<100	<20	23	<0.50	<0.50	<0.50	<0.50	<0.50	
11/16/2005	<100	<20	32	<0.50	<0.50	<0.50	<0.50	<0.50	a
5/31/2006	<300	<20	20	<0.50	<0.50	<0.50	<0.50	<0.50	a
12/6/2006	<300	<20	20	<0.50	<0.50	<0.50	<0.50	<0.50	a
5/15/2007	<300	<20	40	<0.50	<0.50	<0.50	<0.50	<0.50	
11/29/2007	<300	<20	35	<0.50	<0.50	<0.50	<0.50	<0.50	
5/6/2008	<300	<10	14	<0.50	<0.50	<0.50	<0.50	<0.50	
11/24/2008	<600	<20	28	<1.0	<1.0	<1.0	<1.0	<1.0	
MW-4									
4/11/2002	--	--	11	--	--	--	--	--	
11/27/2002	--	--	6.5	--	--	--	--	--	
6/3/2003	<500	<100	120	<2.5	<2.5	<2.5	<2.5	<2.5	
11/13/2003	<100	<20	20	<0.50	<0.50	<0.50	--	--	
05/12/2004	<500	<100	79	<2.5	<2.5	<2.5	<2.5	<2.5	
12/01/2004	<100	<20	1.8	<0.50	<0.50	<0.50	<0.50	<0.50	
05/02/2005	<100	75	11	<0.50	<0.50	<0.50	<0.50	<0.50	
11/16/2005	<100	<20	0.93	<0.50	<0.50	<0.50	<0.50	<0.50	a
5/31/2006	<300	<20	2.4	<0.50	<0.50	<0.50	<0.50	<0.50	a
12/6/2006	<300	<20	7.8	<0.50	<0.50	<0.50	<0.50	<0.50	a
5/15/2007	<300	<20	2.2	<0.50	<0.50	<0.50	<0.50	<0.50	
11/29/2007	<300	<20	9.1	<0.50	<0.50	<0.50	<0.50	<0.50	
5/6/2008	<300	<10	10	<0.50	<0.50	<0.50	<0.50	<0.50	
11/24/2008	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
4/9/2009	<300	<10	12	<0.50	<0.50	<0.50	<0.50	<0.50	
11/24/2009	<300	<10	1.7	<0.50	<0.50	<0.50	<0.50	<0.50	

Table 2. Summary of Fuel Additives Analytical Data

ARCO Service Station #2035, 1001 San Pablo Ave., Albany, CA

Well ID and Date Monitored	Concentrations in µg/L								Footnote
	Ethanol	TBA	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB	
MW-4 Cont.									
5/26/2010	<300	<10	1.4	<0.50	<0.50	<0.50	<0.50	<0.50	
2/16/2011	<300	<10	2.1	<0.50	<0.50	<0.50	<0.50	<0.50	
5/11/2011	<300	<10	0.75	<0.50	<0.50	<0.50	<0.50	<0.50	
11/28/2011	**<300**	**<10**	**0.67**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	
MW-5									
4/11/2002	--	--	<5.0	--	--	--	--	--	
6/3/2003	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
11/13/2003	<100	<20	0.79	<0.50	<0.50	<0.50	--	--	
12/01/2004	<100	<20	0.55	<0.50	<0.50	<0.50	<0.50	<0.50	
11/16/2005	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	a
12/6/2006	<300	<20	0.99	<0.50	<0.50	<0.50	<0.50	<0.50	a
11/29/2007	<300	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
11/24/2008	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
11/24/2009	<300	<10	0.89	<0.50	<0.50	<0.50	<0.50	<0.50	
2/16/2011	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
11/28/2011	**<300**	**<10**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	
MW-6									
4/11/2002	--	--	<5.0	--	--	--	--	--	
11/27/2002	--	--	<0.50	--	--	--	--	--	
6/3/2003	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
11/13/2003	<100	<20	<0.50	<0.50	<0.50	<0.50	--	--	
12/01/2004	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
11/16/2005	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	a
12/6/2006	<300	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	a
11/29/2007	<300	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
11/24/2008	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
11/24/2009	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
2/16/2011	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
11/28/2011	**<300**	**<10**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	
MW-7									

Table 2. Summary of Fuel Additives Analytical Data

ARCO Service Station #2035, 1001 San Pablo Ave., Albany, CA

Well ID and Date Monitored	Concentrations in µg/L								Footnote
	Ethanol	TBA	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB	
MW-7 Cont.									
4/9/2009	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
11/24/2009	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	b
5/26/2010	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
2/16/2011	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
5/11/2011	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
11/28/2011	**<300**	**<10**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	
MW-8									
4/9/2009	<300	330	110	5.5	<0.50	<0.50	34	<0.50	
11/24/2009	<60,000	<2,000	<100	<100	<100	<100	<100	<100	b
5/26/2010	<6,000	<200	<10	<10	<10	<10	<10	<10	
2/16/2011	<3,000	<100	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	
5/11/2011	<2,400	<80	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	
11/28/2011	**<300**	**<10**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	
MW-9									
4/9/2009	<300	<10	2.1	<0.50	<0.50	<0.50	<0.50	<0.50	
11/24/2009	<300	<10	3.8	<0.50	<0.50	<0.50	<0.50	<0.50	
5/26/2010	<300	<10	1.9	<0.50	<0.50	<0.50	<0.50	<0.50	
2/16/2011	<300	<10	3.8	<0.50	<0.50	<0.50	<0.50	<0.50	
5/11/2011	<300	<10	1.2	<0.50	<0.50	<0.50	<0.50	<0.50	
11/28/2011	**<300**	**<10**	**9.1**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	
RW-1									
4/11/2002	--	--	1,500	--	--	--	--	--	
11/27/2002	--	--	<25	--	--	--	--	--	
6/3/2003	<100	22	48	<0.50	<0.50	<0.50	<0.50	<0.50	
11/13/2003	<100	<20	44	<0.50	<0.50	<0.50	--	--	
05/12/2004	<500	<100	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	
12/01/2004	<500	<100	16	<2.5	<2.5	<2.5	<2.5	<2.5	
05/02/2005	<200	<40	50	<1.0	<1.0	<1.0	<1.0	<1.0	
11/16/2005	<200	<40	32	<1.0	<1.0	<1.0	<1.0	<1.0	a
5/31/2006	<300	<20	28	<0.50	<0.50	<0.50	<0.50	<0.50	a

Table 2. Summary of Fuel Additives Analytical Data

ARCO Service Station #2035, 1001 San Pablo Ave., Albany, CA

Well ID and Date Monitored	Concentrations in µg/L								Footnote
	Ethanol	TBA	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB	
RW-1 Cont.									
12/6/2006	<300	<20	19	<0.50	<0.50	<0.50	<0.50	<0.50	a
5/15/2007	<300	<20	18	<0.50	<0.50	<0.50	<0.50	<0.50	
11/29/2007	<300	<20	18	<0.50	<0.50	<0.50	<0.50	<0.50	
5/6/2008	<1,500	<50	2.6	<2.5	<2.5	<2.5	<2.5	<2.5	
11/24/2008	<300	<10	11	<0.50	<0.50	<0.50	<0.50	<0.50	
4/9/2009	<300	<10	4.0	<0.50	<0.50	<0.50	<0.50	<0.50	
11/24/2009	<300	<10	6.5	<0.50	<0.50	<0.50	<0.50	<0.50	
5/26/2010	<300	<10	0.94	<0.50	<0.50	<0.50	<0.50	<0.50	
2/16/2011	<300	<10	1.3	<0.50	<0.50	<0.50	<0.50	<0.50	
5/11/2011	<1,200	<40	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	
11/28/2011	**<300**	**<10**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	
S-5									
4/11/2002	--	--	<500	--	--	--	--	--	
11/27/2002	--	--	<50	--	--	--	--	--	
6/3/2003	<5,000	<1,000	<25	<25	<25	<25	<25	<25	
6/3/2003	<5,000	<1,000	<25	<25	<25	<25	<25	<25	
6/3/2003	<5,000	<1,000	<25	<25	<25	<25	<25	<25	
6/3/2003	<5,000	<1,000	<25	<25	<25	<25	<25	<25	
11/13/2003	<10,000	<2,000	<50	<50	<50	<50	--	--	
05/12/2004	<10,000	<2,000	<50	<50	<50	<50	<50	<50	
12/01/2004	<5,000	<1,000	<25	<25	<25	<25	<25	<25	
05/02/2005	<1,000	<200	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	
11/16/2005	<1,000	<200	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	a
5/31/2006	<3,000	<200	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	a
12/6/2006	<15,000	<1,000	<25	<25	<25	<25	<25	<25	a
5/15/2007	<3,000	<200	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	
11/29/2007	<1,500	<100	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	
5/6/2008	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
11/24/2008	<6,000	<200	<10	<10	<10	<10	<10	<10	
4/9/2009	<6,000	<200	<10	<10	<10	<10	<10	<10	
2/16/2011	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	

Table 2. Summary of Fuel Additives Analytical Data

ARCO Service Station #2035, 1001 San Pablo Ave., Albany, CA

Well ID and Date Monitored	Concentrations in µg/L								Footnote
	Ethanol	TBA	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB	
S-5 Cont.									
5/11/2011	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	

Symbols & Abbreviations:
-- = Not analyzed/applicable/measured/available
< = Not detected at or above the laboratory reporting limit
1,2-DCA = 1,2-Dichloroethane
DIPE = Diisopropyl ether
EDB = 1,2-Dibromoethane
ETBE = Ethyl tert-butyl ether
MTBE = Methyl tert-butyl ether
TAME = tert-Amyl methyl ether
TBA = tert-Butyl alcohol
µg/L = Micrograms per Liter

Footnote:
a = Calibration verification for ethanol was within method limits but outside contract limits
b = Sample taken from VOA vial with air bubble > 6mm diameter
c = LW Quantitated against gasoline

Notes:
All volatile organic compounds analyzed using EPA Method 8260B

The data within this table collected prior to April 2006 was provided to Broadbent & Associates, Inc. by Atlantic Richfield Company and their previous consultants. Broadbent & Associates, Inc. has not verified the accuracy of this information

Table 3. Historical Groundwater Gradient - Direction and Magnitude

ARCO Service Station #2035, 1001 San Pablo Ave., Albany, CA

Date Measured	Approximate Gradient Direction	Approximate Gradient Magnitude (ft/ft)
4/11/2002	Southwest	0.012
11/27/2002	West	0.021
6/3/2003	West	0.024
11/13/2003	West (offsite Northwest)	0.015
5/12/2004	West	0.020
12/1/2004	West	0.030
5/2/2005	West	0.02
11/16/2005	West	0.03
5/31/2006	West	0.04
12/6/2006	West	0.01
5/15/2007	West	0.02
11/29/2007	West	0.02
5/6/2008	West	0.007
11/24/2008	West	0.02
4/9/2009	West	0.02
11/24/2009	West	0.03
5/26/2010	West	0.02
11/30/2010	West-Southwest	0.02
2/16/2011	West	0.03
5/11/2011	West-Southwest	0.03
11/28/2011	**West-Southwest**	**0.02**

Notes:
Site resurveyed by URS on 10/15/03 by datum NAVD '88

The data within this table collected prior to April 2006 was provided to Broadbent & Associates, Inc. by Atlantic Richfield Company and their previous consultants. Broadbent & Associates, Inc. has not verified the accuracy of this information

ATTACHMENT C

Soil Boring Logs

UNIFIED SOIL CLASSIFICATION SYSTEM

MAJOR DIVISIONS		LTR	DESCRIPTION
Coarse-grained soils	Gravel and gravelly soils	GW	Well-graded gravels of gravel-sand mixtures, little or no fines
		GP	Poorly-graded gravels or gravel-sand mixtures, little or no fines
		GM	Silty gravels, gravel-sand-silt mixtures
		GC	Clayey gravels, gravel-sand-clay mixtures
	Sand and sandy soils	SW	Well-graded sand of gravelly sands, little or no fines
		SP	Poorly-graded sands or gravelly sands, little or no fines
		SM	Silty sands, sand-silt mixtures
		SC	Clayey sands, sand-clay mixtures

MAJOR DIVISIONS		LTR	DESCRIPTION
Fine-grained soils	Silts and clays LL<50	ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity
		CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
		OL	Organic silts and organic silt-clays of low plasticity
	Silts and clays LL>50	MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils. Elastic silts
		CH	Inorganic clays of high plasticity, fat clays
		OH	Organic clays of medium to high plasticity, organic silts
Highly organic soils		PT	Peat and other highly organic soils

Depth through which sampler is driven

Relatively undisturbed sample

No sample recovered

Static water level observed in well

Initial water level observed in boring

S-10 Sample number

Sand pack

Bentonite annular seal

Neat cement annular seal

Caved native soil

Blank PVC

Machine-slotted PVC

P.I.D. Photoionization detector

BLOWS REPRESENT THE NUMBER OF BLOWS OF A 140-POUND HAMMER FALLING 30 INCHES TO DRIVE THE SAMPLER THROUGH EACH 6 INCHES OF AN 18-INCH PENETRATION.

DASHED LINES SEPARATING UNITS ON THE LOG REPRESENT APPROXIMATE BOUNDARIES ONLY. ACTUAL BOUNDARIES MAY BE GRADUAL. LOGS REPRESENT SUBSURFACE CONDITIONS AT THE BORING LOCATION AT THE TIME OF DRILLING ONLY.

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PROJECT NO. 69036-1

UNIFIED SOIL CLASSIFICATION SYSTEM AND SYMBOL KEY
ARCO Service Station No. 2035
Marin and San Pablo Avenues
Albany, California

PLATE
P - 3

Total depth of boring: 20 feet **Diameter of boring:** 8 inches **Date drilled:** 8-9-89

Casing diameter: N/A **Length:** N/A **Slot size:** N/A

Screen diameter: N/A **Length:** N/A **Material type:** N/A

Drilling Company: Exploration Geoservices **Driller:** Mike & Kurt

Method Used: Hollow-Stem Auger **Field Geologist:** Steve Bittman

Signature of Registered Professional: _____

Registration No.: _____ **State:** CA

Depth	Sample No.	Blows	P.I.D.	USCS Code	Description	Well Const.
0						
					Asphalt (6 inches) over baserock (6 inches).	
2	S-2	12 21 21	20	CH	Silty clay with occasional sand, brown, black and orange mottled, damp, hard, high plasticity, noticeable odor.	
4		16				
	S-5	35 50	30	CL	Gravelly clay with pebbles, brown, damp, hard, low plasticity, noticeable odor.	
6						
8				GW	Sandy gravel with clay gravel, brown, moist, very dense, obvious odor.	
		21				
10	S-10	35 42	400			
		22				
12	S-11.5	34 47	50			
		24				
	S-13	38 50	2	CH	Silty clay, slightly sand, light gray, orange and brown mottled, damp, hard, high plasticity, noticeable odor.	
14		12				
	S-15	16 21	0		Interbed with orange brown sandy silt, moist, hard, high plasticity.	
16				▽		
18				GM	Silty gravel with pebbles, orange-brown, wet, very dense, noticeable odor.	
		25				
20	S-19.5	50	12			
					Total Depth = 20 feet.	

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PROJECT NO. 69036-1

LOG OF BORING B - 1

ARCO Service Station No. 2035
Marin and San Pablo Avenues
Albany, California

PLATE

P - 4

Total depth of boring: 20–1/2 feet **Diameter of boring:** 8 inches **Date drilled:** 8–9–89

Casing diameter: N/A **Length:** N/A **Slot size:** N/A

Screen diameter: N/A **Length:** N/A **Material type:** N/A

Drilling Company: Exploration Geoservices **Driller:** Mike & Kurt

Method Used: Hollow–Stem Auger **Field Geologist:** Steve Bittman

Signature of Registered Professional: _____

Registration No.: _____ **State:** CA

Depth	Sample No.	Blows	P.I.D.	USCS Code	Description	Well Const.
0						
					Asphalt (6 inches) over baserock (6 inches).	
2	S–2	8, 15, 23	2	CH	Silty clay, brown, blue and green mottled, moist, hard, high plasticity, noticeable odor.	
4				CL	Gravelly clay with clayey sand interbed, brown, black mottled, damp, very dense, noticeable odor.	
6	S–5	10, 25, 36	175			
8				GW	Sandy gravel with clay, brown and gray, moist, very dense, obvious odor.	
10	S–10	15, 36, 40	450			
12						
14	S–14.5	25, 50	25	CL	Sandy clay with silty gravel, gray, brown mottled, damp, hard, low plasticity, noticeable odor.	
16						
18				GW	Silty gravel with sand, brown and gray, wet, very dense, noticeable odor.	
20	S–20	27, 50	5			
					Total Depth = 20–1/2 feet.	

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PROJECT NO. 69036-1

LOG OF BORING B - 2

ARCO Service Station No. 2035
Marin and San Pablo Avenues
Albany, California

PLATE

P - 5

Total depth of boring: 20–1/2 feet **Diameter of boring:** 8 inches **Date drilled:** 8–9–89

Casing diameter: N/A **Length:** N/A **Slot size:** N/A

Screen diameter: N/A **Length:** N/A **Material type:** N/A

Drilling Company: Exploration Geoservices **Driller:** Mike & Kurt

Method Used: Hollow–Stem Auger **Field Geologist:** Steve Bittman

Signature of Registered Professional:

Registration No.: **State:** CA

Depth	Sample No.	Blows	P.I.D.	USCS Code	Description	Well Const.
0						
					Asphalt (6 inches) over baserock (6 inches).	
2	S–2	9 15 18	8	CH	Silty clay with occasional small gravel, brown, gray mottled, damp, high plasticity, very stiff, noticeable odor.	
4		12 19		CL	Gravelly clay, brown, black mottled, damp, low plasticity, very stiff, noticeable odor.	
6	S–5	23	25			
8				SC	Clayey sand with gravel, gray, brown mottled, very dense, obvious odor.	
10	S–10	10 15 45	480			
12						
14	S–14.5	44 50	75	CL	Sandy clay, brown, gray mottled, damp, hard, medium plasticity, noticeable odor.	
16					▽	
18				GM	Silty gravel, brown, wet, very dense.	
20	S–20	35 50	.3			
					Total Depth = 20–1/2 feet.	

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PROJECT NO. 69036-1

LOG OF BORING B - 3

ARCO Service Station No. 2035
Marin and San Pablo Avenues
Albany, California

PLATE

P - 6

Total depth of boring: 19-1/2 feet **Diameter of boring:** 8 inches **Date drilled:** 8-9-89

Casing diameter: N/A **Length:** N/A **Slot size:** N/A

Screen diameter: N/A **Length:** N/A **Material type:** N/A

Drilling Company: Exploration Geoservices **Driller:** Mike & Kurt

Method Used: Hollow-Stem Auger **Field Geologist:** Steve Bittman

Signature of Registered Professional: _____

Registration No.: _____ **State:** CA

Depth	Sample No.	Blows	P.I.D.	USCS Code	Description	Well Const.
0						
					Asphalt (6 inches) over baserock (6 inches).	
2	S-2	5, 10, 12	40	CH	Silty clay, gray, damp, high plasticity, very stiff, noticeable odor.	
4				CL	Gravelly clay, brown, damp, hard, medium plasticity, noticeable odor.	
6	S-5	10, 26, 8	100			
8						
10	S-10	11, 27, 39	540			
12						
14				SM	Silty sand with gravel, brown and gray, damp, hard, low plasticity, obvious odor.	
16	S-15	25, 45, 50	511			
18				SW	Gravelly sand with silt, brown, wet, very dense.	
20	S-19	50	1		Total Depth = 19-1/2 feet.	

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PROJECT NO. 69036-1

LOG OF BORING B - 4

ARCO Service Station No. 2035
Marin and San Pablo Avenues
Albany, California

PLATE

P - 7

Total depth of boring: 20–1/2 feet **Diameter of boring:** 8 inches **Date drilled:** 8–9–89

Casing diameter: N/A **Length:** N/A **Slot size:** N/A

Screen diameter: N/A **Length:** N/A **Material type:** N/A

Drilling Company: Exploration Geoservices **Driller:** Mike & Kurt

Method Used: Hollow–Stem Auger **Field Geologist:** Steve Bittman

Signature of Registered Professional: _____

Registration No.: _____ **State:** CA

Depth	Sample No.	Blows	P.I.D.	USCS Code	Description	Well Const.
					Asphalt (6 inches) over baserock (6 inches).	
0				CH	Silty clay with some sand, gray–brown, moist, high plasticity, very stiff, noticeable odor.	
2	S–2	8 12 15	1			
4		13 45		CL	Gravelly clay with sand, yellow brown, damp, hard, low plasticity, noticeable odor.	
6	S–5	50	15			
8						
10	S–9.5	30 50	5	GW	Sandy gravel, clayey, yellow brown, moist, very dense, noticeable odor.	
12						
14		36		SC	Clayey sand with gravel, yellow brown, damp, very dense.	
16	S–15	36 43	0			
18						
20	S–20	30 40 50	0	CH	Silty clay, gray and brown, moist, hard, high plasticity.	
					Total Depth = 20–1/2 feet.	

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PROJECT NO. 69036-1

LOG OF BORING B - 5

ARCO Service Station No. 2035
Marin and San Pablo Avenues
Albany, California

PLATE

P - 8

Depth of boring: 18 feet Diameter of boring: 8 inches Date drilled: 6-25-91

Well depth: NA Material type: NA Casing diameter: NA

Screen interval: NA Slot size: NA

Drilling Company: Exceltech Driller: Gene & Richard

Method Used: Hollow-Stem Auger Field Geologist: Joel Coffman

Signature of Registered Professional: _____

Registration No.: _____ State: _____

Depth	Sample No.	Blows	P.I.D.	USCS Code	Description	Well Const.
0					Asphalt.	
				SM	Silty sand, brown, dry, loose: fill.	
2				CL	Sandy clay, green-brown, dry to damp, medium plasticity, soft.	
4						
6	S-5.5	14 23 30	0		Brown, low plasticity, stiff.	
8						
10	S-10.5	11 12 22	0		Color change to green-brown.	
12						
14						
16	S-15.5	12 15 33	0			
	S-17	30 48 50	0	SC ▽	Clayey sand, brown, moist, medium dense. Wet.	
18					Total Depth = 18 feet.	
20						

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PROJECT: 69036.03

LOG OF BORING B-6

ARCO Station 2035
1001 San Pablo Avenue
Albany, California

PLATE B2

Depth of boring: 19-1/2 feet Diameter of boring: 8 inches Date drilled: 6-25-91

Well depth: NA Material type: NA Casing diameter: NA

Screen interval: NA Slot size: NA

Drilling Company: Exceltech Driller: Gene & Richard

Method Used: Hollow-Stem Auger Field Geologist: Joel Coffman

Signature of Registered Professional:

Registration No.: State:

Depth	Sample No.	Blows	P.I.D.	USCS Code	Description	Well Const.
0					Asphalt.	
				SM	Silty sand, brown, dry, loose: fill.	
2				CL	Sandy clay, dark brown, dry, medium plasticity, medium plasticity, soft.	
					Old concrete slab, possible part of old foundation.	
4				CL	Sandy clay, brown, dry to damp, low plasticity, very stiff.	
	S-5.5	30 40 30	0			
6						
8				GC	Clayey gravel, brown-gray, damp, dense.	
10	S-10.5	22 22 30	6.8	SC	Clayey sand, brown, damp, dense.	
12						
14				CL	Sandy clay, brown-olive, damp, low to medium plasticity, stiff.	
	S-15.5	11 11 18	0			
16	S-17	20 24 25	1.7			
18	S-18.5	25 40 50	0			
				SC ▽	Clayey sand, brown, damp, dense. Wet	
20					Total Depth = 18 feet.	

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PROJECT: 69036.03

LOG OF BORING B-7

ARCO Station 2035
1001 San Pablo Avenue
Albany, California

PLATE B3

Depth of boring: 30-1/2 feet Diameter of boring: 13 inches Date drilled: 10/15/91

Well depth: 29 feet Material type: Sch 80 PVC Casing diameter: 6 inches

Screen interval: 11 to 26 feet Slot size: 0.020-inch

Drilling Company: Exceltech Drilling Driller: Dan and Kenny

Method Used: Hollow-Stem Auger Field Geologist: Rob Campbell

Signature of Registered Professional:

Registration No.: RCE 044600 State: CA

Depth	Sample No.	Blows	P.I.D.	USCS Code	Description	Well Const.
					Paved area.	
0					Asphalt (3 inches) and baserock (9 inches).	
2				CH	Silty clay, black, moist, high plasticity; obvious product odor, abundant organics.	
4					PID alarm at 4 feet.	
6	S-6	7 15 20	5681	CL	Silty clay, dark gray mottled with green, moist, medium plasticity, hard; obvious product odor.	
8					Gradational color change from gray to brown.	
10	S-11	11 11 11	*	ML	(10/29/91) Gravelly silt, brown mottled with green, damp, low plasticity, very stiff; obvious product odor. Large caliche clasts.	
12						
14						
16	S-16	15 21 28	*	SC	Clayey sand with some gravel, brown mottled with orange damp, dense; noticeable product odor.	
18					Encountered water at 19 feet (10/15/91).	
20					Increasing sand.	
	S-21	19 32 45	0	SM	Silty sand with gravel, brown, damp, very dense.	
					(Section continues downward)	

*Hydrocarbon vapors overloaded OVM.

RESNA

PROJECT: 69036.02

LOG OF BORING B-8/RW-1

ARCO Station 2035
1001 San Pablo Avenue
Albany, California

PLATE 5

Depth	Sample No.	BLOWS	P.I.D.	USCS Code	Description	Well Const.
22				SM	Silty sand with gravel, brown, damp, very dense.	
24						
26	S-26	11 18 25	10			
				CL	Silty clay, gray with brown streaks, damp to moist, medium, plasticity, hard; noticeable product odor.	
28						
30	S-30	30 50	0	SM	Silty sand with gravel, brown, damp to wet, very dense, no odor.	
					Total depth = 30-1/2 feet.	
32						
34						
36						
38						
40						
42						
44						
46						
48						
50						

RESNA

PROJECT 69036.02

LOG OF BORING B-8/RW-1
ARCO Station 2035
1001 San Pablo Avenue
Albany, California

PLATE 6

Depth of boring: 31-1/2 feet Diameter of boring: 13 inches Date drilled: 10/14/91

Well depth: 30 feet Material type: Sch 40 PVC Casing diameter: 4 inches

Screen interval: 15 to 30 feet Slot size: 0.020-inch

Drilling Company: Exceltech Drilling Driller: Don and Kenny

Method Used: Hollow-Stem Auger Field Geologist: Rob Campbell

Signature of Registered Professional:

Registration No.: RCE 044600 State: CA

Depth	Sample No.	Blows	P.I.D.	USCS Code	Description	Well Const.
					Paved.	
0					Asphalt (3 inches) and baserock (9 inches).	
2			0.5	CH	Silty clay with gravel, black, moist, high plasticity, very stiff to hard.	
4				CL	Sandy clay, brown, moist, low to medium plasticity, hard; obvious product odor.	
6	S-6	11 15 30	3232			
8					Iron oxide mottling.	
10	S-10.5	8 13 19	725		(10/29/91).	
12					Color change to light gray mottled with brown, lower plasticity.	
14						
16	S-16	19 35 50	NR	SC	Clayey sand, orange-brown, damp, very dense.	
18						
20	S-20.5	14 19 22	NR		Encountered water 10/14/91.	
				GM	Silty gravel, brown-orange, wet, dense; layer ~3 inches thick.	
				SC	Clayey sand, light gray mottled with orange-brown, moist to wet, dense.	

NR = No reading.

(Section continues downward)

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PROJECT: 69036.02

LOG OF BORING B-9/MW-1

ARCO Station 2035
1001 San Pablo Avenue
Albany, California

PLATE 7

Depth	Sample No.	BLOWS	P.I.D.	USCS Code	Description	Well Const.
22				SC	Clayey sand, light gray mottled with orange-brown, moist to wet, dense.	
24						
26	S-26	19 35 40	NR		Alternating seams of wet and moist.	
28						
					Smoother drilling at 29 feet.	
30	S-31	9 12 19	NR	CL	Silty clay, gray, damp, medium plasticity, very stiff.	
32					Total depth = 31-1/2 feet.	
					NR = No reading.	
34						
36						
38						
40						
42						
44						
46						
48						
50						

RESNA

PROJECT 69036.02

LOG OF BORING B-9/MW-1
ARCO Station 2035
1001 San Pablo Avenue
Albany, California

PLATE 8

Depth of boring: 33 feet Diameter of boring: 10 inches Date drilled: 10/16/91

Well depth: 29 feet Material type: Sch 40 PVC Casing diameter: 4 inches

Screen interval: 20 to 29 feet Slot size: 0.020-inch

Drilling Company: Exceltech Drilling Driller: Don and Kenny

Method Used: Hollow-Stem Auger Field Geologist: Steve Strausz

Signature of Registered Professional:

Registration No.: RCE 044600 State: CA

Depth	Sample No.	Blows	P.I.D.	USCS Code	Description	Well Const.
					Asphalt surface.	
0					Asphalt (2 inches) and baserock (6 inches).	
				CL	Silty clay, dark brown, damp, medium plasticity, stiff.	
2					Color change to lighter gray at 3 feet.	
4					Very stiff.	
	S-5.5	18 23 26	11.8			
6				GM	Silty gravel with minor clay, fine gravel, dark blue-gray, damp, very dense; noticeable product odor.	
8					Smooth drilling at 8 feet.	
				CL	Sandy clay, gray, damp to moist, medium plasticity, hard; minor fine gravel; noticeable product odor.	
10	S-10.5	9 13 19	73.4	▼	(10/29/91).	
12					Rougher drilling at 12 feet.	
	S-13	11 26 30	274	GP	Sandy gravel with clay, brown, moist, dense; obvious product odor.	
14				SC	Clayey sand, gray, moist, very dense.	
	S-15.5	7 11 12	31.9	ML	Clayey silt, light brown, very moist, medium plasticity, very stiff; noticeable product odor.	
16						
18						
20	S-20.5	8 12 17	2.3	▽	Encountered water 10/16/91.	
				SM	Silty sand, fine-grained, light gray, wet, dense.	

(Section continues downward)

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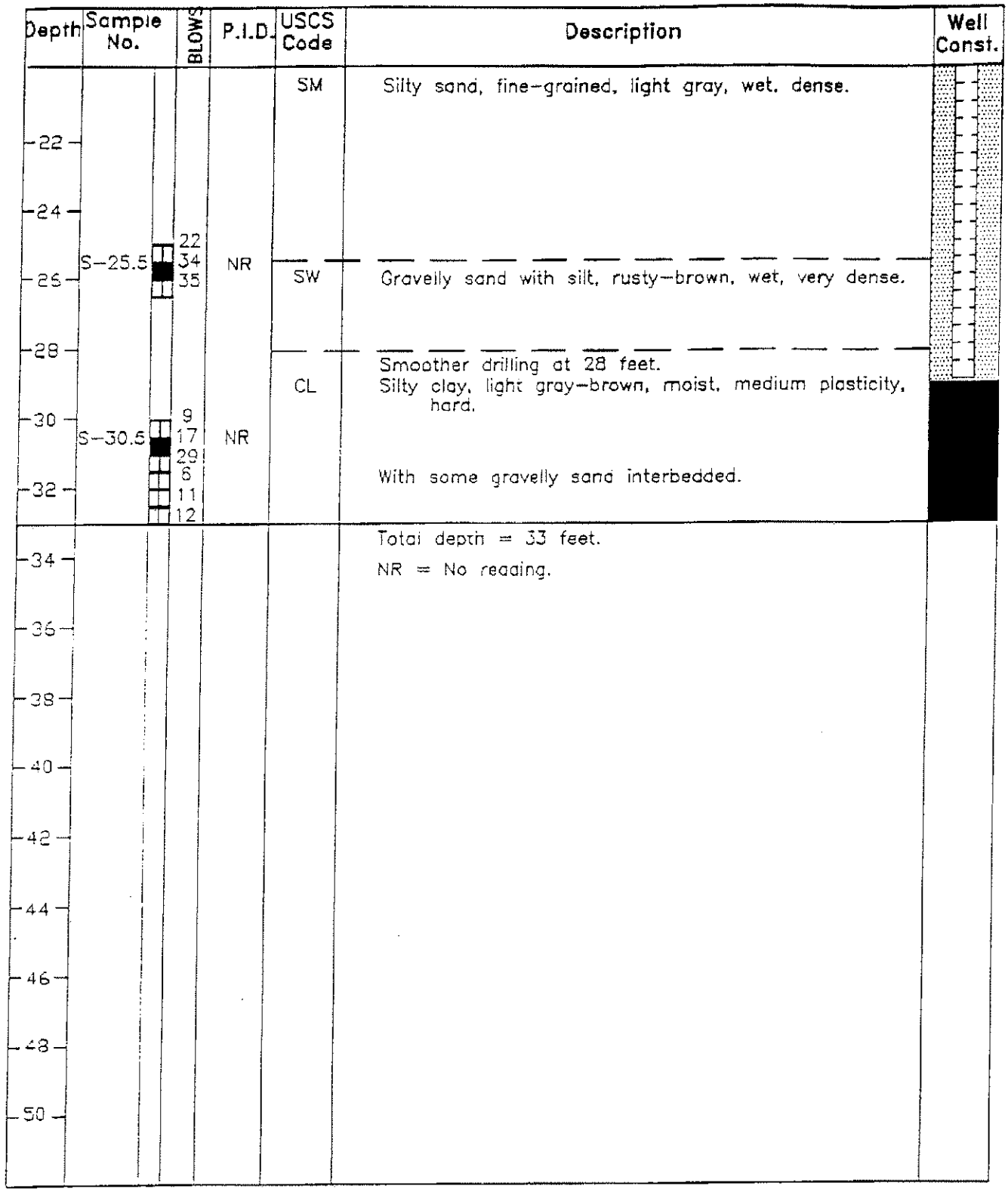
PROJECT: 69036.02

LOG OF BORING B-10/MW-2

ARCO Station 2035
1001 San Pablo Avenue
Albany, California

PLATE 9



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LOG OF BORING B-10/MW-2
ARCO Station 2035
1001 San Pablo Avenue
Albany, California

PLATE
10

PROJECT 69036.02

Depth of boring: 34-1/2 feet Diameter of boring: 10 inches Date drilled: 10/16/91

Well depth: 32-1/2 feet Material type: Sch 40 PVC Casing diameter: 4 inches

Screen interval: 12-1/2 to 32-1/2 feet Slot size: 0.020-inch

Drilling Company: Exceltech Drilling Driller: Don and Kenny

Method Used: Hollow-Stem Auger Field Geologist: Rob Campbell

Signature of Registered Professional:

Registration No.: RCE 044600 State: CA

Depth	Sample No.	Blows	P.I.D.	USCS Code	Description	Well Const.
					Asphalt surface.	
0					Asphalt (3 inches) and baserock (9 inches).	
2				CH	Silty clay, black, moist, high plasticity, stiff to very stiff; noticeable product odor.	
4						
6	S-6	5 13 14	NR	CL	Silty clay with some gravel, brown with green mottling, moist, low to medium plasticity, very stiff; noticeable product odor.	
8						
10	S-11	6 8 10	NR		(10/29/92).	
12				ML	Clayey silt with medium-grained sand, brown with green mottling, moist, medium plasticity, very stiff, noticeable product odor.	
14						
16	S-16	6 8 10	NR	SC	Clayey sand, gray with orange mottling, damp, medium dense, noticeable product odor.	
18						
20	S-21	8 11 23	NR		(Section continues downward)	

NR = No reading.

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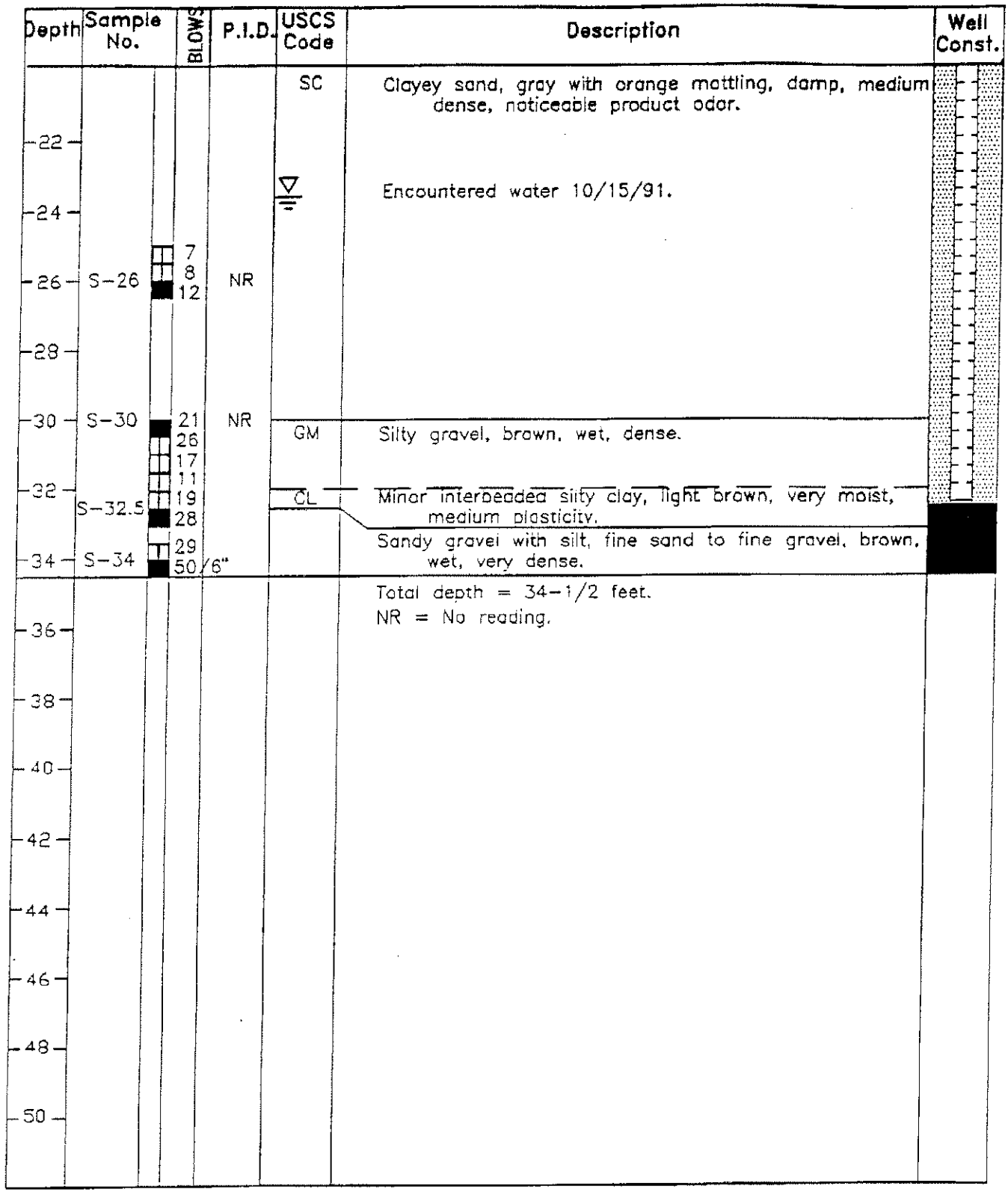
PROJECT: 69036.02

LOG OF BORING B-11/MW-3

ARCO Station 2035
1001 San Pablo Avenue
Albany, California

PLATE 11



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PROJECT 69036.02

LOG OF BORING B-11/MW-3
ARCO Station 2035
1001 San Pablo Avenue
Albany, California

PLATE
12

Depth of boring: 21-1/2 feet Diameter of boring: 8 inches Date drilled: 08/20/92

Well depth: N/A Material type: N/A Casing diameter: N/A

Screen interval: N/A Slot size: N/A

Drilling Company: Bayland Drilling Driller: Frank and John

Method Used: Hollow-Stem Auger Field Geologist: Barbara Sieminski

Signature of Registered Professional:

Registration No.: RCE 044600 State: CA

Depth	Sample No.	Blows	P.I.D.	USCS Code	Description	Well Const.
					Asphalt-covered surface.	
0					Asphalt (4 inches).	
				GP	Sandy gravel, gray, damp, dense; baserock.	
				CL	Sandy clay, dark brown, damp, medium plasticity, stiff.	
2					Color change to brown.	
4	S-4.5	5 10 15	7.3			
				GC	Clayey gravel with sand, brown, damp, medium dense.	
6				CL	Sandy clay with fine gravel, brown, damp, medium plasticity, very stiff.	
	S-7.5	11 12 13	44			
8				GC	Clayey gravel with sand, gray, damp, medium dense; product odor.	
	S-9	4 5 10	86			
10						
12				SC	Clayey sand with gravel, fine-grained sand, light gray with orange mottling, moist, medium dense.	
14	S-14.5	7 11 13	4			
16						
				ML	Sandy silt, orange-brown, moist, low plasticity, stiff.	
18	S-19	3 6 10	0			
20					Increasing sand, moist.	
	S-20.5	8 10 16	0	▽ SC	Clayey sand with gravel, olive-orange, very moist, medium dense.	
					Total depth = 21-1/2 feet.	

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PROJECT 69036.05

LOG OF BORING B-12

ARCO Station 2035
1001 San Pablo Avenue
Albany, California

PLATE 4

Depth of boring: 21-1/2 feet Diameter of boring: 8 inches Date drilled: 08/19/92

Well depth: N/A Material type: N/A Casing diameter: N/A

Screen interval: N/A Slot size: N/A

Drilling Company: Bayland Drilling Driller: Frank and Robert

Method Used: Hollow-Stem Auger Field Geologist: Barbara Sieminski

Signature of Registered Professional: [signature]

Registration No. RCE 044600 State: CA

Depth	Sample No.	Blows	P.I.D.	USCS Code	Description	Well Const.
0					Asphalt-covered surface.	
					Asphalt (4 inches).	
				GP	Sandy gravel, gray, damp, dense: baserock.	
2				CH	Sandy clay, dark brown, damp, high plasticity, soft.	
				CL	Silty clay, brown, damp, medium plasticity, stiff.	
4	S-4.5	2 7 17	0			
				GC	Clayey gravel with sand, brown, damp, medium dense; noticeable product odor.	
6				CL	Sandy clay, brown, damp, medium plasticity, stiff; noticeable product odor.	
8	S-7.5	5 10 14	47			
	S-9	7 9 11	17	GC	Clayey gravel with sand, brown mottled gray, damp, medium dense.	
10						
12				SC	Clayey sand with gravel, fine-grained sand, light gray with orange mottling, dense.	
14	S-14.5	6 14 18	0			
16						
	S-17.5	11 20 21	0			
18	S-19	4 6 10	0		With sandy silt lenses.	
20	S-20	14 17 19	0		Increasing gravel. Decreasing clay, wet.	
					Total depth = 21-1/2 feet.	

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PROJECT 69036.05

LOG OF BORING B-13
ARCO Station 2035
1001 San Pablo Avenue
Albany, California

PLATE 5

Depth of boring: 18-1/2 feet Diameter of boring: 10 inches Date drilled: 08/20/92

Well depth: 17 feet Material type: Sch 40 PVC Casing diameter: 4 inches

Screen interval: 5 to 17 feet Slot size: 0.100-inch

Drilling Company: Bayland Drilling Driller: Frank and John

Method Used: Hollow-Stem Auger Field Geologist: Barbara Sieminski

Signature of Registered Professional:

Registration No.: RCE 044600 State: CA

Depth	Sample No.	Blows	P.I.D.	USCS Code	Description	Well Const.
					Concrete.	
0					Concrete (7 inches).	
				GP	Sandy gravel, gray, damp, dense; baserock.	
				CH	Silty clay, dark brown, damp, high plasticity, soft; product odor.	
2			146			
				CL	Sandy clay, trace fine gravel, brown, damp, medium plasticity, very stiff; product odor.	
4						
	S-5.5	5 8 9	709			
6						
8						
				SC	Clayey sand with gravel, fine- to coarse-grained sand, dark gray, damp, loose; obvious product odor.	
10	S-10.5	5 5 5	576			
				CL	Gravelly clay with sand, brown mottled gray, moist, low plasticity, stiff; product odor.	
12						
14				SC/ML	Clayey sand, fine-grained, with clayey silt lenses, light gray mottled orange, moist, medium dense; noticeable product odor.	
	S-15.5	2 4 8	59			
16						
	S-17.5	7 24 26	12		With gravel, less clay, orange-brown.	
18						
					Total Depth = 18-1/2 feet.	
20						

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PROJECT 69036.05

LOG OF BORING B-14/VW-1

ARCO Station 2035
1001 San Pablo Avenue
Albany, California

PLATE 6

Depth of boring: 17-1/2 feet Diameter of boring: 10 inches Date drilled: 08/19/92

Well depth: 17 feet Material type: Sch 40 PVC Casing diameter: 4 inches

Screen interval: 5 to 17 feet Slot size: 0.100-inch

Drilling Company: Bayland Drilling Driller: Frank and Robert

Method Used: Hollow-Stem Auger Field Geologist: Barbara Sieminski

Signature of Registered Professional:

Registration No.: RCE 044600 State: CA

Depth	Sample No.	Blows	P.I.D.	USCS Code	Description	Well Const.
0					Asphalt-covered surface.	
					Asphalt (4 inches).	
				GP	Sandy gravel, brown, damp, dense: baserock.	
2				CL/CH	Silty clay, black, damp, medium to high plasticity, stiff; product odor.	
4				CL	Silty clay with sand and fine gravel, brown mottled gray, damp, medium plasticity, very stiff; product odor.	
6	S-5.5	4 8 12	364			
8	S-8.5	8 10 12	522	SC	Clayey sand, fine- to coarse-grained, grayish-brown, moist, medium dense; product odor.	
10	S-10	5 7 11	726	ML	Gravelly silt with sand, brown, moist, low plasticity, very stiff; obvious product odor.	
12	S-12	5 20 14			Color change to brown mottled orange, damp.	
14	S-13.5	7 11 20	610	SC/ML	Clayey sand, fine-grained, with sandy silt lenses, greenish brown, moist, dense; product odor.	
	S-15	7 19 20	65			
16		11 19 24	94		Increasing sand, grayish-brown.	
18					Total depth = 17-1/2 feet.	
20						

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PROJECT 69036.05

LOG OF BORING B-15/VW-2

ARCO Station 2035
1001 San Pablo Avenue
Albany, California

PLATE 7

Depth of boring: 15-1/2 feet Diameter of boring: 10 inches Date drilled: 08/19/92

Well depth: 9-1/2 feet Material type: Sch 40 PVC Casing diameter: 4 inches

Screen interval: 4-1/2 to 9-1/2 feet Slot size: 0.100-inch

Drilling Company: Bayland Drilling Driller: Frank and Robert

Method Used: Hollow-Stem Auger Field Geologist: Barbara Sieminski

Signature of Registered Professional:

Registration No.: RCE 044600 State: CA

Depth	Sample No.	Blows	P.I.D.	USCS Code	Description	Well Const.
0					Asphalt-covered surface.	
					Asphalt (4 inches).	
				GP	Sandy gravel, gray, damp, dense: baserock.	
2				CL	Sandy clay, brown, moist, medium plasticity, very soft; product odor.	
4	S-4.5	1 1 1	74			
6						
8					▼	
10	S-10	1 1 2	142	▽SM	Silty sand, fine-grained, dark gray, wet, very loose; product odor.	
12					Some gravel.	
14	S-14.5	2 3 4	7.7	CL	Silty clay with sand, light gray mottled orange, damp to moist, low plasticity, firm.	
16					Total depth = 15-1/2 feet.	
18						
20						

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PROJECT 69036.05

LOG OF BORING B-16/VW-3
ARCO Station 2035
1001 San Pablo Avenue
Albany, California

PLATE 8

Depth of boring: 18-1/2 feet Diameter of boring: 10 inches Date drilled: 08/20/92

Well depth: 17 feet Material type: Sch 40 PVC Casing diameter: 4 inches

Screen interval: 5 to 17 feet Slot size: 0.100-inch

Drilling Company: Bayland Drilling Driller: Frank and John

Method Used: Hollow-Stem Auger Field Geologist: Barbara Sieminski

Signature of Registered Professional:

Registration No.: RCE 044600 State: CA

Depth	Sample No.	Blows	P.I.D.	USCS Code	Description	Well Const.
					Concrete.	
0					Concrete (7 inches).	
				GP	Sandy gravel, brown, damp, dense; baserock.	
2				CH	Silty clay, dark brown, damp, high plasticity, firm.	
4				CL	Sandy clay, brown, damp, medium plasticity, very stiff; obvious product odor.	
6	S-5.5	5 10 14	592		Increasing sand, with fine gravel, grayish-brown.	
8						
10	S-10.5	5 6 6	854	SC	Clayey sand, fine-grained, gray, damp to moist, medium dense; product odor.	
12				CL	Gravelly clay with sand, brown mottled gray, moist, low plasticity, stiff; product odor.	
14				SC/ML	Clayey sand, fine-grained, with clayey silt lenses, light gray mottled orange, moist, medium dense; noticeable product odor.	
16	S-15.5	6 8 10	80			
	S-17.5	1 18 30	225		Less clay, with gravel, orange-brown.	
18					Total depth = 18-1/2 feet.	
20						

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PROJECT 69036.05

LOG OF BORING B-17/VW-4

ARCO Station 2035
1001 San Pablo Avenue
Albany, California

PLATE 9

Depth of boring: 16-1/2 feet Diameter of boring: 10 inches Date drilled: 08/21/92

Well depth: 14-1/2 feet Material type: Sch 40 PVC Casing diameter: 4 inches

Screen interval: 4-1/2 to 14-1/2 feet Slot size: 0.100-inch

Drilling Company: Bayland Drilling Driller: Frank and John

Method Used: Hollow-Stem Auger Field Geologist: Barbara Sieminski

Signature of Registered Professional

Registration No.: RCE 044600 State: CA

Depth	Sample No.	Blows	P.I.D.	USCS Code	Description	Well Const.
0					Asphalt-covered surface.	
					Asphalt (4 inches).	
				GP	Sandy gravel, gray, damp, dense: baserock.	
2				CL/CH	Silty clay, dark brown, damp, medium to high plasticity, firm.	
4				CL	Sandy clay, brown, damp, medium plasticity, stiff.	
				GC	Clayey gravel with sand, grayish-brown, damp, medium dense.	
6	S-5.5	7 12 12	39			
8						
10					Increasing sand.	
	S-10.5	12 10 8	143			
12				CL	Gravelly clay with sand, grayish-brown, damp to moist, low plasticity, very stiff; product odor.	
14						
	S-15.5	18 12 18	896	SC	Clayey sand with gravel, fine-grained sand, light gray mottled orange, moist, medium dense; product odor.	
16					Total depth = 16-1/2 feet.	
18						
20						

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PROJECT 69036.05

LOG OF BORING B-18/VW-5
ARCO Station 2035
1001 San Pablo Avenue
Albany, California

PLATE 10

Depth of boring: 16-1/2 feet Diameter of boring: 10 inches Date drilled: 08/21/92

Well depth: 12-1/2 feet Material type: Sch 40 PVC Casing diameter: 4 inches

Screen interval: 5 to 12-1/2 feet Slot size: 0.100-inch

Drilling Company: Bayland Drilling Driller: Frank and John

Method Used: Hollow-Stem Auger Field Geologist: Barbara Sieminski

Signature of Registered Professional:

Registration No.: RCE 044600 State: CA

Depth	Sample No.	Blows	P.I.D.	USCS Code	Description	Well Const.
0					Asphalt-covered surface.	
					Asphalt (4 inches).	
				GP	Sandy gravel, gray, damp, dense: baserock.	
2				CL/CH	Silty clay, black, damp, medium to high plasticity, stiff; product odor.	
4				CL	Silty clay, brownish-gray, moist, medium plasticity, very stiff; noticeable product odor.	
					Color change to brown.	
	S-5.5	6 12 21	43			
6				GC	Clayey gravel with sand, grayish-brown, moist, dense; noticeable product odor.	
8				CL	Silty clay, trace fine gravel, brown, damp, medium plasticity, stiff.	
10	S-10.5	3 6 9	0		With clayey sand lenses.	
12					▼ ▽	
				SC/CL	Clayey sand, fine-grained, with sandy clay lenses, brown, wet, medium dense.	
14						
	S-15.5	3 5 8	56			
16					Total depth = 16-1/2 feet.	
18						
20						

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PROJECT 69036.05

LOG OF BORING B-19/VW-6

ARCO Station 2035
1001 San Pablo Avenue
Albany, California

PLATE 11

Depth of boring: 29 feet Diameter of boring: 10 inches Date drilled: 11/24/92

Well depth: 25-1/2 feet Material type: Sch 40 PVC Casing diameter: 4 inches

Screen interval: 8-1/2 to 25-1/2 feet Filter pack: #3 Sand Slot size: 0.020-inch

Drilling Company: Bayland Drilling Driller: John and Tom

Method Used: Hollow-Stem Auger Field Geologist: Barbara Sieminski

Signature of Registered Professional:

Registration No.: CEG 1463 State: CA

Depth	Sample No.	Blows	P.I.D.	USCS Code	Description	Well Const.
					Asphalt-covered surface.	
0				GC	Asphalt (4 inches).	
					Clayey gravel, brown, damp, dense: baserock.	
2				ML	Sandy silt with clay, dark brown, damp, low plasticity, stiff.	
4				CL	Sandy clay, brown, damp, medium plasticity, very stiff.	
6	S-5.5	5 8 11	0	SC	Clayey sand, fine- to medium-grained, trace fine gravel, brown, damp, medium dense.	
8						
10	S-9.5	11 12 14	0		Increasing gravel.	
	S-11	3 8 8	0	GC	Clayey gravel with sand, brown mottled orange and black, moist, medium dense.	
12					▼	
14					▽	
				SP≡SC	Gravelly sand with clay, medium- to coarse-grained sand, brown, very moist to wet, medium dense.	
16	S-15.5	5 8 10	0			
18	S-18.5	6 9 10	0	SM/ML	Silty sand, fine-grained, light gray mottled orange, wet, medium dense, interbedded with sandy silt and clay, light gray mottled orange, moist to wet, low plasticity, very stiff.	
20						

(Section continues downward)

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PROJECT 69036.07

LOG OF BORING B-20/MW-4
ARCO Station 2035
1001 San Pablo Avenue
Albany, California

PLATE 5

Depth	Sample No.	BLOWS	P.I.D.	USCS Code	Description	Well Const.
22				SM/ML	Silty sand, fine-grained, light gray mottled orange, wet, medium dense; interbedded with sandy silt and clay, light gray mottled orange, moist to wet, low plasticity, very stiff.	
24	S-24.5	10 11 12	0		Increasing silt, moist.	
26	S-26.5	8 15 25	0	ML	Clayey silt, light gray mottled orange, damp, low plasticity, very stiff.	
28	S-28	10 25 50/6"	0	SP	Gravelly sand, fine- to medium-grained sand, orange-brown, damp, dense.	
					Total depth = 29 feet.	
30						
32						
34						
36						
38						
40						
42						
44						
46						
48						
50						

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LOG OF BORING B-20/MW-4
ARCO Station 2035
1001 San Pablo Avenue
Albany, California

PLATE
6

Depth of boring: 26-1/2 feet Diameter of boring: 10 inches Date drilled: 11/24/92

Well depth: 25 feet Material type: Sch 40 PVC Casing diameter: 4 inches

Screen interval: 8-1/2 to 25 feet Filter pack: #3 Sand Slot size: 0.020-inch

Drilling Company: Bayland Drilling Driller: John and Tom

Method Used: Hollow-Stem Auger Field Geologist: Barbara Sieminski

Signature of Registered Professional:

Registration No.: CEG 1463 State: CA

Depth	Sample No.	Blows	P.I.D.	USCS Code	Description	Well Const.
					Asphalt-covered surface.	
0				GP	Asphalt (4 inches).	
					Sandy gravel, gray, damp, dense: baserock.	
2				CL	Sandy clay, dark brown, damp, medium plasticity, stiff.	
					Color change to brown.	
4						
6	S-5.5	4 6 9	0			
				GC	Clayey gravel with sand, brown with black and orange mottling, damp, medium dense.	
8						
10	S-10.5	9 10 14	0			
12				SP=SC	Gravelly sand with clay, fine- to medium-grained sand, orange-brown, very moist to wet, medium dense.	
14						
16	S-15.5	6 9 11	0			
18						
20	S-20.5	15 25 30	0			

(Section continues downward)

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LOG OF BORING B-21/MW-5

ARCO Station 2035
1001 San Pablo Avenue
Albany, California

PLATE 7

Depth	Sample No.	BLOWS	P.I.D.	USCS Code	Description	Well Const.
22				SP–SC	Gravelly sand with clay, fine– to medium–grained sand, orange–brown, very moist to wet, medium dense.	
24		8		SM/ML	Silty sand, fine–grained, light gray mottled orange, moist, medium dense; interbedded with sandy silt and clay, light gray mottled orange, damp, low plasticity, very stiff.	
26	S–26	11 12	0	ML	Clayey silt, light gray mottled orange, damp, low plasticity, very stiff.	
					Total depth = 26–1/2 feet.	
28						
30						
32						
34						
36						
38						
40						
42						
44						
46						
48						
50						

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PROJECT 69036.07

LOG OF BORING B–21/MW–5
ARCO Station 2035
1001 San Pablo Avenue
Albany, California

PLATE
8

Depth of boring: 26-1/2 feet Diameter of boring: 8 inches Date drilled: 11/25/92

Well depth: 25 feet Material type: Sch 40 PVC Casing diameter: 2 inches

Screen interval: 8 to 25 feet Filter pack: #3 Sand Slot size: 0.020-inch

Drilling Company: Bayland Drilling Driller: John and Tom

Method Used: Hollow-Stem Auger Field Geologist: Barbara Sieminski

Signature of Registered Professional:

Registration No.: CEG 1463 State: CA

Depth	Sample No.	Blows	P.I.D.	USCS Code	Description	Well Const.
					Concrete surface.	
0				GP	Concrete (2 inches).	
				ML	Sandy gravel, grayish-brown, damp, dense: baserock.	
2				CL	Sandy silt, dark brown, damp, low plasticity, stiff; with roots.	
					Sandy clay, brown, damp, medium plasticity, very stiff; with roots.	
4						
	S-5.5	8 10 15	0			
6						
8				SP-SC	Gravelly sand with clay, fine- to medium-grained sand, brown, damp, medium dense.	
	S-9.5	8 15 11	0			
10		10		SC	Clayey sand, fine-grained, light brown, damp, medium dense.	
	S-11.5	15 14	0			
12				GC	Clayey gravel with sand, brown mottled orange, moist, medium dense.	
			▽▼			
14				SP	Gravelly sand, medium-grained sand, brown, wet, medium dense.	
	S-15.5	6 7 9	0			
16				SM/ML	Silty sand, fine-grained, light gray mottled orange, wet, medium dense; interbedded with sandy silt and clay, light gray mottled orange, moist to wet, low plasticity, stiff.	
18						
20						
	S-20.5	8 10 14	0			

(Section continues downward)

RESNA
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PROJECT 69036.07

LOG OF BORING B-22/MW-6

ARCO Station 2035
1001 San Pablo Avenue
Albany, California

PLATE 9

Depth	Sample No.	BLOWS	P.I.D.	USCS Code	Description	Well Const.
22				SM/ML	Silty sand, fine-grained, light gray mottled orange, wet, medium dense; interbedded with sandy silt sand clay, light gray mottled orange, moist to wet, low plasticity, stiff. With gravel.	
24						
26	S-26	5 6 7	0	ML	Clayey silt, light gray mottled orange, damp to moist, low plasticity, stiff.	
					Total depth = 26-1/2 feet.	
28						
30						
32						
34						
36						
38						
40						
42						
44						
46						
48						
50						

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PROJECT 69036.07

LOG OF BORING B-22/MW-6
ARCO Station 2035
1001 San Pablo Avenue
Albany, California

PLATE
10

Total depth of boring:	15-1/2 feet	Casing diameter:	4 inches
Diameter of boring:	10 inches	Casing material:	Sch 40 PVC
Date drilled:	6-16-93	Slot size:	0.10-inch
Drilling Company:	Exploration Geoservices	Sand size:	3/8" pea gravel
Driller:	Dave and Dennis	Screen Interval:	6 feet to 15 feet
Drilling method:	Hollow-Stem Auger	Field Geologist:	Erin McLucas

Signature of Registered Professional: _____

Registration No.: CEG 1463 State: CA

Depth	Sample No.	Blows	P.I.D.	USCS Code	Description	Well Const.
0				CL	Concrete (7 inches).	
2					Silty clay, black, damp, medium plasticity, stiff.	
4				SC	Clayey sand, trace gravel, tan, damp, dense; abundant black rootlets.	
6	S-5					
8				GP	Sandy gravel, tan to orange, damp, very dense.	
10	S-10			GC	Clayey gravel, olive, damp, very dense.	
12						
14				CL	Sandy clay with silt, light gray to olive with orange mottling, damp, medium plasticity, hard; tan rootlets.	
16	S-15				Total Depth = 15-1/2 feet.	
18						
20						
22						
24						
26						
28						
30						
32						
34						
36						
38						
40						

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PROJECT: 69036.10

LOG OF BORING B-23/VW-7
ARCO Station 2035
1001 San Pablo Avenue
Albany, California

PLATE
A-2

Total depth of boring:	15-1/2 feet	Casing diameter:	4 inches
Diameter of boring:	10 inches	Casing material:	Sch 40 PVC
Date drilled:	6-15-93	Slot size:	0.10-inch
Drilling Company:	Exploration Geoservices	Sand size:	3/8" pea gravel
Driller:	John and Dennis	Screen interval:	6 feet to 15 feet
Drilling method:	Hollow-Stem Auger	Field Geologist:	Erin McLucas

Signature of Registered Professional: _____

Registration No.: CEG 1463 State: CA

Depth	Sample No.	Blows	P.I.D.	USCS Code	Description	Well Const.
				GP	Asphalt (4 inches).	
2				CL	Sandy gravel, brown, damp, dense.	
					Silty clay, dark brown to black, damp, medium plasticity, stiff.	
4				GC	Clayey gravel, fine, orange-brown, damp, very dense.	
6	S-6	14 50/ 6				
8						
10	S-10.5	10 14 30				
12				CL	Silty clay, gray with orange mottling, damp, medium plasticity, hard. With sand.	
14	S-15	13 48 40		GC	Clayey gravel, orange-brown, damp, very dense.	
16					Total Depth = 15 feet.	
18						
20						
22						
24						
26						
28						
30						
32						
34						
36						
38						
40						

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Working to Restore Nature

PROJECT: 69036.10

LOG OF BORING B-24/VW-8
ARCO Station 2035
1001 San Pablo Avenue
Albany, California

PLATE
A-3

Total depth of boring:	15-1/2 feet	Casing diameter:	4 inches
Diameter of boring:	10 inches	Casing material:	Sch 40 PVC
Date drilled:	6-21-93	Slot size:	0.10-inch
Drilling Company:	Exploration Geoservices	Sand size:	3/8" pea gravel
Driller:	John and Dennis	Screen Interval:	6 feet to 15 feet
Drilling method:	Hollow-Stem Auger	Field Geologist:	Erin McLucas

Signature of Registered Professional: _____

Registration No.: CEG 1463 State: CA

Depth	Sample No.	Blows	P.I.D.	USCS Code	Description	Well Const.
0					Concrete (6-1/2 inches).	
2				CL	Silty clay, dark brown to black, damp, medium plasticity, stiff.	
4				GP	Sandy to clayey gravel, fine grained, brown, damp, very dense.	
6	S-5.5					
8				CL	Silty clay, light gray to blue, damp, medium plasticity, hard.	
10	S-9.5			GP-GC	Sandy to clayey gravel, fine grained, brown to olive, damp, very dense.	
12						
14				CL	Silty clay, light gray to olive with orange and black mottling, damp, medium plasticity, hard.	
	S-15					
16					Total Depth = 15-1/2 feet.	
18						
20						
22						
24						
26						
28						
30						
32						
34						
36						
38						
40						

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PROJECT: 69036.10

LOG OF BORING B-25/VW-9
ARCO Station 2035
1001 San Pablo Avenue
Albany, California

PLATE
A-4

Total depth of boring:	32-1/2 feet	Casing diameter:	2 inches
Diameter of boring:	12 inches	Casing material:	Sch 40 PVC
Date drilled:	6-16-93	Slot size:	0.10-inch/0.020-inch
Drilling Company:	Exploration Geoservices	Sand size:	3/8" Pea gravel/No. 3 Sand
Driller:	Dave and Dennis	Screen Interval:	5 to 15 feet/29 to 31 feet
Drilling method:	Hollow-Stem Auger	Field Geologist:	Erin McLucas

Signature of Registered Professional: _____

Registration No.: CEG 1463 State: CA

Depth	Sample No.	Blows	P.I.D.	USCS Code	Description	Well Const.
					Concrete (7 inches).	
2				CL	Silty clay, black, damp, medium plasticity, stiff.	
4					Tan to olive.	
6	S-5			GP	Sandy gravel, orange-brown, damp, very dense.	
8				GP-GC	With clay.	
10	S-10			CL	Silty clay with fine sand, light gray, damp, medium plasticity, hard.	
12						
14				CL	Sandy clay, light gray with brown mottling, damp, medium plasticity, hard.	
16	S-15			GP-GC	Sandy gravel with clay, orange-brown, damp, very dense.	
18				▽		
20	S-19				Wet.	
22						
24				SM	Silty sand, fine to medium grained, tan to olive with orange mottling, wet, very dense.	
26	S-25			GP/GC	Sandy to clayey gravel, orange-brown, wet, very dense.	
28						
30						
32	S-31			CL	Silty clay, gray with orange mottling, damp, medium plasticity, hard.	
34					Total Depth = 32-1/2 feet.	
36						
38						
40						

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PROJECT: 69036.10

LOG OF BORING B-26/AS-1
ARCO Station 2035
1001 San Pablo Avenue
Albany, California

PLATE
A-5

Total depth of boring:	32 feet	Casing diameter:	2 inches
Diameter of boring:	12 inches	Casing material:	Sch 40 PVC
Date drilled:	6-16-93	Slot size:	0.10-inch/0.020-inch
Drilling Company:	Exploration Geoservices	Sand size:	3/8" Pea gravel/No. 3 Sand
Driller:	John and Dennis	Screen Interval:	5 to 15 feet/29-1/2 to 31-1/2 feet
Drilling method:	Hollow-Stem Auger	Field Geologist:	Erin McLucas

Signature of Registered Professional: _____

Registration No.: CEG 1463 State: CA

Depth	Sample No.	Blows	P.I.D.	USCS Code	Description	Well Const.
0				GP/GW	Asphalt (4 inches).	
2				GP/GW	Sandy gravel, medium brown, damp, dense; baserock.	
4				CL	Silty clay, brown to black, damp, medium plasticity, stiff.	
6	S-5	21, 40, 35		CL	Brown to olive, trace sand and gravel, hard.	
8	S-7.5	21, 48, 37		SM	Silty sand with gravel, brown to olive, damp, very dense.	
10	S-10	10, 18, 20		SP	Gravelly sand, coarse grained, gray to olive, damp, very dense.	
12	S-12	11, 15, 24		SP	Sand, fine grained with gravel, brown to gray and olive, dense.	
14	S-15	9, 18, 24		GP	Sandy gravel, brown to olive damp, dense.	
16	S-16.5	10, 11, 16		SM	Silty sand, olive with orange mottling, damp, dense.	
18		13, 35, 50/6		GP	Sandy gravel, orange brown, damp to wet; with product.	
20	S-19.5	22, 50, 50/4		CL	Silty clay, light gray to olive with orange mottling, damp, medium plasticity, very stiff.	
22		20, 31, 50/4		GP	Sandy gravel, orange-brown, damp, very dense.	
24		22, 50/6			Trace silty clay.	
26	S-25	3, 50/5			Moist.	
28		24, 50/3			Wet.	
30		28, 30, 50/4				
32	S-31	31, 50/4		CL	Silty clay, trace fine-grained sand, gray with orange mottling, damp, medium plasticity, hard.	
34		26, 50/6			Total Depth = 32 feet.	
36		31, 50/4				
38		50/6				
40		27, 50/6				

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PROJECT: 69036.10

LOG OF BORING B-27/AS-2
ARCO Station 2035
1001 San Pablo Avenue
Albany, California

PLATE
A-6

SOIL BORING LOG **Boring No. MW-7** **Sheet: 1 of 1**

Client	ARCO 2035	Date	March 26, 2009
Address	1001 San Pablo Avenue	Drilling Co.	RSI Drilling rig type: CME-75
	Albany, CA	Driller	Ramiro
Project No.	E2035	Method	Hollow Stem Auger Hole Diameter: 10 inches
Logged By:	Collin Fischer	Sampler:	18-inch length split spoon
Well Pack	sand: 4 ft. to 16 ft	Well Construction	Casing Material: Schedule 40 PVC Screen Interval: 6 ft. to 16 ft.
	bent.: 2 ft. to 4 ft.		Casing Diameter: 4 in. Screen Slot Size: 0.010-in.
	grout: 0 ft. to 2 ft.	Depth to GW:	▽ first encountered: 10' bgs. static ▼

Sample Type	Sample No.	Blow Count	Sample Time	Sample Recov.	Well Details	Depth Scale	Lithologic Column	Descriptions of Materials and Conditions	PID (PPM)
								Cleared to 6.5' bgs. with air knife	
S	MW-7 8'	2 5	1200	100		8	CL	Sandy clay, CL, dark brown, moist, medium stiff, medium plasticity 80% clay, 20% fine grained sand	0
		6 5				9		Clay, CL, dark grayish brown, moist, stiff, medium plasticity 100% clay	
		5 4				10	▽ SC		0
		1 1				11		Clayey sand, SC, dark grayish brown, moist to wet, very loose 60% fine to medium grained sand, 40% clay	
		3 10				12	CL		0
S	MW-7 13'	14 23	1225	100		13		Sandy clay with gravel, CL, dark grayish brown, moist, hard, low plasticity 50% clay, 30% coarse grained sand, 20% fine gravel	898
S	MW-7 14'	3 5	1245	100		14	SM	Silty sand, SM, dark gray, wet, loose, 90% medium grained sand, 10% silt	1143
S	MW-7 15'	15 34	1255	100		15			136
		50/6" -				16	CL	Sandy clay, CL, dark yellowish brown, moist, hard, low plasticity 60% clay, 40% fine to medium grained sand	
						17			
						18			
						19			
						20			

Recovery

Sample

Comments:

STRATUS ENVIRONMENTAL, INC.

SOIL BORING LOG **Boring No. MW-8** **Sheet: 1 of 1**

Client	ARCO 2035	Date	March 26, 2009
Address	1001 San Pablo Avenue	Drilling Co.	RSI Drilling rig type: CME-75
	Albany, CA	Driller	Ramiro
Project No.	E2035	Method	Hollow Stem Auger Hole Diameter: 10 inches
Logged By:	Collin Fischer	Sampler:	18-inch length split spoon
Well Pack	sand: 4 ft. to 19 ft	Well Construction	Casing Material: Schedule 40 PVC Screen Interval: 6 ft. to 19 ft.
	bent.: 2 ft. to 4 ft.		Casing Diameter: 4 in. Screen Slot Size: 0.010-in.
	grout: 0 ft. to 2 ft.	Depth to GW:	▽ first encountered: 16.5' bgs. static ▼

Sample Type	Sample No.	Blow Count	Sample Time	Sample Recov.	Depth Scale	Lithologic Column	Descriptions of Materials and Conditions	PID (PPM)
					1		Cleared to 6.5' bgs. with air knife	
					2			
					3			
					4			
					5			
					6			
					7			
					8			
					9			
					10			
S	MW-8 11'	4 7	0840	100	11		Sandy clay with gravel, CL, dark brown, moist, stiff, medium plasticity 75% clay, 30% medium to coarse grained sand	0
		14 11			12		Clay, CL, dark grayish brown, moist, very stiff, medium plasticity 100% clay	
S	MW-8 13'	15 24	0845	100	13	CL	Sandy clay with gravel, CL, dark grayish brown, moist, hard, low plasticity 50% clay, 30% coarse grained sand, 20% fine gravel	2158
		13 14			14			
		17 21			15		Clay, CL, dark grayish brown, moist, hard, medium plasticity 100% clay	136
S	MW-8 16'	21 21	0912	100	16		Sandy clay with gravel, CL, dark grayish brown, moist, hard, low plasticity 50% clay, 30% coarse grained sand, 20% fine gravel	85
		13 14			17		▽	0
		16 6			18	SC	Clayey sand, SC, dark yellowish brown, wet, medium dense 65% fine to medium grained sand, 35% clay	
S	MW-8 19'	9 13	0955	100	19	CL	Sandy clay, CL, dark yellowish brown, moist to wet, very stiff medium plasticity, 60% clay, 40% fine to medium grained sand	0
					20			

Recovery

Sample

Comments:

STRATUS ENVIRONMENTAL, INC.

SOIL BORING LOG **Boring No. MW-9** **Sheet: 1 of 1**

Client	ARCO 2035	Date	March 26, 2009
Address	1001 San Pablo Avenue	Drilling Co.	RSI Drilling rig type: CME-75
	Albany, CA	Driller	Ramiro
Project No.	E2035	Method	Hollow Stem Auger Hole Diameter: 10 inches
Logged By:	Collin Fischer	Sampler:	18-inch length split spoon
Well Pack	sand: 4 ft. to 16 ft	Well Construction	Casing Material: Schedule 40 PVC Screen Interval: 6 ft. to 16 ft.
	bent.: 2 ft. to 4 ft.		Casing Diameter: 4 in. Screen Slot Size: 0.010-in.
	grout: 0 ft. to 2 ft.	Depth to GW:	▽ first encountered: 10' bgs. static ▼

Sample Type	Sample No.	Blow Count	Sample Time	Sample Recov.	Well Details	Depth Scale	Lithologic Column	Descriptions of Materials and Conditions	PID (PPM)
								Cleared to 6.5' bgs. with air knife	
S	MW-9 8'	16 20	1510	100		8		Sandy clay with gravel, CL, dark grayish brown, moist, hard, low plasticity 50% clay, 30% coarse grained sand, 20% fine gravel	149
S	MW-9 9'	18 12	1520	100		9	CL	Clay, CL, dark grayish brown, moist, very stiff, medium plasticity 100% clay	
		14 22				10 ▽		Sandy clay with gravel, CL, dark grayish brown, moist, hard, low plasticity 50% clay, 30% coarse grained sand, 20% fine gravel	55
S	MW-9 11'	2 4	1530	100		11			
		12 20				12	SM	Silty sand with clay, SM, dark grayish brown, wet, medium dense 70% medium grained sand, 20% silt, 10% clay	15
S	MW-9 13'	29 31	1540	100		13			0
		29 34				14	CL	Sandy clay with gravel, CL, dark yellowish brown, dry to moist, hard medium plasticity, 50% clay, 30% coarse grained sand, 20% medium gravel	
		45 28				15			0
		30 37				16		Sandy clay with gravel, CL, dark yellowish brown, dry to moist, hard medium plasticity, 50% clay, 30% coarse grained sand, 20% coarse gravel	0
						17			
						18			
						19			
						20			

Recovery

Sample

Comments:

STRATUS ENVIRONMENTAL, INC.

ATTACHMENT D

Soil Vapor Sampling Data

Table 1 - Soil Vapor Sampling Field Data, 31 March 2011
Station #2035, 1001 San Pablo Avenue, Albany, California

			Static Leak Test				Purging	Sampling						Helium Percent		
Sample ID	COA#[1]	Can#[2]	Start Time	End Time	Start Vac.	End Vac.	cc	End Time	Start Time	End Time	Elapsed	Start Vac.	End Vac.	Low	High	Average
SG-1	A251	LC172	10:26	10:37	-16	-16	185	10:56	11:00	11:05	0:05	-31	-5	16.7	20	17.7
SG-2	A290	LC119	11:34	11:44	-15	-15	233	11:45	11:53	12:01	0:08	-30	-5	21	26	24.2
SG-3	Soil gas implant submerged - no sample collected															
SG-4	Soil gas implant submerged - no sample collected															
SG-5	A305	LC189	13:54	14:04	-15	-15	210	14:08	14:09	14:14	0:05	-30	-5	14	18	15.5
Ambient	A201	LC398	n/a	n/a	n/a	n/a	n/a	n/a	14:51	14:56	0:05	-31	-5	n/a	n/a	n/a

Notes:

(1) COA# = Critical Orifice Assembly Number (Laboratory-supplied flow regulator; 0.0060 inch orifice, approximately 200 standard cubic centimeters per minute).

(2) Can# = Laboratory-supplied 1-liter Summa canister tracking number.

(3) Vacuums measured in inches Mercury.

(4) n/a = Not applicable/not available; data not collected in the field.

Table 2 - Soil Vapor Sampling Laboratory Analytical Results, 31 March 2011
Station #2035, 1001 San Pablo Avenue, Albany, California

Sample ID	GRO (C6-C12) (mg/m^3)	Benzene (mg/m^3)	Toluene (mg/m^3)	Ethyl-benzene (mg/m^3)	Total Xylenes (mg/m^3)	MTBE (mg/m^3)	ETBE (mg/m^3)	DIPE (mg/m^3)	TAME (mg/m^3)	TBA (mg/m^3)	Ethanol (mg/m^3)	Helium (%)	Oxygen + Argon (%)	Carbon Dioxide (%)	Methane (%)
SG-1	<54	**0.0026**	**0.011**	<0.0030	<0.012	<0.010	<0.012	<0.012	<0.012	<0.0085	<0.013	**0.951**	5.38	6.65	<0.700
SG-2	<56	<0.0023	<0.0028	<0.0032	<0.013	<0.011	<0.012	<0.012	<0.012	<0.0089	<0.014	**0.0172**	11.8	5.46	<0.735
SG-5	<59	<0.0025	**0.0039**	<0.0034	<0.013	<0.011	<0.013	<0.013	<0.013	<0.0094	<0.015	**0.543**	5.12	5.89	<0.775
Ambient	<49	<0.0021	**0.0082**	<0.0028	<0.011	<0.0093	<0.011	<0.011	<0.011	<0.0078	**0.032**	<0.0129	20.6	<0.645	<0.645
ESL-Com.	29 mg/m^3	0.280	180	3.30	58.0	31.0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Notes:

(1) GRO analysis by EPA TO-3; Benzene through Ethanol analysis by EPA TO-15; $He/O_2+Ar/CO_2/CH_4$ analysis by ASTM D-1946.

(2) <X = Not detected above the given laboratory reporting limit (X) in milligrams per cubic meter (mg/m^3)

(3) ESL-Com = Environmental Screening Level for shallow soil gas (commercial or industrial land use); from California Regional Water Quality Control Board, San Francisco Bay Region (SFBRWQCB), May 2008.

(4) n/a = ESL not available or not applicable.

ATTACHMENT E

Regression Graphs

Estimated Time to Reach Water Quality Objective

ARCO Service Station No. 2035

Well ID: **MW-8**

Constituent: **GRO**

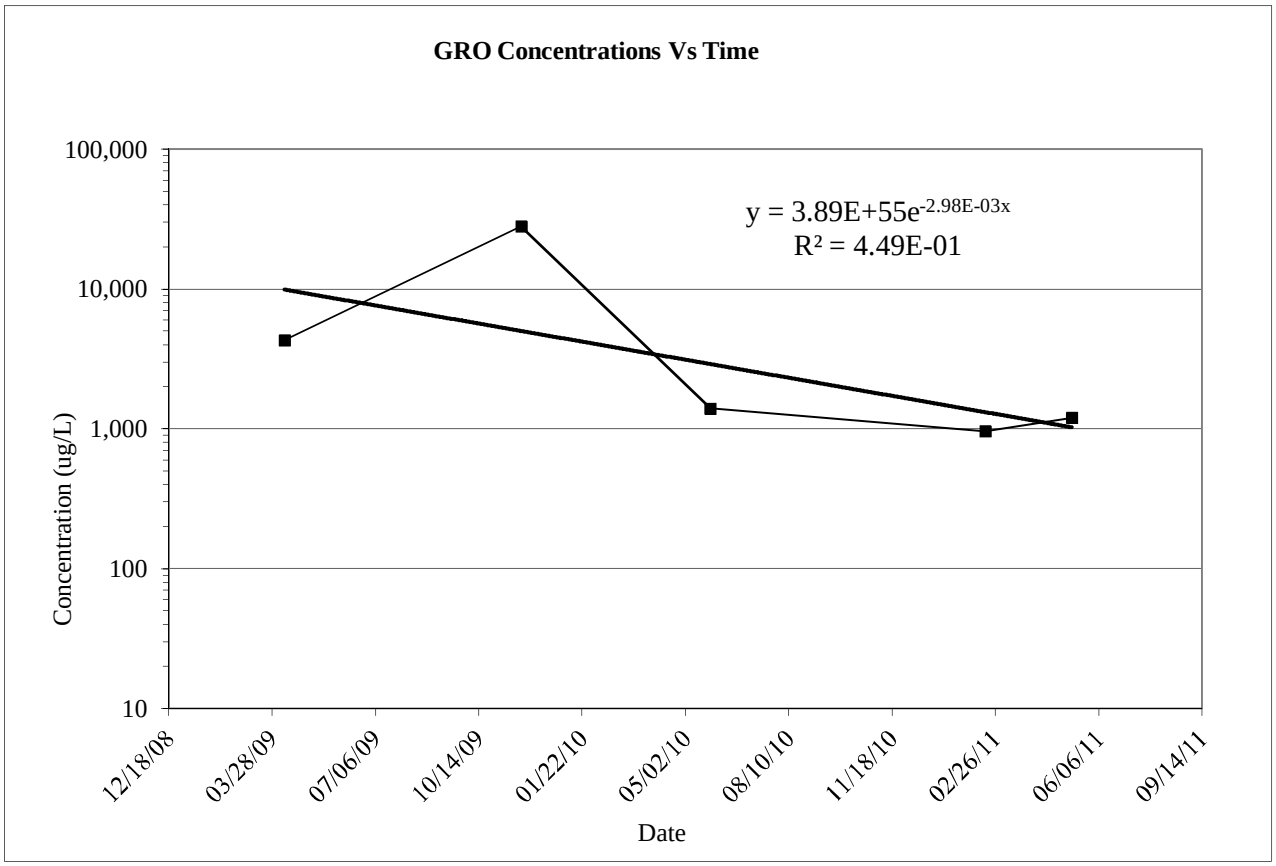
Calculation uses first-order decay equation:

$y = b\,e^{ax}$ **converts to:** $x = \ln(y/b) / a$

Given

Water Quality Objective:	y	100 ug/L
Constant:	b	3.89E+55
Constant:	a	-2.98E-03
Date of Peak Concentration:		11/24/2009

Estimated Date to Reach WQO: (x = ln(y/b) / a) **May 13, 2013**



Estimated Time to Reach Water Quality Objective

ARCO Service Station No. 2035

Well ID: **MW-8**

Constituent: **Benzene**

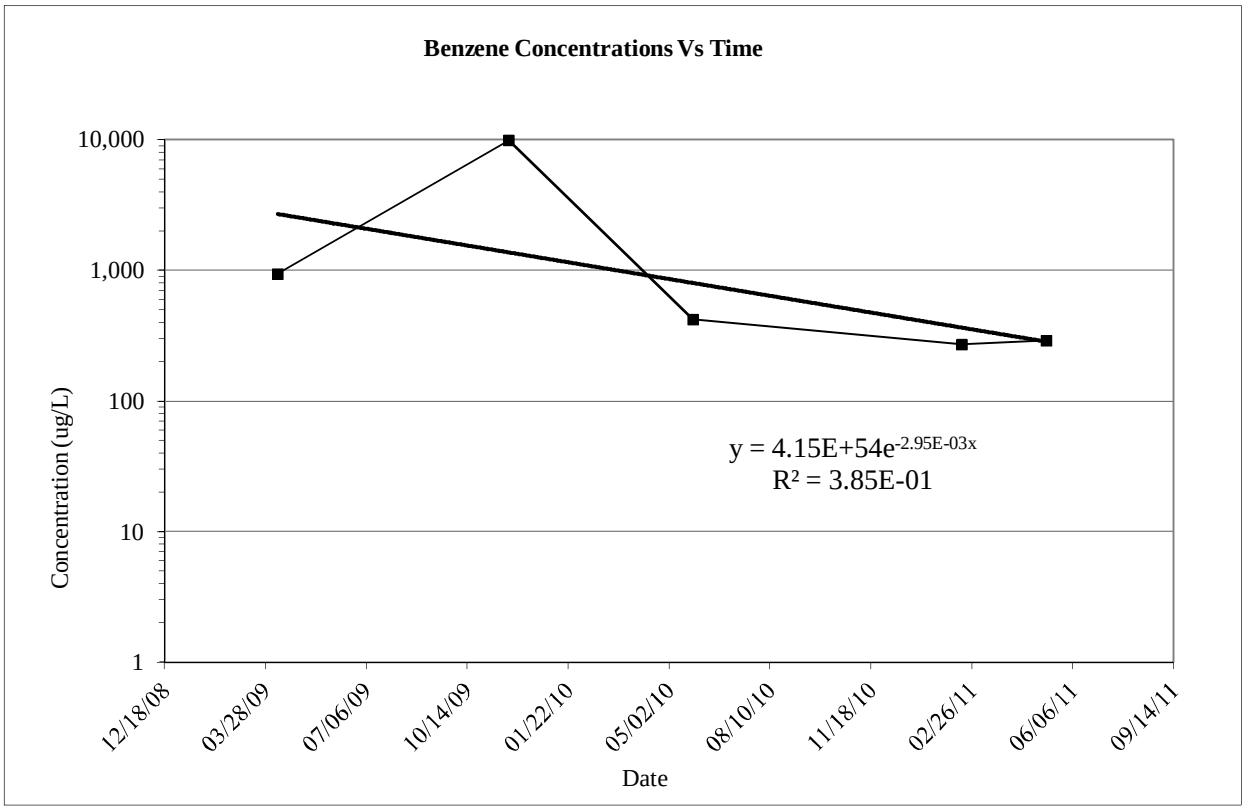
Calculation uses first-order decay equation:

$y = b\,e^{ax}$ **converts to:** $x = \ln(y/b) / a$

Given

Water Quality Objective:	y	1	ug/L
Constant:	b	4.15E+54	
Constant:	a	-2.95E-03	
Date of Peak Concentration		11/24/2009	

Estimated Date to Reach WQO: (x = ln(y/b) / a) **September 18, 2016**



Estimated Time to Reach Water Quality Objective

ARCO Service Station No. 2035

Well ID: **RW-1**

Constituent: **GRO**

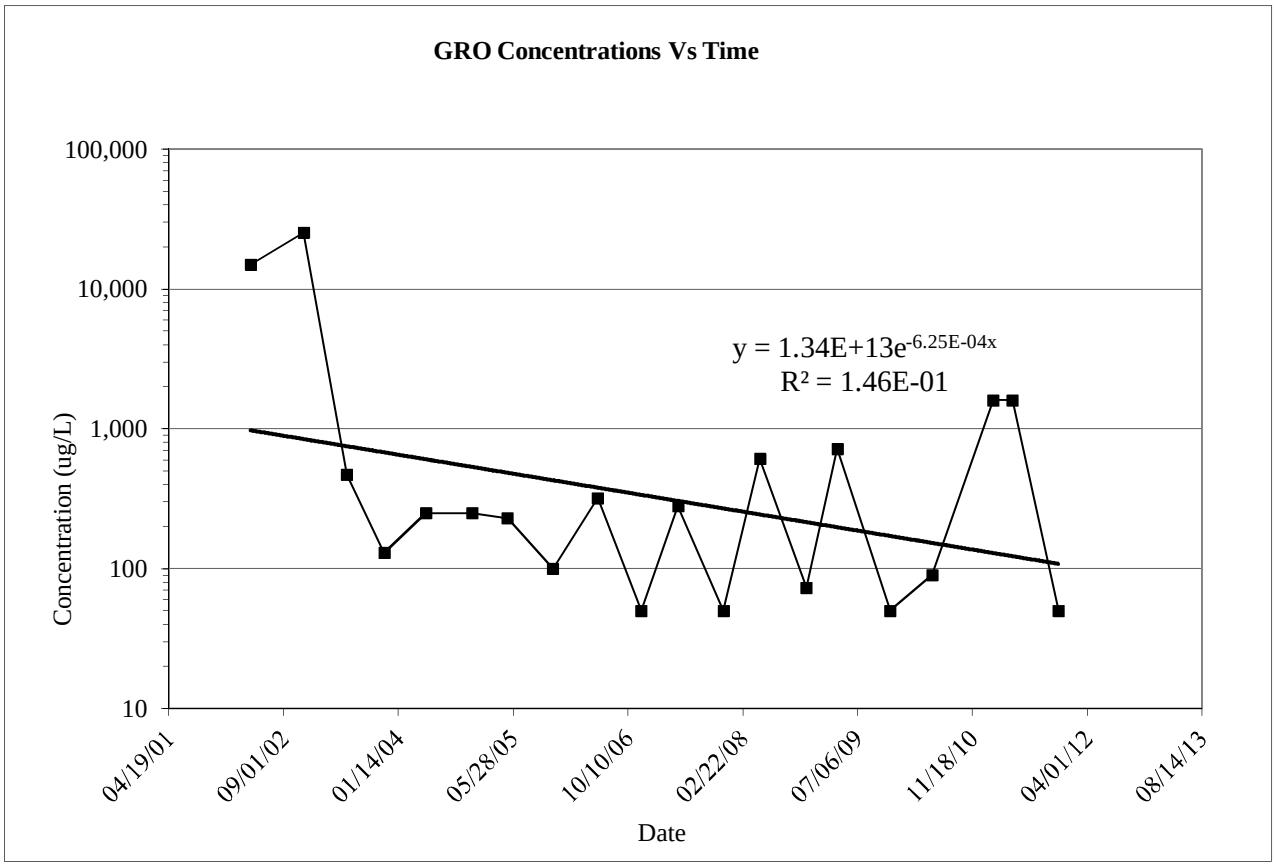
Calculation uses first-order decay equation:

$y = b\,e^{ax}$ **converts to:** $x = \ln(y/b) / a$

Given

Water Quality Objective:	y	100	ug/L
Constant:	b	1.34E+13	
Constant:	a	-6.25E-04	
Date of Peak Concentration:		11/27/2002	

Estimated Date to Reach WQO: (x = ln(y/b) / a) **March 25, 2012**



Estimated Time to Reach Water Quality Objective

ARCO Service Station No. 2035

Well ID: **RW-1**

Constituent: **Benzene**

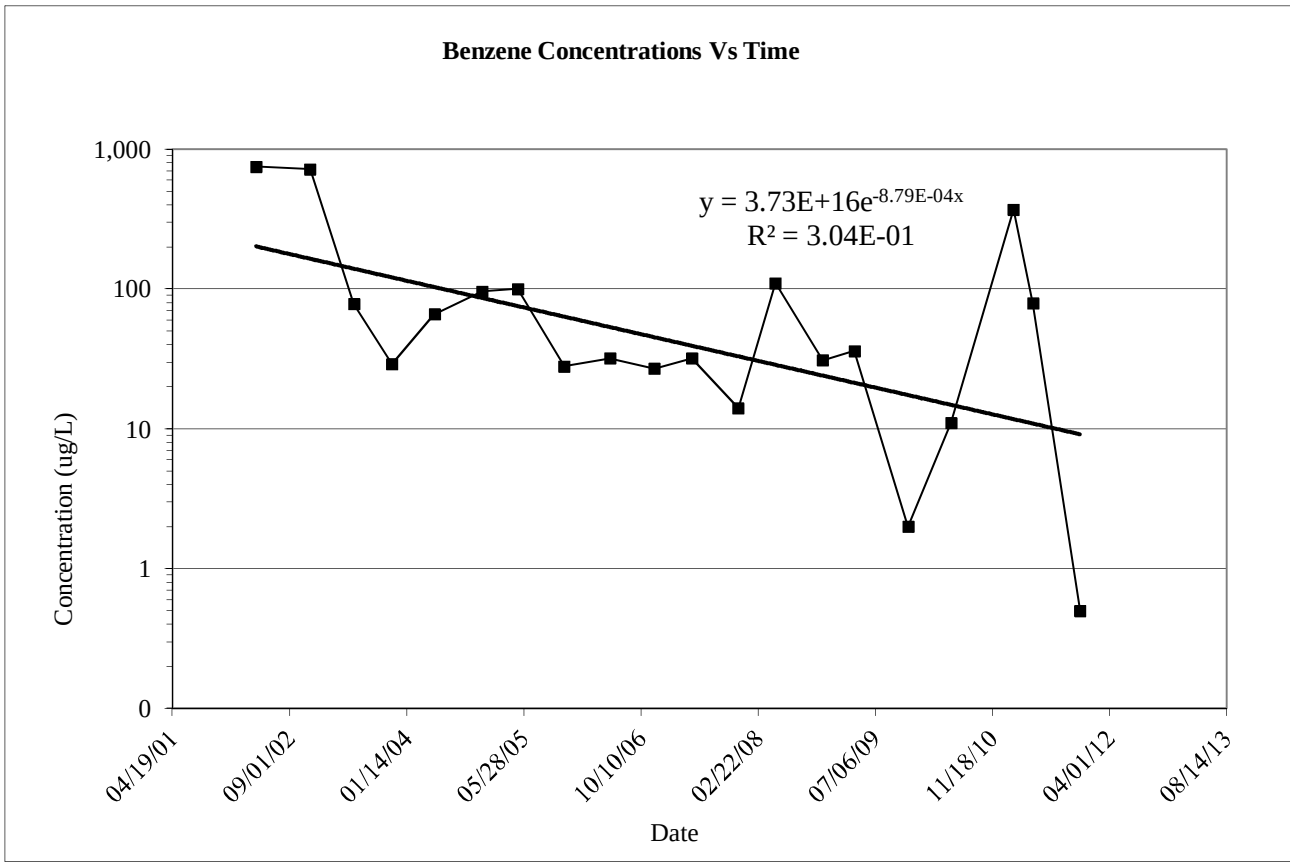
Calculation uses first-order decay equation:

$y = b\,e^{ax}$ **converts to:** $x = \ln(y/b) / a$

Given

Water Quality Objective:	y	1	ug/L
Constant:	b	3.73E+16	
Constant:	a	-8.79E-04	
Date of Peak Concentration:		4/11/2002	

Estimated Date to Reach WQO: (x = ln(y/b) / a) **November 6, 2018**



Estimated Time to Reach Water Quality Objective

ARCO Service Station No. 2035

Well ID: **S-5**

Constituent: **GRO**

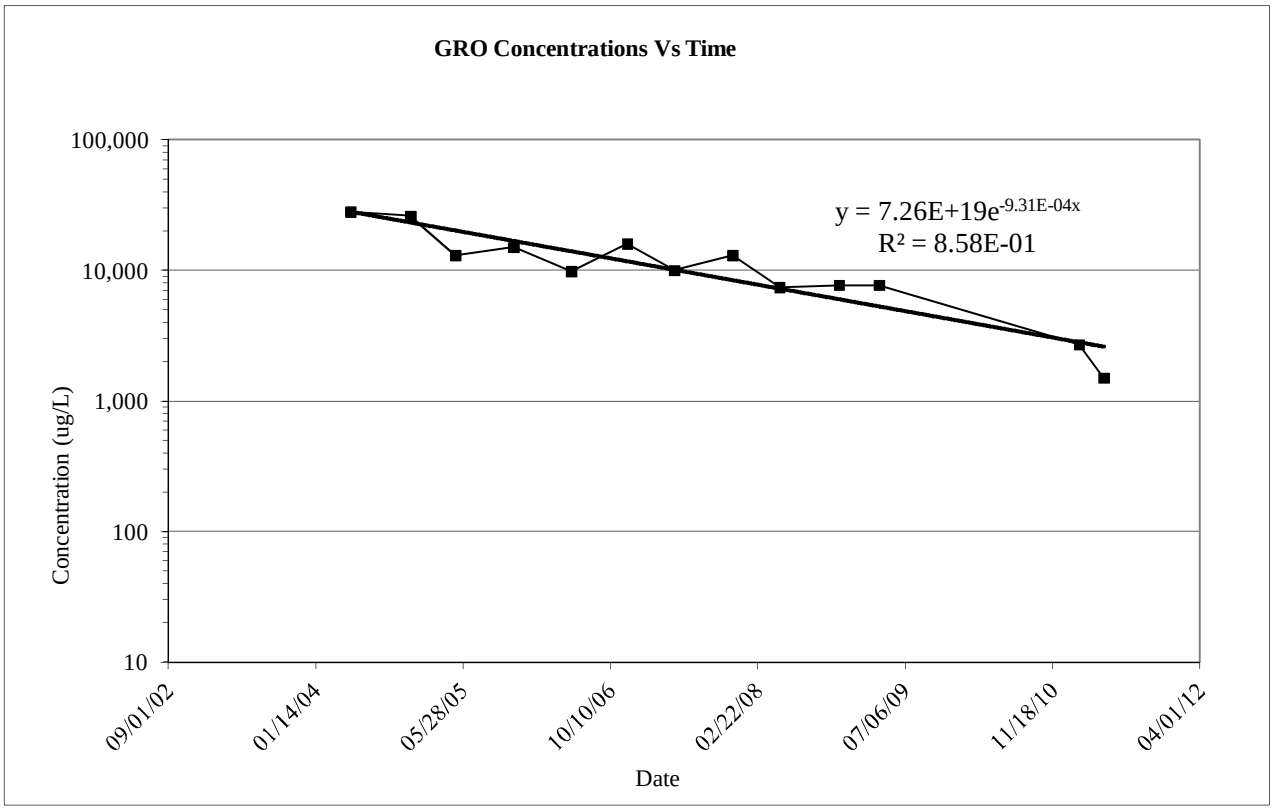
Calculation uses first-order decay equation:

$y = b\,e^{ax}$ **converts to:** $x = \ln(y/b) / a$

Given

Water Quality Objective:	y	100	ug/L
Constant:	b	7.26E+19	
Constant:	a	-9.31E-04	
Date of Peak Concentration		5/12/2004	

Estimated Date to Reach WQO: (x = ln(y/b) / a) **December 9, 2020**



Estimated Time to Reach Water Quality Objective

ARCO Service Station No. 2035

Well ID: **S-5**

Constituent: **Benzene**

Calculation uses first-order decay equation:

$y = b\,e^{ax}$ **converts to:** $x = \ln(y/b) / a$

Given

Water Quality Objective:	y	1	ug/L
Constant:	b	3.88E+26	
Constant:	a	-1.41E-03	
Date of Peak Concentration		12/1/2004	

Estimated Date to Reach WQO: (x = ln(y/b) / a) **November 16, 2018**