Chevron

Global Gas

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RECEIVED

3:11 pm, Feb 24, 2011
Alameda County
Environmental Health

February 18, 2010

Mr. Jerry Wickham
Department of Environmental Health
Alameda County Health Agency
1131 Harbor Bay Parkway
Alameda, California 94502

Dear Mr. Wickham:

I declare, under penalty of perjury, that the information and/or recommendations contained in URS' report titled "**SLIC Case No. RO0002892, Chevron Sunol Pipeline, 2793 Calaveras Road, Sunol, CA – Fourth Quarter 2010 Groundwater Monitoring Report**" are true and correct to the best of my knowledge at the present time.

Sincerely,

Kimberly Tourloukis

K. H. (Kimberly) Tourloukis

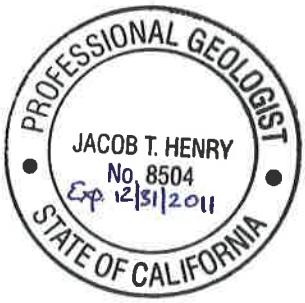
KHT/rmf

URS

This letter report ("**Fourth Quarter 2010 Groundwater Monitoring Report**") was prepared under my direct supervision. The information presented in this report is based on our review of available data obtained during our quarterly sampling activities and our previous subsurface investigation efforts. To the best of our knowledge, we have incorporated into our recommendations all relevant data pertaining to the Chevron Pipeline Company's Sunol Spill Site in Sunol, California.

The Fourth Quarter 2010 Groundwater Monitoring Report discussed herein was developed in accordance with the standard of care used to develop this type of report. The assumptions that were made and the recommendations for continued field activities were based on our professional experience and protocols reported in the literature for similar investigations.

URS Corporation
Approved by:



Jacob Henry, P.G.

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URS

February 23, 2010

Mr. Jerry Wickham
Department of Environmental Health
Alameda County Health Agency
1131 Harbor Bay Parkway
Alameda, California 94502

Subject: SLIC Case No. RO0002892, Chevron Pipeline Company, Sunol Spill, 2793 Calaveras Rd, Sunol, CA, Fourth Quarter 2010 Groundwater Monitoring Report

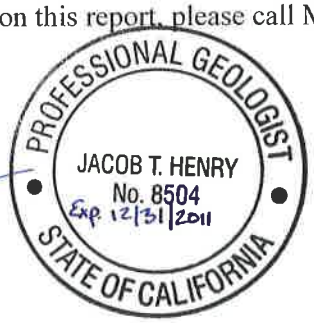
Dear Mr. Wickham:

A December 30, 2005 letter provided by the Alameda County Environmental Health Department (ACEHD) staff requested the initiation of a quarterly groundwater monitoring program for the Chevron Pipeline Company (CPL) Sunol Spill Site (Site). In response to this request and on behalf of CPL, URS Corporation (URS) has prepared the Site groundwater monitoring report for the fourth quarter 2010.

If you have any questions on this report, please call Mr. Jacob Henry of URS at 510-874-3252.

Sincerely yours,

URS Corporation



Jacob Henry, P.G.
Senior Geologist

cc: Ms. Kimberly Tourloukis, Chevron Pipeline Company
Ms. Rachel Naccarati, URS Oakland

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Appendices:
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- Appendix B – Laboratory Analytical Results

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On December 14 and 15, 2010, URS conducted field activities to assess the groundwater conditions at the Chevron Pipeline Company (CPL) Sunol Spill Site (Site). A Site vicinity map is included as Figure 1. Monitoring well and surface water sampling locations are provided on Figure 2.

URS gauged the depth to groundwater at groundwater monitoring wells MW-1 through MW-4 and MW-8 through MW-11. URS collected groundwater samples for laboratory analysis from groundwater monitoring wells MW-1, MW-4, and MW-8 through MW-11. The groundwater elevation in groundwater monitoring well MW-2 was only 0.18 feet above the bedrock. Therefore, MW-2 was determined to be hydraulically disconnected from the unconfined groundwater bearing zone. The groundwater elevation in monitoring well MW-3 was below bedrock and hydraulically disconnected from the unconfined groundwater bearing zone. Therefore, MW-2 and MW-3 were not sampled as part of this sampling event. URS also collected a surface water sample from the very small stream, located northwest of the release location. Groundwater monitoring wells MW-5 through MW-7 were abandoned on June 23, 2008, and are no longer a part of the groundwater monitoring program.

1.1 SITE HYDROGEOLOGY

Prior to collecting groundwater samples, depth to groundwater measurements were recorded from groundwater monitoring wells MW-1 through MW-4 and MW-8 through MW-11 from the top of casing using an electronic oil/water interface probe. Product was not detected in any of the groundwater monitoring wells during the fourth quarter 2010. Depth to groundwater measurements are presented in Table 1 and calculated groundwater elevations above mean sea level (msl) are presented in Table 2.

Unconfined Water Bearing Zone

The groundwater surface elevation decreased in all groundwater monitoring wells (MW-1 through MW-4 and MW-8 through MW-11) relative to the last sampling event in September 2010. The groundwater surface elevation change at MW-2 and MW-3 resulted in hydraulic disconnection. The groundwater elevations for groundwater monitoring wells MW-1 through MW-4 and MW-9 through MW-11 were 290.93, 291.03, 292.60, 292.06, 290.47, 290.14, and 290.33 feet above msl, respectively. The groundwater elevation for MW-8, which is screened in an apparent hillside groundwater recharge source for the Valley Crest Tree Company's (nursery) unconfined groundwater bearing zone, was 313.67 feet above msl.

Based on groundwater level data from MW-1, MW-4, and MW-9 through MW-11, the local groundwater flow direction within the nursery's unconfined water-bearing zone is in a northeast direction with a calculated hydraulic gradient of 0.02 feet/feet. The seasonal groundwater recharge from the hillside appears to flow into the unconfined nursery water-bearing zone on a limited basis. Groundwater monitoring wells MW-2 and MW-3 were not included with the groundwater contours because the groundwater elevations in monitoring wells MW-2 and MW-3 were slightly above or below the bedrock hydraulically disconnecting the wells from the water bearing zone. MW-8 was not included with the groundwater contours, because the well is screened in a different groundwater bearing zone.

Figure 3 provides groundwater contours for the unconfined groundwater bearing zone as well as bedrock surface elevations for the gravel-siltstone contact for comparison.

2.1 QUARTERLY MONITORING ACTIVITIES

On December 14 and 15, 2010 URS measured the depth to groundwater at each groundwater monitoring well and conducted groundwater sampling. The rationale for the method used at each groundwater monitoring well is described below:

- MW-1, MW-4, and MW-9 through MW-11 were sampled using low-flow methods.
- MW-8 was sampled using a disposable bailer.
- A surface water sample was collected using a clean disposable cup from the very small stream northwest of the release location.

2.1.1 MW-1 and MW-9 Sorbent Booms

From March 2007 until May 2009, URS placed sorbent booms (booms) in MW-1 and MW-9 as an interim remedial measure. The booms were effective in passively collecting and facilitating degradation of petroleum hydrocarbons within the groundwater monitoring wells and allowing for quarterly groundwater sample collection. Since May 2009, MW-1 and MW-9 have been gauged monthly, including during the fourth quarter 2010 groundwater monitoring event, with no measurable product observed. URS will continue to monitor MW-1 and MW-9 during the monthly groundwater gauging events for product.

2.1.2 MW-1, MW-4, and MW-9 through MW-11

Each groundwater monitoring well was purged at low-flow rates of 200-400 milliliters per minute (mL/min). Low-flow rates were adjusted according to the groundwater recharge at each groundwater monitoring well. The low-flow groundwater sampling forms are included in Appendix A.

In addition to monitoring the water level at each groundwater monitoring well during low-flow sampling, temperature, pH, conductivity, oxidation reduction potential (ORP), and dissolved oxygen (DO) of the purged groundwater were measured using an in-line flow-through cell and multi-parameter Horiba W-22. The multi-parameter device was calibrated prior the sampling event. During purging, the parameter readings described above were recorded every 3 minutes until the parameters stabilized.

Parameters were considered to be stable when three consecutive readings were within the following guidelines: pH +/- 0.2 pH units, conductivity +/- 3% of reading, ORP +/- 20 millivolts (mV), DO +/- 0.2 milligrams per liter (mg/L).

After monitoring all field parameters, the flow through cell was detached and groundwater samples were collected directly from the pump tubing.

2.1.3 MW-8

A disposable bailer was used to purge MW-8. MW-8 went dry before three well volumes were purged. MW-8 was allowed to re-charge before a sample was collected.

2.1.4 Surface Water Sample

The sampling location along the very small stream is located at the base of the alluvial terrace within the Alameda Creek floodplain and is shown on Figure 2. The former sampling point (SW-Creek, sampled prior to the first quarter of 2007) is also provided on Figure 2 for reference. To the west, beyond the current sampling location, the very small stream fans out into the floodplain and surface flow terminates

within floodplain grasses. A stream sample was collected on December 15, 2010 using a clean disposable container.

3.1 ANALYTICAL PROGRAM

The groundwater samples from groundwater monitoring wells MW-1, MW-4, and MW-8 through MW-11 were collected in clean laboratory provided containers. The containers were labeled with unique project specific identification, packed to prevent breakage, and placed on ice in a cooler with a trip blank immediately after collection. The samples were submitted to Lancaster Analytical Laboratory in Lancaster, Pennsylvania, a California Certified Laboratory, under URS chain-of-custody procedures. The samples were analyzed on a standard turn-around-time.

Groundwater monitoring wells MW-2 and MW-3 were not sampled because groundwater levels were slightly above or below the bedrock.

Groundwater samples collected during quarterly sampling activities were analyzed for the following parameters:

Gasoline Compounds

- Total petroleum hydrocarbons – gasoline range organics (TPH-GRO) by N. CA LUFT GRO
- Benzene, toluene, ethylbenzene, xylenes (BTEX) by USEPA Method 8260B

Geochemical Indicator Parameters

- Nitrate and sulfate by USEPA Method 300.0
- Total manganese and dissolved iron by USEPA Method 6010B
- Ferrous iron by SM20 Method 3500-FE B Modified
- Methane by USEPA Method 8015B Modified
- Alkalinity including breakdown products by USEPA Method 310.1
- Total dissolved solids (TDS) by USEPA Method 160.1

Due to the minimal amount of groundwater available at MW-8, groundwater for geochemical parameters was not collected.

3.2 GROUNDWATER ANALYTICAL RESULTS DISCUSSION

A tabulated summary of the analytical results for the gasoline compounds is presented in Table 3. Complete laboratory analytical results and chain of custody forms are presented as Appendix B.

3.2.1 Unconfined Water-Bearing Zone Monitoring Wells

The unconfined groundwater bearing zone wells sampled during the fourth quarter sampling event included MW-1, MW-4, and MW-8 through MW-11. The fourth quarter 2010 groundwater sample results are as follows:

- MW-1 contained TPH-GRO at 1,900 micrograms per liter (µg/L), benzene at 0.8 µg/L, toluene at 1 µg/L, ethylbenzene at 0.7 µg/L, and total xylenes at 3 µg/L. TPH-GRO sample results decreased since the sampling event in March 2010, however, benzene, toluene, ethylbenzene, and total xylenes have remained constant in comparison with the previous sample results. TPH-GRO and BTEX concentrations have decreased since sampling activities were started in 2006. Monitoring well MW-1 has not been consistently sampled due to groundwater being hydraulically disconnected from the aquifer.
- MW-4 contained total xylenes at 0.8 µg/L. This is the first detection of total xylenes since August 2006.

- MW-8 contained TPH-GRO at 78,000 µg/L, benzene at 2,000 µg/L, toluene at 15,000 µg/L, ethylbenzene at 2,800 µg/L, and total xylenes at 15,000 µg/L. Results remained constant since the sampling event in September 2010.
- MW-9 contained TPH-GRO at 9,100 µg/L, benzene at 6 µg/L, toluene at 2 µg/L, ethylbenzene at 80 µg/L, and total xylenes at 340 µg/L. Sample results have decreased for TPH-GRO, ethylbenzene and xylenes and increased for benzene and toluene since the September 2010 sampling event.
- MW-10 contained toluene at 1 µg/L. All other analytical results from MW-10 and MW-11 were below laboratory method detection limits for TPH-GRO and BTEX.

Groundwater analytical results are presented in Table 3.

3.2.2 Surface Water Sample

A surface water sample was collected on December 15, 2010. TPH-GRO and BTEX were below method detection limits in the sample collected from the stream (Table 3).

3.2.3 Geochemical Analytical Results

The groundwater samples collected from MW-9 through MW-11 were also analyzed for geochemical parameters. Geochemical parameters were not collected from the sample collected from MW-8 due to the lack of groundwater in the well. Overall, the geochemical parameters indicate a low oxygen (anaerobic) environment. URS will continue to collect geochemical parameters when possible from all monitoring wells. Current and historical geochemical results are presented in Table 4.

3.2.3.1 Oxidation Reduction Potential

ORP in groundwater generally ranges from -400 mV (reducing conditions) to +800 mV (oxidizing conditions). ORP levels in MW-1 ranged from -193 mV to 88.15 mV. ORP levels in MW-8 ranged from -165 mV to -74 mV. ORP levels in MW-9 ranged from -231 mV to 4 mV. In general, reducing conditions appear to exist at the Site.

3.2.3.2 Dissolved Oxygen

DO is the most thermodynamically favored electron acceptor used in the aerobic biodegradation of petroleum hydrocarbons. DO concentrations in MW-1 ranged from 0.0 milligrams per liter (mg/L) to 2.45 mg/L DO concentrations in MW-8 ranged from 0.0 mg/L to 0.05 mg/L. DO concentrations in MW-9 ranged from 0.0 mg/L to 3.37 mg/L. Recent DO concentrations in all groundwater monitoring wells have reached 0.0 mg/L indicating anaerobic conditions at the Site.

3.2.3.3 Nitrates

After DO has been depleted in the groundwater, nitrate may be consumed during the anaerobic biodegradation of TPH-g and BTEX. In this process, called denitrification, nitrate is reduced to nitrite and ultimately to nitrogen gas. Reduced nitrate concentrations in a hydrocarbon-impacted area compared to the areas outside the plume suggest that anaerobic biodegradation is occurring under nitrate-reducing conditions. In general, nitrate levels in MW-2 through MW-4, MW-10, and MW-11 are higher than in MW-1, MW-8, and MW-9.

Nitrate concentrations in MW-1 ranged from <0.25 mg/L to 10.3 mg/L; however, overall nitrate concentrations are much lower. Nitrate concentrations in MW-8 ranged from <0.25 mg/L to 0.27 mg/L.

Nitrate concentrations in MW-9 ranged from <0.25 mg/L to 0.89 mg/L. The lack of nitrate may indicate that it has either been consumed by the denitrification process or is not naturally present at the Site.

3.2.3.4 Ferrous Iron

After both DO and nitrate are depleted in anaerobic groundwater, ferric iron in soil may be consumed by anaerobic biodegradation. In this process, ferric iron in soil is reduced to ferrous iron, which is soluble in water. Therefore, if groundwater has relatively high levels of ferrous iron, anaerobic biodegradation may be occurring.

Ferrous iron concentrations in MW-1 ranged from <0.008 mg/L to 0.22 mg/L. Ferrous iron concentrations in MW-8 ranged from 0.14 mg/L to 7.8 mg/L. Ferrous iron concentrations in MW-9 ranged from 0.099 mg/L to 3.3 mg/L. In general, elevated levels of ferrous iron are present at MW-8 indicating that anaerobic biodegradation is occurring at that location.

3.2.3.5 Sulfate

After DO, nitrate and ferric iron are depleted in anaerobic groundwater; sulfate may be consumed in the anaerobic biodegradation process. Sulfate is reduced to sulfide, which reacts with ferric iron on soil particles to precipitate out as various sulfides of iron and can also lead to higher ferrous iron concentrations. Iron sulfides are re-oxidized to iron oxides in the presence of oxygen in the vadose zone. Any dissolved sulfides are oxidized at the plume fringes where impacted groundwater mixes with non-impacted groundwater. If reported sulfate concentrations vary inversely with hydrocarbon concentrations, anaerobic biodegradation of fuel hydrocarbons is likely occurring under sulfate-reducing conditions.

Sulfate concentrations in MW-1 ranged from 26.4 mg/L to 108 mg/L. Sulfate concentrations in MW-8 ranged from 1.7 mg/L to 90.2 mg/L. Sulfate concentrations in MW-9 ranged from 4.5 mg/L to 60.5 mg/L. The elevated levels of sulfate in the nursery groundwater (MW-1 and MW-9) indicate that sulfate reduction is not occurring in this area. However, lower levels of sulfate in the groundwater at MW-8 (eastern side of Calaveras Road) indicate sulfate reduction may be ongoing.

It is worth noting the background levels of sulfate at MW-2 are slightly higher than those observed at MW-1 and MW-9 further indicating that sulfate reduction is not occurring in the nursery at this time.

3.2.3.6 Methane

The final step in the anaerobic biodegradation process is methanogenesis. When all soluble electron acceptors such as DO, nitrate, ferric iron, and sulfate are depleted, groundwater conditions become conducive to fermentation, and methane is generated by methanogenesis. The only electron acceptor available for the methanogenesis is carbon from carbon dioxide. This source of carbon dioxide is primarily from the by-products of previous stages of anaerobic biodegradation. Without methanogenesis, a great deal of carbon (in the form of fermentation products) would accumulate in anaerobic environments.

It was observed that the methane levels in MW-1 (0.017 mg/L) and MW-9 (0.025 mg/L) were low with sulfate levels being high, indicating methanogenesis is not occurring. However, the methane level observed at MW-8 (0.59 mg/L) was slightly higher with lower sulfate levels indicating methanogenesis is occurring.

In conclusion, biodegradation parameters indicate that anaerobic conditions exist within the plume and anaerobic biodegradation is occurring within the plume. However, the soluble electron acceptors within the plume are depleted and may be limiting the rate of biodegradation activity. Hence, addition of electron

acceptors to stimulate biodegradation activity appears to be a potentially viable remedial approach for the Site.

3.2.3.7 TPH-g and BTEX Concentration Trends

TPH-g and BTEX concentrations have steadily decreased since the pipeline release in all wells except MW-8 (Figure 2). The highest concentrations of TPH-g (990 µg/L to 78,000 µg/L) were in groundwater at monitoring well MW-8. The highest concentrations of benzene (76 µg/L to 2,000 µg/L) were in groundwater at monitoring well MW-8. The highest concentrations of toluene (57 µg/L to 16,000 µg/L) were in groundwater at monitoring well MW-8. The highest concentrations of ethylbenzene (69 µg/L to 3,200 µg/L) were in groundwater at monitoring well MW-9. The highest concentrations of total xylenes (340 µg/L to 17,000 µg/L) were in groundwater at monitoring well MW-9.

SUMMARY OF QA/QC REVIEW PARAMETERS

The quality assurance/quality control (QA/QC) program includes using standard sample collection procedures in the field and established analytical methodologies in the laboratory. Laboratory and field QC sample results were evaluated to assess the quality of the individual sample results and overall method performance. Analytical performance was evaluated on a "batch QC" basis by evaluating the QC sample results for groups of samples that were prepared and analyzed together. The data evaluation performed included a review of:

- Blanks (laboratory method blanks and trip blanks)
- Spikes (laboratory control sample spikes, matrix control spikes, blank spikes and surrogate spikes)
- Duplicates (laboratory control sample duplicates and field duplicates)
- Sample Integrity (chain-of-custody documentation, sample preservation, and holding time compliance)

Method Holding Times

Analytical methods have prescribed holding times. The method holding time is defined as the maximum amount of time after collection that a sample may be held prior to extraction and/or analysis. Sample integrity becomes questionable for samples extracted and/or analyzed outside of the prescribed holding times due to degradation and/or volatilization of the sample. All samples were analyzed within the appropriate hold times, with the exception of ferrous iron. The ferrous iron hold time of 24 hours for Method SM20 3500 Fe B was exceeded in all samples submitted for analysis. The ferrous iron detections in these samples were qualified as estimated and flagged with a "J."

Method Blanks

Method blanks are prepared in the laboratory using deionized, distilled (Reagent Grade Type II) water. Method blanks are extracted and/or analyzed following the same procedures as an environmental sample. Analysis of the method blank indicates potential sources of contamination from laboratory procedures (e.g. contaminated reagents, improperly cleaned laboratory equipment) or persistent contamination due to the presence of certain compounds in the ambient laboratory environment. The QA/QC review identifies method blanks with detections of target analytes and evaluates the effect of the detections on associated sample results. Total dissolved solids (TDS) and manganese were detected in the method blanks in Report 1225485. However, the TDS and manganese detections in the field samples were greater than ten times the method blank contamination, so no qualifications were necessary. All other reported results for the

laboratory method blanks were non-detect (less than the laboratory reporting limit), indicating no evidence of contamination from laboratory instrumentation.

Trip Blanks

Trip blanks are samples of deionized, distilled (Reagent Grade Type II) water that are prepared in the laboratory, taken to the field, retained on site throughout sample collection, returned to the laboratory, and analyzed with the environmental samples. The QA/QC review identifies trip blanks with detections of target analytes and evaluates the effect of the detections on associated sample results. Two trip blanks were analyzed during this sampling event. The trip blanks did not have detections of any target analytes, indicating no evidence of contamination during shipment of the laboratory samples.

Matrix Spikes and Laboratory Control Samples

Matrix spikes (MS), matrix spike duplicates (MSD), laboratory control samples (LCS) and laboratory control sample duplicates (LCSD) are analyzed by the laboratory to evaluate the accuracy and precision of the sample extraction and analysis procedures and to evaluate potential matrix interference. Matrix interference, the effect of the sample matrix on the analysis, may partially or completely mask the response of analytical instrumentation to the target analyte(s). Matrix interference may have a varying impact on the accuracy and precision of the extraction and/or analysis procedures, and may bias the sample results high or low.

The MS or MSD is prepared by adding a known quantity of the target compound(s) to a sample. The sample is then extracted and/or analyzed as a typical environmental sample and the results are reported as percent recovery. The spike percent recovery is defined as:

$$\text{Recovery (\%)} = \frac{\text{spike analysis result - original sample concentration}}{\text{concentration of spike addition}} \text{ x100\%}$$

MS and MSD recoveries are reviewed for compliance with laboratory-established control limits to evaluate the accuracy of the extraction and/or analysis procedures.

LCS and LCSD are prepared exactly like MS and MSD using a clean control matrix rather than an environmental sample. Typical control matrices include deionized, distilled water and clean sand. LCS and LCSD are used to evaluate laboratory accuracy independent of matrix effects.

The QA/QC review identifies spike recoveries outside laboratory control limits and evaluates the effect of these recoveries on the associated sample results. All reported LCS/LCSD and MS/MSD sample recoveries were within laboratory QC limits, or were outside laboratory QC limits but did not require qualification.

Laboratory Duplicate Analyses

Duplicate analyses are performed by the laboratory to evaluate the precision of analytical procedures. The laboratory may perform MSD and/or LSD analyses.

Precision is evaluated by calculating a relative percent difference (RPD) using the following equation:

$$\text{RPD (\%)} = \left| \frac{\text{(Spike Concentration} - \text{Spike Duplicate Concentration)}}{\frac{1}{2}\text{(Spike Concentration} + \text{Spike Duplicate Concentration)}} \right| \text{ x 100\%}$$

The RPD is compared to laboratory-established control limits to evaluate analytical precision. The QA/QC review identifies RPDs outside laboratory control limits and evaluates the effect of these recoveries on the associated sample results. All laboratory duplicate analyses were within laboratory QC limits, or were outside laboratory QC limits but did not require qualification.

Field Duplicate Analyses

Field duplicate samples are collected in the field and analyzed to evaluate the heterogeneity of the matrices. No field duplicate samples were collected during this sampling event.

Surrogate Recoveries

Surrogates are organic compounds that are similar to the target analytes in terms of their chemical structures and response to the analytical instrumentation, but are not usually detected in environmental samples. Surrogates are added to each environmental and laboratory QC sample to monitor the effect of the matrix on the accuracy of the extraction and/or analysis of organic analytes. Results for surrogate analyses are reported in terms of percent recovery (defined above). Reported recoveries are compared to laboratory-established control limits to evaluate sample-specific accuracy. The QA/QC review identifies surrogate recoveries outside laboratory control limits and evaluates the effect of these recoveries on the sample results. All surrogate recoveries were within laboratory QC limits, or were outside laboratory QC limits but did not require qualification.

EXPLANATION OF ANALYTICAL DATA QUALIFIERS

The analytical data were reviewed and qualified following USEPA guidelines for organic data review (USEPA, 2008) and inorganic data review (USEPA, 2010). A "J" qualifier indicates that the analyte was positively identified, but that the associated numerical value is an approximate concentration of the analyte in the sample. A "UJ" qualifier indicates that the analyte was not detected above the reported sample quantitation limit (i.e., the laboratory reporting limit). However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. An "R" qualifier indicates that the sample results were rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria, and therefore, the presence or absence of the analyte could not be verified.

SUMMARY OF QA/QC REVIEW FINDINGS

The results of the data evaluation are summarized in the following paragraphs.

The ferrous iron hold time of 24 hours for Method SM20 3500 Fe B was exceeded in all samples submitted for analysis. The ferrous iron detections in these samples were qualified as estimated and flagged with a "J."

Chain-of-custody documentation is complete and consistent. Samples were preserved as required per method specifications. All samples were analyzed within method specified holding times, except as noted. Based on the data quality evaluation, no systematic problems were detected and the overall data objectives for sample contamination, precision, accuracy, and sample integrity were met. These analytical data are of acceptable quality and may be used for their intended purposes.

Quarterly groundwater monitoring field activities conducted on December 14 and 15, 2010 included measuring the depth to groundwater at monitoring wells MW-1 through MW-4 and MW-8 through MW-11 and collecting analytical samples from groundwater monitoring wells MW-1, MW-4, and MW-8 through MW-11, and the stream. The findings are as follows:

- Free product was not observed in any of the groundwater monitoring well during the fourth quarter 2010 groundwater monitoring activities.
- The groundwater elevations decreased in all groundwater monitoring wells except MW-1 and MW-3 since the last sampling event in September 2010. MW-2 and MW-3 were not included included in groundwater contours because the monitoring wells were hydraulically disconnected from the formation.
- MW-1 contained TPH-GRO at a concentration 1,900 µg/L, benzene at 0.8 µg/L, toluene at 1 µg/L, ethylbenzene at 0.7 µg/L, and total xylenes at 3 µg/L. TPH-GRO and BTEX concentrations have decreased since sampling activities were started in 2006. Monitoring well MW-1 has not been consistently sampled due to groundwater being hydraulically disconnected from the aquifer.
- MW-4 contained total xylenes at 0.8 µg/L. This is the first detection in the monitoring well since August 2006.
- MW-8 contained TPH-GRO at 78,000 µg/L, benzene at 2,000 µg/L, toluene at 15,000 µg/L, ethylbenzene at 2,800 µg/L, and total xylenes at 15,000 µg/L. Sample results have remained constant since the sampling event in September 2010.
- MW-9 contained TPH-GRO at 9,100 µg/L, benzene at 6 µg/L, toluene at 2 µg/L, ethylbenzene at 80 µg/L, and total xylenes at 340 µg/L. Sample results have remained constant since the September 2010 sampling event which is associated with the increased water levels in the aquifer.
- MW-10 contained toluene at 1 µg/L. Toluene has not been detected in any of the samples collected from MW-10 since December 2009.
- Groundwater samples collected from monitoring well MW-11 have remained non-detect since the sampling event in September 2010.
- Other than the initial release (August 2005), the known petroleum hydrocarbon along the hillside has had limited contact with groundwater which is the transportation mechanism for petroleum hydrocarbons to the nursery.

Based on the December 14 and 15, 2010 field observations and analytical results URS makes the following recommendations:

- Continue monthly groundwater gauging to assess the effect of seasonal and long-term groundwater elevation fluctuations within the unconfined water-bearing zone.
- Continue semi-annual groundwater monitoring during the second and fourth quarters as approved in a letter from the ACEHD on December 9, 2010.
- Prepare a work plan to address the hillside source area by March 31, 2011.

No evaluation is thorough enough to preclude the possibility that materials that are currently considered hazardous or materials that may be considered hazardous in the future may be present at a site. Since regulatory evaluation criteria are constantly changing, concentrations of contaminants presently considered nonhazardous may, in the future, fall under different regulatory standards and require remediation. Opinions and judgments expressed herein, which are based on understanding and interpretation of current regulatory standards, should not be construed as legal opinions. This document and the information contained herein have been prepared solely for use by CPL, and reliance on this report by third parties will be at such party's sole risk.

TABLE 1
Monitoring Well Groundwater Levels
Fourth Quarter 2010 Groundwater Monitoring Report
Chevron Sunol Pipeline

Well ID	Screen Interval (feet bgs)[1]	Date	Depth to Groundwater (feet TOC-N)[2]	Depth to Product (feet TOC-N)	Product Thickness (feet)
MW-1	29.3-39.3	2/21/2006	36.34	--	--
		6/7/2006	34.28	--	--
		8/22/2006	37.11	37.08	0.03
		11/14/2006	37.05	--	--
		2/20/2007	36.14	--	--
		6/5/2007	37.21	--	--
		9/12/2007	37.67	37.55	0.12
		12/11/2007	37.49	37.46	0.03
		3/19/2008	35.94	--	--
		5/20/2008	35.51	--	--
		6/5/2008	35.69	--	--
		9/18/2008	37.62	37.61	0.01
		12/15/2008	37.53	37.52	0.01
		3/27/2009	35.24	--	--
		6/9/2009	37.05	--	--
		9/28/2009	37.61	--	--
		12/9/2009	37.56	--	--
		3/9/2010	34.41	--	--
		6/23/2010	37.49	--	--
		9/29/2010	37.36	--	--
		12/14/2010	37.11	--	--
MW-2	23.3-38.3	2/21/2006	32.19	--	--
		6/7/2006	30.23	--	--
		8/22/2006	33.11	--	--
		11/14/2006	33.01	--	--
		2/20/2007	31.93	--	--
		6/5/2007	33.23	--	--
		9/12/2007	33.62	--	--
		12/5/2007	33.52	--	--
		3/19/2008	31.76	--	--
		5/20/2008	31.41	--	--
		6/5/2008	31.56	--	--
		9/18/2008	33.65	--	--
		12/15/2008	33.59	--	--
		3/27/2009	31.14	--	--
		6/9/2009	33.08	--	--
		9/28/2009	33.62	--	--
		12/9/2009	33.61	--	--
		3/9/2010	30.36	--	--
		6/23/2010	32.66	--	--
		9/29/2010	33.41	--	--
		12/14/2010	33.12	--	--
MW-3	21.3-36.3	2/21/2006	31.97	--	--
		6/7/2006	30.91	--	--
		8/22/2006	34.66	--	--
		11/14/2006	34.71	--	--
		2/20/2007	31.66	--	--
		6/5/2007	34.63	--	--
		9/12/2007	34.71	--	--
		12/11/2007	34.77	--	--
		3/19/2008	31.64	--	--
		5/20/2008	31.26	--	--
		6/5/2008	31.45	--	--
		9/18/2008	34.81	--	--
		12/15/2008	34.79	--	--
		3/27/2009	30.87	--	--

TABLE 1
Monitoring Well Groundwater Levels
Fourth Quarter 2010 Groundwater Monitoring Report
Chevron Sunol Pipeline

Well ID	Screen Interval (feet bgs)[1]	Date	Depth to Groundwater (feet TOC-N)[2]	Depth to Product (feet TOC-N)	Product Thickness (feet)
MW-3 cont.	21.3-36.3	6/9/2009	34.48	--	--
		9/28/2009	34.82	--	--
		12/9/2009	34.83	--	--
		3/9/2010	30.60	--	--
		6/23/2010	33.94	--	--
		9/29/2010	34.80	--	--
		12/14/2010	33.05	--	--
MW-4	30.7-40.7	2/21/2006	36.72	--	--
		6/7/2006	35.76	--	--
		8/22/2006	38.79	--	--
		11/14/2006	38.84	--	--
		2/20/2007	36.54	--	--
		6/5/2007	38.77	--	--
		9/12/2007	38.93	--	--
		12/11/2008	39.00	--	--
		3/19/2008	36.29	--	--
		5/20/2008	36.27	--	--
		6/5/2008	36.38	--	--
		9/18/2008	39.03	--	--
		12/15/2008	39.03	--	--
		3/27/2009	36.10	--	--
		6/9/2009	38.62	--	--
		9/28/2009	39.04	--	--
		12/9/2009	39.09	--	--
		3/9/2010	35.69	--	--
		6/23/2010	37.41	--	--
		9/29/2010	38.98	--	--
		12/14/2010	37.61	--	--
MW-8	14.5-24.5	8/22/2006	18.71	--	--
		11/14/2006	18.73	--	--
		2/20/2007	19.23	--	--
		6/5/2007	20.48	--	--
		9/12/2007	21.47	--	--
		12/11/2007	19.58	--	--
		Q1 2008	NM	--	--
		Q2 2008	NM	--	--
		9/18/2008	21.67	--	--
		12/15/2008	20.73	--	--
		3/27/2009	19.54	--	--
		6/9/2009	23.31	--	--
		9/28/2009	22.58	--	--
		12/9/2009	20.66	20.65	0.01
		3/9/2010	18.97	--	--
		6/23/2010	19.82	--	--
		9/29/2010	22.23	22.22	0.01
		12/14/2010	20.26	--	--
MW-9	36.0-46.0	8/22/2006	42.59	42.55	0.04
		11/14/2006	42.62	42.54	0.08
		2/20/2007	41.91	41.86	0.05
		6/5/2007	42.71	42.69	0.02
		9/12/2007	43.09	43.01	0.08
		12/11/2007	42.91	--	--
		3/20/2007	41.76	41.75	0.01
		12/11/2007	42.91	--	--
		5/20/2008	41.33	--	--
		6/5/2008	41.57	--	--

TABLE 1
Monitoring Well Groundwater Levels
Fourth Quarter 2010 Groundwater Monitoring Report
Chevron Sunol Pipeline

Well ID	Screen Interval (feet bgs)[1]	Date	Depth to Groundwater (feet TOC-N)[2]	Depth to Product (feet TOC-N)	Product Thickness (feet)
MW-9 cont.	36.0-46.0	9/18/2008	43.07	--	--
		12/15/2008	43.00	--	--
		3/27/2009	41.02	--	--
		6/9/2009	42.53	--	--
		9/28/2009	43.02	--	--
		12/9/2009	42.99	--	--
		3/9/2010	39.97	--	--
		6/23/2010	41.94	--	--
		9/29/2010	42.81	--	--
		12/14/2010	42.60	--	--
MW-10	40.3-55.3	9/5/2007	54.86	--	--
		12/12/2007	46.84	--	--
		3/20/2008	44.41	--	--
		5/20/2008	44.09	--	--
		6/5/2008	43.67	--	--
		9/18/2008	45.89	--	--
		12/15/2008	45.91	--	--
		3/27/2009	43.82	--	--
		6/9/2009	45.19	--	--
		9/28/2009	45.94	--	--
		12/9/2009	46.02	--	--
		3/9/2010	42.62	--	--
		6/23/2010	44.52	--	--
		9/29/2010	45.89	--	--
		12/14/2010	45.77	--	--
MW-11	37.0-47.0	9/6/2007	Dry	--	--
		12/12/2007	42.73	--	--
		3/20/2008	37.29	--	--
		5/20/2008	37.06	--	--
		6/4/2008	37.18	--	--
		9/18/2008	38.97	--	--
		12/15/2008	39.36	--	--
		3/27/2009	36.87	--	--
		6/9/2009	38.30	--	--
		9/28/2009	39.21	--	--
		12/9/2009	39.73	--	--
		3/9/2010	36.28	--	--
		6/23/2010	37.72	--	--
		9/29/2010	44.84	--	--
		12/14/2010	39.56	--	--

Notes:
NM - Not measured
1. Screen intervals measured from feet below ground surface (feet bgs)
2. Groundwater and product levels measured from top of casing - north (TOC-N).
3. MW-5 through MW-7 abandoned 6/23/08.

TABLE 2
Monitoring Well Groundwater Elevations
Fourth Quarter 2010 Groundwater Monitoring Report
Chevron Sunol Pipeline

Well ID	Date Completed	Ground Surface Elevation (feet msl)[1]	Top of Casing Elevation (feet msl)[1, 2]	Date Measured	Groundwater Elevation (feet msl)[1]	Product Elevation (feet msl)[1]	Product Thickness (feet)
MW-1	10/20/2005	328.49	328.04	2/21/2006	291.70	--	--
				6/7/2006	293.76	--	--
				8/22/2006	290.93	290.96	0.03
				11/14/2006	290.99	--	--
				2/20/2007	291.90	--	--
				6/5/2007	290.83	--	--
				9/12/2007	290.37	--	--
				12/11/2007	290.55	290.58	0.03
				3/19/2008	292.10	--	--
				5/20/2008	292.53	--	--
				6/5/2008	292.35	--	--
				9/18/2008	290.42	290.43	0.01
				12/15/2008	290.51	290.52	0.01
				3/27/2009	292.80	--	--
				6/9/2009	290.99	--	--
				9/28/2009	290.43	--	--
				12/9/2009	290.48	--	--
				3/9/2010	293.63	--	--
				6/23/2010	290.55	--	--
				9/28/2010	290.68	--	--
				12/14/2010	290.93	--	--
MW-2	10/21/2005	324.85	324.15	2/21/2006	291.96	--	--
				6/7/2006	293.92	--	--
				8/22/2006	291.04	--	--
				11/14/2006	291.14	--	--
				2/20/2007	292.22	--	--
				6/5/2007	290.92	--	--
				9/12/2007	290.53	--	--
				12/5/2007	290.63	--	--
				3/19/2008	292.39	--	--
				5/20/2008	292.74	--	--
				6/5/2008	292.59	--	--
				9/18/2008	290.50	--	--
				12/15/2008	290.56	--	--
				3/27/2009	293.01	--	--
				6/9/2009	291.07	--	--
				9/28/2009	290.53	--	--
				12/9/2009	290.54	--	--
				3/9/2010	293.79	--	--
				6/23/2010	291.49	--	--
				9/28/2010	290.74	--	--
				12/14/2010	291.03	--	--
MW-3	10/21/2005	326.05	325.65	2/21/2006	293.68	--	--
				6/7/2006	294.74	--	--
				8/22/2006	290.99	--	--
				11/14/2006	290.94	--	--
				2/20/2007	293.99	--	--
				6/5/2007	291.02	--	--
				9/12/2007	290.94	--	--
				12/11/2007	290.88	--	--
				3/19/2008	294.01	--	--
				5/20/2008	294.39	--	--
				6/5/2008	294.20	--	--
				9/18/2008	290.84	--	--
				12/15/2008	290.86	--	--

TABLE 2
Monitoring Well Groundwater Elevations
Fourth Quarter 2010 Groundwater Monitoring Report
Chevron Sunol Pipeline

Well ID	Date Completed	Ground Surface Elevation (feet msl)[1]	Top of Casing Elevation (feet msl)[1, 2]	Date Measured	Groundwater Elevation (feet msl)[1]	Product Elevation (feet msl)[1]	Product Thickness (feet)
MW-3 cont.				3/27/2009	294.78	--	--
				6/9/2009	291.17	--	--
				9/28/2009	290.83	--	--
				12/9/2009	290.82	--	--
				3/9/2010	295.05	--	--
				6/23/2010	291.71	--	--
				9/28/2010	290.85	--	--
				12/14/2010	292.60	--	--
MW-4	1/31/2006	329.97	329.67	2/21/2006	292.95	--	--
				6/7/2006	293.91	--	--
				8/22/2006	290.88	--	--
				11/14/2006	290.83	--	--
				2/20/2007	293.13	--	--
				6/5/2007	290.90	--	--
				9/12/2007	290.74	--	--
				12/11/2007	290.67	--	--
				3/19/2008	293.38	--	--
				5/20/2008	293.40	--	--
				6/5/2008	293.29	--	--
				9/18/2008	290.64	--	--
				12/15/2008	290.64	--	--
				3/27/2009	293.57	--	--
				6/9/2009	291.05	--	--
				9/28/2009	290.63	--	--
				12/9/2009	290.58	--	--
				3/9/2010	293.98	--	--
				6/23/2010	292.26	--	--
				9/28/2010	290.69	--	--
				12/14/2010	292.06	--	--
MW-8	8/15/2006	335.23	333.93	8/22/2006	315.22	--	--
				11/14/2006	315.20	--	--
				2/20/2007	314.70	--	--
				6/5/2007	313.45	--	--
				9/12/2007	312.46	--	--
				12/11/2007	314.35	--	--
				Q1 2008	NM	--	--
				Q2 2008	NM	--	--
				9/18/2008	312.26	--	--
				12/15/2008	313.20	--	--
				3/27/2009	314.39	--	--
				6/9/2009	310.62	--	--
				9/28/2009	311.35	--	--
				12/9/2009	313.27	313.28	0.01
				3/9/2010	314.96	--	--
				6/23/2010	314.11	--	--
				9/28/2010	311.70	311.71	0.01
				12/14/2010	313.67	--	--
MW-9	8/16/2006	333.49	333.07	8/22/2006	290.48	290.52	0.04
				11/14/2006	290.45	290.53	0.08
				2/20/2007	291.16	291.21	0.05
				6/5/2007	290.36	290.38	0.02
				9/12/2007	289.98	290.06	0.08
				12/11/2007	290.16	--	--
				3/20/2007	291.31	--	--
				12/11/2007	290.16	--	--

TABLE 2
Monitoring Well Groundwater Elevations
Fourth Quarter 2010 Groundwater Monitoring Report
Chevron Sunol Pipeline

Well ID	Date Completed	Ground Surface Elevation (feet msl)[1]	Top of Casing Elevation (feet msl)[1, 2]	Date Measured	Groundwater Elevation (feet msl)[1]	Product Elevation (feet msl)[1]	Product Thickness (feet)
MW-9 cont.				5/20/2008	291.74	--	--
				6/5/2008	291.50	--	--
				9/18/2008	290.00	--	--
				12/15/2008	290.07	--	--
				3/27/2009	292.05	--	--
				6/9/2009	290.54	--	--
				9/28/2009	290.05	--	--
				12/9/2009	290.08	--	--
				3/9/2010	293.10	--	--
				6/23/2010	291.13	--	--
				9/28/2010	290.47	--	--
MW-10	9/5/2007	336.55	335.89	9/12/2007	281.03	--	--
				12/12/2007	289.05	--	--
				3/20/2008	291.48	--	--
				5/20/2008	291.80	--	--
				6/5/2008	292.22	--	--
				9/18/2008	290.00	--	--
				12/15/2008	289.98	--	--
				3/27/2009	292.07	--	--
				6/9/2009	290.70	--	--
				9/28/2009	289.95	--	--
				12/9/2009	289.87	--	--
				3/9/2010	293.27	--	--
				6/23/2010	291.37	--	--
				9/28/2010	290.00	--	--
				12/14/2010	290.12	--	--
MW-11	9/6/2007	330.29	329.89	9/12/2007	Dry	--	--
				12/12/2007	287.16	--	--
				3/20/2008	292.60	--	--
				5/20/2008	292.83	--	--
				6/5/2008	292.71	--	--
				9/18/2008	290.92	--	--
				12/15/2008	290.53	--	--
				3/27/2009	293.02	--	--
				6/9/2009	291.59	--	--
				9/28/2009	290.68	--	--
				12/9/2009	290.16	--	--
				3/9/2010	293.61	--	--
				6/23/2010	292.17	--	--
				9/28/2010	285.05	--	--
				10/14/2010	290.33	--	--

Notes:
NM - Not measured
1. All elevations displayed in feet above average mean sea level (msl).
2. Groundwater and product elevations calculated from depths as measured from top of casing - north.
MW-1 through MW-3 surveyed on October 31, 2005.
MW-4 through MW-7 surveyed on February 14, 2006.
MW-8 and MW-9 surveyed on November 10, 2006.
MW-10 and MW-11 surveyed on September 13, 2007.
MW-5 through MW-7 abandoned 6/23/08.

TABLE 3
Summary of Groundwater Analytical Results
Gasoline Compounds
Fourth Quarter 2010 Groundwater Monitoring Report
Chevron Sunol Pipeline

Well ID	Date	Gasoline Compounds				
		TPH-GRO	Benzene	Toluene	Ethylbenzene	Xylenes
		(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
MW-1	2/22/2006	**57,000**	**38**	**2,700**	**3,000**	**8,700**
	6/8/2006	**37,000**	**10**	**330**	**120**	**8,200**
	Q3 2006[2)]	NS	NS	NS	NS	NS
	11/15/2006	**38,000**	**14**	**110**	**38**	**5,900**
	2/21/2007	**18,000**	**4**	**7**	**8**	**1,600**
	6/5/2007	**17,000**	**3**	**7**	**4**	**1,100**
	Q3 2007[2)]	NS	NS	NS	NS	NS
	Q4 20072[)]	NS	NS	NS	NS	NS
	3/19/2008	**12,000**	**0.8**	**1**	**1**	**320**
	6/6/2008	**8,200**	**1**	**2**	**3**	**150**
	Q3 2008[3)]	NS	NS	NS	NS	NS
	Q4 2008[3)]	NS	NS	NS	NS	NS
	3/31/2009	**3,700**	<0.5	**1**	**1**	**44**
	6/10/2009	**5,000**	<0.5	<0.5	**0.7**	**13**
	Q3 2009 [3)]	NS	NS	NS	NS	NS
	Q4 2009 [3)]	NS	NS	NS	NS	NS
	3/10/2010	**3,800**	<0.5	<0.5	<0.5	**4**
	Q2 2010 [3)]	NS	NS	NS	NS	NS
	Q3 2010 [3)]	NS	NS	NS	NS	NS
	12/14/2010	**1,900**	**0.8**	**1**	**0.7**	**3**
MW-2	2/21/2006[1)]	<50 / <50	<0.5 / <0.5	<0.5 / <0.5	<0.5 / <0.5	<0.5 / <0.5
	6/7/2006	<50	<0.5	<0.5	<0.5	<0.5
	8/23/2006	<50	0.5	<0.5	<0.5	<0.5
	11/14/2006	<50	**0.7**	<0.5	<0.5	<0.5
	2/21/2007	<50	<0.5	<0.5	<0.5	<0.5
	6/5/2007	<50	<0.5	<0.5	<0.5	<0.5
	Q3 2007[3)]	NS	NS	NS	NS	NS
	Q4 2007[3)]	NS	NS	NS	NS	NS
	3/19/2008	<50	<0.5	<0.5	<0.5	<0.5
	6/5/2008 [1)]	<50 / <50	<0.5 / <0.5	<0.5 / <0.5	<0.5 / <0.5	<0.5 / <0.5
	Q3 2008[3)]	NS	NS	NS	NS	NS
	Q4 2008[3)]	NS	NS	NS	NS	NS
	3/27/2009	<50	<0.5	<0.5	<0.5	<0.5
	Q2 2009 [3)]	NS	NS	NS	NS	NS
	Q3 2009 [3)]	NS	NS	NS	NS	NS
	Q4 2009 [3)]	NS	NS	NS	NS	NS
	3/10/2010	<50	<0.5	<0.5	<0.5	**2**
	6/23/2010	<50	<0.5	<0.5	<0.5	<0.5
	Q3 2010 [3)]	NS	NS	NS	NS	NS
	Q4 2010 [3)]	NS	NS	NS	NS	NS
MW-3	2/21/2006	<50	<0.5	<0.5	<0.5	<0.5
	6/7/2006	<50	<0.5	<0.5	<0.5	<0.5
	8/23/2006	**170**	<0.5	<0.5	<0.5	<0.5
	11/14/2006	**86**	<0.5	**1**	<0.5	<0.5
	2/21/2007	<50	<0.5	<0.5	<0.5	<0.5
	Q2 2007[3)]	NS	NS	NS	NS	NS
	Q3 2007[3)]	NS	NS	NS	NS	NS

TABLE 3
Summary of Groundwater Analytical Results
Gasoline Compounds
Fourth Quarter 2010 Groundwater Monitoring Report
Chevron Sunol Pipeline

Well ID	Date	Gasoline Compounds				
		TPH-GRO	Benzene	Toluene	Ethylbenzene	Xylenes
		(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
MW-3 cont.	Q4 2007[3)]	NS	NS	NS	NS	NS
	3/19/2008	<50	<0.5	<0.5	<0.5	<0.5
	6/5/2008	<50	<0.5	<0.5	<0.5	<0.5
	Q3 2008[3)]	NS	NS	NS	NS	NS
	Q4 2008[3)]	NS	NS	NS	NS	NS
	3/31/2009	<50	<0.5	<0.5	<0.5	<0.5
	Q2 2009 [3)]	NS	NS	NS	NS	NS
	Q3 2009 [3)]	NS	NS	NS	NS	NS
	Q4 2009 [3)]	NS	NS	NS	NS	NS
	3/9/2010	<50	<0.5	<0.5	<0.5	<0.5
	Q2 2010 [3)]	NS	NS	NS	NS	NS
	Q3 2010 [3)]	NS	NS	NS	NS	NS
	Q4 2010 [3)]	NS	NS	NS	NS	NS
MW-4	2/21/2006	<50	<0.5	<0.5	<0.5	<0.5
	6/7/2006	<50	<0.5	<0.5	<0.5	<0.5
	8/23/2006	**70**	**0.6**	<0.5	<0.5	**1**
	11/15/2006	<50	<0.5	<0.5	<0.5	0.5
	2/21/2007	<50	<0.5	<0.5	<0.5	<0.5
	Q2 2007[3)]	NS	NS	NS	NS	NS
	Q3 2007[3)]	NS	NS	NS	NS	NS
	Q4 2007[3)]	NS	NS	NS	NS	NS
	3/19/2008	<50	<0.5	<0.5	<0.5	<0.5
	6/6/2008	<50	<0.5	<0.5	<0.5	<0.5
	Q3 2008[3)]	NS	NS	NS	NS	NS
	Q4 2008[3)]	NS	NS	NS	NS	NS
	3/31/2009	<50	<0.5	<0.5	<0.5	<0.5
	Q2 2009 [3)]	NS	NS	NS	NS	NS
	Q3 2009 [3)]	NS	NS	NS	NS	NS
	Q4 2009 [3)]	NS	NS	NS	NS	NS
	3/9/2010	<50	<0.5	<0.5	<0.5	<0.5
	6/23/2010	<50	<0.5	<0.5	<0.5	<0.5
	Q3 2010 [3)]	NS	NS	NS	NS	NS
	12/14/2010	<50	<0.5	<0.5	<0.5	**0.8**
MW-8/MW-X	8/24/2006	**18,000**	**190**	**2,600**	**590**	**2,800**
	11/16/2006	**990**	**76**	**80**	**69**	**190**
	2/20/2007	**2,000**	**180**	**57**	**170**	**74**
	6/6/2007	**3,600**	**340**	**92**	**370**	**210**
	9/12/2007	**4,200**	**470**	**230**	**630**	**320**
	12/11/2007	**4,900**	**350**	**300**	**490**	**650**
	Q1 2008[4)]	NS	NS	NS	NS	NS
	Q2 2008[4)]	NS	NS	NS	NS	NS
	9/18/2008[1)]	**11,000 / 9,200**	**740 / 690**	**320 / 290**	**790 / 720**	**2,600 / 2,100**
	12/15/2008	**12,000**	**810**	**920**	**880**	**3,300**
	3/27/2009	**29,000/29,000J**	**1,500/1,200**	**7,200/4,500**	**1,200/1,100**	**4,700/4,100**
	Q2 2009 [3)]	NS	NS	NS	NS	NS
	Q3 2009 [3)]	NS	NS	NS	NS	NS
	12/10/2009	**19,000**	**930**	**1,600**	**1,200**	**3,800**

TABLE 3
Summary of Groundwater Analytical Results
Gasoline Compounds
Fourth Quarter 2010 Groundwater Monitoring Report
Chevron Sunol Pipeline

Well ID	Date	Gasoline Compounds				
		TPH-GRO	Benzene	Toluene	Ethylbenzene	Xylenes
		(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
MW-8/MW-X cont.	3/10/2010	**10,000 / 10,000**	**570 / 580**	**500 / 500**	**730 / 730**	**1,800 / 1,800**
	6/24/2010	**14,000**	**630**	**680**	**870**	**2,500**
	9/29/2010	**74,000 / 170,000 J**	**1,400 / 1,500 J**	**16,000 / 23,000 J**	**3,200 / 4,300 J**	**16,000 / 25,000 J**
	12/15/2010	**78,000**	**2,000**	**15,000**	**2,800**	**15,000**
MW-9	Q3 2006[2)]	NS	NS	NS	NS	NS
	11/15/2006	**74,000**	**480**	**12,000**	**2,200**	**17,000**
	Q1 2007[2)]	NS	NS	NS	NS	NS
	Q2 2007[2)]	NS	NS	NS	NS	NS
	Q3 2007[2)]	NS	NS	NS	NS	NS
	12/11/2007	**48,000**	**62**	**5,400**	**1,700**	**12,000**
	Q1 2008[2)]	NS	NS	NS	NS	NS
	6/6/2008	**31,000**	**5**	**1,000**	**1,300**	**9,000**
	9/18/2008	**25,000**	**6**	**610**	**800**	**4,800**
	12/16/2008	**34,000**	**6**	**750**	**930**	**6,000**
	3/31/2009	**20,000**	**3**	**100**	**460**	**3,200**
	6/10/2009	**27,000**	<3	**66**	**610**	**4,100**
	Q3 2009[2)]	NS	NS	NS	NS	NS
	12/10/2009	**20,000**	**3**	**85**	**460**	**2,800**
	3/10/2010	**18,000**	<3	**17**	**250**	**1,700**
	6/24/2010	**16,000**	**0.9**	**7**	**210**	**1,300**
	9/29/2010	**24,000**	<10	<10	**440**	**2,100**
	12/14/2010	**9,100**	**6**	**2**	**80**	**340**
MW-10/MW-X [6)]	Q3 2007[3)]	NS	NS	NS	NS	NS
	12/14/2007	<50	<0.5	<0.5	<0.5	<0.5
	3/20/2008	<50	**0.9**	<0.5	<0.5	<0.5
	6/6/2008	<50	<0.5	<0.5	<0.5	<0.5
	9/18/2008	<50	<0.5	<0.5	<0.5	<0.5
	12/15/2008	<50	<0.5	<0.5	<0.5	<0.5
	3/27/2009	**52**	<0.5	**0.7**	<0.5	<0.5
	6/10/2009	<50	<0.5	**1**	<0.5	<0.5
	9/28/2009	<50/<50	<0.5/<0.5	<0.5/<0.5	<0.5/<0.5	<0.5/<0.5
	12/10/2009	**540**	**1**	**2**	**5**	**23**
	3/9/2010	<50	<0.5	<0.5	<0.5	<0.5
	6/23/2010	<50	<0.5	<0.5	<0.5	<0.5
	9/29/2010	<50	<0.5	<0.5	<0.5	<0.5
	12/15/2010	<50	<0.5	**1**	<0.5	<0.5
MW-11	Q3 2007[3)]	NS	NS	NS	NS	NS
	12/14/2007	<50	<0.5	<0.5	<0.5	<0.5
	3/20/2008[1)]	<50 / <50	<0.5 / <0.5	<0.5 / <0.5	<0.5 / <0.5	<0.5 / <0.5
	6/6/2008	<50	<0.5	<0.5	<0.5	<0.5
	9/18/2008	<50	<0.5	<0.5	<0.5	<0.5
	12/15/2008	<50	<0.5	<0.5	<0.5	<0.5
	3/27/2009	<50	<0.5	<0.5	<0.5	<0.5
	6/10/2009	**59**	<0.5	**2**	<0.5	**3**
	9/29/2009	<50	<0.5	<0.5	<0.5	<0.5
	12/10/2009	**66**	<0.5	<0.5	<0.5	**3**
	3/9/2010	<50	<0.5	<0.5	<0.5	<0.5
	6/23/2010	<50	<0.5	<0.5	<0.5	<0.5
	9/29/2010	<50	<0.5	<0.5	<0.5	<0.5
	12/15/2010	<50	<0.5	<0.5	<0.5	<0.5

TABLE 3
Summary of Groundwater Analytical Results
Gasoline Compounds
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Well ID	Date	Gasoline Compounds				
		TPH-GRO	Benzene	Toluene	Ethylbenzene	Xylenes
		(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
SW-Creek	6/7/2006	<50	<0.5	<0.5	<0.5	<0.5
	8/22/2006	<50	<0.5	<0.5	<0.5	<0.5
	11/15/2006	<50	<0.5	<0.5	<0.5	<0.5
	11/15/2006	<50	<0.5	<0.5	<0.5	<0.5
Stream	2/21/2007	<50	<0.5	<0.5	<0.5	<0.5
	6/5/2007	<50	<0.5	<0.5	<0.5	<0.5
	9/12/2007	<50	<0.5	<0.5	<0.5	<0.5
	1/25/2008	<50	<0.5	<0.5	<0.5	<0.5
	3/20/2008	<50	<0.5	<0.5	<0.5	<0.5
	6/5/2008	<50	<0.5	<0.5	<0.5	<0.5
	9/18/2008	<50	<0.5	<0.5	<0.5	<0.5
	12/15/2008	<50	<0.5	<0.5	<0.5	<0.5
	3/31/2009	<50	<0.5	<0.5	<0.5	<0.5
	6/9/2009	<50	<0.5	<0.5	<0.5	<0.5
	Q3 2009[5)]	NS	NS	NS	NS	NS
	Q4 2009[5)]	NS	NS	NS	NS	NS
	3/9/2010	<50	<0.5	<0.5	<0.5	<0.5
	6/24/2010	<50	<0.5	<0.5	<0.5	<0.5
	9/28/2010	<50	<0.5	<0.5	<0.5	<0.5
	12/15/2010	<50	<0.5	<0.5	<0.5	<0.5

Notes:

Bold values exceed laboratory reporting limits.

J qualifier - The reported value is the approximate concentration of the analyte in the sample due to sample heterogeneity.
µg/L - micrograms per liter
NS - Not Sampled
TPH-GRO - Total Petroleum Hydrocarbons as Gasoline Range

1) Both sample and duplicate concentrations from well location are displayed.

2) Sample not collected during quarterly monitoring due to the presence of measurable free product.
3) Sample not collected during quarterly monitoring because well is not hydraulically connected to unconfined water-bearing zone.
4) Sample not collected due to extreme overhead hazards posed by dead trees on the 80-90% grade directly uphill from the sampling location.
5) Sample not collected during quarterly monitoring due to the stream sample location being dry.
6) Duplicate sampled collected from MW-10 during the third quarter 2009 sampling event because MW-8 was not hydraulically connected to the water bearing zone.

TABLE 4
Summary of Groundwater Analytical Results
Geochemical Indicators and Other Parameters
Fourth Quarter 2010 Groundwater Monitoring Report
Chevron Sunol Pipeline

		Geochemical Indicators and Other Parameters											
Well ID	Date	DO[1] (mg/L)	ORP[1] (mV)	Nitrate (mg/L)	Manganese (mg/L)	Ferrous Iron (mg/L)	Dissolved Iron (mg/L)	Sulfate (mg/L)	Methane (mg/L)	pH[1]	TDS (mg/L)	Alkalinity to pH 4.5 (mg/L) as $CaCO_3$	Alkalinity to pH 8.3 (mg/L) as $CaCO_3$
MW-1	6/8/2006	0.28	88.15	2.6	0.116	<0.008	<0.052	48.3	<0.002	6.62	494	317	<0.46
	Q3 2006	NM[4]	NM[4]	NM[4]	NM[4]	NM[4]	NM[4]	NM[4]	NM[4]	NM[4]	NM[4]	NM[4]	NM[4]
	11/15/2006	4.87[6]	25	0.37 J	1	0.22	0.079	108	<0.002	6.67	882	597	<0.46
	3/31/2009	2.45	-147	10.3J	0.534	0.12	<0.052	62.4	0.051	6.61	650	343	<0.46
	6/10/2009	0.00	-115	0.42	0.576	0.2	<0.052	72.6	<0.005	7.07	614	422	<0.46
	Q4 2009	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]
	3/10/2010	0.00	-118	4 J	0.431	<0.01	<0.0522	56.9	0.067	6.79	551	347	<0.46
	Q2 2010	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]
	Q3 2010	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]
	12/14/2010	1.97	-193	<0.25	1.07	1.5 J	0.538	26.4	0.017	6.55	647	495	<0.46
MW-2	6/7/2006	NR[3]	36.43	11.9	0.003	<0.008	<0.052	47.5	<0.002	6.56	465	286	<0.46
	8/23/2006	0.32	25.69	7	0.024	0.015	<0.052	121	0.005	6.63	811	470	<0.46
	11/14/2006	0.2	220.84	4	0.021	0.021	<0.052 UJ	126 J	0.004	6.72	867	530	<0.46
	3/27/2009	5.47	-86	18.2	0.017	0.036J	<0.052	65	<0.01	6.62	642	347	<0.46
	Q2 2009	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]
	Q4 2009	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]
	3/10/2010	2.81	38	13 J	0.0182	0.35	<0.0522	54.9	<0.005	6.89	532	322	<0.46
	6/23/2010	2.18	173	13.2	0.103	4	<0.0522	50.9	<0.005	11.51	524	319	<0.46
	Q3 2010	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]
	Q4 2010	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]
MW-3	6/7/2006	0.37	31.23	10.9	0.005	<0.008	<0.052	45.1	<0.002	6.56	446	274	<0.46
	8/23/2006	0.3	-1.8	<0.25	0.368	0.24	<0.052	26.3	1.5	6.6	711	421	<0.46
	11/14/2006	0.12	-17.57	NM[5]	NM[5]	NM[5]	NM[5]	NM[5]	0.42	6.95	NM[5]	NM[5]	NM[5]
	3/31/2009	0.00	48	22.2J	0.0017	0.08	<0.052	57.7	<0.01	6.75	688	320	<0.46
	Q2 2009	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]
	Q4 2009	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]
	3/9/2010	1.75	182	12.6 J	0.0093	0.064	<0.0522	54.4	<0.005	6.78	496	293	<0.46
	Q2 2010	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]
	Q3 2010	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]
	Q4 2010	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]
MW-4	6/7/2006	0.28	29.57	9.2	0.02	0.059	<0.052	60.2	<0.002	6.65	423	282	<0.46
	8/23/2006	NR[3]	-22.49	<0.25	0.226	0.7	<0.052	78.4	0.003	6.62	590	396	<0.46
	11/15/2006	3.46[6]	106	0.34 J	0.137	0.47	<0.052	90.3	0.003	6.74	672	490	<0.46
	3/31/2009	3.96	5	19.5J	0.0406	0.14	<0.052	83.7	<0.01	6.64	631	323	<0.46
	Q2 2009	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]
	Q4 2009	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]
	3/9/2010	0.05	123	10.5 J	0.0343	0.13	<0.0522	89.8	<0.005	6.74	560	312	<0.46
	6/23/2010	0.03	164	9.4	0.0295	0.034	<0.0522	62.5	<0.005	11.03	491	297	<0.46
	Q3 2010	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]
	12/14/2010	1.24	162	6.6	0.084	0.021 J	<0.052	213	<0.010	6.51	771	354	<0.46
MW-8	8/24/2006	NM[2]	NM[2]	<0.25	0.171	0.14	<0.052	90.2	<0.002 UJ	NM[2]	563	362	<0.46
	11/16/2006	0.05	-74	<0.25	0.123	0.8	<0.052	78.6 J	0.002	7.22	564	350	<0.46
	3/27/2009	6.88[6]	-113	0.27	0.553	2.5J	<0.052	15.5	0.13	6.74	639	467	<0.46
	Q2 2009	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]	NM[7]
	12/10/2009	0.04	-165	<0.25 UJ	0.549 J	<2.5	0.06	2 J	<0.2	6.94	576	445	<0.46
	3/10/2010	0.00	-85	<0.25	0.334	3	<0.0522	1.7	0.33	6.89	587	453	<0.46
	6/24/2010	5.83[6]	-84	<0.25	1.08	7.8	0.0949 J+	6.1	0.65	6.72	679	502	<0.46
	Q3 2010	NM[8]	NM[8]	NM[8]	NM[8]	NM[8]	NM[8]	NM[8]	NM[8]	NM[8]	NM[9]	NM[8]	NM[8]
	12/15/2010	NM[8]	NM[8]	<0.25	1.57	1.2 J	0.0693	23	0.59	NM[8]	803.00	536	<0.46
MW-9	Q3 2006	NM[4]	NM[4]	NM[4]	NM[4]	NM[4]	NM[4]	NM[4]	NM[4]	NM[4]	NM[4]	NM[4]	NM[4]
	11/15/2006	3.01[6]	4	<0.25 UJ	4.41	1.2	0.496	29.5	0.009	6.92	836	657	<0.46
	3/31/2009	3.35	-179	0.39J	3.2	0.099	<0.052	60.5	0.012	6.59	632	419	<0.46
	6/10/2009	0.00	-141	<0.25	3.01	1.7	<0.052	46.4	<0.005	6.98	622	468	<0.46
	12/10/2009	1.43	-188	<0.25 UJ	4.39 J	3.3	2.54	4.5 J	<0.2	6.6	734	620	<0.46
	3/10/2010	0.00	-197	<0.25	2.94	1.7	<0.0522	40.9	0.046	6.84	596	448	<0.46
	6/24/2010	0.00	-108	<0.25	2.46	1.5	0.131 J+	33.5	0.012	6.61	489	380	<0.46
	9/29/2010	0.70	-231	<0.25	3.83	2.2 J	0.082	4.5	0.018	6.68	627	549	<0.46
	12/14/2010	3.37	-181	0.89	2.98	2.8 J	1.48	25	0.025	6.46	666	523	<0.46
MW-10	3/27/2009	3.65	48	8.2	0.367	0.21J	<0.052	155	0.28	6.69	1,200	645	<0.46
	6/10/2009	0.37	109	<0.25	0.767	0.8	<0.052	133	2.30	7.20	1,100	623	<0.46
	12/10/2009	0.06	-74	0.33 J	0.964 J	10.90	<0.052	640 J	<0.2	6.85	1,580	512	<0.46
	3/9/2010	1.52	105	13.9 J	0.0357	0.054	<0.052	63.6	0.19	6.89	596	349	<0.46
	6/23/2010	0.00	79	0.68	0.2650	0.200	<0.0522	136.0	0.94	6.76	1000	604	<0.46
	9/29/2010	0.87	22	<0.25	0.384	5.0 J	<0.0522	148	0.550	6.89	998	610	<0.46
	12/15/2010	2.28	61	0.41	0.581	0.29 J	<0.0522	155	0.74	6.78	1,070	606	<0.46
MW-11	3/27/2009	5.86	53	15.3	0.114	0.058J	<0.052	134	0.06	6.61	742	365	<0.46
	6/10/2009	0.37	44	NM	0.415	NM	NM	NM	0.12	7.16	NM	NM	NM
	12/10/2009	1.01	-50	0.48 J	0.804 J	3.6	<0.052	151 J	<0.2	6.84	1720	556	<0.46
	3/9/2010	3.68	133	11.9 J	0.0176	0.087	<0.0522	91.7	0.039	6.73	615	314	<0.46
	6/23/2010	0.45	-2	0.4	0.2420	0.150	<0.0522	437	0.29	6.70	1,300	479	<0.46
	9/28/2010	1.16	7	<0.25	0.320	0.3 J	<0.0522	457	0.350	6.99	1,310	458	<0.46
	12/15/2010	NM[8]	NM[8]	<0.25	0.245	0.84 J	<0.0522	451	0.23	NM[8]	1,320	494	<0.46

Notes:
DO = Dissolved oxygen
ORP = Oxygen reduction potential
TDS = Total dissolved solids
$CaCO_3$ = Calcium Carbonate
NM = Not measured
NR = Not Reported
J = Estimated result
UJ = Estimated result
J+ = Estimated high value

Note: MW-5, MW-6, and MW-7 were destroyed on 6/23/08

1) DO, ORP, and pH values were obtained in the field using a flow-through cell and a multi-parameter meter unless otherwise noted.
2) Field data was not collected for DO, ORP, and pH because groundwater was removed from the well without using the in-line flow-through cell due to insufficient recharge.
3) DO meter did not appear to be functioning correctly.
4) The well was not sampled and parameters were not measured due to the presence of free product at this location.
5) The well was purged dry and recharge was insufficient to collect groundwater for geochemical analysis.
6) DO readings were artificially high because purge water was poured into the multi-parameter meter from a bailer.
7) Sample not collected during quarterly monitoring because well is not hydraulically connected to unconfined water-bearing zone.
8) Parameters not collected because well dewatered before 1 well volume was collected

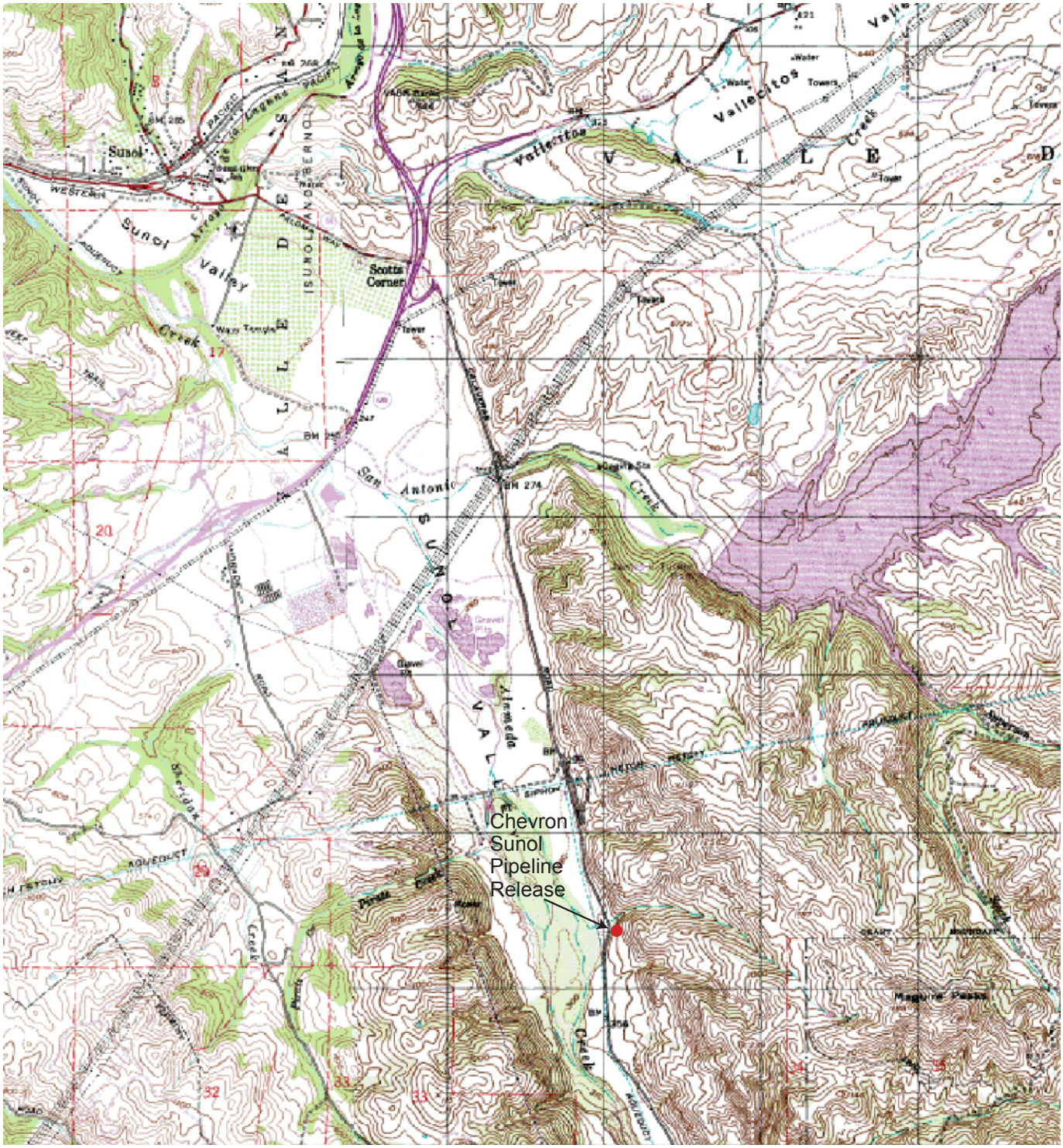

Image obtained from topozone.com

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MAP REFERENCE:

PORTION OF U.S.G.S. QUANDRANGLE MAP
7 1/2 MINUTE SERIES (TOPOGRAPHIC)
LA COSTA VALLEY QUADRANGLE

URS	Chevron Pipeline Company Project No. 26815217	SITE VICINITY MAP CHEVRON SUNOL PIPELINE SUNOL, CALIFORNIA	Figure 1

NORTH

0 50 100

SCALE IN FEET

SW–CREEK
(Former Surface Water Sampling Location)

UPPER DIRT ROAD

LOWER DIRT ROAD

PIPELINE

CURRENT STREAM
SAMPLE LOCATION

VERY SMALL STREAM

MW–10

PROPERTY
LINE/FENCE

CALAVERAS ROAD

MW–11

MW–9

MW–4

MW–3

MW–1

MW–2

MW–7

MW–8

MW–5

MW–6

SVE–1D

SVE–2S

SVE–8

SVE–3S

SVE–7

SVE–4D

SVE–5

SVE–6

SVE–9

RELEASE LOCATION

HILL SLOPE

HILL SLOPE

HILL SLOPE

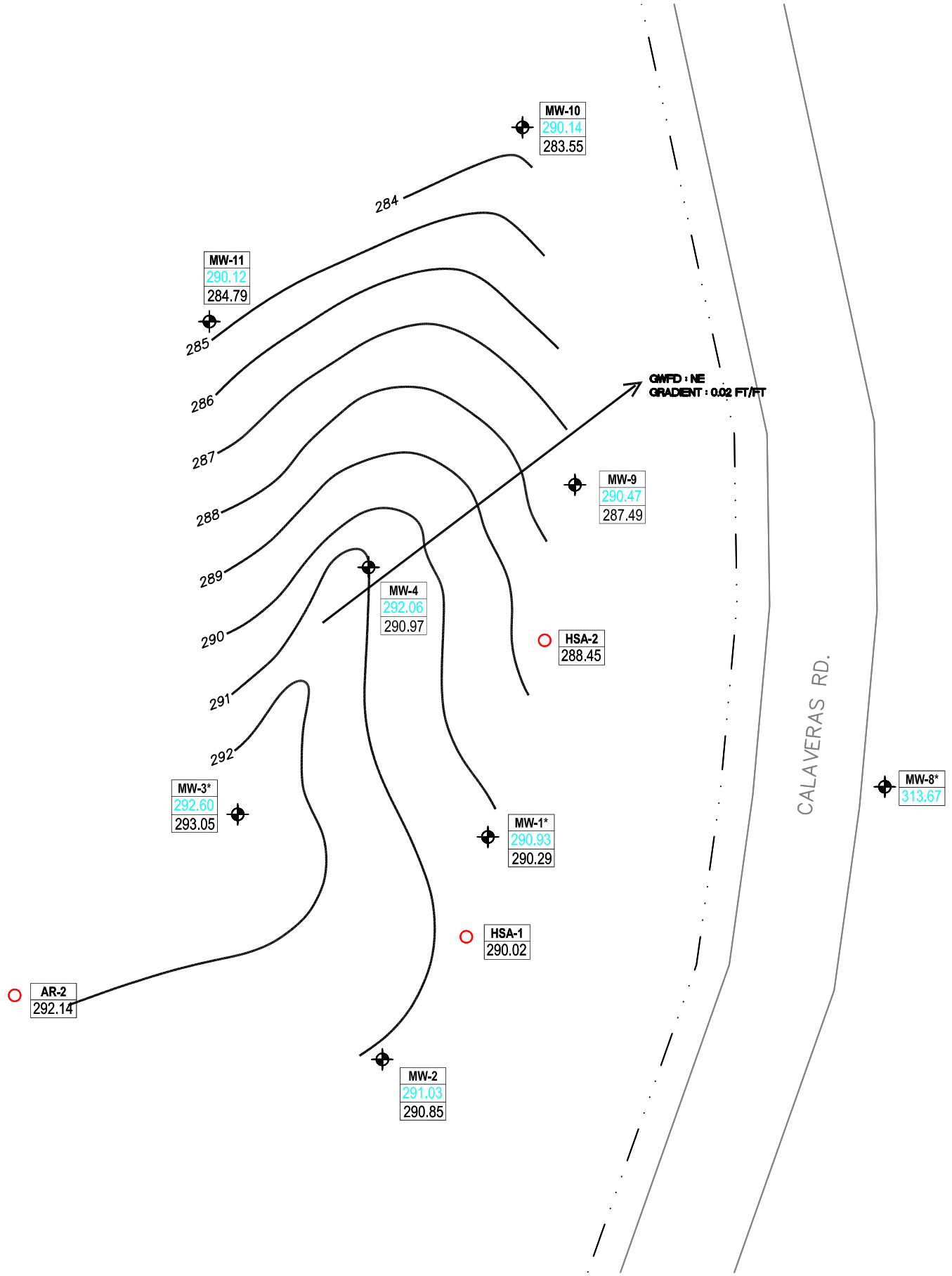
HILL SLOPE
AND DENSE
VEGETATION

LEGEND:

- SURFACE WATER SAMPLE LOCATIONS
- MONITORING WELL
- ABANDONED MONITORING WELLS
- SVE WELL
- SHELF
- STAIRS
- FENCE
- PIPELINE
- VERY SMALL STREAM
- PROPERTY LINE/FENCE
- HILL SLOPE 80–90% GRADE

URS	CHEVRON PIPELINE COMPANY Project No. 26815217	SVE AND GROUNDWATER MONITORING WELL LOCATIONS CHEVRON SUNOL PIPELINE	Figure 2

Aug 05, 2010 – 9:25am
X:\x_env_waste\Chevron Pipeline Company\Sunol Spill\Site Figures\Current CADD\FIGURE 2.dwg



LEGEND:

- MONITORING WELL
- MW-1 / 290.47 / 290.29 — MONITORING WELL LABEL; GROUNDWATER ELEVATION; BEDROCK CONTACT ELEVATION
- SOIL BORING
- HSA-2 / 288.45 — SOIL BORING LABEL; BEDROCK CONTACT ELEVATION
- 290.2 — INFERRED GROUNDWATER CONTOUR
- 285 — BEDROCK SURFACE ELVATION
- GWFD — GROUNDWATER FLOW DIRECTION

NOTES:

1. ELEVATIONS IN FEET ABOVE AVERAGE MEAN SEA LEVEL (msl).
2. GROUNDWATER ELEVATIONS FOR MW-2, MW-4, AND MW-9 THROUGH MW-11, AS MEASURED ON DECEMBER 14, 2010.
3. BEDROCK ELEVATION DATA OBTAINED FROM THE BORING LOGS OF MW-1 THROUGH MW-4, MW-9 THROUGH MW-11, HSA-1, HSA-2, AND AR-2.
4. THE BEDROCK ELEVATIONS SHOWN REPRESENT THE OVERBURDEN CONTACT WITH THE WEATHERED SILTSTONE/CLAYSTONE BEDROCK UNIT (POSSIBLY CRETACEOUS-AGE CLAY SHALE OF THE PANOCHE FORMATION).
5. CALCULATED GROUNDWATER GRADIENT IN NORTHEASTERLY FLOW DIRECTION dh/dl = 0.02 ft/ft.

* GROUNDWATER LEVELS ARE BELOW TOP OF BEDROCK SURFACE, WHICH LIKELY REPRESENTS STAGNANT WATER AND NOT TRUE AQUIFER CONDITIONS.

NORTH

0 30' 60'

SCALE 1"= 30'

URS	CHEVRON PIPELINE COMPANY Project No. 26815217	UNCONFINED WATER-BEARING ZONE GROUNDWATER AND BEDROCK ELEVATIONS MAP CHEVRON SUNOL PIPLINE	Figure 3

Feb 10, 2011 – 6:54pm
X:\x_env_waste\Chevron Pipeline Company\Sunol Spill\Quarterly Groundwater Report\302010\Report\Figures\FIGURE 3_021011.dwg

Appendix A
Groundwater Sampling Forms

URS

12/14/10

Horiba W-22
ISI Low-Flow Log

Project Information:		**Pump Information:**	
Operator Name	Rachel Naccarati/ Ram Kannappan	Pump Model/Type	ES60 Purge Pump
Company Name	URS	Tubing Type	Polyethylene
Project Name	Chevron Sunol Pipeline	Tubing Diameter	3/8 [in]
Site Name	Sunol	Tubing Length	45 [ft]
		Pump placement from TOC	38 [ft]

Well Information:		**Pumping information:**	
Well Id	MW-1	Final pumping rate	400 mL/min
Well diameter	4[in]	Flowcell volume	NM
Well total depth	39.3 [ft]	Calculated Sample Rate	NM
Depth to top of screen	29.3 [ft]	Sample rate	NM
Screen length	10 [ft]	Stabilized drawdown	NM
Depth to Water	37.11 [ft]		

Low-Flow Sampling Stabilization Summary

	Time	Temp [C]	pH [pH]	Cond. [µS/cm]	Turb [NTU]	DO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-3%	+/-10	+/-0.2	+/-20
Multi-parameter Readings	15:58	16.6	6.56	114	9.6	0.84	-179
	16:01	16.7	6.56	114	5.8	1.29	-184
	16:04	16.7	6.55	115	4.8	1.65	-189
	16:07	16.7	6.55	115	3.8	1.83	-192
	16:10	16.7	6.55	115	3.6	1.93	-193
	16:13	16.7	6.55	115	3.2	1.97	-193
	Sample collected from MW-1 at 16:15						
Variance in last 4 readings		0.0	0.00	0	-1.0	0.18	-3
		0.0	0.00	0	-0.2	0.10	-1
		0.0	0.00	0	-0.4	0.04	0

Notes:
Starting Pumping at 15:55
Initial Depth to Water = 37.11 ft
Total Volume Purged = 2.5 gallons
Sample collected at 16:15

URS

12/14/10

Horiba W-22
ISI Low-Flow Log

Project Information:		**Pump Information:**	
Operator Name	Rachel Naccarati/Ram Kannappan	Pump Model/Type	ES60 Purge Pump
Company Name	URS	Tubing Type	Polyethylene
Project Name	Chevron Sunol Pipeline	Tubing Diameter	3/8 [in]
Site Name	Sunol	Tubing Length	43 [ft]
		Pump placement from TOC	39 [ft]

Well Information:		**Pumping information:**	
Well Id	MW-4	Final pumping rate	NM
Well diameter	4 [in]	Flowcell volume	NM
Well total depth	40.7 [ft]	Calculated Sample Rate	NM
Depth to top of screen	30.7 [ft]	Sample rate	NM
Screen length	10 [ft]	Stabilized drawdown	NM
Depth to Water	37.61 [ft]		

Low-Flow Sampling Stabilization Summary

	Time	Temp [C]	pH [pH]	Cond. [µS/cm]	Turb [NTU]	DO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-3%	+/-10	+/-0.2	+/-20
Multi-parameter Readings	12:45	15.9	7.09	124	7.1	5.02	165
	12:47	15.9	6.83	122	4.1	3.03	166
	12:48	15.9	6.71	121	3.2	2.15	165
	12:50	15.9	6.62	120	2.0	1.90	164
	12:51	15.9	6.57	120	1.4	1.60	163
	12:52	16.0	6.51	120	1.2	1.24	162
	Sample collected from MW-4 at 13:00						
Variance in last 4 readings		0.0	-0.09	-1	-1.2	-0.25	-1
		0.0	-0.05	0	-0.6	-0.30	-1
		0.1	-0.06	0	-0.2	-0.36	-1

Notes:
Starting Pumping at 12:45
Initial Depth to Water = 37.61 ft
Total Volume Purged = 5 gallons
Sample collected at 13:00
Final Depth to Water = Dry
Used pump with no control of speed. Purged well dry then let the well recharge to collect a sample.

URS

09/28/10

Horiba U-22XD
ISI Low-Flow Log

Project Information:		**Pump Information:**	
Operator Name	Rachel Naccarati/ Kim Morris	Pump Model/Type	Disposable Bailer
Company Name	URS	Tubing Type	NA
Project Name	Chevron Sunol Pipeline	Tubing Diameter	NA
Site Name	Sunol	Tubing Length	[ft]
		Pump placement from TOC	[ft]

Well Information:		**Pumping information:**	
Well Id	MW-8	Final pumping rate	NA
Well diameter	2 [in]	Flowcell volume	NA
Well total depth	24.5 [ft]	Calculated Sample Rate	NA
Depth to top of screen	14.5 [ft]	Sample rate	NA
Screen length	10 [ft]	Stabilized drawdown	NA
Depth to Water	21.98 [ft]		

Low-Flow Sampling Stabilization Summary

	Time	Temp [C]	pH [pH]	Cond. [µS/cm]	Turb [NTU]	DO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-3%	+/-10	+/-0.2	+/-20
Multi-parameter Readings	1 well volume						
	2 well volumes						
	3 well volumes						
	Sample collected from MW-8 at 11:45 on 9/29/10						

Notes:

Starting Pumping at 11:45
Initial Depth to Water = 21.98 ft
Total Volume Purged = 1 gallons
Sample collected at 11:00 on 9/29/10
Final Depth to Water: Dry

Could not collect parameters because the well was dry before 1 well volume was purged. Well was left to recharge overnight before the sample was collected. 0.01 feet of product was measured in the monitoring well before sampling on 9/29/10.

URS

12/14/10

Horiba W-22
ISI Low-Flow Log

Project Information:		**Pump Information:**	
Operator Name	Rachel Naccarati/ Ram Kannappan	Pump Model/Type	ES60 Purge Pump
Company Name	URS	Tubing Type	Polyethylene
Project Name	Chevron Sunol Pipeline	Tubing Diameter	3/8 [in]
Site Name	Sunol	Tubing Length	50.0 [ft]
		Pump placement from TOC	45.0 [ft]

Well Information:		**Pumping information:**	
Well Id	MW-9	Final pumping rate	200 mL/min
Well diameter	2 [in]	Flowcell volume	NM
Well total depth	46.0 [ft]	Calculated Sample Rate	NM
Depth to top of screen	36.0 [ft]	Sample rate	NM
Screen length	10 [ft]	Stabilized drawdown	NM
Depth to Water	42.60 [ft]		

Low-Flow Sampling Stabilization Summary

	Time	Temp [C]	pH [pH]	Cond. [µS/cm]	Turb [NTU]	DO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-3%	+/-10	+/-0.2	+/-20
Multi-parameter Readings	14:57	17.2	6.53	121	27.0	1.10	-166
	15:00	17.5	6.51	121	27.1	2.03	-168
	15:03	17.8	6.50	121	24.4	2.39	-172
	15:06	17.9	6.49	120	23.4	2.87	-174
	15:09	17.7	6.48	120	23.0	3.03	-175
	15:12	17.7	6.47	119	22.7	3.17	-178
	15:15	17.6	6.46	118	22.9	3.37	-181
	Sample collected from MW-9 at 15:20 on 12/14/10						
Variance in last 4 readings		-0.2	-0.01	0	-0.4	0.16	-1
		0.0	-0.01	-1	-0.3	0.14	-3
		-0.1	-0.01	-1	0.2	0.20	-3

Notes:
Starting Pumping at 14:53
Initial Depth to Water = 42.60 ft
Total Volume Purged = 2.5 gallons
Sample collected at 15:20
Odor
Sheen on purge water
Dark colored water

URS

12/15/10

Horiba W-22
ISI Low-Flow Log

Project Information:		**Pump Information:**	
Operator Name	Rachel Naccarati/ Ram Kannappan	Pump Model/Type	ES60 Purge Pump
Company Name	URS	Tubing Type	Polyethylene
Project Name	Chevron Sunol Pipeline	Tubing Diameter	3/8 [in]
Site Name	Sunol	Tubing Length	56 [ft]
		Pump placement from TOC	54 [ft]

Well Information:		**Pumping information:**	
Well Id	MW-10	Final pumping rate	400 mL/min
Well diameter	2 [in]	Flowcell volume	NM
Well total depth	55.3 [ft]	Calculated Sample Rate	NM
Depth to top of screen	40.3 [ft]	Sample rate	NM
Screen length	15 [ft]	Stabilized drawdown	NM
Depth to Water	46.12 [ft]		

Low-Flow Sampling Stabilization Summary

	Time	Temp [C]	pH [pH]	Cond. [µS/cm]	Turb [NTU]	DO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-3%	+/-10	+/-0.2	+/-20
Multi-parameter Readings	10:16	16.4	6.82	185	389	1.29	71
	10:19	16.7	6.77	185	418	0.90	71
	10:22	17.0	6.75	183	521	0.97	73
	10:25	17.0	6.74	181	541	2.85	78
	10:28	16.8	6.73	180	407	2.87	81
	10:31	17.0	6.75	180	290	2.73	82
	10:34	16.8	6.74	180	209	2.70	83
	10:37	16.9	6.75	180	201	2.60	84
	10:42	17.6	6.76	181	213	2.44	84
	10:45	18.5	6.78	184	90	2.28	61
	Sample collected from MW-10 at 11:55						
Variance in last 4 readings		0.1	0.01	0	-8	-0.10	1
		0.7	0.01	1	12	-0.16	0
		0.9	0.02	3	-123	-0.16	-23

Notes:
Starting Pumping at 10:14
Initial Depth to Water = 46.12 ft on 12/15/10, 45.77 ft on 12/14/10
Total Volume Purged = 2.5 gallons
Sample collected at 11:55
Purged well dry at 10:49.
Pump speed increased at 10:42.

URS

09/28/10

Horiba W-22
ISI Low-Flow Log

Project Information:		**Pump Information:**	
Operator Name	Rachel Naccarati/ Kim Morris	Pump Model/Type	ES60 Purge Pump
Company Name	URS	Tubing Type	Polyethylene
Project Name	Chevron Sunol Pipeline	Tubing Diameter	3/8 [in]
Site Name	Sunol	Tubing Length	50 [ft]
		Pump placement from TOC	45 [ft]

Well Information:		**Pumping information:**	
Well Id	MW-11	Final pumping rate	175 mL/min
Well diameter	2 [in]	Flowcell volume	1000 mL
Well total depth	47.0 [ft]	Calculated Sample Rate	NM
Depth to top of screen	37.0 [ft]	Sample rate	NM
Screen length	10 [ft]	Stabilized drawdown	NM
Depth to Water	39.09 [ft]		

Low-Flow Sampling Stabilization Summary

	Time	Temp [C]	pH [pH]	Cond. [µS/cm]	Turb [NTU]	DO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-3%	+/-10	+/-0.2	+/-20
Multi-parameter Readings	14:14	18.6	6.98	179	503.0	0.93	-25
	14:17	19.1	6.97	178	397.0	0.84	-3
	14:20	19.2	6.96	179	309.0	0.94	9
	14:23	19.3	6.97	181	260.0	1.26	17
	14:26	19.5	6.98	183	332.0	1.52	13
	14:29	20.4	6.99	184	189.0	1.57	10
	14:32	20.6	6.97	186	165.0	1.50	10
	14:35	21.0	6.97	187	158.0	1.33	11
	14:38	21.2	6.99	188	152.0	1.16	7
	Sample collected from MW-11 at 14:40 on 9/28/10						
Variance in last 4 readings		0.2	-0.02	2	-24.0	-0.07	0
		0.4	0.00	1	-7.0	-0.17	1
		0.2	0.02	1	-6.0	-0.17	-4

Notes:
Starting Pumping at 14:10
Initial Depth to Water = 39.09 ft
Total Volume Purged = 2.5 gallons
Sample collected at 14:40
Well purged dry

Appendix B
Laboratory Analytical Results

Lancaster Laboratories

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Analysis Report

ANALYTICAL RESULTS

Prepared by:

Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17605-2425

Prepared for:

Chevron Pipeline Co.
100 Northpark Blvd
Covington LA 70433

December 29, 2010

Project: Sunol, CA

Submittal Date: 12/15/2010
Group Number: 1225485
PO Number: 0015043340
Release Number: JOHNSON
State of Sample Origin: CA

Client Sample Description	Lancaster Labs (LLI) #
MW-1 Grab Water	6164741
MW-1_Filtered Grab Water	6164742
MW-4 Grab Water	6164743
MW-4_Filtered Grab Water	6164744
MW-9 Grab Water	6164745
MW-9_Filtered Grab Water	6164746
TB-1 NA Water	6164747

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

ELECTRONIC COPY TO	URS	Attn: Joe Morgan
ELECTRONIC COPY TO	URS	Attn: Rachel Naccarati
ELECTRONIC COPY TO	URS	Attn: Jacob Henry
ELECTRONIC COPY TO	URS Corporation	Attn: Kimberly Morgan

Lancaster Laboratories

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Analysis Report

Questions? Contact your Client Services Representative
Elizabeth A Leonhardt at (510) 232-8894

Respectfully Submitted,

Susan M. Goshert
Group Leader

Lancaster Laboratories

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Analysis Report

Sample Description: MW-1 Grab Water
NA URSO
Sunol Pipeline SL0600100443 MW-1

LLI Sample # WW 6164741
LLI Group # 1225485
Account # 11875

Project Name: Sunol, CA

Collected: 12/14/2010 16:15 by RN

Submitted: 12/15/2010 09:40
Reported: 12/29/2010 15:09

Chevron Pipeline Co.
100 Northpark Blvd
Covington LA 70433

SUN-1

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10943	Benzene	71-43-2	0.8	0.5	1
10943	Ethylbenzene	100-41-4	0.7	0.5	1
10943	Toluene	108-88-3	1	0.5	1
10943	Xylene (Total)	1330-20-7	3	0.5	1
GC Volatiles	**SW-846 8015B**		**ug/l**	**ug/l**	
01728	TPH-GRO N. CA water C6-C12	n.a.	1,900	50	1
GC Miscellaneous	**SW-846 8015B modified**		**ug/l**	**ug/l**	
07105	Methane	74-82-8	17	10	1
	Due to interfering peaks on the chromatogram, the value reported for methane represents the lowest reporting limit attainable.				
Metals	**SW-846 6010B**		**ug/l**	**ug/l**	
07058	Manganese	7439-96-5	1,070	0.84	1
Wet Chemistry	**EPA 300.0**		**ug/l**	**ug/l**	
00368	Nitrate Nitrogen	14797-55-8	N.D.	250	5
00228	Sulfate	14808-79-8	26,400	1,500	5
	SM20 2320 B		**ug/l as CaCO3**	**ug/l as CaCO3**	
00202	Alkalinity to pH 4.5	n.a.	495,000	460	1
00201	Alkalinity to pH 8.3	n.a.	N.D.	460	1
	SM20 2540 C		**ug/l**	**ug/l**	
00212	Total Dissolved Solids	n.a.	647,000	19,400	1
	SM20 3500 Fe B modified		**ug/l**	**ug/l**	
08344	Ferrous Iron	n.a.	1,500	100	10

General Sample Comments

State of California Lab Certification No. 2501

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10943	BTEX 8260B Water	SW-846 8260B	1	F103542AA	12/20/2010 09:05	Anita M Dale	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	F103542AA	12/20/2010 09:05	Anita M Dale	1
01728	TPH-GRO N. CA water C6-C12	SW-846 8015B	1	10352A07A	12/21/2010 01:42	Marie D John	1

Lancaster Laboratories

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Analysis Report

Sample Description: MW-1 Grab Water
NA URSO
Sunol Pipeline SL0600100443 MW-1

LLI Sample # WW 6164741
LLI Group # 1225485
Account # 11875

Project Name: Sunol, CA

Collected: 12/14/2010 16:15 by RN

Submitted: 12/15/2010 09:40
Reported: 12/29/2010 15:09

Chevron Pipeline Co.
100 Northpark Blvd
Covington LA 70433

SUN-1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01146	GC VOA Water Prep	SW-846 5030B	1	10352A07A	12/21/2010 01:42	Marie D John	1
07105	Volatile Headspace Hydrocarbon	SW-846 8015B modified	1	103490026A	12/17/2010 16:30	Elizabeth J Marin	1
07058	Manganese	SW-846 6010B	1	103511848002	12/20/2010 20:53	John P Hook	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	103511848002	12/20/2010 09:43	Denise K Conners	1
00368	Nitrate Nitrogen	EPA 300.0	1	10348495901C	12/16/2010 10:25	Ashley M Adams	5
00228	Sulfate	EPA 300.0	1	10348495901C	12/16/2010 10:25	Ashley M Adams	5
00202	Alkalinity to pH 4.5	SM20 2320 B	2	10355020201B	12/21/2010 06:34	Susan A Engle	1
00201	Alkalinity to pH 8.3	SM20 2320 B	2	10355020201B	12/21/2010 06:34	Susan A Engle	1
00212	Total Dissolved Solids	SM20 2540 C	1	10351021202B	12/17/2010 12:30	Susan E Hibner	1
08344	Ferrous Iron	SM20 3500 Fe B modified	1	10349834402A	12/15/2010 22:50	Daniel S Smith	10

Lancaster Laboratories

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Analysis Report

Sample Description: MW-1_Filtered Grab Water
NA URSO
Sunol Pipeline SL0600100443 MW-1

LLI Sample # WW 6164742
LLI Group # 1225485
Account # 11875

Project Name: Sunol, CA

Collected: 12/14/2010 16:15 by RN

Submitted: 12/15/2010 09:40
Reported: 12/29/2010 15:09

Chevron Pipeline Co.
100 Northpark Blvd
Covington LA 70433

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
Metals Dissolved	**SW-846 6010B**		ug/l	ug/l	
01754	Iron	7439-89-6	538	52.2	1

General Sample Comments

State of California Lab Certification No. 2501
This sample was filtered in the lab for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01754	Iron	SW-846 6010B	1	103551848001	12/28/2010 10:50	Joanne M Gates	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	103511848002	12/20/2010 09:43	Denise K Conners	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	2	103551848001	12/22/2010 09:07	Denise K Conners	1

Lancaster Laboratories

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Analysis Report

Sample Description: MW-4 Grab Water
NA URSO
Sunol Pipeline SL0600100443 MW-4

LLI Sample # WW 6164743
LLI Group # 1225485
Account # 11875

Project Name: Sunol, CA

Collected: 12/14/2010 13:00 by RN

Submitted: 12/15/2010 09:40
Reported: 12/29/2010 15:09

Chevron Pipeline Co.
100 Northpark Blvd
Covington LA 70433

SUN-4

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10943	Benzene	71-43-2	N.D.	0.5	1
10943	Ethylbenzene	100-41-4	N.D.	0.5	1
10943	Toluene	108-88-3	N.D.	0.5	1
10943	Xylene (Total)	1330-20-7	0.8	0.5	1
GC Volatiles	**SW-846 8015B**		**ug/l**	**ug/l**	
01728	TPH-GRO N. CA water C6-C12	n.a.	N.D.	50	1
GC Miscellaneous	**SW-846 8015B modified**		**ug/l**	**ug/l**	
07105	Methane	74-82-8	N.D.	10	1
	Due to interfering peaks on the chromatogram, the value reported for methane represents the lowest reporting limit attainable.				
Metals	**SW-846 6010B**		**ug/l**	**ug/l**	
07058	Manganese	7439-96-5	83.6	0.84	1
Wet Chemistry	**EPA 300.0**		**ug/l**	**ug/l**	
00368	Nitrate Nitrogen	14797-55-8	6,600	250	5
00228	Sulfate	14808-79-8	213,000	6,000	20
	SM20 2320 B		**ug/l as CaCO3**	**ug/l as CaCO3**	
00202	Alkalinity to pH 4.5	n.a.	354,000	460	1
00201	Alkalinity to pH 8.3	n.a.	N.D.	460	1
	SM20 2540 C		**ug/l**	**ug/l**	
00212	Total Dissolved Solids	n.a.	771,000	19,400	1
	SM20 3500 Fe B modified		**ug/l**	**ug/l**	
08344	Ferrous Iron	n.a.	21	10	1

General Sample Comments

State of California Lab Certification No. 2501

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10943	BTEX 8260B Water	SW-846 8260B	1	F103542AA	12/20/2010 08:01	Anita M Dale	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	F103542AA	12/20/2010 08:01	Anita M Dale	1
01728	TPH-GRO N. CA water C6-C12	SW-846 8015B	1	10352A07A	12/21/2010 02:08	Marie D John	1

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Analysis Report

Sample Description: MW-4 Grab Water
NA URSO
Sunol Pipeline SL0600100443 MW-4

LLI Sample # WW 6164743
LLI Group # 1225485
Account # 11875

Project Name: Sunol, CA

Collected: 12/14/2010 13:00 by RN

Submitted: 12/15/2010 09:40
Reported: 12/29/2010 15:09

Chevron Pipeline Co.
100 Northpark Blvd
Covington LA 70433

SUN-4

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01146	GC VOA Water Prep	SW-846 5030B	1	10352A07A	12/21/2010 02:08	Marie D John	1
07105	Volatile Headspace Hydrocarbon	SW-846 8015B modified	1	103490026A	12/17/2010 16:43	Elizabeth J Marin	1
07058	Manganese	SW-846 6010B	1	103511848002	12/20/2010 21:00	John P Hook	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	103511848002	12/20/2010 09:43	Denise K Conners	1
00368	Nitrate Nitrogen	EPA 300.0	1	10348495901C	12/16/2010 10:40	Ashley M Adams	5
00228	Sulfate	EPA 300.0	1	10348495901C	12/19/2010 01:30	Ashley M Adams	20
00202	Alkalinity to pH 4.5	SM20 2320 B	2	10355020201B	12/21/2010 06:34	Susan A Engle	1
00201	Alkalinity to pH 8.3	SM20 2320 B	2	10355020201B	12/21/2010 06:34	Susan A Engle	1
00212	Total Dissolved Solids	SM20 2540 C	1	10351021202B	12/17/2010 12:30	Susan E Hibner	1
08344	Ferrous Iron	SM20 3500 Fe B modified	1	10349834402A	12/15/2010 22:50	Daniel S Smith	1

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Analysis Report

Sample Description: MW-4_Filtered Grab Water
NA URSO
Sunol Pipeline SL0600100443 MW-4

LLI Sample # WW 6164744
LLI Group # 1225485
Account # 11875

Project Name: Sunol, CA

Collected: 12/14/2010 13:00 by RN

Submitted: 12/15/2010 09:40
Reported: 12/29/2010 15:09

Chevron Pipeline Co.
100 Northpark Blvd
Covington LA 70433

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
Metals Dissolved	**SW-846 6010B**		ug/l	ug/l	
01754	Iron	7439-89-6	N.D.	52.2	1

General Sample Comments

State of California Lab Certification No. 2501
This sample was filtered in the lab for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01754	Iron	SW-846 6010B	2	103551848001	12/28/2010 10:59	Joanne M Gates	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	103511848002	12/20/2010 09:43	Denise K Conners	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	2	103551848001	12/22/2010 09:07	Denise K Conners	1

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Analysis Report

Sample Description: MW-9 Grab Water
NA URSO
Sunol Pipeline SL0600100443 MW-9

LLI Sample # WW 6164745
LLI Group # 1225485
Account # 11875

Project Name: Sunol, CA

Collected: 12/14/2010 15:20 by RN

Submitted: 12/15/2010 09:40
Reported: 12/29/2010 15:09

Chevron Pipeline Co.
100 Northpark Blvd
Covington LA 70433

SUN-9

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10943	Benzene	71-43-2	6	0.5	1
10943	Ethylbenzene	100-41-4	80	0.5	1
10943	Toluene	108-88-3	2	0.5	1
10943	Xylene (Total)	1330-20-7	340	0.5	1
GC Volatiles	**SW-846 8015B**		**ug/l**	**ug/l**	
01728	TPH-GRO N. CA water C6-C12	n.a.	9,100	250	5
GC Miscellaneous	**SW-846 8015B modified**		**ug/l**	**ug/l**	
07105	Methane	74-82-8	25	10	1
	Due to interfering peaks on the chromatogram, the value reported for methane represents the lowest reporting limit attainable.				
Metals	**SW-846 6010B**		**ug/l**	**ug/l**	
07058	Manganese	7439-96-5	2,980	0.84	1
Wet Chemistry	**EPA 300.0**		**ug/l**	**ug/l**	
00368	Nitrate Nitrogen	14797-55-8	890	250	5
00228	Sulfate	14808-79-8	25,000	1,500	5
	SM20 2320 B		**ug/l as CaCO3**	**ug/l as CaCO3**	
00202	Alkalinity to pH 4.5	n.a.	523,000	460	1
00201	Alkalinity to pH 8.3	n.a.	N.D.	460	1
	SM20 2540 C		**ug/l**	**ug/l**	
00212	Total Dissolved Solids	n.a.	666,000	19,400	1
	SM20 3500 Fe B modified		**ug/l**	**ug/l**	
08344	Ferrous Iron	n.a.	2,800	100	10

General Sample Comments

State of California Lab Certification No. 2501

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10943	BTEX 8260B Water	SW-846 8260B	1	F103542AA	12/20/2010 09:27	Anita M Dale	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	F103542AA	12/20/2010 09:27	Anita M Dale	1
01728	TPH-GRO N. CA water C6-C12	SW-846 8015B	1	10352A07A	12/21/2010 07:16	Marie D John	5

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Analysis Report

Sample Description: MW-9 Grab Water
NA URSO
Sunol Pipeline SL0600100443 MW-9

LLI Sample # WW 6164745
LLI Group # 1225485
Account # 11875

Project Name: Sunol, CA

Collected: 12/14/2010 15:20 by RN

Submitted: 12/15/2010 09:40
Reported: 12/29/2010 15:09

Chevron Pipeline Co.
100 Northpark Blvd
Covington LA 70433

SUN-9

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01146	GC VOA Water Prep	SW-846 5030B	1	10352A07A	12/21/2010 07:16	Marie D John	5
07105	Volatile Headspace Hydrocarbon	SW-846 8015B modified	1	103490026A	12/17/2010 16:57	Elizabeth J Marin	1
07058	Manganese	SW-846 6010B	1	103511848002	12/20/2010 21:07	John P Hook	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	103511848002	12/20/2010 09:43	Denise K Conners	1
00368	Nitrate Nitrogen	EPA 300.0	1	10348495901C	12/16/2010 10:54	Ashley M Adams	5
00228	Sulfate	EPA 300.0	1	10348495901C	12/16/2010 10:54	Ashley M Adams	5
00202	Alkalinity to pH 4.5	SM20 2320 B	2	10355020201B	12/21/2010 06:34	Susan A Engle	1
00201	Alkalinity to pH 8.3	SM20 2320 B	2	10355020201B	12/21/2010 06:34	Susan A Engle	1
00212	Total Dissolved Solids	SM20 2540 C	1	10351021202B	12/17/2010 12:30	Susan E Hibner	1
08344	Ferrous Iron	SM20 3500 Fe B modified	1	10349834402A	12/15/2010 22:50	Daniel S Smith	10

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Analysis Report

Sample Description: MW-9_Filtered Grab Water
NA URSO
Sunol Pipeline SL0600100443 MW-9

LLI Sample # WW 6164746
LLI Group # 1225485
Account # 11875

Project Name: Sunol, CA

Collected: 12/14/2010 15:20 by RN

Submitted: 12/15/2010 09:40
Reported: 12/29/2010 15:09

Chevron Pipeline Co.
100 Northpark Blvd
Covington LA 70433

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
Metals Dissolved	**SW-846 6010B**		ug/l	ug/l	
01754	Iron	7439-89-6	1,480	52.2	1

General Sample Comments

State of California Lab Certification No. 2501
This sample was filtered in the lab for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01754	Iron	SW-846 6010B	2	103551848001	12/28/2010 11:03	Joanne M Gates	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	103511848002	12/20/2010 09:43	Denise K Conners	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	2	103551848001	12/22/2010 09:07	Denise K Conners	1

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Analysis Report

Sample Description: TB-1 NA Water
NA URSO
Sunol Pipeline SL0600100443

LLI Sample # WW 6164747
LLI Group # 1225485
Account # 11875

Project Name: Sunol, CA

Collected: 12/14/2010

Submitted: 12/15/2010 09:40
Reported: 12/29/2010 15:09

Chevron Pipeline Co.
100 Northpark Blvd
Covington LA 70433

SUN-T

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		ug/l	ug/l	
10943	Benzene	71-43-2	N.D.	0.5	1
10943	Ethylbenzene	100-41-4	N.D.	0.5	1
10943	Toluene	108-88-3	N.D.	0.5	1
10943	Xylene (Total)	1330-20-7	N.D.	0.5	1
GC Volatiles	**SW-846 8015B**		ug/l	ug/l	
01728	TPH-GRO N. CA water C6-C12	n.a.	N.D.	50	1

General Sample Comments

State of California Lab Certification No. 2501

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10943	BTEX 8260B Water	SW-846 8260B	1	F103542AA	12/20/2010 09:48	Anita M Dale	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	F103542AA	12/20/2010 09:48	Anita M Dale	1
01728	TPH-GRO N. CA water C6-C12	SW-846 8015B	1	10352A07A	12/20/2010 23:59	Marie D John	1
01146	GC VOA Water Prep	SW-846 5030B	1	10352A07A	12/20/2010 23:59	Marie D John	1

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Analysis Report

Quality Control Summary

Client Name: Chevron Pipeline Co. Group Number: 1225485
Reported: 12/29/10 at 03:09 PM

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank MDL	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: F103542AA	Sample number(s): 6164741,6164743,6164745,6164747							
Benzene	N.D.	0.5	ug/l	101		79-120		
Ethylbenzene	N.D.	0.5	ug/l	99		79-120		
Toluene	N.D.	0.5	ug/l	101		79-120		
Xylene (Total)	N.D.	0.5	ug/l	98		80-120		
Batch number: 10352A07A	Sample number(s): 6164741,6164743,6164745,6164747							
TPH-GRO N. CA water C6-C12	N.D.	50.	ug/l	91	87	75-135	4	30
Batch number: 103490026A	Sample number(s): 6164741,6164743,6164745							
Methane	N.D.	10.	ug/l	97		80-120		
Batch number: 103511848002	Sample number(s): 6164741,6164743,6164745							
Manganese	1.8	0.84	ug/l	101		90-110		
Batch number: 103551848001	Sample number(s): 6164742,6164744,6164746							
Iron	N.D.	52.2	ug/l	107		90-112		
Batch number: 10348495901C	Sample number(s): 6164741,6164743,6164745							
Nitrate Nitrogen	N.D.	50.	ug/l	102	99	90-110	3	20
Sulfate	N.D.	300.	ug/l	106	105	89-110	1	20
Batch number: 10349834402A	Sample number(s): 6164741,6164743,6164745							
Ferrous Iron	N.D.	10.	ug/l	96		92-105		
Batch number: 10351021202B	Sample number(s): 6164741,6164743,6164745							
Total Dissolved Solids	10,000	9,700.	ug/l	102		80-120		
Batch number: 10355020201B	Sample number(s): 6164741,6164743,6164745							
Alkalinity to pH 4.5	N.D.	460.	ug/l as CaCO3	100		98-103		

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: F103542AA	Sample number(s): 6164741,6164743,6164745,6164747 UNSPK: 6164743								
Benzene	103	107	80-126	4	30				
Ethylbenzene	104	107	71-134	3	30				
Toluene	103	106	80-125	3	30				

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron Pipeline Co. Group Number: 1225485
Reported: 12/29/10 at 03:09 PM

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Xylene (Total)	100	103	79-125	3	30				
Batch number: 103490026A	Sample number(s): 6164741,6164743,6164745 UNSPK: P164396								
Methane	78	80	35-157	2	20				
Batch number: 103511848002	Sample number(s): 6164741,6164743,6164745 UNSPK: P164546 BKG: P164546								
Manganese	105	101	75-125	3	20	44.2	43.2	2	20
Batch number: 103551848001	Sample number(s): 6164742,6164744,6164746 UNSPK: P164478 BKG: P164478								
Iron	92	98	75-125	1	20	3,850	3,750	3	20
Batch number: 10348495901C	Sample number(s): 6164741,6164743,6164745 UNSPK: P164583 BKG: P164583								
Nitrate Nitrogen	109		90-110			N.D.	N.D.	0 (1)	20
Sulfate	112*		90-110			3,400	3,600	4 (1)	20
Batch number: 10349834402A	Sample number(s): 6164741,6164743,6164745 UNSPK: 6164745 BKG: 6164745								
Ferrous Iron	98	103	73-120	2	6	2,800	2,800	2 (1)	5
Batch number: 10351021202B	Sample number(s): 6164741,6164743,6164745 UNSPK: P165106 BKG: 6164741								
Total Dissolved Solids	103		62-135			647,000	643,000	1	9
Batch number: 10355020201B	Sample number(s): 6164741,6164743,6164745 UNSPK: P165873 BKG: P165873								
Alkalinity to pH 4.5	98		73-121			94,100	95,800	2	5
Alkalinity to pH 8.3						N.D.	N.D.	0 (1)	5

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: UST VOCs by 8260B - Water
Batch number: F103542AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
6164741	98	97	101	105
6164743	97	97	99	103
6164745	98	96	102	107
6164747	98	97	99	100
Blank	100	97	101	101
LCS	101	98	100	102
MS	98	99	100	103
MSD	98	97	101	102
Limits:	80-116	77-113	80-113	78-113

Analysis Name: TPH-GRO N. CA water C6-C12
Batch number: 10352A07A

	Trifluorotoluene-F
6164741	132

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron Pipeline Co. Group Number: 1225485
Reported: 12/29/10 at 03:09 PM

Surrogate Quality Control

6164743	92
6164745	108
6164747	92
Blank	91
LCS	104
LCSD	102
Limits:	63-135

Analysis Name: Volatile Headspace Hydrocarbon
Batch number: 103490026A

	Propene
6164741	46
6164743	72
6164745	61
Blank	105
LCS	102
MS	87
MSD	83
Limits:	42-131

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Chevron California Region Analysis Request/Chain of Custody

250998

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Where quality is a science.

For Lancaster Laboratories use only
Acct. #: 11875 Sample #: 6164741-47 SCR#:

1225485

Facility #:
Site Address: MP 27 Sunol, CA
Chevron PM: Kimberly Tow Lead Consultant: URS
Consultant/Office: Oakland - URS
Consultant Prj. Mgr.: Joe Morgan
Consultant Phone #: (510)893-3600 Fax #: (510)874-3268
Sampler: Rachel Naccarati / Pam Kannappan
Service Order #: ☐ Non SAR:

Analyses Requested

Preservation Codes

Preservative Codes
H = HCl T = Thiosulfate
N = HNO_3 B = NaOH
S = H_2SO_4 O = Other

☐ J value reporting needed
☐ Must meet lowest detection limits possible for 8260 compounds

8021 MTBE Confirmation
☐ Confirm highest hit by 8260
☐ Confirm all hits by 8260
☐ Run ____ oxy's on highest hit
☐ Run ____ oxy's on all hits

Field Point Name	Matrix	Repeat Sample	Top Depth	Year Month Day	Time Collected	New Field Pt.	Grab	Composite	Total Number of Containers	BTEX ~~+MTBE~~ 8260 ☐ 8021 ☐ ONLY	TPH ~~8015 MOD~~ GRO	TPH 8015 MOD DRO ☐ Silica Gel Cleanup	8260 full scan	Oxygenates TDS by SM20 2540C	Lead 7420 ☐ 7421 ☐	Nitrate/Sulfate EPA 300.0	Manganese	Dissolved Fe SM20 Manual 3500-Fe B	Ferrous Fe SM20 Manual 3500-Fe B	Methane RSKSOP 175	Alkalinity by SM20 2320B
MW-1	W	N		2010-12-14	1615	N	X		15	X	X			X		X	X	X	X	X	X
MW-4		N			1300	N	X		15	X	X			X		X	X	X	X	X	X
MW-9		N			1520	N	X		15	X	X			X		X	X	X	X	X	X
TB-1		N			--	N	X		4	X	X										

Comments / Remarks
Lab Filter the metals

Turnaround Time Requested (TAT) (please circle)
STD. TAT 72 hour 48 hour
~~24 hour~~ 4 day 5 day

Data Package Options (please circle if required)
QC Summary Type I – Full
Type VI (Raw Data) ☐ Coelt Deliverable not needed
WIP (RWQCB)
Disk

Relinquished by:	Date	Time	Received by:	Date	Time
	12/14/10	1900			
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by Commercial Carrier: UPS (FedEx) Other			Received by:	Date	Time
Temperature Upon Receipt 1.6 C°			Custody Seals Intact? (Yes) No	12-15-10	0940

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

RL	Reporting Limit	**BMQL**	Below Minimum Quantitation Level
N.D.	none detected	**MPN**	Most Probable Number
TNTC	Too Numerous To Count	**CP Units**	cobalt-chloroplatinate units
IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm	**ng**	nanogram(s)
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
ug	microgram(s)	**mg**	milligram(s)
ml	milliliter(s)	**l**	liter(s)
m3	cubic meter(s)	**ul**	microliter(s)

< less than - The number following the sign is the limit of quantitation, the smallest amount of analyte which can be reliably determined using this specific test.

> greater than

J estimated value – The result is ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ).

ppm parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter of gas per liter of gas.

ppb parts per billion

Dry weight basis Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

U.S. EPA CLP Data Qualifiers:

Organic Qualifiers

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
C	Pesticide result confirmed by GC/MS
D	Compound quantitated on a diluted sample
E	Concentration exceeds the calibration range of the instrument
N	Presumptive evidence of a compound (TICs only)
P	Concentration difference between primary and confirmation columns >25%
U	Compound was not detected
X,Y,Z	Defined in case narrative

Inorganic Qualifiers

B	Value is <CRDL, but ≥IDL
E	Estimated due to interference
M	Duplicate injection precision not met
N	Spike sample not within control limits
S	Method of standard additions (MSA) used for calculation
U	Compound was not detected
W	Post digestion spike out of control limits
*****	Duplicate analysis not within control limits
+	Correlation coefficient for MSA <0.995

Analytical test results meet all requirements of NELAC unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. This report shall not be reproduced except in full, without the written approval of the laboratory.