REPORT

FIRST SEMI-ANNUAL 2012 GROUNDWATER MONITORING REPORT

SLIC CASE #RO0002892
CHEVRON PIPELINE COMPANY
SUNOL SPILL
2793 CALAVERAS RD.
SUNOL, CA

Prepared for
Alameda County Health Agency
1131 Harbor Bay Parkway
Alameda, CA 94502

May 2012

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26817187

Chevron

Global Gas

April 30, 2012

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 – First Semi-Annual 2012 Groundwater Monitoring Report**" are true and correct to the best of my knowledge at the present time.

Submitted by:

Stephen Gwin
Chevron Pipe Line Company

URS

This letter report ("**First Semi-Annual 2012 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 First Semi-Annual 2012 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.

Approved by:
URS CORPORATION

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April 30, 2012

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, First Semi-Annual 2012 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 a letter dated December 10, 2010, the ACEHD agreed to change the quarterly groundwater monitoring program to semi-annual. In response to this request and on behalf of CPL, URS Corporation (URS) has prepared this first semi-annual 2012 Site Groundwater Monitoring Report.

If you have any questions on this report, please call Mr. Joe Morgan of URS at 510-874-3201.

Sincerely,

URS CORPORATION

Robert Horwath, P.G.
Senior Geologist

Joe Morgan III
Project Manager

cc: Mr. Stephen Gwin, Chevron Pipeline Company
Ms. Rachel Naccarati, URS Oakland
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Tables:

- Table 1 – Monitoring Well Groundwater Levels
- Table 2 – Monitoring Well Groundwater Elevations
- Table 3 – Summary of Groundwater Analytical Results – Gasoline Compounds
- Table 4 – Summary of Groundwater Analytical Results – Geochemical Indicators and Other Parameters

Figures:

- Figure 1 – Site Vicinity Map
- Figure 2 – SVE and Groundwater Monitoring Well Locations
- Figure 3 – Unconfined Water-Bearing Zone and Bedrock Elevations Map

Appendices:

- Appendix A – Groundwater Sampling Forms
- Appendix B – Laboratory Analytical Results

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On March 20 and 21, 2012, URS Corporation (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. Groundwater monitoring wells and surface water sampling locations are provided on Figure 2.

URS gauged the depth to groundwater at 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 through MW-4 and MW-8 through MW-11. URS also collected a surface water sample from the very small stream, located northwest of the release location. Monitoring wells MW-5 through MW-7 were abandoned on June 23, 2008, and are no longer part of the groundwater monitoring program.

1.1 SITE HYDROGEOLOGY

Prior to collecting groundwater samples, depth to groundwater measurements were recorded from wells MW-1 through MW-4 and MW-8 through MW-11 from the top of casing using an electronic oil/water interface probe. No light non-aqueous phase liquid (LNAPL) was measured and no LNAPL sheens were observed during the first semi-annual 2012 event. Depth to groundwater measurements are presented in Table 1 and calculated groundwater elevations above mean sea level are presented in Table 2.

Unconfined Water Bearing Zone

The groundwater surface elevation increased in all wells (MW-1 through MW-4 and MW-8 through MW-11) relative to the last sampling event in August 2011. The groundwater elevation for well MW-1 was 291.36, MW-2 was 291.50, MW-3 was 293.57, MW-4 was 292.60, MW-9 was 290.82, MW-10 was 290.41 and MW-11 was 291.22 feet above average mean sea level (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 water-bearing zone, was 315.21 feet above msl.

Based on water level data from MW-1 through 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. Well MW-8 was not included in URS groundwater contour development because it is screened in a different water bearing zone.

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

2.1 QUARTERLY MONITORING ACTIVITIES

After measuring the depth to groundwater at each well, URS conducted groundwater sampling on March 20 and 21, 2012. The rationale for the method used at each monitoring well is described below:

- MW-1 through MW-4 and MW-9 through MW-11 were sampled using low-flow methods.
- MW-8 was sampling using a hand bailer, instead of low-flow methods, due to health and safety concerns due to the close proximity to Calaveras Road.
- A grab 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 through MW-4, and MW-8 through MW-11

Low-flow purging rates of 200-400 milliliters per minute (mL/min) were used, dependent on the rate of recharge at each monitoring well. The low-flow groundwater sampling forms are included in Appendix A.

In addition to monitoring the water level at each monitoring well during low-flow sampling, the following geochemical parameters: 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 U-22 meter. The multi-parameter meter 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 except for MW-8 which was collected directly from the clean hand bailer.

2.1.2 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 March 20, 2012 using a clean disposable container.

3.1 ANALYTICAL PROGRAM

The groundwater samples from wells MW-1 through MW-4, MW-8 through MW-11 and the stream sample were collected in clean laboratory provided containers. The containers were labeled with 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 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 Parameters

- Field measurements included ORP, DO and pH and were collected in monitoring wells MW-1 through MW-4 and MW-9 through MW-11 using an in-line flow-through cell and multi-parameter Horiba U-22 meter.
- Field measurements of ORP, DO and pH were collected in monitoring well MW-8 by pouring the water collected by the clean hand bailer into the flow-through cell.
- Lab measurements included: nitrate and sulfate (EPA method 300.0), manganese, methane and dissolved iron (SW-846 6010B), ferrous iron (SM20 3500 Fe B modified), total dissolved solids (SM 2540 C), and alkalinity (SM20 2320B) and were collected in MW-1 through MW-4 and MW-8 through MW-11.

3.2 GROUNDWATER ANALYTICAL RESULTS DISCUSSION

A tabulated summary of the analytical results for the gasoline compounds are 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 water bearing zone wells sampled during the first semi-annual 2012 event included MW-1 through MW-4 and MW-8 through MW-11. The first semi-annual 2012 groundwater sample results are as follows:

- The MW-1 sample contained TPH-GRO at 880 µg/L and total xylenes at 0.7 µg/L. Benzene, ethylbenzene and toluene analytical results were below their respective laboratory method detection limits. TPH-GRO sample results decreased since the sampling event in August 2011. Toluene and total xylenes sample results decreased since the sampling event in August 2011. Monitoring well MW-1 has not been consistently sampled due to the groundwater in the well being hydraulically disconnected from the aquifer. TPH-GRO and BTEX concentrations have decreased since sampling activities began in 2006.
- The MW-2 sample contained total xylenes at 0.6 µg/L. TPH-GRO, benzene, toluene and ethlybenzene results were below their respective laboratory method detection limits. Total xylenes

has not been detected since March 2010. However, monitoring well MW-2 has not consistently been sampled due to the groundwater in the well being hydraulically disconnected from the aquifer.

- All analytical results from MW-3were below their respective laboratory reporting method detection limits.
- The MW-4 sample contained total xylenes at 1 µg/L. TPH-GRO, benzene, toluene and ethlybenzene results were below their respective laboratory method detection limits. Total xylenes has not been detected since December 2010. However, monitoring well MW-4 has not consistently been sampled due to the groundwater in the well being hydraulically disconnected from the aquifer.
- The MW-8 sample contained TPH-GRO at 52,000 µg/L, benzene at 1,000 µg/L, toluene at 2,300 µg/L, ethylbenzene at 2,600 µg/L, and total xylenes at 8,500 µg/L. TPH-GRO, benzene, toluene, ethylbenzene and total xylenes have decreased since the sampling event in August 2011.
- The MW-9 sample contained TPH-GRO at 2,500 µg/L, ethylbenzene at 3 µg/L, and total xylenes at 4 µg/L. Benzene and toluene analytical results were below their respective laboratory reporting method detection limits. TPH-GRO, ethylbenzene and total xylenes concentrations have decreased since the August 2011 sampling event.
- All analytical results from MW-10 were below their respective laboratory reporting method detection limits.
- All analytical results from MW-11 were below their respective laboratory reporting method detection limits.

Groundwater analytical results are presented in Table 3.

TPH-GRO and BTEX concentrations have steadily decreased since the pipeline release in all wells except MW-8. The highest concentrations of TPH-GRO, benzene, toluene, and ethylbenzene over the duration of the monitoring program were recorded in groundwater at well MW-8 located on the eastern side of Calaveras Road. TPH-GRO was 78,000 µg/L in December 2010, benzene was 2,000 µg/L in December 2010, toluene was 16,000 µg/L in September 2010 and ethylbenzene was 3,200 µg/L in September 2010 and August 2011. The highest concentration of total xylenes over the duration of the monitoring program was 17,000 µg/L in November 2006 in groundwater monitoring well MW-9.

3.2.2 Surface Water Sample

A grab surface water sample was collected on March 20, 2012. TPH-GRO and BTEX were below their respective laboratory reporting limits in the sample collected from the stream (Table 3).

3.2.3 Geochemical Analytical Results

A biodegradation assessment was completed to assess if the residual toluene in groundwater is being decreased by anaerobic biodegradation. Observations from the recent first semi-annual 2012 monitoring event are discussed to provide an overview of the anaerobic biodegradation. A brief summary of oxidation reduction potential (ORP) measurements is provided below, followed by a discussion of the bioremediation parameters in order of the five stages of anaerobic biodegradation: aerobic respiration (DO); denitrification (nitrate); iron (III) reduction (ferric to ferrous); sulfate reduction (sulfate); and methanogenesis (methane).

The groundwater samples collected from MW-1 through MW-4 and MW-8 through MW-11were analyzed for a selection of field and laboratory geochemical parameters. URS will continue to collect a complete set of 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). The following ORP ranges were recorded in the field during this sampling event: ORP levels in MW-1 ranged from -54 mV to 19 mV, ORP levels in MW-2 ranged from 134 mV to 146 mV, ORP levels in MW-3 ranged from -46 mV to 37 mV, ORP levels in MW-4 ranged from 83 mV to 107 mV, ORP levels in MW-8 ranged from -104 mV to -58 mV, ORP levels in MW-9 ranged from -148 mV to -98 mV, ORP levels in MW-10 ranged from -67 mV to -34 mV, and ORP levels in MW-11 ranged from -52 mV to -6 mV. In general, reducing conditions appear to exist at the Site. The ORP reading for MW-8 was recorded during this sampling event using the purge water that was poured into the multi-parameter meter from a bailer.

3.2.3.2 Dissolved Oxygen

DO is the most thermodynamically favored electron acceptor used in the aerobic biodegradation of petroleum hydrocarbons. Final DO concentrations for this sampling event, measured as milligrams per liter (mg/L) in the field, were reported as follows: 0.31 mg/L in MW-1, 1.22 mg/L in MW-2, 4.40 mg/L in MW-3, 2.69 mg/L in MW-4, 8.75 mg/L in MW-8, 0.48 mg/L in MW-9, 0.56 mg/L in MW-10, and 0.38 mg/L in MW-11. The DO reading for MW-8 was artificially high because purge water was aerated when it was poured into the multi-parameter meter from a bailer. The low DO concentrations for MW-1 (0.31 mg/L) and MW-9 (0.48 mg/L) correlate to relatively high TPH-GRO concentrations of 880 µg/L and 2,500 µg/L for MW-1 and MW-9, respectively. The DO concentrations in MW-10 (0.56 mg/L) and MW-11 (and 0.38 mg/L) are lower than expected when correlated to the non-detections of TPH-GRO in these wells. DO concentrations are above 1.22 mg/L in the remaining wells with non-detect levels of TPH-GRO.

3.2.3.3 Nitrates

After DO has been depleted in the groundwater, nitrate may be consumed during the anaerobic biodegradation of TPH-GRO 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. Final nitrate concentrations for this sampling event, measured by the analytical laboratory as mg/L, were reported as follows: 1.1 mg/L in MW-1, 4.4 mg/L in MW-2, 14.9 mg/L in MW-3, 13 mg/L in MW-4, 0.29 mg/L in MW-8, 1.8 mg/L in MW-9, 2.5 mg/L in MW-10, and 0.30 mg/L in MW-11. Nitrate concentrations at the Site are reduced in hydrocarbon impacted wells MW-1, MW-8 and MW-9. However, monitoring well MW-11 has reduced nitrate concentrations with a non-detect level of TPH-GRO.

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. Final ferrous iron concentrations for this sampling event, measured by the analytical laboratory as milligrams per liter (mg/L) were reported as follows: 0.58 mg/L in MW-1, <0.010 mg/L in

MW-2, 0.054 mg/L in MW-3, 0.021 mg/L in MW-4, 2.6/3.0 mg/L in MW-8/MW-X, 0.180 mg/L in MW-9, 0.280 mg/L in MW-10, and 0.20 mg/L in MW-11. Ferrous iron concentrations at the Site are generally higher in hydrocarbon impacted wells MW-1 and MW-8. The ferrous iron concentration is slightly lower in hydrocarbon impacted well MW-9.

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 results for this sampling event, measured by the analytical laboratory as milligrams per liter (mg/L) were reported as follows: 106 mg/L in MW-1, 159 mg/L in MW-2, 65.4 mg/L in MW-3, 119 mg/L in MW-4, <1.5/3.9 mg/L in MW-8/MW-X, 103 mg/L in MW-9, 256 mg/L in MW-10, and 134 mg/L in MW-11. The sulfate concentration at the Site is significantly lower in hydrocarbon impacted well MW-8.

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. Methane results for this sampling event, measured by the analytical laboratory as milligrams per liter (mg/L) were reported as follows: <0.005 mg/L in MW-1, <0.005 mg/L in MW-2, 0.28 mg/L in MW-3, 0.0063 mg/L in MW-4, 67/58 mg/L in MW-8/MW-X, <0.005 mg/L in MW-9, 0.540 mg/L in MW-10, and 0.420 mg/L in MW-11. The methane concentration at the Site is significantly elevated in hydrocarbon impacted well MW-8.

3.2.3.7 TPH-GRO and BTEX Concentration Trends

TPH-GRO and BTEX concentrations have steadily decreased since the pipeline release in all wells except MW-8. The highest concentrations of TPH-GRO, benzene, toluene, and ethylbenzene over the duration of the monitoring program were recorded in groundwater at well MW-8 located on the eastern side of Calaveras Road. TPH-GRO was 78,000 µg/L in December 2010, benzene was 2,000 µg/L in December 2010, toluene was 16,000 µg/L in September 2010 and ethylbenzene was 3,200 µg/L in September 2010 and August 2011. The highest concentration of total xylenes over the duration of the monitoring program was 17,000 µg/L in November 2006 in groundwater monitoring well MW-9.

3.2.3.8 Summary of Geochemical Analytical Results

The geochemical parameters that were collected included ORP, DO, nitrates, ferrous iron, sulfate and methane. ORP concentrations measured in groundwater monitoring wells ranged from -147 mV in MW-9 to 134 mV in MW-2. DO concentrations measured in groundwater monitoring

wells ranged from 0.31 mg/L in MW-1 to 4.40 in MW-2. The DO concentration measured in MW-8, 8.75 mg/L was artificially high because purge water was aerated when it was poured into the multi-parameter meter from a bailer. Nitrate concentrations ranged from 0.30 mg/L in MW-11 to 14.9 mg/L in MW-3 and 0.29 mg/L in MW-8 to 1.8 mg/L in MW-9. Ferrous iron concentrations measured in groundwater monitoring wells ranged from <0.010 mg/L in MW-2 to 2.6 mg/L in MW-8. Sulfate concentrations measured in groundwater monitoring wells ranged from <1.5 mg/L in MW-8 to 256 mg/L in MW-10. Methane concentrations ranged from <0.005 mg/L in MW-1, MW-2 and MW-9 to 67 mg/L in MW-8.

3.3 SUMMARY OF QA/QC REVIEW PAREMETERS

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)

3.3.1 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. The 24 hour sample hold time for ferrous iron was exceeded for all samples. Ferrous iron detections in samples MW-1, MW-3, MW-4, MW-8, MW-10, MW-11, and MW-X (duplicate of MW-8) were qualified as estimated, biased low, and flagged with a "J-" based on the hold time exceedence. The ferrous iron nondetection in sample MW-2 was qualified as rejected, and flagged with an "R" due to the hold time being exceeded. No other hold times were exceeded.

3.3.2 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. Dissolved iron was detected in the method blank in report 1296609. Dissolved iron detection levels were less

than ten times the method blank concentration and were qualified with a "J+". All other reported results for the laboratory method blanks were nondetect (less than the laboratory reporting limit), indicating no evidence of contamination from laboratory instrumentation.

3.3.3 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.

3.3.4 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 Reagent Grade Type II 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.

3.3.5 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.

3.3.6 Field Duplicate Analyses

Field duplicate samples are collected in the field and analyzed to evaluate the heterogeneity of the matrices. One field duplicate sample, MW-X (duplicate of MW-8), was collected during this sampling event. The QA/QC review identifies relative percent (%) difference (RPD) greater than 20% for compounds detected in the field sample and corresponding field duplicate sample. The following field sample/duplicate sample pair had RPDs greater than 20%:

- RPDs of 23%, 43%, 89%, and 76% were observed for toluene, manganese, sulfate, and dissolved iron, respectively, in field sample/duplicate sample pair MW-8/MW-X. The toluene, manganese, sulfate, and dissolved iron results in samples MW-8 and MW-X were qualified with a "J," indicating heterogeneity of the sample matrix.

3.3.7 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.

3.4 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 "J+" or "J-" indicates that the result is an estimate, but may be biased either high or low, respectively. 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.

3.5 SUMMARY OF QA/QC REVIEW FINDINGS

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

The sample hold time for ferrous iron was exceeded for all samples. Ferrous iron detections in samples MW-1, MW-3, MW-4, MW-8, MW-10, MW-11, and MW-X were qualified as estimated, biased low, and flagged with a "J-". The ferrous iron nondetection in sample MW-2 was qualified as rejected, and flagged with an "R".

Dissolved iron was detected in the method blank in report 1296609. Dissolved iron detection levels were less than ten times the method blank concentration and were qualified with a "J+".

RPDs of 23%, 43%, 89%, and 76% were observed for toluene, manganese, sulfate, and dissolved iron, respectively, in field sample/duplicate sample pair MW-8/MW-X. The toluene, manganese, sulfate, and dissolved iron results in samples MW-8 and MW-X were qualified with a "J," indicating heterogeneity of the sample matrix.

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. The QA/QC review of data found it suitable for its intended use to address the groundwater conditions at the Site.

Semi-annual groundwater monitoring field activities conducted on March 20 and 21, 2012 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 monitoring wells MW-1 through MW-4 and MW-8 through MW-11, and the stream. The findings are as follows:

- LNAPL was not observed in any of the monitoring wells during the first semi-annual 2012 groundwater monitoring activities.
- The groundwater elevations increased in all wells since the last sampling event in August 2011. 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.
- TPH-GRO and BTEX concentrations have steadily decreased since the pipeline release in all wells except MW-8. The highest concentrations of TPH-GRO, benzene, toluene, and ethylbenzene over the duration of the monitoring program were recorded in groundwater at well MW-8 located on the eastern side of Calaveras Road. TPH-GRO was 78,000 µg/L in December 2010, benzene was 2,000 µg/L in December 2010, toluene was 16,000 µg/L in September 2010 and ethylbenzene was 3,200 µg/L in September 2010 and August 2011. The highest concentration of total xylenes over the duration of the monitoring program was 17,000 µg/L in November 2006 in groundwater monitoring well MW-9.
- TPH-GRO and BTEX were detected in monitoring well MW-8 during the first semi-annual 2012 monitoring event. TPH-GRO was detected at a concentration of 52,000 µg/L, benzene was detected at a concentration of 1,000 µg/L, toluene was detected at a concentration of 2,300 µg/L, ethylbenzene was detected at a concentration of 2,600 µg/L and xylenes was detected at a concentration of 8,500 µg/L.
- The geochemical parameters that were collected included ORP, DO, nitrates, ferrous iron, sulfate and methane. ORP concentrations measured in groundwater monitoring wells ranged from -147 mV in MW-9 to 146 mV in MW-2. DO concentrations measured in groundwater monitoring wells ranged from 0.31 mg/L in MW-1 to 4.40 in MW-2. The DO concentration measured in MW-8, 8.75 mg/L was artificially high because purge water was aerated when it was poured into the multi-parameter meter from a bailer. Nitrate concentrations ranged from 0.30 mg/L in MW-11 to 14.9 mg/L in MW-3 and 0.29 mg/L in MW-8 to 1.8 mg/L in MW-9. Ferrous iron concentrations measured in groundwater monitoring wells ranged from <0.010 mg/L in MW-2 to 2.6 mg/L in MW-8. Sulfate concentrations measured in groundwater monitoring wells ranged from <1.5 mg/L in MW-8 to 256 mg/L in MW-10. Methane concentrations ranged from <0.005 mg/L in MW-1, MW-2 and MW-9 to 67 mg/L in MW-8.
- Since 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.
- The analytical data are of acceptable quality and may be used for their intended purposes. The QA/QC review of data found it suitable for its intended use to address the groundwater conditions at the Site.

Based on the March 2012 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.
- Implement additional 2012 Data Gaps Investigation/Remediation upon approval from the ACEHD.

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.

Services performed by URS were conducted in a manner consistent with that level of care and skill ordinarily exercised by other professional consultants under similar circumstances. No other representations to CPL, either expressed or implied, and no warranty or guarantee is included or intended for the semiannual groundwater monitoring report. The program described in this report is based upon the information acquired during the various investigations at the Site. It is possible that variations at the Site could exist beyond or between points explored during the course of the investigations. Also, changes in conditions could occur at some time in the future due to possible contamination migration, variations in rainfall, temperature, and/or other factors not apparent at the time of the various field activities.

Opinions relating to the environmental, geologic, and hydrogeologic conditions are based on limited data and actual conditions may vary from those encountered at the times and locations where the data was obtained, despite the use of due professional care.

Any reliance on this report by any other party shall be at such a party's sole risk unless that party has written authorization from URS to use this document. The purpose of this restriction is to attempt to protect the interests for whom the report may be appropriately directed.

TABLE 1
Monitoring Well Groundwater Levels
First Semi-Annual 2012 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	--	--
		3/28/2011	32.19	--	--
		8/22/2011	37.04	37.03	0.01
		3/20/2012	36.68	--	--
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	--	--
		3/28/2011	28.10	--	--
		8/22/2011	33.07	--	--
		3/20/2012	32.65	--	--

TABLE 1
Monitoring Well Groundwater Levels
First Semi-Annual 2012 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	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	--	--
		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	--	--
		3/28/2011	28.78	--	--
		8/22/2011	34.70	--	--
		3/20/2012	32.08	--	--
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	--	--
		3/28/2011	33.63	--	--
		8/22/2011	38.88	--	--
		3/20/2012	37.07	--	--

TABLE 1
Monitoring Well Groundwater Levels
First Semi-Annual 2012 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-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	--	--
		3/28/2011	18.40	--	--
		8/22/2011	19.97	--	--
		3/20/2012	18.72	--	--
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	--	--
		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	--	--
		3/28/2011	37.70	--	--
		8/22/2011	42.52	--	--
		3/20/2012	42.25	--	--
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	--	--

TABLE 1
Monitoring Well Groundwater Levels
First Semi-Annual 2012 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-10 cont.	40.3-55.3	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	--	--
		3/28/2011	40.41	--	--
		8/22/2011	45.57	--	--
		3/20/2012	45.48	--	--
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	--	--
		3/28/2011	34.25	--	--
		8/22/2011	38.73	--	--
		3/20/2012	38.67	--	--

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
First Semi-Annual 2012 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	--	--
				3/28/2011	295.85	--	--
				8/22/2011	291.00	291.01	0.01
				3/20/2012	291.36	--	--
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	--	--
				3/28/2011	296.05	--	--
				8/22/2011	291.08	--	--
				3/20/2012	291.50	--	--
MW-3	10/21/2005	326.05	325.65	2/21/2006	293.68	--	--
				6/7/2006	294.74	--	--
				8/22/2006	290.99	--	--

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First Semi-Annual 2012 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.	10/21/2005	326.05	325.65	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	--	--
				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	--	--
				3/28/2011	296.87	--	--
				8/22/2011	290.95	--	--
				3/20/2012	293.57	--	--
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	--	--
				3/28/2011	296.04	--	--
				8/22/2011	290.79	--	--
				3/20/2012	292.60	--	--
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	--	--

TABLE 2
Monitoring Well Groundwater Elevations
First Semi-Annual 2012 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-8 cont.	8/15/2006	335.23	333.93	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	--	--
				3/28/2011	315.53	--	--
				8/22/2011	313.96	--	--
				3/20/2012	315.21	--	--
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	--	--
				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	--	--
				3/28/2011	295.37	--	--
				8/22/2011	290.55	--	--
				3/20/2012	290.82	--	--
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	--	--

TABLE 2
Monitoring Well Groundwater Elevations
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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-10 cont.	9/5/2007	336.55	335.89	12/14/2010	290.12	--	--
				3/28/2011	295.48	--	--
				8/22/2011	290.32	--	--
				3/20/2012	290.41	--	--
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	--	--
				3/28/2011	295.64	--	--
				8/22/2011	291.16	--	--
				3/20/2012	291.22	--	--

Notes:
NM - Not measured
-- Not present
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
First Semi-Annual 2012
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**
	3/29/2011	**1,200**	<0.5	<0.5	<0.5	<0.5
	8/23/2011	**960**	<0.5	**1**	<0.5	**2**
	3/21/2012	**880**	<0.5	<0.5	<0.5	**0.7**
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
	3/28/2011	<50	<0.5	<0.5	<0.5	<0.5
	Q3 2011 3)	NS	NS	NS	NS	NS
	3/21/2012	<50	<0.5	<0.5	<0.5	**0.6**
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

TABLE 3
Summary of Groundwater Analytical Results Gasoline Compounds
First Semi-Annual 2012
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.	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	<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
	3/28/2011	<50	<0.5	<0.5	<0.5	<0.5
	8/23/2011	<50	<0.5	**2**	**1**	**5**
	3/20/2012	<50	<0.5	<0.5	<0.5	<0.5
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**
	3/29/2011	<50	<0.5	<0.5	<0.5	<0.5
	Q3 2011 3)	NS	NS	NS	NS	NS
	3/21/2012	<50	<0.5	<0.5	<0.5	**1**
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**

TABLE 3
Summary of Groundwater Analytical Results Gasoline Compounds
First Semi-Annual 2012
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.	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**
	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**
	3/29/2011	**49,000**	**1,600**	**7,500**	**2,000**	**11,000**
	8/23/2011	**72,000**	**1,200**	**15,000**	**3,200**	**15,000**
	3/21/2012	**52,000/55,000**	**1,000/1,000**	**2,300 J/2,900 J**	**2,600/2,600**	**8,500/9,700**
MW-9/MW-X [7]	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**
	3/29/2011	**7,100**	**0.8**	**0.9**	**44**	**190**
	8/23/2011	**7900/ 8,300**	**<0.5/<1.0**	**2/ 2**	**46/ 47**	**200 /220**
	3/21/2012	**2,500**	<0.5	<0.5	**3**	**4**
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
	3/28/2011	<50	<0.5	<0.5	<0.5	<0.5
	8/23/2011	<50	<0.5	<0.5	<0.5	0.6
	3/20/2012	<50	<0.5	<0.5	<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

TABLE 3
Summary of Groundwater Analytical Results Gasoline Compounds
First Semi-Annual 2012
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-11 cont.	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
	3/28/2011	<50	<0.5	<0.5	<0.5	<0.5
	8/23/2011	<50	<0.5	<0.5	<0.5	<0.5
	3/20/2012	<50	<0.5	<0.5	<0.5	<0.5
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
	3/29/2011	<50	<0.5	<0.5	<0.5	<0.5
	8/23/2011	<50	<0.5	<0.5	<0.5	<0.5
	3/20/2012	<50	<0.5	<0.5	<0.5	<0.5

Notes:

Bold values exceed laboratory reporting limits.
J - 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.
7) Duplicate sample collected from MW-9 during the third quarter 2011 sampling event.

TABLE 4
Summary of Groundwater Analytical Results Geochemical Indicators and Other Parameters
First Semi-Annual 2012
Groundwater Monitoring Report
Chevron Sunol Pipeline

Well ID	Date	Geochemical Indicators and Other Parameters											
		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	NM[7]	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
	3/29/2011	2.84	-5	9J	0.21	<0.01J-	<0.052	49.4	0.012	7.01	532	327	<0.46
	8/22/2011	2.34	-276	NM[9]	NM[9]	NM[9]	NM[9]	NM[9]	NM[9]	6.88	NM[9]	NM[9]	NM[9]
	3/21/2012	0.31	-54	1.1	0.456	0.58 J-	0.0593	106	<0.005	6.93	868	574	<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]
	3/28/2011	6.11	168	16.600	0.001	0.021J-	<0.052	53.8	<0.01	7.04	529	304	<0.46
	Q3 2011	NM[7]	NM[7]	NM[9]	NM[9]	NM[9]	NM[9]	NM[9]	NM[9]	NM[7]	NM[9]	NM[9]	NM[9]
	3/21/2012	1.22	134	4.4	0.0079	<0.010 R	0.0141	159	<0.005	7.01	874	568	<0.46
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]
	3/28/2011	5.32	185	12.800	<0.0084	0.026J-	<0.052	46.3	<0.01	7.06	454	269	<0.46
	8/22/2011	2.15	-183	NM[9]	NM[9]	NM[9]	NM[9]	NM[9]	NM[9]	7.02	NM[9]	NM[9]	NM[9]
	3/20/2012	4.40	37	14.9	0.029	0.054 J-	0.0219 J+	65.4	0.028	6.66	686	396	<0.46
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]

TABLE 4
Summary of Groundwater Analytical Results Geochemical Indicators and Other Parameters
First Semi-Annual 2012
Groundwater Monitoring Report
Chevron Sunol Pipeline

Well ID	Date	Geochemical Indicators and Other Parameters											
		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-4 cont.	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
	3/29/2011	3.81	220	12J	0.018	0.032J-	<0.052	59.5	<0.010	6.98	488	290	<0.46
	Q3 2011	NM[7]	NM[7]	NM[9]	NM[9]	NM[9]	NM[9]	NM[9]	NM[9]	NM[7]	NM[9]	NM[9]	NM[9]
	3/21/2012	2.69	107	13	0.043	0.021 J-	0.0141	119	0.0063	6.85	672	384	<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[8]	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
	3/29/2011	NM[8]	NM[8]	<0.25UJ	2.29	1.2J-	0.413	84.1	0.39J	NM[8]	1210.00	680	<0.46
	8/23/2011	1.18	-261	NM[9]	NM[9]	NM[9]	NM[9]	NM[9]	NM[9]	6.94	NM[9]	NM[9]	NM[9]
	3/21/2012	8.75[6]	-103	0.29/ <0.25	0.383 J/ 0.590 J	2.6 J-/ 3.0 J-	0.017 J/ 0.385 J	<1.5 J/ 3.9 J	67/ 58	7.43	599/ 674	473/ 507	<0.46/ <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
	3/29/2011	2.78	-140	6.40J	1.58	0.043	<0.052	63	0.018	7.09	608	396	<0.46
	8/22/2011	2.32	-451	NM[9]	NM[9]	NM[9]	NM[9]	NM[9]	NM[9]	7.08	NM[9]	NM[9]	NM[9]
	3/21/2012	0.48	-147	1.8	0.154	0.18 J-	0.146	103	<0.005	6.91	784	552	<0.046
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
	3/28/2011	5.56	48	18.00	0.101	0.39J-	<0.052	57	0.03	7.00	652	392	<0.46
	8/22/2011	0.00	9	NM[9]	NM[9]	NM[9]	NM[9]	NM[9]	NM[9]	7.09	NM[9]	NM[9]	NM[9]
	3/20/2012	0.56	-34	2.5	0.201	0.280 J-	0.0743 J+	256	0.540	7.03	960	592	<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

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Well ID	Date	Geochemical Indicators and Other Parameters											
		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-11 cont.	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
	2/28/2011	5.25	91.00	17.50	0.022	0.03J-	<0.052	76	0.06	6.98	602	319	<0.46
	8/22/2011	2.89	-38.00	NM[9]	NM[9]	NM[9]	NM[9]	NM[9]	NM[9]	6.53	NM[9]	NM[9]	NM[9]
	3/20/2012	0.38	-16	0.30	0.221	0.20 J-	0.025 J+	134	0.420	7.02	954	455	<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- = Biased low value
R = Rejected

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
9) Geochemical parameters were not collected because the sampling crew could not collect enough sample from at least 4 of the monitoring wells for analysis.

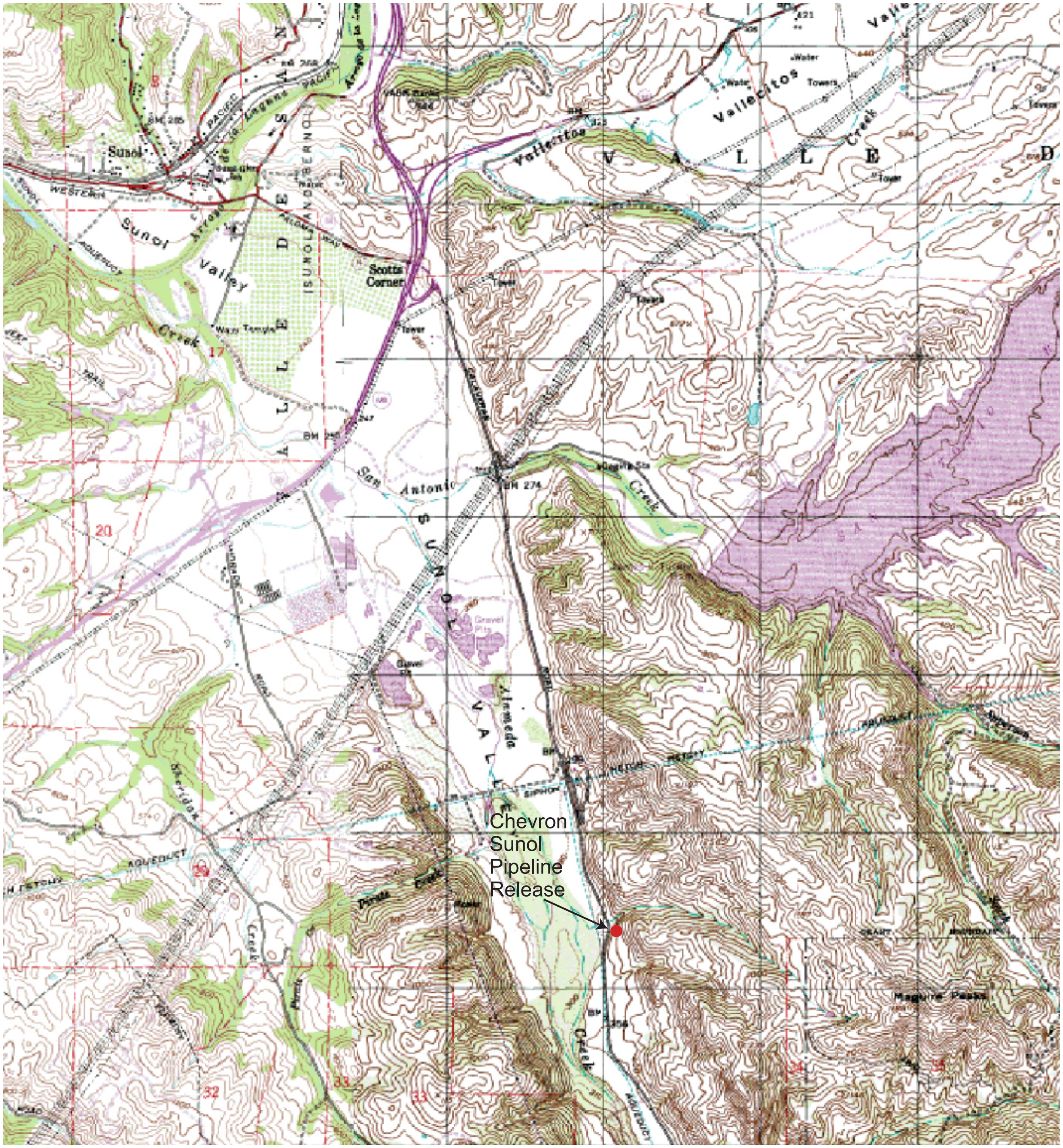


Image obtained from topozone.com

0	0.6	1.2	1.8	2.4	3 km	
0	0.4	0.8	1.2	1.6	2 mi	

N

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. 26817187	SITE VICINITY MAP CHEVRON SUNOL PIPELINE SUNOL, CALIFORNIA	Figure 1

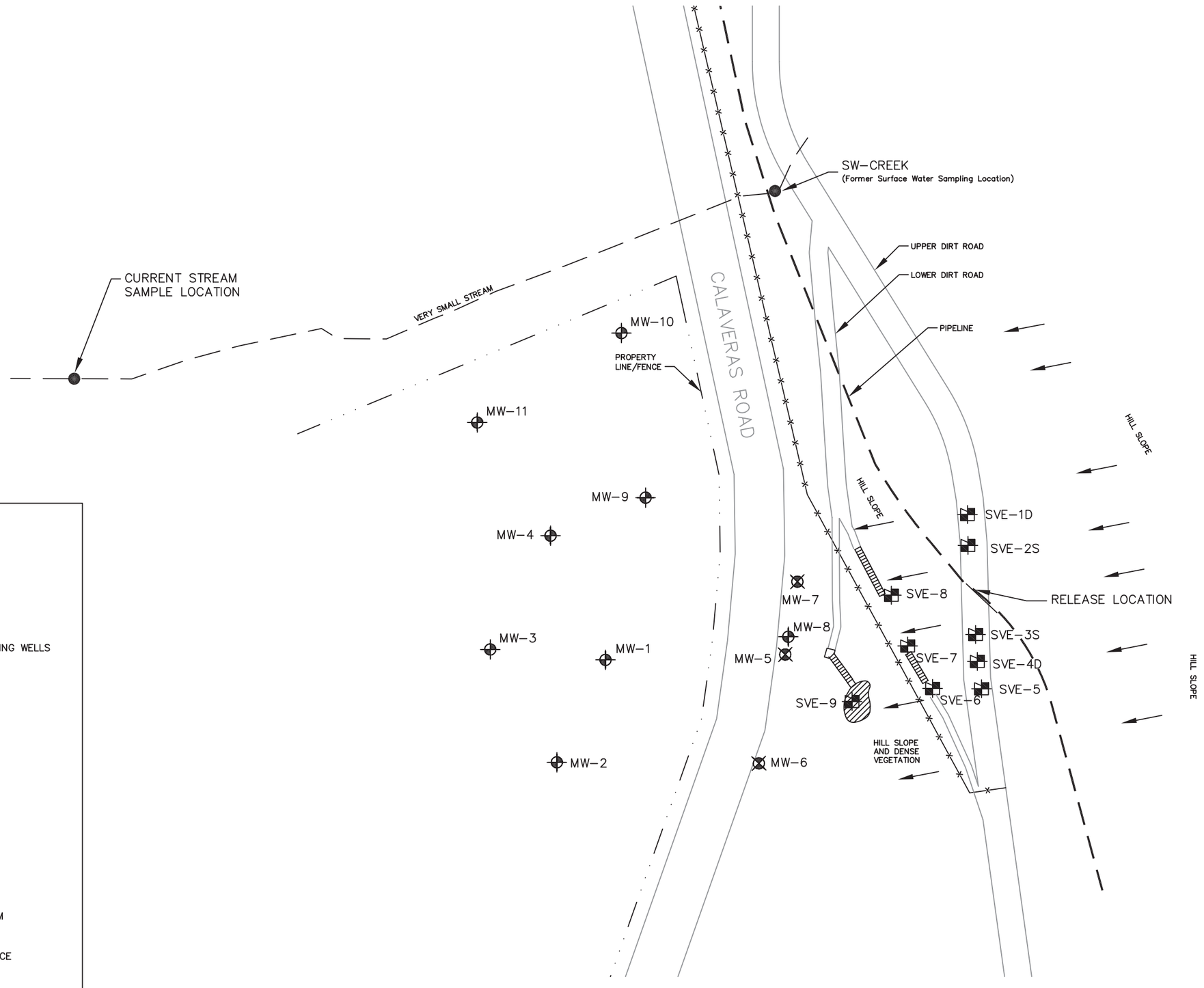
NORTH

0 50 100

SCALE IN FEET

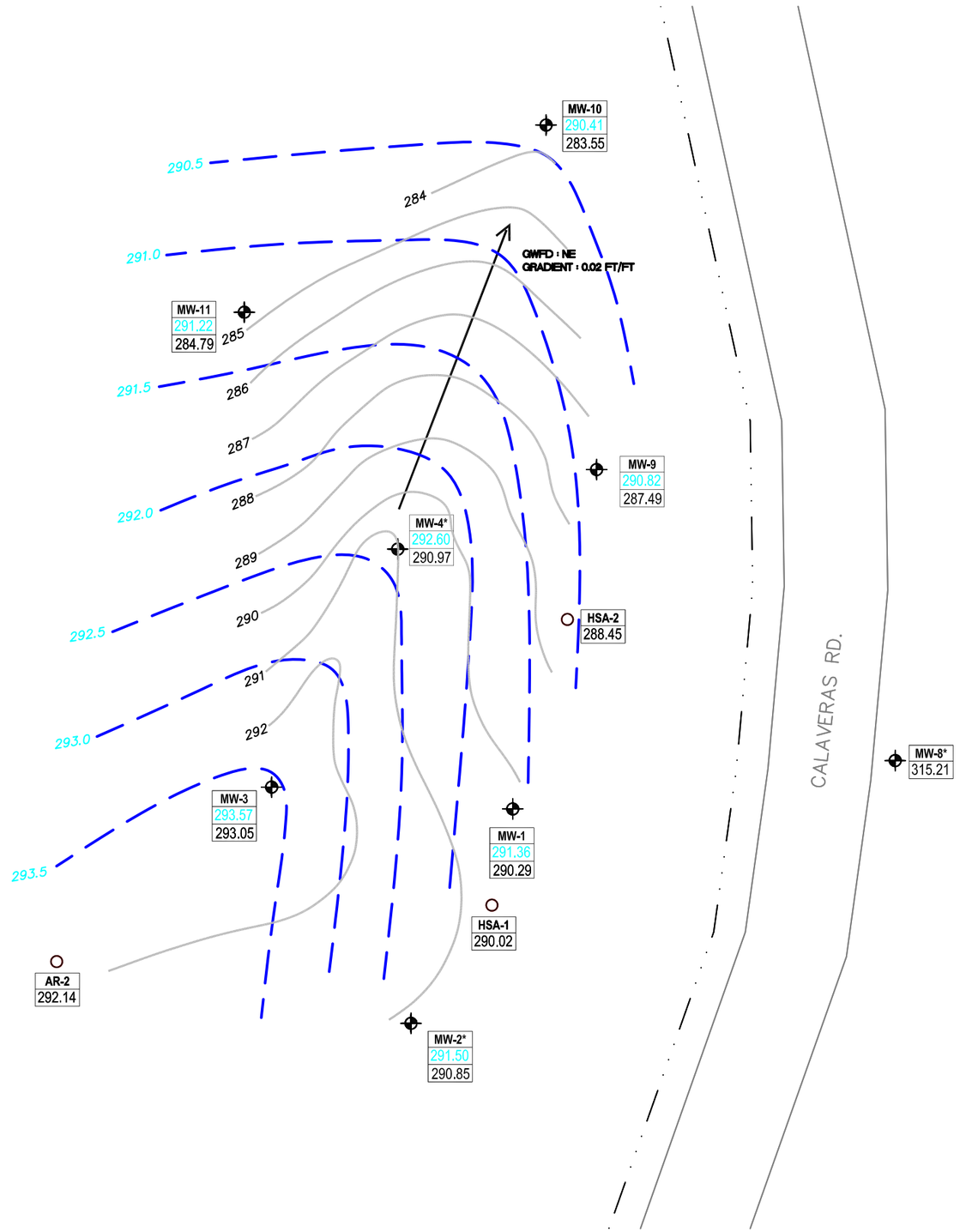
LEGEND:

- 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. 26817187	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 — MONITORING WELL LABEL
- 291.36 — GROUNDWATER ELEVATION
- 290.29 — BEDROCK CONTACT ELEVATION
- SOIL BORING
- HSA-2 — SOIL BORING LABEL
- 288.45 — BEDROCK CONTACT ELEVATION
- 285 — BEDROCK SURFACE ELEVATION
- GWFD — GROUNDWATER FLOW DIRECTION
- 291.5 — GROUNDWATER ELEVATION

NOTES:

1. ELEVATIONS IN FEET ABOVE AVERAGE MEAN SEA LEVEL (msl).
2. GROUNDWATER ELEVATIONS FOR MW-1 THROUGH MW-4 AND MW-8 THROUGH MW-11, AS MEASURED ON MARCH 20, 2012.
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.

* NOT USED IN GROUNDWATER CONTOURS.

NORTH

0 30' 60'

SCALE 1"= 30'

URS	CHEVRON PIPELINE COMPANY Project No. 26817187	UNCONFINED WATER-BEARING ZONE GROUNDWATER AND BEDROCK ELEVATIONS MAP CHEVRON SUNOL PIPLINE	Figure 3

May 03, 2012 - 2:15pm
C:\Users\roxan\Desktop\Sunol\FIGURE 3__050312.dwg

Appendix A
Groundwater Sampling Forms

URS

03/21/12

Horiba U-22
ISI Low-Flow Log

Project Information:		**Pump Information:**	
Operator Name	Jeremy Quick/Kim Morris	Pump Model/Type	Mega Monsoon
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	2 feet off bottom [ft]

Well Information:		**Pumping information:**	
Well Id	MW-1	Final pumping rate	280 mL/min
Well diameter	4 [in]	Flowcell volume	1000 mL
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	36.68 [ft]		

Low-Flow Sampling Stabilization Summary

	Time	Temp [C]	pH [pH]	Cond. [mS/cm]	Turb [NTU]	DO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-3%	+/-10	+/-0.2	+/-20
Multi-parameter Readings	13:52	17.24	7.03	1.53	622.00	4.12	19
	13:55	17.33	6.97	1.50	560.00	0.95	-10
	13:58	17.40	6.94	1.48	505.00	0.53	-23
	14:01	17.53	6.93	1.48	460.00	0.43	-31
	14:04	17.59	6.93	1.48	411.00	0.37	-37
	14:07	17.68	6.93	1.48	360.00	0.34	-42
	14:10	17.73	6.92	1.48	341.00	0.33	-44
	14:13	17.75	6.93	1.48	322.00	0.32	-47
	14:16	17.77	6.93	1.48	304.00	0.32	-50
	14:19	17.84	6.92	1.48	302.00	0.31	-52
	14:22	17.85	6.93	1.48	296.00	0.31	-54
	Sample collected from MW-1 at 14:25						
Variance in last 4 readings		0.02	0.00	0.00	-18.00	0.00	-3.00
		0.07	-0.01	0.00	-2.00	-0.01	-2.00
		0.01	0.01	0.00	-6.00	0.00	-2.00

Notes:
Starting Pumping at 13:50
Initial Depth to Water = 36.68 ft
Total Volume Purged = gallons
Sample collected at 14:25

URS

Horiba W-22

03/21/12 ISI Low-Flow Log

Project Information:		**Pump Information:**	
Operator Name	Jeremy Quick/Kim Morris	Pump Model/Type	Mega Monsoon
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	37 [ft]

Well Information:		**Pumping information:**	
Well Id	MW-2	Final pumping rate	NM
Well diameter	4 [in]	Flowcell volume	100 mL
Well total depth	38.3 [ft]	Calculated Sample Rate	NM
Depth to top of screen	23.5 [ft]	Sample rate	NM
Screen length	15 [ft]	Stabilized drawdown	NM
Depth to Water	32.65 [ft]		

Low-Flow Sampling Stabilization Summary

	Time	Temp [C]	pH [pH]	Cond. [mS/cm]	Turb [NTU]	DO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-3%	+/-10	+/-0.2	+/-20
Multi-parameter Readings	12:49	16.66	7.24	1.59	358.0	3.23	146
	12:52	16.63	7.11	1.57	315.0	1.81	144
	12:55	16.69	7.05	1.56	271.0	1.38	143
	12:58	16.76	7.03	1.56	203.0	1.29	142
	13:01	16.81	7.01	1.56	171.0	1.24	141
	13:04	16.89	7.01	1.55	146.0	1.23	139
	13:07	16.93	7.01	1.55	127.0	1.22	137
	13:10	16.95	7.00	1.55	120.0	1.21	136
	13:13	17.05	7.01	1.55	112.0	1.22	134
	Sample collected from MW-2 at 13:15						
Variance in last 4 readings		0.04	0.00	0.00	-19.00	-0.01	-2.00
		0.02	-0.01	0.00	-7.00	-0.01	-1.00
		0.10	0.01	0.00	-8.00	0.01	-2.00

Notes: Starting Pumping at 12:48
Initial Depth to Water = 32.65 ft
Total Volume Purged = 3.5 gallons
Sample collected at 13:15

URS

Horiba U-22

03/21/12 ISI Low-Flow Log

Project Information:		**Pump Information:**	
Operator Name	Jeremy Quick/Kim Morris	Pump Model/Type	Mega Monsoon
Company Name	URS	Tubing Type	Polyethylene
Project Name	Chevron Sunol Pipeline	Tubing Diameter	3/8 [in]
Site Name	Sunol	Tubing Length	40 [ft]
		Pump placement from TOC	2 feet off bottom [ft]

Well Information:		**Pumping information:**	
Well Id	MW-3	Final pumping rate	200 mL/min
Well diameter	4 [in]	Flowcell volume	1000 mL
Well total depth	36.3 [ft]	Calculated Sample Rate	NM
Depth to top of screen	21.3 [ft]	Sample rate	NM
Screen length	15 [ft]	Stabilized drawdown	NM
Depth to Water	32.08 [ft]		

Low-Flow Sampling Stabilization Summary

	Time	Temp [C]	pH [pH]	Cond. [mS/cm]	Turb [NTU]	DO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-3%	+/-10	+/-0.2	+/-20
Multi-parameter Readings	14:13	16.73	7.06	1.33	546.0	5.90	-19
	14:16	16.60	6.93	1.30	492.0	2.03	-44
	14:19	16.62	6.90	1.29	442.0	1.93	-46
	14:22	16.77	6.87	1.26	391.0	2.25	-41
	14:25	16.74	6.84	1.25	356.0	2.77	-31
	14:28	16.80	6.81	1.24	328.0	3.08	-24
	14:31	16.79	6.77	1.22	311.0	3.45	-15
	14:34	16.83	6.74	1.21	297.0	3.70	-6
	14:37	16.90	6.72	1.20	284.0	3.91	2
	14:40	16.91	6.69	1.20	272.0	4.14	11
	14:43	17.00	6.67	1.19	253.0	4.24	20
	14:46	16.96	6.66	1.19	251.0	4.38	26
	14:49	16.98	6.66	1.19	244.0	4.38	32
	14:52	16.99	6.66	1.18	239.0	4.4	37
	Sample collected from MW-3 at 14:55						
Variance in last 4 readings		-0.04	-0.01	0.00	-2.00	0.14	6.00
		0.02	0.00	0.00	-7.00	0.00	6.00
		0.01	0.00	-0.01	-5.00	0.02	5.00

Notes: Starting Pumping at 14:11
Initial Depth to Water = 32.08 ft
Total Volume Purged = 3 gallons
Sample collected at 14:55

URS

Horiba W-22

03/21/12 ISI Low-Flow Log

Project Information:		**Pump Information:**	
Operator Name	Jeremy Quick/Kim Morris	Pump Model/Type	Mega Monsoon
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	2 feet off bottom [ft]

Well Information:		**Pumping information:**	
Well Id	MW-4	Final pumping rate	300 mL/min
Well diameter	4 [in]	Flowcell volume	1000 mL
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	37.07 [ft]		

Low-Flow Sampling Stabilization Summary

	Time	Temp [C]	pH [pH]	Cond. [mS/cm]	Turb [NTU]	DO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-3%	+/-10	+/-0.2	+/-20
Multi-parameter Readings	11:12	16.18	7.60	1.24	264.0	2.60	83
	11:15	16.31	7.26	1.21	344.0	1.25	84
	11:18	16.52	7.13	1.21	272.0	1.14	86
	11:21	16.64	7.05	1.21	217.0	1.11	87
	11:24	16.54	7.00	1.21	189.0	1.16	89
	11:27	16.43	6.97	1.20	150.0	1.31	91
	11:30	16.81	6.93	1.19	150.0	1.64	93
	11:33	16.89	6.90	1.19	128.0	2.10	96
	11:36	16.92	6.89	1.19	120.0	2.31	99
	11:39	16.97	6.88	1.19	120.0	2.48	102
	11:42	16.98	6.87	1.19	105.0	2.62	105
	11:45	16.98	6.85	1.19	103.0	2.69	107
	Sample collected from MW-4 at 11:50						
Variance in last 4 readings		0.05	-0.01	0.00	0.00	0.17	3.00
		0.01	-0.01	0.00	-15.00	0.14	3.00
		0.00	-0.02	0.00	-2.00	0.07	2.00

Notes:
Starting Pumping at 11:10
Initial Depth to Water =37.07
Total Volume Purged = 2.5 gallons
Sample collected at 11:50

URS

03/21/12

Horiba U-22
ISI Low-Flow Log

Project Information:		**Pump Information:**	
Operator Name	Jeremy Quick/Kim Morris	Pump Model/Type	NA
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	600 mL/min
Well diameter	2 [in]	Flowcell volume	1000 mL
Well total depth	24.5 [ft]	Calculated Sample Rate	NM
Depth to top of screen	14.5 [ft]	Sample rate	NM
Screen length	10 [ft]	Stabilized drawdown	NM
Depth to Water	18.72 [ft]		

Low-Flow Sampling Stabilization Summary

	Time	Temp [C]	pH [pH]	Cond. [mS/cm]	Turb [NTU]	DO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-3%	+/-10	+/-0.2	+/-20
Multi-parameter Readings	9:48	16.53	7.90	1.01	377.0	9.06	-58
	9:52	18.18	7.67	0.99	138.0	8.58	-92
	9:55	18.53	7.55	0.99	153.0	8.57	-97
	9:57	18.35	7.51	0.90	101.0	8.75	-102
	10:00	18.77	7.38	1.00	110.0	8.63	-104
	10:02	18.62	7.43	1.00	121.0	8.75	-103
	Sample collected from MW-8 at 10:05						
Variance in last 4 readings		-0.18	-0.04	-0.09	-52.00	0.18	-5.00
		0.42	-0.13	0.10	9.00	-0.12	-2.00
		-0.15	0.05	0.00	11.00	0.12	1.00

Notes:
Starting Bailing at 09:46
Initial Depth to Water = 18.72 ft
Total Volume Purged = 2 gallons
Sample collected at 10:05

Sample MW-X collected at 12:00

URS

03/21/12

Horiba U-22
ISI Low-Flow Log

Project Information:		**Pump Information:**	
Operator Name	Jeremy Quick/ Kim Morris	Pump Model/Type	Mega Monsoon
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	2 feet off bottom [ft]

Well Information:		**Pumping information:**	
Well Id	MW-9	Final pumping rate	240 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	42.25 [ft]		

Low-Flow Sampling Stabilization Summary

	Time	Temp [C]	pH [pH]	Cond. [mS/cm]	Turb [NTU]	DO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-3%	+/-10	+/-0.2	+/-20
Multi-parameter Readings	15:05	17.77	6.91	1.43	-5.0	7.96	-98
	15:08	17.82	6.88	1.43	930.0	1.59	-111
	15:11	17.92	6.90	1.42	634.0	0.79	-121
	15:14	17.99	6.90	1.41	485.0	0.61	-129
	15:17	18.07	6.89	1.41	447.0	0.57	-134
	15:20	18.16	6.89	1.40	396.0	0.53	-139
	15:23	18.13	6.90	1.40	365.0	0.52	-142
	15:26	18.20	6.90	1.40	329.0	0.50	-145
	15:29	18.18	6.90	1.40	305.0	0.50	-146
	15:32	18.22	6.90	1.40	287.0	0.50	-147
	15:35	18.30	6.90	1.40	255.0	0.48	-148
	15:38	18.32	6.91	1.40	247.0	0.48	-147
	Sample collected at 15:40						
Variance in last 4 readings		0.04	0.00	0.00	-18.00	0.00	-1.00
		0.08	0.00	0.00	-32.00	-0.02	-1.00
		0.02	0.01	0.00	-8.00	0.00	1.00

Notes:
Starting Pumping at 15:02
Initial Depth to Water = 42.25 ft
Total Volume Purged =
Sample collected at 15:40

URS

03/20/12

Horiba U-22
ISI Low-Flow Log

Project Information:

Operator Name	Jeremy Quick/ Kim Morris
Company Name	URS
Project Name	Chevron Sunol Pipeline
Site Name	Sunol

Pump Information:

Pump Model/Type	Mega Monsoon
Tubing Type	Polyethylene
Tubing Diameter	3/8 [in]
Tubing Length	56 [ft]
Pump placement from TOC	2 feet off bottom [ft]

Well Information:

Well Id	MW-10
Well diameter	2 [in]
Well total depth	55.3 [ft]
Depth to top of screen	40.3 [ft]
Screen length	15 [ft]
Depth to Water	45.48 [ft]

Pumping information:

Final pumping rate	120 mL/min
Flowcell volume	1000 mL
Calculated Sample Rate	NM
Sample rate	NM
Stabilized drawdown	NM

Low-Flow Sampling Stabilization Summary

	Time	Temp [C]	pH [pH]	Cond. [mS/cm]	Turb [NTU]	DO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-3%	+/-10	+/-0.2	+/-20
Multi-parameter Readings	11:12	17.35	6.95	1.76	778	0.98	-55
	11:16	17.66	7.03	1.74	494	0.60	-66
	11:19	17.88	7.04	1.72	377	0.48	-67
	11:22	18.00	7.05	1.71	300	0.47	-66
	11:25	18.00	7.06	1.71	271	0.46	-65
	11:28	18.12	7.07	1.70	228	0.46	-64
	11:32	18.32	7.05	1.68	166	0.49	-56
	11:35	18.47	7.04	1.67	146	0.53	-52
	11:38	18.52	7.03	1.66	124	0.56	-45
	11:41	18.55	7.04	1.66	112	0.56	-40
	11:44	18.43	7.04	1.66	113	0.56	-37
	11:47	18.35	7.03	1.66	110	0.56	-34
	Sample collected from MW-10 at 11:50						
Variance in last 4 readings		0.03	0.01	0.00	-12.00	0.00	5.00
		-0.12	0.00	0.00	1.00	0.00	3.00
		-0.08	-0.01	0.00	-3.00	0.00	3.00

Notes:

Starting Pumping at 11:10
Initial Depth to Water = 45.48 ft
Total Volume Purged = 2 gallons
Sample collected at 11:50

URS

Horiba U-22

03/20/12 ISI Low-Flow Log

Project Information:		**Pump Information:**	
Operator Name	Jeremy Quick/Kim Morris	Pump Model/Type	Mega Monsoon
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	2 feet off bottom [ft]

Well Information:		**Pumping information:**	
Well Id	MW-11	Final pumping rate	190 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	38.67 [ft]		

Low-Flow Sampling Stabilization Summary

	Time	Temp [C]	pH [pH]	Cond. [mS/cm]	Turb [NTU]	DO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-3%	+/-10	+/-0.2	+/-20
Multi-parameter Readings	12:29	17.58	7.36	1.85	945.0	2.80	-25
	12:32	17.75	7.27	1.79	635.0	0.75	-52
	12:35	17.93	7.21	1.71	457.0	0.51	-50
	12:38	18.16	7.13	1.65	368.0	0.45	-44
	12:42	18.34	7.06	1.58	297.0	0.54	-28
	12:45	18.44	7.01	1.55	255.0	0.64	-18
	12:49	18.48	6.96	1.51	210.0	0.64	-9
	12:52	18.46	6.95	1.49	186.0	0.61	-7
	12:55	18.52	6.95	1.48	155.0	0.55	-6
	12:58	18.57	6.95	1.47	137.0	0.51	-6
	13:01	18.64	6.96	1.47	122.0	0.46	-8
	13:04	18.69	6.98	1.47	105.0	0.43	-11
	13:07	18.82	6.99	1.47	90.3	0.41	-13
	13:10	18.82	7.02	1.49	80.5	0.38	-16
	Sample collected from MW-11 at 13:12						
Variance in last 4 readings		0.05	0.02	0.00	-17.00	-0.03	-3.00
		0.13	0.01	0.00	-14.70	-0.02	-2.00
		0.00	0.03	0.02	-9.80	-0.03	-3.00

Notes: Starting Pumping at 12:27
Initial Depth to Water = 38.67 ft
Total Volume Purged = 2.5 gallons
Sample collected at 13:12

Appendix B
Laboratory Analytical Results

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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

April 04, 2012

Project: Sunol, CA

Submittal Date: 03/21/2012
Group Number: 1296609
PO Number: PO
Release Number: GWIN
State of Sample Origin: CA

Client Sample Description	Lancaster Labs (LLI) #
MW-10 NA Water	6585833
MW-10_Filtered NA Water	6585834
MW-3 NA Water	6585835
MW-3_Filtered NA Water	6585836
MW-11 NA Water	6585837
MW-11_Filtered NA Water	6585838
Stream NA Water	6585839
Trip_Blank NA Water	6585840

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

ELECTRONIC COPY TO URS Attn: Rachel Naccarati

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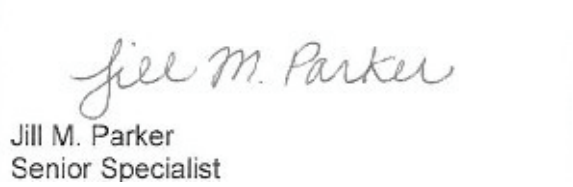
Respectfully Submitted,



Jill M. Parker
Senior Specialist

(717) 556-7262

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Analysis Report

Sample Description: MW-10 NA Water
NA URSO
Sunol Pipeline SL0600100443 MW-10

LLI Sample # WW 6585833
LLI Group # 1296609
Account # 11875

Project Name: Sunol, CA

Collected: 03/20/2012 11:50 by KM

Submitted: 03/21/2012 09:35
Reported: 04/04/2012 13:52

Chevron Pipeline Co.
100 Northpark Blvd
Covington LA 70433

SLM10

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
GC Miscellaneous	**SW-846 8015B modified**		ug/l	ug/l	
07105	Methane	74-82-8	540	25	5
Metals	**SW-846 6010B**		ug/l	ug/l	
07058	Manganese	7439-96-5	201	0.44	1
Wet Chemistry	**EPA 300.0**		ug/l	ug/l	
00368	Nitrate Nitrogen	14797-55-8	2,500	250	5
00228	Sulfate	14808-79-8	256,000	6,000	20
	SM20 2320 B		ug/l as CaCO3	ug/l as CaCO3	
00202	Alkalinity to pH 4.5	n.a.	592,000	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.	960,000	77,600	1
	SM20 3500 Fe B modified		ug/l	ug/l	
08344	Ferrous Iron	n.a.	280	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	D120841AA	03/24/2012 16:34	Daniel H Heller	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	D120841AA	03/24/2012 16:34	Daniel H Heller	1
01728	TPH-GRO N. CA water C6-C12	SW-846 8015B	1	12082A53A	03/22/2012 19:38	Marie D John	1
01146	GC VOA Water Prep	SW-846 5030B	1	12082A53A	03/22/2012 19:38	Marie D John	1

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Analysis Report

Sample Description: MW-10 NA Water
NA URSO
Sunol Pipeline SL0600100443 MW-10

LLI Sample # WW 6585833
LLI Group # 1296609
Account # 11875

Project Name: Sunol, CA

Collected: 03/20/2012 11:50 by KM

Submitted: 03/21/2012 09:35
Reported: 04/04/2012 13:52

Chevron Pipeline Co.
100 Northpark Blvd
Covington LA 70433

SLM10

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07105	Volatile Headspace Hydrocarbon	SW-846 8015B modified	1	120830020A	03/26/2012 21:55	Elizabeth J Marin	5
07058	Manganese	SW-846 6010B	1	120821848005	03/24/2012 16:52	Tara L Snyder	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	120821848005	03/23/2012 09:22	Denise K Conners	1
00368	Nitrate Nitrogen	EPA 300.0	1	12081655901B	03/21/2012 20:29	Christopher D Meeks	5
00228	Sulfate	EPA 300.0	2	12081655901B	04/03/2012 22:27	Christopher D Meeks	20
00202	Alkalinity to pH 4.5	SM20 2320 B	1	12086020202A	03/26/2012 13:04	Hannah M Royer	1
00201	Alkalinity to pH 8.3	SM20 2320 B	1	12086020202A	03/26/2012 13:04	Hannah M Royer	1
00212	Total Dissolved Solids	SM20 2540 C	1	12082021202B	03/22/2012 09:56	Bronson L Cole	1
08344	Ferrous Iron	SM20 3500 Fe B modified	1	12082834401A	03/22/2012 18:50	Daniel S Smith	1

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Analysis Report

Sample Description: MW-10_Filtered NA Water
NA URSO
Sunol Pipeline SL0600100443 MW-10

LLI Sample # WW 6585834
LLI Group # 1296609
Account # 11875

Project Name: Sunol, CA

Collected: 03/20/2012 11:50 by KM

Submitted: 03/21/2012 09:35
Reported: 04/04/2012 13:52

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	74.3	14.1	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	120821848005	03/24/2012 16:56	Tara L Snyder	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	120821848005	03/23/2012 09:22	Denise K Conners	1

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Analysis Report

Sample Description: MW-3 NA Water
NA URSO
Sunol Pipeline SL0600100443 MW-3

LLI Sample # WW 6585835
LLI Group # 1296609
Account # 11875

Project Name: Sunol, CA

Collected: 03/20/2012 14:55 by KM

Submitted: 03/21/2012 09:35
Reported: 04/04/2012 13:52

Chevron Pipeline Co.
100 Northpark Blvd
Covington LA 70433

SLM03

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
GC Miscellaneous	**SW-846 8015B modified**		ug/l	ug/l	
07105	Methane	74-82-8	28	5.0	1
Metals	**SW-846 6010B**		ug/l	ug/l	
07058	Manganese	7439-96-5	29.1	0.44	1
Wet Chemistry	**EPA 300.0**		ug/l	ug/l	
00368	Nitrate Nitrogen	14797-55-8	14,900	250	5
00228	Sulfate	14808-79-8	65,400	1,500	5
	SM20 2320 B		ug/l as CaCO3	ug/l as CaCO3	
00202	Alkalinity to pH 4.5	n.a.	396,000	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.	686,000	38,800	1
	SM20 3500 Fe B modified		ug/l	ug/l	
08344	Ferrous Iron	n.a.	54	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	D120841AA	03/24/2012 17:42	Daniel H Heller	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	D120841AA	03/24/2012 17:42	Daniel H Heller	1
01728	TPH-GRO N. CA water C6-C12	SW-846 8015B	1	12082A53A	03/22/2012 20:05	Marie D John	1
01146	GC VOA Water Prep	SW-846 5030B	1	12082A53A	03/22/2012 20:05	Marie D John	1

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Analysis Report

Sample Description: **MW-3 NA Water**
NA URSO
Sunol Pipeline SL0600100443 MW-3

LLI Sample # WW 6585835
LLI Group # 1296609
Account # 11875

Project Name: Sunol, CA

Collected: 03/20/2012 14:55 by KM

Submitted: 03/21/2012 09:35
Reported: 04/04/2012 13:52

Chevron Pipeline Co.
100 Northpark Blvd
Covington LA 70433

SLM03

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07105	Volatile Headspace Hydrocarbon	SW-846 8015B modified	1	120830020A	03/24/2012 21:19	Elizabeth J Marin	1
07058	Manganese	SW-846 6010B	1	120821848005	03/24/2012 17:00	Tara L Snyder	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	120821848005	03/23/2012 09:22	Denise K Conners	1
00368	Nitrate Nitrogen	EPA 300.0	1	12081655901B	03/21/2012 20:44	Christopher D Meeks	5
00228	Sulfate	EPA 300.0	1	12081655901B	03/21/2012 20:44	Christopher D Meeks	5
00202	Alkalinity to pH 4.5	SM20 2320 B	1	12086020202A	03/26/2012 13:04	Hannah M Royer	1
00201	Alkalinity to pH 8.3	SM20 2320 B	1	12086020202A	03/26/2012 13:04	Hannah M Royer	1
00212	Total Dissolved Solids	SM20 2540 C	1	12082021202B	03/22/2012 09:56	Bronson L Cole	1
08344	Ferrous Iron	SM20 3500 Fe B modified	1	12082834401A	03/22/2012 18:50	Daniel S Smith	1

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Analysis Report

Sample Description: MW-3_Filtered NA Water
NA URSO
Sunol Pipeline SL0600100443 MW-3

LLI Sample # WW 6585836
LLI Group # 1296609
Account # 11875

Project Name: Sunol, CA

Collected: 03/20/2012 14:55 by KM

Submitted: 03/21/2012 09:35
Reported: 04/04/2012 13:52

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	21.9	14.1	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	120821848005	03/24/2012 17:12	Tara L Snyder	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	120821848005	03/23/2012 09:22	Denise K Conners	1

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Analysis Report

Sample Description: MW-11 NA Water
NA URSO
Sunol Pipeline SL0600100443 MW-11

LLI Sample # WW 6585837
LLI Group # 1296609
Account # 11875

Project Name: Sunol, CA

Collected: 03/20/2012 13:12 by KM

Submitted: 03/21/2012 09:35
Reported: 04/04/2012 13:52

Chevron Pipeline Co.
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Covington LA 70433

SLM11

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
GC Miscellaneous	**SW-846 8015B modified**		ug/l	ug/l	
07105	Methane	74-82-8	420	5.0	1
Metals	**SW-846 6010B**		ug/l	ug/l	
07058	Manganese	7439-96-5	221	0.44	1
Wet Chemistry	**EPA 300.0**		ug/l	ug/l	
00368	Nitrate Nitrogen	14797-55-8	300	250	5
00228	Sulfate	14808-79-8	134,000	15,000	50
	SM20 2320 B		ug/l as CaCO3	ug/l as CaCO3	
00202	Alkalinity to pH 4.5	n.a.	455,000	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.	954,000	38,800	1
	SM20 3500 Fe B modified		ug/l	ug/l	
08344	Ferrous Iron	n.a.	200	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	D120841AA	03/24/2012 18:04	Daniel H Heller	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	D120841AA	03/24/2012 18:04	Daniel H Heller	1
01728	TPH-GRO N. CA water C6-C12	SW-846 8015B	1	12082A53A	03/22/2012 20:32	Marie D John	1
01146	GC VOA Water Prep	SW-846 5030B	1	12082A53A	03/22/2012 20:32	Marie D John	1

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Analysis Report

Sample Description: **MW-11 NA Water**
NA URSO
Sunol Pipeline SL0600100443 MW-11

LLI Sample # WW 6585837
LLI Group # 1296609
Account # 11875

Project Name: Sunol, CA

Collected: 03/20/2012 13:12 by KM

Submitted: 03/21/2012 09:35
Reported: 04/04/2012 13:52

Chevron Pipeline Co.
100 Northpark Blvd
Covington LA 70433

SLM11

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07105	Volatile Headspace Hydrocarbon	SW-846 8015B modified	1	120830020A	03/24/2012 21:38	Elizabeth J Marin	1
07058	Manganese	SW-846 6010B	1	120821848005	03/24/2012 17:16	Tara L Snyder	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	120821848005	03/23/2012 09:22	Denise K Conners	1
00368	Nitrate Nitrogen	EPA 300.0	1	12081655901B	03/21/2012 20:58	Christopher D Meeks	5
00228	Sulfate	EPA 300.0	2	12081655901B	04/03/2012 23:13	Christopher D Meeks	50
00202	Alkalinity to pH 4.5	SM20 2320 B	1	12086020202A	03/26/2012 13:04	Hannah M Royer	1
00201	Alkalinity to pH 8.3	SM20 2320 B	1	12086020202A	03/26/2012 13:04	Hannah M Royer	1
00212	Total Dissolved Solids	SM20 2540 C	1	12082021202B	03/22/2012 09:56	Bronson L Cole	1
08344	Ferrous Iron	SM20 3500 Fe B modified	1	12082834401A	03/22/2012 18:50	Daniel S Smith	1

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Analysis Report

Sample Description: MW-11_Filtered NA Water
NA URSO
Sunol Pipeline SL0600100443 MW-11

LLI Sample # WW 6585838
LLI Group # 1296609
Account # 11875

Project Name: Sunol, CA

Collected: 03/20/2012 13:12 by KM

Submitted: 03/21/2012 09:35
Reported: 04/04/2012 13:52

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	25.2	14.1	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	120821848005	03/24/2012 17:20	Tara L Snyder	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	120821848005	03/23/2012 09:22	Denise K Conners	1

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Analysis Report

Sample Description: Stream NA Water
NA URSO
Sunol Pipeline SL0600100443 Stream

LLI Sample # WW 6585839
LLI Group # 1296609
Account # 11875

Project Name: Sunol, CA

Collected: 03/20/2012 16:18 by KM

Submitted: 03/21/2012 09:35
Reported: 04/04/2012 13:52

Chevron Pipeline Co.
100 Northpark Blvd
Covington LA 70433

SLSTR

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	D120841AA	03/24/2012 18:27	Daniel H Heller	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	D120841AA	03/24/2012 18:27	Daniel H Heller	1
01728	TPH-GRO N. CA water C6-C12	SW-846 8015B	1	12082A53A	03/22/2012 20:59	Marie D John	1
01146	GC VOA Water Prep	SW-846 5030B	1	12082A53A	03/22/2012 20:59	Marie D John	1

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Analysis Report

Sample Description: Trip_Blank NA Water
NA URSO
Sunol Pipeline SL0600100443 Trip_Blank

LLI Sample # WW 6585840
LLI Group # 1296609
Account # 11875

Project Name: Sunol, CA

Collected: 03/20/2012

Submitted: 03/21/2012 09:35
Reported: 04/04/2012 13:52

Chevron Pipeline Co.
100 Northpark Blvd
Covington LA 70433

SLMTB

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

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	D120841AA	03/24/2012 15:26	Daniel H Heller	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	D120841AA	03/24/2012 15:26	Daniel H Heller	1

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Analysis Report

Quality Control Summary

Client Name: Chevron Pipeline Co. Group Number: 1296609
Reported: 04/04/12 at 01:52 PM

Matrix QC may not be reported if insufficient sample or 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.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank MDL	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: D120841AA	Sample number(s): 6585833,6585835,6585837,6585839-6585840							
Benzene	N.D.	0.5	ug/l	88		77-121		
Ethylbenzene	N.D.	0.5	ug/l	85		79-120		
Toluene	N.D.	0.5	ug/l	85		79-120		
Xylene (Total)	N.D.	0.5	ug/l	85		77-120		
Batch number: 12082A53A	Sample number(s): 6585833,6585835,6585837,6585839							
TPH-GRO N. CA water C6-C12	N.D.	50.	ug/l	100	91	75-135	10	30
Batch number: 120830020A	Sample number(s): 6585833,6585835,6585837							
Methane	N.D.	5.0	ug/l	93		80-120		
Batch number: 120821848005	Sample number(s): 6585833-6585838							
Iron	26.4	14.1	ug/l	104		90-112		
Manganese	N.D.	0.44	ug/l	100		90-110		
Batch number: 12081655901B	Sample number(s): 6585833,6585835,6585837							
Nitrate Nitrogen	N.D.	50.	ug/l	100		90-110		
Sulfate	N.D.	300.	ug/l	105		90-110		
Batch number: 12082021202B	Sample number(s): 6585833,6585835,6585837							
Total Dissolved Solids	N.D.	9,700.	ug/l	105		80-120		
Batch number: 12082834401A	Sample number(s): 6585833,6585835,6585837							
Ferrous Iron	N.D.	10.	ug/l	98		93-105		
Batch number: 12086020202A	Sample number(s): 6585833,6585835,6585837							
Alkalinity to pH 4.5	N.D.	460.	ug/l as CaCO3	99		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: D120841AA	Sample number(s): 6585833,6585835,6585837,6585839-6585840 UNSPK: 6585833								
Benzene	103	113	72-134	9	30				
Ethylbenzene	92	100	71-134	8	30				
Toluene	97	104	80-125	7	30				
Xylene (Total)	93	100	79-125	8	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: 1296609
Reported: 04/04/12 at 01:52 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
Batch number: 120830020A	Sample number(s): 6585833,6585835,6585837 UNSPK: P585905								
Methane	100	100	35-157	0	20				
Batch number: 120821848005	Sample number(s): 6585833-6585838 UNSPK: P585293 BKG: P585293								
Iron	102	98	75-125	4	20	36.1	31.5	14 (1)	20
Manganese	99	97	75-125	2	20	19.2	19.7	3 (1)	20
Batch number: 12081655901B	Sample number(s): 6585833,6585835,6585837 UNSPK: P585902 BKG: P585902								
Nitrate Nitrogen	99		90-110			14,600	15,000	2	20
Sulfate	104		90-110			37,300	37,100	1	20
Batch number: 12082021202B	Sample number(s): 6585833,6585835,6585837 UNSPK: P585776 BKG: 6585833								
Total Dissolved Solids	101	98	62-135	1	12	960,000	1,010,000	5 (1)	9
Batch number: 12082834401A	Sample number(s): 6585833,6585835,6585837 UNSPK: P586757 BKG: P586757								
Ferrous Iron	95	100	83-108	3	6	4,600	4,500	2 (1)	5
Batch number: 12086020202A	Sample number(s): 6585833,6585835,6585837 UNSPK: P585811 BKG: P585811								
Alkalinity to pH 4.5	92		73-121			163,000	157,000	4	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: D120841AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
6585833	116	108	94	100
6585835	114	108	94	100
6585837	113	104	93	101
6585839	111	104	93	103
6585840	109	106	94	100
Blank	111	104	93	101
LCS	108	106	93	103
MS	110	106	95	106
MSD	109	107	94	104
Limits:	80-116	77-113	80-113	78-113

Analysis Name: TPH-GRO N. CA water C6-C12
Batch number: 12082A53A

	Trifluorotoluene-F
6585833	82
6585835	80
6585837	79

*- 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.

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Quality Control Summary

Client Name: Chevron Pipeline Co. Group Number: 1296609
Reported: 04/04/12 at 01:52 PM

Surrogate Quality Control

6585839	80
Blank	82
LCS	98
LCSD	95
Limits:	63-135

Analysis Name: Volatile Headspace Hydrocarbon
Batch number: 120830020A

	Propene
6585833	61
6585835	82
6585837	86
Blank	105
LCS	102
MS	101
MSD	103
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

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Acct. #: 11875 Sample #: 6585833-40 ~~SCR#:~~ 1296609

Group# [illegible] fmp 3/21/12

Facility #:

Site Address: Sunol, CA

Chevron PM: Lead Consultant:

Consultant/Office: URS Oakland, CA

Consultant Prj. Mgr.: Joe Morgan

Consultant Phone #: 510 874 3024 Fax #:

Sampler: K. Morris J. Quick

Service Order #: 2681 7187 00300 ☐ Non SAR:

Analyses Requested

Preservation Codes

Field Point Name	Matrix	Repeat Sample	Top Depth	Year Month Day	Time Collected	New Field Pt.	Grab	Composite	Total Number of Containers	BTEX [redacted] 8260 ☒ 8021 ☐	TPH 8015 MOD GRO (8015 B)	TPH 8015 MOD DRO ☐ Silica Gel Cleanup	8260 full scan	___ Oxygenates	nitrate + Sulfate EPA 300	TDS by EPA [redacted] 2540C	Alkalinity + Breakdown USEPA 310	Methane EPA 8015B MOD	Ferrous iron SM 20 Method 3500-Fe B modified	Dissolved iron EPA 6010B	Total Manganese EPA 6010B
MW-10	W			2012/03/20	1150				14	X	X				X	X	X	X	X	X	X
MW-3	W			2012/03/20	1455				14	X	X				X	X	X	X	X	X	X
MW-11	W			2012/03/20	1312				14	X	X				X	X	X	X	X	X	X
Stream	W			2012/03/20	1618				6	X	X										
Trip Blank	W				—				1	X	X										

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

Comments / Remarks

Cold/on ice

Trip blank analyzed for 8260 only due to limited sample volume. fmp 3/21/12

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
Project Std.

Relinquished by:	Date	Time	Received by:	Date	Time
Kim Morris	3/20/12	1735			
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: [signature]	3/21/12	0935
Temperature Upon Receipt 1.3 / 2.8 C°			Custody Seals Intact? (Yes) No		

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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)
µg	microgram(s)	**mg**	milligram(s)
mL	milliliter(s)	**L**	liter(s)
m3	cubic meter(s)	**µL**	microliter(s)
		pg/L	picogram/liter

< 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

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.

Data Qualifiers:

C – result confirmed by reanalysis.

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

U.S. EPA CLP Data Qualifiers:

Organic Qualifiers		**Inorganic Qualifiers**	
A	TIC is a possible aldol-condensation product	**B**	Value is <CRDL, but ≥IDL
B	Analyte was also detected in the blank	**E**	Estimated due to interference
C	Pesticide result confirmed by GC/MS	**M**	Duplicate injection precision not met
D	Compound quantitated on a diluted sample	**N**	Spike sample not within control limits
E	Concentration exceeds the calibration range of the instrument	**S**	Method of standard additions (MSA) used for calculation
N	Presumptive evidence of a compound (TICs only)	**U**	Compound was not detected
P	Concentration difference between primary and confirmation columns >25%	**W**	Post digestion spike out of control limits
U	Compound was not detected	*****	Duplicate analysis not within control limits
X,Y,Z	Defined in case narrative	**+**	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.

Times are local to the area of activity. Parameters listed in the 40 CFR part 136 Table II as “analyze immediately” are not performed within 15 minutes.

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

April 03, 2012

Project: Sunol, CA

Submittal Date: 03/22/2012
Group Number: 1296930
PO Number: PO
Release Number: TOURLOUKIS
State of Sample Origin: CA

Client Sample Description	Lancaster Labs (LLI) #
MW-8 NA Water	6587333
MW-8_Filtered NA Water	6587334
MW-X NA Water	6587335
MW-X_Filtered NA Water	6587336
MW-4 NA Water	6587337
MW-4_Filtered NA Water	6587338
MW-2 NA Water	6587339
MW-2_Filtered NA Water	6587340
MW-1 NA Water	6587341
MW-1_Filtered NA Water	6587342
MW-9 NA Water	6587343
MW-9_Filtered NA Water	6587344
Trip_Blank NA Water	6587345
Equip_Blank NA Water	6587346

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

ELECTRONIC COPY TO URS Attn: Rachel Naccarati

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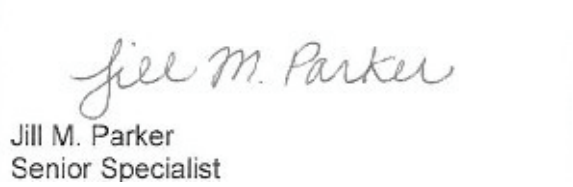
Respectfully Submitted,



Jill M. Parker
Senior Specialist

(717) 556-7262

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Analysis Report

Sample Description: MW-8 NA Water
NA URSO
Sunol Pipeline SL0600100443 MW-8

LLI Sample # WW 6587333
LLI Group # 1296930
Account # 11875

Project Name: Sunol, CA

Collected: 03/21/2012 10:05 by KM

Submitted: 03/22/2012 09:50
Reported: 04/03/2012 16:11

Chevron Pipeline Co.
100 Northpark Blvd
Covington LA 70433

SNL08

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	1,000	10	20
10943	Ethylbenzene	100-41-4	2,600	10	20
10943	Toluene	108-88-3	2,300	10	20
10943	Xylene (Total)	1330-20-7	8,500	10	20
GC Volatiles	**SW-846 8015B**		ug/l	ug/l	
01728	TPH-GRO N. CA water C6-C12	n.a.	52,000	1,000	20
GC Miscellaneous	**SW-846 8015B modified**		ug/l	ug/l	
07105	Methane	74-82-8	6,700	250	50
Metals	**SW-846 6010B**		ug/l	ug/l	
07058	Manganese	7439-96-5	383	0.44	1
Wet Chemistry	**EPA 300.0**		ug/l	ug/l	
00368	Nitrate Nitrogen	14797-55-8	290	250	5
00228	Sulfate	14808-79-8	N.D.	1,500	5
	SM20 2320 B		ug/l as CaCO3	ug/l as CaCO3	
00202	Alkalinity to pH 4.5	n.a.	473,000	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.	599,000	19,400	1
	SM20 3500 Fe B modified		ug/l	ug/l	
08344	Ferrous Iron	n.a.	2,600	200	20

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	D120841AA	03/24/2012 22:14	Daniel H Heller	20
01163	GC/MS VOA Water Prep	SW-846 5030B	1	D120841AA	03/24/2012 22:14	Daniel H Heller	20
01728	TPH-GRO N. CA water C6-C12	SW-846 8015B	1	12087A07A	03/28/2012 18:44	Laura M Krieger	20
01146	GC VOA Water Prep	SW-846 5030B	1	12087A07A	03/28/2012 18:44	Laura M Krieger	20

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Analysis Report

Sample Description: **MW-8 NA Water**
NA URSO
Sunol Pipeline SL0600100443 MW-8

LLI Sample # WW 6587333
LLI Group # 1296930
Account # 11875

Project Name: Sunol, CA

Collected: 03/21/2012 10:05 by KM

Submitted: 03/22/2012 09:50
Reported: 04/03/2012 16:11

Chevron Pipeline Co.
100 Northpark Blvd
Covington LA 70433

SNL08

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07105	Volatile Headspace Hydrocarbon	SW-846 8015B modified	1	120860041A	03/29/2012 16:47	Elizabeth J Marin	50
07058	Manganese	SW-846 6010B	1	120831848008	03/28/2012 13:48	Joanne M Gates	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	120831848008	03/26/2012 11:52	James L Mertz	1
00368	Nitrate Nitrogen	EPA 300.0	1	12082655902A	03/22/2012 23:11	Christopher D Meeks	5
00228	Sulfate	EPA 300.0	1	12082655902A	03/22/2012 23:11	Christopher D Meeks	5
00202	Alkalinity to pH 4.5	SM20 2320 B	1	12087020201A	03/27/2012 09:19	Hannah M Royer	1
00201	Alkalinity to pH 8.3	SM20 2320 B	1	12087020201A	03/27/2012 09:19	Hannah M Royer	1
00212	Total Dissolved Solids	SM20 2540 C	1	12083021202B	03/23/2012 08:55	Bronson L Cole	1
08344	Ferrous Iron	SM20 3500 Fe B modified	1	12085834401A	03/25/2012 07:25	Daniel S Smith	20

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Analysis Report

Sample Description: MW-8_Filtered NA Water
NA URSO
Sunol Pipeline SL0600100443 MW-8

LLI Sample # WW 6587334
LLI Group # 1296930
Account # 11875

Project Name: Sunol, CA

Collected: 03/21/2012 10:05 by KM

Submitted: 03/22/2012 09:50
Reported: 04/03/2012 16:11

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	17.3	14.1	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	120831848008	03/28/2012 13:52	Joanne M Gates	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	120831848008	03/26/2012 11:52	James L Mertz	1

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Analysis Report

Sample Description: MW-X NA Water
NA URSO
Sunol Pipeline SL0600100443 MW-X

LLI Sample # WW 6587335
LLI Group # 1296930
Account # 11875

Project Name: Sunol, CA

Collected: 03/21/2012 12:00 by KM

Submitted: 03/22/2012 09:50
Reported: 04/03/2012 16:11

Chevron Pipeline Co.
100 Northpark Blvd
Covington LA 70433

SNL0X

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	1,000	10	20
10943	Ethylbenzene		100-41-4	2,600	10	20
10943	Toluene		108-88-3	2,900	10	20
10943	Xylene (Total)		1330-20-7	9,700	10	20
GC Volatiles		**SW-846 8015B**		**ug/l**	**ug/l**	
01728	TPH-GRO N. CA water C6-C12		n.a.	55,000	1,000	20
GC Miscellaneous		**SW-846 8015B modified**		**ug/l**	**ug/l**	
07105	Methane		74-82-8	5,800	250	50
Metals		**SW-846 6010B**		**ug/l**	**ug/l**	
07058	Manganese		7439-96-5	590	0.44	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	3,900	1,500	5
		SM20 2320 B		**ug/l as CaCO3**	**ug/l as CaCO3**	
00202	Alkalinity to pH 4.5		n.a.	507,000	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.	674,000	38,800	1
		SM20 3500 Fe B modified		**ug/l**	**ug/l**	
08344	Ferrous Iron		n.a.	3,000	200	20

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	D120841AA	03/24/2012 22:37	Daniel H Heller	20
01163	GC/MS VOA Water Prep	SW-846 5030B	1	D120841AA	03/24/2012 22:37	Daniel H Heller	20
01728	TPH-GRO N. CA water C6-C12	SW-846 8015B	1	12087A07A	03/28/2012 19:09	Laura M Krieger	20
01146	GC VOA Water Prep	SW-846 5030B	1	12087A07A	03/28/2012 19:09	Laura M Krieger	20

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Analysis Report

Sample Description: **MW-X NA Water**
NA URSO
Sunol Pipeline SL0600100443 MW-X

LLI Sample # WW 6587335
LLI Group # 1296930
Account # 11875

Project Name: Sunol, CA

Collected: 03/21/2012 12:00 by KM

Submitted: 03/22/2012 09:50
Reported: 04/03/2012 16:11

Chevron Pipeline Co.
100 Northpark Blvd
Covington LA 70433

SNL0X

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07105	Volatile Headspace Hydrocarbon	SW-846 8015B modified	1	120860041A	03/29/2012 17:04	Elizabeth J Marin	50
07058	Manganese	SW-846 6010B	1	120831848008	03/28/2012 13:56	Joanne M Gates	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	120831848008	03/26/2012 11:52	James L Mertz	1
00368	Nitrate Nitrogen	EPA 300.0	2	12082655902B	03/22/2012 23:26	Christopher D Meeks	5
00228	Sulfate	EPA 300.0	2	12082655902B	03/22/2012 23:26	Christopher D Meeks	5
00202	Alkalinity to pH 4.5	SM20 2320 B	1	12087020201A	03/27/2012 09:19	Hannah M Royer	1
00201	Alkalinity to pH 8.3	SM20 2320 B	1	12087020201A	03/27/2012 09:19	Hannah M Royer	1
00212	Total Dissolved Solids	SM20 2540 C	1	12083021202B	03/23/2012 08:55	Bronson L Cole	1
08344	Ferrous Iron	SM20 3500 Fe B modified	1	12085834401A	03/25/2012 07:25	Daniel S Smith	20

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Analysis Report

Sample Description: MW-X_Filtered NA Water
NA URSO
Sunol Pipeline SL0600100443 MW-X

LLI Sample # WW 6587336
LLI Group # 1296930
Account # 11875

Project Name: Sunol, CA

Collected: 03/21/2012 12:00 by KM

Submitted: 03/22/2012 09:50
Reported: 04/03/2012 16:11

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	38.5	14.1	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	120831848008	03/28/2012 14:01	Joanne M Gates	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	120831848008	03/26/2012 11:52	James L Mertz	1

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Analysis Report

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

LLI Sample # WW 6587337
LLI Group # 1296930
Account # 11875

Project Name: Sunol, CA

Collected: 03/21/2012 11:50 by KM

Submitted: 03/22/2012 09:50
Reported: 04/03/2012 16:11

Chevron Pipeline Co.
100 Northpark Blvd
Covington LA 70433

SNL04

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	1	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	6.3	5.0	1
Metals	**SW-846 6010B**		ug/l	ug/l	
07058	Manganese	7439-96-5	43.3	0.44	1
Wet Chemistry	**EPA 300.0**		ug/l	ug/l	
00368	Nitrate Nitrogen	14797-55-8	13,300	250	5
00228	Sulfate	14808-79-8	119,000	6,000	20
	SM20 2320 B		ug/l as CaCO3	ug/l as CaCO3	
00202	Alkalinity to pH 4.5	n.a.	384,000	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.	672,000	38,800	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	D120841AA	03/24/2012 22:59	Daniel H Heller	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	D120841AA	03/24/2012 22:59	Daniel H Heller	1
01728	TPH-GRO N. CA water C6-C12	SW-846 8015B	1	12087A07A	03/28/2012 12:24	Laura M Krieger	1
01146	GC VOA Water Prep	SW-846 5030B	1	12087A07A	03/28/2012 12:24	Laura M Krieger	1

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Analysis Report

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

LLI Sample # WW 6587337
LLI Group # 1296930
Account # 11875

Project Name: Sunol, CA

Collected: 03/21/2012 11:50 by KM

Submitted: 03/22/2012 09:50
Reported: 04/03/2012 16:11

Chevron Pipeline Co.
100 Northpark Blvd
Covington LA 70433

SNL04

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07105	Volatile Headspace Hydrocarbon	SW-846 8015B modified	1	120860041A	03/28/2012 21:24	Elizabeth J Marin	1
07058	Manganese	SW-846 6010B	1	120831848008	03/29/2012 14:09	Joanne M Gates	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	120831848008	03/26/2012 11:52	James L Mertz	1
00368	Nitrate Nitrogen	EPA 300.0	2	12082655902B	03/22/2012 23:40	Christopher D Meeks	5
00228	Sulfate	EPA 300.0	3	12082655902B	04/02/2012 17:28	William L Hamaker Jr	20
00202	Alkalinity to pH 4.5	SM20 2320 B	1	12087020201A	03/27/2012 09:19	Hannah M Royer	1
00201	Alkalinity to pH 8.3	SM20 2320 B	1	12087020201A	03/27/2012 09:19	Hannah M Royer	1
00212	Total Dissolved Solids	SM20 2540 C	1	12086021202A	03/26/2012 10:18	Bronson L Cole	1
08344	Ferrous Iron	SM20 3500 Fe B modified	1	12085834401A	03/25/2012 07:25	Daniel S Smith	1

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Analysis Report

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

LLI Sample # WW 6587338
LLI Group # 1296930
Account # 11875

Project Name: Sunol, CA

Collected: 03/21/2012 11:50 by KM

Submitted: 03/22/2012 09:50
Reported: 04/03/2012 16:11

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.	14.1	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	120831848008	03/28/2012 14:09	Joanne M Gates	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	120831848008	03/26/2012 11:52	James L Mertz	1

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Analysis Report

Sample Description: MW-2 NA Water
NA URSO
Sunol Pipeline SL0600100443 MW-2

LLI Sample # WW 6587339
LLI Group # 1296930
Account # 11875

Project Name: Sunol, CA

Collected: 03/21/2012 13:15 by KM

Submitted: 03/22/2012 09:50
Reported: 04/03/2012 16:11

Chevron Pipeline Co.
100 Northpark Blvd
Covington LA 70433

SNL02

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	0.6	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.	5.0	1
Metals	**SW-846 6010B**		ug/l	ug/l	
07058	Manganese	7439-96-5	7.9	0.44	1
Wet Chemistry	**EPA 300.0**		ug/l	ug/l	
00368	Nitrate Nitrogen	14797-55-8	4,400	250	5
00228	Sulfate	14808-79-8	159,000	6,000	20
	SM20 2320 B		ug/l as CaCO3	ug/l as CaCO3	
00202	Alkalinity to pH 4.5	n.a.	568,000	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.	874,000	38,800	1
	SM20 3500 Fe B modified		ug/l	ug/l	
08344	Ferrous Iron	n.a.	N.D.	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	D120841AA	03/24/2012 23:22	Daniel H Heller	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	D120841AA	03/24/2012 23:22	Daniel H Heller	1
01728	TPH-GRO N. CA water C6-C12	SW-846 8015B	1	12087A07A	03/28/2012 12:49	Laura M Krieger	1
01146	GC VOA Water Prep	SW-846 5030B	1	12087A07A	03/28/2012 12:49	Laura M Krieger	1

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Analysis Report

Sample Description: MW-2 NA Water
NA URSO
Sunol Pipeline SL0600100443 MW-2

LLI Sample # WW 6587339
LLI Group # 1296930
Account # 11875

Project Name: Sunol, CA

Collected: 03/21/2012 13:15 by KM

Submitted: 03/22/2012 09:50
Reported: 04/03/2012 16:11

Chevron Pipeline Co.
100 Northpark Blvd
Covington LA 70433

SNL02

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07105	Volatile Headspace Hydrocarbon	SW-846 8015B modified	1	120860041A	03/28/2012 21:47	Elizabeth J Marin	1
07058	Manganese	SW-846 6010B	1	120831848008	03/29/2012 14:13	Joanne M Gates	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	120831848008	03/26/2012 11:52	James L Mertz	1
00368	Nitrate Nitrogen	EPA 300.0	2	12082655902B	03/22/2012 23:54	Christopher D Meeks	5
00228	Sulfate	EPA 300.0	3	12082655902B	04/02/2012 17:42	William L Hamaker Jr	20
00202	Alkalinity to pH 4.5	SM20 2320 B	1	12087020201B	03/27/2012 09:19	Hannah M Royer	1
00201	Alkalinity to pH 8.3	SM20 2320 B	1	12087020201B	03/27/2012 09:19	Hannah M Royer	1
00212	Total Dissolved Solids	SM20 2540 C	1	12086021202A	03/26/2012 10:18	Bronson L Cole	1
08344	Ferrous Iron	SM20 3500 Fe B modified	1	12085834401A	03/25/2012 07:25	Daniel S Smith	1

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Analysis Report

Sample Description: MW-2_Filtered NA Water
NA URSO
Sunol Pipeline SL0600100443 MW-2

LLI Sample # WW 6587340
LLI Group # 1296930
Account # 11875

Project Name: Sunol, CA

Collected: 03/21/2012 13:15 by KM

Submitted: 03/22/2012 09:50
Reported: 04/03/2012 16:11

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.	14.1	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	120831848008	03/28/2012 14:17	Joanne M Gates	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	120831848008	03/26/2012 11:52	James L Mertz	1

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Analysis Report

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

LLI Sample # WW 6587341
LLI Group # 1296930
Account # 11875

Project Name: Sunol, CA

Collected: 03/21/2012 14:25 by KM

Submitted: 03/22/2012 09:50
Reported: 04/03/2012 16:11

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100 Northpark Blvd
Covington LA 70433

SNL01

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	0.7	0.5	1
GC Volatiles	**SW-846 8015B**		ug/l	ug/l	
01728	TPH-GRO N. CA water C6-C12	n.a.	880	50	1
GC Miscellaneous	**SW-846 8015B modified**		ug/l	ug/l	
07105	Methane	74-82-8	N.D.	5.0	1
Metals	**SW-846 6010B**		ug/l	ug/l	
07058	Manganese	7439-96-5	456	0.44	1
Wet Chemistry	**EPA 300.0**		ug/l	ug/l	
00368	Nitrate Nitrogen	14797-55-8	1,100	250	5
00228	Sulfate	14808-79-8	106,000	3,000	10
	SM20 2320 B		ug/l as CaCO3	ug/l as CaCO3	
00202	Alkalinity to pH 4.5	n.a.	574,000	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.	868,000	38,800	1
	SM20 3500 Fe B modified		ug/l	ug/l	
08344	Ferrous Iron	n.a.	580	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	D120892AA	03/29/2012 12:00	Daniel H Heller	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	D120892AA	03/29/2012 12:00	Daniel H Heller	1
01728	TPH-GRO N. CA water C6-C12	SW-846 8015B	1	12087A07A	03/28/2012 13:15	Laura M Krieger	1
01146	GC VOA Water Prep	SW-846 5030B	1	12087A07A	03/28/2012 13:15	Laura M Krieger	1

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Analysis Report

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

LLI Sample # WW 6587341
LLI Group # 1296930
Account # 11875

Project Name: Sunol, CA

Collected: 03/21/2012 14:25 by KM

Submitted: 03/22/2012 09:50
Reported: 04/03/2012 16:11

Chevron Pipeline Co.
100 Northpark Blvd
Covington LA 70433

SNL01

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07105	Volatile Headspace Hydrocarbon	SW-846 8015B modified	1	120860041A	03/28/2012 22:04	Elizabeth J Marin	1
07058	Manganese	SW-846 6010B	1	120831848008	03/28/2012 14:30	Joanne M Gates	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	120831848008	03/26/2012 11:52	James L Mertz	1
00368	Nitrate Nitrogen	EPA 300.0	2	12082655902B	03/23/2012 00:08	Christopher D Meeks	5
00228	Sulfate	EPA 300.0	3	12082655902B	04/02/2012 17:56	William L Hamaker Jr	10
00202	Alkalinity to pH 4.5	SM20 2320 B	1	12087020201B	03/27/2012 09:19	Hannah M Royer	1
00201	Alkalinity to pH 8.3	SM20 2320 B	1	12087020201B	03/27/2012 09:19	Hannah M Royer	1
00212	Total Dissolved Solids	SM20 2540 C	1	12086021202B	03/26/2012 10:18	Bronson L Cole	1
08344	Ferrous Iron	SM20 3500 Fe B modified	1	12085834401A	03/25/2012 07:25	Daniel S Smith	1

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Analysis Report

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

LLI Sample # WW 6587342
LLI Group # 1296930
Account # 11875

Project Name: Sunol, CA

Collected: 03/21/2012 14:25 by KM

Submitted: 03/22/2012 09:50
Reported: 04/03/2012 16:11

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	59.3	14.1	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	120831848008	03/29/2012 14:17	Joanne M Gates	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	120831848008	03/26/2012 11:52	James L Mertz	1

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Analysis Report

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

LLI Sample # WW 6587343
LLI Group # 1296930
Account # 11875

Project Name: Sunol, CA

Collected: 03/21/2012 15:40 by KM

Submitted: 03/22/2012 09:50
Reported: 04/03/2012 16:11

Chevron Pipeline Co.
100 Northpark Blvd
Covington LA 70433

SNL09

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	3	0.5	1
10943	Toluene	108-88-3	N.D.	0.5	1
10943	Xylene (Total)	1330-20-7	4	0.5	1
GC Volatiles	**SW-846 8015B**		ug/l	ug/l	
01728	TPH-GRO N. CA water C6-C12	n.a.	2,500	50	1
GC Miscellaneous	**SW-846 8015B modified**		ug/l	ug/l	
07105	Methane	74-82-8	N.D.	5.0	1
Metals	**SW-846 6010B**		ug/l	ug/l	
07058	Manganese	7439-96-5	154	0.44	1
Wet Chemistry	**EPA 300.0**		ug/l	ug/l	
00368	Nitrate Nitrogen	14797-55-8	1,800	250	5
00228	Sulfate	14808-79-8	103,000	3,000	10
	SM20 2320 B		ug/l as CaCO3	ug/l as CaCO3	
00202	Alkalinity to pH 4.5	n.a.	552,000	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.	784,000	38,800	1
	SM20 3500 Fe B modified		ug/l	ug/l	
08344	Ferrous Iron	n.a.	180	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	D120892AA	03/29/2012 13:08	Daniel H Heller	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	D120892AA	03/29/2012 13:08	Daniel H Heller	1
01728	TPH-GRO N. CA water C6-C12	SW-846 8015B	1	12087A07A	03/28/2012 13:40	Laura M Krieger	1
01146	GC VOA Water Prep	SW-846 5030B	1	12087A07A	03/28/2012 13:40	Laura M Krieger	1

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Analysis Report

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

LLI Sample # WW 6587343
LLI Group # 1296930
Account # 11875

Project Name: Sunol, CA

Collected: 03/21/2012 15:40 by KM

Submitted: 03/22/2012 09:50
Reported: 04/03/2012 16:11

Chevron Pipeline Co.
100 Northpark Blvd
Covington LA 70433

SNL09

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07105	Volatile Headspace Hydrocarbon	SW-846 8015B modified	1	120860041A	03/28/2012 22:45	Elizabeth J Marin	1
07058	Manganese	SW-846 6010B	1	120831848008	03/28/2012 14:38	Joanne M Gates	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	120831848008	03/26/2012 11:52	James L Mertz	1
00368	Nitrate Nitrogen	EPA 300.0	2	12082655902B	03/23/2012 00:22	Christopher D Meeks	5
00228	Sulfate	EPA 300.0	3	12082655902B	04/02/2012 18:11	William L Hamaker Jr	10
00202	Alkalinity to pH 4.5	SM20 2320 B	1	12087020201B	03/27/2012 09:19	Hannah M Royer	1
00201	Alkalinity to pH 8.3	SM20 2320 B	1	12087020201B	03/27/2012 09:19	Hannah M Royer	1
00212	Total Dissolved Solids	SM20 2540 C	1	12086021202A	03/26/2012 10:18	Bronson L Cole	1
08344	Ferrous Iron	SM20 3500 Fe B modified	1	12085834401A	03/25/2012 07:25	Daniel S Smith	1

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Analysis Report

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

LLI Sample # WW 6587344
LLI Group # 1296930
Account # 11875

Project Name: Sunol, CA

Collected: 03/21/2012 15:40 by KM

Submitted: 03/22/2012 09:50
Reported: 04/03/2012 16:11

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	146	14.1	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	120831848008	03/29/2012 14:20	Joanne M Gates	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	120831848008	03/26/2012 11:52	James L Mertz	1

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Analysis Report

Sample Description: Trip_Blank NA Water
NA URSO
Sunol Pipeline SL0600100443 Trip_Blank

LLI Sample # WW 6587345
LLI Group # 1296930
Account # 11875

Project Name: Sunol, CA

Collected: 03/21/2012

Submitted: 03/22/2012 09:50
Reported: 04/03/2012 16:11

Chevron Pipeline Co.
100 Northpark Blvd
Covington LA 70433

SNLTB

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	D120841AA	03/24/2012 16:12	Daniel H Heller	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	D120841AA	03/24/2012 16:12	Daniel H Heller	1
01728	TPH-GRO N. CA water C6-C12	SW-846 8015B	1	12087A07A	03/28/2012 11:33	Laura M Krieger	1
01146	GC VOA Water Prep	SW-846 5030B	1	12087A07A	03/28/2012 11:33	Laura M Krieger	1

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Analysis Report

Sample Description: Equip_Blank NA Water
NA URSO
Sunol Pipeline SL0600100443 Equip_Blank

LLI Sample # WW 6587346
LLI Group # 1296930
Account # 11875

Project Name: Sunol, CA

Collected: 03/21/2012 14:45 by KM

Submitted: 03/22/2012 09:50
Reported: 04/03/2012 16:11

Chevron Pipeline Co.
100 Northpark Blvd
Covington LA 70433

SNLEB

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	D120892AA	03/29/2012 13:31	Daniel H Heller	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	D120892AA	03/29/2012 13:31	Daniel H Heller	1
01728	TPH-GRO N. CA water C6-C12	SW-846 8015B	1	12087A07A	03/28/2012 11:58	Laura M Krieger	1
01146	GC VOA Water Prep	SW-846 5030B	1	12087A07A	03/28/2012 11:58	Laura M Krieger	1

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Quality Control Summary

Client Name: Chevron Pipeline Co. Group Number: 1296930
Reported: 04/03/12 at 04:11 PM

Matrix QC may not be reported if insufficient sample or 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.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank MDL	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: D120841AA	Sample number(s): 6587333,6587335,6587337,6587339,6587345							
Benzene	N.D.	0.5	ug/l	88		77-121		
Ethylbenzene	N.D.	0.5	ug/l	85		79-120		
Toluene	N.D.	0.5	ug/l	85		79-120		
Xylene (Total)	N.D.	0.5	ug/l	85		77-120		
Batch number: D120892AA	Sample number(s): 6587341,6587343,6587346							
Benzene	N.D.	0.5	ug/l	97		77-121		
Ethylbenzene	N.D.	0.5	ug/l	97		79-120		
Toluene	N.D.	0.5	ug/l	96		79-120		
Xylene (Total)	N.D.	0.5	ug/l	100		77-120		
Batch number: 12087A07A	Sample number(s): 6587333,6587335,6587337,6587339,6587341,6587343,6587345-6587346							
TPH-GRO N. CA water C6-C12	N.D.	50.	ug/l	109	109	75-135	0	30
Batch number: 120860041A	Sample number(s): 6587333,6587335,6587337,6587339,6587341,6587343							
Methane	N.D.	5.0	ug/l	92	92	80-120	0	20
Batch number: 120831848008	Sample number(s): 6587333-6587344							
Iron	N.D.	14.1	ug/l	101		90-112		
Manganese	N.D.	0.44	ug/l	102		90-110		
Batch number: 12082655902A	Sample number(s): 6587333							
Nitrate Nitrogen	N.D.	50.	ug/l	101		90-110		
Sulfate	N.D.	300.	ug/l	104		90-110		
Batch number: 12082655902B	Sample number(s): 6587335,6587337,6587339,6587341,6587343							
Nitrate Nitrogen	N.D.	50.	ug/l	101		90-110		
Sulfate	N.D.	300.	ug/l	104		90-110		
Batch number: 12083021202B	Sample number(s): 6587333,6587335							
Total Dissolved Solids	N.D.	9,700.	ug/l	101		80-120		
Batch number: 12085834401A	Sample number(s): 6587333,6587335,6587337,6587339,6587341,6587343							
Ferrous Iron	N.D.	10.	ug/l	101		93-105		
Batch number: 12086021202A	Sample number(s): 6587337,6587339,6587343							
Total Dissolved Solids	N.D.	9,700.	ug/l	100		80-120		
Batch number: 12086021202B	Sample number(s): 6587341							
Total Dissolved Solids	N.D.	9,700.	ug/l	100		80-120		
Batch number: 12087020201A	Sample number(s): 6587333,6587335,6587337							
Alkalinity to pH 4.5	N.D.	460.	ug/l as CaCO3	99		98-103		

*- 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: 1296930
Reported: 04/03/12 at 04:11 PM

Analysis Name	Blank Result	Blank MDL	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 12087020201B	Sample number(s): 6587339,6587341,6587343							
Alkalinity to pH 4.5	N.D.	460.	ug/l as CaCO3	99		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: D120841AA	Sample number(s): 6587333,6587335,6587337,6587339,6587345 UNSPK: P585833								
Benzene	103	113	72-134	9	30				
Ethylbenzene	92	100	71-134	8	30				
Toluene	97	104	80-125	7	30				
Xylene (Total)	93	100	79-125	8	30				
Batch number: D120892AA	Sample number(s): 6587341,6587343,6587346 UNSPK: 6587341								
Benzene	101	102	72-134	1	30				
Ethylbenzene	106	106	71-134	1	30				
Toluene	101	103	80-125	2	30				
Xylene (Total)	106	107	79-125	1	30				
Batch number: 120860041A	Sample number(s): 6587333,6587335,6587337,6587339,6587341,6587343 UNSPK: 6587333								
Methane	-3332 (2)	-4666 (2)	35-157	19	20				
Batch number: 120831848008	Sample number(s): 6587333-6587344 UNSPK: P587044 BKG: P587044								
Iron	141 (2)	192 (2)	75-125	3	20	13,300	13,000	2	20
Manganese	85 (2)	113 (2)	75-125	4	20	2,670	2,600	3	20
Batch number: 12082655902A	Sample number(s): 6587333 UNSPK: P587349 BKG: P587349								
Nitrate Nitrogen	107		90-110			N.D.	N.D.	0 (1)	20
Sulfate	112*		90-110			583,000	584,000	0	20
Batch number: 12082655902B	Sample number(s): 6587335,6587337,6587339,6587341,6587343 UNSPK: 6587335 BKG: 6587335								
Nitrate Nitrogen	102		90-110			N.D.	N.D.	0 (1)	20
Sulfate	104		90-110			3,900	4,000	1 (1)	20
Batch number: 12083021202B	Sample number(s): 6587333,6587335 UNSPK: P587157 BKG: P587157								
Total Dissolved Solids	100		62-135			9,560,000	9,440,000	1 (1)	9
Batch number: 12085834401A	Sample number(s): 6587333,6587335,6587337,6587339,6587341,6587343 UNSPK: P587457 BKG: P587457								
Ferrous Iron	94	96	83-108	1	6	1,700	1,800	3 (1)	5
Batch number: 12086021202A	Sample number(s): 6587337,6587339,6587343 UNSPK: 6587339 BKG: 6587339								
Total Dissolved Solids	102		62-135			874,000	864,000	1	9
Batch number: 12086021202B	Sample number(s): 6587341 UNSPK: 6587339 BKG: 6587341								
Total Dissolved Solids	102		62-135			868,000	892,000	3	9

*- 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: 1296930
Reported: 04/03/12 at 04:11 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
Batch number: 12087020201A	Sample number(s): 6587333,6587335,6587337 UNSPK: P587176 BKG: P587176								
Alkalinity to pH 4.5	97		73-121			180,000	177,000	2	5
Alkalinity to pH 8.3						N.D.	N.D.	0 (1)	5
Batch number: 12087020201B	Sample number(s): 6587339,6587341,6587343 UNSPK: P587176 BKG: P587460								
Alkalinity to pH 4.5	97		73-121			134,000	132,000	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: D120841AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
6587333	110	102	95	104
6587335	110	99	96	105
6587337	112	104	93	102
6587339	114	109	92	101
6587345	113	103	92	99
Blank	111	104	93	101
LCS	108	106	93	103
MS	110	106	95	106
MSD	109	107	94	104
Limits:	80-116	77-113	80-113	78-113

Analysis Name: UST VOCs by 8260B - Water
Batch number: D120892AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
6587341	99	93	100	101
6587343	103	96	100	100
6587346	103	96	99	97
Blank	102	96	100	98
LCS	102	97	98	101
MS	102	97	100	103
MSD	101	97	100	102
Limits:	80-116	77-113	80-113	78-113

Analysis Name: TPH-GRO N. CA water C6-C12
Batch number: 12087A07A

	Trifluorotoluene-F
6587333	92
6587335	94
6587337	80

*- 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: 1296930
Reported: 04/03/12 at 04:11 PM

Surrogate Quality Control

6587339	82
6587341	96
6587343	109
6587345	78
6587346	83
Blank	79
LCS	91
LCSD	88
Limits:	63-135

Analysis Name: Volatile Headspace Hydrocarbon
Batch number: 120860041A

	Propene
6587333	97
6587335	93
6587337	72
6587339	69
6587341	55
6587343	65
Blank	93
LCS	95
LCSD	93
MS	84
MSD	79
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

Lancaster Laboratories
Where quality is a science.

For Lancaster Laboratories use only
Acct. #: 11875 Sample #: 6587333-46 SCR#: 1296930 251254
Group # 3 gmp 3/22/12

Facility #:
Site Address: Sonol, CA
Chevron PM: Lead Consultant:
Consultant/Office: URS Oakland, CA
Consultant Prj. Mgr.: Joe Morgan
Consultant Phone #: 510-874-3021 Fax #:
Sampler: K. Morris J. Quick
Service Order #: 208171870300 ☐ 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 ☐	TPH 8015 MOD GRO (8015B)	TPH 8015 MOD DRO ☐ Silica Gel Cleanup	8260 full scan	Oxygenates	Lead 7420 ☐ 7421 ☐ Nitrate Sulfate EPA 300.0	TDS by 2540C	Alkalinity-bicarbonate EPA 310.1	Methane EPA 8015B mod Ferrous iron SM20 Method 3500 modified	Dissolved iron EPA 6010B	Total Manganese EPA 6010B
MW-8	W			2012/03/21	1005				14	X	X				X	X	X	X	X	X
MW-X	W			2012/03/21	1200				14	X	X				X	X	X	X	X	X
MW-4	W			2012/03/21	1150				14	X	X				X	X	X	X	X	X
MW-2	W			2012/03/21	1315				14	X	X				X	X	X	X	X	X
MW-1	W			2012/03/21	1425				14	X	X				X	X	X	X	X	X
MW-9	W			2012/03/21	1540				14	X	X				X	X	X	X	X	X
Trip Blank	W			—	—				1	X	X									
Equip Blank	W			2012/03/21	1445				6	X	X									

Comments / Remarks
cold on ice

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 Project Std.

Relinquished by:	Date 3/21/12	Time 1518	Received by:	Date / Time
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: Elizabeth Lehman	Date 3/22/12 Time 0950
Temperature Upon Receipt 1.2/1.5 C°			Custody Seals Intact? (Yes) No	

3460 Rev. 10/04/01

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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)
µg	microgram(s)	**mg**	milligram(s)
mL	milliliter(s)	**L**	liter(s)
m3	cubic meter(s)	**µL**	microliter(s)
		pg/L	picogram/liter

< 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

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.

Data Qualifiers:

C – result confirmed by reanalysis.

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

U.S. EPA CLP Data Qualifiers:

Organic Qualifiers		**Inorganic Qualifiers**	
A	TIC is a possible aldol-condensation product	**B**	Value is <CRDL, but ≥IDL
B	Analyte was also detected in the blank	**E**	Estimated due to interference
C	Pesticide result confirmed by GC/MS	**M**	Duplicate injection precision not met
D	Compound quantitated on a diluted sample	**N**	Spike sample not within control limits
E	Concentration exceeds the calibration range of the instrument	**S**	Method of standard additions (MSA) used for calculation
N	Presumptive evidence of a compound (TICs only)	**U**	Compound was not detected
P	Concentration difference between primary and confirmation columns >25%	**W**	Post digestion spike out of control limits
U	Compound was not detected	*****	Duplicate analysis not within control limits
X,Y,Z	Defined in case narrative	**+**	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.

Times are local to the area of activity. Parameters listed in the 40 CFR part 136 Table II as “analyze immediately” are not performed within 15 minutes.