Global Gas

Jeff Cosgray
Environmental Team Leader

Chevron Pipe Line Company
4800 Fournace, Room E320C
Bellaire, Texas 77401
Tel 713 432 3335
Fax 866 653 0301
jcos@chevron.com

October 15, 2008

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 – Third Quarter 2008 Groundwater Monitoring Report**" are true and correct to the best of my knowledge at the present time.

Submitted by:

Jeffrey Cosgray

URS

This letter report (**"Third Quarter 2008 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 Release site in Sunol, California.

The third quarter 2008 groundwater monitoring report discussed herein was developed in accordance with the standard of care used to develop this type of report. The assumptions that were made and the recommendations for continued field activities were based on our professional experience and protocols reported in the literature for similar investigations.

URS Corporation
Approved by:

Joe Morgan III

Jacob Henry, P.G.

URS

October 22, 2008

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, Third Quarter 2008 Groundwater Monitoring Report

Dear Mr. Wickham:

A December 30, 2005 letter provided by the Alameda County Environmental Health staff (ACEH) requested the initiation of a Quarterly Groundwater Monitoring Program. In response to this request, URS, on behalf of Chevron Pipe Line Company (CPL), has prepared this groundwater monitoring report for the CPL Sunol site (Site) for the third quarter of 2008.

Section 1 of this report discusses the groundwater monitoring program and details measured groundwater levels, sampling methodologies, and groundwater analytical results. Section 2 provides the findings and Section 3 presents the recommendations for the groundwater monitoring program and the status of the soil vapor extraction system (SVE) system restart process. Section 4 describes the limitations applicable to this report.

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

Sincerely yours,

URS Corporation

PROFESSIONAL GEOLOGIST
JACOB T. HENRY
No. 8504
exp. 12/31/09
STATE OF CALIFORNIA

Jacob Henry, P.G.
Senior Geologist

Joe Morgan III
Senior Project Manager

cc: Mr. Jeff Cosgray, Chevron Pipeline Company
Ms. Rachel Naccarati, URS Oakland
Mr. Greg White, URS Chicago

On September 18, 2008, URS conducted field activities to assess the groundwater conditions at the Site. A Site vicinity map is included as Figure 1. URS measured the fluid levels and attempted to collect analytical samples from groundwater monitoring wells MW-8 through MW-11. URS made the decision not to sample monitoring well MW-1 during third quarter 2008 field activities because water levels were less than 0.75 ft above the bedrock and deemed stagnant. URS made the decision not to sample monitoring wells MW-2 through MW-4 during third quarter 2008 field activities because water levels were below the bedrock and deemed stagnant. URS collected a surface water sample for analysis from the very small stream, located northwest of the release location, at the Site. The monitoring wells and surface water sampling location are provided on Figure 2. Monitoring wells MW-5 through MW-7 were destroyed on June 23, 2008 after the tree removal was completed during the week of June 18, 2008.

1.1 SITE HYDROGEOLOGY

Prior to collecting groundwater samples, the water levels were measured at MW-1 through MW-4 and MW-8 through MW-11 from the top of casing using an electronic oil/water interface meter. Free product was measure in MW-1 with a thickness of 0.01 feet. A slight sheen was observed during purging activities at MW-9. Product was not measured in the other seven wells during the quarterly monitoring activities. The measured groundwater levels are displayed in Table 1 and the calculated groundwater and product elevations are displayed in Table 2.

Unconfined Water Bearing Zone

Due to unusually dry summer and fall conditions, the groundwater level within the unconfined water-bearing zone wells MW-2 through MW-4 has generally decreased since the last groundwater monitoring event in June 2008. Because of the low water table MW-2, MW-3, and MW-4 were hydraulically disconnected from the unconfined water-bearing zone. The standing water levels in MW-2, MW-3, and MW-4 were 290.50, 290.84, and 290.64 feet above average mean sea level (msl), respectively.

The groundwater elevations for the remaining unconfined water-bearing zone wells (MW-1 and MW-9 through MW-11), were 290.42, 290.00, 290.00 and 290.92 feet above msl, respectively. The groundwater elevation for MW-8, which screens an apparent hillside groundwater recharge source for the Valley Crest Tree Company's (nursery) unconfined water-bearing zone, was 312.26 feet above msl. MW-1 was deemed disconnected from the unconfined water-bearing zone due to less than 0.75 ft of water above the bedrock.

Because MW-9 through MW-11 were the only wells deemed hydraulically connected to the unconfined water-bearing zone, the local groundwater flow direction and hydraulic gradient was not calculated due to similar groundwater elevations. The hydraulic gradient for the hillside has not been calculated because MW-8 is the only well screened in the apparent hillside groundwater recharge source area. Figure 3 provides groundwater contours for the unconfined water-bearing zone as well as bedrock surface elevations for the gravel-siltstone contact for comparison.

Confined Water Bearing Zone

As stated before (MW-5 through MW-7), are no longer a part of the groundwater monitoring program. After four quarters of non-detect analytical results, ACEH agreed that further groundwater monitoring of the confined sandstone water-bearing zone was unnecessary. The

wells were abandoned according to Alameda County Zone 7 Water Agency (Zone 7) standards on June 23, 2008.

2.1 QUARTERLY MONITORING ACTIVITIES

After measuring the fluid levels at each well, URS conducted groundwater sampling. Third quarter sampling efforts were influenced by the seasonally low groundwater levels and the presence of free product. The rationale for the method used at each well is described below:

- MW-1 through MW-4 were not sampled because they were deemed hydraulically disconnected from the unconfined water-bearing zone. Furthermore, MW-1 had measurable product, excluding MW-1 from sampling.
- MW-9 was purged using low-flow methods and then sampled.
- MW-8, MW-10, and MW-11 were purged dry due to the slow recharge and then sampled.

A surface water sample was also collected from the very small stream northwest of the release location (Figure 2) on September 18, 2008.

2.1.1 MW-1 and MW-9 Sorbent Booms

URS inspected the sorbent booms (booms) in MW-1 and MW-9, which were installed as an interim remedial measure, during the third quarter 2008 groundwater monitoring event. The booms were removed to determine if they needed to be replaced during the third quarter sampling event. Field personnel determined the booms were collecting product and did not warrant replacement. The booms have been successful in passively collecting and facilitating degradation of hydrocarbon product within the wells. MW-1 and MW-9 have been gauged on a monthly basis since the booms were installed and no product has been observed. During the third quarter monitoring event, after the booms were removed, product was not measured in MW-9 and was measured at 0.01 feet in MW-1.

2.1.2 MW-9

Low-flow purging rates were between 200 to 400 milliliters per minute (mL/min) depending on the rate of recharge at each well. During low-flow purging, the water level in MW-9 was measured periodically to monitor draw down. In MW-9 a stabilized draw down of less than 0.47 feet was achieved. The low-flow groundwater sampling forms are included in Attachment A.

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

In all of the wells where low-flow purging was conducted, the 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), turbidity +/- 1.0 nephelometric turbidity units (NTU).

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

2.1.3 MW-8, MW-10, and MW-11

Because of slow recharge rates at MW-8, MW-10, and MW-11, low-flow purging methods were used until the well went dry. Parameters were collected during purging activities. At MW-8, MW-10, and MW-11, approximately 1.5, 4.0, and 2.5 gallons were removed from each well, respectively. After the wells were purged dry, the recharging water levels were monitored until sufficient water was present to collect the groundwater samples.

2.1.4 Surface Water Sample

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

2.1.5 Status of Soil Vapor Extraction System Restart

With the removal of the trees, URS and CPL are moving forward with the restarting of the SVE system at the site. Stratus Environmental, Inc. (Stratus) has submitted the initial plans to the Alameda County Building Department (ACBD). The ACBD has involved the Alameda County Fire Department (ACFD) due to the potential fire hazards associated with on-site activities related to construction. The ACBD and ACFD approval process continues to delay the start of work, however CPL and URS intend to meet the needs of the ACFD and obtain necessary permits to begin work.

The San Francisco Public Utilities Commission (SFPUC) has approved the URS request to install the electrical power system that will be used to power the SVE system. URS has requested Stratus to conduct brush removal activities at the site prior to the beginning of the electrical and SVE system installation to minimize the potential for fire.

Field activities began October 22, 2008 and included the weed removal and fire road construction. Activities are expected to continue through the week of November 10th, 2008, culminating in the restarting of the SVE system. This report constitutes the ACEH October 2008 update. URS will update ACEH by November 15, 2008 or earlier, with developments of the above mentioned items and any other significant information pertaining to the restarting of the SVE system.

3.1 ANALYTICAL PROGRAM

The groundwater samples from each monitoring well and the very small stream were collected in clean laboratory provided containers, labeled with unique project specific identification, packed to prevent breakage, and placed on ice in a cooler immediately after collection. The sample cooler included a trip blank and was 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.

As discussed in URS' *February 2006 Groundwater Monitoring Report*, groundwater and surface water samples collected during quarterly sampling activities are analyzed for the following parameters:

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

3.2 GROUNDWATER ANALYTICAL RESULTS

A summary of the analytical results for the gasoline compounds and associated environmental screening levels (ESLs) developed by Regional Water Quality Control Board (RWQCB 2008) are presented in Table 3 and the complete laboratory analytical results and chain of custodies are included as Attachment B.

3.2.1 Unconfined Water-Bearing Zone Wells

The unconfined water bearing zone wells include nursery unconfined water-bearing zone wells (MW-1 through MW-4 and MW-9 through MW-11) and the Calaveras Road shallow unconfined water-bearing zone well (MW-8), the apparent hillside groundwater recharge source for the nursery. The third quarter groundwater sample results are as follows:

- MW-1 through MW-4 were not sampled because the wells were deemed not hydraulically connected to the water-bearing zone. Furthermore, MW-1 contained measurable product, excluding MW-1 from sampling.
- The MW-8 sample contained TPH-GRO at 11,000 micrograms per liter (µg/L), benzene at 740 µg/L, toluene at 320 µg/L, ethylbenzene at 790 µg/L, and total xylenes at 2,600 µg/L.
- The MW-9 sample contained TPH-GRO at 25,000 (µg/L), benzene at 6 µg/L, toluene at 610 µg/L, ethylbenzene at 800 µg/L, and total xylenes at 4,800 µg/L.
- The MW-10 sample was below laboratory reporting limits for TPH-GRO, benzene, toluene, ethylbenzene, and total xylenes.
- The MW-11 sample was below laboratory reporting limits for TPH-GRO, benzene, toluene, ethylbenzene, and total xylenes.

3.2.2 Confined Water-Bearing Zone Wells

Wells MW-5 through MW-7 were abandoned June 23, 2008 as approved by ACEH in the November 29, 2007 ACEH letter.

3.2.3 Surface Water Sample

The surface water sampling location is shown on Figure 2. The surface water sample was below laboratory reporting limits for all constituents.

3.2.4 Analytical Result Comparison to ESLs

The groundwater samples collected from MW-10 and MW-11 were below the most stringent ESLs for all constituents. The surface water sample was also below the respective ESLs. MW-8 and MW-9 exceeded the ESLs for all constituents.

3.3 SUMMARY OF QA/QC REVIEW PARAMETERS

The certified analytical reports from the analytical laboratory were subjected to a quality assurance/quality control (QA/QC) review and data validation by URS. Laboratory and field QC sample results were evaluated to assess the quality of the individual sample results and overall method performance. The data evaluation performed included review of:

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

All reported results for the laboratory method blanks were non-detect (less than the laboratory reporting limit), indicating no evidence of contamination from laboratory instrumentation. All reported results for the trip blank were non-detect (less than the laboratory reporting limit), indicating no evidence of contamination during shipping of the laboratory samples. One field duplicate sample, MW-X (MW-8), was collected during this sampling event. The reported results for samples MW-X and MW-8 were TPH-GRO at 9,200 and 11,000 (µg/L), benzene at 690 and 740 µg/L, toluene at 290 and 320 µg/L, ethylbenzene at 720 and 790 µg/L, and total xylenes at 2,100 and 2,600 µg/L, respectively.

All reported laboratory control spike (LCS) sample recoveries, matrix control spike (MS) sample recoveries, and surrogate spike recoveries were within laboratory QC limits.

Chain-of-custody documentation was complete and consistent. Samples were preserved as required per method specifications. All samples were analyzed within the method-specified holding times.

The data quality evaluation indicated that 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 field activities conducted on September 18, 2008, included assessing the groundwater conditions at the Site and measuring the fluid levels and collecting analytical samples from groundwater monitoring wells MW-1 through MW-4 and MW-9 through MW-11. The findings are as follows:

- Measurable free product was observed in MW-1. No product or sheen was observed in monitoring wells MW-2 through MW-4 or MW-8 through MW-11 during gauging. Sheen was observed in MW-9 after purging the well for groundwater sampling.
- Due to unusually dry summer and fall conditions, the water table elevations continue to be stagnant, hydraulically disconnecting MW-1 through MW-4 from the unconfined water-bearing zone, therefore no samples were collected from these wells. Furthermore, the presence of product in MW-1 excluded MW-1 from sampling.
- MW-8 was sampled because the trees along the hillside had been cleared in July 2008. The MW-8 sample contained TPH-GRO at 11,000 µg/L, benzene at 740 µg/L, toluene at 320 µg/L, ethylbenzene at 790 µg/L, and total xylenes at 2,600 µg/L.
- The MW-9 sample contained TPH-GRO at 25,000 (µg/L), benzene at 6 µg/L, toluene at 610 µg/L, ethylbenzene at 800 µg/L, and total xylenes at 4,800 µg/L.
- The groundwater samples collected from MW-10 and MW-11 were non-detect and below the most stringent ESLs for all constituents. Groundwater samples collected from MW-8 and MW-9 exceeded ESLs for all constituents analyzed.
- The surface water sample collected from the very small stream continues to be below laboratory reporting limits for all constituents.
- URS estimates field activities to restart the SVE system will begin in late October 2008.

Based on the September 18, 2008 field observations and analytical results URS makes the following recommendations:

- Continue quarterly groundwater monitoring to further assess the effect of seasonal groundwater fluctuations on groundwater behavior and contaminant transport within the unconfined water-bearing zone.
- Sorbent booms will continue to be used as an interim remediation measure in wells containing hydrocarbon sheen or measurable product. Currently, sorbent booms are installed in MW-1 and MW-9.
- URS and CPL continue to move forward on restarting an SVE system at the Site. URS estimates field activities to restart the SVE system will begin in late October. CPL has requested and paid for an electrical service contract with Pacific Gas & Electric (PG&E). Once the plans for weed abatement, fire road installation, and water tank installation are approved by the ACFD, field activities can begin (late October 2008). The electrical system can then be installed and inspected by PG&E, at which time electrical service can be connected. Stratus will then re-mobilize a trailer-mounted SVE system to the site and will work with URS to bring the current nine SVE well configuration back on-line.

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. Because 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 CPL's use, and reliance on this report by third parties will be at such party's sole risk.

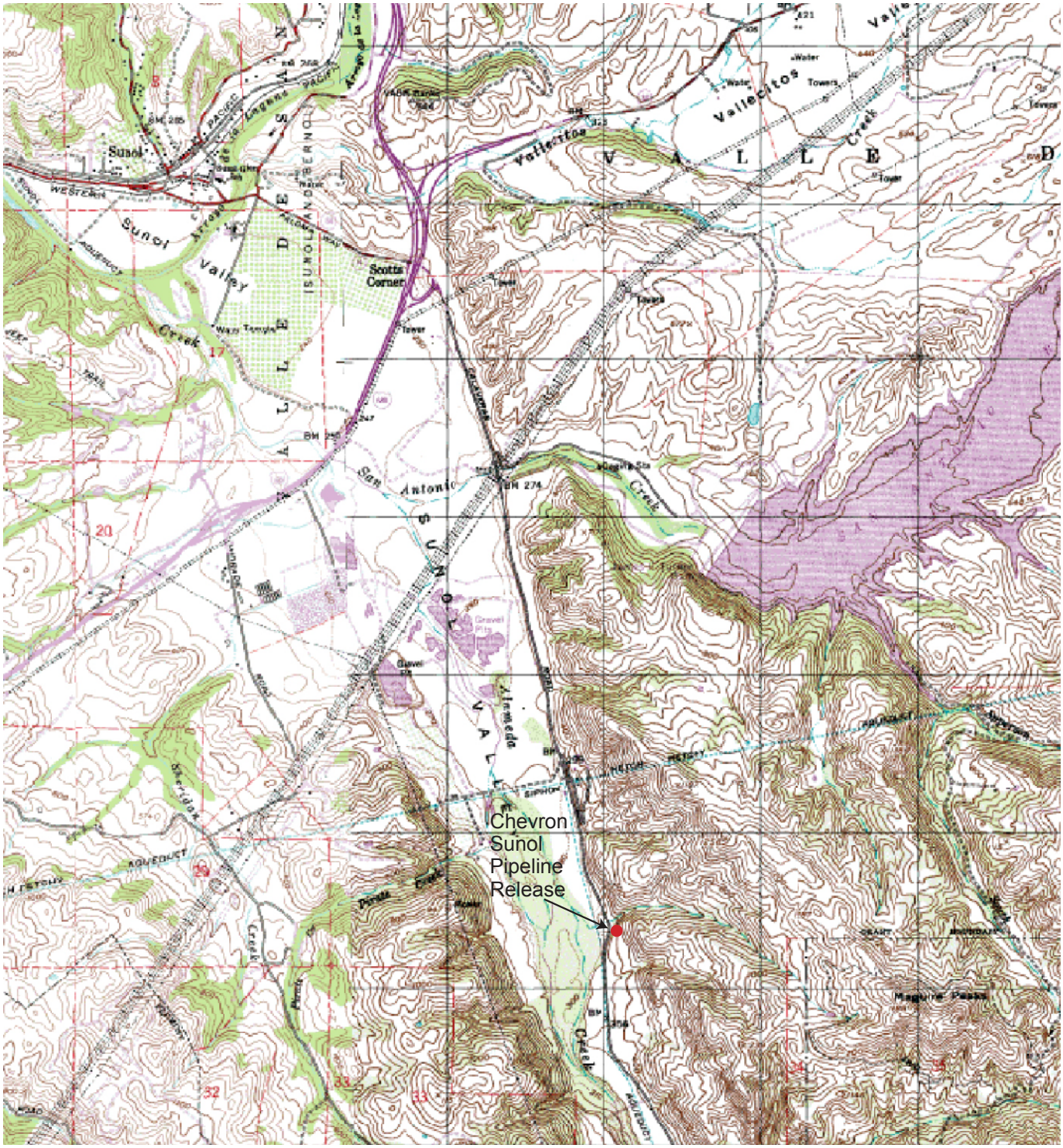


Image obtained from topozone.com

N

0 0.6 1.2 1.8 2.4 3 km

0 0.4 0.8 1.2 1.6 2 mi

MAP REFERENCE:

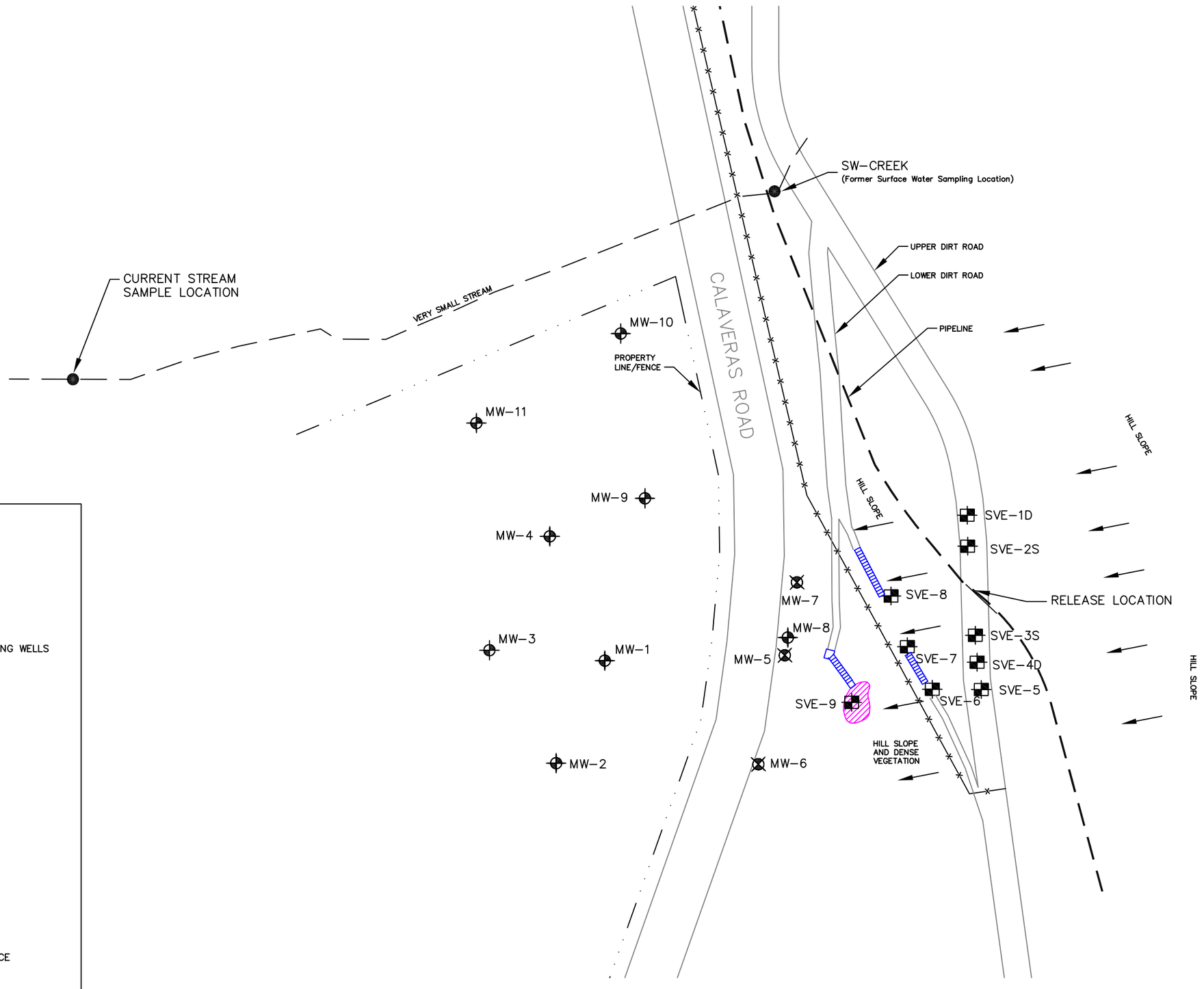
PORTION OF U.S.G.S. QUANDRANGLE MAP
7 1/2 MINUTE SERIES (TOPOGRAPHIC)
LA COSTA VALLEY QUADRANGLE

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

NORTH

0 50 100

SCALE IN FEET

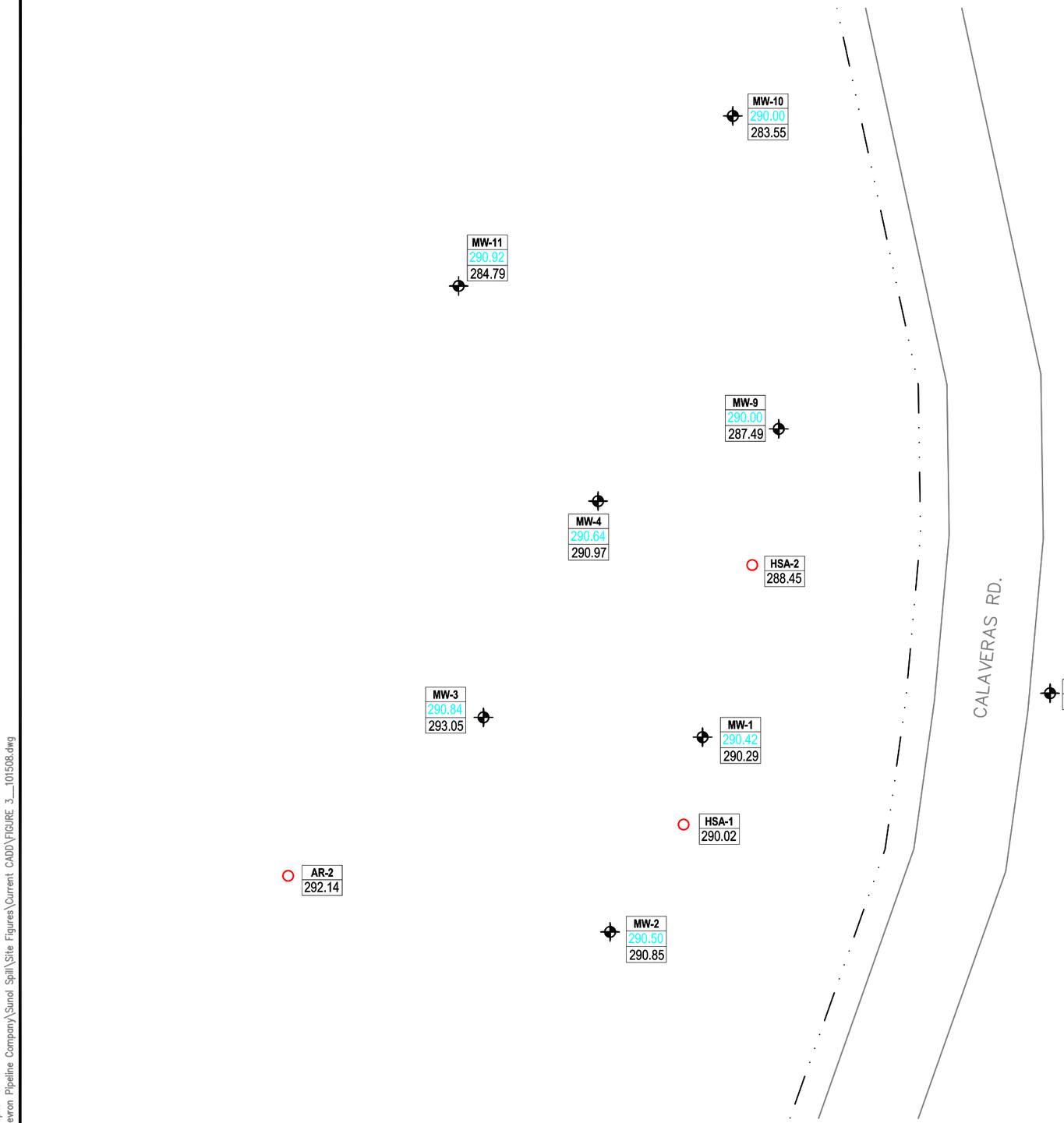


LEGEND:

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

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

Jul 16, 2008 – 4:49pm
X:\x_env_waste\Chevron Pipeline Company\Sunol Spill\Site Figures\Current CADD\FIGURE 2.dwg



LEGEND:

- MONITORING WELL
- MW-11 / 292.71 / 284.79 — MONITORING WELL LABEL; GROUNDWATER ELEVATION; BEDROCK CONTACT ELEVATION
- SOIL BORING
- HSA-2 / 288.45 — SOIL BORING LABEL; BEDROCK CONTACT ELEVATION
- NM — NOT MEASURED

NOTES:

1. ELEVATIONS IN FEET ABOVE AVERAGE MEAN SEA LEVEL (msl).
2. GROUNDWATER ELEVATIONS FOR MW-1 THROUGH MW-4 AND MW-9 THROUGH MW-11, AS MEASURED ON SEPTEMBER 18, 2008.
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. GROUNDWATER ENCOUNTERED AT MW-1 THROUGH MW-4 IS NOT IN CONNECTION WITH THE UNCONFINED WATER BEARING ZONE. THE GROUNDWATER IS STANDING WATER WITHIN THE SUMP OF EACH WELL BELOW THE OVERBURDEN/BEDROCK CONTACT.

NORTH

0 30' 60'

SCALE: 1" = 30'

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

Oct 13, 2008 - 6:11pm
X:\x_env_waste\Chevron Pipeline Company\Sunol Spill\Site Figures\Current CADD\FIGURE 3_101508.dwg

TABLE 1
Monitoring Well Groundwater Levels
Third Quarter 2008 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
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	--	--
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	--	--
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	--	--
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	--	--

TABLE 1
Monitoring Well Groundwater Levels
Third Quarter 2008 Groundwater Monitoring Report
Chevron Sunol Pipeline

Well ID	Screen Interval (feet bgs)[1]	Date	Depth to Groundwater (feet TOC-N)[2]	Depth to Product (feet TOC-N)	Product Thickness (feet)
MW-9	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	--	--
MW-10	40.3-55.3	9/5/2007	54.86	--	--
		12/12/2007	46.84	--	--
		3/20/2008	44.41	--	--
		5/20/2008	44.09	--	--
		6/5/2008	43.67	--	--
		9/18/2008	45.89	--	--
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	--	--

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
Third Quarter 2008 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
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	--	--
MW-3	10/21/2005	326.05	325.65	2/21/2006	293.68	--	--
				6/7/2006	294.74	--	--
				8/22/2006	290.99	--	--
				11/14/2006	290.94	--	--
				2/20/2007	293.99	--	--
				6/5/2007	291.02	--	--
				9/12/2007	290.94	--	--
				12/11/2007	290.88	--	--
				3/19/2008	294.01	--	--
				5/20/2008	294.39	--	--
				6/5/2008	294.20	--	--
				9/18/2008	290.84	--	--
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	--	--
MW-8	8/15/2006	335.23	333.93	8/22/2006	315.22	--	--
				11/14/2006	315.20	--	--
				2/20/2007	314.70	--	--
				6/5/2007	313.45	--	--
				9/12/2007	312.46	--	--
				12/11/2007	314.35	--	--
				Q1 2008	NM	--	--
				Q2 2008	NM	--	--
				9/18/2008	312.26	--	--

TABLE 2
Monitoring Well Groundwater Elevations
Third Quarter 2008 Groundwater Monitoring Report
Chevron Sunol Pipeline

Well ID	Date Completed	Ground Surface Elevation (feet msl)[1]	Top of Casing Elevation (feet msl)[1, 2]	Date Measured	Groundwater Elevation (feet msl)[1]	Product Elevation (feet msl)[1]	Product Thickness (feet)
MW-9	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	--	--
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	--	--
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	--	--

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

TABLE 3
Summary of Groundwater Analytical Results
Gasoline Compounds
Third Quarter 2008 Groundwater Monitoring Report
Chevron Sunol Pipeline

Well ID	Date	Gasoline Compounds				
		TPH-GRO (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)
ESL[1)]		100	1	40	30	20
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[3)]	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[3)]	NS	NS	NS	NS	NS
	Q4 2007[3)]	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[4)]	NS	NS	NS	NS	NS
MW-2	2/21/2006[2)]	<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[4)]	NS	NS	NS	NS	NS
	Q4 2007[4)]	NS	NS	NS	NS	NS
	3/19/2008	<50	<0.5	<0.5	<0.5	<0.5
	6/5/2008 [2)]	<50 / <50	<0.5 / <0.5	<0.5 / <0.5	<0.5 / <0.5	<0.5 / <0.5
	Q3 2008[4)]	NS	NS	NS	NS	NS
MW-3	2/21/2006	<50	<0.5	<0.5	<0.5	<0.5
	6/7/2006	<50	<0.5	<0.5	<0.5	<0.5
	8/23/2006	**170**	<0.5	<0.5	<0.5	<0.5
	11/14/2006	**86**	<0.5	**1**	<0.5	<0.5
	2/21/2007	<50	<0.5	<0.5	<0.5	<0.5
	Q2 2007[4)]	NS	NS	NS	NS	NS
	Q3 2007[4)]	NS	NS	NS	NS	NS
	Q4 2007[4)]	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[4)]	NS	NS	NS	NS	NS
MW-4	2/21/2006	<50	<0.5	<0.5	<0.5	<0.5
	6/7/2006	<50	<0.5	<0.5	<0.5	<0.5
	8/23/2006	**70**	**0.6**	<0.5	<0.5	**1**
	11/15/2006	<50	<0.5	<0.5	<0.5	0.5
	2/21/2007	<50	<0.5	<0.5	<0.5	<0.5
	Q2 2007[4)]	NS	NS	NS	NS	NS
	Q3 2007[4)]	NS	NS	NS	NS	NS
	Q4 2007[4)]	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[4)]	NS	NS	NS	NS	NS
MW-8	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[5)]	NS	NS	NS	NS	NS
	Q2 2008[5)]	NS	NS	NS	NS	NS
	9/18/2008[2)]	**11,000 / 9,200**	**740 / 690**	**320 / 290**	**790 / 720**	**2,600 / 2,100**

TABLE 3
Summary of Groundwater Analytical Results
Gasoline Compounds
Third Quarter 2008 Groundwater Monitoring Report
Chevron Sunol Pipeline

Well ID	Date	Gasoline Compounds				
		TPH-GRO (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)
ESL[1)]		100	1	40	30	20
MW-9	Q3 2006[3)]	NS	NS	NS	NS	NS
	11/15/2006	**74,000**	**480**	**12,000**	**2,200**	**17,000**
	Q1 2007[3)]	NS	NS	NS	NS	NS
	Q2 2007[3)]	NS	NS	NS	NS	NS
	Q3 2007[3)]	NS	NS	NS	NS	NS
	12/11/2007	**48,000**	**62**	**5,400**	**1,700**	**12,000**
	Q1 2008[3)]	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**
MW-10	Q3 2007[4)]	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
MW-11	Q3 2007[4)]	NS	NS	NS	NS	NS
	12/14/2007	<50	<0.5	<0.5	<0.5	<0.5
	3/20/2008[2)]	<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
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

Notes:
Bold values exceed laboratory reporting limits.
J qualifier - The reported value is the approximate concentration of the analyte in the sample due to sample heterogeneity.
µg/L - micrograms per liter
NS - Not Sampled
TPH-GRO - Total Petroleum Hydrocarbons as Gasoline Range Organics

1) Environmental Screening Levels (ESLs) for groundwater as a current or potential source of drinking water were obtained from the San Francisco Regional Water Quality Control Board (RWQCB) Interim Final: Table A, May 2008.
2) Both sample and duplicate concentrations from well location are displayed.
3) Sample not collected during quarterly monitoring due to the presence of measurable free product.
4) Sample not collected during quarterly monitoring because well is not hydraulically connected to unconfined water-bearing zone.
5) Sample not collected due to extreme overhead hazards posed by dead trees on the 80-90% grade directly uphill from the sampling location.

TABLE 4
Summary of Groundwater Analytical Results
Geochemical Indicators and Other Parameters
Fourth Quarter 2006 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	2.60	0.116	<0.008	<0.052	48.30	<0.002	6.62	494.00	317.00	<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]	25.00	0.37 J	1.000	0.220	0.079	108.00	<0.002	6.67	882.00	597.00	<0.46
MW-2	6/7/2006	NR[3]	36.43	11.90	0.003	<0.008	<0.052	47.50	<0.002	6.56	465.00	286.00	<0.46
	8/23/2006	0.32	25.69	7.00	0.024	0.015	<0.052	121.00	0.005	6.63	811.00	470.00	<0.46
	11/14/2006	0.20	220.84	4.00	0.021	0.021	<0.052 UJ	126.00 J	0.004	6.72	867.00	530.00	<0.46
MW-3	6/7/2006	0.37	31.23	10.90	0.005	<0.008	<0.052	45.10	<0.002	6.56	446.00	274.00	<0.46
	8/23/2006	0.30	-1.80	<0.25	0.368	0.240	<0.052	26.30	1.500	6.60	711.00	421.00	<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]
MW-4	6/7/2006	0.28	29.57	9.20	0.020	0.059	<0.052	60.20	<0.002	6.65	423.00	282.00	<0.46
	8/23/2006	NR[3]	-22.49	<0.25	0.226	0.700	<0.052	78.40	0.003	6.62	590.00	396.00	<0.46
	11/15/2006	3.46[6]	106.00	0.34 J	0.137	0.470	<0.052	90.30	0.003	6.74	672.00	490.00	<0.46
MW-5	6/8/2006	0.19	12.05	<0.25	0.029	0.120	<0.052	71.30	0.004	7.24	502.00	313.00	2.60
	8/24/2006	NR[3]	-151.92	<0.25	0.021	0.280	<0.052	72.20	0.0054 J	7.32	506.00	320.00	<0.46
	11/16/2006	0.08	-48.11	<0.25	0.020 J	0.280	<0.052	73.80 J	0.005	7.45	513.00	320.00	<0.46
MW-6	6/7/2006	NM[2]	NM[2]	<0.25	0.599	12.600	<0.052	41.60	<0.002	NM[2]	531.00	364.00	3.70
	8/22/2006	NM[2]	NM[2]	<0.25	0.600	5.500	<0.052	36.90	5.800	NM[2]	553.00	375.00	<0.46
	11/16/2006	0.04	-71.00	<0.25	0.203 J	0.700	<0.052	38.30 J	5.700	7.92	541.00	366.00	<0.46
MW-7	6/8/2006	NM[2]	NM[2]	<0.25	0.706	13.400	<0.052	70.40	0.022	NM[2]	542.00	310.00	5.90
	8/22/2006	NM[2]	NM[2]	<0.25	0.160	0.910	<0.052	75.70	0.094	NM[2]	534.00	335.00	<0.46
	11/16/2006	0.06	-24.00	<0.25	0.376	5.800	<0.052	77.60 J	0.061	7.42	533.00	358.00	<0.46
MW-8	8/24/2006	NM[2]	NM[2]	<0.25	0.171	0.140	<0.052	90.20	<0.002 UJ	NM[2]	563.00	362.00	<0.46
	11/16/2006	0.05	-74.00	<0.25	0.123	0.800	<0.052	78.60 J	0.002	7.22	564.00	350.00	<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]	4.00	<0.25 UJ	4.410	1.200	0.496	29.50	0.009	6.92	836.00	657.00	<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

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 loaction.
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-paramter meter from a bailer.

Appendix A
Groundwater Sampling Forms

URS

Troll 9000 | Low-Flow System
09/18/08 | ISI Low-Flow Log

Project Information:

Operator Name	Cliff Pearson
Company Name	URS
Project Name	Chevron Sunol Pipeline
Site Name	Sunol

Pump Information:

Pump Model/Type	Mega Typhoon
Tubing Type	LDPE
Tubing Diameter	0.38 [in]
Tubing Length	24.5 [ft]
Pump placement from TOC	23.5 [ft]

Well Information:

Well Id	MW-8
Well diameter	2 [in]
Well total depth	NM
Depth to top of screen	14.50 [ft]
Screen length	10 [ft]
Depth to Water	21.67 [ft]

Pumping information:

Final pumping rate	--
Flowcell volume	--
Calculated Sample Rate	--
Sample rate	--
Stabilized drawdown	Dry

Low-Flow Sampling Stabilization Summary

	Time	Temp [F]	pH [pH]	Cond. [µS/cm]	Turb [NTU]	DO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-3%	+/-1	+/-0.2	+/-20
Last 5 Readings	14:17:16	71.92	7.04	821.85	2.1	2783	-164
	14:20:16	72.75	7.06	835.31	2	2671	-152
	14:23:16	72.92	7.09	835.3	1.3	2548	-154
	14:26:16	74.55	7.1	852.87	1.1	2308	-149
	14:29:16	71.93	7.12	831.61	4.2	2413	-142
Variance in last 3 readings		0.17	0.03	-0.01	-0.70	-123.00	-2.00
		1.63	0.01	17.57	-0.20	-240.00	5.00
		-2.62	0.02	-21.26	3.10	105.00	7.00

Notes:

Initial depth to water = 21.67 feet
Total Volume Purged = 1.5 gallons
Final depth to water = Dry
Sample collected at 3:50
NM = Not Measured

URS

Troll 9000 Low-Flow System
09/18/08 ISI Low-Flow Log

Project Information:		**Pump Information:**	
Operator Name	Cliff Pearson	Pump Model/Type	Mega Typhoon
Company Name	URS	Tubing Type	LDPE
Project Name	Chevron Sunol Pipeline	Tubing Diameter	0.38 [in]
Site Name	Sunol	Tubing Length	46 [ft]
		Pump placement from TOC	45 [ft]

Well Information:		**Pumping information:**	
Well Id	MW-9	Final pumping rate	--
Well diameter	2 [in]	Flowcell volume	--
Well total depth	NM	Calculated Sample Rate	--
Depth to top of screen	36.0 [ft]	Sample rate	--
Screen length	10 [ft]	Stabilized drawdown	0.47 [ft]
Depth to Water	43.07 [ft]		

Low-Flow Sampling Stabilization Summary

	Time	Temp [F]	pH [pH]	Cond. [µS/cm]	Turb [NTU]	DO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-3%	+/-1	+/-0.2	+/-20
Last 5 Readings	15:56:43	66.97	6.68	917.08	4.8	3507	-168
	15:59:43	66.39	6.68	912.86	5	3543	-164
	16:02:43	66.61	6.68	916.35	5.4	3433	-161
	16:05:43	66.75	6.68	916.35	4.4	3409	-161
	16:08:43	66.38	6.68	912.64	4.7	3389	-161
Variance in last 3 readings		0.22	0.00	3.49	0.40	-110.00	3.00
		0.14	0.00	0.00	-1.00	-24.00	0.00
		-0.37	0.00	-3.71	0.30	-20.00	0.00

Notes:

Initial depth to water = 43.07 feet
Total Volume Purged = 6 gallons
Final depth to water = 43.54 feet
Sample collected at 3:20
NM = Not Measured
Purged water initially black with slight sheen

URS

Troll 9000 | Low-Flow System
09/18/08 | ISI Low-Flow Log

Project Information:

Operator Name	Cliff Pearson
Company Name	URS
Project Name	Chevron Sunol Pipeline
Site Name	Sunol

Pump Information:

Pump Model/Type	Mega Typhoon
Tubing Type	LDPE
Tubing Diameter	0.38 [in]
Tubing Length	55 [ft]
Pump placement from TOC	54 [ft]

Well Information:

Well Id	MW-10
Well diameter	2 [in]
Well total depth	NM
Depth to top of screen	40.3 [ft]
Screen length	15 [ft]
Depth to Water	45.89 [ft]

Pumping information:

Final pumping rate	130 mL/min
Flowcell volume	--
Calculated Sample Rate	--
Sample rate	--
Stabilized drawdown	Dry

Low-Flow Sampling Stabilization Summary

	Time	Temp [F]	pH [pH]	Cond. [µS/cm]	Turb [NTU]	DO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-3%	+/-1	+/-0.2	+/-20
Last 5 Readings	10:49:05	66.89	6.94	1720.45	28.5	2782	-237
	10:52:05	68.36	6.94	1737.69	30.8	2713	-251
	10:55:05	67.93	6.95	1726.61	28.7	2883	-245
	10:58:05	67.69	6.96	1729.52	27.6	2912	-244
	11:01:05	67.88	6.96	1734.24	26.8	2862	-244
Variance in last 3 readings		-0.43	0.01	-11.08	-2.10	170.00	6.00
		-0.24	0.01	2.91	-1.10	29.00	1.00
		0.19	0.00	4.72	-0.80	-50.00	0.00

Notes:

Initial Flow Rate = 130mL/min
Initial depth to water = 45.89 feet
Total Volume Purged = 4 gallons
Final depth to water = Dry
Sample collected at 10:05
NM = Not Measured

URS

Troll 9000 Low-Flow System
09/18/08 ISI Low-Flow Log

Project Information:		**Pump Information:**	
Operator Name	Cliff Pearson	Pump Model/Type	Mega Typhoon
Company Name	URS	Tubing Type	LDPE
Project Name	Chevron Sunol Pipeline	Tubing Diameter	0.38 [in]
Site Name	Sunol	Tubing Length	47 [ft]
		Pump placement from TOC	46 [ft]

Well Information:		**Pumping information:**	
Well Id	MW-11	Final pumping rate	260 mL/min
Well diameter	2 [in]	Flowcell volume	--
Well total depth	NM	Calculated Sample Rate	--
Depth to top of screen	37 [ft]	Sample rate	--
Screen length	10 [ft]	Stabilized drawdown	Dry
Depth to Water	38.97 [ft]		

Low-Flow Sampling Stabilization Summary

	Time	Temp	pH	Cond.	Turb	DO	ORP
Stabilization Settings			+/-0.2	+/-3%	+/-1	+/-0.2	+/-20
Last 5 Readings	12:09:06	67.1	6.94	1193.89	103.5	3683	-24
	12:12:06	68.44	6.94	1219.45	96.6	3419	-27
	12:15:06	67.12	6.97	1209	90.8	3550	-60
	12:18:06	67.4	6.98	1207.8	88.2	3482	-90
	12:21:06	68.14	7.02	1237.4	82.3	3377	-111
Variance in last 3 readings		-1.32	0.03	-10.45	-5.80	131.00	-33.00
		0.28	0.01	-1.20	-2.60	-68.00	-30.00
		0.74	0.04	29.60	-5.90	-105.00	-21.00

Notes:

Initial Flow Rate = 260 mL/min
Initial depth to water = 38.907 feet
Total Volume Purged = 2.5 gallons
Final depth to water = 44.14 feet
Sample collected at 12:30
NM = Not Measured

Appendix B
Laboratory Analytical Results

Lancaster Laboratories

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Analysis Report

ANALYTICAL RESULTS

Prepared for:

Chevron Pipeline Co.
4800 Fournace Place - E320 D
Bellaire TX 77401

713-432-3335

Prepared by:

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

SAMPLE GROUP

The sample group for this submittal is 1111117. Samples arrived at the laboratory on Friday, September 19, 2008. The PO# for this group is 0015013514 and the release number is COSGRAY.

Client Description	Lancaster Labs Number
MW-8 NA Water	5474237
MW-9 NA Water	5474238
MW-10 NA Water	5474239
MW-11 NA Water	5474240
MW-X NA Water	5474241
Stream NA Water	5474242
Trip_Blank NA Water	5474243

ELECTRONIC COPY TO	URS	Attn: Joe Morgan
ELECTRONIC COPY TO	URS	Attn: April Giangerelli
ELECTRONIC COPY TO	URS	Attn: Jacob Henry
ELECTRONIC COPY TO	URS	Attn: Amber Koster
ELECTRONIC COPY TO	URS Corporation	Attn: Greg White

Lancaster Laboratories

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Analysis Report

Questions? Contact your Client Services Representative
Megan A Moeller at (717) 656-2300

Respectfully Submitted,

Sarah Snyder
Specialist

Lancaster Laboratories

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Analysis Report

Lancaster Laboratories Sample No. WW5474237 **Group No. 1111117**

MW-8 NA Water
NA URSO
Sunol Pipeline SL0600100443 MW-8
Collected:09/18/2008 15:50 by CP

Account Number: 11875

Submitted: 09/19/2008 09:10
Reported: 10/01/2008 at 06:33
Discard: 11/01/2008

Chevron Pipeline Co.
4800 Fournace Place - E320 D
Bellaire TX 77401

SNL08

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
01728	TPH-GRO - Waters	n.a.	11,000	500	ug/l	10
06053	BTEX by 8260B					
05401	Benzene	71-43-2	740	13	ug/l	25
05407	Toluene	108-88-3	320	1	ug/l	2.5
05415	Ethylbenzene	100-41-4	790	13	ug/l	25
06310	Xylene (Total)	1330-20-7	2,600	13	ug/l	25

State of California Lab Certification No. 2116

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

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
01728	TPH-GRO - Waters	SW-846 8015B modified	1	09/26/2008 00:11	Carrie E Youtzy	10
06053	BTEX by 8260B	SW-846 8260B	1	09/24/2008 01:12	Michael A Ziegler	2.5
06053	BTEX by 8260B	SW-846 8260B	1	09/24/2008 01:35	Michael A Ziegler	25
01146	GC VOA Water Prep	SW-846 5030B	1	09/26/2008 00:11	Carrie E Youtzy	10
01163	GC/MS VOA Water Prep	SW-846 5030B	1	09/24/2008 01:12	Michael A Ziegler	2.5
01163	GC/MS VOA Water Prep	SW-846 5030B	2	09/24/2008 01:35	Michael A Ziegler	25

Lancaster Laboratories

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Analysis Report

Lancaster Laboratories Sample No. WW5474238 Group No. 1111117

MW-9 NA Water
NA URSO
Sunol Pipeline SL0600100443 MW-9
Collected:09/18/2008 15:20 by CP

Account Number: 11875

Submitted: 09/19/2008 09:10
Reported: 10/01/2008 at 06:33
Discard: 11/01/2008

Chevron Pipeline Co.
4800 Fournace Place - E320 D
Bellaire TX 77401

SNL09

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
01728	TPH-GRO - Waters	n.a.	25,000	500	ug/l	10
06053	BTEX by 8260B					
05401	Benzene	71-43-2	6	3	ug/l	5
05407	Toluene	108-88-3	610	3	ug/l	5
05415	Ethylbenzene	100-41-4	800	3	ug/l	5
06310	Xylene (Total)	1330-20-7	4,800	25	ug/l	50

State of California Lab Certification No. 2116

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

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
01728	TPH-GRO - Waters	SW-846 8015B modified	1	09/26/2008 00:36	Carrie E Youtzy	10
06053	BTEX by 8260B	SW-846 8260B	1	09/24/2008 02:00	Michael A Ziegler	5
06053	BTEX by 8260B	SW-846 8260B	1	09/24/2008 02:25	Michael A Ziegler	50
01146	GC VOA Water Prep	SW-846 5030B	1	09/26/2008 00:36	Carrie E Youtzy	10
01163	GC/MS VOA Water Prep	SW-846 5030B	1	09/24/2008 02:00	Michael A Ziegler	5
01163	GC/MS VOA Water Prep	SW-846 5030B	2	09/24/2008 02:25	Michael A Ziegler	50

Lancaster Laboratories

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Analysis Report

Lancaster Laboratories Sample No. WW5474239 Group No. 1111117

MW-10 NA Water
NA URSO
Sunol Pipeline SL0600100443 MW-10
Collected:09/18/2008 10:05 by CP

Account Number: 11875

Submitted: 09/19/2008 09:10
Reported: 10/01/2008 at 06:33
Discard: 11/01/2008

Chevron Pipeline Co.
4800 Fournace Place - E320 D
Bellaire TX 77401

SNL10

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
01728	TPH-GRO - Waters	n.a.	N.D.	50	ug/l	1
06053	BTEX by 8260B					
05401	Benzene	71-43-2	N.D.	0.5	ug/l	1
05407	Toluene	108-88-3	N.D.	0.5	ug/l	1
05415	Ethylbenzene	100-41-4	N.D.	0.5	ug/l	1
06310	Xylene (Total)	1330-20-7	N.D.	0.5	ug/l	1

State of California Lab Certification No. 2116

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

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
01728	TPH-GRO - Waters	SW-846 8015B modified	1	09/26/2008 01:00	Carrie E Youtzy	1
06053	BTEX by 8260B	SW-846 8260B	1	09/24/2008 02:49	Michael A Ziegler	1
01146	GC VOA Water Prep	SW-846 5030B	1	09/26/2008 01:00	Carrie E Youtzy	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	09/24/2008 02:49	Michael A Ziegler	1

Lancaster Laboratories

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Analysis Report

Lancaster Laboratories Sample No. WW5474240 **Group No. 1111117**

MW-11 NA Water
NA URSO
Sunol Pipeline SL0600100443 MW-11
Collected:09/18/2008 12:30 by CP

Account Number: 11875

Submitted: 09/19/2008 09:10
Reported: 10/01/2008 at 06:33
Discard: 11/01/2008

Chevron Pipeline Co.
4800 Fournace Place - E320 D
Bellaire TX 77401

SNL11

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
01728	TPH-GRO - Waters	n.a.	N.D.	50	ug/l	1
06053	BTEX by 8260B					
05401	Benzene	71-43-2	N.D.	0.5	ug/l	1
05407	Toluene	108-88-3	N.D.	0.5	ug/l	1
05415	Ethylbenzene	100-41-4	N.D.	0.5	ug/l	1
06310	Xylene (Total)	1330-20-7	N.D.	0.5	ug/l	1

State of California Lab Certification No. 2116

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

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
01728	TPH-GRO - Waters	SW-846 8015B modified	1	09/26/2008 01:25	Carrie E Youtzy	1
06053	BTEX by 8260B	SW-846 8260B	1	09/24/2008 03:14	Michael A Ziegler	1
01146	GC VOA Water Prep	SW-846 5030B	1	09/26/2008 01:25	Carrie E Youtzy	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	09/24/2008 03:14	Michael A Ziegler	1

Lancaster Laboratories

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Analysis Report

Lancaster Laboratories Sample No. WW5474241 **Group No. 1111117**

MW-X NA Water
NA URSO
Sunol Pipeline SL0600100443 MW-X
Collected:09/18/2008 15:50 by CP

Account Number: 11875

Submitted: 09/19/2008 09:10
Reported: 10/01/2008 at 06:33
Discard: 11/01/2008

Chevron Pipeline Co.
4800 Fournace Place - E320 D
Bellaire TX 77401

SNLFD

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
01728	TPH-GRO - Waters	n.a.	9,200	500	ug/l	10
06053	BTEX by 8260B					
05401	Benzene	71-43-2	690	13	ug/l	25
05407	Toluene	108-88-3	290	1	ug/l	2.5
05415	Ethylbenzene	100-41-4	720	13	ug/l	25
06310	Xylene (Total)	1330-20-7	2,100	13	ug/l	25

State of California Lab Certification No. 2116

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

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
01728	TPH-GRO - Waters	SW-846 8015B modified	1	09/26/2008 01:49	Carrie E Youtzy	10
06053	BTEX by 8260B	SW-846 8260B	1	09/24/2008 03:39	Michael A Ziegler	2.5
06053	BTEX by 8260B	SW-846 8260B	1	09/24/2008 04:04	Michael A Ziegler	25
01146	GC VOA Water Prep	SW-846 5030B	1	09/26/2008 01:49	Carrie E Youtzy	10
01163	GC/MS VOA Water Prep	SW-846 5030B	1	09/24/2008 03:39	Michael A Ziegler	2.5
01163	GC/MS VOA Water Prep	SW-846 5030B	2	09/24/2008 04:04	Michael A Ziegler	25

Lancaster Laboratories

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Analysis Report

Lancaster Laboratories Sample No. WW5474242 **Group No. 1111117**

Stream NA Water
NA URSO
Sunol Pipeline SL0600100443 Stream
Collected:09/18/2008 10:15 by CP

Account Number: 11875

Submitted: 09/19/2008 09:10
Reported: 10/01/2008 at 06:33
Discard: 11/01/2008

Chevron Pipeline Co.
4800 Fournace Place - E320 D
Bellaire TX 77401

SNLST

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
01728	TPH-GRO - Waters	n.a.	N.D.	50	ug/l	1
06053	BTEX by 8260B					
05401	Benzene	71-43-2	N.D.	0.5	ug/l	1
05407	Toluene	108-88-3	N.D.	0.5	ug/l	1
05415	Ethylbenzene	100-41-4	N.D.	0.5	ug/l	1
06310	Xylene (Total)	1330-20-7	N.D.	0.5	ug/l	1

State of California Lab Certification No. 2116

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

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
01728	TPH-GRO - Waters	SW-846 8015B modified	1	09/26/2008 02:13	Carrie E Youtzy	1
06053	BTEX by 8260B	SW-846 8260B	1	09/24/2008 04:28	Michael A Ziegler	1
01146	GC VOA Water Prep	SW-846 5030B	1	09/26/2008 02:13	Carrie E Youtzy	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	09/24/2008 04:28	Michael A Ziegler	1

Lancaster Laboratories

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Analysis Report

Lancaster Laboratories Sample No. WW5474243 **Group No. 1111117**

Trip_Blank NA Water
NA URSO
Sunol Pipeline SL0600100443 Trip_Blank
Collected:09/18/2008

Account Number: 11875

Submitted: 09/19/2008 09:10
Reported: 10/01/2008 at 06:33
Discard: 11/01/2008

Chevron Pipeline Co.
4800 Fournace Place - E320 D
Bellaire TX 77401

SNLTB

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
06053	BTEX by 8260B					
05401	Benzene	71-43-2	N.D.	0.5	ug/l	1
05407	Toluene	108-88-3	N.D.	0.5	ug/l	1
05415	Ethylbenzene	100-41-4	N.D.	0.5	ug/l	1
06310	Xylene (Total)	1330-20-7	N.D.	0.5	ug/l	1

State of California Lab Certification No. 2116

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

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
06053	BTEX by 8260B	SW-846 8260B	1	09/24/2008 04:56	Michael A Ziegler	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	09/24/2008 04:56	Michael A Ziegler	1

Lancaster Laboratories

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Analysis Report

Quality Control Summary

Client Name: Chevron Pipeline Co. Group Number: 1111117
Reported: 10/01/08 at 06:33 AM

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

Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank MDL	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 08268B07A	Sample number(s): 5474237-5474242							
TPH-GRO - Waters	N.D.	50.	ug/l	109	109	75-135	0	30
Batch number: Z082674AA	Sample number(s): 5474237-5474243							
Benzene	N.D.	0.5	ug/l	102		78-119		
Toluene	N.D.	0.5	ug/l	106		85-115		
Ethylbenzene	N.D.	0.5	ug/l	104		82-119		
Xylene (Total)	N.D.	0.5	ug/l	103		83-113		

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: 08268B07A	Sample number(s): 5474237-5474242 UNSPK: 5474239								
TPH-GRO - Waters	109		63-154						
Batch number: Z082674AA	Sample number(s): 5474237-5474243 UNSPK: P470917								
Benzene	105	102	83-128	3	30				
Toluene	107	104	83-127	3	30				
Ethylbenzene	109	106	82-129	3	30				
Xylene (Total)	105	101	82-130	4	30				

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: TPH-GRO - Waters
Batch number: 08268B07A

	Trifluorotoluene-F
5474237	117
5474238	128
5474239	115
5474240	115
5474241	118
5474242	115
Blank	115

*- 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: 1111117
Reported: 10/01/08 at 06:33 AM

Surrogate Quality Control

LCS	124
LCSD	124
MS	124
Limits:	63-135

Analysis Name: BTEX by 8260B
Batch number: Z082674AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
5474237	88	81	94	93
5474238	89	82	94	93
5474239	88	82	95	91
5474240	88	83	94	90
5474241	87	82	93	91
5474242	88	83	92	89
5474243	89	83	93	90
Blank	89	83	94	91
LCS	89	85	93	92
MS	89	84	94	92
MSD	90	85	93	92
Limits:	80-116	77-113	80-113	78-113

*- 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 Generic Analysis Request/Chain of Custody

Lancaster Laboratories
Where quality is a science.

Acct. #: 11875 For Lancaster Laboratories use only Sample #: 5474237-43 SCR#: 011209

C# 1111117

Facility #:
Site Address: 2793 Calaveras Rd, Sunol, CA
Chevron PM: Jeff Cosgrove Lead Consultant: Joe Morgan
Consultant/Office: URS - Oakland
Consultant Prj. Mgr.: Joe Morgan
Consultant Phone #: (510) 893-3600 Fax #: (510) 874-3268
Sampler: Cliff Pearson / Rachel Naccarati
Service Order #: ☐ Non SAR:

Analyses Requested

Preservation Codes

Matrix

Sample Identification	Date Collected	Time Collected	Grab	Composite	Soil	Water (Potable ☐ NPDES ☐)	Oil ☐ Air ☐	Total Number of Containers	BTEX + MTBE 8021 ☐ 8260 ☐ Naphth ☐	8260 full scan	Oxygenates	TPH G 8015M	TPH D ☐ Extended Rng. ☐ Silica Gel Cleanup	Lead Total ☐ Diss. ☐ Method	VPH/EPH	NWTPH H HCID ☐ quantification
MW-8	9/18/08	1550				X		6	X			X				
MW-9		1520				X		6	X			X				
MW-10		1005				X		6	X			X				
MW-11		1230				X		6	X			X				
MW-X		1550				X		6	X			X				
Stream	9/18/08	1015				X		6	X			X				
Trip Blank	9/18/08					X		1	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 MTBE + Naphthalene
☐ Confirm highest hit by 8260
☐ Confirm all hits by 8260
☐ Run ____ oxy's on highest hit
☐ Run ____ oxy's on all hits

Comments / Remarks
Exclude MTBE from analysis.

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) Disk / EDD
WIP (RWQCB) Standard Format
Disk _____ Other.

	Date	Time		Date	Time
Relinquished by: Rachel Naccarati	9/18/08	1730	Received by:		
Relinquished by:			Received by:		
Relinquished by:			Received by:		
Relinquished by Commercial Carrier: UPS FedEx Other			Received by:	9/19/08	0940
Temperature Upon Receipt 3.5 C°			Custody Seals Intact? Yes No		

Lancaster Laboratories
Explanation of Symbols and Abbreviations

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

N.D.	none detected	**BMQL**	Below Minimum Quantitation Level
TNTC	Too Numerous To Count	**MPN**	Most Probable Number
IU	International Units	**CP Units**	cobalt-chloroplatinate units
umhos/cm	micromhos/cm	**NTU**	nephelometric turbidity units
C	degrees Celsius	**F**	degrees Fahrenheit
Cal	(diet) calories	**lb.**	pound(s)
meq	milliequivalents	**kg**	kilogram(s)
g	gram(s)	**mg**	milligram(s)
ug	microgram(s)	**l**	liter(s)
ml	milliliter(s)	**ul**	microliter(s)
m3	cubic meter(s)	**fib >5 um/ml**	fibers greater than 5 microns in length per ml

< 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.

U.S. EPA data qualifiers:

Organic Qualifiers

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

Inorganic Qualifiers

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

Analytical test results for methods listed on the laboratories' accreditation scope meet all requirements of NELAC unless otherwise noted under the individual analysis.

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.

WARRANTY AND LIMITS OF LIABILITY – In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL LANCASTER LABORATORIES BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF LANCASTER LABORATORIES AND (B) WHETHER LANCASTER LABORATORIES HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Lancaster Laboratories which includes any conditions that vary from the Standard Terms and Conditions of Lancaster Laboratories and we hereby object to any conflicting terms contained in any acceptance or order submitted by client.