First Half 2011 Groundwater Monitoring Report

Payless Gas and Food Mart
Redding, California
Case No. 450240

Prepared for:

Jaswinder Shergill

SHN Consulting Engineers & Geologists, Inc.
350 Hartnell Avenue, Suite B
Redding, CA 96002-1875
530-221-5424

June 2011
507010

CONSULTING ENGINEERS & GEOLOGISTS, INC.
350 Hartnell Ave., Ste B, Redding, CA 96002-1875 • 530-221-5424 • FAX: 530-221-0135 • reddinginfo@shn-engr.com

Reference: 507010

June 14, 2011

Mr. Grant Stein, P.G.
California Regional Water Quality Control Board
Central Valley Region, Redding Branch Office
415 Knollcrest Drive, Suite 100
Redding, CA 96002

Subject: First Half 2011 Groundwater Monitoring Report, Payless Gas and Food Mart, 3440 South Market Street, Redding, California; Case No. 450240

Dear Mr. Stein:

SHN Consulting Engineers & Geologists, Inc. (SHN) is providing you with this first half 2011 groundwater monitoring report for the Payless Gas and Food Mart site, owned by Ms. Jaswinder Shergill. SHN performed groundwater monitoring on March 28-29, 2011.

If you have any questions please call me at 530-221-5424 or Roland Rueber at 707-441-8855.

Sincerely,

SHN Consulting Engineers & Geologists, Inc.

Mark S. Chaney
Project Manager

Roland M. Rueber, P.G.
Project Geologist

MAP:RMR:llc
Enclosure: Report
c. w/encl: Ms. Jaswinder Shergill, Responsible Party
Mr. Neil Sullivan, Shasta County Environmental Health Division

Reference: 507010

First Half 2011 Groundwater Monitoring Report

Payless Gas and Food Mart
Redding, California
Case No. 450240

Prepared for:

Jaswinder Shergill

PROFESSIONAL GEOLOGIST
ROLAND MICHAEL RUEBER
No. 7629
Exp. 6-30-12
STATE OF CALIFORNIA

Prepared by:

Consulting Engineers & Geologists, Inc.
350 Hartnell Avenue, Suite B
Redding, CA 96002-1875
530-221-5424

June 2011

QA/QC:RMR___

\\Redding\Projects\2007\507010-Paylesscontinuation503081\PUBS\Rpts\201106014-1sthalf2011gmr.Doc

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Abbreviations and Acronyms

<	"less than" the stated method reporting limit
mg/L	milligrams per Liter
mV	millivolts
µg/L	micrograms per Liter
BGS	Below Ground Surface
BTEX	Benzene, Toluene, Ethylbenzene, and total Xylenes
DCO_2	Dissolved Carbon Dioxide
DIPE	Diisopropyl Ether
DO	Dissolved Oxygen
EC	Electrical Conductivity
EPA	Environmental Protection Agency
ETBE	Ethyl Tertiary-Butyl Ether
HVDPE	High Vacuum Dual Phase Extraction
LNAPL	Light Non-Aqueous Phase Liquid
MCL	Maximum Contaminant Level
MTBE	Methyl Tertiary-Butyl Ether
MW-#	Monitoring Well-number
NA	Not Applicable
NAVD88	North American Vertical Datum, 1988
NM	Not Measured
NS	Not Sampled
OBS-#	Observation Well-number
ORP	Oxidation-Reduction Potential
QA/QC	Quality Assurance/Quality Control
RWQCB	California Regional Water Quality Control Board, Central Valley Region, Redding Branch Office
SHN	SHN Consulting Engineers & Geologists, Inc.
SW-#	Surface Water sample-number
TAME	Tertiary-Amyl Methyl Ether
TBA	Tertiary-Butyl Alcohol
TPHG	Total Petroleum Hydrocarbons as Gasoline
USGS	United States Geological Survey
UST	Underground Storage Tank

1.0 Introduction

This report presents the results of groundwater monitoring activities for the first half of 2011, conducted at the Payless Gas and Food Mart (Case No. 450240). The Payless Gas and Food Mart site is located at 3440 South Market Street in Redding, California (Figure 1). SHN Consulting Engineers & Geologists, Inc. (SHN) performed this work on behalf of Ms. Jaswinder Shergill, current owner and responsible party for the site.

2.0 Field Activities

2.1 Monitoring Well Sampling

SHN conducted the first half groundwater monitoring on March 28-29, 2011. As part of the monitoring program, all monitoring wells were purged and sampled (See Figure 2). Prior to purging, each monitoring well was measured for depth to water and checked for the presence of Light Non-Aqueous Phase Liquid (LNAPL). None was observed. Electrical Conductivity (EC), pH, and temperature were monitored periodically during purging activities using portable instrumentation. All wells were measured for Dissolved Oxygen (DO), Dissolved Carbon Dioxide (DCO_2), and Oxidation-Reduction Potential (ORP) prior to purging.

A groundwater sample was collected from each well using a pre-cleaned, disposable bailer, and was transferred into a laboratory-supplied container. The water samples were immediately placed into an ice-filled cooler, and submitted to the laboratory for analyses under appropriate chain-of-custody documentation. Appendix A presents groundwater monitoring data sheets.

2.2 Laboratory Analysis

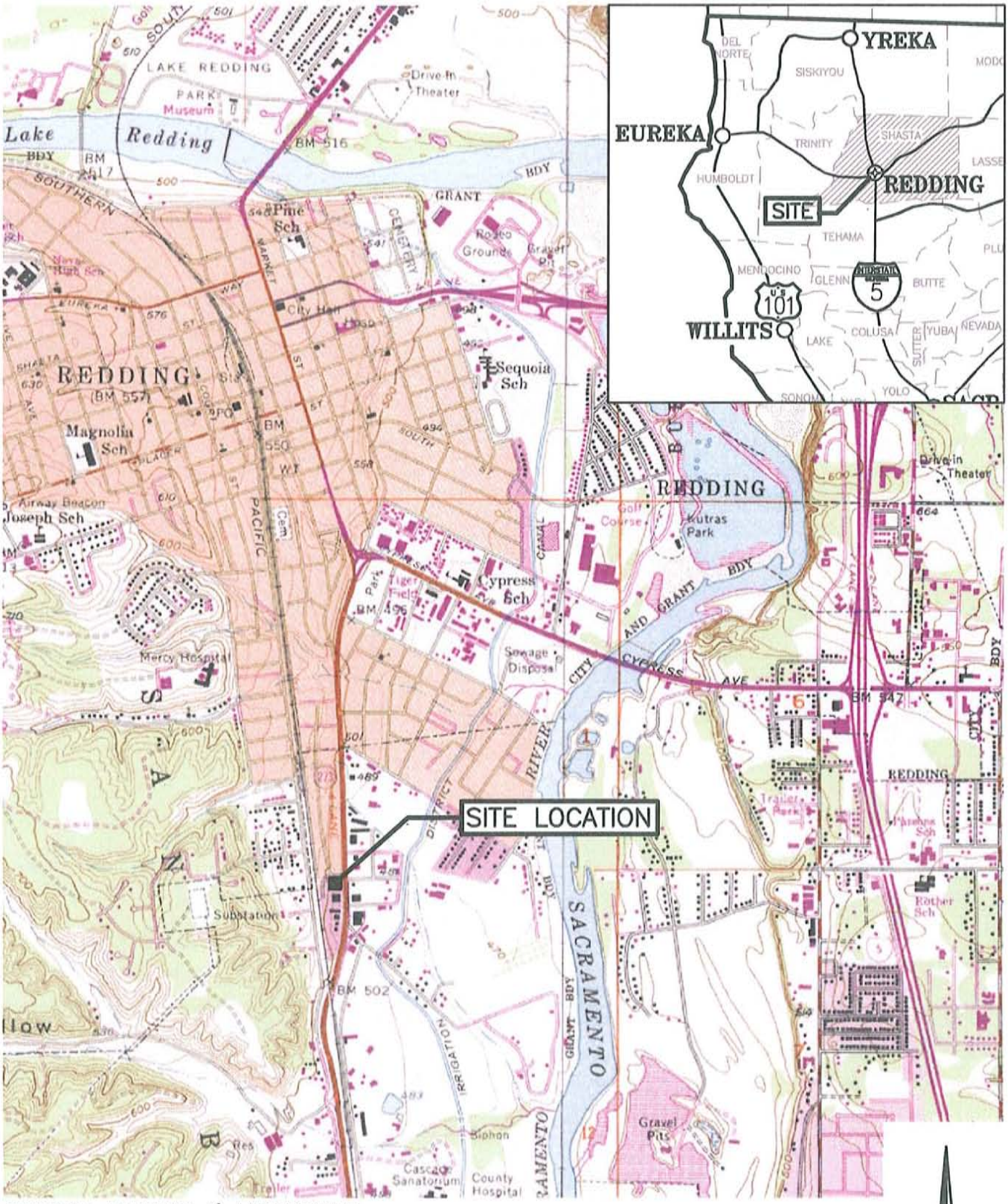
Each groundwater sample was analyzed for:

- Total Petroleum Hydrocarbons as Gasoline (TPHG), in general accordance with U.S. Environmental Protection Agency (EPA) Method No. 8021F
- Benzene, Toluene, Ethylbenzene, and total Xylenes (BTEX), in general accordance with EPA Method No. SW8021F
- Methyl Tertiary-Butyl Ether (MTBE), Ethyl Tertiary-Butyl Ether (ETBE), Di-isopropyl Ether (DIPE), Tertiary-Amyl Methyl Ether (TAME), and Tertiary-Butyl Alcohol (TBA), in general accordance with EPA Method No. 8260FA

All analyses were performed by Shasta Analytical Laboratory, a state-certified analytical laboratory located in Redding, California.

2.3 Equipment Decontamination Procedures

All non-disposable monitoring and sampling equipment was cleaned prior to being transported to the site. All smaller equipment was initially washed in a water solution containing Liquinox® cleaner, followed by two rinses with distilled water.



SOURCE: REDDING & ENTERPRISE
USGS 7.5 MINUTE QUADRANGLES

1"=2000'±

SHN Consulting Engineers & Geologists, Inc.	Payless Gas & Food Market 3440 South Market Street Redding, California	Site Location Map SHN 507010
	May 2011 / 507010-LOCATION	Figure 1

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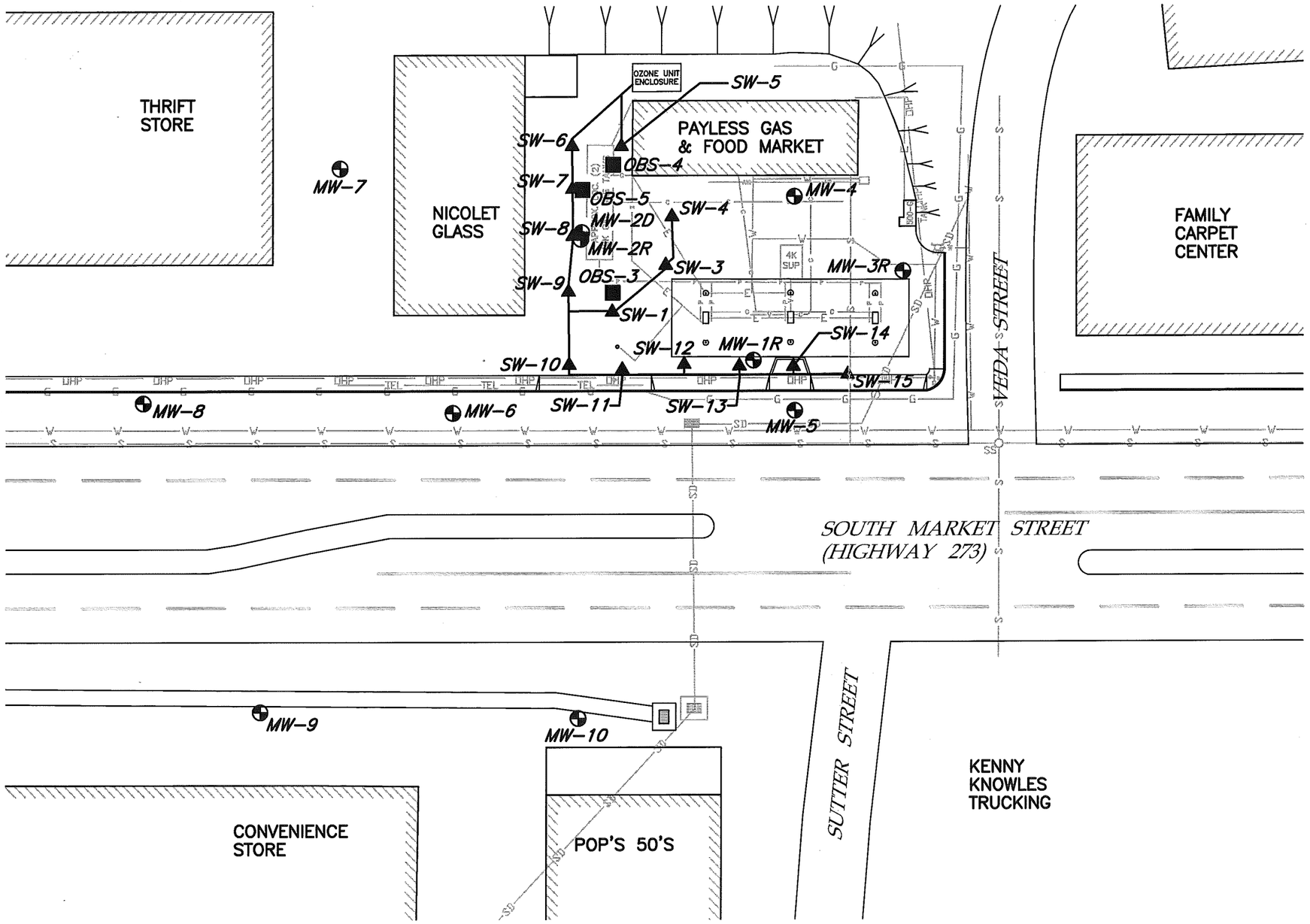

EXPLANATION

MW-10	MONITORING WELL LOCATION
SW-3	SPARGE WELL LOCATION
OBS-1	OBSERVATION WELL LOCATION
G	EXISTING GAS LINE
W	EXISTING WATER LINE
SS	EXISTING SEWER LINE
P	EXISTING PRODUCT LINE
SD	EXISTING STORM DRAIN
E	EXISTING ELECTRICAL LINE
TEL	EXISTING TELEPHONE LINE
	APPROX. LOCATION OF UST's

0 40
1"=40'

SHN Consulting Engineers & Geologists, Inc.

Payless Gas & Food Market
3440 South Market Street
Redding, California

Site Plan

SHN 507010

June 2011 | 507010-SITE | Figure 2

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2.4 Investigation-Derived Waste Management

All rinse water generated from the decontamination of field-sampling equipment and the well purge water was collected in 5-gallon buckets, transferred to 55-gallon steel drums, and temporarily stored on-site (78 gallons). The water was transported to SHN's 1,000-gallon purge water storage tank located at 812 West Wabash Avenue in Eureka, California, where it will be discharged, under permit, to the City of Eureka municipal sewer system. A disposal receipt will be included in future correspondence.

3.0 Groundwater Monitoring Results

3.1 Hydrology

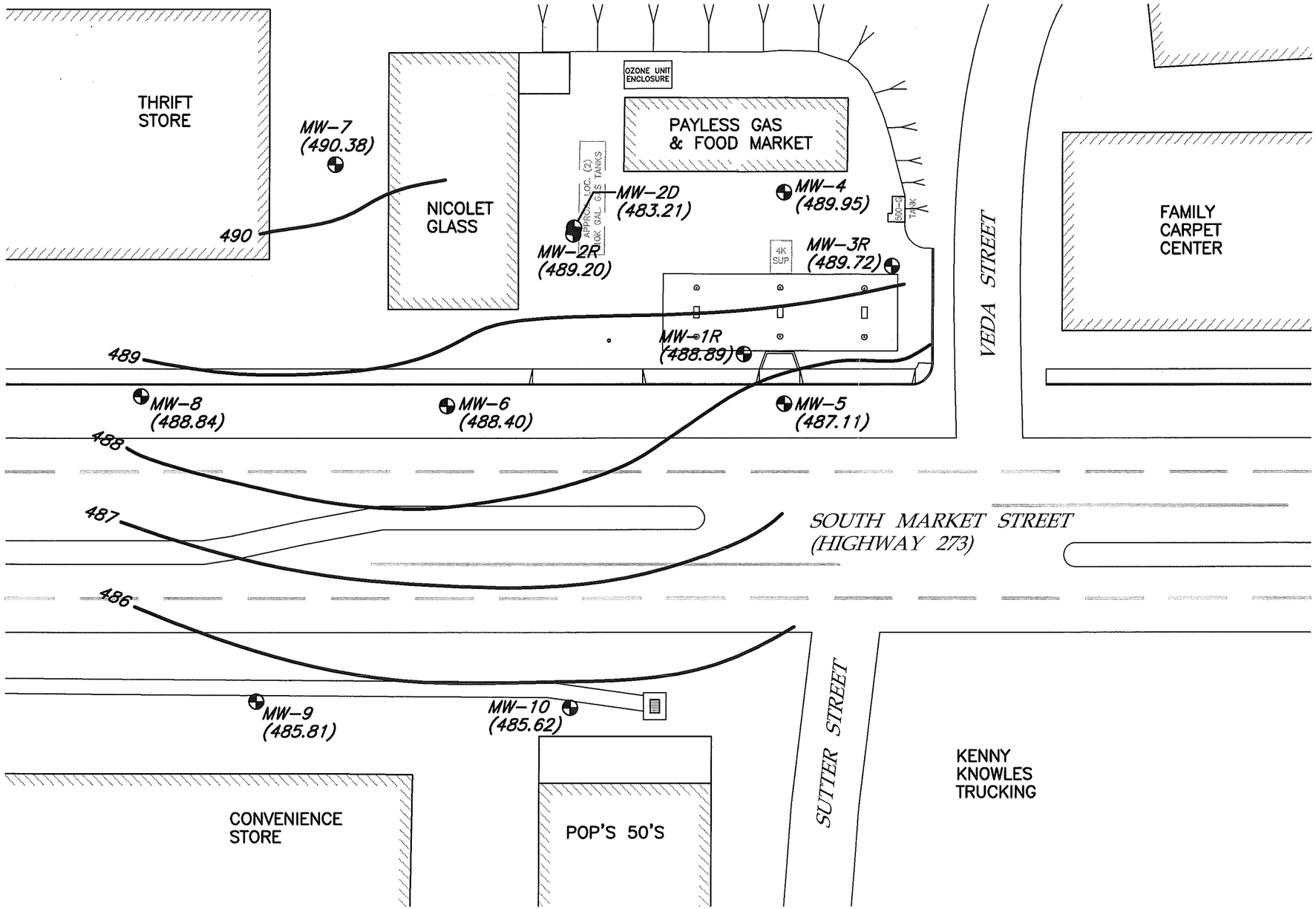
SHN measured depth-to-groundwater in all monitoring wells during the first half 2011 monitoring event. SHN then calculated groundwater elevations based on the depth-to-groundwater measurements (Table 1). Appendix B summarizes well construction details.

Table 1
Water Level Data, March 28, 2011
Payless Gas & Food Mart, Redding, California

Sample Location	Top of Casing Elevation (feet NAVD88)[1]	Depth to Water[2] (feet)	Groundwater Elevation[3] (feet NAVD88)
MW-1R	489.71	0.82	488.89
MW-2R	491.04	1.84	489.20
MW-2D[3]	491.05	7.84	483.21
MW-3R	491.02	1.30	489.72
MW-4	491.03	1.08	489.95
MW-5	489.47	2.36	487.11
MW-6	489.43	1.03	488.40
MW-7	490.98	0.60	490.38
MW-8	489.92	1.08	488.84
MW-9	488.38	2.57	485.81
MW-10	488.48	2.86	485.62

1. NAVD88: North American Vertical Datum, 1988
2. Below top of casing
3. MW-2D is screened through a deeper interval than the shallow monitoring wells

On March 28, 2011, the groundwater flow beneath the site was to the east-northeast with an approximate gradient of 0.023 feet/foot. A groundwater contour map for the first half 2011 monitoring event is presented as Figure 3. The groundwater elevation in MW-2D was not used to construct the groundwater contour map because this well is screened in a deeper interval than the shallow monitoring wells. Groundwater elevation hydrographs are presented as Figure 4. Historic groundwater elevation data is included in Appendix C, Table C-1.



EXPLANATION

MW-10	MONITORING WELL LOCATION
(489.72)	GROUNDWATER ELEVATION (FEET NAVD88)
488	GROUNDWATER CONTOUR (FEET NAVD88)
	APPROX. LOCATION OF UST's

NOTE: MW-2D, A DEEP WELL, WAS NOT USED FOR GROUNDWATER CONTOUR INTERPRETATION.

0 40
1"=40'

SHN Consulting Engineers & Geologists, Inc.	Payless Gas & Food Market 3440 South Market Street Redding, California		Groundwater Contur Map March 28, 2011 SHN 507010
	May 2011	507010-GWC-MAR-2011	Figure 3

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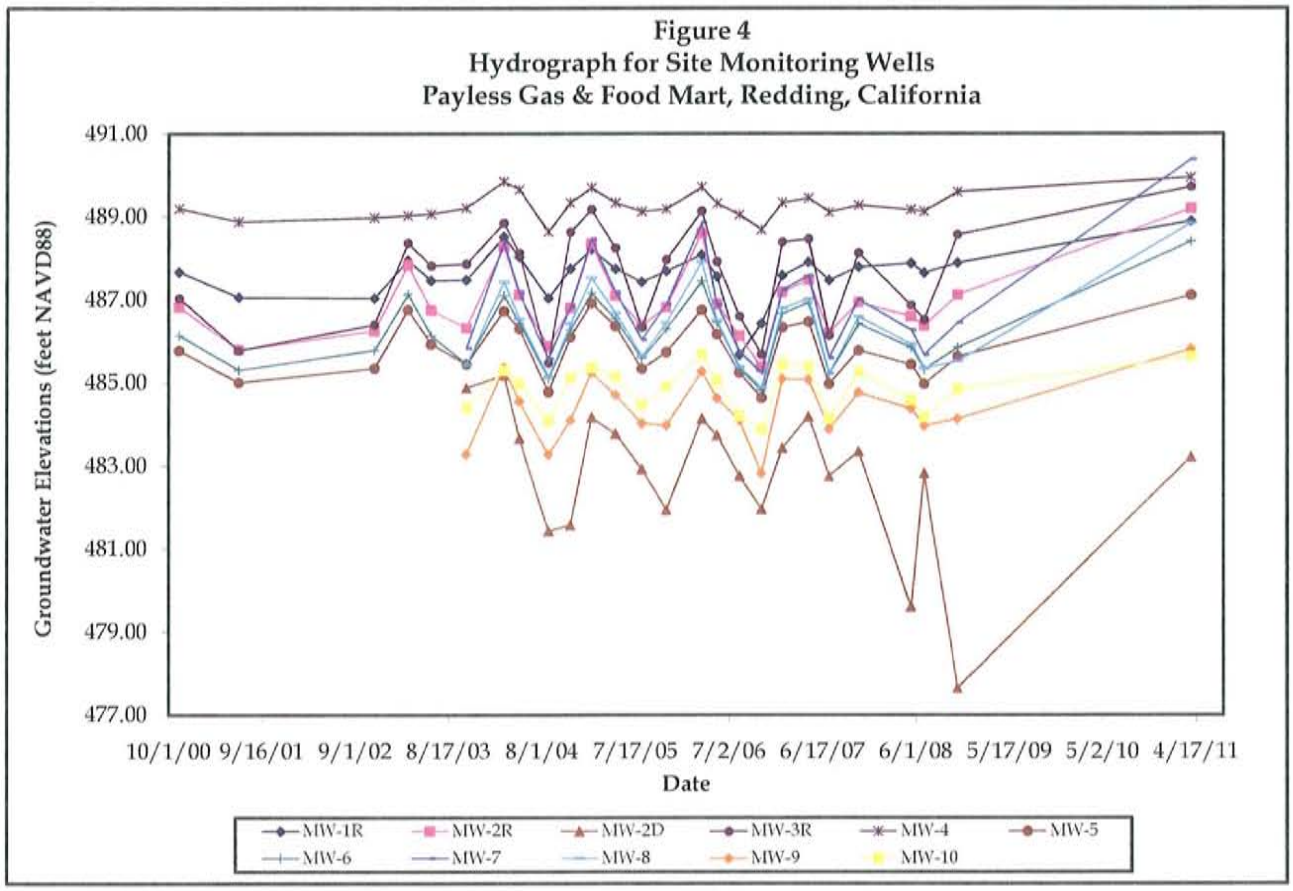


3.2 Groundwater Analytical Results

The analytical results for the groundwater samples collected during the first half 2011 monitoring event are summarized in Table 2.

LNAPL was not observed in any monitoring wells during this sampling event. However, a hydrocarbon sheen was noted in MW-2R.

TPHG was detected in monitoring wells MW-1R, MW-2R, MW-2D, MW-5, and MW-10 at 3,500; 63,000; 1,400; 350; and 440 micrograms per Liter (µg/L), respectively. No detectable concentrations of TPHG were present in monitoring wells MW-3R, MW-4, MW-6, MW-7, MW-8, and MW-9 during the first half 2011 monitoring event.

BTEX compounds were detected in monitoring wells MW-1R, MW-2R, and MW-5. Benzene was not detected above the laboratory reporting limit in any well at the Payless gas site. BTEX compounds were not detected above the laboratory reporting limit in monitoring wells MW-2D, MW-3R, MW-4, MW-6, MW-7, MW-8, MW-9, and MW-10.

Table 2 Groundwater Analytical Results, March 28-29, 2011 Payless Gas & Food Mart, Redding, California (in µg/L)[1]										
Sample Location	TPHG[2]	Benzene[3]	Toluene[3]	Ethyl-benzene[3]	Total Xylenes[3]	MTBE[4]	ETBE[4]	DIPE[4]	TAME[4]	TBA[4]
MW-1R	**3,500**	<12.5[5]	<12.5	**18**	<25	<5.0	<5.0	<5.0	<5.0	<10
MW-2R	**63,000**	<125	**760**	**1,800**	**21,000**	<5.0	<5.0	<5.0	<5.0	<10
MW-2D	**1,400**	<2.5	<2.5	<2.5	<5.0	**1,000**	<25	<25	<25	<50
MW-3R	<50	<0.5	<0.5	<0.5	<1.0	<5.0	<5.0	<5.0	<5.0	<10
MW-4	<50	<0.5	<0.5	<0.5	<1.0	<5.0	<5.0	<5.0	<5.0	<10
MW-5	**350**	<0.5	<0.5	**1.2**	<1.0	**9.2**	<5.0	<5.0	<5.0	<10
MW-6	<50	<0.5	<0.5	<0.5	<1.0	<5.0	<5.0	<5.0	<5.0	<10
MW-7	<50	<0.5	<0.5	<0.5	<1.0	<5.0	<5.0	<5.0	<5.0	<10
MW-8	<50	<0.5	<0.5	<0.5	<1.0	<5.0	<5.0	<5.0	<5.0	<10
MW-9	<50	<0.5	<0.5	<0.5	<1.0	<5.0	<5.0	<5.0	<5.0	<10
MW-10	**440**	<0.5	<0.5	<0.5	<1.0	**5.1**	<5.0	<5.0	<5.0	<10

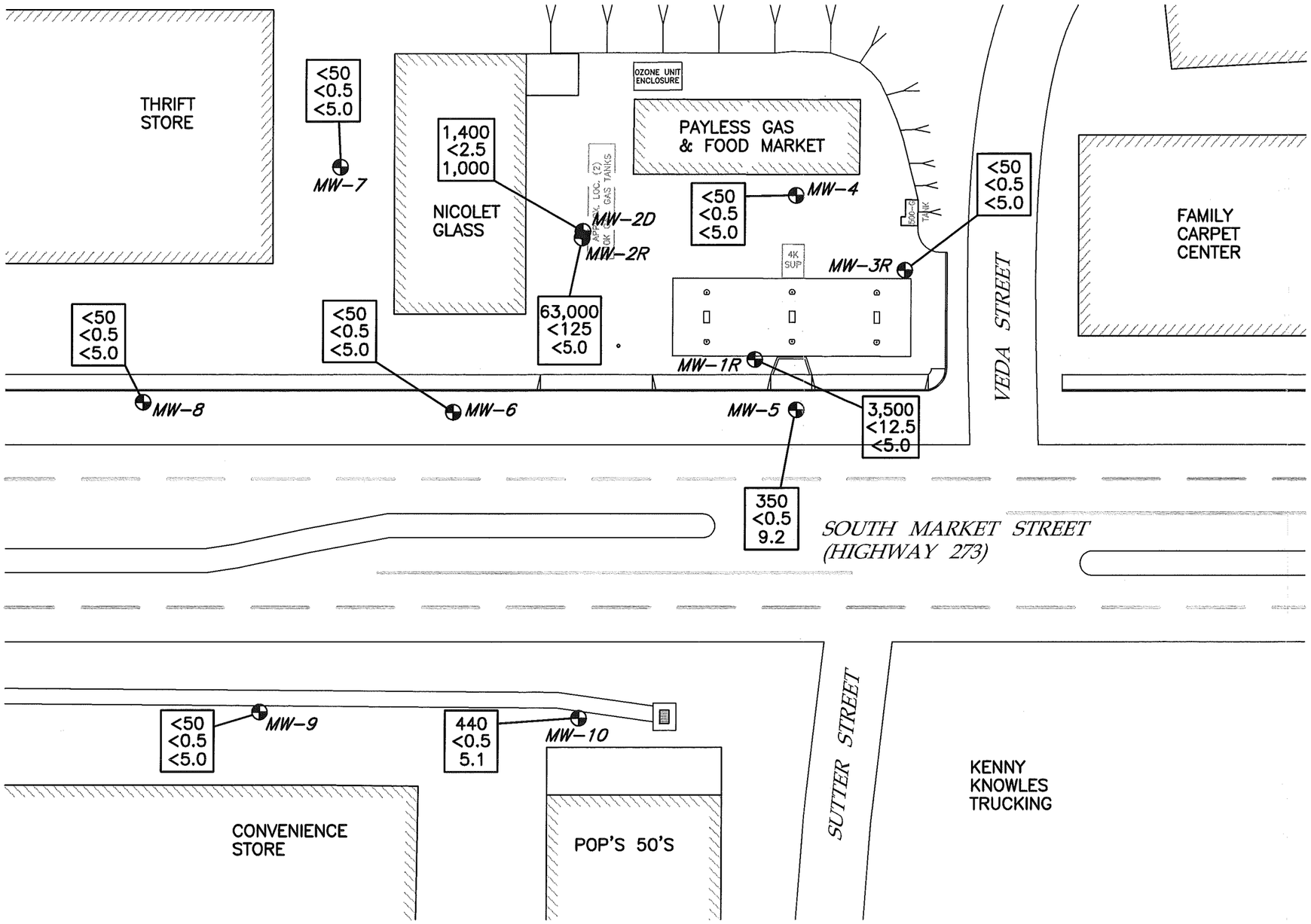
1. µg/L: micrograms per Liter
2. TPHG: Total Petroleum Hydrocarbons as Gasoline using EPA Method No. 8021F
3. Benzene (B), Toluene (T), Ethylbenzene (E), and total Xylenes (X), using EPA Method No. SW8021F
4. Methyl Tertiary-Butyl Ether (MTBE), Ethyl Tertiary-Butyl Ether (ETBE), Di-isopropyl Ether (DIPE), Tertiary-Amyl Methyl Ether (TAME), and Tertiary-Butyl Alcohol (TBA) using EPA Method No. 8260FA
5. <: "less than" the stated method reporting limit

MTBE was detected in monitoring wells MW-2D, MW-5, and MW-10. No other fuel oxygenates were detected above the laboratory reporting limit during this sampling event.

The complete analytical test results, chain-of-custody, and laboratory quality control data for the first half 2011 monitoring event are included in Appendix D. A site map that shows the concentrations of TPHG, benzene, and MTBE in existing groundwater wells for the first half 2011 monitoring event is presented as Figure 5. Historic groundwater data are included in Appendix C, Table C-2.

3.3 Field Measured Parameters

DO, DCO_2, and ORP were measured in all monitoring wells prior to sampling, and are summarized in Table 3.



EXPLANATION

MW-10 — MONITORING WELL LOCATION

<50 <0.5 <5.0 — TPHG (µg/L) BENZENE (µg/L) MTBE (µg/L)

APPROX. LOCATION OF UST's

0 40
1"=40'

SHN Consulting Engineers & Geologists, Inc.

Payless Gas & Food Market
3440 South Market Street
Redding, California

Contaminant Concentrations in Groundwater, March 28-29, 2011
SHN 507010

May 2011 | 507010-CONT-CONC-GW-MAR-11 | Figure 5

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Table 3 DO, DCO_2, and ORP Measurement Results, March 28-29, 2011 Payless Gas & Food Mart, Redding, California			
Sample Location	DO[1] (mg/L)[2]	DCO_2[3] (mg/L)	ORP[4] (mV)[5]
MW-1R	0.83	25	-7
MW-2R	1.04	25	33
MW-2D	0.57	15	-5
MW-3R	2.62	40	292
MW-4	1.68	25	281
MW-5	0.70	35	21
MW-6	2.40	45	118
MW-7	3.13	30	188
MW-8	2.35	55	238
MW-9	1.06	40	262
MW-10	1.91	25	58

1. DO: Dissolved Oxygen
2. mg/L: milligrams per Liter
3. DCO_2: Dissolved Carbon Dioxide
4. ORP: Oxidation-Reduction Potential
5. mV: millivolts

Monitoring wells with known contamination include MW-1R, MW-2R, MW-2D, MW-5, MW-6, and MW-10. Background wells are MW-3R and MW-4. Previously, elevated DO results in monitoring wells were likely due to the decomposition of ozone to oxygen. However, since the ozone remediation system has been turned off, DO results have dropped. DO concentrations are generally lower in wells with detectable concentrations of contaminants when compared to background wells, suggesting natural attenuation is occurring.

The ORP for aerobic metabolism is greater than 50 millivolts (mV), while anaerobic metabolism has an ORP less than 50 mV (US EPA, 1996) and the ORP inside the contaminant plume should be less than background levels. At the Payless Gas site, ORP results from this monitoring event indicate biodegradation of contaminants may be occurring within the plume. Historic field measured parameters are presented in Appendix C, Table C-3.

4.0 Remediation System Status

The ozone sparge system was started up on November 21, 2006, and turned off in March 2009. In a letter dated March 11, 2009, to the RWQCB, SHN requested a temporary suspension of the remediation at the site in order to perform maintenance on the ozone trailer and to evaluate potential alternative remedial strategies to expedite the remediation process. During this timeframe, the Underground Storage Tank Cleanup Fund (USTCF) placed a suspension on all Claimant Class C owners' projects, which included Payless Gas. With the suspension in place and not knowing when the suspension would be lifted, the ozone treatment unit was removed from the site by the owner of the ozone unit, H20 Engineering of San Luis Obispo. SHN placed one of our ozone treatment units on site shortly thereafter; however, SHN has been waiting for the USTCF to reimburse payments to clients in a more timely manner before starting up the treatment unit again.

5.0 Discussion and Recommendations

SHN requested removing monitoring wells MW-3R, MW-4, MW-7, MW-8, and MW-9 from the monitoring schedule in a letter dated March 11, 2009 to the RWQCB. The RWQCB granted SHN's request in a letter dated April 1, 2009. However, due to the long lapse between monitoring events, SHN sampled all wells to determine if the results would be similar to historic analytical results. The results from 2011 were similar, indicating that the dissolved phase plume is stable.

Contaminant concentration versus time graphs for select wells are included in Appendix E. The trendlines generated from the data indicate that contaminant concentrations in all wells are decreasing through time. For analytical results reported as less than the detection limits, the data were plotted at the detection limit.

Information collected during this first half groundwater monitoring event indicates:

- LNAPL was not observed in any monitoring wells during this sampling event, though historically it has been observed in monitoring wells MW-1R and MW-2R.
- The highest concentrations of TPHG were detected in monitoring wells MW-1R, MW-2R, and MW-2D, near the site USTs and to the north-northeast of the USTs, near the dispenser islands.
- The highest concentrations of BTEX constituents were detected in monitoring well MW-2R, near the site USTs.
- The highest concentration of MTBE for this monitoring event was detected in monitoring well MW-2D at 1,000 μg/L. MTBE concentrations are decreasing in wells MW-1R, MW-2R, MW-2D, MW-5, and MW-10 when compared to historic data. MTBE in MW-1R, MW-2R, MW-2D, MW-5, and MW-10 were reported at the lowest level since monitoring began.

In order to reduce contaminant mass in the source area, SHN is recommending implementing the High Vacuum Dual Phase Extraction (HVDPE) process at the site prior to starting up the ozone treatment unit again. Performing the HVDPE will remove a significant amount of contaminant mass. Wells MW-1R, MW-2R, MW-2D, and MW-5 would be used for extraction. The work will be scheduled upon USTCF budget approval. SHN is recommending temporarily suspending semi-annual groundwater monitoring pending the HVDPE activities in order to conserve resources for remediation.

6.0 References Cited

California Regional Water Quality Control Board, Central Valley Region. (April 1, 2009). Letter concurring with the recommendation to discontinue sampling monitoring wells MW-3R, MW-4, MW-7, MW-8, and MW-9. Redding:RWQCB.

SHN Consulting Engineers & Geologists, Inc. (March 11, 2009). Letter requesting to suspend remediation and amend monitoring program. SHN Redding:RWQCB.

U.S. Environmental Protection Agency. (1996). *Bioremediation of Hazardous Waste Site; Practical Approaches to Implementations, Seminar Publication. EPA/625/K-96/001.* Washington, D.C.:EPA Office of Research and Development.

United States Geological Survey. (NR). Redding and Enterprise 7.5-Minute Quadrangles Topographic Maps. NR:USGS.

Appendix A

Field Notes

CONSULTING ENGINEERS & GEOLOGISTS, INC.
350 Hartnell Ave., Suite B • Redding, CA 96002 • Tel: 530.221.5424 • FAX: 530.221.0135 •E-mail: shninfo@shn-redding.com
812 W. Wabash • Eureka, CA 95501 • Tel: 707.441.8855 • FAX: 707.441.8877 •E-mail: shninfo@shn-engr.com

DAILY FIELD REPORT

JOB NO 507010

PAGE 1 OF 1

PROJECT NAME Payless Gas	CLIENT/OWNER Shergill	DAILY FIELD REPORT SEQUENCE NO	
GENERAL LOCATION OF WORK: Redding, CA	OWNER/CLIENT REPRESENTATIVE	DATE 3/28-29/2011	DAY OF WEEK Mon/Tues.
TYPE OF WORK: GW Monitoring	WEATHER Sunny - w/ Winds	PROJECT MANAGER Mark Chaney	
SOURCE & DESCRIPTION OF FILL MATERIAL	KEY PERSONS CONTACTED	TECHNICIAN Mike Palmer	

DESCRIBE PROJECT ACTIVITIES BELOW

3/28/2011

0900 - SHN onsite (after loading truck/equipment).
- Locate and open wells. Let equilibrate. Collect measurements.
- Calibrate equipment.
- Starting on MW-7. Placed DO probe down-hole. Collected reading. Used new disposable bailer for purging. Initially collected 1st bail of water from 2/3 down in water column. Used this water for CO_2 and ORP measurements. Calculated each well volume. Purged (1) well volume and collected: pH, Temp, and EC (and at each well volume thereafter). After purging 3-well volumes, used lab supplied containers for sample. Placed sample in cooler w/ ice. Collected recharge reading. Closed/locked well. Placed collected purge water in 55-gal DT drum. Decon equipment. See "Water Sampling Data Sheets" for details on each well.

1800 - Completed remaining wells in same manner (for 3/28/2011) (MW-8, MW-4, MW-3R, MW-6, MW-5, MW-1R)

3/29/2011

0850 - Onsite
- Started on MW-10 (based on time ⇒ well is located in front of business). Completed in same manner as MW-7.
- Completed MW-9, MW-2R, and MW-2D in similar manner. See "Water Sampling Data Sheets" for details on well sampling.
- Closed all wells. Placed purge/decon water in drums (55-gal). = ~78 gals total (2 drums).

1400 - SHN offsite (to lab).

COPY GIVEN TO:

REPORTED BY: M. Palmer

CONSULTING ENGINEERS & GEOLOGISTS, INC.
350 Hartnell Avenue, Suite B • Redding, CA 96002-1875 • 530-221-5424 • FAX: 530-221-0135 • E-mail: shnrdd@shn-engr.com

Equipment Calibration Sheet

Name: Mike Palmer

Project Name: Payless Gas

Reference No.: 507010

Date: 3/28-29/2011

Equipment: [X] PH & EC [ ] PID [ ] $GTCO_2$ [ ] GTLEL
[ ] Turbidity [X] Other

Description of Calibration Procedure and Results:

Calibrated YSI DO meter by turning on and allowing ~20 minutes to equilibrate. Set elevation equal to 5 (500 feet above MSL).

Calibrated YSI multimeter using 7.00 and 4.01 pH auto-calibration solutions.

SHN CONSULTING ENGINEERS & GEOLOGISTS, INC.
350 Hartnell Avenue, Suite B • Redding, CA 96002 • 530-221-5424 • FAX: 530-221-0135

Groundwater Elevations

Job No.: 507010 Name: Mike Palmer

Client: Payless Gas Date: 3/28/2011

Location: Redding Weather: Sunny - cool

Sample Location	Time of Reading	Top of Casing Elevation (feet)	Depth To Water (feet)	Water Surface Elevation (feet)
MW-1R	10:50	489.71	0.82'	488.89
MW-2R	11:10	491.04	1.84'	489.20
MW-2D	11:15	491.05	7.84'	483.21
MW-3R *	10:30	491.02	1.30'	489.72
MW-4 *	10:15	491.03	1.08'	489.95
MW-5 *	10:45	489.47	2.36'	487.11
MW-6 *	10:37	489.43	1.03'	488.40
MW-7 *	10:05	490.98	0.60'	490.38
☆ MW-8	12:45	489.92	1.08'	488.84
3/29 MW-9	09:55	488.38	2.57'	485.81
3/29 MW-10	08:50	488.48	2.86'	485.62
Sample Order				
MW-7 ✓				
☆ MW-8				
MW-4 ✓	*MW-9 and MW-10 typically sampled at end of event due to street.			
MW-3R ✓				
MW-9*				
MW-6 ✓				
MW-5 ✓				
MW-10*				
MW-1R ✓				
MW-2R				
MW-2D				

☆ Car over top → will collect after moved.

* Well Box FULL of water.

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Water Sampling Data Sheet

Project Name:	Payless Gas	Date/Time:	3/28/2011
Project No.:	507010	Sampler Name:	Mike Palmer
Location:	Redding	Sample Type:	Water
Well #:	MW-1R	Weather	Sunny - Winds
Hydrocarbon Thickness/Depth (feet):	NA	Key Needed:	yes

Total Well Depth (feet)	-	Initial Depth to Water (feet)	=	Height of Water Column (feet)	x	0.163 gal/ft (2-inch well) / 0.653 gal/ft (4-inch well)	=	1 Casing Volume (gal)
14.62	-	0.82'	=	13.8	x	0.163	=	2.25

Time	DO (ppm)	CO_2 (ppm)	ORP (mV)	EC (uS/cm)	Temp (°C)	pH	Water Removed (gal)	Comments
1705	0.83						0	Sheen
1711		25	-7				0.25	HC Odor
1716				181.6	14.1	6.64	2.25	Grayish
1721				179.3	14.0	6.55	4.50	↓
1726				182.3	14.1	6.54	6.75	↓
1735	Sample Time							

Purge Method: 2" Disposable Bailer

Total Volume Removed: 7.0 (gal)

Laboratory Information

Sample ID	# & Type of Containers	Preservative / Type	Laboratory	Analyses
MW-1R	4 - 40 mL VOA's	HCl	Shasta	TPHG, BTEX, Fuel Oxy's

Well Condition: Poor.

Remarks: (2) wells next to each other (1) not labeled. It is the S one if facing N. (Bolts Stripped) Lock

Recharge Depth: 1.12'

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Water Sampling Data Sheet

Project Name:	Payless Gas	Date/Time:	3/29/2011
Project No.:	507010	Sampler Name:	Mike Palmer
Location:	Redding	Sample Type:	Water
Well #:	MW-2R	Weather	Sunny
Hydrocarbon Thickness/Depth (feet):	NA	Key Needed:	yes

Total Well Depth (feet)	-	Initial Depth to Water (feet)	=	Height of Water Column (feet)	x	0.163 gal/ft (2-inch well) / 0.653 gal/ft (4-inch well)	=	1 Casing Volume (gal)
14.65	-	1.84	=	12.81	x	0.163	=	2.1

Time	DO (ppm)	CO_2 (ppm)	ORP (mV)	EC (uS/cm)	Temp (°C)	pH	Water Removed (gal)	Comments
11:20	1.04						0	Hvy Sheen
1130		25	33				0.25	Strong HC Odor
1136				230.6	14.7	6.61	2.25	↓
1149				233.1	15.7	6.63	4.50	↓
1157				234.0	16.0	6.65	6.75	↓
1205	Sample Time							

Purge Method: 2" Disposable Bailer

Total Volume Removed: 7.0 (gal)

Laboratory Information

Sample ID	# & Type of Containers	Preservative / Type	Laboratory	Analyses
MW-2R	4 – 40 mL VOA's	HCl	Shasta	TPHG, BTEX, Fuel Oxy's

Well Condition: Poor

Remarks: Water in Well Box

Recharge Depth: 2.80'

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Water Sampling Data Sheet

Project Name:	Payless Gas	Date/Time:	3/29/2011
Project No.:	507010	Sampler Name:	Mike Palmer
Location:	Redding	Sample Type:	Water
Well #:	MW-2D	Weather	Sunny - Warm 70 F
Hydrocarbon Thickness/Depth (feet):	NA	Key Needed:	Yes

Total Well Depth (feet)	-	Initial Depth to Water (feet)	=	Height of Water Column (feet)	x	0.163 gal/ft (2-inch well) / 0.653 gal/ft (4-inch well)	=	1 Casing Volume (gal)
29.10	-	7.84	=	21.26	x	0.163	=	3.46

Time	DO (ppm)	CO_2 (ppm)	ORP (mV)	EC (uS/cm)	Temp (°C)	pH	Water Removed (gal)	Comments
1218	0.57						0	
1223		15	-5				0.25	HC Odor
1235				220.9	19.4	7.87	3.5	↓
1315				271.3	19.9	7.88	~7	↓
			★- well going dry just after 1st					
			well volume ⇒ waiting for recharge					
			⇒ bail down again and then					
			sample					
1325	Sample Time	(In	30 minutes well water came up to ~15' BGS)					

Purge Method: 2" Disposable Bailer

Total Volume Removed: 7.25 (gal)

Laboratory Information

Sample ID	# & Type of Containers	Preservative / Type	Laboratory	Analyses
MW-2D	4 – 40 mL VOA's	HCl	Shasta	TPHG, BTEX, Fuel Oxy's

Well Condition: Poor

Remarks: Water in Well Box

Recharge Depth: 25.47'

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Water Sampling Data Sheet

Project Name:	Payless Gas	Date/Time:	3/28/2011
Project No.:	507010	Sampler Name:	Mike Palmer
Location:	Redding	Sample Type:	Water
Well #:	MW-3R	Weather	Sunny - w/ Winds
Hydrocarbon Thickness/Depth (feet):	NA	Key Needed:	yes

Total Well Depth (feet)	-	Initial Depth to Water (feet)	=	Height of Water Column (feet)	x	0.163 gal/ft (2-inch well) / 0.653 gal/ft (4-inch well)	=	1 Casing Volume (gal)
14.52	-	1.30	=	13.22	x	0.163	=	2.2

Time	DO (ppm)	CO_2 (ppm)	ORP (mV)	EC (uS/cm)	Temp (°C)	pH	Water Removed (gal)	Comments
1439	2.62						0	
1444		40	292				0.25	clear
1449				163.6	15.3	6.17	2.25	sl cloudy
1454				155.2	14.5	6.18	4.50	↓
1458				153.2	14.6	6.20	6.75	↓
1505	Sample Time							

Purge Method: 2" Disposable Bailer

Total Volume Removed: 7.0 (gal)

Laboratory Information

Sample ID	# & Type of Containers	Preservative / Type	Laboratory	Analyses
MW-3R	4 – 40 mL VOA's	HCl	Shasta	TPHG, BTEX, Fuel Oxy's

Well Condition: Poor

Remarks: Well box full of water. (2) wells in same location 3R is the one on the W side (if facing N).

Recharge Depth: 1.97'

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Water Sampling Data Sheet

Project Name:	Payless Gas	Date/Time:	3/28/2011
Project No.:	507010	Sampler Name:	Mike Palmer
Location:	Redding	Sample Type:	Water
Well #:	MW-4	Weather	Sunny - w/winds
Hydrocarbon Thickness/Depth (feet):	NA	Key Needed:	yes

Total Well Depth (feet)	-	Initial Depth to Water (feet)	=	Height of Water Column (feet)	x	0.163 gal/ft (2-inch well) / 0.653 gal/ft (4-inch well)	=	1 Casing Volume (gal)
11.56	-	1.08	=	10.48	x	0.163	=	1.7

Time	DO (ppm)	CO_2 (ppm)	ORP (mV)	EC (uS/cm)	Temp (°C)	pH	Water Removed (gal)	Comments
1346	1.68						0	
1350		25	281	~~167~~ MM			0.25	
1355				167.2	15.6	6.24	1.75	Sl Cloudy
1400				154.8	15.4	6.29	3.50	↓
1406				155.0	14.8	6.10	5.25	↓
1415	Sample Time							

Purge Method: 2" Disposable Bailer

Total Volume Removed: 5.5 (gal)

Laboratory Information

Sample ID	# & Type of Containers	Preservative / Type	Laboratory	Analyses
MW-4	4 – 40 mL VOA's	HCl	Shasta	TPHG, BTEX, Fuel Oxy's

Well Condition: Poor

Remarks: well Box Full of Water

Recharge Depth: 1.88'

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Water Sampling Data Sheet

Project Name:	Payless Gas	Date/Time:	3/28/2011
Project No.:	507010	Sampler Name:	Mike Palmer
Location:	Redding	Sample Type:	Water
Well #:	MW-5	Weather	Sunny - Winds
Hydrocarbon Thickness/Depth (feet):	NA	Key Needed:	yes

Total Well Depth (feet)	-	Initial Depth to Water (feet)	=	Height of Water Column (feet)	x	0.163 gal/ft (2-inch well) / 0.653 gal/ft (4-inch well)	=	1 Casing Volume (gal)
14.65	-	2.36	=	12.29	x	0.163	=	2

Time	DO (ppm)	CO_2 (ppm)	ORP (mV)	EC (uS/cm)	Temp (°C)	pH	Water Removed (gal)	Comments
1618	0.70						0	
1624		35	21				0.25	
1630				246.1	17.5	6.64	2.0	HC Odor
1636				224.2	17.2	6.67	4.0	Clear
1643				234.0	16.6	6.63	6.0	Greyish
1650	Sample Time							

Purge Method: 2" Disposable Bailer

Total Volume Removed: 6.25 (gal)

Laboratory Information

Sample ID	# & Type of Containers	Preservative / Type	Laboratory	Analyses
MW-5	4 – 40 mL VOA's	HCl	Shasta	TPHG, BTEX, Fuel Oxy's

Well Condition: Poor

Remarks:

Recharge Depth: 5.67'

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Water Sampling Data Sheet

Project Name:	Payless Gas	Date/Time:	3/28/2011
Project No.:	507010	Sampler Name:	Mike Palmer
Location:	Redding	Sample Type:	Water
Well #:	MW-6	Weather	Sunny - Winds
Hydrocarbon Thickness/Depth (feet):	NA	Key Needed:	yes

Total Well Depth (feet)	-	Initial Depth to Water (feet)	=	Height of Water Column (feet)	x	0.163 gal/ft (2-inch well) / 0.653 gal/ft (4-inch well)	=	1 Casing Volume (gal)
14.53	-	1.03	=	13.5	x	0.163	=	2.2

Time	DO (ppm)	CO_2 (ppm)	ORP (mV)	EC (uS/cm)	Temp (°C)	pH	Water Removed (gal)	Comments
1534	2.40						0	
1539		45	118				0.25	
1544				186.2	18.6	6.25	2.25	cloudy
1549				190.7	18.1	6.26	4.50	↓
1555				189.2	17.4	6.36	6.75	↓
1605	Sample	Time						

Purge Method: 2" Disposable Bailer

Total Volume Removed: 7.0 (gal)

Laboratory Information

Sample ID	# & Type of Containers	Preservative / Type	Laboratory	Analyses
MW-6	4 – 40 mL VOA's	HCl	Shasta	TPHG, BTEX, Fuel Oxy's

Well Condition: Poor

Remarks: V. Fast Recharge

Recharge Depth: 1.22'

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Water Sampling Data Sheet

Project Name:	Payless Gas	Date/Time:	3/28/2011
Project No.:	507010	Sampler Name:	Mike Palmer
Location:	Redding	Sample Type:	Water
Well #:	MW-7	Weather	Sunny w/ Winds
Hydrocarbon Thickness/Depth (feet):	NA	Key Needed:	yes

Total Well Depth (feet)	-	Initial Depth to Water (feet)	=	Height of Water Column (feet)	x	0.163 gal/ft (2-inch well) / 0.653 gal/ft (4-inch well)	=	1 Casing Volume (gal)
14.93	-	0.60'	=	14.33	x	0.163	=	2.3

Time	DO (ppm)	CO_2 (ppm)	ORP (mV)	EC (uS/cm)	Temp (°C)	pH	Water Removed (gal)	Comments
12:01	3.13						0	
12:06		30	188				0.25	
12:12				198.3	15.5	6.39	2.5	sl cloudy
12:17				188.5	15.9	6.38	5	↓
12:22				190.1	15.4	6.39	7.5	↓
1230	Sample Time							

Purge Method: 2" Disposable Bailer

Total Volume Removed: 7.75 (gal)

Laboratory Information				
Sample ID	# & Type of Containers	Preservative / Type	Laboratory	Analyses
MW-7	4 – 40 mL VOA's	HCl	Shasta	TPHG, BTEX, Fuel Oxy's

Well Condition: Poor

Remarks:

Recharge Depth: 0.65'

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Water Sampling Data Sheet

Project Name:	Payless Gas	Date/Time:	3/28/2011
Project No.:	507010	Sampler Name:	Mike Palmer
Location:	Redding	Sample Type:	Water
Well #:	MW-8	Weather	Sunny - Windy
Hydrocarbon Thickness/Depth (feet):	NA	Key Needed:	yes

Total Well Depth (feet)	-	Initial Depth to Water (feet)	=	Height of Water Column (feet)	x	0.163 gal/ft (2-inch well) / 0.653 gal/ft (4-inch well)	=	1 Casing Volume (gal)
12.93	-	1.08	=	11.85	x	0.163	=	1.9

Time	DO (ppm)	CO_2 (ppm)	ORP (mV)	EC (uS/cm)	Temp (°C)	pH	Water Removed (gal)	Comments
1250	2.35						0	
1256		55	238				0.25	
1300				251.1	17.9	6.15	2.0	Cloudy
1305				220.9	18.2	6.20	4.0	↓
1311				237.6	17.2	6.25	6.0	↓
1320	Sample Time							

Purge Method: 2" Disposable Bailer

Total Volume Removed: 6.25 (gal)

Laboratory Information				
Sample ID	# & Type of Containers	Preservative / Type	Laboratory	Analyses
MW-8	4 – 40 mL VOA's	HCl	Shasta	TPHG, BTEX, Fuel Oxy's

Well Condition: Poor

Remarks:

Recharge Depth: 1.37

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Water Sampling Data Sheet

Project Name:	Payless Gas	Date/Time:	3/29/2011
Project No.:	507010	Sampler Name:	Mike Palmer
Location:	Redding	Sample Type:	Water
Well #:	MW-9	Weather	Sunny -
Hydrocarbon Thickness/Depth (feet):	NA	Key Needed:	yes

Total Well Depth (feet)	-	Initial Depth to Water (feet)	=	Height of Water Column (feet)	x	0.163 gal/ft (2-inch well) / 0.653 gal/ft (4-inch well)	=	1 Casing Volume (gal)
14.60	-	2.57	=	12.03	x	0.163	=	1.96

Time	DO (ppm)	CO_2 (ppm)	ORP (mV)	EC (uS/cm)	Temp (°C)	pH	Water Removed (gal)	Comments
1000	1.06						0	
1009		40	262				0.25	
1017				268.3	15.6	6.42	2.0	sl HC odor
1024				268.4	16.4	6.45	4.0	
1030				267.4	17.0	6.40	6.0	
1040	Sample Time							

Purge Method: 2" Disposable Bailer

Total Volume Removed: 6.25 (gal)

Laboratory Information

Sample ID	# & Type of Containers	Preservative / Type	Laboratory	Analyses
MW-9	4 – 40 mL VOA's	HCl	Shasta	TPHG, BTEX, Fuel Oxy's

Well Condition: Poor

Remarks:

Recharge Depth: 9.86'

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Water Sampling Data Sheet

Project Name:	Payless Gas	Date/Time:	3/29/2011
Project No.:	507010	Sampler Name:	Mike Palmer
Location:	Redding	Sample Type:	Water
Well #:	MW-10	Weather	Cool - W/ Sun
Hydrocarbon Thickness/Depth (feet):	NA	Key Needed:	Yes

Total Well Depth (feet)	-	Initial Depth to Water (feet)	=	Height of Water Column (feet)	x	0.163 gal/ft (2-inch well) / 0.653 gal/ft (4-inch well)	=	1 Casing Volume (gal)
14.97	-	2.86	=	12.11	x	0.163	=	1.97

Time	DO (ppm)	CO_2 (ppm)	ORP (mV)	EC (uS/cm)	Temp (°C)	pH	Water Removed (gal)	Comments
0900	1.91						0	
0910		25	58				0.25	
0915				266.2	14.0	6.74	2.0	Grey/ HC odor
0920				266.5	15.6	6.77	4.0	
0925				267.9	15.9	6.79	6.0	
0935	Sample Time							

Purge Method: 2" Disposable Bailer

Total Volume Removed: 6.25 (gal)

Laboratory Information				
Sample ID	# & Type of Containers	Preservative / Type	Laboratory	Analyses
MW-10	4 - 40 mL VOA's	HCl	Shasta	TPHG, BTEX, Fuel Oxy's

Well Condition: Poor

Remarks: Box full of water.

Recharge Depth: 3.01'

Appendix B

Well Construction Details

Table B-1
Monitoring Well Construction Details[1]
Payless Gas & Food Mart, Redding, California

Well ID	Date Installed	Top of Casing Elevation (feet NAVD88)[2]	Depth of Well (feet BGS)[3]	Well Diameter (inches)	Screened Interval (feet BGS)	Filter Pack (#8 Silica sand) (feet BGS)	Bentonite Seal (feet BGS)	Casing Materials
MW-1R	11/6/00	489.71	15	2	2-15	1.5-15	1-1.5	Sch 40 PVC[4], 0.020 inch slot
MW-2R	11/4/00	491.04	15.5	2	2-15.5	1.5-15.5	1-1.5	Sch 40 PVC, 0.020 inch slot
MW-2D	10/3/03	491.05	30	2	22-30	No sand – hole caved in	20-21	Sch 40 PVC, 0.010 inch slot
MW-3R	11/4/00	491.02	15.5	2	2-15.5	1.5-15.5	1-1.5	Sch 40 PVC, 0.020 inch slot
MW-4	11/4/00	491.03	15.5	2	2-15.5	1.5-15.5	1-1.5	Sch 40 PVC, 0.020 inch slot
MW-5	11/6/00	489.47	15	2	2-15	1.5-15	1-1.5	Sch 40 PVC, 0.020 inch slot
MW-6	11/6/00	489.43	15.5	2	2-15.5	1.5-15	1-1.5	Sch 40 PVC, 0.020 inch slot
MW-7	10/3/03	490.98	16	2	3-16	3-16	2-3	Sch 40 PVC, 0.010 inch slot
MW-8	10/3/03	489.92	16	2	3-16	3-16	2-3	Sch 40 PVC, 0.010 inch slot
MW-9	10/3/03	488.38	16	2	3-16	3-16	2-3	Sch 40 PVC, 0.010 inch slot
MW-10	10/3/03	488.48	16	2	3-16	3-16	2-3	Sch 40 PVC, 0.010 inch slot

1. All monitoring wells were installed by Lawrence & Associates
2. NAVD88: North American Vertical Datum, 1988
3. BGS: Below Ground Surface
4. PVC: Polyvinyl Chloride

Table B-2
Ozone Sparge Well Construction Data[1]
Payless Gas and Food Mart, Redding, California

Well ID	Date Installed	PVC Casing Diameter (inches)	Sparge Diameter (inches)	Total Depth (feet BGS)[2]	Sparge Depth (feet BGS)	Screened Interval (feet BGS)	Ground Elevation (NAVD 88)[3]
SW-1[4]	3-9-2005	1	1.6	9	7-9	NA[5]	490.73
SW-3	2-1-2006	1	1.6	12	8-10	NA	490.83
SW-4	1-31/2-1-06	1	1.6	12	9-11	NA	491.15
SW-5	2-1-2006	1	1.6	12	6.5-8.5	NA	491.66
SW-6	1-30-2006	1	1.6	12	9.5-11.5	NA	491.69
SW-7	1-30-2006	1	1.6	12	9-11	NA	488.85
SW-8	1-30-2006	1	1.6	12	8-10	NA	488.58
SW-9	1-30/31-2006	1	1.6	12	8-10	NA	491.23
SW-10	1-30/31-2006	1	1.6	12	9.5-11.5	NA	490.70
SW-11	1-31-2006	1	1.6	12	9-11	NA	490.45
SW-12	1-31-2006	1	1.6	12	7.5-9.5	NA	490.19
SW-13	1-31-2006	1	1.6	12	8-10	NA	490.25
SW-14	1-31-2006	1	1.6	12	9-11	NA	490.30
SW-15	1-31-2006	1	1.6	12	8-10	NA	490.06
OBS-3[6]	3-9-2005	1	NA	8	NA	3-8	490.84
OBS-4	10-20-2006	1	NA	8	NA	3-8	491.71
OBS-5	10-3-06	1	NA	8	NA	3-8	491.67

1. All sparge wells were installed by SHN
2. BGS: Below Ground Surface
3. NAVD 88: North American Vertical Datum of 1988
4. SW-1 was installed during the pilot study phase of investigation
5. NA: Not Applicable
6. OBS-3 was installed during the pilot study phase of the investigation

Appendix C

Historic Monitoring Data

Table C-1 Historic Groundwater Elevations Payless Gas and Food Mart, Redding, California						
Sample Location	Sampling Date	Top-of-Casing Elevation (feet NAVD88)[1]	Depth to LNAPL[2,3] (feet)	Depth to Groundwater[3] (feet)	LNAPL Thickness (feet)	Groundwater Elevation (feet NAVD88)
MW-1R	11/9/00	489.71	---	---	---	487.67
	6/21/01	---	---	---	---	487.06
	11/12/02	---	---	---	---	487.04
	3/17/03	---	---	---	---	487.95
	6/12/03	---	---	---	---	487.46
	10/22/03	---	---	---	---	487.48
	3/11/04	---	1.17	1.26	0.09	488.52
	5/7/04	---		1.68	---	488.03
	8/24/04	---	2.62	2.80	0.18	487.04
	11/15/04	---	---	1.96	---	487.75
	2/1/05	---	---	1.49	---	488.22
	5/2/05	---	---	1.96	---	487.75
	8/9/05	---	2.28	2.29	0.01	487.43
	11/9/05	---	---	2.02	---	487.69
	3/22/06	---	---	1.62	---	488.09
	5/18/06	---	---	2.15	---	487.56
	8/10/06	---	---	4.04	---	485.67
	10/31/06	---	---	3.28	---	486.43
	1/17/07	---	---	2.12	---	487.59
	4/25/07	---	---	1.80	---	487.91
	7/12/07	---	---	2.24	---	487.47
	10/30/07	---	---	1.92	---	487.79
	5/13/08	---	---	1.83	---	487.88
	7/2/08	---	---	2.06	---	487.65
	11/4/08	---	---	1.82	---	487.89
	3/28/11	---	---	0.82	---	488.89
MW-2R	11/9/00	491.04	---	---	---	486.82
	6/21/01	---	---	---	---	485.80
	11/12/02	---	---	---	---	486.25
	3/17/03	---	---	---	---	487.84
	6/12/03	---	---	---	---	486.75
	10/22/03	---	---	---	---	486.32
	3/11/04	---	2.74	2.79	0.05	488.29
	5/7/04	---	3.91	3.96	0.05	487.12
	8/24/04	---	5.11	5.28	0.17	485.88
	11/15/04	---		4.23		486.81
	2/1/05	---	2.67	2.69	0.02	488.36
	5/2/05	---	3.93	3.95	0.02	487.10
	8/9/05	---	4.65	4.69	0.04	486.38
	11/9/05	---	---	4.21	---	486.83
	3/22/06	---	---	2.43	---	488.61
	5/18/06	---	---	4.14	---	486.90
	8/10/06	---	---	4.91	---	486.14
	10/31/06	---	---	5.66	---	485.38
	1/17/07	---	---	3.85	---	487.19
	4/25/07	---	---	3.56	---	487.48
	7/12/07	---	---	4.84	---	486.20
	10/30/07	---	---	4.10	---	486.94

Table C-1 Historic Groundwater Elevations Payless Gas and Food Mart, Redding, California						
Sample Location	Sampling Date	Top-of-Casing Elevation (feet NAVD88)[1]	Depth to LNAPL[2,3] (feet)	Depth to Groundwater[3] (feet)	LNAPL Thickness (feet)	Groundwater Elevation (feet NAVD88)
MW-2R Contid	5/13/08	---	---	4.44	---	486.60
	7/2/08	---	---	4.67	---	486.37
	11/4/08	---	---	3.92	---	487.12
	3/28/11	---	---	1.84	---	489.20
MW-2D	10/22/03	491.05	---	6.17	---	484.88
	3/11/04	---	---	5.87	---	485.18
	5/7/04	---	---	7.39	---	483.66
	8/24/04	---	---	9.62	---	481.43
	11/15/04	---	---	9.47	---	481.58
	2/1/05	---	---	6.88	---	484.17
	5/2/05	---	---	7.27	---	483.78
	8/9/05	---	---	8.10	---	482.92
	11/9/05	---	---	9.11	---	481.94
	3/22/06	---	---	6.91	---	484.14
	5/18/06	---	---	7.31	---	483.74
	8/10/06	---	---	8.28	---	482.76
	10/31/06	---	---	9.09	---	481.96
	1/17/07	---	---	7.62	---	483.43
	4/25/07	---	---	6.86	---	484.19
	7/12/07	---	---	8.30	---	482.75
	10/30/07	---	---	7.70	---	483.35
	5/13/08	---	---	11.45	---	479.60
	7/2/08	---	---	8.23	---	482.82
	11/4/08	---	---	13.40	---	477.65
	3/28/11	---	---	7.84	---	483.21
MW-3R	11/9/00	491.02	---	---	---	487.04
	6/21/01	---	---	---	---	485.78
	11/12/02	---	---	---	---	486.40
	3/17/03	---	---	---	---	488.37
	6/12/03	---	---	---	---	487.82
	10/22/03	---	---	3.15	---	487.87
	3/11/04	---	---	2.17	---	488.85
	5/7/04	---	---	2.90	---	488.12
	8/24/04	---	---	5.54	---	485.48
	11/15/04	---	---	2.39	---	488.63
	2/1/05	---	---	1.84	---	489.18
	5/2/05	---	---	2.77	---	488.25
	8/9/05	---	---	4.68	---	486.34
	11/9/05	---	---	3.05	---	487.97
	3/22/06	---	---	1.88	---	489.14
	5/18/06	---	---	3.10	---	487.92
	8/10/06	---	---	4.42	---	486.60
	10/31/06	---	---	5.33	---	485.69
	1/17/07	---	---	2.63	---	488.39
	4/25/07	---	---	2.55	---	488.47
	7/12/07	---	---	4.88	---	486.14
	10/30/07	---	---	2.89	---	488.13
	5/13/08	---	---	4.15	---	486.87

Table C-1 Historic Groundwater Elevations Payless Gas and Food Mart, Redding, California						
Sample Location	Sampling Date	Top-of-Casing Elevation (feet NAVD88)[1]	Depth to LNAPL[2,3] (feet)	Depth to Groundwater[3] (feet)	LNAPL Thickness (feet)	Groundwater Elevation (feet NAVD88)
MW-3R Cont'd	7/2/08	---	---	4.50	---	486.52
	11/4/08	---	---	2.45	---	488.57
	3/28/11	---	---	1.30	---	489.72
MW-4	11/9/00	491.03	---	---	---	489.20
	6/21/01	---	---	---	---	488.88
	11/12/02	---	---	---	---	488.98
	3/17/03	---	---	---	---	489.03
	6/12/03	---	---	---	---	489.07
	10/22/03	---	---	1.82	---	489.21
	3/11/04	---	---	1.18	---	489.85
	5/7/04	---	---	1.37	---	489.66
	8/24/04	---	---	2.39	---	488.64
	11/15/04	---	---	1.69	---	489.34
	2/1/05	---	---	1.33	---	489.70
	5/2/05	---	---	1.69	---	489.34
	8/9/05	---	---	1.90	---	489.13
	11/9/05	---	---	1.84	---	489.19
	3/22/06	---	---	1.31	---	489.72
	5/18/06	---	---	1.71	---	489.32
	8/10/06	---	---	1.98	---	489.05
	10/31/06	---	---	2.34	---	488.69
	1/17/07	---	---	1.69	---	489.34
	4/25/07	---	---	1.58	---	489.45
	7/12/07	---	---	1.92	---	489.11
	10/30/07	---	---	1.75	---	489.28
	5/13/08	---	---	1.86	---	489.17
	7/2/08	---	---	1.90	---	489.13
	11/4/08	---	---	1.43	---	489.60
	3/28/11	---	---	1.08	---	489.95
MW-5	11/9/00	489.47	---	---	---	485.78
	6/21/01	---	---	---	---	485.01
	11/12/02	---	---	---	---	485.35
	3/17/03	---	---	---	---	486.76
	6/12/03	---	---	---	---	485.93
	10/22/03	---	---	4.02	---	485.45
	3/11/04	---	---	2.74	---	486.73
	5/7/04	---	---	3.17	---	486.30
	8/24/04	---	---	4.69	---	484.78
	11/15/04	---	---	3.37	---	486.10
	2/1/05	---	---	2.55	---	486.92
	5/2/05	---	---	3.10	---	486.37
	8/9/05	---	---	4.13	---	485.34
	11/9/05	---	---	3.73	---	485.74
	3/22/06	---	---	2.71	---	486.76
	5/18/06	---	---	3.30	---	486.17
	8/10/06	---	---	4.22	---	485.25
	10/31/06	---	---	4.83	---	484.64
	1/17/07	---	---	3.13	---	486.34

Table C-1 Historic Groundwater Elevations Payless Gas and Food Mart, Redding, California						
Sample Location	Sampling Date	Top-of-Casing Elevation (feet NAVD88)[1]	Depth to LNAPL[2,3] (feet)	Depth to Groundwater[3] (feet)	LNAPL Thickness (feet)	Groundwater Elevation (feet NAVD88)
MW-5 Cont'd	4/25/07	---	---	3.00	---	486.47
	7/12/07	---	---	4.50	---	484.97
	10/30/07	---	---	3.69	---	485.78
	5/13/08	---	---	4.03	---	485.44
	7/2/08	---	---	4.50	---	484.97
	11/4/08	---	---	3.84	---	485.63
	3/28/11	---	---	2.36	---	487.11
MW-6	11/9/00	489.43	---	---	---	486.14
	6/21/01	---	---	---	---	485.31
	11/12/02	---	---	---	---	485.78
	3/17/03	---	---	---	---	487.13
	6/12/03	---	---	---	---	486.13
	10/22/03	---	---	3.98	---	485.45
	3/11/04	---	---	2.33	---	487.10
	5/7/04	---	---	3.00	---	486.43
	8/24/04	---	---	4.33	---	485.10
	11/15/04	---	---	3.15	---	486.28
	2/1/05	---	---	2.27	---	487.16
	5/2/05	---	---	2.90	---	486.53
	8/9/05	---	---	3.84	---	485.59
	11/9/05	---	---	3.14	---	486.29
	3/22/06	---	---	1.98	---	487.45
	5/18/06	---	---	2.98	---	486.45
	8/10/06	---	---	4.09	---	485.34
	10/31/06	---	---	4.62	---	484.81
	1/17/07	---	---	2.76	---	486.67
	4/25/07	---	---	2.50	---	486.93
	7/12/07	---	---	4.22	---	485.21
	10/30/07	---	---	3.01	---	486.42
	5/13/08	---	---	3.58	---	485.85
	7/2/08	---	---	4.11	---	485.32
	11/4/08	---	---	3.58	---	485.85
	3/28/11	---	---	1.03	---	488.40
MW-7	10/22/03	490.98	---	5.15	---	485.83
	3/11/04	---	---	2.61	---	488.37
	5/7/04	---	---	3.82	---	487.16
	8/24/04	---	---	5.40	---	485.58
	11/15/04	---	---	4.15	---	486.83
	2/1/05	---	---	2.51	---	488.47
	5/2/05	---	---	3.79	---	487.19
	8/9/05	---	---	4.94	---	486.04
	11/9/05	---	---	4.08	---	486.90
	3/22/06	---	---	2.12	---	488.86
	5/18/06	---	---	4.10	---	486.88
	8/10/06	---	---	5.22	---	485.76
	10/31/06	---	---	5.74	---	485.24
	1/17/07	---	---	3.74	---	487.24
	4/25/07	---	---	3.40	---	487.58

Table C-1 Historic Groundwater Elevations Payless Gas and Food Mart, Redding, California						
Sample Location	Sampling Date	Top-of-Casing Elevation (feet NAVD88)[1]	Depth to LNAPL[2,3] (feet)	Depth to Groundwater[3] (feet)	LNAPL Thickness (feet)	Groundwater Elevation (feet NAVD88)
MW-7 Cont'd	7/12/07	---	---	5.38	---	485.60
	10/30/07	---	---	3.97	---	487.01
	5/13/08	---	---	4.71	---	486.27
	7/2/08	---	---	5.31	---	485.67
	11/4/08	---	---	4.53	---	486.45
	3/28/11	---	---	0.60	---	490.38
MW-8	10/22/03	489.92	---	4.49	---	485.43
	3/11/04	---	---	2.49	---	487.43
	5/7/04	---	---	3.38	---	486.54
	8/24/04	---	---	4.79	---	485.13
	11/15/04	---	---	3.50	---	486.42
	2/1/05	---	---	2.39	---	487.53
	5/2/05	---	---	3.24	---	486.68
	8/9/05	---	---	4.27	---	485.65
	11/9/05	---	---	3.47	---	486.45
	3/22/06	---	---	2.00	---	487.92
	5/18/06	---	---	3.42	---	486.50
	8/10/06	---	---	4.54	---	485.38
	10/31/06	---	---	5.03	---	484.89
	1/17/07	---	---	3.12	---	486.80
	4/25/07	---	---	2.90	---	487.02
	7/12/07	---	---	4.70	---	485.22
	10/30/07	---	---	3.33	---	486.59
	5/13/08	---	---	3.99	---	485.93
	7/2/08	---	---	4.57	---	485.35
	11/4/08	---	---	4.40	---	485.52
	3/28/11	---	---	1.08	---	488.84
MW-9	10/22/03	488.38	---	5.10	---	483.28
	3/11/04	---	---	3.02	---	485.36
	5/7/04	---	---	3.83	---	484.55
	8/24/04	---	---	5.11	---	483.27
	11/15/04	---	---	4.28	---	484.10
	2/1/05	---	---	3.13	---	485.25
	5/2/05	---	---	3.67	---	484.71
	8/9/05	---	---	4.35	---	484.03
	11/9/05	---	---	4.40	---	483.98
	3/22/06	---	---	3.10	---	485.28
	5/18/06	---	---	3.75	---	484.63
	8/10/06	---	---	4.28	---	484.10
	10/31/06	---	---	5.56	---	482.82
	1/17/07	---	---	3.29	---	485.09
	4/25/07	---	---	3.30	---	485.08
	7/12/07	---	---	4.50	---	483.88
	10/30/07	---	---	3.62	---	484.76
	5/13/08	---	---	4.00	---	484.38
	7/2/08	---	---	4.42	---	483.96
	11/4/08	---	---	4.25	---	484.13
	3/28/11	---	---	2.57	---	485.81

Table C-1
Historic Groundwater Elevations
Payless Gas and Food Mart, Redding, California

Sample Location	Sampling Date	Top-of-Casing Elevation (feet NAVD88)[1]	Depth to LNAPL[2,3] (feet)	Depth to Groundwater[3] (feet)	LNAPL Thickness (feet)	Groundwater Elevation (feet NAVD88)
MW-10	10/22/03	488.48	---	4.09	---	484.39
	3/11/04	---	---	3.18	---	485.30
	5/7/04	---	---	3.51	---	484.97
	8/24/04	---	---	4.41	---	484.07
	11/15/04	---	---	3.36	---	485.12
	2/1/05	---	---	3.12	---	485.36
	5/2/05	---	---	3.34	---	485.14
	8/9/05	---	---	4.03	---	484.45
	11/9/05	---	---	3.59	---	484.89
	3/22/06	---	---	2.80	---	485.68
	5/18/06	---	---	3.43	---	485.05
	8/10/06	---	---	4.28	---	484.20
	10/31/06	---	---	4.61	---	483.87
	1/17/07	---	---	3.04	---	485.44
	4/25/07	---	---	3.10	---	485.38
	7/12/07	---	---	4.34	---	484.14
	10/30/07	---	---	3.23	---	485.25
	5/13/08	---	---	3.90	---	484.58
	7/2/08	---	---	4.31	---	484.17
	11/4/08	---	---	3.64	---	484.84
	3/28/11	---	---	2.86	---	485.62

1. NAVD 88: North American Vertical Datum, 1988
2. LNAPL: Light Non-Aqueous Phase Liquids
3. Below top of casing
4. ---: No measurable LNAPL

Table C-2
Historic Analytical Results
Payless Gas and Food Mart, Redding, California
(in µg/L)[1]

Sample Location	Sample Date	TPHG[2]	Benzene[3]	Toluene[3]	Ethyl-benzene[3]	Total Xylenes[3]	MTBE[4]	ETBE[5]	DIPE[6]	TAME[7]	TBA[8]
MW-1R	11/9/2000	7,900	90	<25[9]	460	100	730	<25	<25	43	<500
	6/21/2001	5,900	80	26	130	94	14,000	<250	<250	<5,000	<5,000
	11/12/2002	9,200	80	<12.5	500	68	760	<50	<50	<50	<300
	3/17/2003	5,400	90	45	600	130	1,300	<25	<25	45	<150
	6/12/2003	7,200	28	<12.5	680	110	530	<25	<25	<25	<150
	10/22/2003	50,000	2,900	17,000	1,500	7,100	34,000	<50	<1,250	<1,250	<2,500
	3/11/2004	NS[10]	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/7/2004	33,000	1,300	1,300	880	34,000	34,000	<1,250	<1,250	<1,250	<2,500
	8/24/2004	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/15/2004	24,000	2,000	1,100	1,800	5,600	11,000	<125	<125	<125	<250
	2/1/2005	21,000	800	220	550	1,500	2,000	<125	<125	<125	1,000
	5/2/2005	11,000	750	100	550	1,200	910	<12.5	<12.5	<12.5	<25
	8/9/2005	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/9/2005	14,000	530	59	1,700	1,600	2,000	<1.0	<1.0	<1.0	<10
	3/23/2006	9,300	120	39	1,000	900	160	<1.0	<1.0	2.0	41
	5/19/2006	7,800	77	<40	710	430	87	<40	<40	<40	<400
	8/11/2006	8,000	93	<40	950	200	190	<40	<40	<40	<400
	10/31/2006	6,400	24	5.5	360	59	35	<1.0	<1.0	<1.0	<10
	1/17/2007[11]	8,200	<25	<25	330	100	32	<12.5	<12.5	<12.5	<25
	4/25/2007	8,300	21	16	520	140	41	<12.5	<12.5	<12.5	<25
	7/12/2007	6,300	13	14	320	62	22	<12.5	<12.5	<12.5	<25
	10/30/2007	6,200	<12.5	<12.5	100	<25	26	<5.0	<5.0	<5.0	<10
	5/13/2008	4,900	<12.5	<12.5	65	33	7.3	<5.0	<5.0	<5.0	<10
	7/2/2008	4,700	<12.5	<12.5	58	40	5.5	<5.0	<5.0	<5.0	<10
	11/4/2008	280	<0.5	<0.5	4.0	1.9	<5.0	<5.0	<5.0	<5.0	<10
	3/28/2011	3,500	<12.5	<12.5	18	<25	<5.0	<5.0	<5.0	<5.0	<10
MW-2R	11/9/2000	24,000	810	5,000	820	3,700	660,000	<5,000	<5,000	<5,000	<100,000
	11/12/2002	19,000	9,000	150,000	150,000	1,300,000	9,800	<500	<500	1,600	<3,000
	3/17/2003	110,000	3,000	27,000	3,000	17,000	4,400	<50	<50	<50	<300
	6/12/2003	83,000	1,200	24,000	2,500	17,000	3,600	<50	<50	620	<300
	10/22/2003	36,000	630	3,600	800	4,100	930	<25	<25	40	<50
	3/11/2004	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/7/2004	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	8/24/2004	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/15/2004	21,000	370	4,200	730	4,800	830	<12.5	<12.5	46	<25
	2/1/2005	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/2/2005	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	8/9/2005	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/9/2005	12,000	110	1,700	500	2,600	670	<1.0	<1.0	<1.0	<10
	3/23/2006	26,000	52	3,000	1,200	8,500	<20	<20	<20	<20	<200
	5/19/2006	17,000	62	1,100	590	3,800	260	<1.0	<1.0	11	100
	8/11/2006	11,000	100	2,500	940	6,000	320	<40	<40	<40	<400
	10/31/2006	14,000	47	900	310	1,900	340	<5.0	<5.0	26	<50
	1/17/2007[11]	20,000	70	1,400	440	2,800	180	<50	<50	<50	<100
	4/25/2007	21,000	89	4,100	700	5,300	110	<50	<50	<50	<100
	7/12/2007	19,000	79	3,100	580	4,300	180	<12.5	<12.5	26	<25
	10/30/2007	10,000	<50	330	120	1,100	78	<12.5	<12.5	<12.5	<25
	5/13/2008	6,900	29	370	130	1,400	47	<5.0	<5.0	6.3	<10
	7/2/2008	7,700	14	230	110	950	61	<5.0	<5.0	9.6	<10
	11/4/2008	17,000	26	2,600	880	4,500	37	<5.0	<5.0	8.1	<10
	3/29/2011	63,000	<125	760	1,800	21,000	<5.0	<5.0	<5.0	<5.0	<10

Table C-2
Historic Analytical Results
Payless Gas and Food Mart, Redding, California
(in µg/L)[1]

Sample Location	Sample Date	TPHG[2]	Benzene[3]	Toluene[3]	Ethyl-benzene[3]	Total Xylenes[3]	MTBE[4]	ETBE[5]	DIPE[6]	TAME[7]	TBA[8]
MW-2D	10/22/2003	**53,000**	**310**	**10,000**	<0.5	**9,400**	**5,200**	<50	<50	<50	<100
	3/11/2004	**60,000**	**140**	**4,700**	**1,200**	**10,000**	**3,900**	<50	<50	**70**	<100
	5/7/2004	**43,000**	<125	**2,800**	**8,000**	**6,000**	**6,000**	<125	<125	<125	<250
	8/24/2004	**21,000**	**250**	**1,300**	**800**	**5,500**	**7,900**	<125	<125	<125	<250
	11/15/2004	**36,000**	<50	**690**	**710**	**9,700**	**9,800**	<125	<125	**140**	<250
	2/1/2005	**29,000**	<50	**250**	**320**	**2,200**	**5,200**	<125	<125	<125	<250
	5/2/2005	**18,000**	**170**	**170**	**300**	**2,100**	**8,700**	<125	<125	<125	<250
	8/9/2005	**11,000**	<25	**40**	**120**	**950**	**5,800**	<125	<125	<125	<250
	11/9/2005	**14,000**	<50	**54**	**300**	**1,800**	**7,200**	<50	<50	<50	<500
	3/23/2006	**7,400**	<20	**22**	**120**	**960**	**7,100**	<20	<20	**95**	**280**
	5/19/2006	**9,100**	**2.8**	**33**	**210**	**1,500**	**4,100**	<1.0	<1.0	**59**	**400**
	8/11/2006	**7,700**	<40	<40	**110**	**630**	**4,900**	<40	<40	**80**	<400
	10/31/2006	**9,500**	<5.0	**21**	**130**	**740**	**2,100**	<5.0	<5.0	**38**	<50
	1/17/2007[11]	**6,700**	<25	<25	**32**	**200**	**1,900**	<25	<25	**27**	**580**
	4/25/2007	**5,600**	<12.5	<12.5	**39**	**200**	**3,600**	<50	<50	**81**	**310**
	7/12/2007	**5,000**	<12.5	<12.5	**41**	**200**	**3,200**	<50	<50	**61**	<100
	10/30/2007	**5,900**	<12.5	<12.5	**14**	**59**	**1,800**	<50	<50	<50	<100
	5/13/2008	**2,900**	<12.5	<12.5	<12.5	**27**	**2,900**	<50	<50	**51**	<100
	7/2/2008	**4,800**	<5.0	**12**	**25**	**72**	**1,200**	<50	<50	<50	<100
	11/4/2008	**3,500**	<5.0	<5.0	**20**	**33**	**2,300**	<25	<25	**46**	<50
	3/29/2011	**1,400**	<2.5	<2.5	<2.5	<5.0	**1,000**	<25	<25	<25	<50
MW-3R	11/9/2000	<50	<0.5	<0.5	<0.5	<1.0	**7.7**	<5.0	<5.0	<5.0	<100
	6/21/2001	<50	<0.5	<0.5	<0.5	<1.0	<5.0	<5.0	<5.0	<5.0	<100
	11/12/2002	<50	<0.5	<0.5	<0.5	<1.0	<5.0	<5.0	<5.0	<5.0	<30
	3/17/2003	<50	<0.5	<0.5	<0.5	<1.0	<5.0	<5.0	<5.0	<5.0	<30
	6/12/2003	<50	<0.5	<0.5	<0.5	<1.0	<5.0	<5.0	<5.0	<5.0	<30
	10/22/2003	**490**	**20**	**13**	**9.9**	**60**	**140**	<5.0	<5.0	<5.0	<10
	3/11/2004	<50	<0.5	<0.5	<0.5	<1.0	<5.0	<5.0	<5.0	<5.0	<10
	5/7/2004	<50	<0.5	<0.5	<0.5	<1.0	<5.0	<5.0	<5.0	<5.0	<10
	8/24/2004	<50	<0.5	<0.5	<0.5	<1.0	<5.0	<5.0	<5.0	<5.0	<10
	11/15/2004	<50	<0.5	<0.5	<0.5	**2.0**	<5.0	<5.0	<5.0	<5.0	<10
	2/1/2005	<50	<0.5	<0.5	<0.5	<1.0	<5.0	<5.0	<5.0	<5.0	<10
	5/2/2005	<50	<0.5	<0.5	<0.5	<1.0	<5.0	<5.0	<5.0	<5.0	<10
	8/9/2005	<50	<0.5	<0.5	<0.5	<1.0	<5.0	<5.0	<5.0	<5.0	<10
	11/9/2005	<50	<1.0	<1.0	<1.0	<1.0	**1.3**	<1.0	<1.0	<1.0	<10
	3/23/2006	<50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10
	5/18/2006	<50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10
	8/11/2006	<50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10
	10/31/2006	<50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10
	1/17/2007[11]	<50	<0.5	<0.5	<0.5	<1.0	<5.0	<5.0	<5.0	<5.0	<10
	4/25/2007	<50	<0.5	<0.5	<0.5	<1.0	<5.0	<5.0	<5.0	<5.0	<10
	7/12/2007	<50	<0.5	<0.5	<0.5	<1.0	<5.0	<5.0	<5.0	<5.0	<10
	10/30/2007	<50	<0.5	<0.5	<0.5	<1.0	<5.0	<5.0	<5.0	<5.0	<10
	5/13/2008	<50	<0.5	<0.5	<0.5	<1.0	<5.0	<5.0	<5.0	<5.0	<10
	7/2/2008	<50	<0.5	<0.5	<0.5	<1.0	<5.0	<5.0	<5.0	<5.0	<10
	11/4/2008	<50	<0.5	<0.5	<0.5	<1.0	<5.0	<5.0	<5.0	<5.0	<10
	3/28/2011	<50	<0.5	<0.5	<0.5	<1.0	<5.0	<5.0	<5.0	<5.0	<10
MW-4	11/9/2000	<50	<0.5	<0.5	<0.5	<1.0	<5.0	<5.0	<5.0	<5.0	<100
	6/21/2001	<50	<0.5	<0.5	<0.5	<1.0	<5.0	<5.0	<5.0	<5.0	<100
	11/12/2002	<50	<0.5	<0.5	<0.5	<1.0	<5.0	<5.0	<5.0	<5.0	<30
	3/17/2003	<50	<0.5	<0.5	<0.5	<1.0	**6.2**	<5.0	<5.0	<5.0	<30
	6/12/2003	<50	<0.5	<0.5	<0.5	<1.0	<5.0	<5.0	<5.0	<5.0	<30
	10/22/2003	<50	<0.5	<0.5	<0.5	<1.0	<5.0	<5.0	<5.0	<5.0	<10
	3/11/2004	<50	<0.5	<0.5	<0.5	<1.0	<5.0	<5.0	<5.0	<5.0	<10
	5/7/2004	<50	<0.5	<0.5	<0.5	<1.0	<5.0	<5.0	<5.0	<5.0	<10
	8/24/2004	<50	<0.5	<0.5	<0.5	<1.0	<5.0	<5.0	<5.0	<5.0	<10

Table C-2
Historic Analytical Results
Payless Gas and Food Mart, Redding, California
(in µg/L)[1]

Sample Location	Sample Date	TPHG[2]	Benzene[3]	Toluene[3]	Ethyl-benzene[3]	Total Xylenes[3]	MTBE[4]	ETBE[5]	DIPE[6]	TAME[7]	TBA[8]
MW-4 Cont'd	11/15/2004	<50	<0.5	<0.5	<0.5	<1.0	<5.0	<5.0	<5.0	<5.0	<10
	2/1/2005	<50	<0.5	<0.5	<0.5	<1.0	<5.0	<5.0	<5.0	<5.0	<10
	5/2/2005	<50	<0.5	<0.5	<0.5	<1.0	<5.0	<5.0	<5.0	<5.0	<10
	8/9/2005	<50	<0.5	<0.5	<0.5	<1.0	<5.0	<5.0	<5.0	<5.0	<10
	11/9/2005	<50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10
	3/23/2006	<50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10
	5/18/2006	<50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10
	8/10/2006	<50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10
	10/31/2006	<50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10
	1/17/2007[11]	<50	<0.5	<0.5	<0.5	<1.0	<5.0	<5.0	<5.0	<5.0	<10
	4/25/2007	<50	<0.5	<0.5	<0.5	<1.0	<5.0	<5.0	<5.0	<5.0	<10
	7/12/2007	<50	<0.5	<0.5	<0.5	<1.0	<5.0	<5.0	<5.0	<5.0	<10
	10/30/2007	<50	<0.5	<0.5	<0.5	<1.0	<5.0	<5.0	<5.0	<5.0	<10
	5/13/2008	<50	<0.5	<0.5	<0.5	<1.0	<5.0	<5.0	<5.0	<5.0	<10
	7/2/2008	<50	<0.5	<0.5	<0.5	<1.0	<5.0	<5.0	<5.0	<5.0	<10
	11/4/2008	<50	<0.5	<0.5	<0.5	<1.0	<5.0	<5.0	<5.0	<5.0	<10
	3/28/2011	<50	<0.5	<0.5	<0.5	<1.0	<5.0	<5.0	<5.0	<5.0	<10
MW-5	11/9/2000	**1,200**	**26**	<2.5[9]	**8.0**	<5.0	**2,900**	<50	<50	**80**	<1,000
	6/21/2001	**1,700**	**44**	**7.0**	**15**	**9.5**	**4,300**	<50	<50	**180**	<1,000
	11/12/2002	**270**	**3.5**	<1.25	<1.25	<2.5	**3,600**	<50	<50	<50	**780**
	3/17/2003	**780**	**20**	<1.25	**2.0**	<2.5	**5,200**	<50	<50	**95**	<300
	6/12/2003	**980**	**21**	<1.25	**3.8**	<2.5	**3,400**	<50	<50	**63**	<300
	10/22/2003	**350**	**27**	**6.6**	**1.8**	**1.9**	**9,900**	<250	<250	<250	<500
	3/11/2004	**690**	**35**	<1.25	**1.5**	<2.5	**7,800**	<250	<250	<250	<500
	5/7/2004	**1,500**	**45**	**1.5**	**3.0**	**4.3**	**9,000**	<125	<125	<125	<250
	8/24/2004	**110**	**4.7**	<0.5	<0.5	<1.0	**3,900**	<125	<125	<125	<250
	11/15/2004	**860**	**28**	**3.0**	**5.0**	<5.0	**7,800**	<125	<125	<125	<250
	2/1/2005	**1,600**	**41**	<2.5	**4.0**	<5.0	**4,600**	<125	<125	<125	<250
	5/2/2005	**830**	**65**	<2.5	<2.5	<5.0	**6,300**	<125	<125	<125	<250
	8/9/2005	**450**	**22**	<1.25	<1.25	<2.5	**3,100**	<125	<125	<125	<250
	11/9/2005	**520**	**36**	<4.0	**4.7**	<4.0	**3,400**	<4.0	<4.0	<4.0	<40
	3/23/2006	**370**	**33**	<10	<10	<10	**4,000**	<10	<10	**17**	**130**
	5/19/2006	**400**	**40**	**2.9**	**7.8**	**2.2**	**2,900**	<1.0	<1.0	**17**	**280**
	8/11/2006	**210**	**11**	<1.0	**1.0**	<1.0	**1,700**	<1.0	<1.0	**14**	**91**
	10/31/2006	**320**	**16**	<5.0	<5.0	<5.0	**1,100**	<5.0	<5.0	**6.3**	<50
	1/17/2007[11]	<125	**4.2**	<1.25	<1.25	<2.5	**1,500**	<125	<125	<125	<250
	4/25/2007	<50	**4.7**	<0.5	<0.5	<1.0	**880**	<50	<50	<50	<100
	7/12/2007	**370**	**7.8**	**1.4**	**1.8**	**1.4**	**690**	<12.5	<12.5	<12.5	<25
	10/30/2007	<50	<0.5	<0.5	<0.5	<1.0	**310**	<5.0	<5.0	<5.0	<10
	5/13/2008	<50	<0.5	<0.5	<0.5	<1.0	**250**	<5.0	<5.0	<5.0	**210**
	7/2/2008	<50	<0.5	<0.5	<0.5	<1.0	**190**	<5.0	<5.0	<5.0	**190**
	11/4/2008	**190**	<0.5	<0.5	<0.5	<1.0	**64**	<5.0	<5.0	<5.0	**190**
	3/28/2011	**350**	<0.5	<0.5	**1.2**	<1.0	**9.2**	<5.0	<5.0	<5.0	<10
MW-6	11/9/2000	<50	**2.5**	<0.5	<0.5	<1.0	**1,100**	<12.5	<12.5	**21**	<250
	6/21/2001	**4,400**	**77**	**730**	**140**	**800**	**1,400**	<25	<25	**40**	<500
	11/12/2002	**2,500**	<2.5	<2.5	**28**	**50**	**34**	<5.0	<5.0	<5.0	<30
	3/17/2003	**1,700**	**8.0**	<5.0	**20**	**38**	**6.5**	<5.0	<5.0	<5.0	<30
	6/12/2003	**1,000**	<1.25	<1.25	**7.0**	**15**	**8.4**	<5.0	<5.0	<5.0	<30
	10/22/2003	**1,200**	<0.5	<0.5	**5.9**	**14**	**34**	<5.0	<5.0	<5.0	<10
	3/11/2004	**720**	<2.5	<2.5	**3.0**	<5.0	<5.0	<5.0	<5.0	<5.0	<10
	5/7/2004	<50	<0.5	<0.5	<0.5	<1.0	<5.0	<5.0	<5.0	<5.0	<10
	8/24/2004	**180**	<0.5	<0.5	**1.3**	**1.4**	<5.0	<5.0	<5.0	<5.0	<10
	11/15/2004	**280**	<0.5	**4.2**	**3.4**	**7.9**	<5.0	<5.0	<5.0	<5.0	<10
	2/1/2005	**210**	<0.5	<0.5	**1.7**	**1.4**	<5.0	<5.0	<5.0	<5.0	<10
	5/2/2005	<50	<0.5	<0.5	<0.5	<1.0	<5.0	<5.0	<5.0	<5.0	<10

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Payless Gas and Food Mart, Redding, California
(in µg/L)[1]

Sample Location	Sample Date	TPHG[2]	Benzene[3]	Toluene[3]	Ethyl-benzene[3]	Total Xylenes[3]	MTBE[4]	ETBE[5]	DIPE[6]	TAME[7]	TBA[8]
MW-6	8/9/2005	**100**	<0.5	<0.5	**0.8**	**1.1**	<5.0	<5.0	<5.0	<5.0	<10
Cont'd	11/9/2005	**85**	<1.0	<1.0	<1.0	<1.0	**1.3**	<1.0	<1.0	<1.0	<10
	3/23/2006	**94**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10
	5/19/2006	<50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10
	8/10/2006	<50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10
	10/31/2006	**58**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10
	1/17/2007[11]	<50	<0.5	<0.5	<0.5	<1.0	<5.0	<5.0	<5.0	<5.0	<10
	4/25/2007	**570**	<0.5	<0.5	<0.5	<1.0	<5.0	<5.0	<5.0	<5.0	<10
	7/12/2007	**50**	<0.5	<0.5	<0.5	<1.0	<5.0	<5.0	<5.0	<5.0	<10
	10/30/2007	<50	<0.5	<0.5	<0.5	<1.0	<5.0	<5.0	<5.0	<5.0	<10
	5/13/2008	<50	<0.5	<0.5	<0.5	<1.0	<5.0	<5.0	<5.0	<5.0	<10
	7/2/2008	**80**	<0.5	<0.5	**0.6**	**2.2**	<5.0	<5.0	<5.0	<5.0	<10
	11/4/2008	**60**	<0.5	<0.5	<0.5	<1.0	<5.0	<5.0	<5.0	<5.0	<10
	3/28/2011	<50	<0.5	<0.5	<0.5	<1.0	<5.0	<5.0	<5.0	<5.0	<10
MW-7	10/22/2003	<50	<0.5	<0.5	<0.5	<1.0	<5.0	<5.0	<5.0	<5.0	<10
	3/11/2004	<50	<0.5	<0.5	<0.5	<1.0	<5.0	<5.0	<5.0	<5.0	<10
	5/7/2004	<50	<0.5	<0.5	<0.5	<1.0	<5.0	<5.0	<5.0	<5.0	<10
	8/24/2004	<50	<0.5	<0.5	<0.5	<1.0	<5.0	<5.0	<5.0	<5.0	<10
	11/15/2004	<50	<0.5	<0.5	<0.5	<1.0	<5.0	<5.0	<5.0	<5.0	<10
	2/1/2005	<50	<0.5	<0.5	<0.5	<1.0	<5.0	<5.0	<5.0	<5.0	<10
	5/2/2005	<50	<0.5	<0.5	<0.5	<1.0	<5.0	<5.0	<5.0	<5.0	<10
	8/9/2005	<50	<0.5	<0.5	<0.5	<1.0	<5.0	<5.0	<5.0	<5.0	<10
	11/9/2005	<50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10
	3/23/2006	<50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10
	5/18/2006	<50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10
	8/10/2006	<50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10
	10/31/2006	<50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10
	1/17/2007[11]	<50	<0.5	<0.5	<0.5	<1.0	<5.0	<5.0	<5.0	<5.0	<10
	4/25/2007	<50	<0.5	<0.5	<0.5	<1.0	<5.0	<5.0	<5.0	<5.0	<10
	7/12/2007	<50	<0.5	<0.5	<0.5	<1.0	<5.0	<5.0	<5.0	<5.0	<10
	10/30/2007	<50	<0.5	<0.5	<0.5	<1.0	<5.0	<5.0	<5.0	<5.0	<10
	5/13/2008	<50	<0.5	<0.5	<0.5	<1.0	<5.0	<5.0	<5.0	<5.0	<10
	7/2/2008	<50	<0.5	<0.5	<0.5	<1.0	<5.0	<5.0	<5.0	<5.0	<10
	11/4/2008	<50	<0.5	<0.5	<0.5	<1.0	<5.0	<5.0	<5.0	<5.0	<10
	3/28/2011	<50	<0.5	<0.5	<0.5	<1.0	<5.0	<5.0	<5.0	<5.0	<10
MW-8	10/22/2003	<50	<0.5	<0.5	<0.5	<1.0	<5.0	<5.0	<5.0	<5.0	<10
	3/11/2004	<50	<0.5	<0.5	<0.5	<1.0	<5.0	<5.0	<5.0	<5.0	<10
	5/7/2004	<50	<0.5	<0.5	<0.5	<1.0	<5.0	<5.0	<5.0	<5.0	<10
	8/24/2004	<50	<0.5	<0.5	<0.5	<1.0	<5.0	<5.0	<5.0	<5.0	<10
	11/15/2004	<50	<0.5	<0.5	<0.5	<1.0	<5.0	<5.0	<5.0	<5.0	<10
	2/1/2005	<50	<0.5	<0.5	<0.5	<1.0	<5.0	<5.0	<5.0	<5.0	<10
	5/2/2005	<50	<0.5	<0.5	<0.5	<1.0	<5.0	<5.0	<5.0	<5.0	<10
	8/9/2005	<50	<0.5	<0.5	<0.5	<1.0	<5.0	<5.0	<5.0	<5.0	<10
	11/9/2005	<50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10
	3/23/2006	<50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10
	5/18/2006	<50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10
	8/10/2006	<50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10
	10/31/2006	<50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10
	1/17/2007[11]	<50	<0.5	<0.5	<0.5	<1.0	<5.0	<5.0	<5.0	<5.0	<10
	4/25/2007	<50	<0.5	<0.5	<0.5	<1.0	<5.0	<5.0	<5.0	<5.0	<10
	7/12/2007	<50	<0.5	<0.5	<0.5	<1.0	<5.0	<5.0	<5.0	<5.0	<10
	10/30/2007	<50	<0.5	<0.5	<0.5	<1.0	<5.0	<5.0	<5.0	<5.0	<10
	5/13/2008	<50	<0.5	<0.5	<0.5	<1.0	<5.0	<5.0	<5.0	<5.0	<10
	7/2/2008	<50	<0.5	<0.5	<0.5	<1.0	<5.0	<5.0	<5.0	<5.0	<10
	11/4/2008	<50	<0.5	<0.5	<0.5	<1.0	<5.0	<5.0	<5.0	<5.0	<10
	3/28/2011	<50	<0.5	<0.5	<0.5	<1.0	<5.0	<5.0	<5.0	<5.0	<10

Table C-2
Historic Analytical Results
Payless Gas and Food Mart, Redding, California
(in µg/L)[1]

Sample Location	Sample Date	TPHG[2]	Benzene[3]	Toluene[3]	Ethyl-benzene[3]	Total Xylenes[3]	MTBE[4]	ETBE[5]	DIPE[6]	TAME[7]	TBA[8]
MW-9	10/22/2003	<50	<0.5	<0.5	<0.5	<1.0	<5.0	<5.0	<5.0	<5.0	<10
	3/11/2004	<50	<0.5	<0.5	<0.5	<1.0	<5.0	<5.0	<5.0	<5.0	<10
	5/7/2004	<50	<0.5	<0.5	<0.5	<1.0	<5.0	<5.0	<5.0	<5.0	<10
	8/24/2004	<50	<0.5	<0.5	<0.5	<1.0	<5.0	<5.0	<5.0	<5.0	<10
	11/15/2004	<50	<0.5	<0.5	<0.5	<1.0	<5.0	<5.0	<5.0	<5.0	<10
	2/1/2005	<50	<0.5	<0.5	<0.5	<1.0	<5.0	<5.0	<5.0	<5.0	<10
	5/2/2005	<50	<0.5	<0.5	<0.5	<1.0	<5.0	<5.0	<5.0	<5.0	<10
	8/9/2005	<50	<0.5	<0.5	<0.5	<1.0	<5.0	<5.0	<5.0	<5.0	<10
	11/9/2005	<50	<1.0	<1.0	<1.0	<1.0	**1.2**	<1.0	<1.0	<1.0	<10
	3/23/2006	<50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10
	5/18/2006	<50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10
	8/11/2006	<50	<1.0	<1.0	<1.0	<1.0	**1.2**	<1.0	<1.0	<1.0	<10
	10/31/2006	<50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10
	1/17/2007[11]	<50	<0.5	<0.5	<0.5	<1.0	<5.0	<5.0	<5.0	<5.0	<10
	4/25/2007	<50	<0.5	<0.5	<0.5	<1.0	<5.0	<5.0	<5.0	<5.0	<10
	7/12/2007	<50	<0.5	**0.6**	<0.5	**1.4**	<5.0	<5.0	<5.0	<5.0	<10
	10/30/2007	<50	<0.5	<0.5	<0.5	<1.0	<5.0	<5.0	<5.0	<5.0	<10
	5/13/2008	<50	<0.5	<0.5	<0.5	<1.0	<5.0	<5.0	<5.0	<5.0	<10
	7/2/2008	<50	<0.5	<0.5	<0.5	<1.0	<5.0	<5.0	<5.0	<5.0	<10
	11/4/2008	<50	<0.5	<0.5	<0.5	<1.0	<5.0	<5.0	<5.0	<5.0	<10
	3/29/2011	<50	<0.5	<0.5	<0.5	<1.0	<5.0	<5.0	<5.0	<5.0	<10
MW-10	10/22/2003	**1,600**	**30**	**4.5**	**76**	**47**	**2,300**	<50	<50	<50	<100
	3/11/2004	**9,600**	**100**	<25	**420**	**360**	**230**	<50	<50	<50	<100
	5/7/2004	**4,200**	**18**	<5.0	**130**	**42**	**260**	<5.0	<5.0	**5.8**	<10
	8/24/2004	**550**	**2.7**	<0.5	**6.3**	**5.5**	**210**	<5.0	<5.0	<5.0	<10
	11/15/2004	**1,200**	**23**	**9.5**	**33**	**47**	**580**	<5.0	<5.0	**18**	<10
	2/1/2005	**5,300**	**44**	<5.0	**130**	**130**	**79**	<5.0	<5.0	<5.0	<10
	5/2/2005	**2,000**	<2.5	<2.5	**22**	**13**	**51**	<5.0	<5.0	<5.0	<10
	8/9/2005	**560**	<2.5	<2.5	<2.5	<5.0	**120**	<5.0	<5.0	<5.0	<10
	11/9/2005	**370**	<1.0	<1.0	<1.0	**2.4**	**110**	<1.0	<1.0	<1.0	<10
	3/23/2006	**2,200**	<1.0	<1.0	**30**	**16**	**45**	<1.0	<1.0	<1.0	<10
	5/19/2006	**920**	<1.0	<1.0	<1.0	<1.0	**37**	<1.0	<1.0	<1.0	<10
	8/11/2006	**660**	<1.0	<1.0	<1.0	<1.0	**39**	<1.0	<1.0	<1.0	<10
	10/31/2006	**590**	<1.0	<1.0	<1.0	<1.0	**90**	<1.0	<1.0	<1.0	<10
	1/17/2007[11]	**1,400**	<5.0	<5.0	**7.0**	<10	**60**	<5.0	<5.0	<5.0	**46**
	4/25/2007	**880**	<2.5	<2.5	**6.7**	**6.7**	**28**	<5.0	<5.0	<5.0	<10
	7/12/2007	**350**	<1.25	<1.25	**3.2**	**6.1**	**71**	<5.0	<5.0	<5.0	<10
	10/30/2007	**380**	<0.5	**0.9**	**1.3**	**1.6**	**55**	<5.0	<5.0	<5.0	<10
	5/13/2008	**600**	<0.5	<0.5	<0.5	<1.0	**45**	<5.0	<5.0	<5.0	<10
	7/2/2008	**380**	<0.5	<0.5	<0.5	<1.0	**57**	<5.0	<5.0	<5.0	<10
	11/4/2008	**240**	<0.5	<0.5	<0.5	<1.0	**43**	<5.0	<5.0	<5.0	<10
	3/29/2011	**440**	<0.5	<0.5	<0.5	<1.0	**5.1**	<5.0	<5.0	<5.0	<10

1. µg/L: micrograms per Liter
2. TPHG: Total Petroleum Hydrocarbons as Gasoline
3. BTEX: Benzene (B), Toluene (T), Ethylbenzene (E), and total Xylenes (X)
4. MTBE: Methyl Tertiary-Butyl Ether
5. ETBE: Ethyl Tertiary-Butyl Ether
6. DIPE: Diisopropyl Ether
7. TAME: Tertiary-Amyl Methyl Ether
8. TBA: Tertiary-Butyl Alcohol
9. <: "less than" stated the method reporting limit
10. NS: Not Sampled
11. Samples from November 9, 2005 to October 31, 2006 were submitted to Columbia Analytical Services. All other samples were submitted to Shasta Analytical Services.

Table C-3
Historic DO, DCO_2, and ORP Measurements
Payless Gas and Food Mart, Redding, California

Sample Location	Sampling Date	DO[1] (mg/L)[2]	DCO[2,3] (mg/L)	ORP[4] (mV)[5]
MW-1R	3/11/2004	NM[6]	NM	NM
	5/7/2004	0.42	60	-82
	8/24/2004	NM	NM	NM
	11/15/2004	0.83	60	-57
	2/1/2005	0.87	30	26
	5/2/2005	0.38	50	-101
	8/9/2005	NM	NM	NM
	11/9/2005	1.01	80	-43
	3/23/2006	1.20	20	162
	5/19/2006	1.66	30	-38
	8/11/2006	0.62	95	-63
	10/31/2006	0.31	40	-130
	1/17/2007	0.97	45	-69
	4/25/2007	1.49	40	-55
	7/12/2007	0.50	85	-28
	10/30/2007	0.94	55	-20
	5/13/2008	0.60	120	-28
	7/2/2008	0.38	110	-22
	11/4/2008	3.54	100	80
	3/28/2011	0.83	25	-7
MW-2R	3/11/2004	NM	NM	NM
	5/7/2004	NM	NM	NM
	8/24/2004	NM	NM	NM
	11/15/2004	0.74	40	-124
	2/1/2005	NM	NM	NM
	5/2/2005	NM	NM	NM
	8/9/2005	NM	NM	NM
	11/9/2005	1.02	40	-38
	3/23/2006	1.25	40	203
	5/19/2006	1.55	30	-112
	8/11/2006	0.56	45	101
	10/31/2006	0.27	40	-139
	1/17/2007	1.00	50	-77
	4/25/2007	1.54	70	-70
	7/12/2007	0.50	70	-45
	10/30/2007	1.22	35	-51
	5/13/2008	0.57	50	-2
	7/2/2008	0.38	50	-53
	11/4/2008	2.39	100	-51
	3/29/2011	1.04	25	33

Table C-3
Historic DO, DCO_2, and ORP Measurements
Payless Gas and Food Mart, Redding, California

Sample Location	Sampling Date	DO[1] (mg/L)[2]	DCO[2,3] (mg/L)	ORP[4] (mV)[5]
MW-2D	3/11/2004	0.54	0	225
	5/7/2004	0.65	0	69
	8/24/2004	0.47	10	49
	11/15/2004	0.73	5	-66
	2/1/2005	1.34	10	29
	5/2/2005	0.46	20	14
	8/9/2005	0.55	10	-75
	11/9/2005	0.94	10	105
	3/23/2006	0.98	10	192
	5/19/2006	1.77	5	117
	8/11/2006	0.54	20	-3
	10/31/2006	0.25	5	-164
	1/17/2007	1.01	10	-80
	4/25/2007	1.42	20	-87
	7/12/2007	0.49	15	-47
	10/30/2007	1.34	15	-83
	5/13/2008	0.59	20	-55
	7/2/2008	0.46	15	-46
	11/4/2008	2.55	80	-97
	3/29/2011	0.57	15	-5
MW-3R	3/11/2004	5.00	25	250
	5/7/2004	5.23	30	61
	8/24/2004	1.33	55	37
	11/15/2004	5.81	20	-8
	2/1/2005	4.78	20	55
	5/2/2005	5.14	30	52
	8/9/2005	1.07	25	106
	11/9/2005	6.03	20	104
	3/23/2006	4.89	30	227
	5/19/2006	5.98	20	131
	8/11/2006	2.18	35	275
	10/31/2006	0.68	25	101
	1/17/2007	7.55	25	129
	4/25/2007	5.15	35	139
	7/12/2007	1.31	50	211
	10/30/2007	8.93	30	119
	5/13/2008	7.06	45	142
	7/2/2008	5.05	45	101
	11/4/2008	5.11	20	125
	3/28/2011	2.62	40	292

Table C-3
Historic DO, DCO_2, and ORP Measurements
Payless Gas and Food Mart, Redding, California

Sample Location	Sampling Date	DO[1] (mg/L)[2]	DCO[2,3] (mg/L)	ORP[4] (mV)[5]
MW-4	3/11/2004	1.73	25	265
	5/7/2004	1.19	25	68
	8/24/2004	2.68	50	67
	11/15/2004	3.58	40	30
	2/1/2005	2.31	40	49
	5/2/2005	1.42	40	48
	8/9/2005	2.08	25	109
	11/9/2005	5.22	20	98
	3/23/2006	2.53	25	216
	5/18/2006	2.51	10	123
	8/10/2006	0.82	45	310
	10/31/2006	0.85	30	177
	1/17/2007	2.95	30	110
	4/25/2007	2.36	35	154
	7/12/2007	1.66	50	195
	10/30/2007	3.23	30	98
	5/13/2008	2.80	45	124
	7/2/2008	1.96	75	131
	11/4/2008	2.76	80	81
	3/28/2011	1.68	25	281
MW-5	3/11/2004	0.86	40	257
	5/7/2004	0.40	35	-62
	8/24/2004	0.51	55	-35
	11/15/2004	0.80	50	16
	2/1/2005	0.91	30	5
	5/2/2005	0.40	45	-17
	8/9/2005	0.58	25	-53
	11/9/2005	1.06	50	8
	3/23/2006	0.86	25	221
	5/19/2006	1.84	20	61
	8/11/2006	0.46	50	61
	10/31/2006	0.30	45	-27
	1/17/2007	1.10	45	-27
	4/25/2007	1.47	50	-43
	7/12/2007	0.47	65	-11
	10/30/2007	0.90	40	23
	5/13/2008	0.62	30	-22
	7/2/2008	0.34	60	-25
	11/4/2008	1.28	100	116
	3/28/2011	0.70	35	21

Table C-3
Historic DO, DCO_2, and ORP Measurements
Payless Gas and Food Mart, Redding, California

Sample Location	Sampling Date	DO[1] (mg/L)[2]	DCO[2,3] (mg/L)	ORP[4] (mV)[5]
MW-6	3/11/2004	4.29	80	252
	5/7/2004	0.47	45	60
	8/24/2004	0.53	40	23
	11/15/2004	0.83	60	7
	2/1/2005	3.46	40	92
	5/2/2005	1.58	50	64
	8/9/2005	0.60	30	NM
	11/9/2005	1.26	40	-26
	3/23/2006	5.96	20	210
	5/19/2006	3.07	15	134
	8/10/2006	0.62	65	246
	10/31/2006	0.33	20	230
	1/17/2007	1.87	40	181
	4/25/2007	1.64	40	142
	7/12/2007	0.57	60	197
	10/30/2007	0.83	35	198
	5/13/2008	0.62	65	113
	7/2/2008	0.38	55	108
	11/4/2008	1.55	90	52
	3/28/2011	2.40	45	118
MW-7	3/11/2004	2.45	20	278
	5/7/2004	0.43	45	58
	8/24/2004	0.71	65	44
	11/15/2004	1.44	60	112
	2/1/2005	2.24	50	98
	5/2/2005	1.24	50	43
	8/9/2005	0.67	50	93
	11/9/2005	1.49	60	100
	3/23/2006	5.18	30	220
	5/18/2006	2.76	25	141
	8/10/2006	0.60	55	279
	10/31/2006	0.36	45	264
	1/17/2007	2.92	35	134
	4/25/2007	3.18	35	84
	7/12/2007	0.69	65	124
	10/30/2007	1.16	50	162
	5/13/2008	2.14	60	78
	7/2/2008	0.61	50	86
	11/4/2008	1.55	45	114
	3/28/2011	3.13	30	188

Table C-3
Historic DO, DCO_2, and ORP Measurements
Payless Gas and Food Mart, Redding, California

Sample Location	Sampling Date	DO[1] (mg/L)[2]	DCO[2,3] (mg/L)	ORP[4] (mV)[5]
MW-8	3/11/2004	3.70	40	277
	5/7/2004	0.47	50	17
	8/24/2004	0.61	55	52
	11/15/2004	1.50	60	9
	2/1/2005	4.30	60	102
	5/2/2005	1.37	70	-12
	8/9/2005	0.69	40	-37
	11/9/2005	1.40	60	113
	3/23/2006	4.08	15	216
	5/18/2006	2.49	25	162
	8/10/2006	0.50	40	278
	10/31/2006	0.35	100	256
	1/17/2007	5.40	50	179
	4/25/2007	2.16	75	160
	7/12/2007	0.60	75	193
	10/30/2007	2.69	50	205
	5/13/2008	1.28	75	128
	7/2/2008	0.41	100	125
	11/4/2008	1.56	60	161
	3/28/2011	2.35	55	238
MW-9	3/11/2004	0.63	35	267
	5/7/2004	0.59	50	88
	8/24/2004	0.58	10	36
	11/15/2004	2.13	55	10
	2/1/2005	1.21	50	26
	5/2/2005	0.47	55	-37
	8/9/2005	0.76	40	80
	11/9/2005	2.15	50	99
	3/23/2006	1.29	20	193
	5/18/2006	2.21	30	30
	8/10/2006	0.64	55	198
	10/31/2006	0.48	55	81
	1/17/2007	1.99	45	17
	4/25/2007	1.62	45	94
	7/12/2007	0.68	80	129
	10/30/2007	3.37	50	94
	5/13/2008	0.57	85	17
	7/2/2008	1.17	95	113
	11/4/2008	3.02	55	64
	3/29/2011	1.06	40	262

Table C-3
Historic DO, DCO_2, and ORP Measurements
Payless Gas and Food Mart, Redding, California

Sample Location	Sampling Date	DO[1] (mg/L)[2]	DCO[2,3] (mg/L)	ORP[4] (mV)[5]
MW-10	3/11/2004	0.54	70	252
	5/7/2004	0.51	45	70
	8/24/2004	0.52	45	-3
	11/15/2004	0.96	60	-14
	2/1/2005	0.87	60	31
	5/2/2005	0.40	40	-76
	8/9/2005	0.58	40	-67
	11/9/2005	1.14	65	25
	3/23/2006	0.89	45	208
	5/19/2006	1.70	30	135
	8/11/2006	0.59	45	6
	10/31/2006	0.33	60	-20
	1/17/2007	0.95	55	-8
	4/25/2007	1.54	45	-41
	7/12/2007	0.52	85	-11
	10/30/2007	1.45	55	26
	5/13/2008	0.78	65	-29
	7/2/2008	0.45	65	-4
	11/4/2008	1.37	80	10
	3/29/2011	1.91	25	58

1. DO: Dissolved Oxygen
2. mg/L: milligrams per Liter
3. DCO_2: Dissolved Carbon Dioxide
4. ORP: Oxidation-Reduction Potential
5. mV: milliVolts
6. NM: Not Measured

Appendix D

Laboratory Analytical Reports

Laboratory Report Project Overview

EDF 1.2a

Laboratory:	Shasta Analytical Laboratory, Inc., Redding, CA
Lab Report Number:	PAYLESS GAS
Project Name:	PAYLESS GAS
Work Order Number:	507010
Control Sheet Number:	T0608900234

Case Narrative

Shasta Analytical Laboratory, Inc., Redding, CA

Report Date:	04/05/2011	Project:	PAYLESS GAS
Report Number:	PAYLESS GAS	Order #:	507010

Project Name: Payless Gas
Job No.: 507010

Chemical analysis of the samples referenced above has been completed. Summaries of the data are contained on the following pages. Samples were received under documented chain-of-custody. US EPA protocols for sample storage and preservation were followed.

Shasta Analytical is certified by the State of California Department of Health Services (DOHS #1971). If you have any questions regarding these results, please contact me at (530) 378-2200.

Sincerely,

Lynn Coster
Laboratory Director

Approved by: Lynn Coster Date: 4/5/11

Report Summary

Labreport	Sampid	Labsampid	Mtrx	QC	Anmcode	Exmcode	Logdate	Extdate	Anadate	Lablotctl	Run Sub
PAYLESS GAS	MW-10	10382	W	CS	8260FA	SW5030B	03/29/2011	04/01/2011	04/01/2011	8260-0401	1
PAYLESS GAS	MW-10	10382	W	CS	SW8021F	SW5030B	03/29/2011	03/30/2011	03/30/2011	8021-0330	1
PAYLESS GAS	MW-1R	10378	W	CS	8260FA	SW5030B	03/28/2011	04/01/2011	04/01/2011	8260-0401	1
PAYLESS GAS	MW-1R	10378	W	CS	SW8021F	SW5030B	03/28/2011	03/30/2011	03/30/2011	8021-0330	1
PAYLESS GAS	MW-2D	10380	W	CS	8260FA	SW5030B	03/29/2011	04/01/2011	04/01/2011	8260-0401	1
PAYLESS GAS	MW-2D	10380	W	CS	SW8021F	SW5030B	03/29/2011	03/30/2011	03/30/2011	8021-0330	1
PAYLESS GAS	MW-2R	10379	W	CS	8260FA	SW5030B	03/29/2011	04/01/2011	04/01/2011	8260-0401	1
PAYLESS GAS	MW-2R	10379	W	CS	SW8021F	SW5030B	03/29/2011	03/30/2011	03/30/2011	8021-0330	1
PAYLESS GAS	MW-3R	10375	W	CS	8260FA	SW5030B	03/28/2011	04/01/2011	04/01/2011	8260-0401	1
PAYLESS GAS	MW-3R	10375	W	CS	SW8021F	SW5030B	03/28/2011	03/30/2011	03/30/2011	8021-0330	1
PAYLESS GAS	MW-4	10374	W	CS	8260FA	SW5030B	03/28/2011	04/01/2011	04/01/2011	8260-0401	1
PAYLESS GAS	MW-4	10374	W	CS	SW8021F	SW5030B	03/28/2011	03/30/2011	03/30/2011	8021-0330	1
PAYLESS GAS	MW-5	10377	W	CS	8260FA	SW5030B	03/28/2011	04/01/2011	04/01/2011	8260-0401	1
PAYLESS GAS	MW-5	10377	W	CS	SW8021F	SW5030B	03/28/2011	03/30/2011	03/30/2011	8021-0330	1
PAYLESS GAS	MW-6	10376	W	CS	8260FA	SW5030B	03/28/2011	04/01/2011	04/01/2011	8260-0401	1
PAYLESS GAS	MW-6	10376	W	CS	SW8021F	SW5030B	03/28/2011	03/30/2011	03/30/2011	8021-0330	1
PAYLESS GAS	MW-7	10372	W	CS	8260FA	SW5030B	03/28/2011	04/01/2011	04/01/2011	8260-0401	1
PAYLESS GAS	MW-7	10372	W	CS	SW8021F	SW5030B	03/28/2011	03/30/2011	03/30/2011	8021-0330	1
PAYLESS GAS	MW-8	10373	W	CS	8260FA	SW5030B	03/28/2011	04/01/2011	04/01/2011	8260-0401	1

Report Summary

Labreport	Sampid	Labsampid	Mtrx	QC	Anmcode	Exmcode	Logdate	Extdate	Anadate	Lablotctl	Run	Sub
PAYLESS GAS	MW-8	10373	W	CS	SW8021F	SW5030B	03/28/2011	03/30/2011	03/30/2011	8021-0330	1	
PAYLESS GAS	MW-9	10381	W	CS	8260FA	SW5030B	03/29/2011	04/01/2011	04/01/2011	8260-0401	1	
PAYLESS GAS	MW-9	10381	W	CS	SW8021F	SW5030B	03/29/2011	03/30/2011	03/30/2011	8021-0330	1	
		LCS-0330	W	BS1	SW8021F	SW5030B	/ /	03/30/2011	03/30/2011	8021-0330	1	
		LCS-0401	W	BS1	8260FA	SW5030B	/ /	04/01/2011	04/01/2011	8260-0401	1	
		MB-0330	W	LB1	SW8021F	SW5030B	/ /	03/30/2011	03/30/2011	8021-0330	1	
		MB-0401	W	LB1	8260FA	SW5030B	/ /	04/01/2011	04/01/2011	8260-0401	1	
		10372	W	MS1	SW8021F	SW5030B	/ /	03/30/2011	03/30/2011	8021-0330	1	
		10373	W	MS1	8260FA	SW5030B	/ /	04/01/2011	04/01/2011	8260-0401	1	
		10372	W	SD1	SW8021F	SW5030B	/ /	03/30/2011	03/30/2011	8021-0330	1	
		10373	W	SD1	8260FA	SW5030B	/ /	04/01/2011	04/01/2011	8260-0401	1	

Shasta Analytical Laboratory, Inc., Redding, CA

Lab Report No.: PAYLESS GAS Date: 04/05/2011

Project Name:	PAYLESS GAS	Analysis:	Volatile Organic Compounds by GC/MS Fuel
Project No:	507010	Method:	8260FA
		Prep Meth:	SW5030B

Field ID:	MW-10	Lab Samp ID:	10382
Descr/Location:	MW-10	Rec'd Date:	03/29/2011
Sample Date:	03/29/2011	Prep Date:	04/01/2011
Sample Time:	0935	Analysis Date:	04/01/2011
Matrix:	Water	QC Batch:	8260-0401
Basis:	Not Filtered	Notes:	

Analyte	Det Limit	Rep Limit		Note	Result	Units	Pvc Dil
Methyl-tert-butyl ether (MTBE)	5.0	5.0	PQL		5.1	UG/L	1
Ethyl tert-butyl ether (ETBE)	5.0	5.0	PQL		ND	UG/L	1
tert-Amyl methyl ether (TAME)	5.0	5.0	PQL		ND	UG/L	1
Di-isopropyl ether (DIPE)	5.0	5.0	PQL		ND	UG/L	1
tert-Butyl alcohol (TBA)	10.	10.	PQL		ND	UG/L	1

SURROGATE AND INTERNAL STANDARD RECOVERIES:

4-Bromofluorobenzene	70-130	SBSA	89%	1
Toluene-d8	70-130	SBSA	95%	1
Dibromofluoromethane	70-130	SBSA	103%	1

Approved by: Lynn Costen Date: 4/5/11

Shasta Analytical Laboratory, Inc., Redding, CA

Lab Report No.: PAYLESS GAS Date: 04/05/2011

Project Name:	PAYLESS GAS	Analysis:	Volatile Organic Compounds by GC/MS Fuel
Project No:	507010	Method:	8260FA
		Prep Meth:	SW5030B

Field ID:	MW-1R	Lab Samp ID:	10378
Descr/Location:	MW-1R	Rec'd Date:	03/29/2011
Sample Date:	03/28/2011	Prep Date:	04/01/2011
Sample Time:	1735	Analysis Date:	04/01/2011
Matrix:	Water	QC Batch:	8260-0401
Basis:	Not Filtered	Notes:	

Analyte	Det Limit	Rep Limit		Note	Result	Units	Pvc Dil
Methyl-tert-butyl ether (MTBE)	5.0	5.0	PQL		ND	UG/L	1
Ethyl tert-butyl ether (ETBE)	5.0	5.0	PQL		ND	UG/L	1
tert-Amyl methyl ether (TAME)	5.0	5.0	PQL		ND	UG/L	1
Di-isopropyl ether (DIPE)	5.0	5.0	PQL		ND	UG/L	1
tert-Butyl alcohol (TBA)	10.	10.	PQL		ND	UG/L	1

SURROGATE AND INTERNAL STANDARD RECOVERIES:

4-Bromofluorobenzene	70-130	SBSA	96%	1
Toluene-d8	70-130	SBSA	96%	1
Dibromofluoromethane	70-130	SBSA	102%	1

Approved by: Lynn Costen Date: 4/5/11

Shasta Analytical Laboratory, Inc., Redding, CA

Lab Report No.: PAYLESS GAS Date: 04/05/2011

Project Name:	PAYLESS GAS	Analysis:	Volatile Organic Compounds by GC/MS Fuel
Project No:	507010	Method:	8260FA
		Prep Meth:	SW5030B

Field ID:	MW-2D	Lab Samp ID:	10380
Descr/Location:	MW-2D	Rec'd Date:	03/29/2011
Sample Date:	03/29/2011	Prep Date:	04/01/2011
Sample Time:	1325	Analysis Date:	04/01/2011
Matrix:	Water	QC Batch:	8260-0401
Basis:	Not Filtered	Notes:	

Analyte	Det Limit	Rep Limit		Note	Result	Units	Pvc Dil
Methyl-tert-butyl ether (MTBE)	5.0	25.	PQL		1000.	UG/L	5
Ethyl tert-butyl ether (ETBE)	5.0	25.	PQL		ND	UG/L	5
tert-Amyl methyl ether (TAME)	5.0	25.	PQL		ND	UG/L	5
Di-isopropyl ether (DIPE)	5.0	25.	PQL		ND	UG/L	5
tert-Butyl alcohol (TBA)	10.	50.	PQL		ND	UG/L	5

SURROGATE AND INTERNAL STANDARD RECOVERIES:

4-Bromofluorobenzene	70-130	SBSA	93%	5
Toluene-d8	70-130	SBSA	104%	5
Dibromofluoromethane	70-130	SBSA	100%	5

Approved by: Lynn Coates Date: 4/5/11

Shasta Analytical Laboratory, Inc., Redding, CA

Project Name:	PAYLESS GAS	Analysis:	Volatile Organic Compounds by GC/MS Fuel
Project No:	507010	Method:	8260FA
		Prep Meth:	SW5030B

Field ID:	MW-2R	Lab Samp ID:	10379
Descr/Location:	MW-2R	Rec'd Date:	03/29/2011
Sample Date:	03/29/2011	Prep Date:	04/01/2011
Sample Time:	1205	Analysis Date:	04/01/2011
Matrix:	Water	QC Batch:	8260-0401
Basis:	Not Filtered	Notes:	

Analyte	Det Limit	Rep Limit		Note	Result	Units	Pvc Dil
Methyl-tert-butyl ether (MTBE)	5.0	5.0	PQL		ND	UG/L	1
Ethyl tert-butyl ether (ETBE)	5.0	5.0	PQL		ND	UG/L	1
tert-Amyl methyl ether (TAME)	5.0	5.0	PQL		ND	UG/L	1
Di-isopropyl ether (DIPE)	5.0	5.0	PQL		ND	UG/L	1
tert-Butyl alcohol (TBA)	10.	10.	PQL		ND	UG/L	1
SURROGATE AND INTERNAL STANDARD RECOVERIES:							
4-Bromofluorobenzene		70-130	SBSA		89%		1
Toluene-d8		70-130	SBSA		97%		1
Dibromofluoromethane		70-130	SBSA		96%		1

Approved by: Lynn Coster Date: 4/5/11

Shasta Analytical Laboratory, Inc., Redding, CA

Lab Report No.: PAYLESS GAS Date: 04/05/2011

Project Name:	PAYLESS GAS	Analysis:	Volatile Organic Compounds by GC/MS Fuel
Project No:	507010	Method:	8260FA
		Prep Meth:	SW5030B

Field ID:	MW-3R	Lab Samp ID:	10375
Descr/Location:	MW-3R	Rec'd Date:	03/29/2011
Sample Date:	03/28/2011	Prep Date:	04/01/2011
Sample Time:	1505	Analysis Date:	04/01/2011
Matrix:	Water	QC Batch:	8260-0401
Basis:	Not Filtered	Notes:	

Analyte	Det Limit	Rep Limit		Note	Result	Units	Pvc Dil
Methyl-tert-butyl ether (MTBE)	5.0	5.0	PQL		ND	UG/L	1
Ethyl tert-butyl ether (ETBE)	5.0	5.0	PQL		ND	UG/L	1
tert-Amyl methyl ether (TAME)	5.0	5.0	PQL		ND	UG/L	1
Di-isopropyl ether (DIPE)	5.0	5.0	PQL		ND	UG/L	1
tert-Butyl alcohol (TBA)	10.	10.	PQL		ND	UG/L	1
SURROGATE AND INTERNAL STANDARD RECOVERIES:							
4-Bromofluorobenzene		70-130	SBSA		90%		1
Toluene-d8		70-130	SBSA		100%		1
Dibromofluoromethane		70-130	SBSA		101%		1

Approved by: Lynn Costen Date: 4/5/11

Project Name:	PAYLESS GAS	Analysis:	Volatile Organic Compounds by GC/MS Fuel
Project No:	507010	Method:	8260FA
		Prep Meth:	SW5030B

Field ID:	MW-4	Lab Samp ID:	10374
Descr/Location:	MW-4	Rec'd Date:	03/29/2011
Sample Date:	03/28/2011	Prep Date:	04/01/2011
Sample Time:	1415	Analysis Date:	04/01/2011
Matrix:	Water	QC Batch:	8260-0401
Basis:	Not Filtered	Notes:	

Analyte	Det Limit	Rep Limit		Note	Result	Units	Pvc Dil
Methyl-tert-butyl ether (MTBE)	5.0	5.0	PQL		ND	UG/L	1
Ethyl tert-butyl ether (ETBE)	5.0	5.0	PQL		ND	UG/L	1
tert-Amyl methyl ether (TAME)	5.0	5.0	PQL		ND	UG/L	1
Di-isopropyl ether (DIPE)	5.0	5.0	PQL		ND	UG/L	1
tert-Butyl alcohol (TBA)	10.	10.	PQL		ND	UG/L	1
SURROGATE AND INTERNAL STANDARD RECOVERIES:							
4-Bromofluorobenzene		70-130	SBSA		88%		1
Toluene-d8		70-130	SBSA		95%		1
Dibromofluoromethane		70-130	SBSA		98%		1

Approved by: Lynn Costin Date: 4/5/11

Project Name:	PAYLESS GAS	Analysis:	Volatile Organic Compounds by GC/MS Fuel
Project No:	507010	Method:	8260FA
		Prep Meth:	SW5030B

Field ID:	MW-5	Lab Samp ID:	10377
Descr/Location:	MW-5	Rec'd Date:	03/29/2011
Sample Date:	03/28/2011	Prep Date:	04/01/2011
Sample Time:	1650	Analysis Date:	04/01/2011
Matrix:	Water	QC Batch:	8260-0401
Basis:	Not Filtered	Notes:	

Analyte	Det Limit	Rep Limit		Note	Result	Units	Pvc Dil
Methyl-tert-butyl ether (MTBE)	5.0	5.0	PQL		9.2	UG/L	1
Ethyl tert-butyl ether (ETBE)	5.0	5.0	PQL		ND	UG/L	1
tert-Amyl methyl ether (TAME)	5.0	5.0	PQL		ND	UG/L	1
Di-isopropyl ether (DIPE)	5.0	5.0	PQL		ND	UG/L	1
tert-Butyl alcohol (TBA)	10.	10.	PQL		ND	UG/L	1
SURROGATE AND INTERNAL STANDARD RECOVERIES:							
4-Bromofluorobenzene		70-130	SBSA		92%		1
Toluene-d8		70-130	SBSA		97%		1
Dibromofluoromethane		70-130	SBSA		107%		1

Approved by: Lynn Costen Date: 4/5/11

Project Name:	PAYLESS GAS	Analysis:	Volatile Organic Compounds by GC/MS Fuel
Project No:	507010	Method:	8260FA
		Prep Meth:	SW5030B

Field ID:	MW-6	Lab Samp ID:	10376
Descr/Location:	MW-6	Rec'd Date:	03/29/2011
Sample Date:	03/28/2011	Prep Date:	04/01/2011
Sample Time:	1605	Analysis Date:	04/01/2011
Matrix:	Water	QC Batch:	8260-0401
Basis:	Not Filtered	Notes:	

Analyte	Det Limit	Rep Limit		Note	Result	Units	Pvc Dil
Methyl-tert-butyl ether (MTBE)	5.0	5.0	PQL		ND	UG/L	1
Ethyl tert-butyl ether (ETBE)	5.0	5.0	PQL		ND	UG/L	1
tert-Amyl methyl ether (TAME)	5.0	5.0	PQL		ND	UG/L	1
Di-isopropyl ether (DIPE)	5.0	5.0	PQL		ND	UG/L	1
tert-Butyl alcohol (TBA)	10.	10.	PQL		ND	UG/L	1
SURROGATE AND INTERNAL STANDARD RECOVERIES:							
4-Bromofluorobenzene		70-130	SBSA		93%		1
Toluene-d8		70-130	SBSA		101%		1
Dibromofluoromethane		70-130	SBSA		100%		1

Approved by: Lynn Coster Date: 4/5/11

Project Name:	PAYLESS GAS	Analysis:	Volatile Organic Compounds by GC/MS Fuel
Project No:	507010	Method:	8260FA
		Prep Meth:	SW5030B

Field ID:	MW-7	Lab Samp ID:	10372
Descr/Location:	MW-7	Rec'd Date:	03/29/2011
Sample Date:	03/28/2011	Prep Date:	04/01/2011
Sample Time:	1230	Analysis Date:	04/01/2011
Matrix:	Water	QC Batch:	8260-0401
Basis:	Not Filtered	Notes:	

Analyte	Det Limit	Rep Limit		Note	Result	Units	Pvc Dil
Methyl-tert-butyl ether (MTBE)	5.0	5.0	PQL		ND	UG/L	1
Ethyl tert-butyl ether (ETBE)	5.0	5.0	PQL		ND	UG/L	1
tert-Amyl methyl ether (TAME)	5.0	5.0	PQL		ND	UG/L	1
Di-isopropyl ether (DIPE)	5.0	5.0	PQL		ND	UG/L	1
tert-Butyl alcohol (TBA)	10.	10.	PQL		ND	UG/L	1
SURROGATE AND INTERNAL STANDARD RECOVERIES:							
4-Bromofluorobenzene		70-130	SBSA		92%		1
Toluene-d8		70-130	SBSA		101%		1
Dibromofluoromethane		70-130	SBSA		101%		1

Approved by: Lynn Costen Date: 4/5/11

Project Name:	PAYLESS GAS	Analysis:	Volatile Organic Compounds by GC/MS Fuel
Project No:	507010	Method:	8260FA
		Prep Meth:	SW5030B

Field ID:	MW-8	Lab Samp ID:	10373
Descr/Location:	MW-8	Rec'd Date:	03/29/2011
Sample Date:	03/28/2011	Prep Date:	04/01/2011
Sample Time:	1320	Analysis Date:	04/01/2011
Matrix:	Water	QC Batch:	8260-0401
Basis:	Not Filtered	Notes:	

Analyte	Det Limit	Rep Limit		Note	Result	Units	Pvc Dil
Methyl-tert-butyl ether (MTBE)	5.0	5.0	PQL		ND	UG/L	1
Ethyl tert-butyl ether (ETBE)	5.0	5.0	PQL		ND	UG/L	1
tert-Amyl methyl ether (TAME)	5.0	5.0	PQL		ND	UG/L	1
Di-isopropyl ether (DIPE)	5.0	5.0	PQL		ND	UG/L	1
tert-Butyl alcohol (TBA)	10.	10.	PQL		ND	UG/L	1

SURROGATE AND INTERNAL STANDARD RECOVERIES:

4-Bromofluorobenzene	70-130	SBSA	92%	1
Toluene-d8	70-130	SBSA	100%	1
Dibromofluoromethane	70-130	SBSA	105%	1

Approved by: Lynn Coster Date: 4/5/11

Project Name:	PAYLESS GAS	Analysis:	Volatile Organic Compounds by GC/MS Fuel
Project No:	507010	Method:	8260FA
		Prep Meth:	SW5030B

Field ID:	MW-9	Lab Samp ID:	10381
Descr/Location:	MW-9	Rec'd Date:	03/29/2011
Sample Date:	03/29/2011	Prep Date:	04/01/2011
Sample Time:	1040	Analysis Date:	04/01/2011
Matrix:	Water	QC Batch:	8260-0401
Basis:	Not Filtered	Notes:	

Analyte	Det Limit	Rep Limit		Note	Result	Units	Pvc Dil
Methyl-tert-butyl ether (MTBE)	5.0	5.0	PQL		ND	UG/L	1
Ethyl tert-butyl ether (ETBE)	5.0	5.0	PQL		ND	UG/L	1
tert-Amyl methyl ether (TAME)	5.0	5.0	PQL		ND	UG/L	1
Di-isopropyl ether (DIPE)	5.0	5.0	PQL		ND	UG/L	1
tert-Butyl alcohol (TBA)	10.	10.	PQL		ND	UG/L	1

SURROGATE AND INTERNAL STANDARD RECOVERIES:

4-Bromofluorobenzene	70-130	SBSA	92%	1
Toluene-d8	70-130	SBSA	101%	1
Dibromofluoromethane	70-130	SBSA	102%	1

Approved by: Lynn Coster Date: 4/5/11

Project Name:	PAYLESS GAS	Analysis:	Volatiles by GC/Gasoline Range Organics
Project No:	507010	Method:	SW8021F
		Prep Meth:	SW5030B

Field ID:	MW-10	Lab Samp ID:	10382
Descr/Location:	MW-10	Rec'd Date:	03/29/2011
Sample Date:	03/29/2011	Prep Date:	03/30/2011
Sample Time:	0935	Analysis Date:	03/30/2011
Matrix:	Water	QC Batch:	8021-0330
Basis:	Not Filtered	Notes:	

Analyte	Det Limit	Rep Limit		Note	Result	Units	Pvc Dil
Benzene	0.5	0.5	PQL		ND	UG/L	1
Toluene	0.5	0.5	PQL		ND	UG/L	1
Ethylbenzene	0.5	0.5	PQL		ND	UG/L	1
Xylenes	1.0	1.0	PQL		ND	UG/L	1
Total Petroleum Hydrocarbons (TPH)	0.05	0.05	PQL		0.44	MG/L	1
SURROGATE AND INTERNAL STANDARD RECOVERIES:							
Trifluorotoluene		70-130	SBSA		104%		1

Approved by: Lynn Coster Date: 4/5/11

Project Name:	PAYLESS GAS	Analysis:	Volatiles by GC/Gasoline Range Organics
Project No:	507010	Method:	SW8021F
		Prep Meth:	SW5030B

Field ID:	MW-1R	Lab Samp ID:	10378
Descr/Location:	MW-1R	Rec'd Date:	03/29/2011
Sample Date:	03/28/2011	Prep Date:	03/30/2011
Sample Time:	1735	Analysis Date:	03/30/2011
Matrix:	Water	QC Batch:	8021-0330
Basis:	Not Filtered	Notes:	

Analyte	Det Limit	Rep Limit		Note	Result	Units	Pvc Dil
Benzene	0.5	12.5	PQL		ND	UG/L	25
Toluene	0.5	12.5	PQL		ND	UG/L	25
Ethylbenzene	0.5	12.5	PQL		18.	UG/L	25
Xylenes	1.0	25.	PQL		ND	UG/L	25
Total Petroleum Hydrocarbons (TPH)	0.05	1.25	PQL		3.5	MG/L	25
SURROGATE AND INTERNAL STANDARD RECOVERIES:							
Trifluorotoluene		70-130	SBSA		87%		25

Approved by: Lynn Coster Date: 4/5/11

Project Name:	PAYLESS GAS	Analysis:	Volatiles by GC/Gasoline Range Organics
Project No:	507010	Method:	SW8021F
		Prep Meth:	SW5030B

Field ID:	MW-2D	Lab Samp ID:	10380
Descr/Location:	MW-2D	Rec'd Date:	03/29/2011
Sample Date:	03/29/2011	Prep Date:	03/30/2011
Sample Time:	1325	Analysis Date:	03/30/2011
Matrix:	Water	QC Batch:	8021-0330
Basis:	Not Filtered	Notes:	

Analyte	Det Limit	Rep Limit		Note	Result	Units	Pvc Dil
Benzene	0.5	2.5	PQL		ND	UG/L	5
Toluene	0.5	2.5	PQL		ND	UG/L	5
Ethylbenzene	0.5	2.5	PQL		ND	UG/L	5
Xylenes	1.0	5.0	PQL		ND	UG/L	5
Total Petroleum Hydrocarbons (TPH)	0.05	0.25	PQL		1.4	MG/L	5
SURROGATE AND INTERNAL STANDARD RECOVERIES:							
Trifluorotoluene		70-130	SBSA		91%		5

Approved by: Lynn Coster Date: 4/5/11

Project Name:	PAYLESS GAS	Analysis:	Volatiles by GC/Gasoline Range Organics
Project No:	507010	Method:	SW8021F
		Prep Meth:	SW5030B

Field ID:	MW-2R	Lab Samp ID:	10379
Descr/Location:	MW-2R	Rec'd Date:	03/29/2011
Sample Date:	03/29/2011	Prep Date:	03/30/2011
Sample Time:	1205	Analysis Date:	03/30/2011
Matrix:	Water	QC Batch:	8021-0330
Basis:	Not Filtered	Notes:	

Analyte	Det Limit	Rep Limit		Note	Result	Units	Pvc Dil
Benzene	0.5	125.	PQL		ND	UG/L	250
Toluene	0.5	125.	PQL		760.	UG/L	250
Ethylbenzene	0.5	125.	PQL		1800.	UG/L	250
Xylenes	1.0	250.	PQL		21000.	UG/L	250
Total Petroleum Hydrocarbons (TPH)	0.05	12.5	PQL		63.	MG/L	250
SURROGATE AND INTERNAL STANDARD RECOVERIES:							
Trifluorotoluene		70-130	SBSA		83%		250

Approved by: Lynn Coster Date: 4/5/11

Project Name:	PAYLESS GAS	Analysis:	Volatiles by GC/Gasoline Range Organics
Project No:	507010	Method:	SW8021F
		Prep Meth:	SW5030B

Field ID:	MW-3R	Lab Samp ID:	10375
Descr/Location:	MW-3R	Rec'd Date:	03/29/2011
Sample Date:	03/28/2011	Prep Date:	03/30/2011
Sample Time:	1505	Analysis Date:	03/30/2011
Matrix:	Water	QC Batch:	8021-0330
Basis:	Not Filtered	Notes:	

Analyte	Det Limit	Rep Limit		Note	Result	Units	Pvc Dil
Benzene	0.5	0.5	PQL		ND	UG/L	1
Toluene	0.5	0.5	PQL		ND	UG/L	1
Ethylbenzene	0.5	0.5	PQL		ND	UG/L	1
Xylenes	1.0	1.0	PQL		ND	UG/L	1
Total Petroleum Hydrocarbons (TPH)	0.05	0.05	PQL		ND	MG/L	1
SURROGATE AND INTERNAL STANDARD RECOVERIES:							
Trifluorotoluene		70-130	SBSA		87%		1

Approved by: Lynn Coster Date: 4/5/11

Project Name:	PAYLESS GAS	Analysis:	Volatiles by GC/Gasoline Range Organics
Project No:	507010	Method:	SW8021F
		Prep Meth:	SW5030B

Field ID:	MW-4	Lab Samp ID:	10374
Descr/Location:	MW-4	Rec'd Date:	03/29/2011
Sample Date:	03/28/2011	Prep Date:	03/30/2011
Sample Time:	1415	Analysis Date:	03/30/2011
Matrix:	Water	QC Batch:	8021-0330
Basis:	Not Filtered	Notes:	

Analyte	Det Limit	Rep Limit		Note	Result	Units	Pvc Dil
Benzene	0.5	0.5	PQL		ND	UG/L	1
Toluene	0.5	0.5	PQL		ND	UG/L	1
Ethylbenzene	0.5	0.5	PQL		ND	UG/L	1
Xylenes	1.0	1.0	PQL		ND	UG/L	1
Total Petroleum Hydrocarbons (TPH)	0.05	0.05	PQL		ND	MG/L	1
SURROGATE AND INTERNAL STANDARD RECOVERIES:							
Trifluorotoluene		70-130	SBSA		87%		1

Approved by: Lynn Coster Date: 4/5/11

Project Name:	PAYLESS GAS	Analysis:	Volatiles by GC/Gasoline Range Organics
Project No:	507010	Method:	SW8021F
		Prep Meth:	SW5030B

Field ID:	MW-5	Lab Samp ID:	10377
Descr/Location:	MW-5	Rec'd Date:	03/29/2011
Sample Date:	03/28/2011	Prep Date:	03/30/2011
Sample Time:	1650	Analysis Date:	03/30/2011
Matrix:	Water	QC Batch:	8021-0330
Basis:	Not Filtered	Notes:	

Analyte	Det Limit	Rep Limit		Note	Result	Units	Pvc Dil
Benzene	0.5	0.5	PQL		ND	UG/L	1
Toluene	0.5	0.5	PQL		ND	UG/L	1
Ethylbenzene	0.5	0.5	PQL		1.2	UG/L	1
Xylenes	1.0	1.0	PQL		ND	UG/L	1
Total Petroleum Hydrocarbons (TPH)	0.05	0.05	PQL		0.35	MG/L	1
SURROGATE AND INTERNAL STANDARD RECOVERIES:							
Trifluorotoluene		70-130	SBSA		117%		1

Approved by: Lynn Coster Date: 4/5/11

Project Name:	PAYLESS GAS	Analysis:	Volatiles by GC/Gasoline Range Organics
Project No:	507010	Method:	SW8021F
		Prep Meth:	SW5030B

Field ID:	MW-6	Lab Samp ID:	10376
Descr/Location:	MW-6	Rec'd Date:	03/29/2011
Sample Date:	03/28/2011	Prep Date:	03/30/2011
Sample Time:	1605	Analysis Date:	03/30/2011
Matrix:	Water	QC Batch:	8021-0330
Basis:	Not Filtered	Notes:	

Analyte	Det Limit	Rep Limit		Note	Result	Units	Pvc Dil
Benzene	0.5	0.5	PQL		ND	UG/L	1
Toluene	0.5	0.5	PQL		ND	UG/L	1
Ethylbenzene	0.5	0.5	PQL		ND	UG/L	1
Xylenes	1.0	1.0	PQL		ND	UG/L	1
Total Petroleum Hydrocarbons (TPH)	0.05	0.05	PQL		ND	MG/L	1
SURROGATE AND INTERNAL STANDARD RECOVERIES:							
Trifluorotoluene		70-130	SBSA		88%		1

Approved by: Lynn Coster Date: 4/5/11

Project Name:	PAYLESS GAS	Analysis:	Volatiles by GC/Gasoline Range Organics
Project No:	507010	Method:	SW8021F
		Prep Meth:	SW5030B

Field ID:	MW-7	Lab Samp ID:	10372
Descr/Location:	MW-7	Rec'd Date:	03/29/2011
Sample Date:	03/28/2011	Prep Date:	03/30/2011
Sample Time:	1230	Analysis Date:	03/30/2011
Matrix:	Water	QC Batch:	8021-0330
Basis:	Not Filtered	Notes:	

Analyte	Det Limit	Rep Limit		Note	Result	Units	Pvc Dil
Benzene	0.5	0.5	PQL		ND	UG/L	1
Toluene	0.5	0.5	PQL		ND	UG/L	1
Ethylbenzene	0.5	0.5	PQL		ND	UG/L	1
Xylenes	1.0	1.0	PQL		ND	UG/L	1
Total Petroleum Hydrocarbons (TPH)	0.05	0.05	PQL		ND	MG/L	1
SURROGATE AND INTERNAL STANDARD RECOVERIES:							
Trifluorotoluene		70-130	SBSA		87%		1

Approved by: Lynn Coster Date: 4/5/11

Project Name:	PAYLESS GAS	Analysis:	Volatiles by GC/Gasoline Range Organics
Project No:	507010	Method:	SW8021F
		Prep Meth:	SW5030B

Field ID:	MW-8	Lab Samp ID:	10373
Descr/Location:	MW-8	Rec'd Date:	03/29/2011
Sample Date:	03/28/2011	Prep Date:	03/30/2011
Sample Time:	1320	Analysis Date:	03/30/2011
Matrix:	Water	QC Batch:	8021-0330
Basis:	Not Filtered	Notes:	.

Analyte	Det Limit	Rep Limit		Note	Result	Units	Pvc Dil
Benzene	0.5	0.5	PQL		ND	UG/L	1
Toluene	0.5	0.5	PQL		ND	UG/L	1
Ethylbenzene	0.5	0.5	PQL		ND	UG/L	1
Xylenes	1.0	1.0	PQL		ND	UG/L	1
Total Petroleum Hydrocarbons (TPH)	0.05	0.05	PQL		ND	MG/L	1
SURROGATE AND INTERNAL STANDARD RECOVERIES:							
Trifluorotoluene		70-130	SBSA		88%		1

Approved by: Glynn Coster Date: 4/5/11

Project Name:	PAYLESS GAS	Analysis:	Volatiles by GC/Gasoline Range Organics
Project No:	507010	Method:	SW8021F
		Prep Meth:	SW5030B

Field ID:	MW-9	Lab Samp ID:	10381
Descr/Location:	MW-9	Rec'd Date:	03/29/2011
Sample Date:	03/29/2011	Prep Date:	03/30/2011
Sample Time:	1040	Analysis Date:	03/30/2011
Matrix:	Water	QC Batch:	8021-0330
Basis:	Not Filtered	Notes:	

Analyte	Det Limit	Rep Limit		Note	Result	Units	Pvc Dil
Benzene	0.5	0.5	PQL		ND	UG/L	1
Toluene	0.5	0.5	PQL		ND	UG/L	1
Ethylbenzene	0.5	0.5	PQL		ND	UG/L	1
Xylenes	1.0	1.0	PQL		ND	UG/L	1
Total Petroleum Hydrocarbons (TPH)	0.05	0.05	PQL		ND	MG/L	1
SURROGATE AND INTERNAL STANDARD RECOVERIES:							
Trifluorotoluene		70-130	SBSA		89%		1

Approved by: Lynn Coster Date: 4/5/11

QA/QC Report
Method Blank Summary

Shasta Analytical Laboratory, Inc., Redding, CA

Lab Report No.: PAYLESS GAS Date: 04/05/2011

QC Batch:	8021-0330	Analysis:	Volatiles by GC/Gasoline Range Organics
Matrix:	Water	Method:	SW8021F
Lab Samp ID:	MB-0330	Prep Meth:	SW5030B
Analysis Date:	03/30/2011	Prep Date:	03/30/2011
Basis:	Not Filtered	Notes:	

Analyte	Det Limit	Rep Limit		Note	Result	Units	Pvc Dil
Benzene	0.5	0.5	PQL		ND	UG/L	1
Toluene	0.5	0.5	PQL		ND	UG/L	1
Ethylbenzene	0.5	0.5	PQL		ND	UG/L	1
Xylenes	1.0	1.0	PQL		ND	UG/L	1
Total Petroleum Hydrocarbons (TPH)	0.05	0.05	PQL		ND	MG/L	1
SURROGATE AND INTERNAL STANDARD RECOVERIES:							
Trifluorotoluene		70-130	SBSA		90%		1

QA/QC Report
Matrix Spike/Duplicate Matrix Spike Summary

Shasta Analytical Laboratory, Inc., Redding, CA

Lab Report No.: PAYLESS GAS Date: 04/05/2011

QC Batch: 8021-0330
Matrix: Water
Lab Samp ID: 10372
Basis: Not Filtered

Project Name: PAYLESS GAS
Project No.: 507010
Field ID: MW-7
Lab Ref ID: 10372

Analyte	Analysis Method	Spike Level MS	Spike Level DMS	Sample Result	Spike Result MS	Spike Result DMS	Units	% Recoveries MS	% Recoveries DMS	% Recoveries RPD	Acceptance Criteria % Rec		Acceptance Criteria RPD
Benzene	SW8021F	10.0	10.0	ND	8.9	8.5	UG/L	89.0	85.0	4.6	130-70	LSA	30LSP
Ethylbenzene	SW8021F	10.0	10.0	ND	9.8	9.3	UG/L	98.0	93.0	5.2	130-70	LSA	30LSP
Toluene	SW8021F	10.0	10.0	ND	9.3	8.8	UG/L	93.0	88.0	5.5	130-70	LSA	30LSP
Total Petroleum Hydrocarbons (TPH)	SW8021F	0.142	0.142	ND	0.163	0.159	MG/L	115	112	2.6	130-70	LSA	30LSP
Trifluorotoluene	SW8021F	100.	100.	87.	95.	95.	PERCENT	95.0	95.0	0.00	130-70	SBSA	NA

QA/QC Report
Blank Spike/Duplicate Blank Spike Summary

Shasta Analytical Laboratory, Inc., Redding, CA

Lab Report No.: PAYLESS GAS Date: 04/05/2011

QC Batch: 8021-0330
Matrix: Water
Lab Samp ID: LCS-0330

Analyte	Analysis Method	Spike Level LCS	Spike Level LCD	Spike Result LCS	Spike Result LCD	Units	% Recoveries LCS	% Recoveries LCD	% Recoveries RPD	Acceptance Criteria %Rec		Acceptance Criteria RPD
Benzene	SW8021F	10.0	NA	8.3	NA	UG/L	83.0	NA	NA	130-70	LSA	NA
Ethylbenzene	SW8021F	10.0	NA	8.5	NA	UG/L	85.0	NA	NA	130-70	LSA	NA
Toluene	SW8021F	10.0	NA	8.2	NA	UG/L	82.0	NA	NA	130-70	LSA	NA
Total Petroleum Hydrocarbons (TPH) (C5-C12)	SW8021F	0.142	NA	0.137	NA	MG/L	96.5	NA	NA	130-70	LSA	NA
Trifluorotoluene	SW8021F	100.	NA	92.	NA	PERCENT	92.0	NA	NA	130-70	SBSA	NA

QA/QC Report
Method Blank Summary

Shasta Analytical Laboratory, Inc., Redding, CA

Lab Report No.: PAYLESS GAS Date: 04/05/2011

QC Batch:	8260-0401	Analysis:	Volatile Organic Compounds by GC/MS Fuel
Matrix:	Water	Method:	8260FA
Lab Samp ID:	MB-0401	Prep Meth:	SW5030B
Analysis Date:	04/01/2011	Prep Date:	04/01/2011
Basis:	Not Filtered	Notes:	

Analyte	Det Limit	Rep Limit		Note	Result	Units	Pvc Dil
Methyl-tert-butyl ether (MTBE)	5.0	5.0	PQL		ND	UG/L	1
Ethyl tert-butyl ether (ETBE)	5.0	5.0	PQL		ND	UG/L	1
tert-Amyl methyl ether (TAME)	5.0	5.0	PQL		ND	UG/L	1
Di-isopropyl ether (DIPE)	5.0	5.0	PQL		ND	UG/L	1
tert-Butyl alcohol (TBA)	10.	10.	PQL		ND	UG/L	1
SURROGATE AND INTERNAL STANDARD RECOVERIES:							
4-Bromofluorobenzene		70-130	SBSA		89%		1
Toluene-d8		70-130	SBSA		100%		1
Dibromofluoromethane		70-130	SBSA		99%		1

QA/QC Report
Matrix Spike/Duplicate Matrix Spike Summary

Shasta Analytical Laboratory, Inc., Redding, CA

Lab Report No.: PAYLESS GAS Date: 04/05/2011

QC Batch: 8260-0401
Matrix: Water
Lab Samp ID: 10373
Basis: Not Filtered

Project Name: PAYLESS GAS
Project No.: 507010
Field ID: MW-8
Lab Ref ID: 10373

Analyte	Analysis Method	Spike Level MS	Spike Level DMS	Sample Result	Spike Result MS	Spike Result DMS	Units	% Recoveries MS	% Recoveries DMS	% Recoveries RPD	Acceptance Criteria % Rec		Acceptance Criteria RPD
Di-isopropyl ether (DIPE)	8260FA	100.	100.	ND	88.	101.	UG/L	88.0	101	14	130-70	LSA	25LSP
Ethyl tert-butyl ether (ETBE)	8260FA	100.	100.	ND	91.	94.	UG/L	91.0	94.0	3.2	130-70	LSA	25LSP
Methyl-tert-butyl ether (MTBE)	8260FA	100.	100.	ND	83.	84.	UG/L	83.0	84.0	1.2	130-70	LSA	25LSP
tert-Amyl methyl ether (TAME)	8260FA	100.	100.	ND	91.	94.	UG/L	91.0	94.0	3.2	130-70	LSA	25LSP
tert-Butyl alcohol (TBA)	8260FA	500.	500.	ND	441.	468.	UG/L	88.2	93.6	5.9	130-70	LSA	25LSP
4-Bromofluorobenzene	8260FA	100.	100.	92.	91.	95.	PERCENT	91.0	95.0	4.3	130-70	SBSA	NA
Dibromofluoromethane	8260FA	100.	100.	105.	102.	101.	PERCENT	102	101	0.99	130-70	SBSA	NA
Toluene-d8	8260FA	100.	100.	100.	97.	96.	PERCENT	97.0	96.0	1.0	130-70	SBSA	NA

QA/QC Report
Blank Spike/Duplicate Blank Spike Summary

Shasta Analytical Laboratory, Inc., Redding, CA

Lab Report No.: PAYLESS GAS Date: 04/05/2011

QC Batch: 8260-0401
Matrix: Water
Lab Samp ID: LCS-0401

Analyte	Analysis Method	Spike Level LCS	Spike Level LCD	Spike Result LCS	Spike Result LCD	Units	% Recoveries LCS	% Recoveries LCD	% Recoveries RPD	Acceptance Criteria %Rec		Acceptance Criteria RPD
Di-isopropyl ether (DIPE)	8260FA	100.	NA	99.	NA	UG/L	99.0	NA	NA	130-70	LSA	NA
Ethyl tert-butyl ether (ETBE)	8260FA	100.	NA	94.	NA	UG/L	94.0	NA	NA	130-70	LSA	NA
Methyl-tert-butyl ether (MTBE)	8260FA	100.	NA	84.	NA	UG/L	84.0	NA	NA	130-70	LSA	NA
tert-Amyl methyl ether (TAME)	8260FA	100.	NA	90.	NA	UG/L	90.0	NA	NA	130-70	LSA	NA
tert-Butyl alcohol (TBA)	8260FA	500.	NA	425.	NA	UG/L	85.0	NA	NA	130-70	LSA	NA
4-Bromofluorobenzene	8260FA	100.	NA	93.	NA	PERCENT	93.0	NA	NA	130-70	SBSA	NA
Dibromofluoromethane	8260FA	100.	NA	97.	NA	PERCENT	97.0	NA	NA	130-70	SBSA	NA
Toluene-d8	8260FA	100.	NA	93.	NA	PERCENT	93.0	NA	NA	130-70	SBSA	NA

Code List

Code	Name
!	Out of control limits
1C	First Column Result - The Value Obtained from the First Column
2C	Second Column Result - The Value Obtained from the Second Column
<	Less Than
=	Equal To
>	Greater Than
AAC	American Analytics, Chatsworth, CA
AACS	Aspen Analytical, Colorado Springs, CO
ABCP	ABC Environmental Laboratories, Pico Rivera, CA
ACBS	Abalone Coast Bacteriology, San Luis Obispo, CA
ACET	ACE Laboratories, Inc., Thousand Oaks, CA
ACTD	Accutest Mid-Atlantic, Dayton, NJ
ACTH	Accutest Gulfcoast, Houston, TX
ACTM	Accutest New England, Marlborough, MA
ACTO	Accutest Southeast, Orlando, FL
ACZ	ACZ Laboratories, Steamboat, CO
AEH	AEH
AEHA	Army Environmental Hygiene Agency (AEHA), APG, MD
AEIW	AN/EN Inc., Watsonville, CA
AELF	American Environmental Laboratories, Pensacola, FL
AENP	American Environmental Network, Portland, OR
AETB	American Environmental Testing Laboratory, Inc., Burbank, CA
ALAB	Associated Laboratories, Orange, CA
ALIC	AccuLabs, Inc., City of Industry, CA
ALID	AccuLabs, Inc., Davis, CA
ALPS	Alpha Analytical, Inc., Sparks, NV
ALPU	Alpha Analytical Laboratories, Ukiah, CA
ALTC	Alta Analytical Lab Incorporated, El Dorado Hills, CA
ALWM	A&L Western Laboratories, Inc., Modesto, CA
AMKR	AMK Environmental Labs, LLC, Riverside, CA
AMSC	AmeriSci Los Angeles, Carson, CA
ANCS	Accutest Northern California, Santa Clara, CA
APEX	APEX Laboratories, Tigard, Oregon
APHC	Applied Physics & Chemistry Laboratory, Chino, CA
APPL	Agriculture & Priority Pollutants Laboratories, Fresno, CA
ARDL	Applied Research and Development Lab, Inc., (ARDL) Mt. Vernon, IL
ARGC	Argon Laboratories, Ceres, CA
ARI	Analytical Resources, Inc., Seattle, WA
ARSW	Aquatic Research, Inc., Seattle, WA
ASC2	Alpha Scientific Corporation, Cerritos, CA
ASCI	Analytical Sciences, Petaluma, CA
ASLL	American Scientific Laboratories, LLC, Los Angeles, CA
ASLS	Applied Sciences Laboratory, San Diego, CA
ATCA	Analytica Alaska, Inc., Anchorage, AK
ATCC	Analytica Environmental Labs, Inc., Thornton, CO
ATCJ	Analytica Alaska, Inc., Juneau, AK
ATEM	Asbestos TEM Laboratories, Berkeley, CA
ATIA	Analytical Technologies, Inc., Anchorage, AK
ATIR	Analytical Technologies, Inc., Renton, WA
ATIS	Analytical Technologies, Inc., San Diego, CA
ATLC	Air Technology Laboratories, City of Industry, CA
ATLL	Advanced Technology Laboratories , Las Vegas, NV
ATLP	Aerotech Laboratory, Inc., Phoenix, AZ

Code	Name
ATLV	Aquatic Testing Laboratories, Ventura, CA
ATOX	Air Toxics LTD, Folsom, CA
AVTS	Advanced Technology Laboratories, Signal Hill, CA
AXYS	Axys Analytical Services, Ltd., Sidney, B.C., Canada
BAAP	Badger Army Ammunition Plant Env. Lab, Baraboo, WI
BASH	Baseline Analytical Services, Huntington Beach, CA
BAW	Bace Analytical, Windsor, CA
BCE	Brown & Caldwell Analytical Lab, Emeryville, CA
BCLB	BC Laboratories, Bakersfield, CA
BD	Blank Spike Duplicate
BDO	Battelle Duxbury Operations, Duxbury, MA
BEBA	Beacon Environmental Services, Inc., Bel Air, MD
BLPH	Block Environmental Services, Pleasant Hill, CA
BLR	Basic Laboratory, Redding, CA
BMLA	Boreochem Mobile Lab & Analytical Services
BMSS	Battelle Marine Sciences Laboratory, Sequim, WA
BRS	Brelje & Race, Santa Rosa, CA
BS	Blank Spike
BSKL	BSK Laboratories, Inc., Fresno, CA
BTGS	Bodycote Testing Group, Santa Fe Springs, CA
BVLB	BioVir Laboratories, Inc., Benicia, CA
CALA	Castle Analytical Laboratory, Atwater, CA
CALN	Caltest Analytical Laboratory, Napa, CA
CALR	Centrum Analytical Laboratories, Inc., Riverside, CA
CALS	Centrum Analytical Laboratories, Inc., Signal Hill, CA
CAPC	CAPCO Analytical Services, Inc., Ventura, CA
CASB	Columbia Analytical Services, Inc., Bothell, WA
CASD	Columbia Analytical Services, Inc., Redding, CA
CASH	Columbia Analytical Services, Inc., Houston, TX
CASK	Columbia Analytical Services, Inc., Kelso, WA
CASL	Columbia Analytical Services, Inc., Canoga Park, CA
CASP	Columbia Analytical Services, Inc., Phoenix, AZ
CASS	Columbia Analytical Services, Inc., Simi Valley , CA
CAWL	California Water Labs, Inc., Modesto, CA
CB	Calibration Blank
CC	Continuing Calibration Verification
CCN	Ceimic Corporation, Narragansett, RI
CDL	Contract Required Detection Limit
CDM	CDM Federal Programs Corporation
CELG	Calscience Envrionmental Laboratories, Inc., Garden Grove, CA
CELL	Creek Environmental Laboratories, Inc., San Luis Obispo, CA
CELR	Chevron Environmental Laboratory, Richmond, CA
CELS	Chemical & Environmental Laboratories, Inc., Santa Fe Springs, CA
CESM	Clean Earth Environmental Testing Lab, Santa Monica, CA
CFWM	City of Fresno Wastewater Managment, Fresno, CA
CGSP	Clayton Group Services, Inc., Pleasanton, CA
CHEM	Chemic Laboratory, San Diego, CA
CHMC	CH2M Hill Analytical Services, Corvallis, OR
CHMM	CH2M Hill Analytical Services, Montgomery, AL
CHRP	ChromaLab, Inc., Pleasanton, CA
CKY	CKY Inc., Torrance, CA
CLPA	Contract Laboratory Program Accuracy Limits for Spiked Samples
CLPCC	CLP Continuing Calibration Acceptance Criteria
CLPIC	CLP Initial Calibration Acceptance Criteria
CLPLR	Contract Laboratory Program Precision for Lab Replicates

Code	Name
CLPP	Contract Laboratory Program Precision Limits for Spiked Samples
CLSR	California Laboratory Services, Rancho Cordova, CA
CLTP	Clayton Environmental Consultants, Inc., Pleasanton, CA
CRLB	Century Refining (CENREF) Labs, Inc., Brighton, CO
CRLS	CRL Environmental Laboratories, Sacramento, CA
CS	Client Sample
CTB	Curtis & Tompkins, Berkeley, CA
CTE	CT&E Environmental Services, Inc., Anchorage, AK
CTEC	CT&E Environmental Services, Inc., Charleston, WV
CTEP	Cal Tech Environmental Laboratories, Inc., Paramount, CA
CTES	Chemtek Environmental Laboratories, Santa Fe Springs, CA
CTLB	CT Laboratories, Baraboo, WI
CTLM	Cooper Testing Laboratory, Mountain View, CA
CWTB	Commonwealth Technologies, Baraboo, WI
DCHM	DataChem Laboratories, Inc., Salt Lake City, UT
DDEE	DDEE (Dave Drilling and Environmental Engineering), Pittsburg, CA
DDL	Method Defined Detection Limit
DELB	Delta Environmental Laboratories, Benicia, CA
DELS	Delta Environmental Laboratories, San Jose, CA
DHLR	DHL Analytical, Round Rock, TX
DLLC	Davy Laboratories, LaCrosse, WI
DLP	Davi Laboratories, Pinole, CA
DMAC	Del Mar Analytical, Colton, CA
DMAI	Del Mar Analytical, Irvine, CA
DMAP	Del Mar Analytical, Phoenix, AZ
DMP	D & M Laboratories, Petaluma, CA
DOWL	Dowl Engineering Alaska Test Labs, Anchorage, AK
DT	Dilution Test
DTAS	D-TEK Analytical Laboratories, Inc., San Diego, CA
DU	Data Unavailable
DU	Data Unavailable
EAL	Elite Analytical, Livermore, CA
EALS	Entech Analytical Labs, Inc., Santa Clara, CA
EALY	Entech Analytical Labs, Inc., Sunnyvale, CA
EASL	Environmental Analytical Services, Inc., Luis Obispo, CA
EBA	EBA
EBMU	East Bay Municipal Utility District Laboratory, Oakland, CA
ECEN	Ecology & Environment, Inc.
ECGB	EnChem, Green Bay, WI
ECI	EcoChem, Inc., Seattle, WA
ECIP	Enviro-Chem, Inc., Pomona, CA
ECK	EnChem, Kimberly, WI
ECLL	Environmental Chemistry Lab at LLNL, Livermore, CA
EEIS	Envirodyne Engineers, Inc., St. Louis, MO
EELR	Excelchem Environmental Labs, Roseville, CA
EELS	Environmental Engineering Laboratory, San Diego, CA
EMAS	EnviroMatrix Analytical, Inc., San Diego, CA
EMXT	EMAX Laboratories, Inc., Torrance, CA
ENSR	ENSR International, Santa Ana, CA
EPA9	U.S. Environmental Protection Agency, Region 9 Lab, Richmond, CA
EQL	Estimated Quantitation Limit
EQLS	Environmental Quality Laboratory at UTC, San Jose, CA
ERDL	ERD, Lawrence Livermore National Laboratory, Livermore, CA
ESBR	E. S. Babcock & Sons, Inc., Riverside, CA
ESC	Environmental Science Corporation, Mount Juliet, TN

Code	Name
ESR	Eberline Services, Richmond, CA
ESTI	Environmental Support Technologies, Inc., Irvine, CA
ETCS	ETC, Santa Rosa, CA
FAED	Frontier Analytical, El Dorado Hills, CA
FBIS	Friedman & Bruya, Inc., Seattle, WA
FGIS	Frontier Geosciences, Inc., Seattle, WA
FGL	Fruit Growers Laboratory, Inc., Stockton, CA
FGLE	FGL Environmental, Santa Paula, CA
FORA	Forensic Analytical
FPAO	Field Portable Analytical, Inc., Orangevale, CA
GALM	GeoAnalytical Laboratories, Inc., Modesto, CA
GBLR	Great Basin Laboratories, Inc., Reno, NV
GCAL	Gulf Coast Analytical Lab, Baton Rouge, LA
GELC	General Engineering Laboratories, Inc., Charleston, SC
GENC	GTEL Environmental Labs, Inc., Concord, CA
GGHO	G.G. Hatch Isotope Laboratories, Ottawa, Ontario, Canada
GLES	Galson Laboratories, E. Syracuse, NY
GPLG	GPL Laboratories, LLLP, Gaithersburg, MD
H2MM	H2M Labs, Inc., Melville, NY
HALB	Halcyon Laboratories, Bakersfield, CA
HEAA	Hall Environmental Analysis Laboratory, Albuquerque, NM
HLV	Herguth Laboratories, Inc., Vallejo, CA
HPLE	HP Labs, Escondido, CA
HWLQ	Henrici Water Laboratory, Quincy, CA
IC	Initial Calibration Verification
IDL	Instrument Detection Limit
IELA	InterPhase Environmental, Inc., Los Angeles, CA
IN	Internal Standard
JEIF	Jones Environmental, Inc., Fullerton, CA
JLAM	JL Analytical Services, Modesto, CA
KD	Known (External Reference Material) Duplicate
KESM	Kemron Environmental Services, Marietta, OH
KIC	KIC Lab, Prudhoe Bay, AK
KIFF	Kiff Analytical LLC, Davis, CA
KLIA	Kinnetic Laboratories, Inc., Anchorage, AK
KLIC	Kinnetic Laboratories, Inc., Carlsbad, CA
KLIL	Kinnetic Laboratories, Inc., Lahhaina, HI
KLIS	Kinnetic Laboratories, Inc., Santa Cruz, CA
KLR	Kensington Laboratories, Richmond, CA
KMO	Kinder Morgan, Orange, CA
KPIS	KPrime, Inc., Santa Rosa, CA
LAB1	Laboratory 1
LAB2	Laboratory 2
LAL	Lockheed Analytical Laboratory, Las Vegas, NV
LASL	Los Alamos Scientific Laboratory, Los Alamos, NM
LB	Lab Blank
LCC	Laboratory Continuing Calibration Accuracy
LCLW	LifeChem Laboratory Services, Woodland Hills, CA
LCMS	LLNL Chemistry & Materials Sciences Analytical Lab, Livermore, CA
LDC	Laboratory Data Consultants
LIC	Laboratory Initial Calibration Accuracy
LICP	ICP MS Facility, LLNL, Livermore, CA
LL	Lancaster Laboratories, Inc., Lancaster, PA
LLD	Lowest Level of Detection
LLR	Laboratory Established Precision for Lab Replicates

Code	Name
LOQ	Limit of Quantitation
LR	Lab Replicate
LSA	Laboratory Sample Accuracy for Spiked Samples
LSP	Laboratory Sample Precision for Spiked Samples
LTL	Laucks Testing Lab, Inc.
MACN	Maxxam Analytical, Inc., Cheektowaga, NY
MBAM	Monterey Bay Analytical Services, Inc., Monterey, CA
MCAP	McCampbell Analytical, Pacheco, CA
MCLL	Mobile Chem Labs, Inc., Lafayette, CA
MDL	Method Detection Limit
MEA	Method Established Accuracy for Spiked Samples
MEC	MEC Analytical Systems, Inc., Carlsbad, CA
MECC	Method Established Continuing Calibration Acceptance Criteria
MEIC	Method Established Initial Calibration Acceptance Criteria
MELR	Method Established Precision for Laboratory Replicates
MEP	Method Established Precision for Spiked Samples
MIRT	Microbial Insights, Inc., Rockford, TN
MLIC	Michelson Laboratories, Inc., Commerce, CA
MLR	Matrix Laboratory Replicate Precision
MOLE	Mobile One Laboratories, Inc., Escondido, CA
MPP	Microseeps, Pittsburgh, PA
MRL	Method Reporting Limit (lowest standard adjusted for prep.)
MS	GC/MS Result - Value Confirmed Using GC/MS
MS	Lab Matrix Spike
MSA	Matrix Spike Accuracy for Spiked Samples
MSLV	MID-STATE Laboratory LLC, Visalia, CA
MSP	Matrix Spike Precision for Spiked Samples
MSSL	Mountain States Analytical, Salt Lake City, UT
MTAF	Moore Twining Associates, Inc., Fresno, CA
MWHM	MWH Labs, Monrovia, CA
MWLP	Montgomery Watson Laboratories, Pasadena, CA
NA	Not Applicable
NA	Not Available - Result Not Available
NC	Non-Client Sample
NCAA	North Creek Analytical, Anchorage, AK
NCAB	North Creek Analytical, Bothell, WA
NCAC	North Creek Analytical, Bend, OR
NCAP	North Creek Analytical, Beaverton, OR
NCAS	North Creek Analytical, Spokane, WA
NCLA	North Coast Laboratories, Arcata, CA
ND	Not Detected
NELL	NEL Laboratories, Inc., Las Vegas, NV
NLSC	Northern Lake Service, Crandon, WI
NR	Not Reported - Data Not Reported
NRES	Navy Regional Environmental Lab, San Diego, CA
NSEF	North State Environmental, South San Francisco, CA
NSLF	North State Labs, South San Francisco, CA
NTL	Northern Testing Laboratories, Anchorage, AK
NTLF	Northern Testing Laboratories, Fairbanks, AK
NU	Not Usable - Data Not Usable
NWCC	Northwest Colorado Consultants, Inc., Steamboat Springs, CO
NWEA	North Wind Environmental, Inc., Anchorage, AK
OCAT	Orange Coast Analytical, Inc., Tustin, CA
OECS	Oilfield Environmental and Compliance, Santa Maria, CA
OEIR	OnSite Environmental, Inc., Redmond, WA

Code	Name
PA	Present/Absent
PAC	Pacific Analytical, Carlsbad, CA
PAIR	Precision Analytical, Inc., Richmond, CA
PAIS	Performance Analytical, Inc., Simi Valley, CA
PALA	Pacific Analytical Laboratory, Alameda, CA
PARA	Paragon Analytics, Inc., CO
PASA	Pace Analytical Services, Inc., Asheville, NC
PASC	Pace Analytical Services, Inc., Huntersville, NC
PASH	Pace Analytical Services, Inc., Houston, TX
PASI	Pace Analytical Services, Inc., Indianapolis, IN
PASN	Pace Analytical Services, Inc., St. Rose, LA
PCL	Pat-Chem Laboratories, Moorpark, CA
PD	Post-Digestion Spike Duplicate
PDMW	Paradigm Analytical Laboratories, Wilmington, NC
PETS	Precision Enviro-Tech, Stockton, CA
PHLE	Philip Environmental
PIC	Pace Analytical Services, Inc., Camarillo, CA
PIHB	Pace Analytical Services, Inc., Huntington Beach, CA
PIL	Pace Analytical Services, Inc., Lenexa, KS
PIM	Pace Analytical Services, Inc., Minneapolis, MN
PIN	Pace Analytical Services, Inc., Novato, CA
PINY	Pace Analytical Services, Inc., New York, NY
PIP	Pace Analytical Services, Inc., Pittsburgh, PA
PITB	Pace Analytical Services, Inc., Tampa Bay, FL
PIWF	Pace Analytical Services, Inc., Wappingers Falls, NY
PLSA	Positive Lab Service, Los Angeles, CA
PLW	Perry Laboratory, Watsonville, CA
PNLE	Pacific Northwest Laboratories, Eugene, OR
PQL	Practical Quantitation Limit
PR	Primary Result - The Primary Result for a Parameter
PRL	Parameter Range Limit
PS	Post-Digestion Spike
QALA	Quality Analytical Laboratores, Inc., Montgomery, AL
QALC	Quality Analytical Laboratories, Inc., Redding, CA
RCHR	RCH Research & Env. Laboratories, Inc., Rancho Dominquez, CA
RFWC	Roy F. Weston, West Chester, PA
RFWS	Roy F. Weston, Stockton, CA
RM	Known (External Reference Material)
RQL	Reporting Quantitation Limit
RS	Reagent Solvent
SAFW	Star Analytical, Fort Worth, TX
SALR	Shasta Analytical Laboratory, Inc., Redding, CA
SAS	Sound Analytical Services, Inc., Tacoma, WA
SBSA	Both Reagent and Matrix Sample Accuracy for Surrogates
SBSP	Both Reagent and Matrix Sample Precision for Surrogates
SC3S	S-Cubed, A Division of Maxwell Laboratories, Inc., San Diego, CA
SCLA	Contract Laboratory Program Limits for Surrogate Accuracy
SCLP	Contract Laboratory Program Limits for Surrogate Precision
SCLW	Soil Control Lab, Watsonville, CA
SCST	Southern California Soil & Testing, Inc., San Diego, CA
SD	Lab Matrix Spike Duplicate
SDGE	Environmental Analysis Lab, SDGE, San Diego, CA
SDLA	Dept. of General Services, Standards Division, Los Angeles, CA
SEMS	Sierra Environmental Monitoring, Sparks, NV
SEQC	Sequoia Analytical Laboratories, Inc., San Carlos, CA

Code	Name
SEQM	Sequoia Analytical Laboratories, Inc., Morgan Hill, CA
SEQP	Sequoia Analytical Laboratories, Inc., Petaluma, CA
SEQS	Sequoia Analytical Laboratories, Inc., Sacramento, CA
SEQW	Sequoia Analytical Laboratories, Inc., Walnut Creek, CA
SGSA	SGS Environmental Services Inc., Anchorage, AK
SGSL	SGS Michigan Division, Ludington, MI
SHLH	Sherwood Labs Corporation, Hilmar, CA
SILD	Stable Isotope Laboratory - UC Davis, Davis, CA
SIRL	Sierra Analytical Labs, Inc., Laguna Hills, CA
SLMP	Stanford Linear Accelerator Center, Menlo Park, CA
SLOC	San Luis Obispo Cnt. Eng. Dept. Environ. Lab, San Luis Obispo, CA
SLSA	Laboratory Sample Limits for Accuracy for Surrogates
SLSP	Laboratory Sample Limits for Precision for Surrogates
SMEA	Method Established Limits for Accuracy for Surrogates
SMEP	Method Established Limits for Precision for Surrogates
SMSA	Sample Matrix Limits for Accuracy for Surrogates
SMSP	Sample Matrix Limits for Precision for Surrogates
SPEC	Spectra Laboratory, Inc., Tacoma, WA
SPLH	SPL Houston Laboratory, Houston, TX
SPLL	SPL Lafayette Laboratory, Scott, LA
SPLM	SPL Michigan Laboratory, Traverse City, MI
SR	Semi-Quantitative Result
SRAD	Standard Reference Accuracy Defined by Agency/Manufacturer
SRMA	Standard Reference Material Accuracy Limits Determined by Lab
SRMP	Standard Reference Material Precision Limits Determined by Lab
SRPD	Standard Reference Precision Defined by Agency/Manufacturer
SSLE	SunStar Laboratories, Inc., Encinitas, CA
SSLT	SunStar Laboratories, Inc., Tustin, CA
STCL	STL ChromaLab, Inc., Pleasanton, CA
STEH	Sierra Testing Lab, El Dorado Hills, CA
STIS	Sparger Technology, Inc., Sacramento, CA
STL1	STL Denver, Arvada, CO
STL2	Severn Trent Laboratories, Edison, NJ
STL3	STL Los Angeles, Santa Ana, CA
STL4	Severn Trent Laboratories, Miramar, FL
STL5	Severn Trent Laboratories, Newburgh, NY
STL6	Severn Trent Laboratories, Colchester, VT
STL8	STL Seattle, Seattle, WA
STL9	Severn Trent Laboratories, Inc., Chicago, IL
STLB	Severn Trent Laboratories, Sparks, MD
STLC	Severn Trent Laboratories, North Canton, OH
STLD	Severn Trent Laboratories, Austin, TX
STLE	Severn Trent Laboratories, Tallahassee, FL
STLF	Severn Trent Laboratories, Tampa, FL
STLG	Severn Trent Laboratories, Savannah, GA
STLH	Severn Trent Laboratories, Houston, TX
STLI	Severn Trent Laboratories, Pensacola, FL
STLJ	Severn Trent Laboratories, N. Billerica, MA
STLK	STL Knoxville, Knoxville, TN
STLL	Severn Trent Laboratories, Earth City, MO
STLM	Severn Trent Laboratories, Monroe, CT
STLO	Severn Trent Laboratories, Mobile, AL
STLP	STL Pittsburgh, Pittsburgh, PA
STLQ	Severn Trent Laboratories, Amherst, NY
STLR	Severn Trent Laboratories, Richland, WA

Code	Name
STLS	STL Sacramento, West Sacramento, CA
STLT	Severn Trent Laboratories, Austin, TX (Quanterra)
STLU	Severn Trent Laboratories, University Park, IL
STLV	Severn Trent Laboratories, Valparaiso, IN
STLW	Severn Trent Laboratories, Westfield, MA
STLX	Severn Trent Laboratories, Tampa, FL (Savannah)
STLY	Severn Trent Laboratories, Whippany, NJ
STLZ	Severn Trent Laboratories, Corpus Christi, TX
STSM	Southland Technical Services, Inc., Montebello, CA
SU	Surrogate
SWAA	Shannon & Wilson, Inc., Anchorage, AK
SWLB	Southwest Laboratory, Broken Arrow, OK
SWRI	Southwest Resarch Institute, San Antonio, TX
TAAA	TestAmerica, Anchorage, AK
TABI	TestAmerica, Buffalo Grove, IL
TACC	TestAmerica, Colorado Springs, CO
TACI	TestAmerica, Cedar Falls, IA
TADC	TestAmerica, Denver, CO
TADO	TestAmerica , Dayton, OH
TAIC	TestAmerica, Irvine, CA
TAKP	TestAmerica, King of Prussia, PA
TALA	TestAmerica, Los Angeles, CA
TAMC	TestAmerica, Morgan Hill, CA
TAN	TestAmerica, Nashville, TN
TAOC	TestAmerica, Ontario, CA
TAOF	TestAmerica, Orlando, FL
TAPA	TestAmerica, Phoenix, AZ
TAPO	TestAmerica, Portland, OR
TASC	TestAmerica, Sacramento, CA
TASF	TestAmerica, San Francisco, CA
TASP	TestAmerica , Spokane, WA
TASW	TestAmerica, Seattle, WA
TATW	TestAmerica, Tacoma, WA
TAWS	TestAmerica, West Sacramento, CA
TAWW	TestAmerica ,Watertown, WI
TDL	Target Method Detection Limit
TDLT	Truesdail Laboratories, Inc., Tustin, CA
TEGR	TEG Northern California, Inc., Rancho Cordova, CA
TGGB	TEG, Solana Beach, CA
TI	Tentatively Identified Compound
TLF	Twining Labs, Fresno, CA
TLIT	Turner Laboratories, Inc., Tucson, AZ
TLM	Torrent Laboratory, Milpitas, CA
TRID	Triangle Laboratories, Inc., Durham, NC
TSIW	ToxScan, Inc., Watsonville, CA
VALE	Vista Analytical Laboratories, El Dorado Hills, CA
WALC	Western Analytical Laboratories, Inc., Chino, CA
WCAS	West Coast Analytical Services, Inc., Santa Fe Springs, CA
WETS	Western Environmental Testing Lab, Sparks, NV
WLGA	W. L. Gore and Associates, Inc., Elkton, MD
WLIC	Weck Laboratories, Inc., City of Industry, CA
WPEL	City of LA Dept. Water & Power Environ. Lab, Los Angeles, CA
WQLC	JWPCP Water Quality Laboratory, Carson, CA
WQLW	San Jose Creek Water Quality Laboratory, Whittier, CA
XX	No QC for method

Code	Name
ZALB	Zalco Laboratories, Inc., Bakersfield, CA
ZXEO	ZymaX envirotechnology, San Luis Obispo, CA

Error Summary Log

04/05/11

EDF 1.2i All files present in deliverable.

Laboratory:	Shasta Analytical Laboratory, Inc., Redding, CA
Project Name:	PAYLESS GAS
Work Order Number:	507010
Global ID:	T0608900234
Lab Report Number:	PAYLESS GAS

Report Summary

Labreport	Sampid	Labsampid	Mtrx	QC	Anmcode	Exmcode	Logdate	Extdate	Anadate	Lablotctl	Run Sub
PAYLESS GAS	MW-10	10382	W	CS	8260FA	SW5030B	03/29/11	04/01/11	04/01/11	8260-0401	1
PAYLESS GAS	MW-10	10382	W	CS	SW8021F	SW5030B	03/29/11	03/30/11	03/30/11	8021-0330	1
PAYLESS GAS	MW-1R	10378	W	CS	8260FA	SW5030B	03/28/11	04/01/11	04/01/11	8260-0401	1
PAYLESS GAS	MW-1R	10378	W	CS	SW8021F	SW5030B	03/28/11	03/30/11	03/30/11	8021-0330	1
PAYLESS GAS	MW-2D	10380	W	CS	8260FA	SW5030B	03/29/11	04/01/11	04/01/11	8260-0401	1
PAYLESS GAS	MW-2D	10380	W	CS	SW8021F	SW5030B	03/29/11	03/30/11	03/30/11	8021-0330	1
PAYLESS GAS	MW-2R	10379	W	CS	8260FA	SW5030B	03/29/11	04/01/11	04/01/11	8260-0401	1
PAYLESS GAS	MW-2R	10379	W	CS	SW8021F	SW5030B	03/29/11	03/30/11	03/30/11	8021-0330	1
PAYLESS GAS	MW-3R	10375	W	CS	8260FA	SW5030B	03/28/11	04/01/11	04/01/11	8260-0401	1
PAYLESS GAS	MW-3R	10375	W	CS	SW8021F	SW5030B	03/28/11	03/30/11	03/30/11	8021-0330	1
PAYLESS GAS	MW-4	10374	W	CS	8260FA	SW5030B	03/28/11	04/01/11	04/01/11	8260-0401	1
PAYLESS GAS	MW-4	10374	W	CS	SW8021F	SW5030B	03/28/11	03/30/11	03/30/11	8021-0330	1
PAYLESS GAS	MW-5	10377	W	CS	8260FA	SW5030B	03/28/11	04/01/11	04/01/11	8260-0401	1
PAYLESS GAS	MW-5	10377	W	CS	SW8021F	SW5030B	03/28/11	03/30/11	03/30/11	8021-0330	1
PAYLESS GAS	MW-6	10376	W	CS	8260FA	SW5030B	03/28/11	04/01/11	04/01/11	8260-0401	1
PAYLESS GAS	MW-6	10376	W	CS	SW8021F	SW5030B	03/28/11	03/30/11	03/30/11	8021-0330	1
PAYLESS GAS	MW-7	10372	W	CS	8260FA	SW5030B	03/28/11	04/01/11	04/01/11	8260-0401	1
PAYLESS GAS	MW-7	10372	W	CS	SW8021F	SW5030B	03/28/11	03/30/11	03/30/11	8021-0330	1
PAYLESS GAS	MW-8	10373	W	CS	8260FA	SW5030B	03/28/11	04/01/11	04/01/11	8260-0401	1
PAYLESS GAS	MW-8	10373	W	CS	SW8021F	SW5030B	03/28/11	03/30/11	03/30/11	8021-0330	1
PAYLESS GAS	MW-9	10381	W	CS	8260FA	SW5030B	03/29/11	04/01/11	04/01/11	8260-0401	1
PAYLESS GAS	MW-9	10381	W	CS	SW8021F	SW5030B	03/29/11	03/30/11	03/30/11	8021-0330	1
		LCS-0330	W	BS1	SW8021F	SW5030B	/ /	03/30/11	03/30/11	8021-0330	1
		MB-0330	W	LB1	SW8021F	SW5030B	/ /	03/30/11	03/30/11	8021-0330	1
		10372	W	MS1	SW8021F	SW5030B	/ /	03/30/11	03/30/11	8021-0330	1
		10372	W	SD1	SW8021F	SW5030B	/ /	03/30/11	03/30/11	8021-0330	1
		LCS-0401	W	BS1	8260FA	SW5030B	/ /	04/01/11	04/01/11	8260-0401	1
		MB-0401	W	LB1	8260FA	SW5030B	/ /	04/01/11	04/01/11	8260-0401	1
		10373	W	MS1	8260FA	SW5030B	/ /	04/01/11	04/01/11	8260-0401	1
		10373	W	SD1	8260FA	SW5030B	/ /	04/01/11	04/01/11	8260-0401	1

EDFSAMP: Error Summary Log

04/05/11

Error type	Logcode	Projname	Npdlwo	Sampid	Matrix
There are no errors in this data file					

EDFTEST: Error Summary Log

04/05/11

Error type	Labsampid	Qccode	Anmcode	Exmcode	Anadate	Run number
There are no errors in this data file					/ /	0

EDFRES: Error Summary Log

04/05/11

Error type	Labsampid	Qccode	Matrix	Anmcode	Pvccode	Anadate	Run number	Parlabel
Warning: extra parameter	10372	CS	W	8260FA	PR	04/01/11	1	BR4FBZ
Warning: extra parameter	10372	CS	W	8260FA	PR	04/01/11	1	BZMED8
Warning: extra parameter	10372	CS	W	8260FA	PR	04/01/11	1	DBFM
Warning: extra parameter	10372	CS	W	SW8021F	PR	03/30/11	1	TFBZME
Warning: extra parameter	10372	CS	W	SW8021F	PR	03/30/11	1	TPHC5C12
Warning: extra parameter	10372	MS1	W	SW8021F	PR	03/30/11	1	TFBZME
Warning: extra parameter	10372	MS1	W	SW8021F	PR	03/30/11	1	TPHC5C12
Warning: extra parameter	10372	SD1	W	SW8021F	PR	03/30/11	1	TFBZME
Warning: extra parameter	10372	SD1	W	SW8021F	PR	03/30/11	1	TPHC5C12
Warning: extra parameter	10373	CS	W	8260FA	PR	04/01/11	1	BR4FBZ
Warning: extra parameter	10373	CS	W	8260FA	PR	04/01/11	1	BZMED8
Warning: extra parameter	10373	CS	W	8260FA	PR	04/01/11	1	DBFM
Warning: extra parameter	10373	CS	W	SW8021F	PR	03/30/11	1	TFBZME
Warning: extra parameter	10373	CS	W	SW8021F	PR	03/30/11	1	TPHC5C12
Warning: extra parameter	10373	MS1	W	8260FA	PR	04/01/11	1	BR4FBZ
Warning: extra parameter	10373	MS1	W	8260FA	PR	04/01/11	1	BZMED8
Warning: extra parameter	10373	MS1	W	8260FA	PR	04/01/11	1	DBFM
Warning: extra parameter	10373	SD1	W	8260FA	PR	04/01/11	1	BR4FBZ
Warning: extra parameter	10373	SD1	W	8260FA	PR	04/01/11	1	BZMED8
Warning: extra parameter	10373	SD1	W	8260FA	PR	04/01/11	1	DBFM
Warning: extra parameter	10374	CS	W	8260FA	PR	04/01/11	1	BR4FBZ
Warning: extra parameter	10374	CS	W	8260FA	PR	04/01/11	1	BZMED8
Warning: extra parameter	10374	CS	W	8260FA	PR	04/01/11	1	DBFM
Warning: extra parameter	10374	CS	W	SW8021F	PR	03/30/11	1	TFBZME
Warning: extra parameter	10374	CS	W	SW8021F	PR	03/30/11	1	TPHC5C12

Error type	Labsampid	Qccode	Matrix	Anmcode	Pvccode	Anadate	Run number	Parlabel
Warning: extra parameter	10375	CS	W	8260FA	PR	04/01/11	1	BR4FBZ
Warning: extra parameter	10375	CS	W	8260FA	PR	04/01/11	1	BZMED8
Warning: extra parameter	10375	CS	W	8260FA	PR	04/01/11	1	DBFM
Warning: extra parameter	10375	CS	W	SW8021F	PR	03/30/11	1	TFBZME
Warning: extra parameter	10375	CS	W	SW8021F	PR	03/30/11	1	TPHC5C12
Warning: extra parameter	10376	CS	W	8260FA	PR	04/01/11	1	BR4FBZ
Warning: extra parameter	10376	CS	W	8260FA	PR	04/01/11	1	BZMED8
Warning: extra parameter	10376	CS	W	8260FA	PR	04/01/11	1	DBFM
Warning: extra parameter	10376	CS	W	SW8021F	PR	03/30/11	1	TFBZME
Warning: extra parameter	10376	CS	W	SW8021F	PR	03/30/11	1	TPHC5C12
Warning: extra parameter	10377	CS	W	8260FA	PR	04/01/11	1	BR4FBZ
Warning: extra parameter	10377	CS	W	8260FA	PR	04/01/11	1	BZMED8
Warning: extra parameter	10377	CS	W	8260FA	PR	04/01/11	1	DBFM
Warning: extra parameter	10377	CS	W	SW8021F	PR	03/30/11	1	TFBZME
Warning: extra parameter	10377	CS	W	SW8021F	PR	03/30/11	1	TPHC5C12
Warning: extra parameter	10378	CS	W	8260FA	PR	04/01/11	1	BR4FBZ
Warning: extra parameter	10378	CS	W	8260FA	PR	04/01/11	1	BZMED8
Warning: extra parameter	10378	CS	W	8260FA	PR	04/01/11	1	DBFM
Warning: extra parameter	10378	CS	W	SW8021F	PR	03/30/11	1	TFBZME
Warning: extra parameter	10378	CS	W	SW8021F	PR	03/30/11	1	TPHC5C12
Warning: extra parameter	10379	CS	W	8260FA	PR	04/01/11	1	BR4FBZ
Warning: extra parameter	10379	CS	W	8260FA	PR	04/01/11	1	BZMED8
Warning: extra parameter	10379	CS	W	8260FA	PR	04/01/11	1	DBFM
Warning: extra parameter	10379	CS	W	SW8021F	PR	03/30/11	1	TFBZME
Warning: extra parameter	10379	CS	W	SW8021F	PR	03/30/11	1	TPHC5C12
Warning: extra parameter	10380	CS	W	8260FA	PR	04/01/11	1	BR4FBZ
Warning: extra parameter	10380	CS	W	8260FA	PR	04/01/11	1	BZMED8
Warning: extra parameter	10380	CS	W	8260FA	PR	04/01/11	1	DBFM
Warning: extra parameter	10380	CS	W	SW8021F	PR	03/30/11	1	TFBZME

Error type	Labsampid	Qccode	Matrix	Anmcode	Pvccode	Anadate	Run number	Parlabel
Warning: extra parameter	10380	CS	W	SW8021F	PR	03/30/11	1	TPHC5C12
Warning: extra parameter	10381	CS	W	8260FA	PR	04/01/11	1	BR4FBZ
Warning: extra parameter	10381	CS	W	8260FA	PR	04/01/11	1	BZMED8
Warning: extra parameter	10381	CS	W	8260FA	PR	04/01/11	1	DBFM
Warning: extra parameter	10381	CS	W	SW8021F	PR	03/30/11	1	TFBZME
Warning: extra parameter	10381	CS	W	SW8021F	PR	03/30/11	1	TPHC5C12
Warning: extra parameter	10382	CS	W	8260FA	PR	04/01/11	1	BR4FBZ
Warning: extra parameter	10382	CS	W	8260FA	PR	04/01/11	1	BZMED8
Warning: extra parameter	10382	CS	W	8260FA	PR	04/01/11	1	DBFM
Warning: extra parameter	10382	CS	W	SW8021F	PR	03/30/11	1	TFBZME
Warning: extra parameter	10382	CS	W	SW8021F	PR	03/30/11	1	TPHC5C12
Warning: extra parameter	LCS-0330	BS1	W	SW8021F	PR	03/30/11	1	TFBZME
Warning: extra parameter	LCS-0330	BS1	W	SW8021F	PR	03/30/11	1	TPHC5C12
Warning: extra parameter	LCS-0401	BS1	W	8260FA	PR	04/01/11	1	BR4FBZ
Warning: extra parameter	LCS-0401	BS1	W	8260FA	PR	04/01/11	1	BZMED8
Warning: extra parameter	LCS-0401	BS1	W	8260FA	PR	04/01/11	1	DBFM
Warning: extra parameter	MB-0330	LB1	W	SW8021F	PR	03/30/11	1	TFBZME
Warning: extra parameter	MB-0330	LB1	W	SW8021F	PR	03/30/11	1	TPHC5C12
Warning: extra parameter	MB-0401	LB1	W	8260FA	PR	04/01/11	1	BR4FBZ
Warning: extra parameter	MB-0401	LB1	W	8260FA	PR	04/01/11	1	BZMED8
Warning: extra parameter	MB-0401	LB1	W	8260FA	PR	04/01/11	1	DBFM

EDFQC: Error Summary Log

04/05/11

Error type	Lablotctl	Anmcode	Parlabel	Qccode	Labqcid
There are no errors in this data files					

EDFCL: Error Summary Log

04/05/11

Error type	Clrevdate	Anmcode	Exmcode	Parlabel	Clcode
There are no errors in this data file	/ /				

SAMPLE CHAIN-OF-CUSTODY ANALYSIS REQUEST

Shasta Analytical Laboratory
20280 Skypark Drive • Redding, CA 96002
(530) 226-5400 • salab@c-zone.net

POSSIBLE HAZARDS: _____

Date: 3/29/2011
Source of Samples: PAYLESS GAS
Sampler Name: MIKE PALMER
Company: SHN
Project No.: 507010

Report to: MIKE PALMER
Company: SHN
Address: 350 HARTNELL AVE SUITE B REDDING CA 96002
Phone: (530) 221-5424
E-Mail:

EDF Report Required: YES
Global I.D.: T0608900234
EDF E-Mail: mpalmer@shn-engr.com

LAB ID No.	Client ID No.	COLLECTION Date	COLLECTION Time	Type	Depth	Composite	Note 4	Turn-around time	TPHG	BTEX	Fuel Oxygenates						COMMENTS/CONDITIONS: (Container type, container number, etc.)
	MW-7	3/28	1230	W			hcl	stnd	X	X	X						(4) 4 mL VOA's
	MW-8		1320														
	MW-4		1415														
	MW-3R		1505														
	MW-6		1605														
	MW-5		1650														
	MW-1R		1735														
	MW-2R	3/29	1205														
	MW-2D		1325														
	MW-9		1040														
	MW-10		0935														

1) Write only one sample number in each space.
2) Specify type of sample(s): Water(W), Solid (S), or indicate type.
3) Mark each sample which should be composited in Laboratory as follows: Place an "A" in box for each sample that should be composited into one sample; use sequential letter for additional groups.
4) Preservation of sample.
5) Write each analyses requested across top. Place an "X" in appropriate column to indicate type of analysis needed for each sample.

SAMPLE RELINQUISHED BY:

Print Name	Signature	Company	Date	Time
MIKE PALMER	[signature]	SHN	3/29/11	1420

SAMPLE RECEIVED BY:

Print Name	Signature	Company	Date	Time
[illegible]	[signature]	SHASTA	3-29-11	1420

Carrier: _____

SAMPLE CHAIN-OF-CUSTODY ANALYSIS REQUEST

Shasta Analytical Laboratory
20280 Skypark Drive • Redding, CA 96002
(530) 226-5400 • salab@c-zone.net

POSSIBLE HAZARDS: _____

Date 3/29/2011
Source of Samples PAYLESS GAS
Sampler Name MIKE PALMER
Company SHN

Project No. 507010

Report to MIKE PALMER
Company SHN
Address 350 HARTNELL AVE
SUITE B
REDDING CA 96002
Phone: (530) 221-5424
E-Mail: _____

EDF Report Required YES
Global I.D. T0608900234
EDF E-Mail: mpalmer@shn-engr.com

LAB ID No.	Client ID No.	COLLECTION Date	COLLECTION Time	Type	Depth	Composite	Note 4	Turn-around time	ANALYSES REQUESTED: TPHG	BTEX	Fuel Oxygenates						COMMENTS/CONDITIONS: (Container type, container number, etc.)
	MW-7	3/28	1230	W			hcl	stnd	X	X	X						(4) 4 mL VOA's
	MW-8		1320														
	MW-4		1415														
	MW-3R		1505														
	MW-6		1605														
	MW-5		1650														
	MW-1R		1735														
	MW-2R	3/29	1205														
	MW-2D		1325														
	MW-9		1040														
	MW-10		0935														

1) Write only one sample number in each space.
2) Specify type of sample(s): Water(W), Solid (S), or indicate type.
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5) Write each analyses requested across top. Place an "X" in appropriate column to indicate type of analysis needed for each sample.

SAMPLE RELINQUISHED BY:

Print Name	Signature	Company	Date	Time
MIKE PALMER	[signature]	SHN	3/29/11	1420

SAMPLE RECEIVED BY:

Print Name	Signature	Company	Date	Time

Carrier: _____

Appendix E

Concentration Versus Time Graphs

Figure E-1
Contaminant Concentrations Through Time, MW-1R
Payless Gas & Food Mart, Redding, California

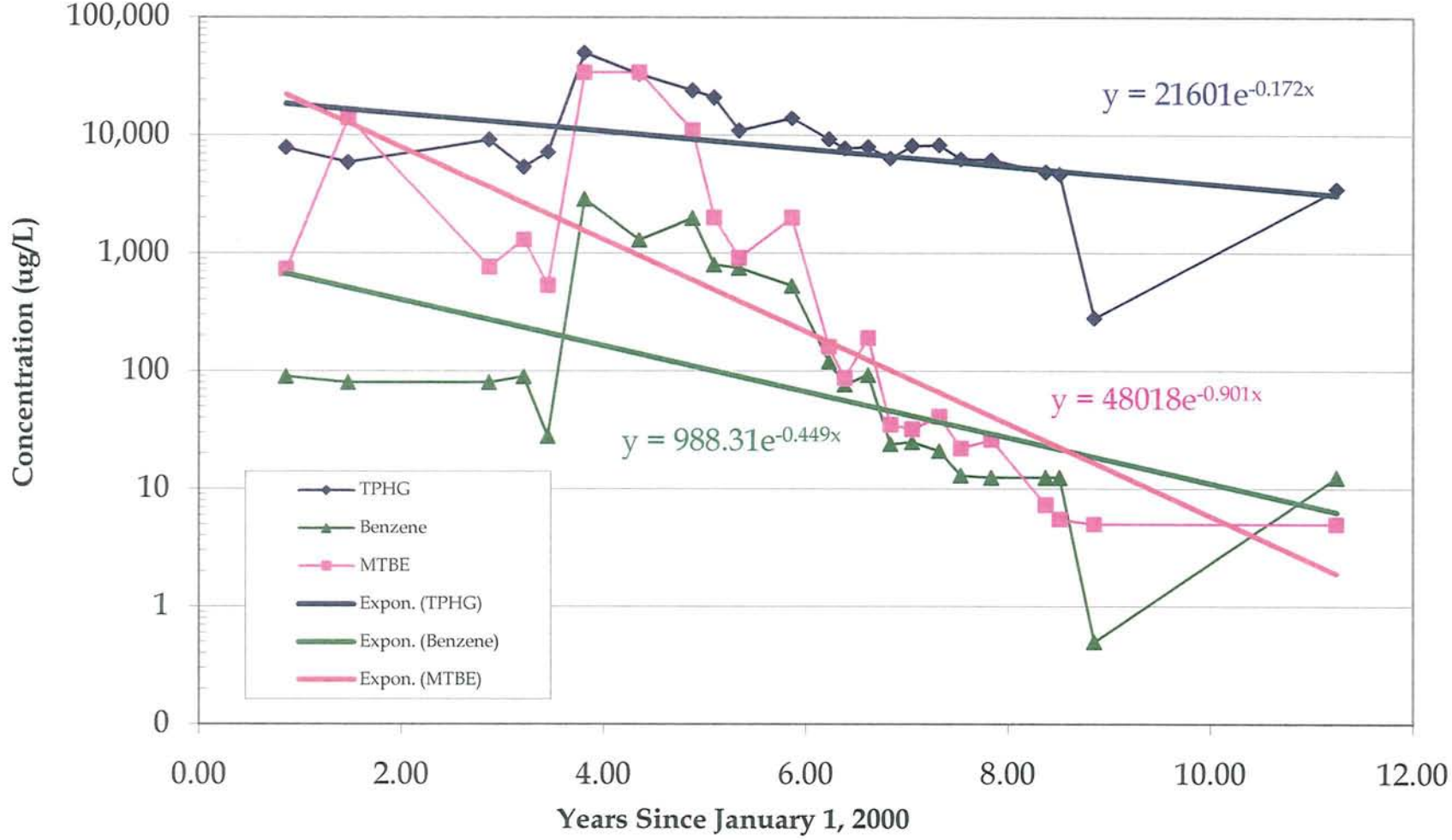


Figure E-2
Contaminant Concentrations Through Time, MW-2R
Payless Gas & Food Mart, Redding, California

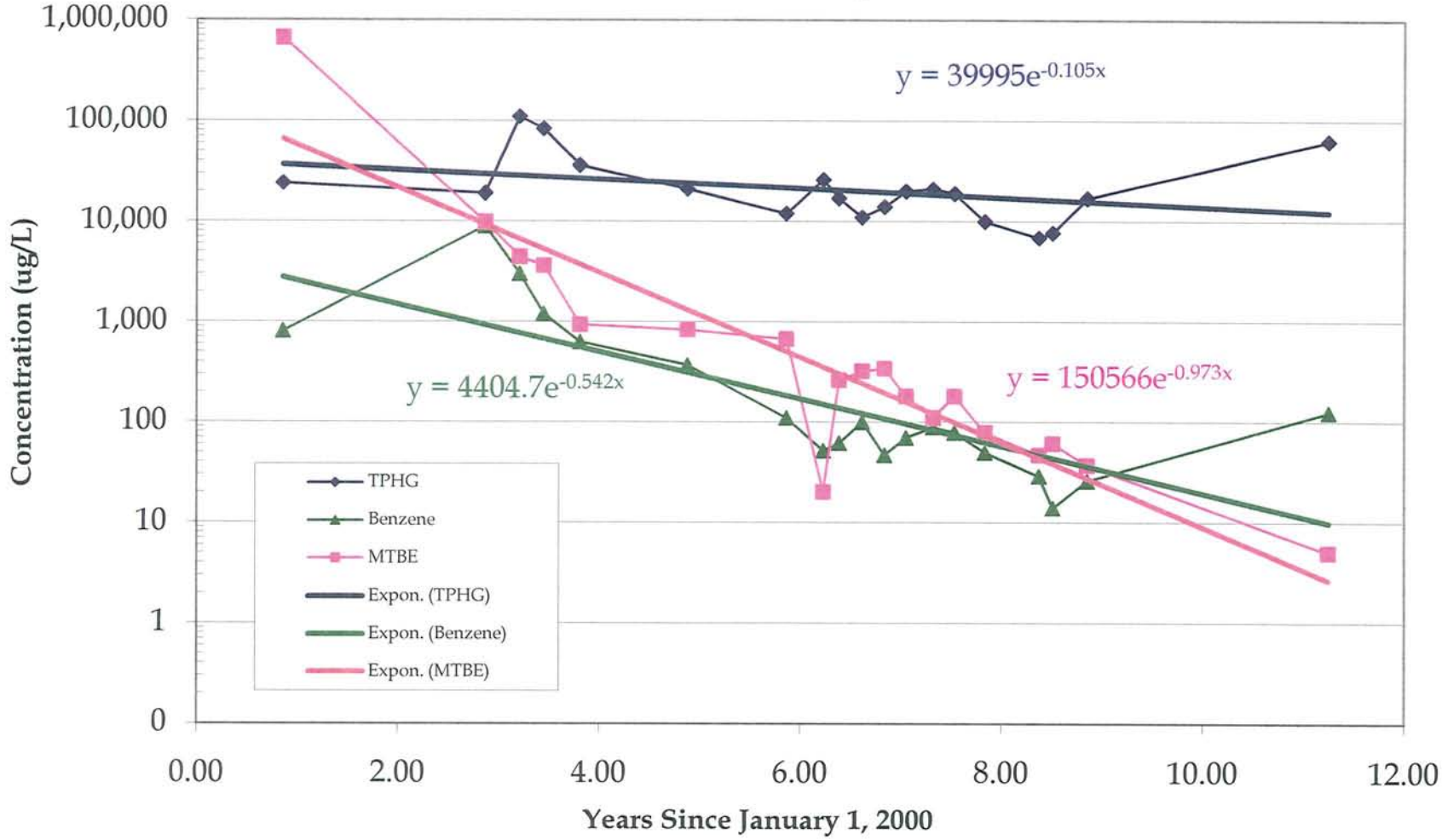


Figure E-3
Contaminant Concentrations Through Time, MW-2D
Payless Gas & Food Mart, Redding, California

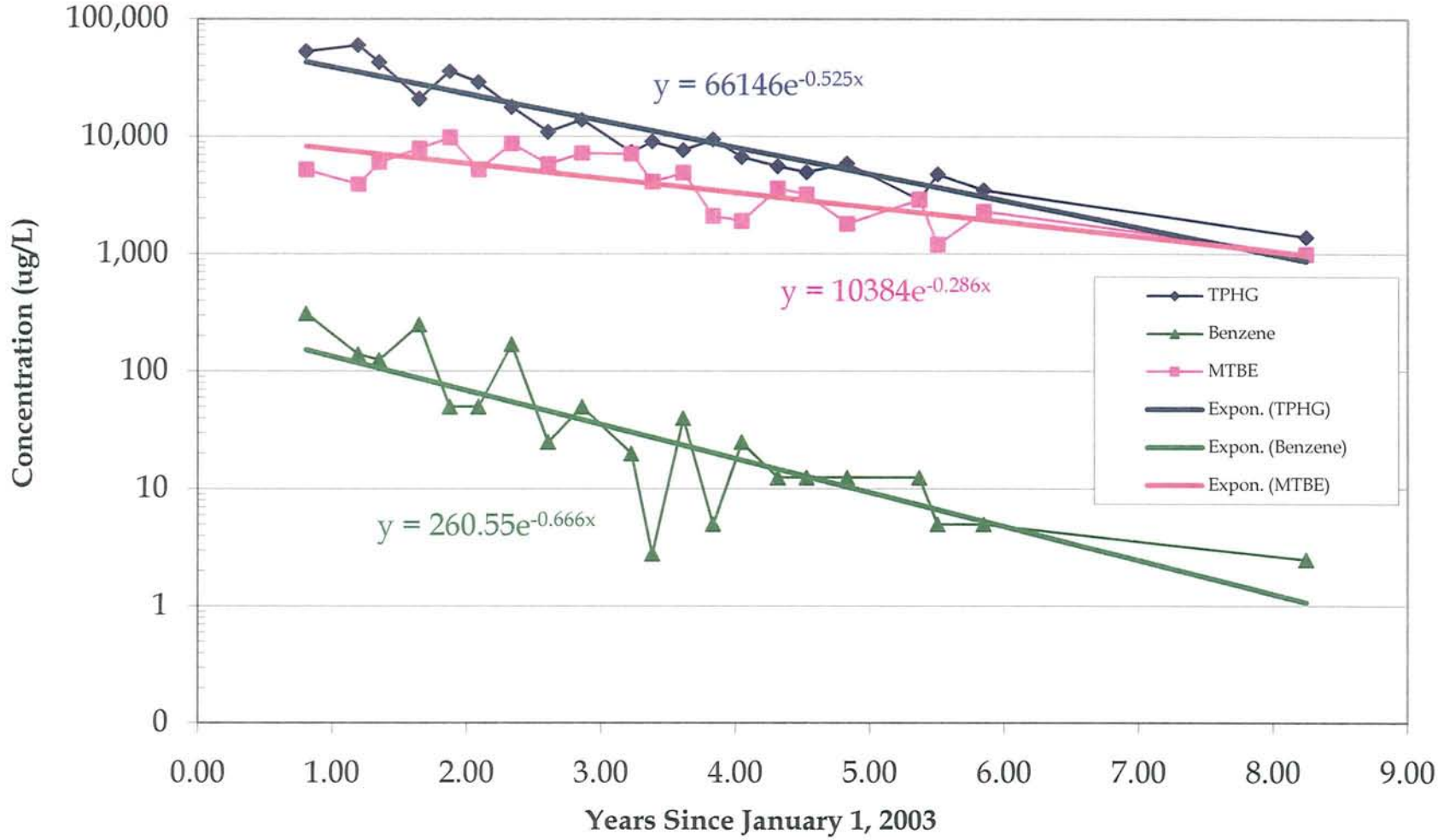
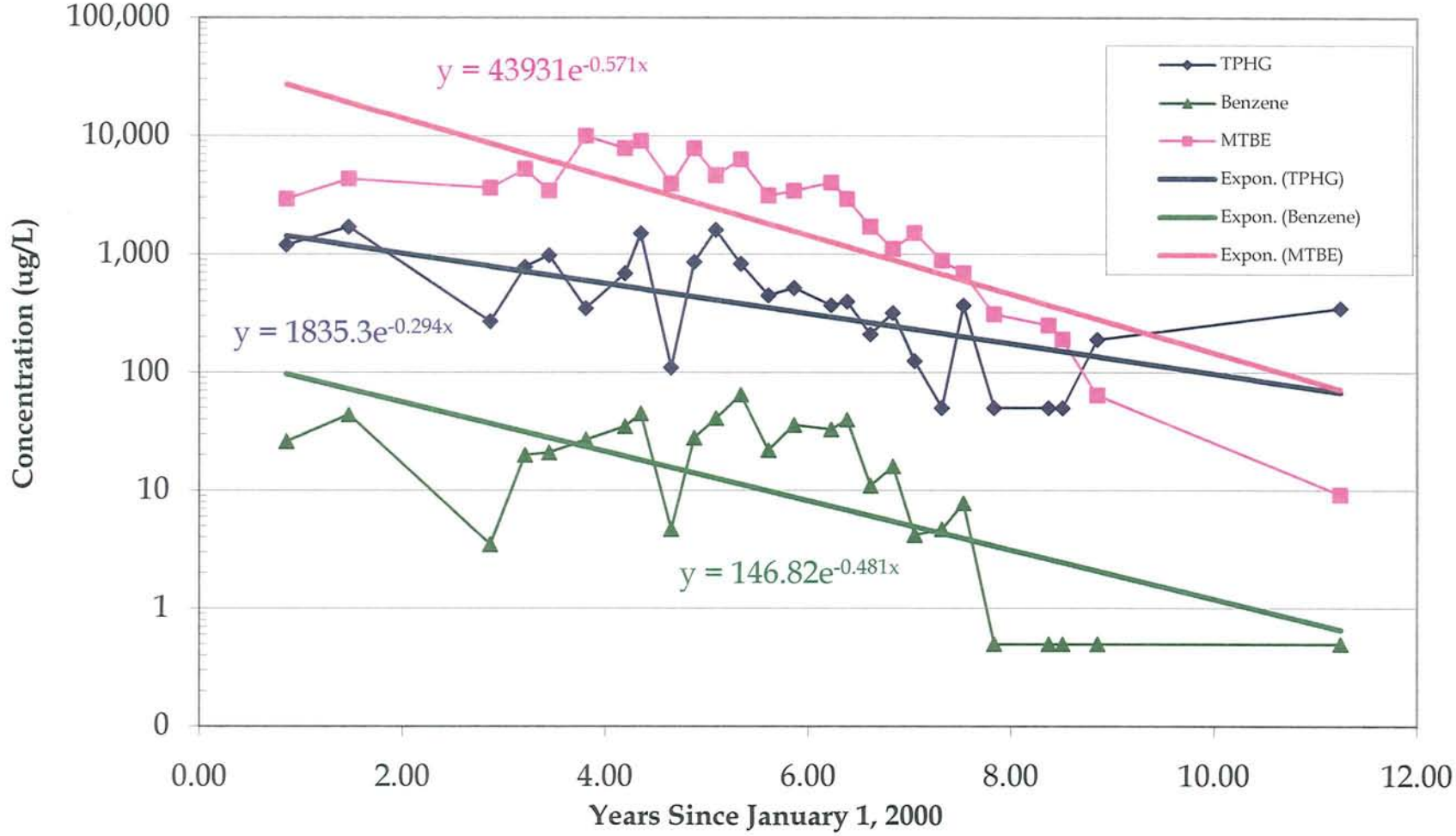


Figure E-4
Contaminant Concentrations Through Time, MW-5
Payless Gas & Food Mart, Redding, California



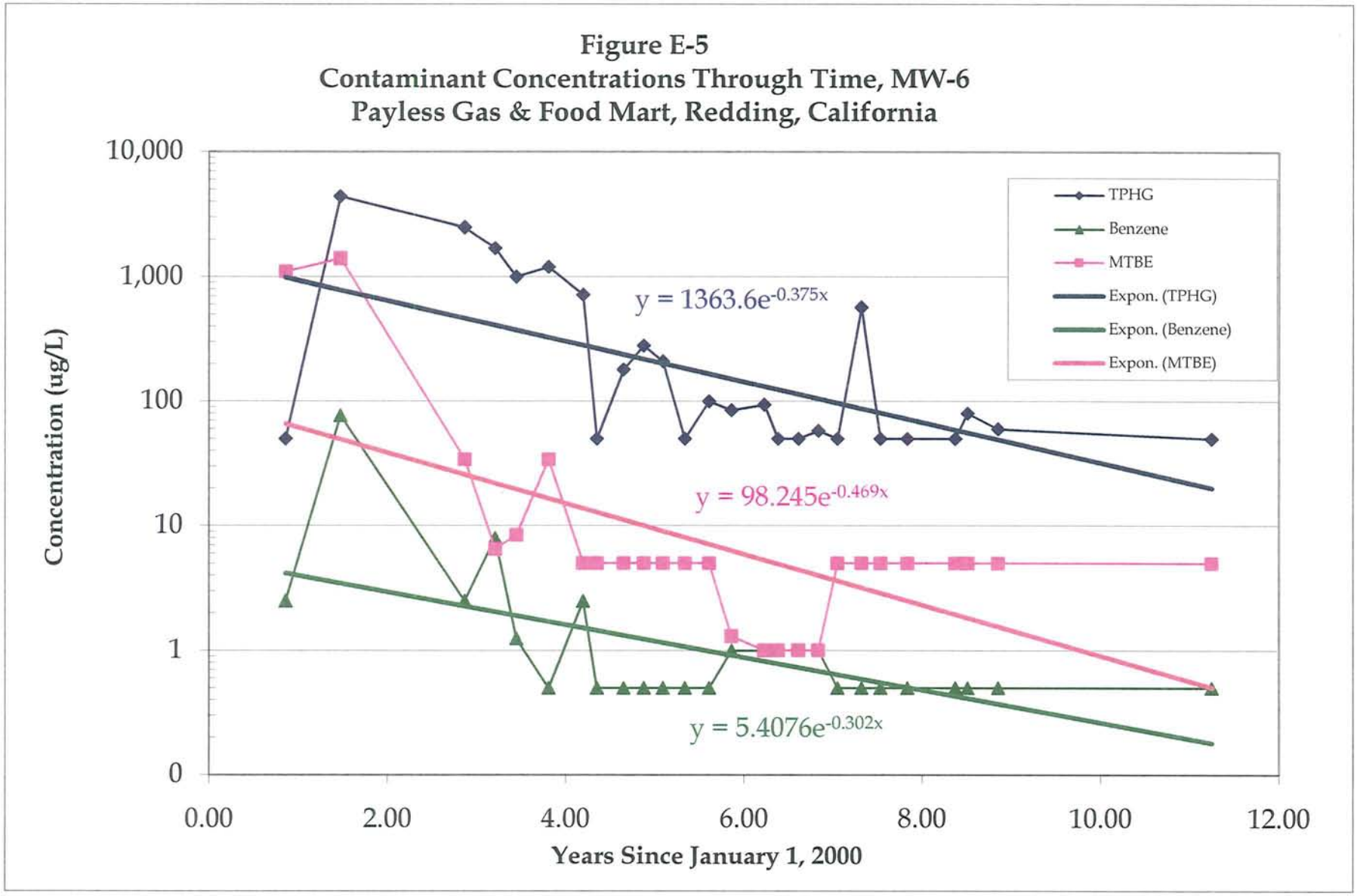


Figure E-5
Contaminant Concentrations Through Time, MW-6
Payless Gas & Food Mart, Redding, California
10,000
1,000
100
10
1
0
Concentration (ug/L)
0.00
2.00
4.00
6.00
8.00
10.00
12.00
Years Since January 1, 2000
TPHG
Benzene
MTBE
Expon. (TPHG)
Expon. (Benzene)
Expon. (MTBE)
y = 1363.6e-0.375x
y = 98.245e-0.469x
y = 5.4076e-0.302x

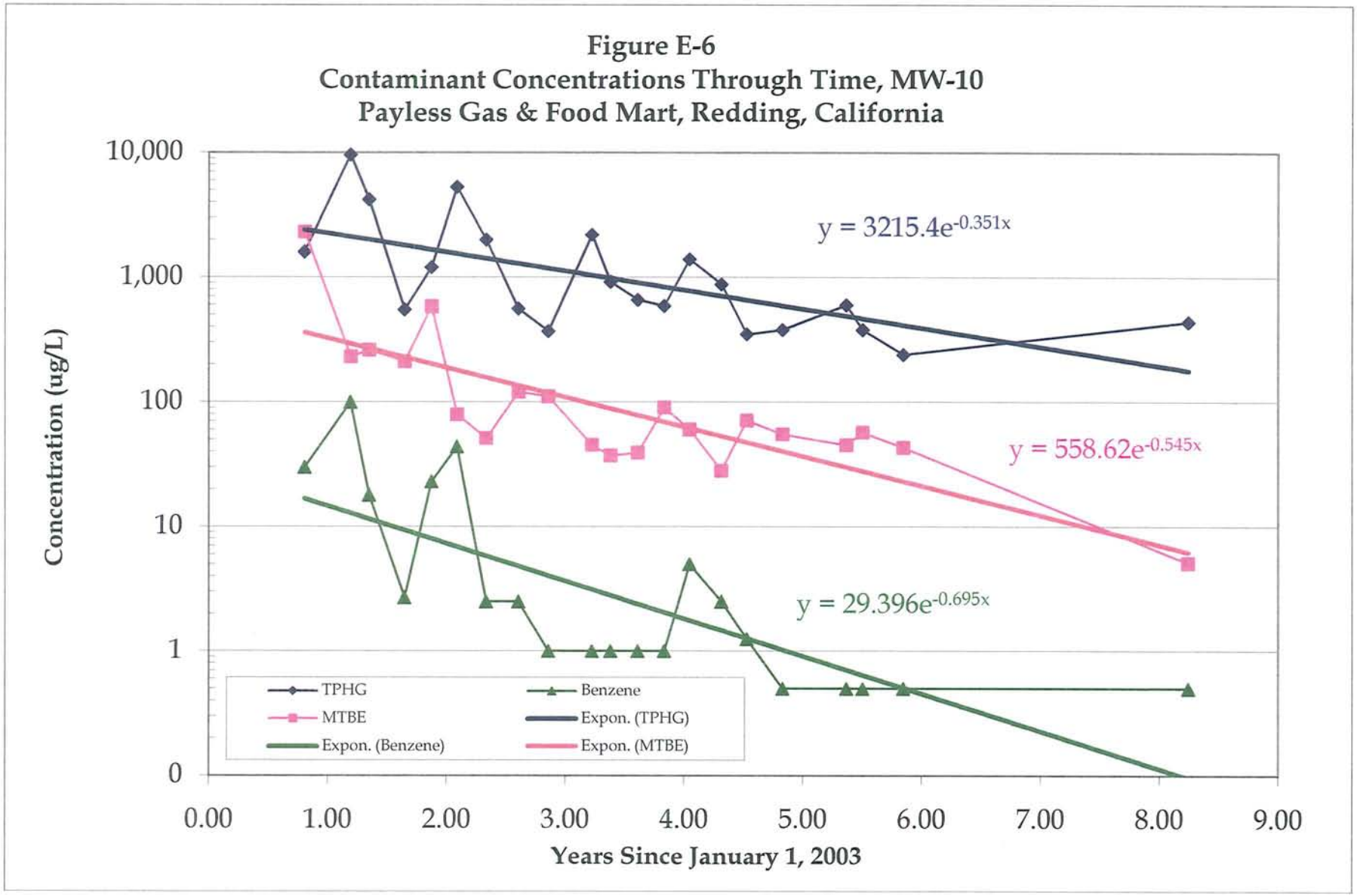


Figure E-6
Contaminant Concentrations Through Time, MW-10
Payless Gas & Food Mart, Redding, California
10,000
1,000
100
10
1
0
Concentration (ug/L)
y = 3215.4e-0.351x
y = 558.62e-0.545x
y = 29.396e-0.695x
TPHG
MTBE
Expon. (Benzene)
Benzene
Expon. (TPHG)
Expon. (MTBE)
0.00
1.00
2.00
3.00
4.00
5.00
6.00
7.00
8.00
9.00
Years Since January 1, 2003