RO 127

HerSchy Environmental, Inc.

January 25, 2006
Project A51-01

Mr. Barney Chan
Alameda County
Health Care Services Agency
Environmental Health Services
1131 Harbor Bay Parkway, Ste. 250
Alameda, California 94502-6577

Re: Results of November, 2005 Quarterly Groundwater Monitoring and Free Product Extraction Test, Alaska Gasoline Company, Oakland, California, Case #RO0000127

Dear Mr. Chan:

HerSchy Environmental, Inc. is pleased to present the results of the most recent quarterly groundwater monitoring event and free product pump test for the above-referenced site. The site is located at 6211 San Pablo Avenue, which is on the northwest corner of San Pablo Avenue and 62nd Street in Oakland, Alameda County, California (Figure 1). Groundwater monitoring was performed on November 17, 2005. A submersible product skimmer for removal of free product was installed in EX-1 on December 27, 2005, and operated until January 10, 2006, for the purpose of testing extraction rates.

METHODS OF INVESTIGATION

Groundwater Sampling Procedures:

Groundwater samples were collected from five of the seven monitoring wells on November 17, 2005. Monitoring well MW-4 and extraction well EX-1 were found to have floating product, and therefore were not sampled (depth to product data for EX-1 was inadvertently omitted during this monitoring event). All monitoring wells were measured for static water level and total depth using an electric sounder prior to initiating sampling. Depth to groundwater was recorded to the nearest 0.01 feet on field sampling data sheets. The groundwater elevation in the monitoring wells was calculated by subtracting the measured depth to groundwater from the surveyed well elevation. The depth to groundwater, total depth of the well, and well diameter were used to calculate the purge volume.

At least three casing volumes were purged from each well prior to collecting a groundwater sample using a Waterra electric pump and dedicated hoses. Physical characteristics (temperature, electrical conductivity, and pH), were measured at the initiation of purging and

then again just prior to collection of the groundwater sample. These characteristics were recorded on field sampling data sheets which are presented in Appendix A. One sample from each well was collected and contained in three 40-milliliter vials. Each of the sample containers was filled completely to form a positive meniscus, capped, and checked to ensure no air bubbles were present.

Samples were sealed in a ziplock bag and placed in a cooler chest with frozen gel packs ("blue ice") immediately after sampling. Samples were maintained at or below four degrees Celsius until delivered to the laboratory. Groundwater samples were handled under chain-of-custody documentation until delivered to a California certified laboratory.

Laboratory Analysis:

Groundwater samples were analyzed for gasoline-range total petroleum hydrocarbons (TPHg), benzene, toluene, ethylbenzene, and xylenes (BTEX), and methyl tertiary butyl ether (MTBE). Samples were analyzed using EPA method 8020 for BTEX and MTBE. Groundwater samples were also analyzed for the fuel oxygenates and additives MTBE, di-isopropyl ether (DIPE), ethyl tertiary butyl ether (ETBE), tertiary amyl methyl ether (TAME), tertiary butanol (TBA), 1,2-dichloroethane (1,2-DCA) and ethylene dibromide (EDB) using EPA method 8260.

RESULTS OF INVESTIGATION – GROUNDWATER MONITORING

Groundwater Conditions:

Because MW-4 and EX-1 contained floating product, no samples were collected from these wells. Groundwater data from wells with floating product is not used in determining the groundwater flow direction or gradient.

Groundwater was present beneath the site at an average depth of 7.62 feet below the surveyed well elevations during the November 2005 monitoring event. Groundwater elevation during the November 2005 monitoring event averaged 28.25 feet above mean sea level. This represents an increase in average groundwater elevation of about 0.16 feet since the August 2005 monitoring event. Groundwater flow direction is estimated at South 35 degrees West at a gradient of 0.010. Groundwater conditions are summarized in Table 1 and are presented graphically in Figure 2.

Table 1

Groundwater Conditions, Alaska Gasoline, Oakland

Well Number	Elevation	Depth to GW	GW Elevation
February 17, 2005*			
EX-1	33.28	0.34' free product	------
MW-1R	36.67	6.57	30.10
MW-2	36.33	5.86	30.47
MW-3	35.12	5.01	30.11
MW-4	34.11	1.50' free product	------
MW-5	35.17	4.88	30.29

Table 1

Groundwater Conditions, Alaska Gasoline, Oakland

Well Number	Elevation	Depth to GW	GW Elevation
MW-6	36.07	5.70	30.37
Flow Direction = S. 55 W.; Gradient = .0036			
May 24 and 26, 2005*			
EX-1	33.28	NS	NS
MW-1R	36.67	NS	NS
MW-2	36.33	6.39	29.94
MW-3	35.12	NS	NS
MW-4	34.11	0.48' free product	28.79 (Estimated)
MW-5	35.17	6.02	29.15
MW-6	36.07	NS	NS
Flow Direction = S. 16 W.; Gradient = .0097; Estimate only			
August 15 & 17, 2005*			
EX-1	33.28	0.83' free product	------
MW-1R	36.67	8.55	28.12
MW-2	36.33	7.99	28.34
MW-3	35.12	7.71	27.41
MW-4	34.11	0.5' free product	------
MW-5	35.17	6.75	28.42
MW-6	36.07	7.91	28.16
Flow Direction = S. 38 W.; Gradient = .013			
November 17, 2005*			
EX-1	33.28	NS	NS
MW-1R	36.67	8.41	28.26
MW-2	36.33	7.88	28.45
MW-3	35.12	7.56	27.56
MW-4	34.11	0.75' free product	------
MW-5	35.17	6.47	28.70
MW-6	36.07	7.80	28.27
Flow Direction = S. 35 W.; Gradient = .010			

Elevations in feet * survey conducted 7/8/04

NS = buried and not sounded or sampled

Based on the data gathered from the site monitoring wells, the groundwater flow direction is toward San Francisco Bay, located approximately 0.75 miles southwest of the site. Regional groundwater flow appears to parallel the surface grade in the area.

Groundwater Quality:

Groundwater samples were submitted to the laboratory and analyzed for the above-mentioned fuel constituents. Certified analytical reports and chain-of-custody documentation are presented in Appendix B and are summarized in Table 2 below:

Table 2
Laboratory Analytical Results for Groundwater, Alaska Gasoline, Oakland

Well No	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE
February 17, 2005						
EX-1	NA	NA	NA	NA	NA	NA
MW-1R	530	3.4	ND	ND	2.6	1,000
MW-2	18,000	2,100	31	800	680	20,000
MW-3	130,000	2,100	420	210	730	290,000
MW-4	NA	NA	NA	NA	NA	NA
MW-5	51	0.74	ND	0.94	ND	1.5
MW-6	5,600	190	34	41	110	10,000
May 24 and 26, 2005						
EX-1	NA	NA	NA	NA	NA	NA
MW-1R	NA	NA	NA	NA	NA	NA
MW-2	22,000	3,200	52	1,400	1,700	16,000
MW-3	NA	NA	NA	NA	NA	NA
MW-4	NA	NA	NA	NA	NA	NA
MW-5	ND	ND	ND	ND	ND	1.0
MW-6	NA	NA	NA	NA	NA	NA
August 15 and 17, 2005						
EX-1	NA	NA	NA	NA	NA	NA
MW-1R	2,500	64	240	61	210	2,300
MW-2	2,000	66	ND	46	47	2,400
MW-3	110,000	1,500	ND	ND	ND	260,000
MW-4	NA	NA	NA	NA	NA	NA
MW-5	ND	ND	ND	ND	ND	0.88
MW-6	1,800	27	ND	6.0	23	3,800
November 17, 2005						
EX-1	NA	NA	NA	NA	NA	NA
MW-1R	2,500	66	290	75	290	1,300
MW-2	760	19	0.64	15	13	1,000
MW-3	200,000	2,400	ND	ND	ND	580.000
MW-4	NA	NA	NA	NA	NA	NA
MW-5	71	0.81	ND	1.1	ND	1.4
MW-6	1,100	30	ND	4.4	9.0	2,400

All results presented in parts per billion (ppb) NA= no analysis
MTBE results by EPA method 8260 ND= below detectable limits

As requested by your office, groundwater samples were also analyzed for the fuel additives di-isopropyl ether (DIPE), ethyl tertiary butyl ether (ETBE), tertiary amyl methyl ether (TAME), tertiary butanol (TBA), 1,2-dichloroethane (1,2-DCA), ethylene dibromide (EDB), methanol, and ethanol. Ethanol and methanol were not detected in any of the groundwater samples during the May 2004 monitoring event and are no longer being included in the laboratory analysis. Laboratory analytical results are presented in Appendix B and are summarized in Table 3 below:

Table 3

Laboratory Analytical Results for Groundwater, Alaska Gasoline, Oakland

Sample	DIPE	ETBE	TAME	TBA	1,2-DCA	EDB	Methanol	Ethanol
February 17, 2005								
MW-1R	ND	ND	100	ND	ND	ND	NA	NA
MW-2	ND	ND	1,000	ND	ND	ND	NA	NA
MW-3	ND	ND	11,000	ND	ND	ND	NA	NA
MW-5	ND	ND	ND	ND	ND	ND	NA	NA
MW-6	ND	ND	780	2,000	ND	ND	NA	NA
May 24 and 25, 2005								
MW-1R	NS	NS	NS	NS	NS	NS	NS	NS
MW-2	ND	ND	610	ND	ND	ND	NA	NA
MW-3	NS	NS	NS	NS	NS	NS	NS	NS
MW-5	ND	ND	ND	ND	ND	ND	NA	NA
MW-6	NS	NS	NS	NS	NS	NS	NS	NS
August 15 and 17, 2005								
MW-1R	ND	ND	210	ND	ND	ND	NA	NA
MW-2	ND	ND	95	880	ND	ND	NA	NA
MW-3	ND	ND	21,000	25,000	ND	ND	NA	NA
MW-5	ND	ND	ND	ND	ND	ND	NA	NA
MW-6	ND	ND	300	3,500	ND	ND	NA	NA
November 17, 2005								
MW-1R	ND	ND	110	1,600	ND	ND	NA	NA
MW-2	ND	ND	26	810	ND	ND	NA	NA
MW-3	ND	ND	24,000	49,000	ND	ND	NA	NA
MW-5	ND	ND	ND	ND	ND	ND	NA	NA
MW-6	ND	ND	190	9,500	ND	ND	NA	NA

ND = below detectable concentrations
NA = no analysis
All results in parts per billion (ppb)
NS = not sampled

There was no DIPE, ETBE, EDB, or 1,2-DCA detected in the groundwater samples during the November 2005 monitoring event.

RESULTS OF INVESTIGATION – INTERIM REMEDIAL ACTION

Methods: Free Product Recovery Test:

As outlined in the March 7, 2005 report, *"Results of February, 2005 Quarterly Groundwater Monitoring, and Work Plan for Interim Remedial Action, Alaska Gasoline Company, Oakland, California"*, HerSchy Environmental, Inc. recommended the testing and possible installation of a product recovery system (PRS) in order to enhance remedial efforts at the subject site prior to installation of the approved SVES. The purpose of the PRS is to reduce and possibly eliminate the floating product known to exist in the southwest corner of the subject site. The PRS consists of a dedicated product pump, dedicated hoses, and a poly tank for the purpose of storing free product and highly contaminated groundwater.

On December 27, 2005, a Xitech model AJ 1000 Smart Skimmer product pump with external timer was installed in extraction well EX-1. The Xitech Skimmer is designed to be placed at the product / groundwater interface where it removes free product to a sheen on the groundwater surface while excluding groundwater extraction. The timer can be set at various pumping intervals to accommodate product recovery rate. The advantage of this tool over other PRS pumps is that floating product is removed without any decrease in groundwater elevation. A significant decrease in the groundwater elevation will create a smear zone in soil as the elevation of floating product declines through the soil column.

Prior to pump installation, wells EX-1 and MW-4 were measured for depth to product and depth to groundwater using an electric interface probe. The pump was then lowered into extraction well EX-1 to the free product / groundwater interface. The pump was turned on and the rate of product recovery was recorded. When the total volume of product that was present in extraction well EX-1 was removed, the pump was shut off and removed from the well. Depth to product and depth to groundwater were measured at regular intervals in both EX-1 and MW-4. Measurements in EX-1 would define the recharge rate of product entering the extraction well; measurements on monitoring well MW-4 would record the effect of extraction on nearby groundwater and floating product levels. Product produced during the test was temporarily stored on site in a poly tank, sampled for characterization purposes, and removed from the site by a licensed waste hauler to be disposed of properly.

Results: Free Product Recovery Test:

The Xitech Smart Skimmer successfully removed all floating product from EX-1 without extracting groundwater. Unfortunately, groundwater elevation was at historic highs for the duration of the two-week test period, causing the screen top at five feet BGS in EX-1 to be drowned. Groundwater was initially measured to be at 3.32' BGS in EX-1. Upon removal of free product from EX-1 and after twelve hours recovery time, groundwater was measured at 2.76' BGS. Additional free product was thus completely restricted from entering the well. Therefore the recovery rate of floating product could not be measured during the test.

CONCLUSIONS AND RECOMMENDATIONS

All of the on-site monitoring wells sampled during the November 2005 event were impacted, to varying degrees, with gasoline constituents. The highest concentrations detected this quarter are from MW-3, the well that historically has recorded the highest contaminant concentrations of the wells without floating product. Concentrations remain relatively low in MW-5. This is likely due to the up-gradient location of MW-5 relative to the USTs. Relatively high concentrations of petroleum hydrocarbons remain in soil and groundwater beneath the subject site. This is clearly evident by the fact that monitoring well MW-4 and extraction well EX-1 contain floating product.

The authority to construct (ATC) for the soil vapor extraction system (SVES) has cleared the Bay Area Air Quality Management District (BAAQMD). We have applied for, and are now awaiting, an electrical permit from the City of Oakland for SVES construction and operation. An on-site meeting with a PG&E representative and an independent electrical contractor took place in November 2005 for the purpose of clarifying the utilities requirements and plans within the SVES enclosure. Contact was made in December 2005 with the City of Oakland to expedite permit approval, but as yet our attempts to accelerate the process have not succeeded.

Product Recovery System:

HerSchy Environmental, Inc. recommends a second test of free product recovery using a Xitech or similar product pump to be conducted when groundwater levels decline. Significant groundwater level fluctuation occurs seasonally in this region in response to changes in rainfall. Another free product pump test may be performed as soon as March 2006 if conditions allow. Once product pumping has been successfully tested, recommendations can be made concerning ongoing product recovery as an interim remedial solution. At present the free product plume is not fully defined and as a result the quantity of product cannot be determined. However, a product recovery system can be operated until monitoring indicates that free product is no longer present within the capture zone of EX-1. Off-site monitoring wells are intended to be installed near the site; however, permit issues have significantly delayed this work. If free product is discovered in off-site wells beyond the capture zone of EX-1, the product recovery system can be extended to these areas as part of site remediation.

If you have any questions or need additional information, please contact the undersigned at the letterhead address or at (559) 641-7320.

With best regards,
HerSchy Environmental, Inc.

Edward L. Kaczmarek
Geologist

James S. Olbinski
Registered Geologist #4274

REGISTERED GEOLOGIST
JAMES S. OLBINSKI
No. 4274
STATE OF CALIFORNIA

pc: Mr. Pritpaul Sappal
Mr. Hernan Gomez, Oakland Fire Services Agency
Mrs. Susan M. Torrence, Deputy District Attorney

HerSchy Environmental, Inc.

Environmental Consulting and Remediation

P. O. Box 229
Bass Lake, California 93604-0229
Tel. (559) 641-7320, Fax (559) 641-7340

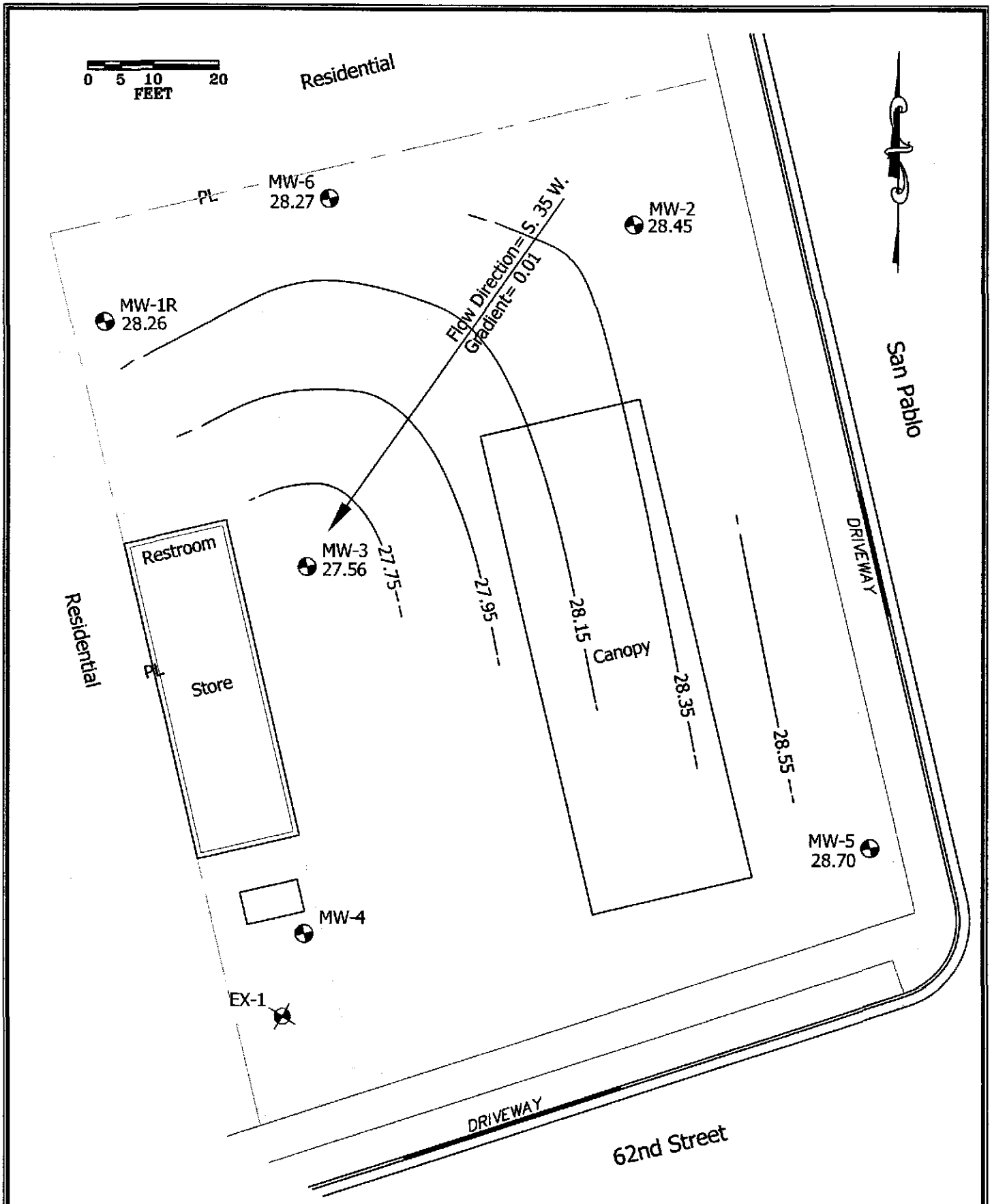
SITE LOCATION MAP

ALASKA GASOLINE COMPANY

6211 San Pablo Avenue, Oakland, California

DATE:	August 2005
FILE NO.:	A51.01
DRAWN BY:	WEA

FIGURE 1



HerSchy Environmental, Inc.
Environmental Consulting and Remediation
P. O. Box 229
Bass Lake, California 93604-0229
Tel. (559) 641-7320, Fax (559) 641-7340

November, 2005 GROUNDWATER CONDITIONS

ALASKA GASOLINE COMPANY

6211 San Pablo Avenue, Oakland, California

DATE: December 2005

FILE NO.: A51-01

DRAWN BY: JSO

FIGURE 2

APPENDIX A

GROUNDWATER FIELD

SAMPLING DATA SHEETS

HerSchy Environmental

WATER SAMPLE FIELD DATA SHEET

Client Name: ALASKA GAS Location: OAKLAND

Purged By: WEST Sampled by: WEST

Sample ID: MW-1R Type: Groundwater X Surface Water ____ Other ____

Casing Diameter (inches): 2 X 3 ____ 4 ____ 5 ____ 6 ____ Other ____

Casing Elevation (feet/MSL): 36.67 Volume in Casing (gal.): 2.5

Depth of Well (feet): 23.40 Calculate Purge Volume (gal.): 7.3

Depth to Water (feet): 8.41 Actual Purge Volume (gal.): 7+

Date Purged: 11-17-05 Date Sampled: 11-17-05 0733

TIME	VOLUME	pH	E. C.	TEMP.	TURBIDITY
0723	✓	6.62	578	65.6	CLOUDY
0731	7+	6.69	546	65.8	CLOUDY

Sheen Y/N?: Y Odor: PETROLEUM

Purging Equipment: WATERRA

Sampling Equipment: WATERRA

Remarks: ____

Sampler's Signature: John S. Wood

/Water Sample Sheet.wpd

HerSchy Environmental

WATER SAMPLE FIELD DATA SHEET

Client Name: ALASKA GAS Location: OAKLAND

Purged By: WEST Sampled by: WEST

Sample ID: MW-2 Type: Groundwater X Surface Water ____ Other ____

Casing Diameter (inches): 2 X 3 ____ 4 ____ 5 ____ 6 ____ Other ____

Casing Elevation (feet/MSL): 36.33 Volume in Casing (gal.): 2.1

Depth of Well (feet): 20.90 Calculate Purge Volume (gal.): 6.4

Depth to Water (feet): 7.88 Actual Purge Volume (gal.): 7+

Date Purged: 11-17-05 Date Sampled: 11-17-05 0808

TIME	VOLUME	pH	E. C.	TEMP.	TURBIDITY
0757	1	6.70	590	66.8	CLEAR
0805	6.4	6.64	612	67.4	CLOUDY

Sheen Y/N?: Y Odor: PETROLEUM

Purging Equipment: WATERRA

Sampling Equipment: WATERRA

Remarks: ____

Sampler's Signature: John S. West

/Water Sample Sheet.wpd

HerSchy Environmental

WATER SAMPLE FIELD DATA SHEET

Client Name: ALASKA GAS Location: OAKLAND

Purged By: WEST Sampled by: WEST

Sample ID: MW-3 Type: Groundwater X Surface Water ____ Other ____

Casing Diameter (inches): 2 X 3 ____ 4 ____ 5 ____ 6 ____ Other ____

Casing Elevation (feet/MSL): 33.12 Volume in Casing (gal.): 2.2

Depth of Well (feet): 21.20 Calculate Purge Volume (gal.): 6.7

Depth to Water (feet): 7.56 Actual Purge Volume (gal.): 7+

Date Purged: 11-17-05 Date Sampled: 11-17-05 0715

TIME	VOLUME	pH	E. C.	TEMP.	TURBIDITY
0704	~	6.52	969	61.0	CLOUDY
0712	6.7	6.47	916	65.4	CLOUDY

Sheen Y/N?: Y Odor: PETROLEUM

Purging Equipment: WATERRA

Sampling Equipment: WATERRA

Remarks: ____

Sampler's Signature: John S West

/Water Sample Sheet.wpd

HerSchy Environmental

WATER SAMPLE FIELD DATA SHEET

Client Name: ALASKA GAS Location: OAKLAND

Purged By: _____ Sampled by: _____

Sample ID: MW-4 Type: Groundwater X Surface Water _____ Other _____

Casing Diameter (inches): 2 X 3 _____ 4 _____ 5 _____ 6 _____ Other _____

Casing Elevation (feet/MSL): 34.11 Volume in Casing (gal.): _____

Depth of Well (feet): _____ Calculate Purge Volume (gal.): N/A

Depth to Water (feet): N/A Actual Purge Volume (gal.): _____

Date Purged: _____ Date Sampled: _____

TIME	VOLUME	pH	E. C.	TEMP.	TURBIDITY

Sheen Y/N?: _____ Odor: _____

Purging Equipment: N/A

Sampling Equipment: _____

Remarks: FLOATING PRODUCT .75"
MEASURED WITH A TAPE MEASURE, USING A BAILER TO EXTRACT SAMPLE

Sampler's Signature: John S. West

/Water Sample Sheet.wpd

HerSchy Environmental

WATER SAMPLE FIELD DATA SHEET

Client Name: ALASKA GAS Location: OAKLAND

Purged By: WEST Sampled by: WEST

Sample ID: MW-5 Type: Groundwater X Surface Water ____ Other ____

Casing Diameter (inches): 2 X 3 ____ 4 ____ 5 ____ 6 ____ Other ____

Casing Elevation (feet/MSL): 35.17 Volume in Casing (gal.): 3.0

Depth of Well (feet): 24.90 Calculate Purge Volume (gal.): 9.0

Depth to Water (feet): 6.47 Actual Purge Volume (gal.): 9+

Date Purged: 11-17-05 Date Sampled: 11-17-05 0828

TIME	VOLUME	pH	E. C.	TEMP.	TURBIDITY
0815	1	6.71	701	67.2	Cloudy
0823	9	6.71	659	67.6	Cloudy

Sheen Y/N?: Y Odor: PETROLEUM

Purging Equipment: ~~PETT~~ WATERRA

Sampling Equipment: WATERRA

Remarks: ____

Sampler's Signature: John L. West

/Water Sample Sheet.wpd

HerSchy **WATER SAMPLE FIELD DATA SHEET**
Environmental

Client Name: ALASKA GAS Location: OAKLAND

Purged By: WEST Sampled by: WEST

Sample ID: MW-6 Type: Groundwater X Surface Water ____ Other ____

Casing Diameter (inches): 2 X 3 ____ 4 ____ 5 ____ 6 ____ Other ____

Casing Elevation (feet/MSL): 36.07 Volume in Casing (gal.): 2.5

Depth of Well (feet): 23.10 Calculate Purge Volume (gal.): 7.5

Depth to Water (feet): 7.80 Actual Purge Volume (gal.): 7.5+

Date Purged: 11-17-05 Date Sampled: 11-17-05 0750

TIME	VOLUME	pH	E. C.	TEMP.	TURBIDITY
0740	1	6.65	548	66.5	CLOUDY
0747	7.5	6.78	544	66.5	CLEAR

Sheen Y/N?: Y Odor: PETROLEUM

Purging Equipment: WATERRA

Sampling Equipment: WATERRA

Remarks: ____

Sampler's Signature: John L. Wilson

/Water Sample Sheet.wpd

APPENDIX B

CERTIFIED ANALYTICAL REPORTS

WITH CHAIN-OF-CUSTODY

CASTLE ANALYTICAL LABORATORY

Environmental Testing Services
Certificate #2480
2333 Shuttle Drive, Atwater, CA 95301
Phone: (209) 384-2930
Fax: (209) 384-1507

HerSchy Environmental	Client Project ID: Alaska Gas - Oakland	Sampled: 11-17-05
P.O. Box 229	Reference Number: 8721	Received: 11-17-05
Bass Lake, CA 93604	Sample Description: Water	Extracted: 11-18-05
Attn: William Ackland	Sample Prep/Analysis Method: EPA 5030/8015M, 8020	Analyzed: 11-18-05
	Lab Numbers: 8721-1W, 2W, 3W, 4W, 5W	Reported: 11-30-05

TOTAL PETROLEUM HYDROCARBONS - GASOLINE WITH BTEX DISTINCTION

ANALYTE	REPORTING LIMIT µg/L	SAMPLE ID MW-1R (µg/L)	SAMPLE ID MW-2 (µg/L)	SAMPLE ID MW-3 (µg/L)	SAMPLE ID MW-5 (µg/L)	SAMPLE ID MW-6 (µg/L)
MTBE	0.50	1100	770	470000	ND	2200
BENZENE	0.50	66	19	2400	0.81	30
TOLUENE	0.50	290	0.64	ND	ND	ND
ETHYLBENZENE	0.50	75	15	ND	1.1	4.4
TOTAL XYLENES	0.50	290	13	ND	ND	9.0
GASOLINE RANGE HYDROCARBONS	50	2500	760	200000	71	1100
Report Limit Multiplication Factor:		5	1	500	1	5
Report Limit Multiplication Factor for MTBE only:		100	100	10000		500
Report Limit Multiplication Factor for Toluene only:		100				

Surrogate % Recovery:	FID: 136% / PID: 122%	FID: 228% / PID: 150%	FID: 99.6% / PID: 93.1%	FID: 98.7% / PID: 97.3%	FID: 112% / PID: 107%
Instrument ID:	VAR-GC1	VAR-GC1	VAR-GC1	VAR-GC1	VAR-GC1

Analytes reported as ND were not detected or below the Practical Quantitation Limit
Practical Quantitation Limit = Reporting Limit x Report Limit Multiplication Factor

APPROVED BY: _____
James C. Phillips / Laboratory Director or
Clari J. Cone / Laboratory Manager

CASTLE ANALYTICAL LABORATORY

Environmental Testing Services
Certificate # 2480
2333 Shuttle Drive, Atwater, CA 95301
Phone: (209) 384-2930
Fax: (209) 384-1507

HerSchy Environmental	Client Project ID: Alaska Gas - Oakland	Method: EPA 5030/8015M,8020
P.O. Box 229	Reference Number: 8721	Instrument ID: Var-GC1
Bass Lake, CA 93604	Sample Description: Water	Extracted: 11-18-05
Attn: William Ackland	Analyst: Jim Phillips	Analyzed: 11-18-05
		Reported: 11-30-05

QUALITY CONTROL DATA REPORT

ANALYTE	Gasoline	MTBE	Benzene	Toluene	Ethyl Benzene	Total Xylenes
Spike Concentration:	110	2.16	1.34	7.58	1.82	8.88
Units:	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
LCS Batch #:	VW-N185	VW-N185	VW-N185	VW-N185	VW-N185	VW-N185
LCS % Recovery:	93.6%	78.9%	84.7%	97.2%	100%	101%
Surrogate Recovery:	102%	103%	103%	103%	103%	103%
Control Limits:	70-130 %	70-130 %	70-130 %	70-130 %	70-130 %	70-130 %
MS/MSD Batch #:	VW-N185	VW-N185	VW-N185	VW-N185	VW-N185	VW-N185
Spike Concentration:	110	2.16	1.34	7.58	1.82	8.88
MS % Recovery:	125%	185%	134%	97.7%	105%	103%
Surrogate Recovery:	101%	102%	102%	102%	102%	102%
MSD % Recovery:	123%	192%	130%	96.3%	97.4%	100%
Surrogate Recovery:	102%	103%	103%	103%	103%	103%
Relative % Difference:	1.28%	3.55%	3.21%	1.33%	7.12%	2.33%
Method Blank :	ND	ND	ND	ND	ND	ND
Surrogate Recovery:	92.8%	96.0%	96.0%	96.0%	96.0%	96.0%

The LCS (Laboratory Check Sample) is a control sample of known, interferent free matrix that is fortified with representative analytes and analyzed using the same reagents, preparation and analytical methods employed for the samples. The LCS % recovery is used for validation of sample batch results. Due to matrix effects, the QC limits and recoveries for MS/MSD's are advisory only and are not used to accept or reject batch results.

APPROVED BY: _____

James C. Phillips / Laboratory Director or
Clari J. Cone / Laboratory Manager

CASTLE ANALYTICAL LABORATORY

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Certificate #2480
2333 Shuttle Drive, Atwater, CA 95301
Phone: (209) 384-2930
Fax: (209) 384-1507

HerSchy Environmental	Client Project ID: Alaska Gas - Oakland	Sampled: 11-17-05
P.O. Box 229	Lab Reference Number: 8721	Received: 11-17-05
Bass Lake, CA 93604	Sample Description: Water	Extracted: 11-21-05
Attn: William Ackland	Sample Prep/Analysis Method: EPA 5030/8260	Analyzed: 11-21-05
	Lab Numbers: 8721-1W, 2W, 3W, 4W, 5W	Reported: 11-30-05

GASOLINE ADDITIVES BY EPA METHOD 8260 GC/MS

ANALYTE	REPORTING LIMIT (µg/L)	SAMPLE ID MW-1R (µg/L)	SAMPLE ID MW-2 (µg/L)	SAMPLE ID MW-3 (µg/L)	SAMPLE ID MW-5 (µg/L)	SAMPLE ID MW-6 (µg/L)
FUEL OXYGENATES						
Methyl tert-Butyl Ether (MTBE)	0.50	1300	1000	580000	1.4	2400
Di-isopropyl Ether (DIPE)	0.50	ND	ND	ND	ND	ND
Ethyl tert-Butyl Ether (ETBE)	0.50	ND	ND	ND	ND	ND
tert-Amyl Methyl Ether (TAME)	0.50	110	26	24000	ND	190
tert-Butanol (TBA)	20	1600	810	49000	ND	9500
VOLATILE HALOCARBONS						
1,2-Dichloroethane (1,2-DCA)	0.50	ND	ND	ND	ND	ND
Ethylene Dibromide (EDB)	0.50	ND	ND	ND	ND	ND
Report Limit Multiplication Factor:		5*	5*	200*	1	10*
Report Limit Multiplication Factor for MTBE:		100	100	20000		200
Report Limit Multiplication Factor for TAME:				20000		

** Report limit raised due to matrix interference*

Surrogate Recoveries					
1,2-Dichloroethane-d4	91.4%	98.9%	101%	103%	92.9%
Toluene-d8	95.9%	99.0%	97.6%	95.5%	91.8%

Instrument ID: HP 5972 MS
Analytes reported as ND were not detected or below the Practical Quantitation Limit
Practical Quantitation Limit = Reporting Limit x Report Limit Multiplication Factor
(µg/L) = micrograms per liter or parts per billion (ppb)

APPROVED BY: _____

James C. Phillips / Laboratory Director or
Clari J. Cone / Laboratory Manager

CASTLE ANALYTICAL LABORATORY

Environmental Testing Services
Certificate #2480
2333 Shuttle Drive, Atwater, CA 95301
Phone: (209) 384-2930
Fax: (209) 384-1507

HerSchy Environmental
P.O. Box 229
Bass Lake, CA 93604
Attn: William Ackand

Client Project ID: Alaska Gas - Oakland
Lab Reference Number: 8721
Sample Description: Water
Analyst: Scott Foster

Method: EPA 5030/8260
Instrument ID: HP 5972 MS
Prepared: 11-21-05
Analyzed: 11-21-05
Reported: 11-30-05

QUALITY CONTROL DATA REPORT

SPIKE ID: VWMS-N215

	Reporting Limit µg/L	BLANK Result µg/L	Spiking Level µg/L	Control Spike %R	%R Limits
COMPOUNDS					
t-Butyl Alcohol (t-BA)	20	ND	75.0	140%	57.6-163
Methyl t-butyl ether (MTBE)	0.50	ND	2.50	116%	64.7-134
Diisopropyl ether (DIPE)	0.50	ND	2.50	104%	58.2-135
Ethyl t-Butyl ether (ETBE)	0.50	ND	2.50	109%	65.0-132
t-Amyl methyl ether (TAME)	0.50	ND	2.50	100%	61.0-139
1,2-Dichloroethane (1,2-DCA)	0.50	ND	2.50	112%	70.1-145
Ethylene dibromide (EDB)	0.50	ND	2.50	102%	55.0-156
Surrogates:					
1,2-Dichloroethane-d4	1.00	102%	10.0	107%	80.0-118
Toluene-d8	1.00	91.6%	10.0	96.1%	74.1-129

	Spiking Level µg/L	MATRIX SPIKE %R	MATRIX SPIKE DUP %R	%R Limits	%RPD
COMPOUNDS					
t-Butyl Alcohol (t-BA)	75.0	125%	132%	39.7-178	5.93%
Methyl t-butyl ether (MTBE)	2.50	90.4%	98.4%	55.3-144	5.26%
Diisopropyl ether (DIPE)	2.50	100%	98.4%	54.9-135	1.61%
Ethyl t-Butyl ether (ETBE)	2.50	103%	112%	54.0-136	8.92%
t-Amyl methyl ether (TAME)	2.50	78.0%	88.8%	39.6-131	11.2%
1,2-Dichloroethane (1,2-DCA)	2.50	119%	116%	73.9-147	2.72%
Ethylene dibromide (EDB)	2.50	98.0%	96.8%	63.3-141	1.23%
Surrogate:					
1,2-Dichloroethane-d4	10.0	101%	104%	68.9-128	2.64%
Toluene-d8	10.0	101%	101%	68.0-128	0.494%

The LCS (Laboratory Check Sample) is a control sample of known, interferent free matrix that is fortified with representative analytes and analyzed using the same reagents, preparation and analytical methods employed for the samples. The LCS % recovery is used for validation of sample batch results. Due to matrix effects, the QC limits and recoveries for MS/MSD's are advisory only and are not used to accept or reject batch results.

APPROVED BY: _____

James C. Phillips / Laboratory Director or
Clari J. Cone / Laboratory Manager

CASTLE ANALYTICAL LABORATORY

CHAIN OF CUSTODY

Location: 2333 Shuttle Drive, Bldg 908/909, Atwater, CA 95301
Mailing Address: 2333 Shuttle Drive, Atwater, CA 95301
Phone: (209) 384-2930 - Fax: (209) 384-1507

Certificate No. 2480

PAGE 1 OF 1

Customer: ALASKA GAS
Address:
City/State/ZIP: OAKLAND
Phone / FAX:
Proj # / P.O. #:
Report Attention: BILL
Sampler Signature: John L. West
Printed: JOHN S. WEST

Lab ID#	SAMPLE ID	DATE	TIME	DESCRIPTION/LOCATION	SAMPLE TYPE (g) grab (c) composite (d) discrete	SAMPLE MATRIX (s) solid (l) liquid (o) other	REQUESTED ANALYSES: BTEX/TPH-GAS	MTBE	TPH-DIESEL	TRPH 418.1M	Oxy's / EDB / DCA by 8260	8260					Electronic Deliverables (EDF)	NUMBER OF CONTAINERS	OBSERVATIONS/REMARKS
8721-1W	MW-1R	11-17	0733		G	L	X	X			X							3	
-2W	MW-2		0808																
-3W	MW-3		0715																
-4W	MW-5		0828																
-5W	MW-6		0750																

Method of Shipment:

Notes:

	Signature	Printed Name	Date	Time	Company Name
Relinquished by:	John L. West	JOHN S. WEST	11-17	11:45	HERSCHY ENV
Received by:	Veronica Soto	Veronica Soto	11-17	11:45	Castle analytical
Relinquished by:					
Received by:					
Relinquished by:					
Received by:					

15 Total number of containers submitted to the laboratory

Note: All special requests (e.g. quick turn times) must be cleared through authorized laboratory personnel .

RESULTS DUE : _____

☐ VERBAL ☐ WRITTEN