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Environmental Health

May 14, 2012

Paresh C. Khatri
Hazardous Materials Specialist
Alameda County Environmental Health
1131Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

Subject: **Alameda Gas**
1310 Central Avenue, Alameda
Fuel Leak Case No. RO0000022

Dear Mr. Khatri:

Enclosed is the *Quarterly Groundwater Monitoring Report – Fourth Quarter 2011* for the subject LUFT site. In compliance with state and local regulations, electronic submittals of this report have been uploaded to the Geotracker database and the Alameda County ftp website.

I declare, under penalty of perjury that the information and/or recommendations contained in the attached report are true and correct to the best of my knowledge.

Please call Tim Cook at Cook Environmental Services at (925) 478-8390 if you have questions or comments in regards to the technical content of this report.

Very truly yours,

Alameda Gas

Nissan Saidian Joseph Zadik Leon Zekster

cc: Tim Cook, Cook Environmental Services, Inc.

SEMI-ANNUAL GROUNDWATER MONITORING REPORT
Fourth Quarter 2011

Alaska Gas
1310 Central Avenue
Alameda, California 94501
LOP Case No. RO0000022

PREPARED FOR:
Nissan Saidian
5733 Medallion Court
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SUBMITTED TO:
Alameda County Environmental Health Services
Local Oversight Program
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PREPARED BY:
Cook Environmental Services, Inc.
1485 Treat Boulevard, Suite 203A
Walnut Creek, California 94597

May 11, 2012

Project No. 1035

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Cook Environmental Services, Inc. prepared this document under the professional supervision of the person whose seal and signature appears below. No warranty, either expressed or implied, is made as to the professional advice presented herein. The analysis, conclusions, and recommendations contained in this document are based upon site conditions at the time of the investigation, which are subject to change.

The conclusions presented in this document are professional opinions based solely upon visual observations of the site and vicinity, and interpretation of available information as described in this report. The limited scope of services performed in execution of this investigation may not be appropriate to satisfy the needs, or requirements of other regulatory agencies, or of other users. Any use or reuse of this document or its findings, conclusions or recommendations presented herein is at the sole risk of said user.

Tim Cook, P.E.
President

ACRONYMS AND ABBREVIATIONS

ACEHS	Alameda County Environmental Health Services
AEI	All Environmental, Inc.
amsl	above mean sea level
ASE	Aqua Science Engineers, Inc.
BTEX	benzene, toluene, ethylbenzene, xylenes
CES	Cook Environmental Services, Inc.
COC	chain-of-custody
DCA	1,2-dichloroethane
DIPE	di-isopropyl ether
EDB	ethylene di-bromide
EDF	electronic data file
ESL	Environmental Screening Level
EtBE	ethyl tert-butyl ether
FS/CAP	Feasibility Study/Corrective Action Plan
Matriks	Matriks Corporation
MtBE	methyl tert-butyl ether
O&G	oil and grease
µg/L	micrograms per liter
mg/Kg	milligrams per kilogram
ml	milliliter
MW	monitoring well
PDF	portable document format
RWQCB	California Regional Water Quality Control Board
SC	specific conductance
SWRCB	California State Water Resources Control Board
tAME	tert-amyl methyl ether
tBA	tert butyl alcohol
UST	underground storage tank
VOA	volatile organic analysis

INTRODUCTION

This report presents the results of the fourth quarter semi-annual groundwater monitoring event for 2011 conducted by Cook Environmental Services, Inc. (CES) at Alaska Gas (the "Site"), located at 1310 Central Avenue in Alameda, California. The semi-annual groundwater monitoring event (monitoring event) described in this report was conducted on December 15, 2011 and is part of an ongoing subsurface investigation of petroleum hydrocarbons in soil or groundwater that was caused by an unauthorized release of petroleum fuels from the UST system (tanks, associated piping and dispensers) formerly located at the Site. CES is conducting this investigation on behalf of the responsible parties, Mr. Leon Zektser, Mr. Nissan Saidian and Mr. Joe Zadik. The Alameda County Environmental Health Services (ACEHS) is the lead regulatory agency overseeing Site investigation and remediation and the ACEHS case number is RO0000022. The semi-annual groundwater monitoring program consists of the collection and laboratory analysis of groundwater samples from five groundwater monitoring wells in order to assess concentrations of petroleum hydrocarbon compounds in shallow groundwater.

Site Description and Physical Setting

The Site is currently a retail gasoline fueling station located in an area of mixed commercial and residential properties in the south-central part of the island of Alameda. The Site is located at the intersection of Encinal Avenue, Sherman Street, and Central Avenue. A Site location map is shown on **Figure 1** and a Site plan showing physical features and groundwater monitoring well locations is shown on **Figure 2**.

The Site is relatively flat and the investigation area has a surface elevation of approximately 25 feet amsl. San Francisco Bay and the Alameda Estuary are located approximately one-half mile to the south.

Site History

In May 1996, Petrotek removed three gasoline USTs including one 10,000-gallon, one 7,500-gallon and one 5,000-gallon UST from the western corner of the Site. A 500-gallon waste oil UST adjacent to the building, was also removed from the southern portion of the Site. Fuel dispensers and associated product piping were also removed.

Free-phase petroleum hydrocarbons were observed floating on the groundwater surface in the gasoline UST excavation following removal of the USTs. According to the laboratory analysis, a groundwater sample collected from the gasoline UST excavation contained 2,800 micrograms per liter (µg/L) of total petroleum hydrocarbons as gasoline (TPH-g) and 100 µg/L benzene. Soil samples collected from the same excavation contained up to 5,000 milligrams per kilogram (mg/Kg) of THP-g and 31mg/Kg benzene. Soil samples collected beneath the former dispenser island contained up to 6,800 mg/Kg TPH-g and 63 mg/Kg benzene. A ground water sample collected in the waste oil UST excavation contained 35,000 µg/L of total petroleum hydrocarbons as diesel (TPH-d) and motor oil range hydrocarbons, and 1,300 µg/L of TPH-g. These results are documented in a *UST Closure Report* submitted by Petrotek in May 1996.

Petrotek reportedly excavated and disposed of approximately 600 cubic yards of petroleum hydrocarbon-impacted soil from the UST excavations. It does not appear that confirmation soil samples were collected following removal of the petroleum hydrocarbon-impacted soil. Approximately 15,000 gallons of ground water were also removed from the excavations, treated and discharged to the sanitary sewer. Two new gasoline USTs, dispensers and product piping were installed in the same UST excavation after the petroleum hydrocarbon-impacted soil and ground water were removed.

In November 1998, All Environmental Inc. (AEI) advanced 14 soil borings on the Site and collected soil and groundwater samples for analysis. Up to 5,900 mg/Kg of TPH-g was detected in soil samples collected from the borings. Up to 120,000 µg/L TPH-g and 7,200 µg/L benzene were detected in groundwater samples from the borings.

In October 1999, HerSchy Environmental installed three monitoring wells at the Site. The initial sampling yielded up to 43,000 µg/L TPH-g, 8,700 µg/L total petroleum hydrocarbons as diesel (TPH-d), 480 µg/L benzene, and 1,600 µg/L methyl tert-butyl ether (MtBE) were detected in groundwater samples from the wells. The groundwater flow direction was southwesterly under a gradient of 0.0085. Well construction details are presented in **Table 1**.

On May 16, 2000, Aqua Science Engineers (ASE) began quarterly monitoring at the Site. Groundwater samples collected from MW-1 contained 20,000 µg/L TPH-g, 38 µg/L benzene, 6.3 µg/L toluene, 740 µg/L ethyl benzene, and 1,600 µg/L total xylenes. No MtBE or other oxygenates were detected in the sample from MW-1. No hydrocarbons were detected in the groundwater sample taken from MW-2. The groundwater sample from MW-3 contained 17,000 µg/L TPH-g, 2,800 µg/L benzene, 60 µg/L toluene, 380 µg/L ethyl benzene, 190 µg/L total xylenes, 990 µg/L MtBE, 9.1 µg/L tert-amyl methyl ether (TAME), and 350 µg/L tert butyl alcohol (tBA).

On July 28, 2000, ASE advanced 12 Geoprobe borings (borings BH-A through BH-L) to further delineate the lateral and vertical extent of petroleum hydrocarbons and collected soil and grab groundwater samples from each borings. Laboratory analysis detected 0.00061 mg/Kg of MtBE in a soil samples collected from 3.0 feet (ft) below ground surface in boring BH-J. There were no petroleum hydrocarbons or oxygenates detected in soil samples from the other 11 borings, however, petroleum hydrocarbons and oxygenates were detected in grab groundwater samples collected from borings BH-A, B, C, D, I, J, K, and L.

In December 2002, ASE conducted an investigation to assess whether subsurface utility line trenches may provide a groundwater movement pathway. ASE concluded that it did not appear that the utility line trenches act as groundwater movement pathways. This conclusion was based on ASE's assumption that the utility line trench backfill material is native sandy soil and that the highest concentrations of petroleum hydrocarbons in the 12 Geoprobe borings soil samples were located beyond the utility line trenches. Although ASE concluded that the utility line trenches did not provide a groundwater movement pathway, the ACEHS requested that water samples be collected from the sewer in one of the trenches to assess whether petroleum hydrocarbon-impacted groundwater may have entered the sewer line through seams or cracks.

In January 2004, ASE drilled four additional soil borings, BH-M through BH-P and the soil samples collected from each boring contained concentrations of TPH-d, with the highest concentration of 68 mg/Kg detected in BH-M. No TPH-d, BTEX or oxygenates were detected in any of the other soil samples. The groundwater samples collected from the borings contained TPH-d concentrations as high as 170 µg/L and the groundwater sample collected from boring BH-O also contained 19 µg/L MtBE. None of the other groundwater samples contained detectable concentrations of TPH-g, BTEX or oxygenates. Groundwater samples were also collected from the sewer line beneath Central Avenue, both up gradient and down gradient of the Site. Low concentrations of TPH-g were detected in both samples. No BTEX or oxygenates were detected in either of these samples. The source of the TPH-g was not conclusively identified.

In December 2005, ASE conducted a records search at the Alameda City Public Works Agency and the California Department of Water Resources to identify water wells with ½ mile radius of the Site. A total of 25 wells were located within the search radius. The results included three domestic wells, 10 irrigation wells, one industrial well, two cathodic protection wells, four groundwater monitoring wells, and five vapor extraction wells. The nearest well is located more than 1,000 feet east of the Site. The nearest, potentially down gradient, well is located approximately 1,260 feet northwest of the Site. Based on the records search, ASE proposed additional soil and groundwater assessment for the Site.

In April 2006, ASE advanced two additional borings and installed two groundwater monitoring wells. Borings BH-Q, BH-R and monitoring wells MW-4 and MW-5 were installed using a drill rig equipped with an 8-inch hollow-stem auger. Petroleum hydrocarbons were detected by laboratory analysis at a concentration of 11 mg/Kg TPH-d in a soil sample from BH-Q and 1.7 mg/Kg TPH-d in a soil sample from the boring MW-5. The laboratory noted that the hydrocarbons reported as TPH-D in each sample did not exhibit a typical diesel chromatogram pattern. None of the soil samples contained detectable concentrations of TPH-g, BTEX or oxygenates.

Groundwater samples collected from BH-Q and BH-R contained detectable concentrations of petroleum hydrocarbon of 220 µg/L TPH-d and 770 µg/L TPH-d, respectively. Similar to the soil samples, the laboratory noted the hydrocarbons reported as TPH-d did not exhibit a typical diesel chromatogram pattern. Based on the results of this investigation, ASE recommended no further delineation of the extent of petroleum hydrocarbons in soil or groundwater.

From April 2006 to March 2009, groundwater monitoring well samples have been collected and analyzed on a quarterly basis. The monitoring schedule for the Site has been reduced to a semi-annual basis as directed in a letter from the ACEHS dated, July 24, 2009. Groundwater monitoring takes place during the first and third quarters.

In June 2008, the Site owners contracted with Matriks to conduct groundwater monitoring and prepare for further Site remediation.

Matriks submitted the *Site Investigation Workplan*, dated September 16, 2009, to the ACEHS. The workplan was prepared in accordance with an ACEHS directive issued in a letter dated

August 13, 2009. The proposed scope of work included the installation of four soil borings to further investigate the vertical extent of the release, define the contaminate plume, and evaluate on and off-site risks.

The ACEHS approved the *Site Investigation Workplan* (Workplan), with modifications to the proposed scope of work, in a letter date October 22, 2009. Four borings were pushed in the vicinity of the existing tanks to a maximum depth of 20 fbg. Free product was observed in several of the borings with TPH-d in groundwater at concentrations up to 1,100,000 µg/L. Matriks prepared a *Site Investigation Report*, dated December 15, 2010, documenting the findings. At present, the California UST Cleanup Fund recommends site closure. This report is submitted to justify site closure.

SCOPE OF WORK

The scope of work conducted for this semi-annual groundwater monitoring event included the following tasks:

- Measurement of static water levels in five groundwater monitoring wells;
- Collection of field water quality parameters including pH, temperature, and specific conductance (SC) from groundwater in each well;
- Purging at least three casing volumes from each well;
- Collection and analysis of groundwater water samples from each well for THP-d, TPH-g, BTEX and MtBE (see the *Monitoring Well Purging and Sampling* section of this report for analytical methods used);
- Update of the Geotracker database; and
- Preparation of this *Semi-Annual Monitoring Report*.

METHODS AND PROCEDURES

Groundwater Level Measurements

Prior to measuring the depth to groundwater, the cap of each well was removed and the water level was given an opportunity to equilibrate with atmospheric pressure for approximately 30 minutes before recording measurements using an electronic water depth indicator. The static water levels were referenced to the surveyed marks notched into the top of each well casing and the depth-to-water measurements were used to calculate the purge volume of for each monitoring well.

Monitoring Well Purging and Sampling

At least three well volumes were purged from each well using a new disposable bailer. Groundwater temperature, pH, and SC were measured intermittently during purging. Measurements were obtained with a Hanna multi-meter, which was calibrated by the equipment rental service prior to on-site use. Water quality measurements were recorded on monitoring well sampling logs, copies of which are included in **Appendix A**. Well purge water was placed into labeled and sealed 55-gallon, DOT-approved steel drums and temporarily stored on-site.

A new disposable bailer dedicated to each well, was used to remove the groundwater samples and transfer them to the appropriate laboratory prepared containers. Care was taken to remove the headspace in each container. Each sample container was labeled with the project number, sample ID, and collection date. The same information was recorded on the laboratory chain-of-custody form. Samples were stored in a cooler filled with ice for transport to the laboratory.

Samples were transported and submitted to McCampbell Analytical, Inc. of Pittsburg, California (DHS ELAP Certification No. 1644) and analyzed for TPH-g and TPH-d by EPA Method 8015 modified; for BTEX by EPA Method 8021B; and for MtBE, DIPE, EtBE, tAME, tBA, methanol, ethanol, EDB, and DCA by EPA Method 8260B.

RESULTS

Groundwater Levels and Gradient

Depth to water was measured in each monitoring well. The groundwater flow direction, as determined from wells MW-2, MW-3 and MW-5, for this monitoring event was calculated to be northwest with a gradient of 0.008. Well construction details are summarized in **Table 1**. The depth to groundwater and the corresponding water table elevations are summarized in **Table 2**. Groundwater elevation contours are depicted on **Figure 3**. Hydrographs for all monitoring wells are presented on **Figure 4**.

Groundwater Analytical Results

TPH-g was detected in wells MW-1, MW-3, and MW-5 at concentrations of 3,000, 6,800 and 180 µg/L, respectively. TPH-g was not detected in the remaining monitoring wells.

Benzene was detected in MW-1, MW-, and MW-5 at 12, 58 and 0.93 µg/L, respectively. Benzene was not the remaining monitoring wells.

MtBE was detected in MW-5 at 220 µg/L. MtBE was not detected in the remaining monitoring wells.

TPH-d was detected in MW-1, MW-3 and MW-5 at 1,700, 2,500 and 87 µg/L, respectively. TPH-d was not detected in the remaining monitoring wells.

In general, hydrocarbon concentrations increased in MW-1 and decreased in MW-3 and MW-5, when compared to the last time these wells were sampled on January 20, 2011.

Groundwater analytical results for the fourth quarter 2011 are summarized in **Table 3** and all of the historical groundwater monitoring results are summarized in **Table 4**. A copy of the laboratory analytical report is included in **Appendix B**.

Figure 5 shows TPH-g and benzene concentration trends in well MW-1 and **Figure 6** shows these same concentration trends in MW-3.

Geotracker Requirements

All analytical data were submitted electronically to the California State Water Resources Control Board Geotracker database as required by AB2886 (Water Code Section 13195-13198). EDFs are prepared and formatted by the laboratory and submitted by Matriks. Well latitudes, longitudes (GEO_XY files), and elevations (GEO_Z files) were previously submitted to the database. A well status and usage report (GEO_WELL file) is submitted for each monitoring event. A complete electronic copy of this report (GEO_REPORT file) in PDF format was also submitted. Updated maps (GEO_MAP files) are submitted when site features such as monitoring wells or soil borings are added.

CONCLUSIONS

The site investigation performed in November 2010 indicated free product was present and elevated concentrations of diesel and gas were observed in soil and groundwater samples from several borings. Diesel product has only been dispensed since the new USTs were installed in 1996. The diesel UST was emptied and has not held fuel since 2006. Existing diesel lines were drained back to the tank, all diesel nozzles have been removed from the dispensers and the diesel turbine has been locked out at the electrical box.

As shown on **Figures 5 and 6**, the overall trend of TPH-d concentrations is downward in MW-1 and MW-3. **Table 4** indicates that the TPH-d concentration trend is downward in MW-2, MW-4 and MW-5. TPH-g shows a decreasing trend in all monitoring wells except MW-1 which increased from 1,100 to 3,000 µg/L when compare to the last sampling event. Likewise, benzene either was not detected or decreased in concentration in all wells except MW-1 where it increased from 0.85 to 12 µg/L when compare to the last sampling event. Toluene, ethylbenzene and xylenes also increased in MW-1.

MtBE and tBA concentrations are decreasing with time in all wells. MW-1 is above the ESLs for TPH-g, TPH-d, benzene, ethylbenzene and xylenes. MW-3 is above the ESLs for TPH-g, TPH-d and benzene. MW-5 is above the ESLs for TPH-g and MtBE.

The detection of TPH-g and MtBE above the ESLs in well MW-5 indicates that petroleum hydrocarbons are migrating down gradient from the Site.

RECOMMENDATIONS

The Site meets all of the requirements for low risk closure as follows:

1. The unauthorized release is located within the service area of a public water system;
2. The unauthorized release consists only of petroleum;
3. The unauthorized release has been stopped;
4. Free product has been removed to the maximum extent practicable;
5. A conceptual site model has been developed;
6. Secondary source removal has been addressed;
7. Soil and groundwater has been tested for MtBE and results reported in accordance with H&S Code Section 25296.15; and
8. Nuisance as defined by Water Code Section 13050 does not exist at the Site.

Based on these criteria, we recommend this site for low risk case closure. The SWRCB concurred with this recommendation in their *Second 5-Year Review Summary Report* dated July 5, 2011. This report is provided in **Appendix C**. With the concurrence of ACEH, CES will prepare a formal Request for No Further Action pursuant to Appendix A of the *Tri-Regional Recommendations for Preliminary Investigation and Evaluation of Underground Storage Tank Sites*.

TABLES

Table 1
Well Construction Details
Alaska Gas
Alameda, California

Well ID	Date Installed	Total Depth (feet bg)	Screened Interval (feet bg)	Water-Bearing Zone	Screen Slot Size (inches)	Filter Pack Interval (feet bg)	Bentonite Interval (feet bg)	Grout Interval (feet bg)	TOC Elevation (feet amsl)	Northing Coordinates (feet)	Westing Coordinates (feet)
MW-1	10/11/99	18	17.35-2.5	Silty Sand	0.02	18-1.5	1.5-0.5	0.5-0	29.18	15.20394	46.13606
MW-2	10/11/99	18	18-4	Silty Sand	0.02	18-3	3-1.5	1.5-0	29.55	14.93558	45.97882
MW-3	10/11/99	20	19-4	Silty Sand	0.02	20-3	3-1.5	1.5-0	27.74	15.28672	47.24157
MW-4	04/03/06	16	15-5	Sand-Clayey Sand	0.02	15-4.5	4.5-4	4-0.5	26.23	17.12115	48.05243
MW-5	04/04/06	17	15-5	Sand-Clayey Sand	0.02	15-4.5	4.5-4	4-0.5	26.78	16.21022	47.48996

Table 2. Groundwater Elevation Data
Alaska Gas, Alameda, California

Well ID	Date	Top of Casing Elevation (msl)	Depth to Water (feet)	Groundwater Elevation
MW-1	11/06/99	26.85	5.16	21.69
	05/16/00		3.24	23.61
	08/03/00		4.15	22.70
	12/05/00		4.90	21.95
	03/05/01		3.04	23.81
	06/04/01		4.01	22.84
	06/05/02		3.73	23.12
	09/09/02		5.06	21.79
	12/19/02		4.09	22.76
	03/10/03		3.50	23.35
	06/03/03		3.66	23.19
	09/19/03		4.91	21.94
	12/22/03		4.30	22.55
	03/12/04		2.93	23.92
	06/11/04		4.23	22.62
	09/13/04		5.02	21.83
	12/16/04		3.76	23.09
	03/21/05		2.81	24.04
	06/23/05		3.66	23.19
	09/30/05		4.55	22.30
	12/08/05		4.21	22.64
	03/01/06		2.90	23.95
	05/25/06	29.18	2.84	26.34
	08/10/06		4.35	24.83
	11/21/06		4.22	24.96
	02/06/07		4.39	24.79
	05/08/07		3.88	25.30
	08/06/07		5.02	24.16
	12/26/07		4.87	24.31
	06/28/08		4.77	24.41
	09/27/08		6.29	22.89
	12/30/08		6.04	23.14
	03/28/09		3.78	25.40
	09/12/09		6.59	22.59
	03/30/10		3.52	25.66
	09/30/10		5.61	23.57
	01/20/11		3.61	25.57
	12/15/11		5.12	24.06

Table 2. Groundwater Elevation Data
Alaska Gas, Alameda, California

Well ID	Date	Top of Casing Elevation (msl)	Depth to Water (feet)	Groundwater Elevation
MW-2	11/06/99	27.18	5.56	21.62
	05/16/00		3.54	23.64
	08/03/00		4.44	22.74
	12/05/00		5.24	21.94
	03/05/01		3.28	23.90
	06/04/01		4.33	22.85
	06/05/02		3.98	23.20
	09/09/02		5.34	21.84
	12/19/02		4.33	22.85
	03/10/03		3.58	23.60
	06/03/03		3.87	23.31
	09/19/03		5.24	21.94
	12/22/03		4.47	22.71
	03/12/04		3.40	23.78
	06/11/04		4.51	22.67
	09/13/04		5.35	21.83
	12/16/04		4.09	23.09
	03/21/05		3.01	24.17
	06/23/05		3.91	23.27
	09/30/05		4.86	22.32
	12/08/05		4.49	22.69
	03/01/06		3.09	24.09
	05/25/06	29.55	3.16	26.39
	08/10/06		4.98	24.57
	11/21/06		4.81	24.74
	02/06/07		4.37	25.18
	05/08/07		4.12	25.43
	08/06/07		5.36	24.19
	12/26/07		5.03	24.52
	06/28/08		5.06	24.49
	09/27/08		6.64	22.91
	12/30/08		6.28	23.27
	03/28/09		4.03	25.52
	09/12/09		6.24	23.31
	03/30/10		3.80	25.75
	09/30/10		6.00	23.55
	01/20/11		4.17	25.38
	12/15/11		5.46	24.09

Table 2. Groundwater Elevation Data
Alaska Gas, Alameda, California

Well ID	Date	Top of Casing Elevation (msl)	Depth to Water (feet)	Groundwater Elevation
MW-3	11/06/99	25.3	4.02	21.28
	05/16/00		2.06	23.24
	08/03/00		3.20	22.10
	12/05/00		3.71	21.59
	03/05/01		1.90	23.40
	06/04/01		2.72	22.58
	06/05/02		2.75	22.55
	09/09/02		3.88	21.42
	12/19/02		2.79	22.51
	03/10/03		2.36	22.94
	06/03/03		2.65	22.65
	09/19/03		3.15	22.15
	12/22/03		2.83	22.47
	03/12/04		2.00	23.30
	06/11/04		3.11	22.19
	09/13/04		3.90	21.40
	12/16/04		2.89	22.41
	03/21/05		1.93	23.37
	06/23/05		2.69	22.61
	09/30/05		4.54	20.76
	12/08/05		3.05	22.25
	03/01/06		1.95	23.35
	05/25/06	27.74	2.11	25.63
	08/10/06		3.25	24.49
	11/21/06		3.35	24.39
	02/06/07		3.34	24.40
	05/08/07		3.53	24.21
	08/06/07		3.91	23.83
	12/26/07		3.57	24.17
	06/28/08		3.66	24.08
	09/27/08		4.98	22.76
	12/30/08		4.63	23.11
	03/28/09		2.73	25.01
	09/12/09		4.80	22.94
	03/30/10		2.62	25.12
	09/30/10		4.38	23.36
	01/20/11		2.58	25.16
	12/15/11		3.93	23.81

Table 2. Groundwater Elevation Data
Alaska Gas, Alameda, California

Well ID	Date	Top of Casing Elevation (msl)	Depth to Water (feet)	Groundwater Elevation
MW-4	05/25/06	26.23	2.54	23.69
	08/10/06		4.65	21.58
	11/21/06		4.63	21.60
	02/06/07		3.87	22.36
	05/08/07		4.21	22.02
	08/06/07		4.54	21.69
	12/26/07		2.90	23.33
	06/28/08		3.02	23.21
	09/27/08		4.78	21.45
	12/30/08		3.91	22.32
	03/28/09		2.50	23.73
	09/12/09		4.93	21.30
	03/30/10		3.43	22.80
	09/30/10		3.79	22.44
	01/20/11		2.19	24.04
	12/15/11		3.64	22.59
MW-5	05/25/06	26.78	2.60	24.18
	08/10/06		3.40	23.38
	11/21/06		3.27	23.51
	02/06/07		3.10	23.68
	05/08/07		3.00	23.78
	08/06/07		3.79	22.99
	12/26/07		3.38	23.40
	06/28/08		3.70	23.08
	09/27/08		4.65	22.13
	12/30/08		4.04	22.74
	03/28/09		2.85	23.93
	09/12/09		4.48	22.30
	03/30/10		2.80	23.98
	09/30/10		4.11	22.67
	01/20/11		2.69	24.09
	12/15/11		3.67	23.11

All measurements are in feet. DTW = Depth to water below top of PVC casing.
TOC = Top of casing. ELEV = Elevation above mean sea level.
Wells resurveyed on April 27, 2006

Table 3. Groundwater Analytical Results
December 15, 2011
Alaska Gas, Alameda, California

Well ID	Date	TPH-g	TPH-d	benzene	toluene	ethyl-benzene	xylenes	MtBE
MW-1	12/15/11	**3000***	**1700+^**	12	16	**230**	**120**	**<50**
MW-2	12/15/11	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0
MW-3	12/15/11	**6800***	**2500^**	**58**	16	18	12	**10**
MW-4	12/15/11	<50	**<50**	<0.5	<0.5	<0.5	<0.5	<5.0
MW-5	12/15/11	**180***	87^	0.93	0.72	<0.5	<0.5	**220**
ESL		100	100	1.0	40	30	20	5
WQO				1.0	150	700	1750	5

Notes:

Units are micrograms per liter (ug/L).

TPH-g total petroleum hydrocarbons as gasoline

TPH-d total petroleum hydrocarbons as diesel

* Laboratory noted that weakly modified or unmodified gasoline is significant

\+ Laboratory noted that diesel range compounds are significant; no recognizable pattern

^ Laboratory noted that gasoline range compounds are significant

† Laboratory noted that oil range compounds are significant

ESL Environmental Screening Limits

WQO Water Quality Objectives for Site: Per the Region 2, Water Quality Control Plan

Table 4. Historical Groundwater Analytical Results
Alaska Gas, Alameda, California

Well ID	Date	TPH-g	TPH-d	benzene	toluene	ethyl-benzene	xylenes	MtBE	tAME	tBA	Other Oxygenates
MW-1	11/06/99	**5,700**	**8,700**	**170**	**59**	22	**85**	**20,000**	NA	NA	NA
	05/16/00	**20,000**	<7,500	**38**	6.3	**740**	**1,600**	<5.0	<5.0	<50	<5.0
	08/03/00	**20,000**	<6,000	**56**	9.7	**920**	**1,600**	<0.5	<0.5	<50	<0.5
	12/05/00	**31,000**	<4,000	**64**	27	**820**	**2,200**	<10	<5.0	<50	<5.0
	03/05/01	**20,000**	<4,000	**19**	<5.0	**480**	**870**	<5	<5.0	<50	<5.0
	06/04/01	**23,000**	<7,000	**58**	50	**710**	**2,100**	**5.1**	<5.0	<50	<5.0
	06/05/02	**7,400**	<1,500	**9.3**	6.7	**180**	**230**	<1.0	<1.0	<10	<1.0
	09/09/02	**8,300**	<3500	**32**	20	**390**	**670**	<2.0	<2.0	<20	<2.0
	12/19/02	**5,100**	NS	**7.9**	2.5	**56**	**93**	<1.0	<1.0	<10	<1.0
	03/10/03	**2,000**	<2,000	**3.4**	2.9	**80**	**98**	<0.5	<0.5	<5.0	<0.5
	06/03/03	**7,300**	<4,000	**6.8**	9.9	**300**	**1,000**	2.3	<0.5	<5.0	<0.5
	09/19/03	**9,000**	<3,000	**26**	22	**420**	**1,200**	4.5	<1.5	<20	<1.5
	12/22/03	**4,300**	<2,000	**12**	6.7	**200**	**290**	**9.1**	<1.0	<10	<1.0
	03/12/04	**7,000**	<3,000	**8.3**	8.2	**250**	**760**	3.9	<2.0	<20	<2.0
	06/11/04	**13,000**	<4,000	**26**	27	**530**	**1,700**	<2.5	<2.5	<15	<2.5
	09/13/04	**17,000**	<4,000	**37**	**42**	**840**	**2,000**	<5.0	<5.0	<50	<5.0
	12/16/04	**1,800**	<1,000	**5.9**	1.9	**100**	**35**	**16**	<0.5	<5.0	<0.5
	03/21/05	**7,500**	<3,000	**3.4**	4.2	**290**	**760**	<1.5	<1.5	<20	<1.5
	06/23/05	**11,000**	<8,000	**15**	11	**370**	**910**	2.4	<1.5	<7.0	<1.5
	09/30/05	**9,800**	<4,000	**32**	25	**540**	**680**	1.6	<1.5	<7.0	<1.5
	12/08/05	**9,200**	<4,000	**27**	21	**500**	**490**	2.2	<1.5	<7.0	<1.5
	03/01/06	**6,500**	<4,000	**8.1**	9.4	**370**	**660**	**18**	<1.5	<6.0	<1.5
	05/25/06	**10,000**	<3,000	**19**	14	**900**	**620**	<1.5	<1.5	<7.0	<1.5
	08/10/06	**9,800**	<1,500	**16**	8.1	**640**	**180**	<1.5	<1.5	<7.0	<1.5
	11/21/06	**2,900**	<1,000	**7.8**	2.5	**160**	12	2.5	2.5	<5.0	<0.5
	02/06/07	**4,600**	<1,500	**9.4**	6	**380**	**220**	1	<0.50	<5.0	<0.50
	05/08/07	**3,700**	<800	**10**	4.6	**320**	**86**	1.5	<0.50	<5.0	<0.50
	08/06/07	**8,200**	<2,000	**14**	8.8	**730**	**180**	<0.50	<0.50	<5.0	<0.50
	12/26/07	**1,200**	<300	**2.3**	1.1	**89**	21	4.8	<0.50	<5.0	<0.50
	03/31/08	**2,000**	<800	**2.2**	1.6	**99**	**75**	1.8	<0.50	<5.0	<0.50
	06/28/08	**8,400**	**3900***	**18**	26	**670**	**1,100**	<2.5	<2.5	<10	<2.5
	09/27/08	**12,000**	**4600***	**32**	**49**	**1,200**	**680**	<25	<25	<100	<25
	12/30/08	**5,300**	**3,700**	**12**	31	**300**	**27**	**7.1**	<5.0	<20	<5.0
	03/28/09	**1,900**	**920***	<1.7	<1.7	**77**	**58**	**22**	<1.7	<6.7	<1.7
	09/12/09	**7,800**	**9,400**	**34**	**110**	**690**	**200**	3.0	<0.5	140	<0.5
	03/30/10	**1,700**	**700***	**2.1**	14	**40**	9.5	**14**	<0.5	7.8	<0.5
	09/30/10	**2,300**	**6,500***	**8.5**	23	**150**	**29**	4	<0.5	2.2	<0.5
	01/20/11	**1,100**	**590**	0.85	6.6	**34**	**42**	**7.7**	<0.5	<2.0	<0.5
	12/15/11	**3,000**	**1,700**	12	16	**230**	**120**	**<50**	NA	NA	NA

Table 4. Historical Groundwater Analytical Results
Alaska Gas, Alameda, California

Well ID	Date	TPH-g	TPH-d	benzene	toluene	ethyl-benzene	xylenes	MtBE	tAME	tBA	Other Oxygenates
MW-2	11/06/99	**6,000**	70	**1,300**	92	50	400	**6,800**	NA	NA	NA
	05/16/00	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5
	08/03/00	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5
	12/05/00	<50	**1,400**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5
	03/05/01	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5
	06/04/01	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5
	06/05/02	<50	**2,300**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5
	09/09/02	<50	**1,300**	<0.5	<0.5	<0.5	<0.5	1.4	<0.5	<5.0	<0.5
	12/19/02	<50	--	<0.5	<0.5	<0.5	<0.5	**16**	<0.5	<5.0	<0.5
	03/10/03	<50	**3,000**	<0.5	<0.5	<0.5	<0.5	1	<0.5	<5.0	<0.5
	06/03/03	<50	**700**	<0.5	<0.5	<0.5	<0.5	2	<0.5	<5.0	<0.5
	09/19/03	<50	**1,400**	<0.5	<0.5	<0.5	<0.5	4.7	<0.5	<5.0	<0.5
	12/22/03	<50	**1,000**	<0.5	<0.5	<0.5	<0.5	**39**	<0.5	<5.0	<0.5
	03/12/04	<50	**250**	<0.5	<0.5	<0.5	<0.5	2.1	<0.5	<5.0	<0.5
	06/11/04	<50	**920**	<0.5	<0.5	<0.5	<0.5	0.75	<0.5	<5.0	<0.5
	09/13/04	<50	**140**	<0.5	<0.5	<0.5	<0.5	1.5	<0.5	<5.0	<0.5
	12/16/04	<50	**150**	<0.5	<0.5	<0.5	<0.5	**12**	<0.5	<5.0	<0.5
	03/21/05	<50	**130**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5
	06/23/05	<50	**1,100**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5
	09/30/05	<50	**300**	<0.5	<0.5	<0.5	<0.5	1.6	<0.5	<5.0	<0.5
	12/08/05	<50	**600**	<0.5	<0.5	<0.5	<0.5	1.9	<0.5	<5.0	<0.5
	03/01/06	<50	**920**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5
	05/25/06	<50	**160**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5
	08/10/06	<50	**870**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5
	11/21/06	<50	**130**	<0.5	<0.5	<0.5	<0.5	1.8	<0.5	<5.0	<0.5
	02/06/07	<50	**450**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5
	05/08/07	<50	**160**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5
	08/06/07	<50	**180**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5
	12/26/07	<50	**190**	<0.5	<0.5	<0.5	<0.5	2.9	<0.5	<5.0	<0.5
	03/31/08	Inaccessable Not Sampled									
	06/28/08	<50	**180**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0	<2.0
	09/27/08	<50	78	<0.5	<0.5	<0.5	<0.5	**7**	<0.5	<2.0	<0.5
	12/30/08	<50	**100**	<0.5	<0.5	<0.5	<0.5	**13**	<0.5	<0.5	<0.5
	03/28/09	<50	60	<0.5	<0.5	<0.5	<0.5	**5.4**	<0.5	<0.5	<0.5
	09/12/09	<50	91	<0.5	<0.5	<0.5	<0.5	4.7	<0.5	<2.0	<0.5
	03/30/10	<50	**150**	<0.5	<0.5	<0.5	<0.5	2.5	<0.5	<2.0	<0.5
	09/30/10	<50	**310**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5
	01/20/11	<50	90	<0.5	<0.5	<0.5	<0.5	1.4	<0.5	<2.0	<0.5
	12/15/11	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	NA	NA	NA

Table 4. Historical Groundwater Analytical Results
Alaska Gas, Alameda, California

Well ID	Date	TPH-g	TPH-d	benzene	toluene	ethyl-benzene	xylenes	MtBE	tAME	tBA	Other Oxygenates
MW-3	11/06/99	**43,000**	**870**	**860**	**70**	<0.5	65	**120,000**	NA	NA	NA
	05/16/00	**17,000**	<5,000	**2,800**	**60**	380	190	**990**	9.1	**350**	<5.0
	08/03/00	**16,000**	<2,000	**1,600**	29	210	53	**1,200**	21	**260**	<2.0
	12/05/00	**17,000**	**5800**	**1,700**	**45**	460	240	**1,100**	21	**230**	<5.0
	03/05/01	**29,000**	<1,300	**2,100**	**68**	280	100	**180**	<8.0	<80	<8.0
	06/04/01	**17,000**	<6,000	**2,000**	**56**	340	230	**300**	<10	**130**	<10
	06/05/02	**11,000**	<2,000	**1,600**	**46**	**210**	**47**	**790**	<10	**220**	<10
	09/09/02	**12,000**	<800	**1,400**	**44**	**130**	**27**	**760**	<10	**160**	<5.0
	12/19/02	**10,000**	NS	**740**	32	**180**	**38**	**86**	<5.0	<50	<5.0
	03/10/03	**13,000**	<6,000	**1,200**	**42**	**240**	**35**	**470**	5.3	**140**	<2.5
	06/03/03	**6,500**	<3,000	**750**	21	**46**	15	**1,300**	<50	**280**	<10
	09/19/03	**9,800**	<3,000	**1,500**	38	**170**	**32**	**420**	<10	**150**	<5.0
	12/22/03	**8,800**	<2,000	**1,100**	32	**82**	20	**330**	5.8	**52**	<2.5
	03/12/04	**7,600**	<3,000	**590**	23	**69**	17	**470**	9.2	**63**	<1.5
	06/11/04	**7,800**	<2,000	**840**	19	**58**	15	**710**	12	**140**	<2.5
	09/13/04	**7,500**	<1,500	**840**	17	23	7.8	**730**	15	**93**	<2.5
	12/16/04	**9,300**	<2,000	**1,100**	26	**76**	13	**600**	12	**130**	<2.5
	03/21/05	**11,000**	<3,000	**1,200**	37	**190**	**24**	**460**	9.3	**100**	<2.5
	06/23/05	**9,600**	<4,000	**1,100**	28	**93**	**23**	**370**	8.2	**67**	<1.5
	09/30/05	**9,000**	<3,000	**690**	18	**32**	14	**380**	8.4	**72**	<1.5
	12/08/05	**8,700**	<3,000	**560**	23	**38**	12	**350**	6.9	**82**	<1.5
	03/01/06	**8,400**	<2,000	**410**	24	**42**	13	**360**	8	**58**	<1.5
	05/25/06	**9,900**	<2,000	**630**	25	13	13	**190**	5.3	**59**	<1.5
	08/10/06	**14,000**	<3,000	**690**	**43**	**130**	**26**	**200**	5.4	**70**	<1.5
	11/21/06	**10,000**	<3,000	**580**	37	**96**	**25**	**240**	6.3	**72**	<1.5
	02/06/07	**7,700**	<1,000	**520**	36	**90**	**23**	**260**	7.4	**54**	<1.5
	05/08/07	**4,700**	<800	**150**	0.86	<0.5	<0.5	**170**	5	**52**	<0.5
	08/06/07	**6,000**	<1,000	**240**	26	34	17	**180**	5	**55**	<0.5
	12/26/07	**8,100**	<1,500	**76**	14	17	12	**150**	4.3	**37**	<0.9
	03/31/08	**7,900**	<1,500	**250**	30	**62**	20	**140**	4.5	**47**	<0.90
	06/28/08	**6,400**	**3,100***	**97**	17	19	13	**200**	5.6	**38**	<5.0
	09/27/08	**11,000**	**15,000***	**190**	24	29	16	**160**	<5.0	**40**	<5.0
	12/30/08	**9,100**	**2,300***	**160**	24	**31**	18	**150**	5	**100**	<5.0
	03/28/09	**9,200**	**4,300***	**150**	25	**34**	**22**	**120**	<5.0	**38**	<5.0
	09/12/09	**6,100**	**2,700***	**110**	21	14	18	**170**	<5.0	**38**	<0.5
	03/30/10	**12,000**	**12,000***	**200**	25	**35**	**23**	**96**	<5.0	**58**	<5.0
	09/30/10	**6,300**	**5,100**	**110**	14	6.2	16	**110**	3.8	**16**	<2.5
	01/20/11	**7,700**	**3,500**	**100**	20	20	16	**85**	3.4	**41**	<1.7
	12/15/11	**6,800**	**2,500**	**58**	16	18	12	<150	NA	NA	NA

Table 4. Historical Groundwater Analytical Results
Alaska Gas, Alameda, California

Well ID	Date	TPH-g	TPH-d	benzene	toluene	ethyl-benzene	xylenes	MtBE	tAME	tBA	Other Oxygenates
MW-4	05/25/06	**410**	<80	<2.5	<2.5	<2.5	<2.5	**1800**	28	44	<2.5
	08/10/06	<50	<50	<0.5	<0.5	<0.5	<0.5	1.2	<0.5	<5.0	<0.5
	11/21/06	<50	<50	<0.5	<0.5	<0.5	<0.5	0.59	<0.5	<5.0	<0.5
	02/06/07	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5
	05/08/07	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5
	08/06/07	<50	<50	<0.5	<0.5	<0.5	<0.5	0.82	<0.5	<5.0	<0.5
	12/26/07	<50	<50	<0.5	<0.5	<0.5	<0.5	1.3	<0.5	<5.0	<0.5
	03/31/08	<50	<50	<0.5	<0.5	<0.5	<0.5	1.4	<0.5	<5.0	<0.5
	06/28/08	<50	88	<0.5	<0.5	<0.5	<0.5	1.1	<0.5	<2.0	<0.5
	09/27/08	<50	<50	<0.5	<0.5	<0.5	<0.5	1.3	<0.5	<5.0	<0.5
	12/30/08	<50	<50	<0.5	<0.5	<0.5	<0.5	1.2	<0.5	<0.5	<0.5
	03/28/09	<50	<50	<0.5	<0.5	<0.5	<0.5	0.9	<0.5	<0.5	<0.5
	09/12/09	<50	**240**	<0.5	<0.5	<0.5	<0.5	1.0	<0.5	<2.0	<0.5
	03/30/10	<50	<50	<0.5	<0.5	<0.5	<0.5	0.58	<0.5	<2.0	<0.5
	09/30/10	<50	<50	<0.5	<0.5	<0.5	<0.5	0.76	<0.5	<2.0	<0.5
	01/20/11	<50	**210**	<0.5	<0.5	<0.5	<0.5	0.70	<0.5	<2.0	<0.5
	12/15/11	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	NA	NA	NA
MW-5	05/25/06	<50	86	<0.5	<0.5	<0.5	<0.5	1.2	<0.5	<5.0	<0.5
	08/10/06	55	<50	<0.5	<0.5	<0.5	<0.5	**1,100**	19	9.1	<0.5
	11/21/06	<250	<50	<2.5	<2.5	<2.5	<2.5	**1,500**	25	**28**	<2.5
	02/06/07	**430**	<50	**6.9**	<2.5	<2.5	<2.5	**1,600**	26	**34**	<2.5
	05/08/07	<250	<50	<2.5	<2.5	<2.5	<2.5	**1,200**	20	**38**	<2.5
	08/06/07	**330**	<80	<2.5	<2.5	<2.5	<2.5	**1,000**	20	**39**	<2.5
	12/26/07	**490**	<50	<2.5	<2.5	<2.5	<2.5	**1,000**	18	**28**	<2.5
	03/31/08	**520**	<100	6.0	1.9	<1.5	2.5	**520**	16	**33**	<1.5
	06/28/08	**510**	**290***	**6.2**	1.0	<0.5	2.3	**550**	11	<40	<10
	09/27/08	**670**	**320***	<17	<17	<17	<17	**650**	<17	**95**	<17
	12/30/08	**210**	**130***	<0.5	0.8	0.99	<0.5	**610**	12	<40	<10
	03/28/09	**200**	**100***	<17	<17	<17	<17	**610**	<17	<67	<17
	09/12/09	**230**	**130***	**1.6**	1.3	<0.5	1.4	**540**	11	<40	<10
	03/30/10	**360**	**170***	**2.0**	1.7	<0.5	1.3	**490**	13	<40	<10
	09/30/10	**710**	**310**	**10**	2.6	<1.0	3.1	**400**	<10	<40	<10
	01/19/11	**340**	**280**	**3.0**	2.0	<0.5	1.2	**450**	<10	**100**	<10
	12/15/11	**180**	87	0.93	0.72	<0.5	0.54	**220**	NA	NA	NA
ESL		100	100	1.0	40	30	20	5	NE	12	NA
WQO				1.0	150	700	1750	5		12	

Notes:

Units are micrograms per liter (ug/L).

NT analyte not tested

TPH-g total petroleum hydrocarbons as gasoline

TPH-d total petroleum hydrocarbons as diesel

* Laboratory noted that TPH-g range is significant

ESL Environmental Screening Limits

WQO Water Quality Objectives for Site: Per the Region 2, Water Quality Control Plan

MtBE methyl tert-butyl ether

tAME tert-amyl methyl ether

tBA tert-butanol

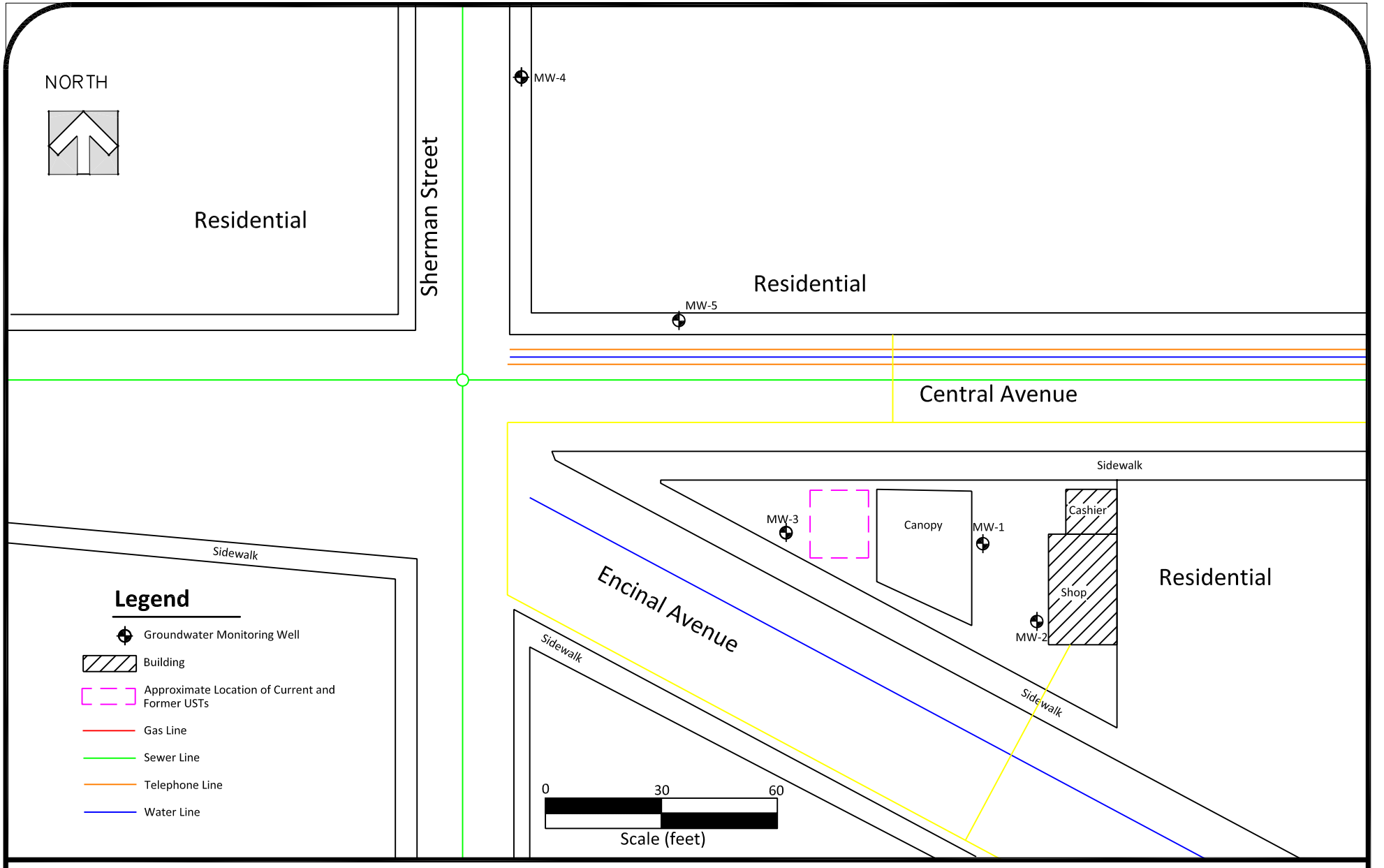
FIGURES

Cook Environmental Services, Inc.
1485 Treat Blvd. Ste. 203A
Walnut Creek, CA 94597
(925) 478-8390 work
(925) 787-6869 cell
tcook@cookenvironmental.com

Site Location Map

1031 Central Avenue
Alameda, CA 94501

Project : 1035	Figure: 1
Date: 5/11/12	
Scale: 1"=1500'	



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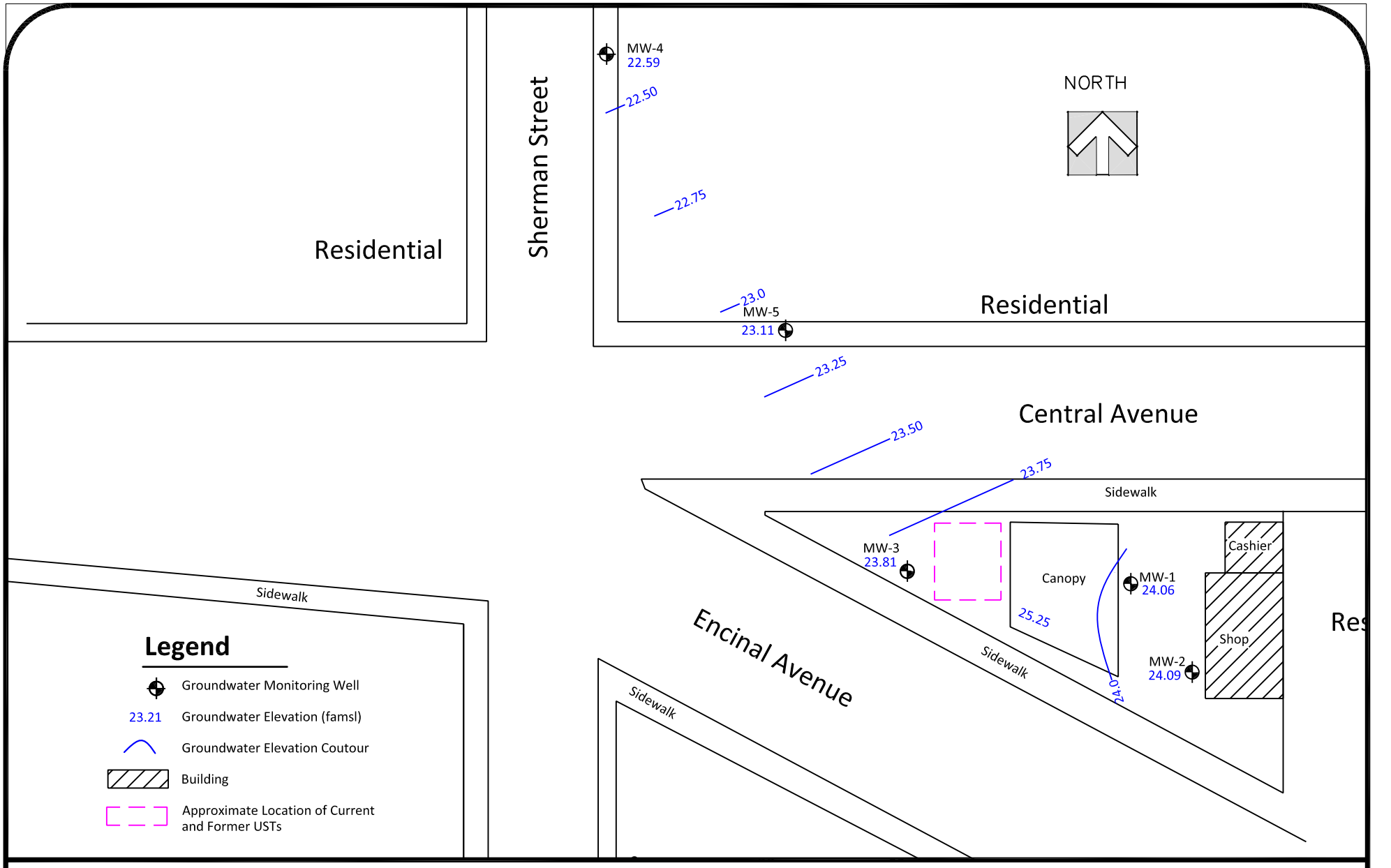
1485 Treat Blvd. Ste 203A
Walnut Creek, CA 94597
(925) 478-8390
tcook@cookenvironmental.com

Site Map

Alaska Gasoline
1310 Central Avenue
Alameda, California

Project #: 1035	Figure: 2
Date: 5/10/2012	
Scale: as shown	



Cook Environmental Services, Inc.
1485 Treat Blvd. Ste 203A
Walnut Creek, CA 94597
(925) 478-8390
tcook@cookenvironmental.com

Groundwater Elevations
December 15, 2011
Alaska Gasoline
1310 Central Avenue
Alameda, California

Project #: 1035	Figure: 3
Date: 5/10/2012	
Scale: as shown	

Figure 4. Monitoring Well Hydrographs
Alaska Gas, Alameda, CA

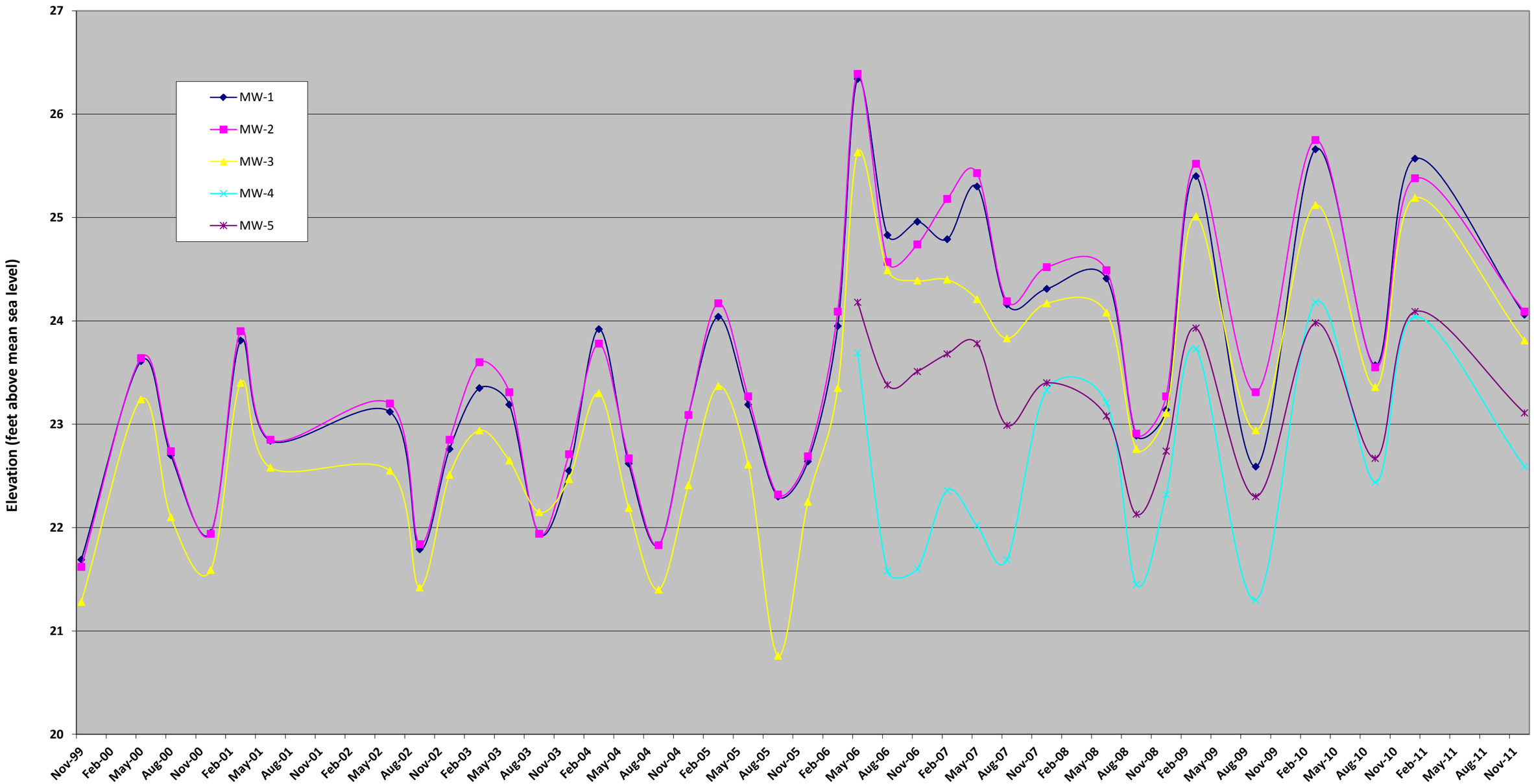


Figure 5. TPH and Benzene Concentration Trends in Well MW-1
Alaska Gas , Alameda, California

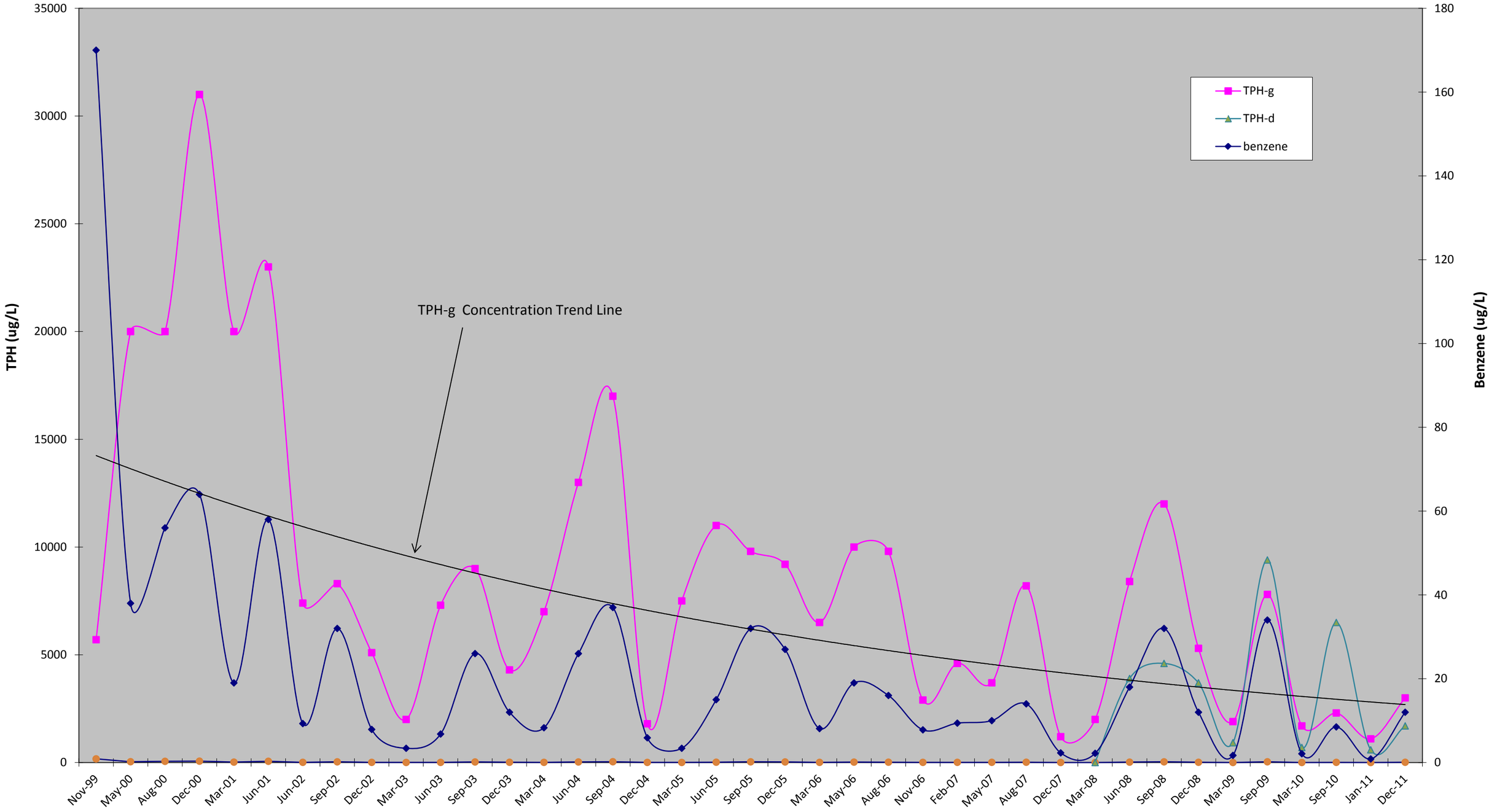
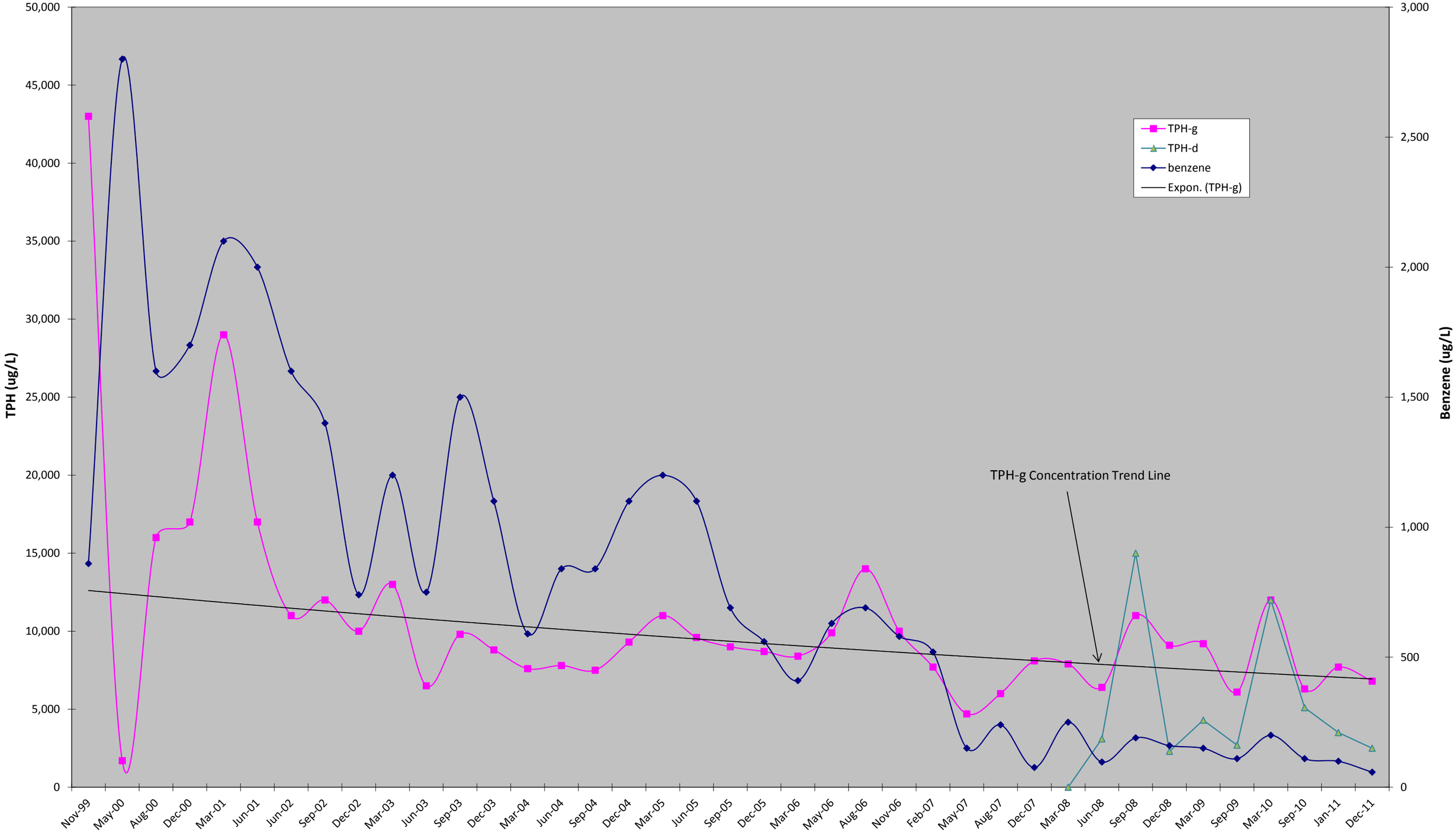


Figure 6. TPH and Benzene Concentration Trends in Well MW-3
Alaska Gas, Alameda, California



APPENDIX A
Well Sampling Logs

Environmental
Sampling Services, LLC

Project Name: Alameda Gas
Project Address: 1310 Central Avenue, Alameda, California
Task: December 2011 Groundwater Monitoring Event

DAILY EQUIPMENT CALIBRATION SHEET

Date	Time	Instrument Serial Number	Probe Serial Number	Dissolved Oxygen (%)	pH			Specific Conductivity (1,000 µs/cm[c])	ORP (231 mV)	Turbidity (0.02 NTU)
					4	7	10			
12/15/2011	1145	556 MPS	09C100611	100.1	3.99	7.00	10.01	1,000	NA	NA

Environmental
Sampling Services, LLC

WATER QUALITY SAMPLE LOG SHEET | WELL IDENTIFICATION: **MW-1** DATE: 12/15/2011

Project Name: Alameda Gas Job #: 1035 | Client: Cook Environmental Services, Inc.

Laboratory: McCampbell Analytical, Inc. | Weather Conditions: overcast & cool

Well Diameter: 1" (2") 4" 6" Other: ____ | Well Type: (PVC) / Stainless Steel / Other: ____

Is Well Secured? (Yes) / No Bolt Size: 9/16" | Type of lock / Lock number: No lock

Screen Interval (Ft., BGS): NA | Set pump intake @ — (Ft., BTOC)

Purge Method: NA (Disp. PE Bailer) Centrifugal Pump Peristaltic Pump Bladder Pump SS Submersible Pump

Pump Lines: (NA) / PE / Teflon / Other - New / Cleaned / Dedicated Bailer Line: ~~NA~~ (New) / Cleaned / Dedicated

Method of Cleaning Pump: (NA) / Liqui-nox / Tap Water / DI Rinse / Other: ____

Sampling Method: (Disp. PE Bailer) Peristaltic Pump Bladder Pump SS Submersible Pump PDBs

Multi-Parameter Meter / Probe Serial No.: (556 MPS - 09C100611) / 556 MPS - 09C100612

Equipment Calibration: See Daily Equipment Calibration Sheet OVM 580B P.I.D. Reading: NA ppm

Water Level Meter Serial No.: (QW 9371-1) / 25083 / 25742 / 49914 / 56500 / Other: ____

Beginning Water Level (DTW): 5.12 @ 11:41 Ending Water Level: 8.34

TD = 18.00 - 5.12 (DTW) = 12.88 (Ft. of water) x "K" = 2.1 (Gals./CV) x 3 (No. of CV) = 6.3 (Gals.)

"K" = 0.04 (1" well) ("K" = .163 (2" well)) "K" = 0.653 (4" well) "K" = 1.46 (6" well)

FIELD WATER QUALITY PARAMETERS

Date	Time	Discharge (Gallons)	Temp (°C)	Specific Conductivity (µS/cm[c]) ± 10%	pH (SU) ± 0.1 SU	DO (mg/L) ± 10%	Water Level (BTOC)	Color	Comments
12/15/11	13:26	2	18.88	605	6.49	2.17	—	Dk gray	Strong Petroleum odor Fine sand, Very light sheen
	13:31	4	19.41	583	6.47	2.92	—	Grayish Brown	
	13:37	5.5	19.44	576	6.48	2.88	—	"	
	13:40	6.5	19.66	574	6.47	2.72	—	"	

Total Discharge: 6.5 Gallons 3.1 CV Removed Storage of discharged water: 55 Gallon Drum(s)

Date / Time Sampled: 12/15/11 @ 13:42 Analysis: TPH-G & MBTEX (8015/8020); TPH-D (8015)

Notes: ____

QA/QC: — @ — as a Duplicate Equipment Blank Field Blank MS/MSD

Recorded by: (Stephen Penman) / Jacqueline Lee Signature: [signature]

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www.envsampling.com

Environmental
Sampling Services, LLC

WATER QUALITY SAMPLE LOG SHEET | WELL IDENTIFICATION: **MW-2** DATE: 12/15/2011

Project Name: Alameda Gas Job #: 1035 | Client: Cook Environmental Services, Inc.

Laboratory: McCampbell Analytical, Inc. | Weather Conditions: Overcast & cool

Well Diameter: 1" (2") 4" 6" Other: ____ | Well Type: PVC / Stainless Steel / Other: ____

Is Well Secured? (Yes) / No Bolt Size: 9/16" | Type of lock / Lock number: No lock

Screen Interval (Ft., BGS): NA | Set pump intake @ — (Ft., BTOC)

Purge Method: NA (Disp. PE Bailer) Centrifugal Pump Peristaltic Pump Bladder Pump SS Submersible Pump

Pump Lines: (NA) / PE / Teflon / Other - New / Cleaned / Dedicated Bailer Line: NA (New) / Cleaned / Dedicated

Method of Cleaning Pump: (NA) / Liqui-nox / Tap Water / DI Rinse / Other: ____

Sampling Method: (Disp. PE Bailer) Peristaltic Pump Bladder Pump SS Submersible Pump PDBs

Multi-Parameter Meter / Probe Serial No.: (556 MPS - 09C100611) / 556 MPS - 09C100612

Equipment Calibration: See Daily Equipment Calibration Sheet OVM 580B P.I.D. Reading: NA ppm

Water Level Meter Serial No.: (QW 9371-1) / 25083 / 25742 / 49914 / 56500 / Other: ____

Beginning Water Level (DTW): 5.46 @ 11:46 Ending Water Level: 5.83

TD = 18.00 - 5.45 (DTW) = 12.54 (Ft. of water) x "K" = 2.04 (Gals./CV) x 3 (No. of CV) = 6.12 (Gals.)

"K" = 0.04 (1" well) ("K" = .163 (2" well)) "K" = 0.653 (4" well) "K" = 1.46 (6" well)

FIELD WATER QUALITY PARAMETERS

Date	Time	Discharge (Gallons)	Temp (°C)	Specific Conductivity (µS/cm[c]) ± 10%	pH (SU) ± 0.1 SU	DO (mg/L) ± 10%	Water Level (BTOC)	Color	Comments
12/15/11	13:57	2	18.64	301	6.24	1.66	—	Amber Brown	
	14:00	4	19.61	302	6.23	1.72	—	"	
	14:03	6	19.54	308	6.19	1.69	—	"	
	14:05	7	19.84	309	6.18	1.45	—	"	

Total Discharge: 7 Gallons 3.43 CV Removed Storage of discharged water: 55 Gallon Drum(s)

Date / Time Sampled: 12/15/11 @ 14:07 Analysis: TPH-G & MBTEX (8015/8020); TPH-D (8015)

Notes: ____

QA/QC: ____ @ ____ as a Duplicate Equipment Blank Field Blank MS/MSD

Recorded by (Stephen Penman) Jacqueline Lee Signature: [signature]

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www.envsampling.com

Environmental Sampling Services, LLC

WATER QUALITY SAMPLE LOG SHEET	WELL IDENTIFICATION: **MW-3** DATE: 12/15/2011

Project Name: Alameda Gas Job #: 1035 | Client: Cook Environmental Services, Inc.

Laboratory: McCampbell Analytical, Inc. | Weather Conditions: Mostly Sunny & cool

Well Diameter: 1" (2") 4" 6" Other: ____ | Well Type: (PVC) / Stainless Steel / Other: ____

Is Well Secured? (Yes) / No Bolt Size: 9/16" | Type of lock / Lock number: No lock

Screen Interval (Ft., BGS): NA | Set pump intake @ ―― (Ft., BTOC)

Purge Method: NA (Disp. PE Bailer) Centrifugal Pump Peristaltic Pump Bladder Pump SS Submersible Pump

Pump Lines: (NA) / PE / Teflon / Other - New / Cleaned / Dedicated Bailer Line: NA (New) / Cleaned / Dedicated

Method of Cleaning Pump: (NA) / Liqui-nox / Tap Water / DI Rinse / Other: ____

Sampling Method: (Disp. PE Bailer) Peristaltic Pump Bladder Pump SS Submersible Pump PDBs

Multi-Parameter Meter / Probe Serial No.: (556 MPS - 09C100611) / 556 MPS - 09C100612

Equipment Calibration: See Daily Equipment Calibration Sheet OVM 580B P.I.D. Reading: NA ppm

Water Level Meter Serial No.: (OW 9371-1) / 25083 / 25742 / 49914 / 56500 / Other: ____

Beginning Water Level (DTW): 3.93 @ 11:37 Ending Water Level: 4.98

TD = 20.00 - 3.93 (DTW) = 16.07 (Ft. of water) x "K" = 2.62 (Gals./CV) x 3 (No. of CV) = 7.9 (Gals.)

"K" = 0.04 (1" well) ("K" = .163 (2" well)) "K" = 0.653 (4" well) "K" = 1.46 (6" well)

FIELD WATER QUALITY PARAMETERS

Date	Time	Discharge (Gallons)	Temp (°C)	Specific Conductivity (μS/cm^c) ± 10%	pH (SU) ± 0.1 SU	DO (mg/L) ± 10%	Water Level (BTOC)	Color	Comments
12/15/11	12:56	2	19.34	756	6.39	1.84	—	Cloudy grayish brn.	Strong Petroleum odor, Lt. Sheen, Fine Sand
|	13:00	4	20.31	764	6.41	1.89	—	"	|
|	13:03	6	20.13	758	6.41	1.92	—	"	|
|	13:06	8	20.20	739	6.39	1.72	—	"	|

Total Discharge: 8 Gallons 3.1 CV Removed Storage of discharged water: 55 Gallon Drum(s)

Date / Time Sampled: 12/15/11 @ 13:08 Analysis: TPH-G & MBTEX (8015/8020); TPH-D (8015)

Notes: ____

QA/QC: ―― @ ―― as a Duplicate Equipment Blank (Field Blank) MS/MSD

Recorded by: (Stephen Penman) / Jacqueline Lee Signature: [signature]

Environmental
Sampling Services, LLC

WATER QUALITY SAMPLE LOG SHEET | WELL IDENTIFICATION: **MW-4** DATE: 12/15/2011

Project Name: Alameda Gas Job #: 1035 | Client: Cook Environmental Services, Inc.

Laboratory: McCampbell Analytical, Inc. | Weather Conditions: Mostly Cloudy & cool

Well Diameter: 1" (2") 4" 6" Other: _____ | Well Type: (PVC) / Stainless Steel / Other: _____

Is Well Secured? (Yes) No Bolt Size: 9/16" | Type of lock / Lock number: No lock

Screen Interval (Ft., BGS): NA | Set pump intake @ — (Ft., BTOC)

Purge Method: NA (Disp. PE Bailer) Centrifugal Pump Peristaltic Pump Bladder Pump SS Submersible Pump

Pump Lines: (NA) / PE / Teflon / Other - New / Cleaned / Dedicated Bailer Line: NA (New) Cleaned / Dedicated

Method of Cleaning Pump: (NA) / Liqui-nox / Tap Water / DI Rinse / Other: _____

Sampling Method: (Disp. PE Bailer) Peristaltic Pump Bladder Pump SS Submersible Pump PDBs

Multi-Parameter Meter / Probe Serial No.: (556 MPS - 09C100611) / 556 MPS - 09C100612

Equipment Calibration: See Daily Equipment Calibration Sheet OVM 580B P.I.D. Reading: NA ppm

Water Level Meter Serial No.: (OW 9371-1) 25083 / 25742 / 49914 / 56500 / Other: _____

Beginning Water Level (DTW): 3.64 @ 11:56 Ending Water Level: 3.20 @ 14:19

TD = 16.00 - 3.64 (DTW) = 12.36 (Ft. of water) x "K" = 2.02 (Gals./CV) x 3 (No. of CV) = 6.02 (Gals.)

"K" = 0.04 (1" well) ("K" = .163 (2" well)) "K" = 0.653 (4" well) "K" = 1.46 (6" well)

FIELD WATER QUALITY PARAMETERS

Date	Time	Discharge (Gallons)	Temp (°C)	Specific Conductivity (µS/cm^c) ± 10%	pH (SU) ± 0.1 SU	DO (mg/L) ± 10%	Water Level (BTOC)	Color	Comments
12/15/11	12:00	2	17.76	443	6.56	4.39	—	Cloudy Lt. Brown	
1	12:07	3	18.15	468	6.61	2.64	—	Slightly Cloudy	Dry @ 3 gallons

Total Discharge: 3 Gallons 1.5 CV Removed Storage of discharged water: 55 Gallon Drum(s)

Date / Time Sampled: 12/15/11 @ 14:21 Analysis: TPH-G & MBTEX (8015/8020); TPH-D (8015)

Notes: Measured TD = 15.46
water in well box

QA/QC: — @ — as a Duplicate Equipment Blank Field Blank MS/MSD

Recorded by: (Stephen Penman) / Jacqueline Lee Signature:

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Environmental
Sampling Services, LLC

WATER QUALITY SAMPLE LOG SHEET | WELL IDENTIFICATION: **MW-5** DATE: 12/15/2011

Project Name: Alameda Gas Job #: 1035 | Client: Cook Environmental Services, Inc.

Laboratory: McCampbell Analytical, Inc. | Weather Conditions: Partly Sunny & Cool

Well Diameter: 1" (2") 4" 6" Other: | Well Type: (PVC) / Stainless Steel / Other:

Is Well Secured? (Yes) / No Bolt Size: 9/16" | Type of lock / Lock number: No lock

Screen Interval (Ft., BGS): NA | Set pump intake @ — (Ft., BTOC)

Purge Method: NA (Disp. PE Bailer) Centrifugal Pump Peristaltic Pump Bladder Pump SS Submersible Pump

Pump Lines: (NA) / PE / Teflon / Other - New / Cleaned / Dedicated Bailer Line: NA (New) / Cleaned / Dedicated

Method of Cleaning Pump: (NA) / Liqui-nox / Tap Water / DI Rinse / Other:

Sampling Method: (Disp. PE Bailer) Peristaltic Pump Bladder Pump SS Submersible Pump PDBs

Multi-Parameter Meter / Probe Serial No.: (556 MPS - 09C100611) / 556 MPS - 09C100612

Equipment Calibration: See Daily Equipment Calibration Sheet OVM 580B P.I.D. Reading: NA ppm

Water Level Meter Serial No.: (OW 9371-1) / 25083 / 25742 / 49914 / 56500 / Other:

Beginning Water Level (DTW): 3.67 @ 11:44 Ending Water Level: 3.90

TD = 17.00 - 3.67 (DTW) = 13.33 (Ft. of water) x "K" = 2.2 (Gals./CV) x 3 (No. of CV) = 6.6 (Gals.)

"K" = 0.04 (1" well) "K" = .163 (2" well) "K" = 0.653 (4" well) "K" = 1.46 (6" well)

FIELD WATER QUALITY PARAMETERS

Date	Time	Discharge (Gallons)	Temp (°C)	Specific Conductivity (µS/cm^c) ± 10%	pH (SU) ± 0.1 SU	DO (mg/L) ± 10%	Water Level (BTOC)	Color	Comments
12/15/11	12:23	2	18.04	831	6.28	1.68	—	Cloudy Lt. Brn	Moderate Petroleum odor
"	12:26	4	19.26	720	6.23	2.20	—	"	"
"	12:29	6	18.77	768	6.28	2.70	—	Lt Brown	"
"	12:32	7	19.10	714	6.30	2.74	—	"	"

Total Discharge: 7 Gallons 3.2 CV Removed Storage of discharged water: 55 Gallon Drum(s)

Date / Time Sampled: 12/15/11 @ 12:34 Analysis: TPH-G & MBTEX (8015/8020); TPH-D (8015)

Notes:

QA/QC: — @ — as a Duplicate Equipment Blank Field Blank MS/MSD

Recorded by: (Stephen Penman) / Jacqueline Lee Signature:

6680 Alhambra Avenue, # 102 • Martinez, CA 94553-6105 • (925) 372-8108
www.envsampling.com

APPENDIX B
Laboratory Analytical Report

McCampbell Analytical, Inc.
"When Quality Counts"

1534 Willow Pass Road, Pittsburg, CA 94565-1701
Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269
http://www.mccampbell.com / E-mail: main@mccampbell.com

Analytical Report

Cook Environmental Services, Inc. 1485 Treat Blvd, Ste. 203A Walnut Creek, CA 94597	Client Project ID: #1035; Alameda Gas	Date Sampled: 12/15/11
		Date Received: 12/15/11
	Client Contact: Tim Cook	Date Reported: 12/21/11
	Client P.O.:	Date Completed: 12/21/11

WorkOrder: 1112493

December 21, 2011

Dear Tim:

Enclosed within are:

1) The results of the **5** analyzed samples from your project: **#1035; Alameda Gas,**
2) QC data for the above samples, and
3) A copy of the chain of custody.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits.

If you have any questions or concerns, please feel free to give me a call. Thank you for choosing McCampbell Analytical Laboratories for your analytical needs.

Best regards,

Angela Rydelius
Laboratory Manager
McCampbell Analytical, Inc.

The analytical results relate only to the items tested.

McCAMPBELL ANALYTICAL, INC.
1534 Willow Pass Road
Pittsburg, CA 94565-1701
Website: www.mccampbell.com Email: main@mccampbell.com
Telephone: (877) 252-9262 Fax: (925) 252-9269

112493

CHAIN OF CUSTODY RECORD

TURN AROUND TIME ☐ RUSH ☐ 24 HR ☐ 48 HR ☐ 72 HR ■ 5 DAY

EDF Required? Coelt (Normal) No Write On (DW) No

Report To: Tim Cook Bill To: Same

Company: Cook Environmental Services

1485 Treat Blvd, Suite 203A

Walnut Creek, CA 94597 email: tcook@cookenvironmental.com

Tele: (925) 478-8390 Fax: (925) 478-8394

Project #:1035 Project Name: Alameda Gas

Project Location: Alameda, CA

Sampler Name & Signature: Stephen Penman

SAMPLE ID (Field Point Name)	LOCATION	SAMPLING Date	SAMPLING Time	# Containers	Type Containers	MATRIX Water	MATRIX Soil	MATRIX Air	MATRIX Sludge	MATRIX Other	METHOD PRESERVED ICE	METHOD PRESERVED HCL	METHOD PRESERVED HNO_3	METHOD PRESERVED Other	BTEX & TPH as Gas (602/8020 + 8015)/MTBE	TPH as Diesel (8015)	Total Petroleum Oil & Grease (5520 E&F/B&F)	Total Petroleum Hydrocarbons (418.1)	EPA 601 / 8010 / 8021	BTEX ONLY (EPA 602 / 8020)	EPA 608 / 8081	EPA 608 / 8082 PCB's ONLY	EPA 8140 / 8141	EPA 8150 / 8151	EPA 524.2 / 624 / 8260 (9 oxys)	EPA 525 / 625 / 8270	PAH's / PNA's by EPA 625 / 8270 / 8310	CAM-17 Metals (6010 / 6020)	LUFT 5 Metals (6010 / 6020)	Lead (200.8 / 200.9 / 6010)	Other	Other	Other	Comments
MW-1	MW-1	12/15/11	13:42	5	VOA	X					X	X			X	X																		Filter Samples for Metals analysis: Yes / No
MW-2	MW-2	12/15/11	14:07	5	VOA	X					X	X			X	X																		
MW-3	MW-3	12/15/11	13:08	5	VOA	X					X	X			X	X																		
MW-4	MW-4	12/15/11	14:21	5	VOA	X					X	X			X	X																		
MW-5	MW-5	12/15/11	12:34	5	VOA	X					X	X			X	X																		

Relinquished By:	Date:	Time:	Received By:
	12/15/11	16:53	
Relinquished By:	Date:	Time:	Received By:
Relinquished By:	Date:	Time:	Received By:

ICE/t° 6.2

COMMENTS:

GOOD CONDITION

HEAD SPACE ABSENT

DECHLORINATED IN LAB

APPROPRIATE CONTAINERS

PRESERVED IN LAB

PRESERVATION	VOAS	O&G	METALS	OTHER
			pH<2	

McCampbell Analytical, Inc.
1534 Willow Pass Rd
Pittsburg, CA 94565-1701
(925) 252-9262

CHAIN-OF-CUSTODY RECORD

WorkOrder: 1112493 **ClientCode: CESW**

☐ WaterTrax ☐ WriteOn ☑ EDF ☐ Excel ☐ Fax ☑ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag

Report to:
Tim Cook
Cook Environmental Services, Inc.
1485 Treat Blvd, Ste. 203A
Walnut Creek, CA 94597
925-937-1759 FAX: 925-937-1759

Email: tcook@cookenvironmental.com
cc:
PO:
ProjectNo: #1035; Alameda Gas

Bill to:
Tim Cook
Cook Environmental Services, Inc.
1485 Treat Blvd, Ste. 203A
Walnut Creek, CA 94597

Requested TAT: **5 days**

Date Received: **12/15/2011**
Date Printed: **12/15/2011**

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
1112493-001	MW-1	Water	12/15/2011 13:42	☐	B	A	A									
1112493-002	MW-2	Water	12/15/2011 14:07	☐	B		A									
1112493-003	MW-3	Water	12/15/2011 13:08	☐	B		A									
1112493-004	MW-4	Water	12/15/2011 14:21	☐	B		A									
1112493-005	MW-5	Water	12/15/2011 12:34	☐	B		A									

Test Legend:

1	G-MBTEX_W	2	PREDF REPORT	3	TPH(D)_W	4		5	
6		7		8		9		10	
11		12							

Prepared by: Zoraida Cortez

Comments:

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).
Hazardous samples will be returned to client or disposed of at client expense.

McCampbell Analytical, Inc.
"When Quality Counts"

1534 Willow Pass Road, Pittsburg, CA 94565-1701
Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269
http://www.mccampbell.com / E-mail: main@mccampbell.com

Sample Receipt Checklist

Client Name: **Cook Environmental Services, Inc.**
Date and Time Received: **12/15/2011 8:43:41 PM**

Project Name: **#1035; Alameda Gas**
Checklist completed and reviewed by: Zoraida Cortez

WorkOrder N°: **1112493** Matrix: Water
Carrier: Client Drop-In

Chain of Custody (COC) Information

Chain of custody present?	Yes ☑	No ☐
Chain of custody signed when relinquished and received?	Yes ☑	No ☐
Chain of custody agrees with sample labels?	Yes ☑	No ☐
Sample IDs noted by Client on COC?	Yes ☑	No ☐
Date and Time of collection noted by Client on COC?	Yes ☑	No ☐
Sampler's name noted on COC?	Yes ☑	No ☐

Sample Receipt Information

Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	NA ☑
Shipping container/cooler in good condition?	Yes ☑	No ☐	
Samples in proper containers/bottles?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	

Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature	Cooler Temp: 6.2°C		NA ☐
Water - VOA vials have zero headspace / no bubbles?	Yes ☑	No ☐	No VOA vials submitted ☐
Sample labels checked for correct preservation?	Yes ☑	No ☐	
Metal - pH acceptable upon receipt (pH<2)?	Yes ☐	No ☐	NA ☑
Samples Received on Ice?	Yes ☑	No ☐	

(Ice Type: WET ICE)

** NOTE: If the "No" box is checked, see comments below.*

Comments:

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http://www.mccampbell.com / E-mail: main@mccampbell.com

Cook Environmental Services, Inc.	Client Project ID: #1035; Alameda Gas	Date Sampled: 12/15/11
		Date Received: 12/15/11
1485 Treat Blvd, Ste. 203A	Client Contact: Tim Cook	Date Extracted: 12/17/11-12/20/11
Walnut Creek, CA 94597	Client P.O.:	Date Analyzed: 12/17/11-12/20/11

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE*

Extraction method: SW5030B Analytical methods: SW8021B/8015Bm Work Order: 1112493

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS	Comments
001B	MW-1	W	3000	ND<50	12	16	230	120	10	113	d1
002B	MW-2	W	ND	ND	ND	ND	ND	ND	1	103	
003B	MW-3	W	6800	ND<150	58	16	18	12	10	113	d1
004B	MW-4	W	ND	ND	ND	ND	ND	ND	1	101	
005B	MW-5	W	180	220	0.93	0.72	ND	0.54	1	111	d1

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	50	5.0	0.5	0.5	0.5	0.5	µg/L
	S	1.0	0.05	0.005	0.005	0.005	0.005	mg/Kg

* water and vapor samples are reported in ug/L, soil/sludge/solid samples in mg/kg, wipe samples in µg/wipe, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts in mg/L.

cluttered chromatogram; sample peak coelutes w/surrogate peak; low surrogate recovery due to matrix interference. %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation:
d1) weakly modified or unmodified gasoline is significant

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Angela Rydelius, Lab Manager

McCampbell Analytical, Inc.
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http://www.mccampbell.com / E-mail: main@mccampbell.com

Cook Environmental Services, Inc.	Client Project ID: #1035; Alameda Gas	Date Sampled: 12/15/11
		Date Received: 12/15/11
1485 Treat Blvd, Ste. 203A	Client Contact: Tim Cook	Date Extracted 12/15/11
Walnut Creek, CA 94597	Client P.O.:	Date Analyzed 12/19/11-12/20/11

Total Extractable Petroleum Hydrocarbons*

Extraction method: SW3510C Analytical methods: SW8015B Work Order: 1112493

Lab ID	Client ID	Matrix	TPH-Diesel (C10-C23)	DF	% SS	Comments
1112493-001A	MW-1	W	1700	1	95	e4,e2
1112493-002A	MW-2	W	ND	1	88	
1112493-003A	MW-3	W	2500	1	98	e4
1112493-004A	MW-4	W	ND	1	108	
1112493-005A	MW-5	W	87	1	107	e4

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	50	µg/L
	S	NA	NA

* water samples are reported in ug/L, wipe samples in µg/wipe, soil/solid/sludge samples in mg/kg, product/oil/non-aqueous liquid samples in mg/L, and all DISTLC / STLC / SPLP / TCLP extracts are reported in µg/L.

cluttered chromatogram resulting in coeluted surrogate and sample peaks, or; surrogate peak is on elevated baseline, or; surrogate has been diminished by dilution of original extract.

%SS = Percent Recovery of Surrogate Standard. DF = Dilution Factor

The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation:
e2) diesel range compounds are significant; no recognizable pattern
e4) gasoline range compounds are significant.

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Angela Rydelius, Lab Manager

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http://www.mccampbell.com / E-mail: main@mccampbell.com

QC SUMMARY REPORT FOR SW8021B/8015Bm

W.O. Sample Matrix: Water | QC Matrix: Water | BatchID: 63498 | WorkOrder: 1112493

EPA Method: SW8021B/8015Bm **Extraction: SW5030B** **Spiked Sample ID: 1112493-004B**

Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acceptance Criteria (%)		
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS
TPH(btex)£	ND	60	88.8	95.1	6.75	91.1	70 - 130	20	70 - 130
MTBE	ND	10	107	105	1.48	107	70 - 130	20	70 - 130
Benzene	ND	10	99.1	102	3.35	103	70 - 130	20	70 - 130
Toluene	ND	10	92	93.8	1.93	95.2	70 - 130	20	70 - 130
Ethylbenzene	ND	10	93.4	95.4	2.17	97.3	70 - 130	20	70 - 130
Xylenes	ND	30	106	108	2.09	110	70 - 130	20	70 - 130
%SS:	101	10	103	103	0	104	70 - 130	20	70 - 130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:
NONE

BATCH 63498 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1112493-001B	12/15/11 1:42 PM	12/20/11	12/20/11 12:33 AM	1112493-002B	12/15/11 2:07 PM	12/20/11	12/20/11 1:03 AM
1112493-003B	12/15/11 1:08 PM	12/20/11	12/20/11 1:33 AM	1112493-004B	12/15/11 2:21 PM	12/20/11	12/20/11 2:03 AM
1112493-004B	12/15/11 2:21 PM	12/20/11	12/20/11 2:03 AM	1112493-005B	12/15/11 12:34 PM	12/17/11	12/17/11 4:21 PM

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

£ TPH(btex) = sum of BTEX areas from the FID.

cluttered chromatogram; sample peak coelutes with surrogate peak.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = matrix interference and/or analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content, or inconsistency in sample containers.

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QA/QC Officer

McCampbell Analytical, Inc.
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QC SUMMARY REPORT FOR SW8015B

W.O. Sample Matrix: Water | QC Matrix: Water | BatchID: 63383 | WorkOrder: 1112493

EPA Method: SW8015B **Extraction: SW3510C** **Spiked Sample ID: N/A**

Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acceptance Criteria (%)		
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS
TPH-Diesel (C10-C23)	N/A	1000	N/A	N/A	N/A	123	N/A	N/A	70 - 130
%SS:	N/A	625	N/A	N/A	N/A	107	N/A	N/A	70 - 130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:
NONE

BATCH 63383 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1112493-001A	12/15/11 1:42 PM	12/15/11	12/19/11 1:57 PM	1112493-002A	12/15/11 2:07 PM	12/15/11	12/20/11 3:24 PM
1112493-003A	12/15/11 1:08 PM	12/15/11	12/19/11 10:03 PM	1112493-004A	12/15/11 2:21 PM	12/15/11	12/19/11 7:38 PM
1112493-005A	12/15/11 12:34 PM	12/15/11	12/19/11 8:50 PM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

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QA/QC Officer

APPENDIX C
5-Year Review Summary Report

State Water Resources Control Board

Division of Financial Assistance
1001 I Street • Sacramento, California 95814
P.O. Box 944212 • Sacramento, California • 94244-2120
(916) 341-5684 FAX (916) 341-5806 ♦ www.waterboards.ca.gov/cwphome/ustcf

Linda S. Adams
Acting Secretary for
Environmental Protection

Edmund G. Brown
Governor

July 5, 2011

Donna Drogos, Division Chief
Alameda County Environmental Health
1131 Harbor Bay Parkway
Alameda, CA 94502

SECOND 5-YEAR REVIEW SUMMARY REPORT FOR CLAIM NUMBER 12650; ALASKA GASOLINE, LOCATED AT 1310 CENTRAL AVENUE, ALAMEDA, CA

The UST Cleanup Fund (Fund) has completed our review of Alameda County Environmental Health (Alameda County) Case No. RO0000022. The 5-Year Review Summary Report for this case is enclosed for your information and comment. Please note that the Fund' s recommendations are based on review of information contained in the Fund's case files, data currently in the GeoTracker database and any other sources of information that were readily available to Fund staff at the time the review was conducted. Consequently, they may not reflect historical information that has not been uploaded to the GeoTracker database or available in the Fund's case files and any data that has been recently submitted to your office.

The Fund requests that Alameda County staff notify the Fund within 45 days from the date of this letter as to whether you agree or disagree with our recommendations for this case. If you agree with our recommendation, we request that you provide the Fund with an estimated timeframe to either implement the recommendations for additional corrective action or for closing this case. If you do not agree with our recommendations, we request that you provide the Fund with a summary of the reasons for disagreeing and/or impediments to implementing the recommendations for additional corrective action or closing this case. Responses to the Fund may be provided by e-mail, letter or a copy of correspondence to the RP, if the correspondence addresses all the information requested by the Fund. Please direct your response to:

Pat G. Cullen, P.G.
Underground Storage Tank Cleanup Fund
State Water Resources Control Board
P.O. Box 944212
Sacramento, CA 94244-2120
(PCullen@waterboards.ca.gov)

Fund staff will be sending copies of the completed 5-Year Review Summary Report to applicable claimants 45 days from the date of this letter unless Alameda County notifies the Fund that they wish to discuss this case prior to transmittal to the claimant. If you or your staff has any questions or concerns on specific reports that you would like to discuss with the Fund prior to transmittal of the report to the claimant, please contact Pat G. Cullen at (916) 341-5735 or by email (PCullen@waterboards.ca.gov) within this period.

Sincerely,

Signed by Pat G. Cullen for

Robert Trommer
Senior Engineering Geologist
Chief, Technical Review Unit
Underground Storage Tank Cleanup Fund

CC: Ms. Cherie McCaulou
San Francisco RWQCB (Region 2)
1515 Clay Street, Suite 1400
Oakland, CA 94612

State Water Resources Control Board

Division of Financial Assistance
1001 I Street • Sacramento, California 95814
P.O. Box 944212 • Sacramento, California • 94244-2120
(916) 341-5660 FAX (916) 341-5806 ♦ www.waterboards.ca.gov/cwphome/ustcf

Linda S. Adams
Acting Secretary for Environmental Protection

Edmund G. Brown Jr.
Governor

SECOND USTCF 5-YEAR REVIEW
JULY 2011

USTCF Claim No.: 12650
Claimant Name: Nissan Saidian
Site Name: Alaska Gasoline
Site Address: 1310 Central Avenue, Alameda, CA
USTCF Expenditures to Date: $231,388

LOP: Alameda Co.
Caseworker: Paresh Khatri
Lead Agency Case No: RO0000022
Global ID: T0600102128

Priority Class: B

I. CASE INFORMATION

Tank No.	Size in Gallons	Contents	Closed in Place/ Removed/Active?	Date
1	10,000	Gasoline	Removed	May 1996
2	7,500	Gasoline	Removed	May 1996
3	5,000	Gasoline	Removed	May 1996
4	500	Waste Oil	Removed	May 1996
5	Unknown	Gasoline	Active	2009
6	Unknown	Gasoline	Active	2009

II. RELEASE INFORMATION

- Source of Release: USTs
- Date Release Reported: 1 February 1995
- Affected Media: soil and groundwater

III. SITE CHARACTERIZATION INFORMATION

A. Site Information

SITE DESCRIPTION: The Site is currently an active retail gasoline station located in a mixed commercial and residential area in the south-central portion of the island of Alameda.

GW BASIN: East Bay Plain Groundwater Basin

CURRENT LAND USE: Undesignated

BENEFICIAL USES: Municipal and domestic supply, other groundwater (uses other than drinking water)

DISTANCE TO NEAREST SUPPLY WELL: According to the California Department of Public Health (DPH) database, no wells identified within ½ mile of the site. According to the Alameda City Public works Agency records a total of 14 wells were identified within a ½ mile radius of the

Site; three domestic wells, 10 irrigation wells and one industrial well. The nearest down gradient well is located 1,260 feet northwest of the Site.

MINIMUM GROUNDWATER DEPTH: 1.93 feet below ground surface (bgs) in Site well MW-3.
MAXIMUM GROUNDWATER DEPTH: 6.59 feet bgs in Site well MW-1
FLOW DIRECTION: Northwest
SOIL TYPES: Sands and silty sands
MAXIMUM DEPTH SAMPLED: 17.5 feet bgs.

B. Monitoring Well Information

Well Designation	Date Installed	Screen Interval (feet bgs)	Depth To Water (January 2011)
MW-1	October 1999	2.5-17.5	3.61
MW-2	October 1999	4-18	4.17
MW-3	October 1999	4-19	2.58**
MW-4	April 2006	5-15	2.19**
MW-5	April 2006	5-15	2.69**

NM - Not measured

* - Numerous occasions when groundwater elevation measured in the well was above the screened interval

** - Groundwater elevation measured in well higher than the screen this quarter

IV. MAXIMUM DOCUMENTED CONTAMINANT CONCENTRATIONS

Contaminant	Soil (mg/kg)		Water (µg/L)		WQOs (µg/L)
	Maximum	Latest (December 2010)	Maximum	Latest (January 2011)	
TPH-g	6,800	26,000	43,000	7,700**	--
TPH-d	300	4,400	8,700*	3,500**	--
Benzene	31	54	1,300	100	1
Toluene	250	630	59	20	150
Ethylbenzene	120	520	740	20	700
Xylenes	680	3,400	1,600	42	1,750
MTBE	<0.02	<2.0	120,000	450	5
TBA	NA	<2.0	100	100	1,200***

NA Not Analyzed, Not Applicable or Data Not Available
WQO WATER QUALITY OBJECTIVES: Per the Region 2, Water Quality Control Plan (Basin Plan).
ND – Laboratory results reported below detection limits
* - The laboratory noted the diesel chromatograms were not consistent with typical diesel
** - The Laboratory notes that; weakly modified gasoline is significant; diesel range compounds are significant; no recognizable pattern; heavier range compounds are significant.

*** - California Department of Public Health, Response Level

V. FREE PRODUCT: Free-product was observed during the UST removal process in 1996.

VI. SOIL AND GROUNDWATER REMEDIATION

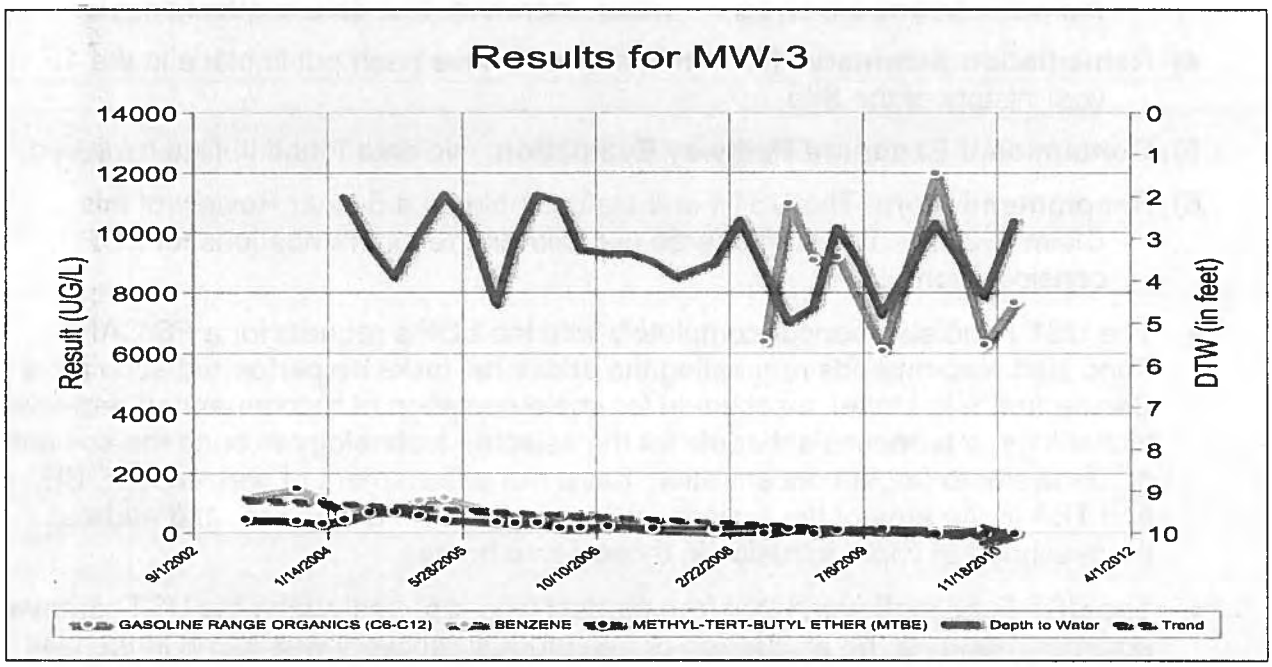
A. Soil Excavation: Approximately 600 cubic yards of impacted soil was removed from the Site during the UST removal activities in 1996

B. In-Situ Soil: None to date

C. Groundwater Remediation:

May 1996 – Approximately 15,000 gallon of TPH affected groundwater was removed during the UST removal activities.

D. Groundwater Trends: The graph below presents the historic concentrations of TPHg, benzene and MTBE plotted against groundwater elevations for Site well MW-3. As presented in the graph below the concentrations of benzene and MTBE are naturally degrading and the concentrations of TPHg are stable.



E. SENSITIVE RECEPTOR SURVEY:

Surface water – San Francisco Bay and Alameda Estuary are both located approximately ½ mile south of the Site.

VIII. COMMENTS AND JUSTIFICATION FOR RECOMMENDED ACTION

1) Site Description: The Site is currently an active retail gasoline station located in a mixed commercial and residential area in the south-central portion of the island of Alameda.

2) **Site History**:

May 1996 – UST removal activities resulted in the discovery of an unauthorized release.

November 1998 through Current - Site assessment and monitoring activities were conducted.

4th Qtr 2009 – A work plan was approved to provide further definition. In addition to approving the work plan the LOP requested additional information including: a feasibility study/corrective action plan, provided a schedule of requested reports, and reminded the claimant of the GeoTracker reporting requirements.

3) **Groundwater Monitoring Summary**: The Site has been monitored for 13 years. The regular groundwater monitoring reports do not present adequate data to define the limits of petroleum hydrocarbon contamination that has migrated northwest, off-Site. In addition, numerous water level measurements and sampling events have been conducted in wells where the well screens are under water, therefore, that data is questionable.

4) **Remediation Summary**: No remedial efforts have been put in place in the 15 year history of the Site.

5) **Contaminant Exposure Pathway Evaluation**: No data found in files reviewed

6) **Recommendation:** The UST Fund staff completed a 5-Year Review of this Claim in 2010. The staff offered the following recommendations for LOP consideration.

- The UST Fund staff concur completely with the LOP's request for a FS/CAP. Fund staff recommends requesting the additional tasks be performed such as; a Conceptual Site Model, a schedule for implementation of recommended remedial technology, a proposed schedule for the selected technology to bring the soil and groundwater to target concentration, basic risk assessment of benzene, MTBE, and TBA in the area of the residential properties north of the Site, and address the likelihood of vapor intrusion in those same homes.
- The UST Fund staff noted that free product was reported during the UST removal activities, however, no discussion of free product recovery was found in the files reviewed.
- The UST Fund staff questions the rational for further vertical definition of the lighter than water contaminates at a site. No mechanism for vertical movement has been identified at the Site to warrant the additional investigation and cost.
- The UST Fund staff noted that four of the five Site groundwater monitoring wells have screened intervals that have historically been submerged when sampled. Those data represent questionable data. Two wells have never had a valid sample collected in the history of the wells (MW-4 and MW-5).

- The UST Fund staff also recommends the Claimant upload historic groundwater water levels and analytical data into GeoTracker, at a minimum, to the date it was required to be uploaded in 2005.

A Second 5-Year Review has been completed for this Site and the UST Fund staff offer these recommendations for LOP consideration. The UST Fund staff recommends the Site be considered for Low Risk Closure for the following reasons:

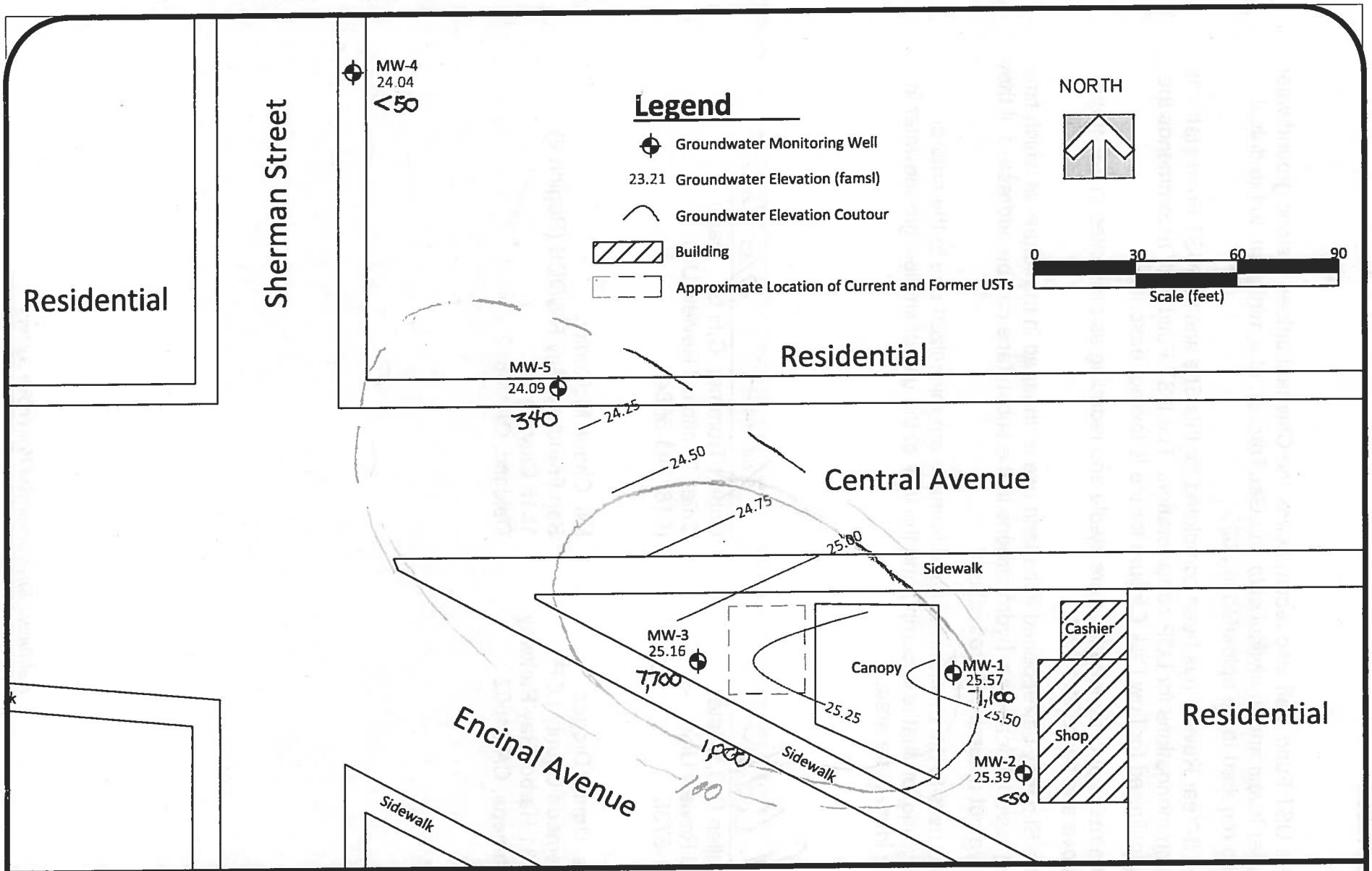
- The residual concentrations are stable and reducing as presented in the graph above and figure attached;
- The Site may be reopened if the land use is changed in the future, at which time the residual petroleum hydrocarbons in the subsurface can be addressed, if they have not naturally degraded; and
- The risks to the environment and humans are minimized due to the natural degradation that is occurring and the lack of the use of shallow groundwater in the immediate area.

Pat G. Cullen P.G. Date
Technical Review Unit
(916) 341-5735

07/05/2011
Robert Trommer, C.H.G. Date
Chief, Technical Review Unit
(916) 341-5684

CC: Ms. Donna Drogos
Alameda County LOP
1131 Harbor Bay Parkway
Alameda, CA 94502

Ms. Cherie McCaulou
San Francisco Bay RWQCB (Region 2)
1515 Clay Street
Oakland, CA 94612



MATRIKS

321 Court Street Lic. No. 909563
Woodland, California 95695
(530) 406-1760 Fax# (530) 406-1760

Groundwater Elevations on January 20, 2011

Alaska Gasoline
1310 Central Avenue
Alameda, California

TPHg Concentrations

Drawn by:
Pat G. Cullen P.G.
6/28/11 using
H. January 2011 data

Project #: 6022	Figure: 3
Date: 02/01/2011	
Scale: as shown	