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8:26 am, Feb 02, 2012

Alameda County Environmental Health

January 26, 2012

Ms. Donna Drogos Alameda County Environmental Health 1131 Harbor Parkway, Suite 250 Oakland, CA 94502-6577

Subject:

Offsite Investigation and DPE Pilot Test with Fourth Quarter 2011

Monitoring Report Shore Acres Gas

403 East 12<sup>th</sup> Street, Oakland, Alameda County, California

RO #0002931

ECG # GHA.19009

Dear Ms. Drogos:

Enclosed please find a copy of the January 26, 2012 Offsite Investigation and DPE Pilot Test with Fourth Quarter 2011 Monitoring Report for the above referenced site prepared by our consultant Environmental Compliance Group, LLC.

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

Respectfully,

Rashid Ghafoor



270 Vintage Drive Turlock, CA 95382 P: 209.664.1035 F: 209.664.1040

# OFF SITE INVESTIGATION AND DUAL PHASE PILOT TEST RESULTS WITH FOURTH QUARTER 2011 GROUNDWATER MONITORING REPORT

SHORE ACRES GAS 403 EAST 12<sup>TH</sup> STREET OAKLAND, CALIFORNIA

Prepared for: Rashid Ghafoor

ECG Project Number: GHA.19009 Alameda County Fuel Leak Case No. R00002931

January 26, 2012

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### INTRODUCTION

Environmental Compliance Group (ECG), LLC has been authorized by Mr. Rashid Ghafoor to provide this interim results report for the site.

This report provides details on:

- advancing 12 groundwater grab sample borings off site to delineate the dissolved phase plume,
- conducting the fourth quarter 2011 groundwater monitoring event, and
- summarizing a five-day dual phase extraction (DPE) test.

This interim report was prepared by ECG as specified by the Alameda County Health Care Services (ACHCS) Agency in their directive letter dated June 17, 2011 (Appendix A). This work was conducted according to the workplans prepared by ECG on February 9, April 14, and June 6, 2011, Site information is as follows:

Site Location:

403 East 12th Street

Oakland, California

Geotracker Global ID:

T0600174667

### LIMITATIONS

This report has been prepared for use by Rashid Ghafoor and the relevant regulatory agencies. The conclusions in this report are professional opinions based on the data presented in this report. This report was prepared in general accordance with hydrogeologic and engineering methods and standards. No other warranties are made as to the findings or conclusions presented in this report. The work described in this report was performed under the direct supervision of the professional geologist whose signature and State of California registration are shown above.

### SITE DESCRIPTION AND HYDROGEOLOGIC CONDITIONS

### SITE DESCRIPTION

The site occupies a parcel on the southeast corner of 4th Avenue and East 12th Street in Oakland, Alameda County, California (Figure 1). The site is situated in a commercial and residential area in central Oakland and is currently vacant. The site was historically used as a gasoline station. The area of interest at the site is the former location of three underground storage tanks (USTs) and fuel dispensers where impacted soil and groundwater was first identified in 2006. A detailed site plan is shown on Figure 2.

### HYDROGEOLOGIC CONDITIONS

The site is underlain by Quaternary-age dune sand deposits referred to as the Merritt Sand. The Merritt Sand is typically described as loose, well-sorted fine- to medium-grained sand with a large

Off Site Investigation and Dual Phase Pilot Test Results With Fourth Quarter 2011 Groundwater Monitoring Report Shore Acres Gas 403 East 12th Street, Oakland, California

silt component. The sand is reported to reach a maximum depth of 50-feet below ground surface (bgs) in the area.

Based on boring logs from the advancement of 21 soil borings and the installation of six monitoring wells and two extraction wells, the stratigraphy of the site and vicinity consists of silt to approximately 30-feet bgs with discontinuous thin intervals of sandy silt and clayey sand present in the area.

Depth to groundwater is shallow, ranging between 10- to 13-feet bgs. The groundwater flow direction appears to be toward the south.

### CLEANUP CRITERIA

It is prudent to establish cleanup goals for soil and groundwater based upon reaching the residential Environmental Screening Levels (ESLs) established by Region II for sites with shallow soil where groundwater is not a current or potential drinking water source. The primary constituents of concern relative to the site appear to be total petroleum hydrocarbons as diesel (TPHd) and gasoline (TPHg) benzene, toluene, ethylbenzene, and xylenes (BTEX), methyl tertiary butyl ether (MTBE), and tertiary butyl alcohol (TBA). Accordingly, the following cleanup goals are proposed:

Constituent	Soil (mg/kg)	Groundwater (ug/L)
TPHd	100	210
TPHg	100	210
Benzene	0.12	46
Toluene	9.3	130
Ethylbenzene	2.3	43
Xylenes	11	100
MTBE	8.4	1,800
TBA	100	18,000

### PROJECT BACKGROUND

### INVESTIGATIONS

In July 2006, Geofon Incorporated (Geofon) advanced soil borings GP-1 and GP-2 and collected and analyzed soil samples. Results are detailed in Geofon's report entitled *Summary of Phase II Assessment Activities*, dated July 25, 2006.

In August 2009, Wright Environmental Services, Inc. (Wright) removed three USTs, associated fuel dispensers, and all associated piping. Results are detailed in Wright's *Closure Report for Three Underground Storage Tanks*, dated September 2009.

In April 2010, Apex Envirotech, Inc. (Apex) advanced nine soil borings to evaluate the lateral extent of impacted soil and groundwater. Results are documented in Apex's Subsurface Investigation Results Report dated June 23, 2010.

Off Site Investigation and Dual Phase Pilot Test Results With Fourth Quarter 2011 Groundwater Monitoring Report Shore Acres Gas 403 East 12th Street, Oakland, California

In June 2011, ECG supervised the installation of six groundwater monitoring wells (MW-1 through MW-6) and two extraction wells (VW-1 and VW-2). Results are documented in ECG's *Interim* Results and Second Quarter 2011 Monitoring Report, dated August 17, 2011.

In December 2011, ECG advanced 12 direct push borings for the collection of grab groundwater samples to delineate the dissolved phase plume in the up, cross, and downgradient from the site. The results are presented in this report.

Well construction details are contained in Table 1.

### RISK ASSESSMENTS

In February 2011, ECG conducted a sensitive receptor survey and a preferential pathway study for the site. Results of the sensitive receptor survey and preferential pathway study are contained in the Site Assessment and Soil Vapor Extraction Pilot Test Workplan, dated February 9, 2011.

A soil vapor survey has not been completed for the site.

### CORRECTIVE ACTIONS

In June 2011, ECG installed two extraction wells (VW-1 and VW-2). Results are documented in ECG's *Interim Results and Second Quarter 2011 Monitoring Report*, dated August 17, 2011. Also in June 2011, ECG performed a five-day DPE test and the results are detailed in this report.

### SITE ACTIVITIES

In correspondence dated June 17, 2011 (Appendix A), ACHCS requested a final results report to assess the lateral and vertical extent of soil and groundwater contamination and assess remediation technologies suitable to clean up the site. The following sections complete that request.

### **BORING INSTALLATIONS**

ECG prepared a site-specific Health and Safety Plan for the proposed scope of work as required by the Occupational Health and Safety Administration (OSHA) Standard "Hazardous Waste Operations and Emergency Response" guidelines (29 CFR.1910.120). The document was reviewed and signed by all ECG personnel and subcontractors prior to performing work at the site.

Prior to conducting and subsurface work at the site, Underground Services Alert (USA) was contacted to delineate subsurface utilities near the site with surface markings. In addition, the first five feet of every location was hand cleared as a further precaution against damaging underground utilities. All work was done in accordance to ECG Standard Operating Procedures (SOPs) included as Appendix B.

On December 5, 2011, ECG supervised Resonant Sonic Industries (RSI) of Woodland, California, during the installation of 12 grab groundwater borings (SB-10 through SB-21) at locations shown on Figure 2. The borings were installed using 2-inch diameter direct push techniques. Boring SB-10 was advanced to delineate groundwater in the upgradient direction and borings SB-11 and 12 were advanced in the cross gradient direction. Borings SB-13 through SB-21were advanced to

403 East 12th Street, Oakland, California

laterally delineate impacted groundwater downgradient from the site. Borings were advanced to total depths of 20-feet bgs.

### **GROUNDWATER SAMPLING**

Discrete groundwater samples were collected from all borings at a depth of approximately 19-feet bgs. Water was slow to enter the borings. Soil boring SB-20 did not yield groundwater for sample collection. Groundwater samples were collected into appropriate containers, labeled, and placed in an insulated container for delivery to Argon Analytical Laboratories in Ceres, California under proper chain of custody (COC) documentation. The groundwater samples were analyzed for TPHg, BTEX, five oxygenates, and two lead scavengers by EPA Method 8260B. Laboratory analytical reports and COCs are provided in Appendix C. Summaries of grab groundwater analytical data are presented in Tables 3a and 3b.

### FOURTH QUARTER 2011 GROUNDWATER MONITORING EVENT

ECG performed the fourth quarter 2011 groundwater monitoring and sampling event at the site on December 11, 2011. Gauging, development, purging, and sampling were conducted in accordance with ECG's SOPs included in Appendix B. The collected groundwater samples were submitted to Argon Analytical Services, Inc. located in Ceres, California for laboratory analysis under COC protocols (Appendix C).

The following is a summary of the current status of the groundwater monitoring program at the site:

**Current Phase of Project:** 

Assessment Ouarterly

Groundwater Sampling Schedule:

Wells MW-1 through MW-6, VW-1, and VW-2

Analysis:

TPHg and TPHd by EPA Method 8015M,

BTEX, 5 oxygenates, and 2 lead scavengers by

EPA Method 8260B

Is Free Product Present On-Site:

No

The following is a summary of recent field and analytical data:

Average Depth to Groundwater

11.96-feet bgs

Average Groundwater Elevation

19.21-feet above mean sea level

**Groundwater Gradient Direction** 

West

Groundwater Gradient

0.0020 feet/foot

TPHg Detected Range Benzene Detected Range 260 ug/L (SB-19) to 110,000 ug/L (MW-5) 7.1 ug/L (SB-19) to 12,000 ug/L (MW-3)

MTBE Detected

22 ug/L (SB-11) to 7,400 (MW-3)

Laboratory analytical reports and COCs are provided in Appendix C. Field notes are located in Appendix D. Summaries of groundwater monitoring and analytical data are presented in Tables 4a and 4b. TPHd was inadvertently not sampled for during this quarterly event.

### FIVE DAY EXTRACTION PILOT TEST

ECG conducted the DPE pilot test from June 24 through 28, 2011. A portable DPE unit was rented from Mako Industries in Anaheim, California under their blanket air board permit. The DPE unit used was a Model 300 TCAT, thermal oxidizer capable of extracting and abating soil vapors at a rate of 300 standard cubic feet per minute (scfm) and equipped with a liquid ring pump. System specifications are presented in Appendix E.

Wells VW-1 and VW-2 were used as extraction points during the test. The DPE unit was connected to an individual well using 2-inch diameter above ground flexible tubing. The remaining extraction well and groundwater monitoring wells MW-1 through MW-6 were used to monitor vacuum influence and water levels during the test.

Wells VW-1 and VW-2 were extracted from for 40 and 48 hours, respectively. During daylight hours, readings for influent concentrations, flow rates, system vacuum, and vacuum influence were monitored hourly with field instruments. Field notes are included as Appendix F which include flow rates and field influent concentrations monitored with a photoionization detector (PID). Influent flow rates were difficult to obtain because of the presence of water that was entrained in the vapor stream during the DPE test. Average flow rates of 180 standard cubic feet per minute (scfm) and 50 scfm were estimated for wells VW-1 and VW-2, respectively. PID readings increased from 62 parts per million by volume (ppmv) to 272 by the end of the test at well VW-1. PID reading initially increased to 1,990 ppmv but then reduced to 173 ppmv at the end of the test at well VW-2. Vapor influence was noticed at all site wells during the first test at well VW-1 but positive pressure was recorded at most wells during the test at well VW-2. This is most likely caused by groundwater recovery in these wells after the first test creating positive pressure within the wells' casings.

Influent vapor samples were collected from the conveyance piping after each test ran for three hours, near the middle of the tests, and just prior to the conclusion of the tests on wells VW-1 and VW-2. Vapor samples were collected into one-liter Tedlar bags filled no more than 90 percent to capacity and shipped overnight to Kiff Analytical in Davis, California, a State certified analytical laboratory for analysis. Analytical data, flow rates and extraction rates are shown on Tables 6 and 7. TPHg influent concentrations increased from 190 to 1,400 ppmv during the test for well VW-1 and decreased from 11,000 to 3,200 ppmv at well VW-2 during the tests. TPHg extraction rates were 76 and 58 pounds per day at the conclusion of the tests at wells VW-1 and VW-2, respectively.

Groundwater extraction rates of approximately 3.3 and 2.0 gallons per minute were achieved during extraction from wells VW-1 and VW-2, respectively and drawdown of one to five feet was observed in observation wells, with the furthest distance being 68-feet from well VW-1 to well MW-2. A Distance Drawdown Plot using the data from the test at VW-1 shows a groundwater radius of influence of 88 feet, a transmissivity value of 34 square feet/day, and a hydraulic conductivity value of 0.0012 centimeters per second which is consistent for a silty sand aquifer (Appendix G). A time drawdown plot using the recovery data from well VW-2 shows a transmissivity value of 22 square feet/day and a hydraulic conductivity value of 0.0008 centimeters per second which is also consistent for a silty sand aquifer (Appendix G).

Water samples were collected from the extraction wells at the conclusion of the tests. Analytical data, total groundwater extracted, and a groundwater extraction summary is shown on Table 8. All work was done in accordance to ECG SOPs included as Appendix B.

### CONCLUSIONS

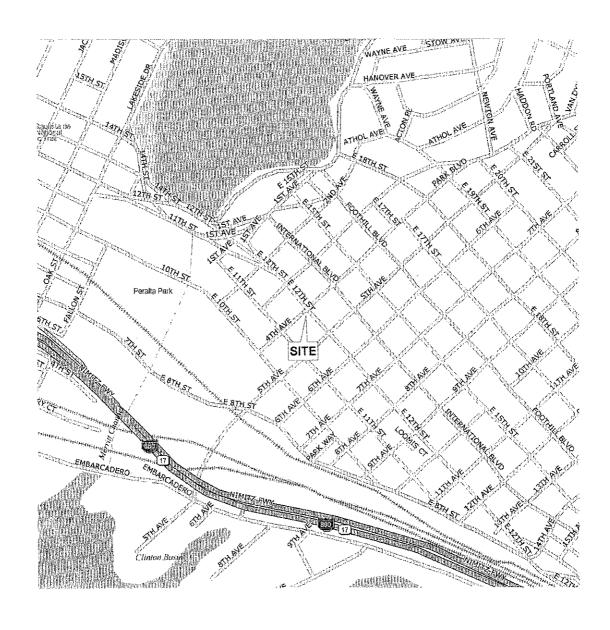
Groundwater concentrations in extraction wells VW-1 and VW-2 and all onsite wells are substantial. Figure 4 through 6 illustrate the dissolved phase groundwater plume is sufficiently delineated in the downgradient direction (southwest) by soil boring SB-14. It appears that a second source is present near the intersection of Fourth Avenue and East Eleventh Street. In addition, the absence of MTBE in the second source area borings provides further evidence that contamination found in this area is not associated with the Shore Acres Gas site.

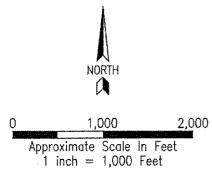
DPE worked well at the site. During extraction, vapor flow rates averaged at approximately 150 and 50 scfm at wells VW-1 and VW-2, respectively and vapor influence was seen at observation wells approximately 68 feet away from the extraction wells. Groundwater extraction rates of greater than 3-gallons per minute were recorded, and drawdown of over 1-foot was measured in observation wells approximately 68 feet away from extraction wells. Mass removal rates were averaged at approximately 60 pounds per day at the conclusions of each test, which is high enough to warrant installing a full-time DPE unit at the site. DPE would effectively lower the mass while controlling off site migration.

Soil concentration data illustrating the lateral and vertical extents is shown on Figures 7 through 14. Using the soil and groundwater isoconcentration and cross section data, it is warranted to convert well MW-5 to a 4-inch extraction well.

ECG recommends preparing a Feasibility Study and Remedial Action Plan detailing the DPE treatment system appropriate to reduce site conditions to below Region II ESLs in a reasonable amount of time.

FIGURES





### FIGURE 1

Project Number: GHA.19009

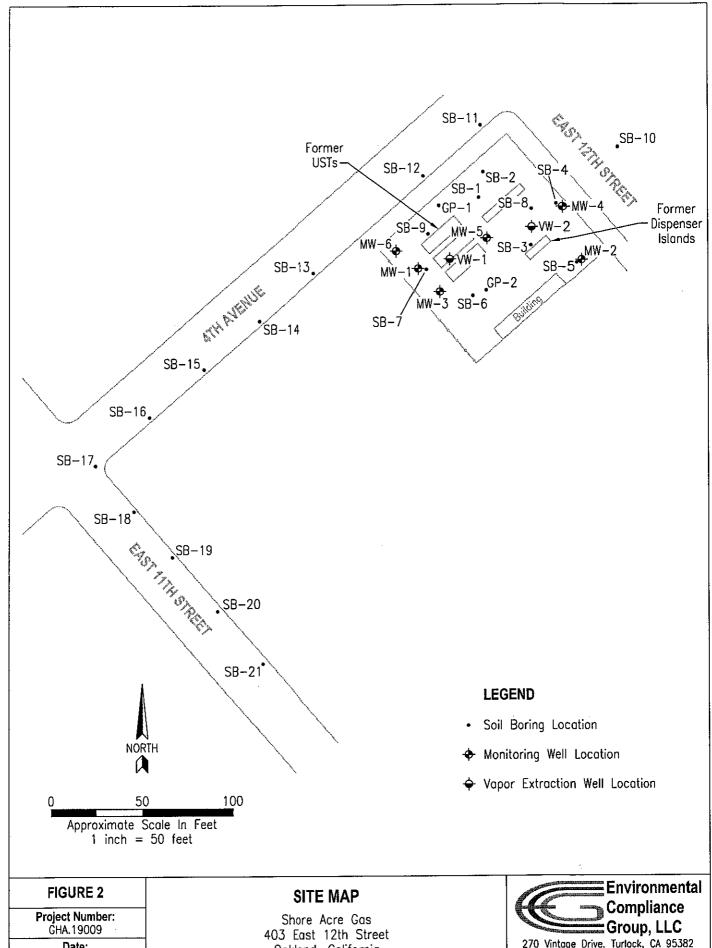
Date: February 9, 2011

### SITE LOCATION MAP

Shore Acre Gas 403 East 12th Street Oakland, California

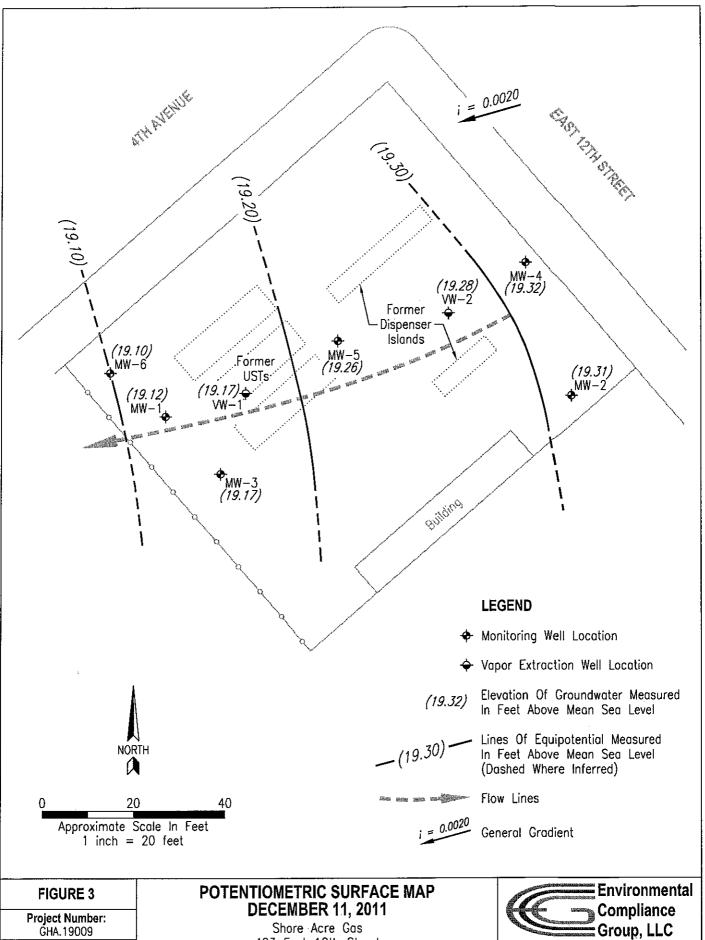


270 Vintage Drive, Turlock, CA 95382 Phone: (209) 664-1035



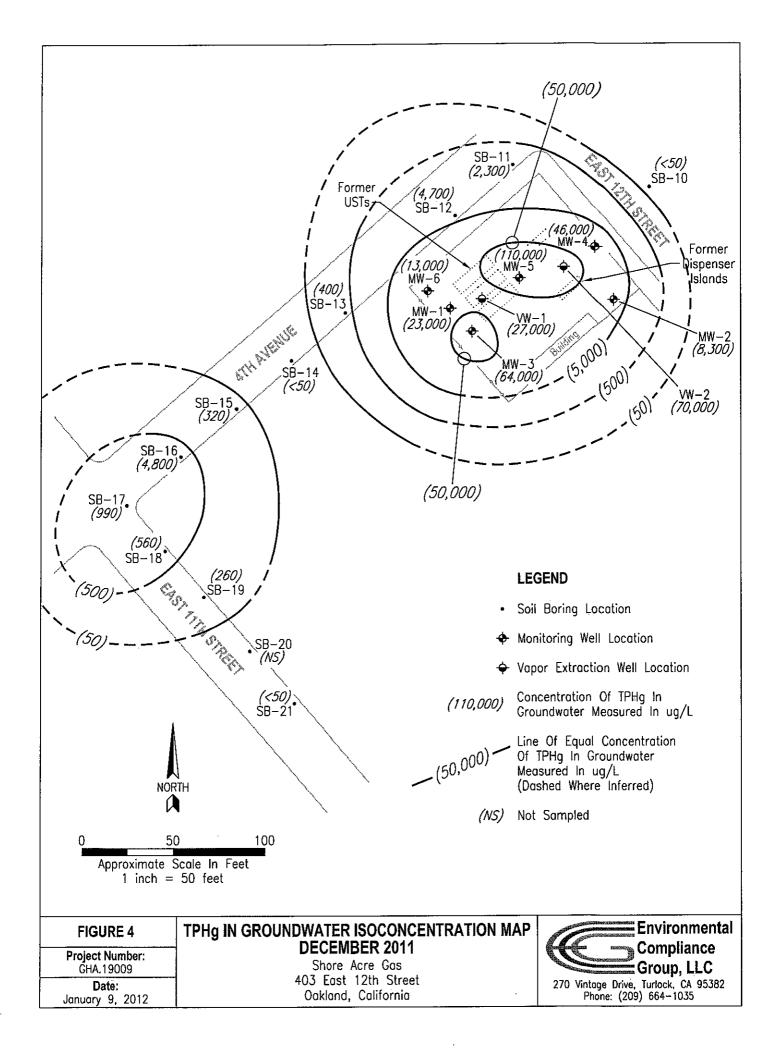
Date: January 4, 2012 Oakland, California

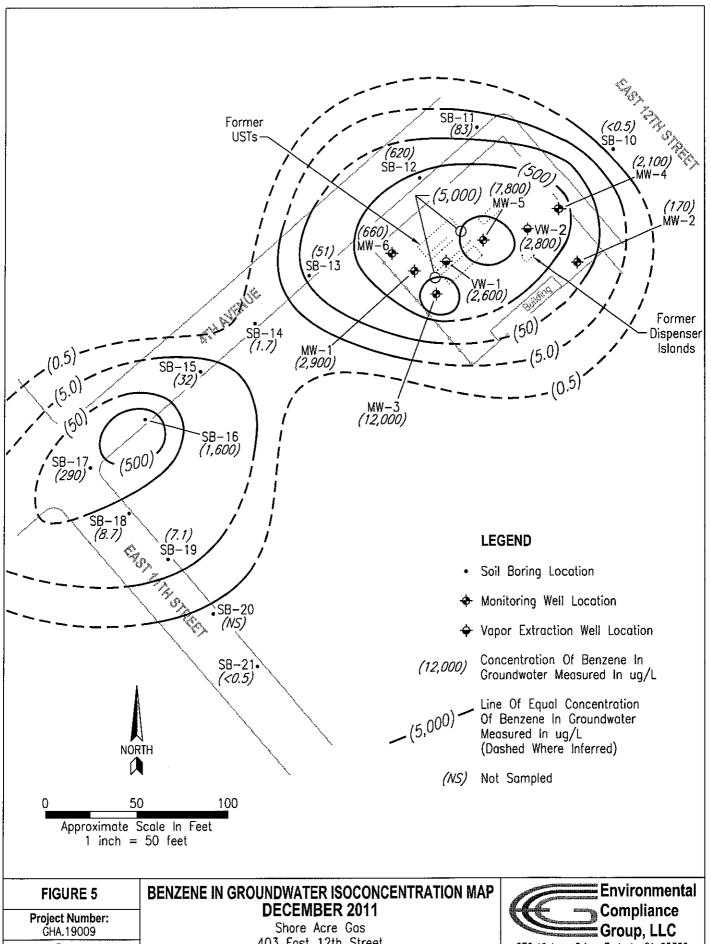
270 Vintage Drive, Turlock, CA 95382 Phone: (209) 664-1035



Date: January 9, 2012 403 East 12th Street Oakland, California



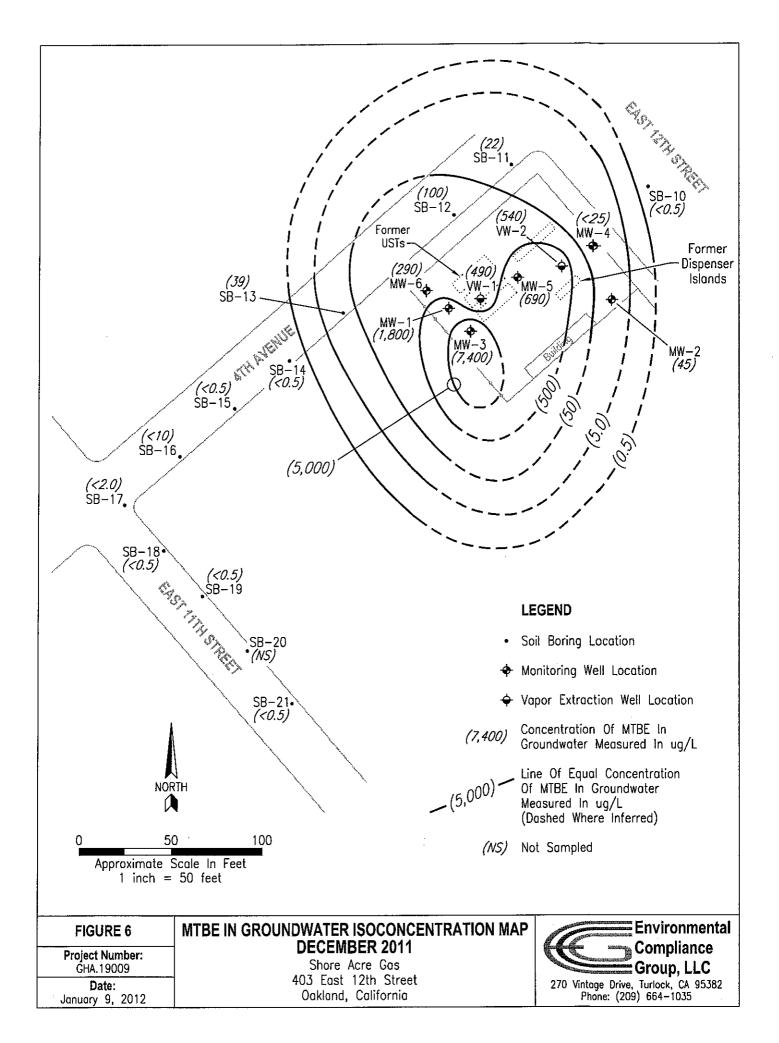


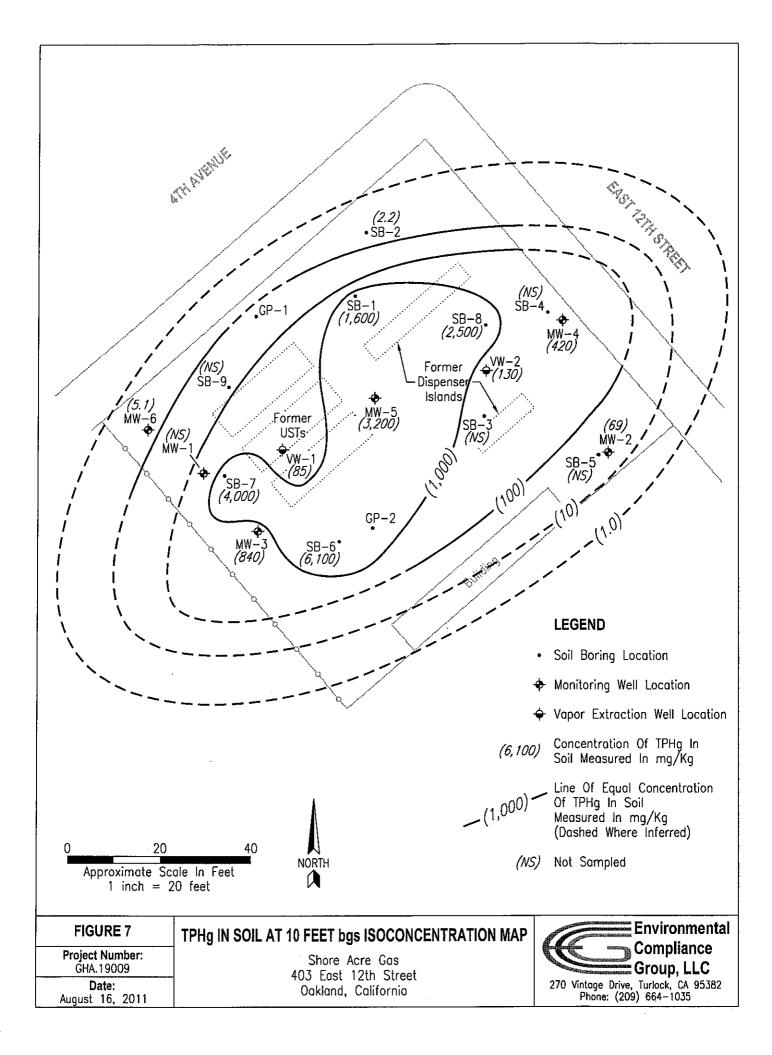


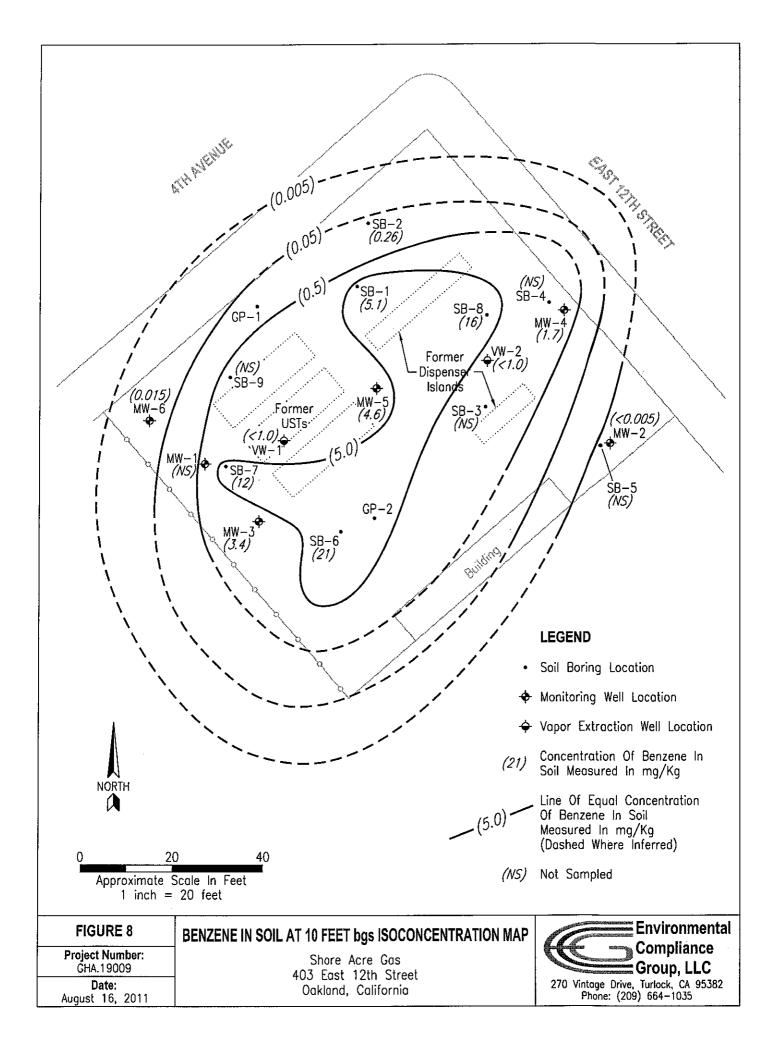
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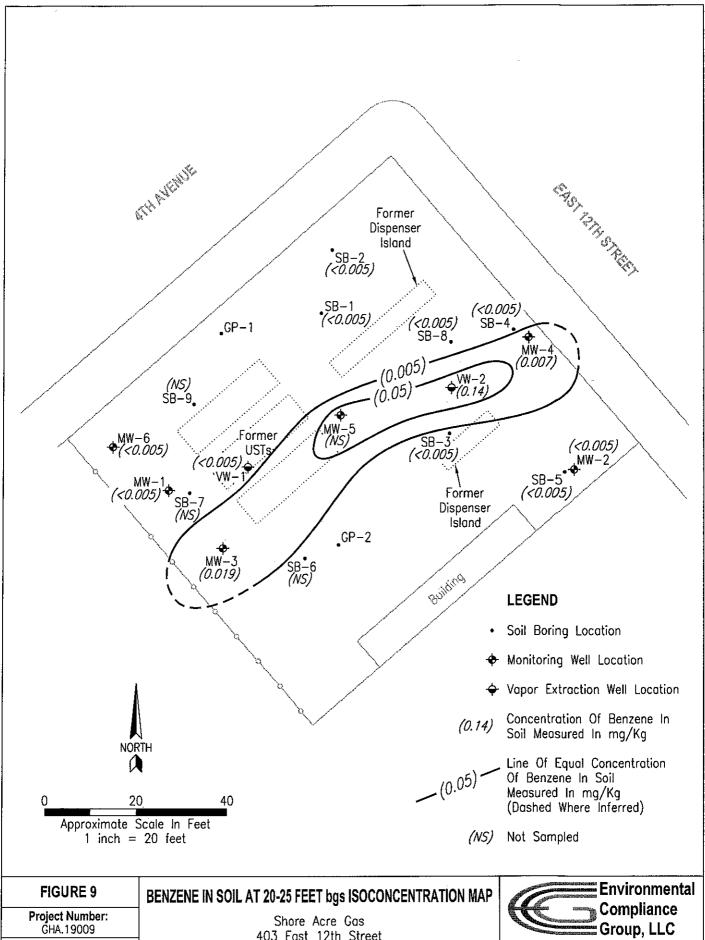


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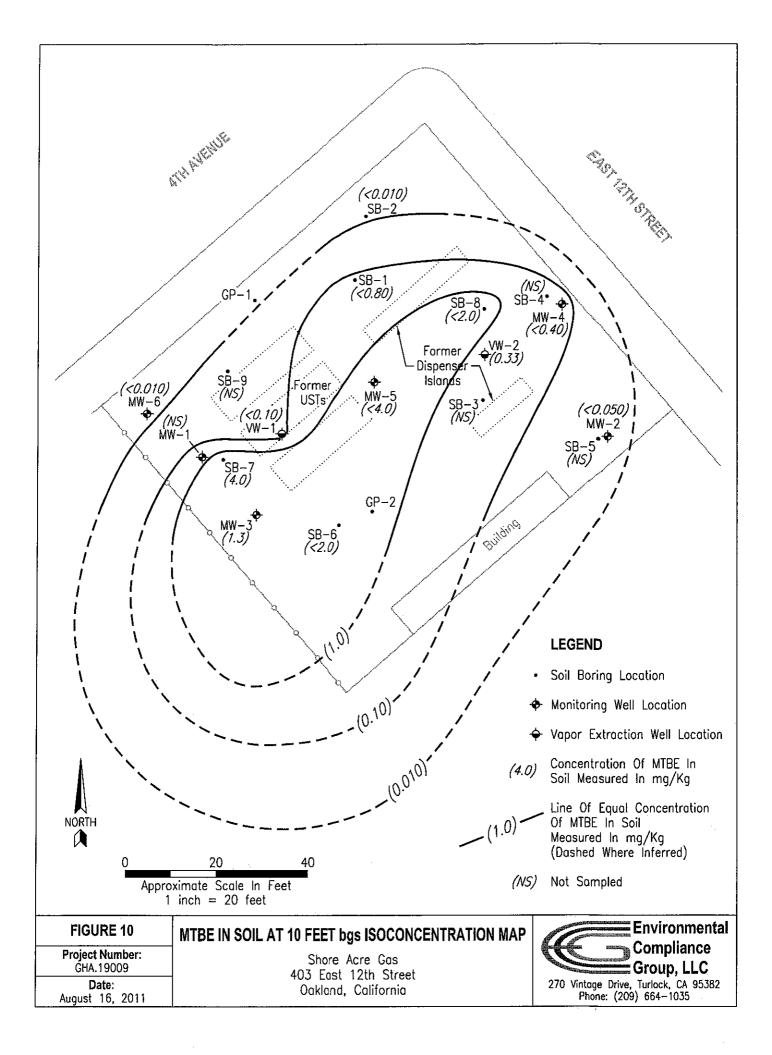


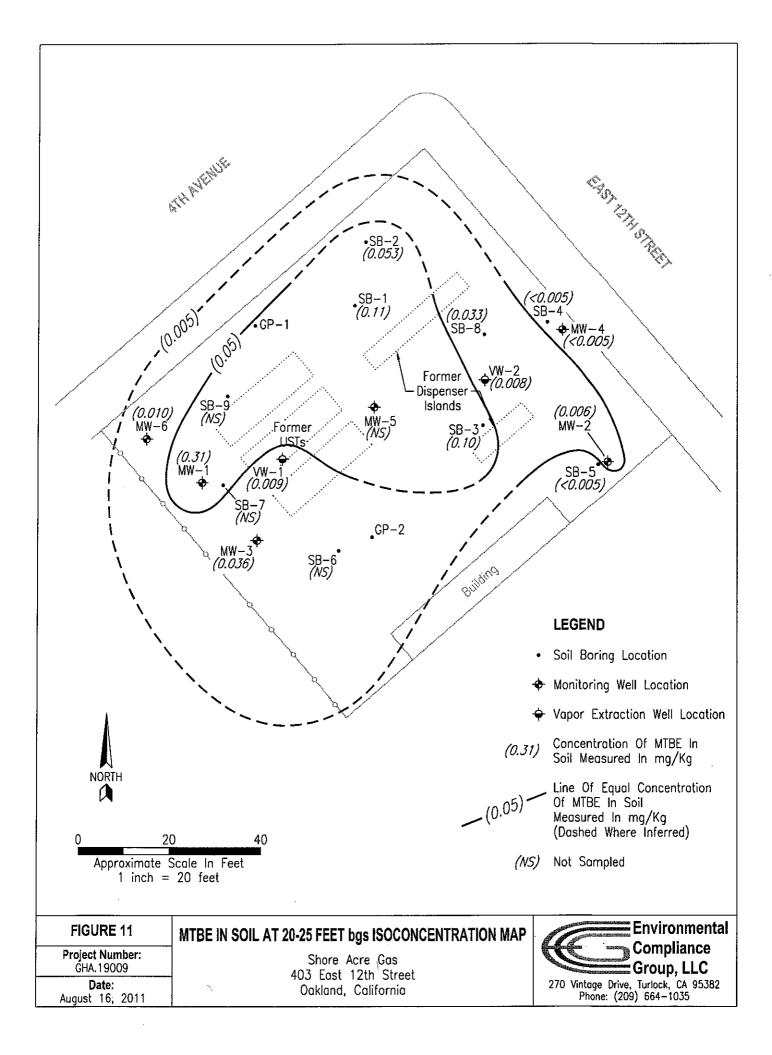


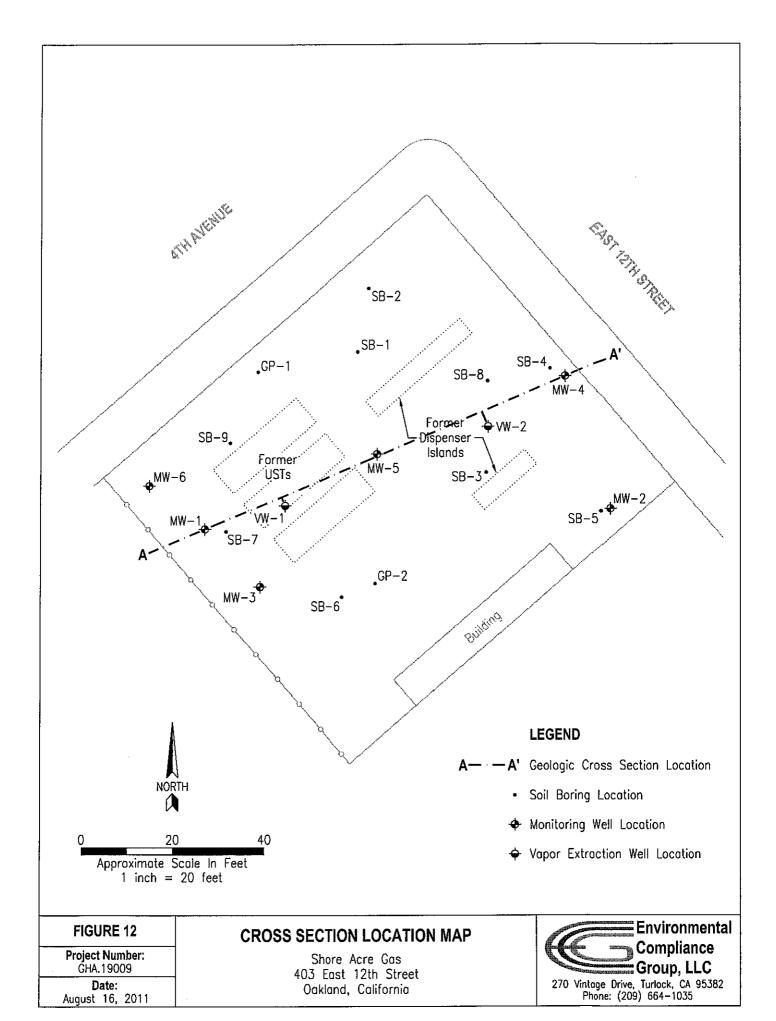
Date: August 16, 2011 403 East 12th Street Oakland, California

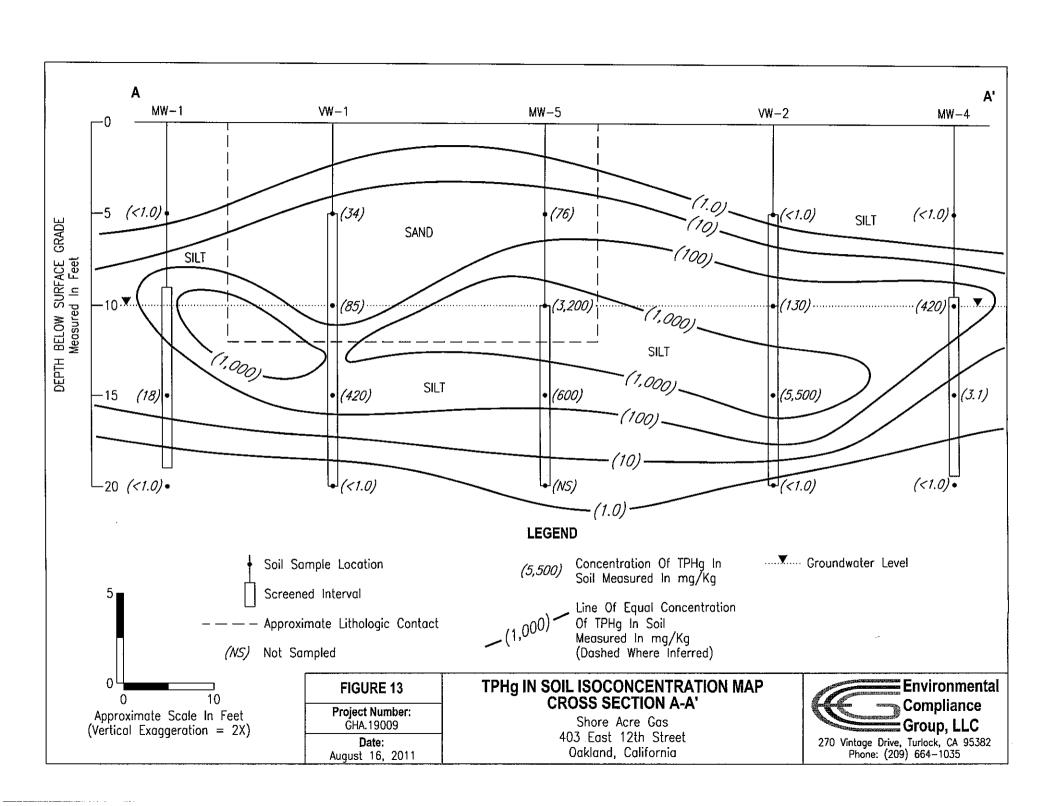


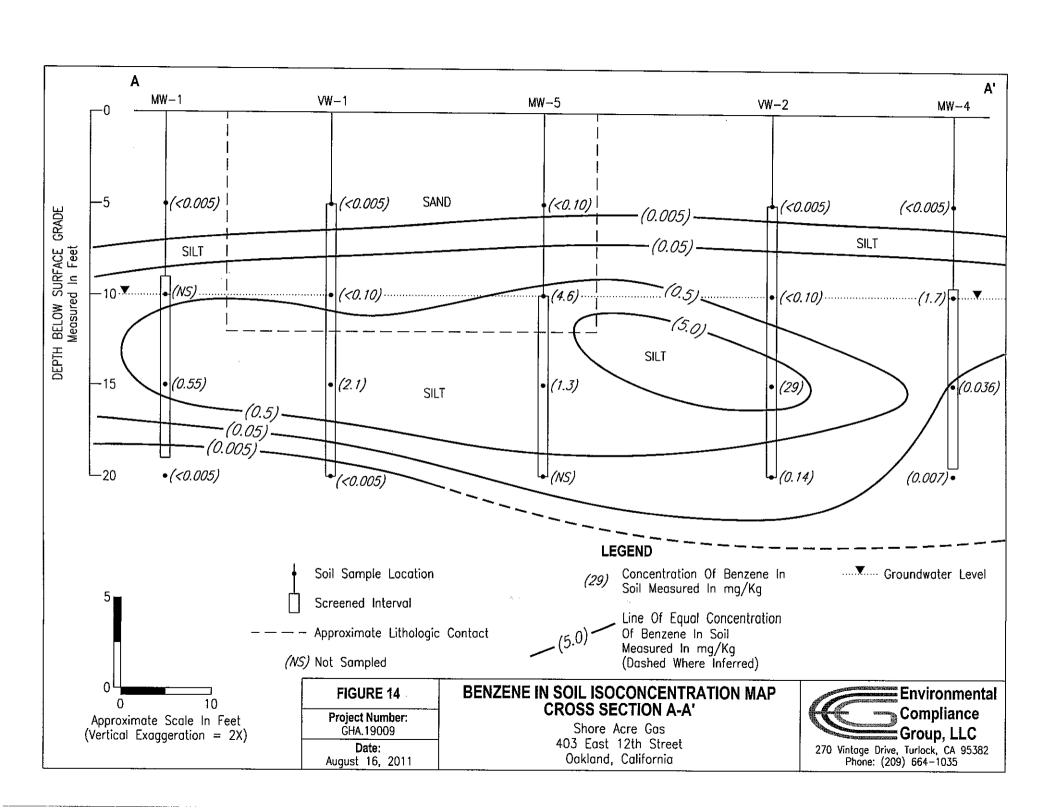
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### TABLES

### Table 1 Well Construction Details

Shore Acres Gas 403 East 12th Street Oakland, California

Well	Date	тос	Well	Casing	Casing	Screen/	Screen				
ID	installed	Elevation	Depth	Diameter	Material	Filter	Interval				
		(ft amsi)	(ft bgs)	(inches)			(ft bgs)				
Monitoring Wells											
MW-1		30.81	20	2	PVC	0.020/#3	10-20				
MW-2		31.29	20	2	PVC	0.020/#3	10-20				
MW-3	June 2011	31.30	18	2	PVC	0.020/#3	8-18				
MW-4	Julie 2011	31.21	19	2	PVC	0.020/#3	9-19				
MW-5		31.35	20	2	PVC	0.020/#3	10-20				
MW-6	·	30.79	20	2	PVC_	0.020/#3	10-20				
Dual Phase	Extraction We	ells	· · · · · ·								
VW-1	June 2011	31.26	20	4	PVC	0.020/#3	5-20				
VW-2	Julie Zott	31.40	20	4	PVC	0.020/#3	5-20				

### Notes:

TOC - denotes top of casing

ft - denotes feet

amsi - denotes above mean sea level

bgs - denotes below ground surface

PVC - denotes polyvinyl chloride

# Table 2a Historical Soil Analytical Data TPH and BTEX

Shore Acres Gas 403 East 12th Street Oakland, California

Boring ID	Sample	Collection	TPHd	TPHg	Benzene	Toluene	Ethyi-	Total
	Depth	Date	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	benzene	xylenes
	(feet)						(mg/kg)	(mg/kg)
<b>UST Removal Sam</b>	ıples							
SS-D1	2		1,800*	3,000	<0.25	0.34	39	180
SS-D2	2	] [	900*	2,400	<0.25	<0.25	36	120
SS-D3	2	] [	460*	1,000	<0.15	<0.15	12	14
SS-D4	2	] [	540*	640	<0.090	1.0	6.1	51
SS-D5	2	] [	320	140	<0.025	<0.025	1.3	3.2
SS-D6	2.0	] [	320*	260	<0.025	0.054	1.0	8.0
SS-J1	2.0	1	39*	160	<0.025	<0.025	0.71	0.94
SS-Isle	4.0	August	560*	100	<0.025	<0.025	0.30	0.084
SS-7	18.0	2009	310*	1,600	6.9	76	39	200
Tank 1-SS-1	14.0	1	830*	2,500	4.2	100	69	360
Tank 1-SS-2	14.0	1	62*	480	1.8	5.3	14	62
Tank 2-SS-1	14.0	]	120*	290	0.37	2.4	6.3	31
Tank 2-SS-2	14.0	7	330*	80	0.074	0.051	1.2	5.8
Tank 3-SS-1	14.0	1	480*	2,100	2.4	41	62	320
Tank 3-SS-2	14.0	1	75*	130	0.23	0.26	3.1	15
Soil Borings			-		•			
GP-1-15.5	15.5		13.0	18.0	0.63	0.052	0.69	0.13
GP-1-18.0	18.0	1 2006	<1.0	<1.0	0.0056	0.0082	<0.005	0.019
GP-2-12.0	12.0	July 2006	600	3,600	17	180	98	440
GP-2-20.0	20.0	]	79	1,100	3.2	41	25	130
SB-1-9.5	9.5			1,600	5.1	43	30	180
SB-1-24.5	24.5	1		<1.0	<0.005	<0.005	<0.005	<0.010
SB-1-29.5	29.5	] [		<1.0	<0.005	<0.005	<0.005	<0.010
SB-2-9.5	9.5	]		2.2	0.26	<0.010	0.066	<0.020
SB-2-24.5	24.5	]		<1.0	<0.005	<0.005	<0.005	<0.010
SB-2-29.5	29.5	1 1		<1.0	<0.005	<0.005	<0.005	<0.010
SB-3-14.5	14.5	7		17	17	100	42	240
SB-3-24.5	24.5	1 1		<1.0	<0.005	0.005	<0.005	0.013
SB-3-29.5	29.5	1 1		<1.0	<0.005	<0.005	<0.005	< 0.010
SB-4-14.5	14.5	1 1		1,700	13	79	28	170
SB-4-19.5	19.5	April 2010		<1.0	<0.005	0.009	<0.005	0.026
SB-4-29.5	29.5	1 ·		<1.0	<0.005	<0.005	<0.005	<0.010
SB-5-14.5	14.5	1		470	<0.20	0.45	6.2	37
SB-5-24.5	24.5	<u> </u>		<1.0	<0.005	<0.005	<0.005	<0.010
SB-5-29.5	29.5	1		<1.0	<0.005	<0.005	<0.005	<0.010
SB-6-9.5	9.5	1		6,100	21	170	95	580
SB-6-29.5	29.5	1		<1.0	<0.005	<0.005	<0.005	<0.010
SB-6-32	32.0	1		<1.0	<0.005	<0.005	<0.005	<0.010
SB-7-9.5	9.5	†		4,000	12	46	55	360
SB-7-29.5	29.5	1		<1.0	<0.005	<0.005	<0.005	<0.010
SB-7-32	32.0	1		<1.0	<0.005	<0.005	<0.005	<0.010

### Table 2a Historical Soil Analytical Data **TPH and BTEX**

**Shore Acres Gas** 403 East 12th Street Oakland, California

Boring ID	Sample	Collection	TPHd	TPHg	Benzene	Toluene	Ethyl-	Total
	Depth	Date	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	benzene	xylenes
	(feet)						(mg/kg)	(mg/kg)
SB-8-9.5	9.5			2,500	16	110	63	370
SB-8-24.5	24.5			<1.0	<0.005	<0.005	<0.005	<0.010
SB-8-29.5	29.5	A = =11 2010		<1.0	<0.005	<0.005	<0.005	<0.010
SB-9-14.5	14.5	April 2010		390	3.0	3.0	9.1	41
SB-9-29.5	29.5			<1.0	<0.005	<0.005	<0.005	<0.010
SB-9-32	32.0	]		<1.0	<0.005	<0.005	<0.005	<0.010
Groundwater Well	S							
MW-1-5	5		<5.0	<1.0	<0.005	<0.005	<0.005	<0.010
MW-1-15	15	]	<5.0	18	0.55	<0.050	0.87	1.2
MW-1-20	20	]	<5.0	<1.0	<0.005	<0.005	<0.005	<0.010
MW-2-5	5		<5.0	<1.0	<0.005	<0.005	<0.005	<0.010
MW-2-10	10	]	<5.0	69	<0.005	<0.005	<0.005	<0.010
MW-2-15	15		<5.0	50	<0.050	0.48	3.1	19
MW-2-20	20		<5.0	<1.0	<0.005	<0.005	<0.005	<0.010
MW-3-5	5		<5.0	<1.0	<0.010	<0.010	<0.010	<0.020
MW-3-10	10	] [	<15	840	3.4	33	20	140
MW-3-15	15	] [	<5.0	380	3.0	4.5	7.3	41
MW-3-20	20		<5.0	<1.0	0.019	<0.005	0.006	<0.010
MW-4-5	5	] [	<5.0	<1.0	<0.005	<0.005	<0.005	<0.010
MW-4-10	10	] [	<15	420	1.7	2.6	9.2	51
MW-4-15	15		<5.0	3.1	0.036	0.20	0.15	0.95
MW-4-20	20	June 2011	<5.0	<1.0	0.007	0.017	0.010	0.039
MW-5-5	5		<5.0	76	<0.10	<0.10	1.3	0.76
MW-5 <b>-1</b> 0	10		<15	3,200	4.6	6.5	72	410
MW-5-15	15	]	<5.0	600	1.3	13	15	110
MW-6-5	5		<5.0	<1.0	<0.005	<0.005	<0.005	<0.010
MW-6-10	10	}	<5.0	5.1	0.015	<0.010	3.4	1.0
MW-6-15	15	]	<5.0	<1.0	<0.005	<0.005	<0.005	<0.010
MW-6-20	20	]	<5.0	<1.0	<0.005	<0.005	<0.005	<0.010
VW-1-5	5	] [	<5.0	34	<0.005	<0.005	0.16	0.31
VW-1-10	10	] [	<15	85	<0.10	<0.10	2.2	0.89
VW-1-15	15	] [	<15	420	2.1	4.1	9.4	55
VW-1-20	20	[	<5.0	<1.0	<0.005	<0.005	<0.005	<0.010
VW-2-5	5	]	<5.0	<1.0	<0.005	<0.005	<0.005	<0.010
VW-2-10	10		<5.0	130	<0.10	<0.10	2.9	15
VW-2-15	15		<15	5,500	29	430	120	910
VW-2-20	20	]	<5.0	<1.0	0.14	0.054	0.025	0.14
		-	·.				<u> </u>	

### Notes:

TPHd - denotes total petroleum hydrocarbons as diesel
TPHg - denotes total petroleum hydrocarbons as gasoline
mg/kg - denotes milligrams per kilogram
< - denotes less than the detection limit

--- denotes no data

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### Table 2b Historical Soil Analytical Data Oxygenates and Lead Scavengers

Shore Acres Gas 403 East 12th Street Oakland, California

Boring ID	Sample	Collection	DIPE	ETBE	MTBE	TAME	ТВА	1,2-DCA	EDB
	Depth	Date	(mg/kg)						
	(feet)								
<b>UST Removal San</b>	nples							<u></u>	
SS-D1	2		<0.25	<0.25	<0.25	<0.25	<1.5		
SS-D2	2		<0.25	<0.25	<0.25	<0.25	<1.5		
SS-D3	2		<0.15	<0.15	<0.15	<0.15	<0.70		
SS-D4	2		<0.090	<0.090	<0.090	<0.090	<0.50		
SS-D5	2		<0.025	<0.025	<0.025	<0.025	<0.15		
SS-D6	2		<0.025	<0.025	<0.025	<0.025	<0.15		
SS-J1	2	1	<0.025	<0.025	<0.025	<0.025	<0.15		
SS-Isle	4	August	<0.025	<0.025	<0.025	<0.025	<0.15		
SS-7	18	2009	<0.25	<0.25	<0.25	<0.25	<1.5	<0.25	<0.25
Tank 1-SS-1	14	]	<0.50	<0.50	<0.50	<0.50	<2.5	<0.50	<0.50
Tank 1-SS-2	14	]	<0.040	<0.040	0.37	<0.040	0.51	<0.040	<0.040
Tank 2-SS-1	14	1	<0.050	<0.050	0.18	<0.050	0.35	<0.050	<0.050
Tank 2-SS-2	14	]	<0.025	<0.025	0.090	<0.025	0.16	<0.025	<0.025
Tank 3-SS-1	14	]	<0.50	<0.50	<0.50	<0.50	<2.5	<0.50	<0.50
Tank 3-SS-2	14	]	<0.025	<0.025	0.19	<0.025	0.15	<0.025	<0.025
Soil Borings	•								
GP-1-15.5	15.5		<0.005	<0.005	0.029	<0.005	0.27		
GP-1-18.0	18.0	]	<0.005	<0.005	0.54	<0.005	0.33		
GP-2-12.0	12.0	July 2006	<0.50	<0.50	<0.50	<0.50	<2.5		
GP-2-20.0	20.0	1	<0.025	<0.025	0.041	<0.025	<0.15	****	
SB-1-9.5	9.5		<0.80	<0.80	<0.80	<0.80	<8.0	<0.80	<0.80
SB-1-24.5	24.5	1	<0.005	<0.005	0.11	<0.005	<0.050	<0.005	<0.005
SB-1-29.5	29.5	]	<0.005	<0.005	<0.005	<0.005	<0.050	<0.005	<0.005
SB-2-9.5	9.5	]	<0.010	<0.010	<0.010	<0.010	< 0.10	<0.010	< 0.010
SB-2-24.5	24.5	]	<0.005	<0.005	0.053	<0.005	<0.050	<0.005	<0.005
SB-2-29.5	29.5	]	<0.005	<0.005	<0.005	<0.005	<0.050	<0.005	<0.005
SB-3-14.5	14.5	]	<2.0	<2.0	<2.0	<2.0	<20	<2.0	<2.0
SB-3-24.5	24.5		<0.005	<0.005	0.10	<0.005	<0.050	<0.005	<0.005
SB-3-29.5	29.5	]	<0.005	<0.005	0.010	<0.005	<0.050	<0.005	<0.005
SB-4-14.5	14.5	1	<1.0	<1.0	<1.0	<1.0	<10	<1.0	<1.0
SB-4-19.5	19.5	April 2010	<0.005	<0.005	<0.005	<0.005	<0.050	<0.005	<0.005
SB-4-29.5	29.5	1	<0.005	<0.005	<0.005	<0.005	<0.050	<0.005	<0.005
SB-5-14.5	14.5	]	<0.20	<0.20	<0.20	<0.20	<2.0	<0.20	<0.20
SB-5-24.5	24.5	]	<0.005	<0.005	<0.005	<0.005	<0.050	<0.005	<0.005
SB-5-29.5	29.5	]	<0.005	<0.005	<0.005	<0.005	<0.050	<0.005	<0.005
SB-6-9.5	9.5	]	<2.0	<2.0	<2.0	<2.0	<20	<2.0	<2.0
SB-6-29.5	29.5	]	<0.005	<0.005	0.20	<0.005	<0.050	<0.005	<0.005
SB-6-32	32.0	1	<0.005	<0.005	0.18	<0.005	<0.050	<0.005	<0.005
SB-7-9.5	9.5	1	<1.0	<1.0	4.0	<1.0	<10	<1.0	<1.0
SB-7-29.5	29.5	1	<0.005	<0.005	0.18	<0.005	<0.050	<0.005	<0.005
SB-7-32	32.0	1	<0.005	<0.005	0.11	<0.005	<0.050	<0.005	<0.005

## Table 2b Historical Soil Analytical Data Oxygenates and Lead Scavengers

Shore Acres Gas 403 East 12th Street Oakland, California

Boring ID	Sample	Collection	DIPE	ETBE	MTBE	TAME	TBA	1,2-DCA	EDB
	Depth	Date	(mg/kg)						
	(feet)								
SB-8-9.5	9.5		<2.0	<2.0	<2.0	<2.0	<20	<2.0	<2.0
SB-8-24.5	24.5	]	<0.005	<0.005	0.033	<0.005	<0.050	<0.005	<0.005
SB-8-29.5	29.5	1	<0.005	<0.005	<0.005	<0.005	<0.050	<0.005	<0.005
SB-9-14.5	14.5	April 2010	<0.20	<0.20	5.5	<0.20	<2.0	<0.20	<0.20
SB-9-29.5	29.5	]	<0.005	<0.005	0.090	<0.005	0.15	<0.005	<0.005
SB-9-32	32.0		<0.005	<0.005	0.11	<0.005	<0.050	<0.005	<0.005
Groundwater Well	S								
MW-1-5	5		<0.005	<0.005	0.35	<0.005	0.093	<0.005	<0.005
MW-1-15	15	]	<0.050	<0.050	1.1	<0.050	<0.50	<0.050	<0.050
MW-1-20	20	]	<0.005	<0.005	0.31	<0.005	0.58	<0.005	<0.005
MW-2-5	5	]	<0.005	<0.005	<0.005	<0.005	<0.050	<0.005	<0.005
MW-2-10	10	1	<0.050	<0.050	<0.050	<0.050	<0.50	<0.050	<0.050
MW-2-15	15	]	<0.050	<0.050	<0.050	<0.050	<0.50	<0.050	<0.050
MW-2-20	20	1	<0.005	<0.005	0.006	<0.005	<0.050	<0.005	<0.005
MW-3-5	5	]	<0.010	<0.010	1.5	<0.010	0.37	<0.010	<0.010
MW-3-10	10		<0.80	<0.80	1.3	<0.80	<8.0	<0.80	<0.80
MW-3-15	1.5		<0.20	<0.20	3.0	<0.20	<2.0	<0.20	<0.20
MW-3-20	20	]	<0.005	<0.005	0.036	<0.005	0.16	<0.005	<0.005
MW-4-5	5	]	<0.005	<0.005	<0.005	<0.005	<0.050	<0.005	<0.005
MW-4-10	10		<0.40	<0.40	<0.40	<0.40	<4.0	<0.40	<0.40
MW-4-15	15		<0.010	<0.010	<0.010	<0.010	<0.10	<0.010	<0.010
MW-4-20	20	June 2011	<0.005	<0.005	<0.005	< 0.005	<0.050	<0.005	<0.005
MW-5-5	5	Julie 2011	<0.10	<0.10	<0.10	<0.10	<1.0	<0.10	<0.10
MW-5-10	10	]	<4.0	<4.0	<4.0	<4.0	<40	<4.0	<4.0
MW-5-15	15		<0.40	<0.40	<0.40	< 0.40	<4.0	<0.40	<0.40
MW-6-5	5		<0.005	<0.005	<0.005	<0.005	<0.050	<0.005	<0.005
MW-6-10	10		<0.010	<0.010	<0.010	<0.010	<0.10	<0.010	<0.010
MW-6-15	15		<0.005	<0.005	0.026	<0.005	0.088	<0.005	<0.005
MW-6-20	20		<0.005	<0.005	0.010	<0.005	0.37	<0.005	<0.005
VW-1-5	5	]	<0.050	<0.050	<0.050	<0.050	<0.50	<0.050	<0.050
VW-1-10	10		<0.10	<0.10	<0.10	<0.10	<1.0	<0.10	<0.10
VW-1-15	15		<0.40	<0.40	0.59	<0.40	<4.0	<0.40	<0.40
VW-1-20	20	- -	<0.005	<0.005	0.009	<0.005	0.16	<0.005	<0.005
VW-2-5	5		<0.005	<0.005	0.25	<0.005	0.14	<0.005	<0.005
VW-2-10	10		<0.10	<0.10	0.33	<0.10	<1.0	<0.10	<0.10
VW-2-15	15	[	<4.0	<4.0	<4.0	<4.0	<40	<4.0	<4.0
VW-2-20	20		<0.005	<0.005	0.008	<0.005	0.26	<0.005	<0.005

### Notes:

mg/kg - denotes milligrams per kilogram MTBE - denotes methyl tertiary butyl ether

< - denotes less than the detection limi DIPE - denotes di-isopropyl ether

--- denotes not analyzed/applicable ETBE - denotes ethyl tertiary butyl ether

DCA - denotes dichloroethane TAME - denotes tertiary amyl ether

EDB - denotes ethylene dibromide

TBA - denotes tertiary butyl alcohol

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# Table 3a Grab Groundwater Sample Results TPH and BTEX

Shore Acres Gas 403 East 12th Street Oakland, California

Sample ID	Collection					Ethyl-	Total			
1	Date	TPHd	TPHg	Benzene	Toluene	benzene	Xylenes			
		(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)			
Excavation	Excavation									
	August									
Pit Sample 1	2009	21,000	21,000	3,800	1,000	1,200	3,700			
Direct Push Gra	b Groundwa	ter Sampl	es							
SB-1			60	2.9	6.7	2.1	9.7			
SB-2			<50	<0.5	<0.5	<0.5	<1.0			
SB-3			170	1.5	11	4.8	27			
SB-4	] [		6,500	78	440	190	960			
SB-5	April 2010		<50	<0.5	<0.5	<0.5	<1.0			
SB-6			440	<20	<20	<20	<40			
SB-7			270	<12	<12	<12	<25			
SB-8			<50	0.6	1.3	0.6	3.3			
SB-9			<50	<10	<10	<10	<20			
SB-10			<50	<0.5	<0.5	<0.5	<1.0			
SB-11			2,300	83	1.9	140	43			
SB-12			4,700	620	290	84	400			
SB-13			400	51	2.4	4.2	9.7			
SB-14	December		<50	1.7	<0.5	2.1	<1.0			
SB-15			320	32	0.7	33	25			
SB-16	2011		4,800	1,600	10	49	<20			
SB- <b>1</b> 7			990	290	7.2	27	4.3			
SB-18		Lad Mile Sale	560	8.7	4.9	23	83			
SB-19			260	7.1	<0.5	16	7.0			
SB-21			<50	<0.5	<0.5	<0.5	<1.0			

### Notes:

TPHd - denotes total petroleum hydrocarbons as diesel

TPHg - denotes total petroleum hydrocarbons as gasoline

ug/L - denotes micrograms per liter

< - denotes less than the detection limit

--- - denotes not analyzed/applicable

# Table 3b Grab Groundwater Sample Results Oxygenates and Lead Scavengers

Shore Acres Gas 403 East 12th Street Oakland, California

Sample ID	Collection	DIPE	ETBE	MTBE	TAME	ТВА	1,2-DCA	EDB
•	Date	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)
		(	( 0, 7		, 0, ,	, 5. ,		,
Excavation	<u> </u>							
	February	<10	<10	15,000	39	17,000	<10	<10
Water	2000							
Direct Push Gra	b Groundwa	ter Sampl	es					
SB-1		<0.5	<0.5	14	<0.5	<5.0	<0.5	<0.5
SB-2		<0.5	<0.5	45	<0.5	<5.0	<0.5	<0.5
SB-3	] [	<0.5	<0.5	110	<0.5	32	<0.5	<0.5
SB-4	] [	<5.0	<5.0	<5.0	<5.0	<50	<5.0	<5.0
SB-5	April 2010	<0.5	<0.5	0.6	<0.5	<5.0	<0.5	<0.5
SB-6	] [	<20	<20	4,000	<20	<200	<20	<20
SB-7	]	<12	<12	2,500	<12	<120	<12	<12
SB-8		<0.5	<0.5	26	<0.5	98	<0.5	<0.5
SB-9		<10	<10	1,800	<10	5,300	<10	<10
SB-10		<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	<0.5
SB-11	] [	<1.0	<1.0	22	<1.0	140	<1.0	<1.0
SB-12	] [	<5.0	<5.0	100	<5.0	550	<5.0	<5.0
SB-13	] [	<2.0	<2.0	39	<2.0	3,900	<2.0	<2.0
SB-14	December	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	<0.5
SB-15	2011	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	<0.5
SB-16	2011	<10	<10	<10	<10	<100	<10	<10
SB-17		<2.0	<2.0	<2.0	<2.0	<20	<2.0	<2.0
SB-18		<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	<0.5
SB-19		<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	<0.5
SB-21		<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	<0.5
			-					

### Notes:

ug/L - denotes micrograms per liter

< - denotes less than the detection limit

DCA - denotes dichloroethane

EDB - denotes ethylene dibromide

MTBE - denotes methyl tertiary butyl ether

DIPE - denotes di-isopropyl ether

ETBE - denotes ethyl tertiary butyl ether

TAME - denotes tertiary amyl ether

TBA - denotes tertiary butyl alcohol

### Table 4a Monitoring Well Data Water Level, TPH, and BTEX

Shore Acres Gas 403 East 12th Street Oakland, California

Well	Date	Depth to	Groundwater					Ethyl-	Total
ID	Measured	Groundwater	Elevation	TPHd	TPHg	Benzene	Toluene	benzene	Xylenes
тос		(ft bgs)	(ft amsl)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)
Monitoring	Wells								
MW-1	6/23/2011	10.46	20.35	<250	23,000	4,500	820	1,700	3,800
	9/22/2011	12.13	18.68	<50	21,000	4,000	1,500	980	3,000
	12/11/2011	11.69	19.12		23,000	2,900	1,000	720	3,000
MW-2	6/23/2011	10.70	20.59	<250	13,000	1,000	160	370	1,600
	9/22/2011	12.42	18.87	<50	12,000	300	130	470	1,400
	12/11/2011	11.98	19.31		8,300	170	120	450	1,500
_									
MW-3	6/23/2011	10.79	20.51	<250	55,000	15,000	3,600	2,000	4,300
	9/22/2011	12.60	18.70	<250	77,000	15,000	3,900	1,700	4,900
	12/11/2011	12.13	19.17		64,000	12,000	3,100	1,600	4,500
MW-4	6/23/2011	10.62	20.59	<250	47,000	3,500	7,100	2,300	11,000
	9/22/2011	12.25	18 <i>.</i> 96	<250	46,000	2,000	2,400	1,100	5,300
	12/11/2011	11.89	19.32		46,000	2,100	3,400	1,800	7,000
MW-5	6/23/2011	10.12	21.23	<250	130,000	7,100	25,000	13,000	94,000
	9/22/2011	12.53	18.82	<250	120,000	6,900	7,600	3,800	17,000
	12/11/2011	12.09	19.26		110,000	7,800	14,000	4,200	20,000
MW-6	6/23/2011	10.43	20.36	<250	11,000	2,400	120	480	840
	9/22/2011	12.10	18.69	<50	15,000	1,500	270	880	2,500
	12/11/2011	11.69	19.10	bes	13,000	660	190	610	1,500
		· .							
DPE Wells							,		
VW-1	6/28/2011				20,000	2,000	490	1,000	2,400
	9/22/2011	12.55	18.71	<120	39,000	3,900	610	1,400	4,600
	12/11/2011	12.09	19.17		27,000	2,600	270	1,400	4,400
VW-2	6/28/2011				33,000	3,100	2,000	790	3,500
	9/22/2011	12.50	18.90	<250	66,000	2,400	4,500	2,000	11,000
	12/11/2011	12.12	19.28		70,000	2,800	6,900	2,700	13,000

### Notes:

TOC - denotes top of casing elevation

TPHg - denotes total petroleum hydrocarbons as gasoline

TPHd - denotes total petroleum hydrocarbons as diesel

ft bgs - denotes feet below top of casing

ft amsl - denotes feet above mean sea level

ug/L - denotes micrograms per liter

< - denotes less than the detection limit

--- - denotes not available/applicable

FLH - denotes floating liquid hydrocarbons

\* - denotes less than six inches of water and considered dry

# Table 4b Monitoring Well Data Oxygenates and Lead Scavengers

Shore Acres Gas 403 East 12th Street Oakland, California

Well	Date	DIPE	ETBE	MTBE	TAME	ТВА	1,2-DCA	EDB		
ID	Measured	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)		
тос										
Monitoring Wells										
MW-1	6/23/2011	<25	<25	3,000	<25	3,900	<25	<25		
	9/22/2011	<50	<50	2,600	. <50	2,500	<50	<50		
	12/11/2011	<20	<20	1,800	<20	1,600	<20	<20		
MW-2	6/23/2011	<10	<10	240	<10	640	<10	<10		
	9/22/2011	<5.0	<5.0	110	<5.0	260	<5.0	<5.0		
	12/11/2011	<2.5	<2.5	45	<2.5	110	<2.5	<2.5		
MW-3	6/23/2011	<100	<100	8,200	<100	6,400	<100	<100		
	9/22/2011	<100	<100	11,000	<100	2,800	<100	<100		
	12/11/2011	<100	<100	7,400	<100	1,800	<100	<100		
MW-4	6/23/2011	<50	<50	<50	<50	<500	<50	<50		
	9/22/2011	<25	<25	<25	<25	<250	<25	<25		
	12/11/2011	<25	<25	<25	<25	<250	<25	<25		
MW-5	6/23/2011	<120	<120	440	<120	<1,200	<120	<120		
	9/22/2011	<50	<50	670	<50	1,500	<50	<50		
	12/11/2011	<120	<120	690	<120	1,600	<120	<120		
MW-6	6/23/2011	<25	<25	1,100	<25	4,000	<25	<25		
	9/22/2011	<12	<12	600	<12	2,800	<12	<12		
	12/11/2011	<10	<10	290	<10	1,300	<10	<10		
DPE Wells										
VW-1	6/28/2011	<25	<25	1,500	<25	5,300	<25	<25		
	9/22/2011	<50	<50	640	<50	1,800	<50	<50		
	12/11/2011	<25	<25	490	<25	1,000	<25	<25		
VW-2	6/28/2011	<25	<25	670	<25	4,100	<25	<25		
	9/22/2011	<50	<50	740	<50	1,600	<50	<50		
	12/11/2011	<50	<50	540	<50	880	<50	<50		

### Notes:

ug/L - denotes micrograms per liter

< - denotes less than the detection limit

DCA - denotes dichloroethane

EDB - denotes ethylene dibromide

MTBE - denotes methyl tertiary butyl ether

DIPE - denotes di-isopropyl ether

ETBE - denotes ethyl tertiary butyl ether

TAME - denotes tertiary amyl ether

TBA - denotes tertiary butyl alcohol

--- - denotes no data available

### Table 5 Sensitive Receptor Survey Data

Shore Acres Gas 403 East 12th Street Oakland, California

Figure ID	Well Owner	Well Location Description on DWR Log	Well Type	Total Depth (feet bgs.)	Screen Interval (feet bgs.)	Seal Inteval (feet bgs.)	Installation Date	Distance/ Direction (feet)	Notes:
1	Port of Oakiand	251 5th Avenue, Oakland	Monitoring	13.0	8-13	0-8	6/14/05	1000/SW	
2-3	Kaiser Paving Company	5th Avenue and S.P. Tracks, Oakland	Test Hole	15.0	None	Unknown	4/20/05	1,200/SW	

#### Notes:

DWR - denotes Department of Water Resources

--- - denotes no data available

bgs - denotes below ground surface

# Table 6 Dual Phase Extraction Pilot Test Vapor Analytical Results

Shore Acres Gas 403 East 12th Street Oakland, California

Sample	Date				Ethyl-	Total	
ID	Measured	TPHg	Benzene	Toluene	benzene	Xylenes	MTBE
		(ppmv)	(ppmv)	(ppmv)	(ppmv)	(ppmv)	(ppmv)
VW-1-INIT	6/24/2011	190	9.4	1.1	1.3	2.7	1.3
VW-1-DAY 2	6/25/2011	500	15	5.8	4.5	10	2.1
VW-1-END	6/26/2011	1,400	21	13	9.0	23	1.9
VW-2-INIT	6/26/2011	11,000	140	240	84	220	9.2
VW-2-DAY 2	6/27/2011	4,700	68	99	24	64	3.6
VW-2-END	6/28/2011	3,200	44	68	16	43	3.1
	0,20,2011				10		

### Notes:

TPHg - denotes total petroleum hydrocarbons as gasoline

MTBE - denotes methyl tertiary butyl ether

ppmv - parts per million by volume

< - denotes less than the detection limit

# Table 7 Dual Phase Extraction Pilot Test Vapor Extraction Summary

Shore Acres Gas 403 East 12th Street Oakland, California

	N.N £	Influent	Influent San	nple Results		on Rates day)		tion Mass o/day)	
Well	<b>Meter</b> (hours)	Flow Rate (scfm)	TPHg (ppmv)	Benzene (ppmv)	TPHg (lb/day)	Benzene (lb/day)	TPHg (lb)	Benzene (lb)	
VW-1-INIT	3	150	190	9.4	10.29	0.44	1.29	0.06	
VW-1-DAY 2	15	150	500	15	27.08	0.00	13.54	0.00	
VW-1-END	39 .	150	1,400	21	75.81	0.99	75.81	0.99	
VW-2-INIT	3.0	50	11,000	140	198.55	2.19	24.82	0.27	
VW-2-DAY 2	18.5	50	4,700	68	84.84	1.07	54.79	0.69	
VW-2-END	42.5	50	3,200	44	57.76	0.69	57.76	0.69	
Total							228.0	2.69	

MW <sub>TPHg</sub> = Molecular Weight of TPHg = 90

MW<sub>MTBE</sub> = Molecular Weight of Methyl tert-butyl ether = 88.15

MW<sub>Benzene</sub> = Molecular Weight of Benzene = 78.11

ft3 = cubic feet

min = minutes

lb/day = pounds per day

ppmv = parts per million by volume =  $ft^3 / 1x10^6 ft^3$ 

scfm = standard cubic feet per minute

NS = not sampled

NA = not analyzed

NC = not calculated

Extraction rate = (flow rate( $ft^3/min$ ) x concentration ( $ft^3/1x10^6 ft^3$ ) x MW<sub>TPHg</sub>(lb/lb-mol) x 1440 min/day)/(359  $ft^3$ /lb-mol\*)

# Table 8 Dual Phase Extraction Pilot Test Groundwater Extraction Summary

Shore Acres Gas 403 East 12th Street Oakland, California

		Water	Influent Co	ncentration	Extraction Mass		
Sample ID	Date	Extracted	TPHg	Benzene	TPHg (lb/day)	Benzene (lb/day)	
		(gals.)	(ug/L)	(ug/L)	(lb)	(lb)	
VW-1	6/28/2011	8,200	20,000	2,000	1.37	0.14	
VW-2	6/28/2011	5,700	33,000	3,100	1.57	0.15	
Totals					2.9	0.3	

gals. - denotes gallons

ug/L - denotes micrograms per liter

1b- denotes pounds

< - denotes less than the detection limit

Water extracted values are total gallons of water extracted

Average of the March 11 and 18 concentrations were used to determin mass

# APPENDICES

# ALAMEDA COUNTY HEALTH CARE SERVICES AGENCY



ALEX BRISCOE, Director

ENVIRONMENTAL HEALTH DEPARTMENT ENVIRONMENTAL PROTECTION. 1131 Harbor Bay Parkway, Suite 250 Alameda, CA 94502-6577 (510) 567-6700 FAX (510) 337-9335

June 17, 2011

Rashid Ghafoor and Waseem Iqbal (Sent via e-mail to rashidz1@aol.com) 226 Havenwood Circle Pittsburg, CA 94567

Subject: Work Plan Conditional Approval for Fuel Leak Case No. RO0002931 and GeoTracker Global ID T0600174667, Shore Acres Gas, 403 E 12<sup>th</sup> St., Oakland, CA 94606

Dear Messrs. Ghafoor and Igbal:

Alameda County Environmental Health (ACEH) staff has reviewed the recently submitted document entitled, *Workplan Addendum to the Site Assessment and Soil Vapor Extraction Pilot Test Workplan* dated April 14, 2011, and *Second Workplan Addendum* dated June 6, 2011 which were prepared by Environmental Compliance Group (ECG), LLC for the subject site. The second work plan recommends installation of four monitoring wells, two soil vapor wells and an off-site transect consisting of four borings. The proposed scope of work may be implemented provided that the modifications requested in the technical comments below are addressed and incorporated during the field implementation. Please perform the work and submit the reports requested below.

### **TECHNICAL COMMENTS**

- 1. Proposed Monitoring Well Network ACEH notes that fuel contamination is present at locations across the entire site and the proposed monitoring network should be installed to monitor all of these areas. Based on this, ACEH recommends two additional monitoring wells, one in the easternmost corner of the site, and a second approximately 20 feet southwest of proposed VW-2. Additionally, ACEH requests moving well MW-3 approximately 20 feet northwest of the proposed location for a total of six monitoring wells. After the wells are installed, surveyed and sampled, please present the interim results to ACEH by the due date requested below so the locations of the off-site soil borings discussed below can be determined.
- 2. Off-Site Investigation In both the December 16, 2010 and March 22, 2011 ACEH directive letters, ACEH requested an off-site investigation that evaluates contamination that may be moving onto the school property downgradient of your site. As ECG points out, determining the groundwater flow direction by installing and surveying the new wells, would aid in off-site boring placement. ACEH agrees that this work would be better approached in this phased approach and consequently requests that you evaluate and plot the locations of the MTBE

Messrs. Ghafoor and Iqbal RO0002931 June 17, 2011, Page 2

detected on the school property on 4<sup>th</sup> Avenue on an expanded site map using an aerial photograph as a basemap, evaluate the groundwater flow direction after you install the onsite monitoring wells and propose off-site boring locations based on the results of your current investigation and the location of contamination at the school site. Please present this data and your recommended boring locations in the interim results report requested below.

3. <u>Cross Sections</u> – To help interested parties understand the subsurface in the site vicinity, please prepare cross-sections that show at a minimum: the lithology, soil analytical results, first encountered and static groundwater levels, the location of the former USTs, dispensers, areas excavated, known conduits, etc and submit the results in the SWI requested below.

### **TECHNICAL REPORT REQUEST**

Please submit technical reports to ACEH (Attention: Barbara Jakub), according to the following schedule:

- August 17, 2011 Interim Results Report with Proposed Off-site Boring Locations
- November 17, 2011 SWI and Pilot Test Results Report

Thank you for your cooperation. Should you have any questions or concerns regarding this correspondence or your case, please call me at (510) 639-1287 or send me an electronic mail message at barbara.jakub@acgov.org.

Sincerely,

Digitally signed by Barbara J. Jakub DN: cn=Barbara J. Jakub, o, ou, email=barbara.jakub@acgov.org, ,c=U5

\_c=U5\_\_\_\_ Date: 2011.06.17 15:22:51 -07'00'

Barbara J. Jakub, P.G.

Hazardous Materials Specialist

Enclosure: Responsible Party(ies) Legal Requirements/Obligations

ACEH Electronic Report Upload (ftp) Instructions

cc: Michael S. Sgourakis, Environmental Compliance Group, LLC, 270 Vintage Drive, Turlock, CA 95382 (Sent via E-mail to: ecg.ust@gmail.com)

Leroy Griffin, Oakland Fire Department, 250 Frank H. Ogawa Plaza, Ste. 3341, Oakland,

CA 94612-2032 (Sent via E-mail to: <a href="mailto:lgriffin@oaklandnet.com">lgriffin@oaklandnet.com</a>)

Donna Drogos, ACEH (Sent via E-mail to: donna.drogos@acgov.org)

Barbara Jakub, ACEH (Sent via E-mail to: <u>barbara.jakub@acgov.org</u>)

GeoTracker, e-file

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# ENVIRONMENTAL COMPLIANCE GROUP, LLC STANDARD OPERATING AND SAFETY AND LOSS CONTROL PROCEDURES

#### 1.0 SOIL BORING/DRILLING SAMPLE COLLECTION AND CLASSIFICATION PROCEDURES

ECG will prepare a site-specific Health and Safety Plan as required by the Occupational Health and Safety Administration (OSHA) Standard "Hazardous Waste Operations and Emergency Response" guidelines (29 CFR.1910.120). The document will be reviewed and signed by all ECG personnel and subcontractors prior to performing work at the site.

Prior to conducting and subsurface work at the site, Underground Services Alert (USA) will be contacted to delineate subsurface utilities near the site with surface markings. In addition, the first five feet of every location will be hand cleared to a diameter larger than the diameter of the auger or probe as a further precaution against damaging underground utilities. Sites that are currently operated as gas stations will be cleared with a private utility locator prior to drilling activities.

Soil samples to be submitted for chemical analyses are collected into brass or stainless steel tubes. The tubes are placed in an 18-inch long split-barrel sampler. The split-barrel sampler is driven its entire length hydraulically or by 140-pound drop hammer. The split-barrel sampler is removed from the borehole and the tubes are removed. When the tubes are removed from the split-barrel sampler, the tubes are trimmed and capped with Teflon sheets and plastic caps or the soil is removed from the tubes and placed in other appropriate sample containers. The samples are sealed, labeled, and placed in ice under chain-of-custody to be delivered to the analytical laboratory. All samples will be kept refrigerated until their delivery to the analytical laboratory.

One soil sample collected from each split-barrel sampler is field screened with a photoionization detector (PID), flame ionization detector (FID), or other equivalent field screening meter. The soil sample is sealed in a plastic bag or other appropriate container to allow volatilization of volatile organic compounds (VOCs). The field meter is used to measure the VOC concentration in the container's headspace and is recorded on the boring logs at the appropriate depth interval.

Other soil samples collected from each split-barrel sampler are inspected and documented to identify the soil stratigraphy beneath the site and classify the soil types according to the United Soil Classification System. The soil types are recorded on boring logs with the appropriate depth interval and any pertinent field observations. Drilling and sampling equipment are steam cleaned or washed in solution and rinsed in deionized water prior to use, between sample collections and boreholes and after use.

### 2.0 SOIL EXCAVATION SAMPLE COLLECTION AND CLASSIFICATION PROCEDURES

Soil samples to be submitted for chemical analyses are collected into brass or stainless steel tubes or other appropriate containers. The samples are sealed, labeled, and placed in ice under chain-of-custody (COC) to be delivered to the analytical laboratory. All samples will be kept refrigerated until their delivery to the analytical laboratory.

Select soil samples are placed into a sealed plastic bag or other appropriate container and field screened using a PID, FID, or equivalent meter. Other soil samples collected are inspected and documented to identify the soil stratigraphy beneath the site and classify the soil types according to the United Soil Classification System. The soil types are recorded field notes with the appropriate depth interval and any pertinent field observations. Sampling equipment are steam cleaned or washed in solution and rinsed in deionized water prior to use, between sample collections, and after use. Soil cuttings and rinseate water are temporarily stored onsite pending laboratory analytical results and proper transport and disposal.

### 3.0 SAMPLE IDENTIFICATION AND COC PROCEDURES

Sample containers are labeled with job number, job name, sample collection time and date, sample collection point, and analyses requested. Sampling method, sampler's name, and any pertinent field observations are recorded on boring logs or excavation field notes. COC forms track the possession of the sample from the time of its collection until the time of its delivery to the analytical laboratory. During sample transfers, the person with custody of the samples will relinquish them to the next person by signing the COC and documenting the time and date. The analytical laboratory Quality Control/Quality Assurance (QA/QC) staff will document the receipt of the samples and confirm the analyses requested on the COC matches the sample containers and preservative used, if any. The analytical laboratory will assign unique log numbers for identification during the analyses and reporting. The log numbers will be added to the COC form and maintained in a log book maintained by the analytical laboratory.

#### 4.0 ANALYTICAL LABORATORY QA/QC PROCEDURES

The analytical laboratory analyzes spikes, replicates, blanks, spiked blanks, and certified reference materials to verify analytical methods and results. The analytical laboratory QA/QC also includes:

Routine instrument calibration,

Complying with state and federal laboratory accreditation and certification programs,

Participation in U.S. EPA performance evaluation studies,

Standard operating procedures, and

Multiple review of raw data and client reports

#### 5.0 HOLLOW STEM AUGER WELL INSTALLATION

Boreholes for wells are often drilled with a truck-mounted hollow stem auger drill rig. The borehole diameter is at least 4 inches wider than the outside diameter of the well casing. Soil samples are collected and screened as described in **Section 1.0** and decontamination procedures are also the same as described in **Section 1.0**.

Wells are cased with both blank and factory-perforated Schedule 40 PVC. The factory perforations are typically 0.020 inches wide by 1.5 inch long slots, with 42 slots per foot. A PVC cap is typically installed at the bottom of the casing with stainless steel screws. No solvents or cements are used in the construction of the wells. Well stabilizers or centering devices may be installed around the casing to ensure the filter material and grout in the annulus are evenly distributed. The casing is purchased pre-cleaned or steam cleaned and washed prior to installation in the borehole.

The casing is set inside the augers and sand, gravel, or other filter material is poured into the annulus to fill the borehole from the bottom to approximately 1-2 feet above the perforations. A two foot thick bentonite plug is placed above the filter material to prevent the grout from filling the filter pack. Neat cement or sand-cement grout is poured into the annulus from the top of the bentonite plug to the surface. For wells located in parking lots or driveways, or roads, a traffic rated well box is installed around the well. For wells located in landscaped areas or fields, a stovepipe well protection device is installed around the well. Soil cuttings and rinseate water are temporarily stored onsite pending laboratory analytical results and proper transport and disposal.

#### 6.0 MUD AND AIR ROTARY WELL INSTALLATION

Boreholes for wells can also be drilled with a truck-mounted air rotary or mud rotary drill rig. Air or mud can be used as a drill fluid to fill the borehole and prevent the borehole from caving in and remove drill cuttings. Mud or air can be chosen depending on the subsurface conditions. Soil samples are collected and screened as described in **Section 1.0** and decontamination procedures are also the same as described in **Section 1.0**.

Wells are cased with both blank and factory-perforated Schedule 40 PVC. The factory perforations are typically 0.020 inches wide by 1.5 inch long slots, with 42 slots per foot. A PVC cap is typically installed at the bottom of the casing with stainless steel screws. No solvents or cements are used in the construction of the wells. Well stabilizers or centering devices may be installed around the casing to ensure the filter material and grout in the annulus are evenly distributed. The casing is purchased pre-cleaned or steam cleaned and washed prior to installation in the borehole. Soil cuttings and drilling fluids are temporarily stored onsite pending laboratory analytical results and proper transport and disposal.

The casing is set inside the augers and sand, gravel, or other filter material is poured into the annulus to fill the borehole from the bottom to approximately 1-2 feet above the perforations. A two foot thick bentonite plug is placed above the filter material to prevent the grout from filling the filter pack. Neat cement or sand-cement grout is poured into the annulus from the top of the bentonite plug to the surface. For wells located in parking lots or driveways, or roads, a traffic rated well box is installed around the well. For wells located in landscaped areas or fields, a stovepipe well protection device is installed around the well. Soil cuttings and rinseate water are temporarily stored onsite pending laboratory analytical results and proper transport and disposal.

### 7.0 WELL DEVELOPMENT

After well installation, the wells are developed to remove residual drilling materials from the annulus and to improve well production by fine materials from the filter pack. Possible well development methods include pumping, surging, bailing, jetting, flushing, and air lifting. Development water is temporarily stored onsite pending laboratory analytical results and proper transport and disposal. Development equipment are steam cleaned or washed in solution and rinsed in deionized water prior to use, between sample collections and after use. After well development the wells are typically allowed to stabilize for at least 24 hours prior to purging and sampling.

#### 8.0 LIQUID LEVEL MEASUREMENTS

Liquid level measurements are made with a water level meter and/or interface probe and disposable bailers. The probe tip attached to a measuring tape is lowered into the well and into the groundwater when a beeping tone indicates the probe is in the groundwater. The probe and measuring tape (graduated to hundredths of a foot) are slowly raised until the beeping stops and the depth to water measurement is recorded. If the meter makes a steady tone, this indicates the presence of floating liquid hydrocarbons (FLH) and the probe and measuring tape are raised until the steady tone stops and the depth to the FLH is measured. Once depth to water and depth to FLH (if present) has been recorded, the probe and measuring tape are lowered to the bottom of the well where the total depth of the well is measured. The depth to water, depth to FLH, and depth to bottom are measured again to confirm the results.

If FLH is encountered in the well, a disposable bailer is lowered into the well and brought back to the surface to confirm the thickness/presence of FLH. To minimize potential for cross contamination between wells, all measurements are done from cleanest to dirtiest well. Prior to beginning liquid level measurements, in between measurements in all wells, and at the completion of liquid level measurements, the water level probe and measuring tape is cleaned with solution (Alconox, Simple Green, or equivalent) and rinsed with deionized water.

### 9.0 WELL PURGING AND SAMPLING

Each well is typically purged of at least three well casing volumes of groundwater prior to collecting a groundwater sample. Purging can continue beyond three well casing volumes if field parameters including pH, temperature, electrical conductivity are not stabilizing during the purging process. If the well is purged dry before the three well casing volumes has been purged, the well is typically allowed to recharge to 80 percent of its initial water level before a groundwater sample is collected.

Purging equipment can include submersible pumps, PVC purging bailers, disposable bailers, air lift pumps, or pneumatic pumps. Prior to beginning well purging, in between each well purging, and at the completion of purging activities, all non-dedicated purging equipment is cleaned with solution (Alconox, Simple Green, or equivalent) and rinsed with deionized water.

Once the well has been purged, it will be sampled with a disposable bailer, PVC bailer, stainless steel bailer, or through a low flow groundwater pump. The groundwater sample is transferred from the bottom of the bailer to reduce volatilization to the appropriate sample container. The sample containers are specified by the analytical laboratory depending on the analyses requested. Sample containers typically include volatile organic compound (VOA) vials with septa of Teflon like materials. The groundwater sample is collected into the VOAs to minimize air bubbles and once the cap has been placed on the VOA, the VOA is tipped upside down to see if air bubbles are present in the VOA. Typically a duplicate VOA is collected from each well to be analyzed by the analytical laboratory, if warranted, to verify results.

Sample containers are labeled as described in **Section 3.0** and placed immediately in an ice chest and kept refrigerated until its delivery to the analytical laboratory. A trip blank may also be prepared by the analytical laboratory to travel with the ice chest during transport to the laboratory. Field blanks from equipment that has been decontaminated may be collected in between use in different wells to verify the decontamination procedure is effective. To minimize potential for cross contamination between wells, all wells are purged and sampled from cleanest to dirtiest well.

#### 10.0 TEDLAR BAG SOIL VAPOR SAMPLING

Sampling equipment to collect Tedlar bag soil vapor samples includes an air pump, a Tedlar bag which can range in size from 1 to 10 liters, and 3/16-inch diameter polyethylene tubing. The air pump should be equipped with 3/16-inch hose barbs for the polyethylene tubing to attach to. The Tedlar bag must be equipped with a valve for filling and sealing the bag.

When soil vapor samples are collected from remediation equipment, the sample collection port on the remediation equipment is typically fitted with a 3/16-inch hose barb. Prior to collecting soil vapor samples from remediation equipment, air flow, temperature, and pressure or vacuum of the sampling point/remediation equipment are recorded. One end of the polyethylene tubing is connected to the sample collection port and one end is connected to the influent of the air pump, creating an air tight seal. The air pump is turned on and soil vapor from the sample collection port is pumped through the air pump for at least one minute. The air pump is turned off and one end of another piece of polyethylene tubing is connected to the effluent of the air pump and one end is connected to the valve on the Tedlar bag. The valve is opened and the air pump is turned on filling the Tedlar bag with the soil vapor sample until the bag has reached 75% capacity, when the valve on the Tedlar bag is closed and the air pump is turned off.

Tedlar bags are labeled as described in **Section 3.0** and placed immediately in an empty ice chest and kept dry and unrefrigerated until its delivery to the analytical laboratory. After each soil vapor sample collection, the air pump is turned on for five minutes to allow ambient air to clear the air pump and polyethylene tubing.

#### 11.0 SUMMA CANISTER SOIL VAPOR SAMPLING

Sampling equipment to collect Summa canister soil vapor samples includes a sterilized Summa stainless steel canister under vacuum, ½-inch diameter polyethylene tubing, and a laboratory calibrated flow meter, if required.

When soil vapor samples are collected from remediation equipment, the sample collection port on the remediation equipment is typically fitted with brass connection with silicone septa that has been threaded into a tapped hole on the piping network. Prior to collecting soil vapor samples from remediation equipment, air flow, temperature, and pressure or vacuum of the sampling point/remediation equipment are recorded. One end of the polyethylene tubing is connected to the brass sample collection port and one end is connected to the canister valve or flow meter, creating an air tight seal. Prior to collecting the soil vapor sample, the valve on the Summa canister is opened to verify the Summa canister has the required vacuum which is recorded. The sample valve or flow meter is opened and the soil vapor sample is collected into the Summa canister and the sample valve is closed and the final vacuum reading (typically greater than 5 inches per square inch) on the Summa canister is recorded.

Summa canisters are labeled as described in **Section 3.0** and placed immediately in an empty ice chest and kept dry and unrefrigerated until its delivery to the analytical laboratory.

#### 12.0 SYRINGE SOIL VAPOR SAMPLING

Sampling equipment to collect syringe soil vapor samples includes a sterilized, 100 cubic centimeter, gas tight syringe and silicone septa.

When soil vapor samples are collected from remediation equipment, the sample collection port on the remediation equipment is typically fitted with brass connection with silicone septa that has been threaded into a tapped hole on the piping network. Prior to collecting soil vapor samples from remediation equipment, air flow, temperature, and pressure or vacuum of the sampling point/remediation equipment are recorded. The syringe is inserted into the silicone septa and the plunger is purged or pumped at least three times. The sample is collected the fourth time the syringe plunger is extracted and the syringe is removed from the sample collection port and the needle on the syringe is capped with a rubber stopper.

Syringes are labeled as described in **Section 3.0** and placed immediately in an empty ice chest and kept dry and unrefrigerated until its delivery to the analytical laboratory.

#### 13.0 TEDLAR BAG SOIL VAPOR SURVEY, TEMPORARY SAMPLING POINTS

Sampling equipment to collect Tedlar bag soil vapor survey samples includes an air pump, a Tedlar bag which can range in size from 1 to 10 liters, 3/16-inch diameter polyethylene tubing, and possibly a soil vapor probe. The air pump should be equipped with 3/16-inch hose barbs for the polyethylene tubing to attach to. The Tedlar bag must be equipped with a valve for filling and sealing the bag.

A temporary borehole is advanced using either a slam bar or a direct push drill rig. In the case of the slam bar, once the borehole has been created, a temporary soil vapor probe is inserted into the borehole and advanced with a slide hammer or other physical force two additional feet. A bentonite seal is then placed in the borehole above the soil vapor probe to create an air tight seal and prevent ambient air from entering the sample collection space. In the case of the direct push drill rig, the sampling rod is advanced to the desired depth with a 6-inch retractable vapor screen at the tip. The sample screen on the 6-inch vapor screen is removed and a bentonite seal is then placed in the borehole above the soil vapor probe to create an air tight seal and prevent ambient air from entering the sample collection space.

Once the bentonite seal has set, at least one hour, the soil vapor survey samples are collected into Tedlar bags as described in **Section 10.0**. Tedlar bags are labeled as described in **Section 3.0** and placed immediately in an empty ice chest and kept dry and unrefrigerated until its delivery to the analytical laboratory. After each soil vapor sample collection, the air pump is turned on for five minutes to allow ambient air to clear the air pump and polyethylene tubing.

### 13.0 TEDLAR BAG SOIL VAPOR SURVEY, TEMPORARY AND REPEATABLE SAMPLING POINTS

Sampling equipment to collect Tedlar bag soil vapor survey samples includes an air pump, a Tedlar bag which can range in size from 1 to 10 liters, 3/16-inch diameter polyethylene tubing, and possibly a soil vapor probe. The air pump should be equipped with 3/16-inch hose barbs for the polyethylene tubing to attach to. The Tedlar bag must be equipped with a valve for filling and sealing the bag.

#### 13.1 TEMPORARY SAMPLING POINTS

A temporary borehole is advanced using either a slam bar or a direct push drill rig. In the case of the slam bar, once the borehole has been created, a temporary soil vapor probe is inserted into the borehole and advanced with a slide hammer or other physical force two additional feet. A bentonite seal is then placed in the borehole above the soil vapor probe to create an air tight seal and prevent ambient air from entering the sample collection space. In the case of the direct push drill rig, the sampling rod is advanced to the desired depth with a 6-inch retractable vapor screen at the tip. The sample screen on the 6-inch vapor screen is removed and a bentonite seal is then placed in the borehole above the soil vapor probe to create an air tight seal and prevent ambient air from entering the sample collection space.

Once the bentonite seal has set, at least one hour, the soil vapor survey samples are collected into Tedlar bags as described in **Section 10.0**. Tedlar bags are labeled as described in **Section 3.0** and placed immediately in an empty ice chest and kept dry and unrefrigerated until its delivery to the analytical laboratory. After each soil vapor sample collection, the air pump is turned on for five minutes to allow ambient air to clear the air pump and polyethylene tubing.

#### 13.2 REPEATABLE SAMPLING POINTS

A borehole is advanced using either a hand auger or a drill rig. A 6-inch slotted probe with caps on both ends is placed in the borehole. A Swagelok fitting is attached to one end cap and 3/16-inch diameter Nylon tubing is attached to the Swagelok fitting. A one foot sand pack is placed around the probe and the remainder of the borehole is sealed with a layer of dry bentonite powder, followed by a layer of bentonite chips, and an additional layer of dry bentonite powder. A well box is placed on the surface of the repeatable sampling point and the excess Nylon tubing is placed inside the well box.

Soil vapor survey samples will be collected at least one week after probe installation. In addition, soil vapor survey samples will only be collected after five consecutive precipitation free days and after any onsite irrigation has been suspended.

The soil vapor survey samples are collected into Tedlar bags as described in **Section 10.0** or Summa canisters as described in **Section 11.0**. Tedlar bags or Summa canisters are labeled as described in **Section 3.0** and placed immediately in an empty ice chest and kept dry and unrefrigerated until its delivery to the analytical laboratory. After each soil vapor sample collection, the air pump is turned on for five minutes to allow ambient air to clear the air pump and polyethylene tubing.

## argon laboratories

22 December 2011

Mike Sgourakis Environmental Compliance Group, LLC 270 Vintage Drive Turlock, CA 95382

RE: Shore Acres Gas Project Data

Enclosed are the results for sample(s) received on 12/07/11 16:09 by Argon Laboratories. The sample(s) were analyzed according to instructions in accompanying chain-of-custody. Results are summarized on the following pages.

Please see quality control report for a summary of QC data pertaining to this project.

The sample(s) will be stored for 30 days after completion of analysis, then disposed of in accordance with State and Federal regulations, Sample(s) may be archived by prior arrangement.

Thank you for the opportunity to service the needs of your company.

Sincerely,

Hiram Cueto Lab Manager

# Argon Analytical Services, Inc. CHAIN OF CUSTODY

	Pr	oject Informa	tion:		т				Report To	);	···						Samples Submitted To:
Project No:	GHA.19009				Consu	itant:	Environ		ompliand		, LLC			Labora	tory:		Argon Labs
Project Title:	Shore Acres G	as			Addres	e:		lage Driv						Addres	:8:		2906 Railroad Avenue
Location:	403 E. 12th St	eet						CA 953	82					İ			Ceres, CA 95307
	Oakland, CA				Contac		Drew V							Contac Phone:			(209) 581-9260
Sampler's Name: Mike Sgourakis					Phone:		209.664							fax:	•		(209) 581-9262
Sampler's Signatur							209.004	1040	Bill To:						sults Red	nilred:	(208) 361-9202
Sampler & Signatur	W-						·····		Dill 10.					1	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	<b>,</b> ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
					Cilent:			Environ	mental C	ompliano	ce Group	, LLC		Date Re	port Req	ulred:	
					Addres	s:			tage Driv								
		JRN AROUND 1	rive		-	<del>}                                    </del>		TURIDOK	, CA 8536		LYSIS			i			T
RUSH	24 Hour	48 Hour	Standard	Special	2 4				Π	Ann	1313		T			T	1
			(5 days)	(10-14 days)	Method	# f 8								ł		i	
[]					ĮžΩ	oxygenates, t, and EDB by thod 82608								1		i	1
<b></b>	L		L	2	Dà	\$ # B										St.	1
					l≥i											ge g	İ
					F. 5	BTEX, 1,2-DC, EPA M						1				EDF Reports	
	1		# Containers	Matrix	<u>E</u> 8	<u> </u>					<del> </del>			<u> </u>	<del> </del> -	<u> </u>	COMMENTS Preservative
Sample ID.	Date	Time			<u> </u>				<u> </u>		1	<u> </u>			<del> </del>	<del> </del>	Preseivative
SB-10	12/5/2011	9:30	2	water	×	×					<del> </del>		-			×	
SB-11	12/5/2011	11:00	. 2	water	x	×						ļ	ļ		ļ	x	
SB-12	12/5/2011	11:05	2	water	x	х								ļ <u>.</u>		x	
SB-13	12/5/2011	13:30	11	water	x	х								ļ		×	
SB-14	12/5/2011	13:40	1	water	x	×										×	
SB-15	12/5/2011	13:45	1	water	x	х			***************************************	mmnmm.n					<u> </u>	x	
SB-16	12/5/2011	14:30	1	water	х	×						<u> </u>	ļ			x	
SB-17	12/5/2011	14:20	1	water	x	х									<u> </u>	x	
SB-18	12/5/2011	13:55	1	water	x	x					ļ			<u></u>		x	
SB-19	12/5/2011	14:25	11	water	×	×									ļ	×	
SB-21	12/5/2011	14:40	1	water	x	x					<u> </u>					x	
			1			İ.	Λ				1						
Relinquished By:	ILS (1	'n	Data:	100 J	Receive	d By:	10	Ó	00	in	Date:	3/1	Time:	6-0	<b>19</b>	SPECIA	.L INSTRUCTIONS: Global ID#
Relinquished By:	7		Date:	Time:	Receive	d By:					Date:	(	Time:	,			T0601359733
Relinquished By:			Date:	Time:	Receive	d Øy:	,				Dates		Time:				
					<u></u>						1					<u> </u>	

# **Argon Laboratories Sample Receipt Checklist**

Client Name:	Environmental (	Comp	liance G	roup		-		Date	e & Time R	eceived:	12	2/07/11	1	6:09
Project Name:	Shore Acres Ga	ıs						Clie	nt Project	Number:		GHA	<b>4.19009</b>	ļ
Received By:	M.G.			Matr	ix:	Water	<b>_</b>	Soil			Stud	ge		
Sample Carrier:	Client	Lab	oratory		Fed Ex		UPS		Other					
Argon Labs Project	Number:	<u>L112</u>	2020											
Shipper Container in	good condition?					Sample	es received	i in prop	per containe	ers?	Yes	7	No	
	N/A	Yes	<b>✓</b>	No		Sample	s received	intact?	?		Yes	1	No	
Samples received und	der refrigeration?	Yes	<b>4</b>	No		Sufficie	nt sample	volume	e for reques	ted tests?	Yes	4	No	
Chain of custody pres	sent?	Yes	4	No		Sample	es receive	d within	holding tim	e?	Yes	1	No	
Chain of Custody sign	ned by all parties?	Yes	7	No		Do san	nples cont	ain prop	oer preserva N/A	ntive?	Yes	7	No	
Chain of Custody mai	tches all sample la	bels?				Do VOA	viais conta	in zero l	headspace?					
,	·	Yes	7	No				(None	submitted	□)	Yes	1	No	
	ANY "	No" R	ESPONS	E MUST	BE DETA	AILED IN	THE CO	MMENT	rs sectio	N BELOV	i			
Date Client Contac	ted:			_	Pe	rson Co	ontacted:				•			
Contacted By:					Subject	:							=	
Comments:				,										
Astin Taken														
Action Taken:														
				ADDITIO	NAL TES	T(S) RE	QUEST I	OTHER	₹					
Contacted By:					_	0	ate:				Tim	ne:		
Call Received By:					•••									
Comments:		••												
										······································	··-			

ENGINE | laboratories | 2905 Railroad Ave. | Ceres, CA 95307 (209)581-9280 | Fax (209)581-9282

Environmental Compliance Group, LLC

270 Vintage Drive Turlock, CA 95382 Project Number: GHA.19009

Project Name: Shore Acres Gas

Project Manager: Mike Sgourakis

Work Order No.:

L112020

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SB-10	L112020-01	Water	12/05/11 09:30	12/07/11 16:09
\$B-11	L112020-02	Water	12/05/11 11:00	12/07/11 16:09
SB-12	L112020-03	Water	12/05/11 11:05	12/07/11 16:09
\$B-13	L112020-04	Water	12/05/11 13:30	12/07/11 16:09
SB-14	L112020-05	Water	12/05/11 13:40	12/07/11 16:09
SB-15	L112020-06	Water	12/05/11 13:45	12/07/11 16:09
SB-16	L112020-07	Water	12/05/11 14:30	12/07/11 16:09
SB-17	L112020-08	Water	12/05/11 14:20	12/07/11 16:09
SB-18	L112020-09	Water	12/05/11 13:55	12/07/11 16:09
SB-19	L112020-10	Water	12/05/11 14:25	12/07/11 16:09
SB-21	L112020-11	Water	12/05/11 14:40	12/07/11 16:09

Environmental Compliance Group, LLC

270 Vintage Drive Turlock, CA 95382 Project Number: GHA,19009

Project Name: Shore Acres Gas

Project Manager: Mike Sgourakis

Work Order No.:

Vork Order No.: L112020

TPH-gas & Volatile Organic Compounds by GC/MS

Analyte	Result	Reporting Limit	Units	Dilution	Analyzed	Method	Notes
SB-10 (L112020-01) Water Sampled: 05-	Dec-11 09:30 Rece	ived: 07-Dec-1	1 16:09				
Total Petroleum Hydrocarbons @	ND	50	ug/L	1	14-Dec-11	EPA 8260B	
Gasoline				11		O.	
Benzene	ND	0.5	11		n	,,	
Toluene	ND	0.5	H	P		n.	
Xylenes, total	ND	1.0	n n	u		11	
Ethyl Benzene	ND	0.5	u	"		11	
t-Butanol	ND	5.0	11	11	n		
Methyl tert-Butyl Ether	ND	0,5	н	и	*	,,	
Di-Isopropyl Ether	ND	0.5			"	II .	
Ethyl tert-Butyl Ether	ND	0,5	u	11	II	u u	
tert-Amyl Methyl Ether	ND	0.5	и	p	11	H	
1,2-Dichloroethane	ND	0.5	n n	п	ú	II	
1,2-Dibromoethane (EDB)	ND	0.5		ч	- 11	и	
Surr. Rec.:		103 %			n	v	
SB-11 (L112020-02) Water Sampled: 05-	Dec-11 11:00 Rece	ived: 07-Dec-1	1 16:09				
Total Petroleum Hydrocarbons @	2300	100	ug/L	2	14-Dec-11	EPA 8260B	
Gasoline Benzene	83	1.0	н		n	n	
Toluene	1.9	1,0	11	**	II .	н	
	43	2.0		D	11	0	
Xylenes, total	140	1.0	а		n	n	
Ethyl Benzene	140	10	н	н	п	и	
t-Butanol	22	1.0	II.	11	11	н	
Methyl tert-Butyl Ether	ND	1.0		"	ij	n	
Di-Isopropyl Ether	ND ND	1.0	q		u	u u	
Ethyl tert-Buty! Ether		1.0	11	**	tt.	н	
tert-Amyl Methyl Ether	ND		,,	P.	п	11	
1,2-Dichloroethane	ND	1.0	"	"	(1	п	
1,2-Dibromoethane (EDB)	ND	1.0		-			

Surr. Rec.:

Environmental Compliance Group, LLC

270 Vintage Drive Turlock, CA 95382 Project Number: GHA.19009

Project Name: Shore Acres Gas
Project Manager: Mike Sgourakis

Work Order No.:

ork Order No.: L112020

TPH-gas & Volatile Organic Compounds by GC/MS

	Result	Reporting Limit	Units	Dilution	Analyzed	Method	Note
Analyte				Difficion	rsmary zect	Tributiou .	
SB-12 (L112020-03) Water Sampled: 05-I	Dec-11 11:05 Receiv	ed: 07-Dec-1	1 16:09				
Total Petroleum Hydrocarbons @	4700	500	ug/L	10	14-Dec-11	EPA 8260B	
Gasoline				u	u	"	
Benzene	620	5.0	11	11	11		
Toluene	290	5.0	n	"	 D.	11	
Xylenes, total	400	10	n				
Ethyl Benzene	84	5.0	"	H			
t-Butanol	550	50	"		"		
Methyl tert-Butyl Ether	100	5.0	11	"			
Di-Isopropyl Ether	ND	5.0	ш	11			
Ethyl tert-Butyl Ether	ND	5.0	11	II.	"		
tert-Amyl Methyl Ether	ND	5.0	U	n	"	11	
1,2-Dichloroethane	ND	5,0	II .	II .	"	u n	
1,2-Dibromoethane (EDB)	ND	5.0	,ı				
Surr. Rec.:		98 %		Ą	"	н	
SB-13 (L112020-04) Water Sampled: 05-1	Dec-11 13:30 Recei	/ed: 07-Dec-1	1 16:09				
Total Petroleum Hydrocarbons @	400	200	ug/L	4	14-Dec-11	EPA 8260B	
Gasoline							
Benzene	51	2.0	"	II .	II.	n	
Toluene	2.4	2,0	III	11	II.	u	
Xylenes, total	9.7	4.0	11	n	ĮĮ.	"	
Ethyl Benzene	4.2	2.0	n	п	11	11	
t-Butanol	3900	20	u	11	н	n	
Methyl tert-Butyl Ether	39	2.0	"	ti .	ti	н	
Di-Isopropyl Ether	ND	2.0	11	n	11	u	
	ND	2.0	u u	n	U.	н	
Ethyl tert-Butyl Ether	4 1 4-2			"	н	11	
	ND	2.0	**				
Ethyl tert-Butyl Ether tert-Amyl Methyl Ether 1.2-Dichloroethane		2.0 2.0	н	11	ш	n	

Surr. Rec.:

Environmental Compliance Group, LLC

270 Vintage Drive Turlock, CA

Project Number: GHA 19009 Project Name: Shore Acres Gas

Project Manager: Mike Sgourakis

Work Order No.:

L112020

TPH-gas & Volatile Organic Compounds by GC/MS

		-					
Analyte	Result	Reporting Limit	Units	Dilution	Analyzed	Method	Notes
SB-14 (L112020-05) Water Sampled: 05-	Dec-11 13:40 Rece	ived: 07-Dec-1	1 16:09				
Total Petroleum Hydrocarbons @	ND	50	ug/L	1	14-Dec-11	EPA 8260B	
Gasoline							
Benzene	1.7	0,5	II .	II.	, ,	h	
Toluene	ND	0.5	11	"	"	ч	
Xylenes, total	ND	1.0	n .	II .	#	Tr.	
Ethyl Benzene	2.1	0.5	U	u .	n	17	
t-Butanol	ND	5.0	u	41	n n	н	
Methyl tert-Butyl Ether	ND	0.5	11	n	ĮI.	ц	
Di-Isopropyl Ether	ND	0,5	11	n .	II	н	
Ethyl tert-Butyl Ether	ND	0,5	rr	и	*	н	
tert-Amyl Methyl Ether	ND	0.5	n	u	n	17	
1,2-Dichloroethane	ND	0.5		4	u	n	
1,2-Dibromoethane (EDB)	ND	0.5		0 ~	. 11	н .	
Surr. Rec.:		107 %			n	H	

### SB-15 (L112020-06) Water Sampled: 05-Dec-11 13:45 Received: 07-Dec-11 16:09

Total Petroleum Hydrocarbons @	320	50	ug/L	1	14-Dec-11 EPA 8260B
Gasoline					
Benzene	32	0.5	a	n	n n
Toluene	0.7	0.5	"	"	u H
Xylenes, total	25	1.0	11	"	II W
Ethyl Benzene	33	0.5	t)	11	D D
t-Butanol	ND	5.0	*	II.	u n
Methyl tert-Butyl Ether	ND	0.5	U	D	u II
Di-Isopropyl Ether	ND	0.5	a	n	п
Ethyl tert-Butyl Ether	ND	0.5	u	II .	Ü ((
tert-Amyl Methyl Ether	ND	0.5	**	11	u 19
1,2-Dichloroethane	ND	0.5	11	П	11
1,2-Dibromoethane (EDB)	ND	0.5	D	"	п

Surr. Rec.:

Environmental Compliance Group, LLC

270 Vintage Drive Turlock, CA 95382

Project Number: GHA.19009 Project Name: Shore Acres Gas

Project Manager: Mike Sgourakis

Work Order No.:

L112020

TPH-gas & Volatile Organic Compounds by GC/MS

		Reporting	FT 1.	D3 -7	Analyzed	Method	Note
Analyte	Result	Limit	Units	Dilution	Analyzed	Ivietiloa	14016
SB-16 (L112020-07) Water Sampled: 05-I	Dec-11 14:30 Receiv	ed: 07-Dec-1	1 16:09				
Total Petroleum Hydrocarbons @	4800	1000	ug/L	20	19-Dec-11	EPA 8260B	
Gasoline					n	u	
Benzene	1600	10	11	n	"	"	
Toluene	10	10	11	u	11	17	
Xylenes, total	ND	20	n	"	11		
Ethyl Benzene	49	10	n	11	rr	n 	
-Butanol	ND	100	ш	if .	U	n	
Methyl tert-Butyl Ether	ND	10	a	n	"	u	
Di-Isopropyl Ether	ND	10	**	п	11	и	
Ethyl tert-Butyl Ether	ND	10	11	u .	11	"	
tert-Amyl Methyl Ether	ND	10	п	tt	n	111	
1,2-Dichloroethane	ND	10	n	11	Ü	II.	
1,2-Dibromoethane (EDB)	ND	10	"	11		H	
Surr. Rec.:	-	96 %			H	it.	
SB-17 (L112020-08) Water Sampled: 05-I	Dec-11 14:20 Receiv	ed: 07-Dec-1	1 16:09				
Totał Petroleum Hydrocarbons @	990	200	ug/L	4	19-Dec-11	EPA 8260B	
Gasoline							
	290	2.0	11	11	n	ii.	
Benzene	4,70	2.0		"			
Benzene Foluene	7.2	2.0			п	ıı	
			;; 1)		n u	n u	
Toluene Xylenes, total	7.2	2.0		II.	n v	<del>"</del>	
Toluene	7.2 4.3	2.0 4.0	n	17 18	u	u	
Toluene Xylenes, total Ethyl Benzene	7.2 4.3 27	2.0 4.0 2.0	)) ((	17 18	11 11	H H	
Toluene Xylenes, total Ethyl Benzene i-Butanol	7.2 4.3 27 ND	2.0 4.0 2.0 20	1) 11	17 18	11 11	tt tt	
T <b>oluene</b> <b>Xylenes, total</b> E <b>thyl Benzene</b> t-Butanol Methyl tert-Butyl Ether Di-Isopropyl Ether	7.2 4.3 27 ND ND	2.0 4.0 2.0 20 2.0	1) 11 11	1) 1) 11 11	11 11	tt tt	
<b>Foluene Kylenes, total Ethyl Benzene</b> :-Butanol  Methyl tert-Butyl Ether  Di-Isopropyl Ether  Ethyl tert-Butyl Ether	7.2 4.3 27 ND ND ND	2.0 4.0 2.0 20 2.0 2.0	11 11	1) 1) 1) 1) 1)	0 0 1 1	tt tt	
Toluene Xylenes, total Ethyl Benzene t-Butanol Methyl tert-Butyl Ether	7.2 4.3 27 ND ND ND ND	2.0 4.0 2.0 20 2.0 2.0 2.0	10 11 11	17 18 18 17 11	10 10 10 11 11	tt tt	

Surr. Rec.:

Environmental Compliance Group, LLC

270 Vintage Drive Turlock, CA 9538 Project Number: GHA.19009

Project Name: Shore Acres Gas

Project Manager: Mike Sgourakis

Work Order No.:

Work Order No.: L112020

### TPH-gas & Volatile Organic Compounds by GC/MS

Analyte	Result	Reporting Limit	Units	Dilution	Analyzed	Method	Notes
SB-18 (L112020-09) Water Sampled: 05-I	Dec-11 13:55 Receiv	ed: 07-Dec-1	1 16:09				
Total Petroleum Hydrocarbons @	560	50	ug/L	1	19-Dec-11	EPA 8260B	
Gasoline							
Вепzепе	8.7	0.5	u	n	11	"	
Toluene	4.9	0.5	"	ii .	u	11	
Xylenes, total	83	1.0	11	W.	ii ii	II.	
Ethyl Benzene	23	0.5	it.	м	н	п	
t-Butanol	ND	5.0	n	Ħ	II:	п	
Methyl tert-Butyl Ether	ND	0,5	u	n	Ŋ	u	
Di-Isopropyl Ether	ND	0.5	u	n .	u	11	
Ethyl tert-Butyl Ether	ND	0.5	"	u	11	-17	
tert-Amyl Methy! Ether	ND	0,5	11	м	"	n	
1.2-Dichloroethane	ND	0.5	n	If	п	п	
1,2-Dibromoethane (EDB)	ND	0.5	n	n	u	п	
		100 %			"	"	
Surr, Rec.:							
SB-19 (L112020-10) Water Sampled: 05-I	Dec-11 14:25 Recei	ved: 07-Dec-1	1 16:09				
Total Petroleum Hydrocarbons @	260	50	ug/L	1	19-Dec-11	EPA 8260B	
Gasoline							
Benzene	7.1	0.5	"	II .	ii	er .	
Toluene	ND	0.5		u	u	11	
Xylenes, total	7.0	1.0	"	11	н	"	
Ethyl Benzene	16	0.5	11	D	,		
t-Butanol	ND	5.0	н	п	. u	u	
Methyl tert-Butyl Ether	ND	0.5	n	U.	n	"	
Di-Isopropyl Ether	ND	0.5	"	u	II	П	
Ethyl tert-Butyl Ether	ND	0.5	u	11	II	m.	
tert-Amyl Methyl Ether	ND	0.5	11	n	п	D	
1,2-Dichloroethane	ND	0.5	п	n	"	II .	
1,2-Dibromoethane (EDB)	ND	0.5	n		10		

Surr. Rec.:

Environmental Compliance Group, LLC

270 Vintage Drive Turlock, CA 95382 Project Number: GHA.19009

Project Name: Shore Acres Gas

Work Order No.: L112020

Project Manager: Mike Sgourakis

### TPH-gas & Volatile Organic Compounds by GC/MS

Analyte	Result	Reporting Limit	Units	Dilution	Analyzed	Method	Notes
SB-21 (L112020-11) Water Sampled: 05	-Dec-11 14:40 Rece	ived: 07-Dec-1	1 16:09				
Total Petroleum Hydrocarbons @	ND	50	ug/L	1	19-Dec-11	EPA 8260B	
Gasoline							
Benzene	ND	0.5	11	"	ч	n	
Toluene	ND	0,5	"	11	n	n	
Xylenes, total	ND	1.0		И	н	u u	
Ethyl Benzene	ND	0,5	п	Ü.	н	н	
t-Butanol	ND	5.0	u	Ü	D	и	
Methyl tert-Butyl Ether	ND	0.5	"	n	п	u	
Di-Isopropyl Ether	ND	0,5	"	n	**	Ħ	
Ethyl tert-Butyl Ether	ND	0.5	**	п	н	0	
tert-Amyl Methyl Ether	ND	0.5	11	u	n	11	
1,2-Dichloroethane	ND	0.5	11	u	D	п	
1,2-Dibromoethane (EDB)	ND	0,5	Ш	u	n	н	
				<del></del>		"	

Surr. Rec.:

ETSION | Iaboratories | 2905 Railroad Ave. | Ceres, CA 95307 (209)581-9280 | Fax (209)581-9282

Environmental Compliance Group, LLC

270 Vintage Drive Turlock, CA 95382 Project Number: GHA.19009 Project Name: Shore Acres Gas

Project Manager: Mike Sgourakis

Work Order No.: L112020

RPD

%REC

70-130

105

0.4

20

### TPH-gas & Volatile Organic Compounds by GC/MS - Quality Control

Spike

Source

Reporting

### **Argon Laboratories**

Analyte	Result	Keporting Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch L102134 - EPA 5030B						<u> </u>				
Blank (L102134-BLK1)				Prepared &	: Analyzed:	12/14/11				
Surrogate: Fluorobenzene	50.0		ug/L	50		100	70-130			
Total Petroleum Hydrocarbons @ Gasoline	ND	50	u							
Benzene	ND	0.5	"							
Toluene	ND	0.5	"							
Xylenes, total	ND	1.0	ш							
Ethyl Benzene	ND	0.5	"							
t-Butanol	ND	5.0	11							
Methyl tert-Butyl Ether	ND	0.5	11							
Di-Isopropyl Ether	ND	0.5	11							
Ethyl tert-Butyl Ether	ND	0.5	11							
tert-Amyl Methyl Ether	ND	0,5	11							
1,2-Dichloroethane	ND	0.5	11							
1,2-Dibromoethane (EDB)	ND	0.5	Ħ							
LCS (L102134-BS1)				Prepared &	Analyzed:	12/14/11				
1,2-Dibromoethane (EDB)	25,7		ug/L	25		103	80-120			
LCS Dup (L102134-BSD1)				Prepared &	Analyzed	12/14/11				
1,2-Dibromoethane (EDB)	25.0		ug/L	25		100	80-120	3	20	
Matrix Spike (L102134-MS1)	Sou	rce: L112020-	-01	Prepared &	k Analyzed	12/14/11				
Toluene	26,3		ug/L	25	ND	105	70-130			
Matrix Spike Dup (L102134-MSD1)	Sou	rce: L112020-	01	Prepared &	k Analyzed	12/14/11				

ug/L

25

ND

Approved By

Toluene

Environmental Compliance Group, LLC

270 Vintage Drive

Turlock, CA 95382

Project Number: GHA.19009

Project Name: Shore Acres Gas

Project Manager: Mike Sgourakis

Units

Spike

Level

Work Order No.:

Notes

L112020

RPD

Limit

%REC

Limits

RPD

Source

Result

%REC

### TPH-gas & Volatile Organic Compounds by GC/MS - Quality Control

Result

Reporting

Limit

### **Argon Laboratories**

Analyte

Blank (L102135-BLK1)				Prepared & Anal	lyzed: 12/19/11		
Surrogate: Fluorobenzene	48.0		ug/L	50	96	70-130	
Total Petroleum Hydrocarbons @ Gasoline	ND	50	11				
Benzene	ND	0.5	0				
Toluene	ND	0.5	н				
Xylenes, total	ND	1.0	n				
Ethyl Benzene	ND	0.5	n				
t-Butanol	ND	5.0	U				
Methyl tert-Butyl Ether	ND	0.5	u				
Di-Isopropyl Ether	ND	0,5	u				
Ethyl tert-Butyl Ether	ND	0.5	"				
tert-Amyl Methyl Ether	ND	0.5	11				
1,2-Dichloroethane	ND	0.5	П				
1,2-Dibromoethane (EDB)	ND	0,5	I)				
LCS (L102135-BS1)				Prepared & Ana	lyzed: 12/19/11		_
Mathed toet Dutyl Ethan	24.2		no/I	25	97	80-120	

LCS (L102135-BS1)			Prepared &	Analyzed:	12/19/11				
Methyl tert-Butyl Ether	24.2	ug/L	25		97	80-120			
LCS Dup (L102135-BSD1)			Prepared &	: Analyzed:	12/19/11				
Methyl tert-Butyl Ether	25,6	ug/L	25		102	80-120	6	20	
Matrix Spike (L102135-MS1)	Source: L	.112020-11	Prepared &	Analyzed:	12/19/11				
Benzene	26.1	ug/L	25	ND	104	70-130			
Matrix Spike Dup (L102135-MSD1)	Source: L	112020-11	Prepared &	Analyzed:	12/19/11				
Benzene	24.4	ug/L	25	ND	98	70-130	7	20	

Approved By

Environmental Compliance Group, LLC

270 Vintage Drive Turlock, CA 95382 Project Number: GHA.19009
Project Name: Shore Acres Gas

Project Manager: Mike Sgourakis

Work Order No.: L112020

### **Notes and Definitions**

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

## argon laboratories

12 July 2011

Mike Sgourakis Environmental Compliance Group, LLC 270 Vintage Drive Turlock, CA 95382

RE: Shore Acres Gas Project Data

Enclosed are the results for sample(s) received on 06/28/11 17:00 by Argon Laboratories. The sample(s) were analyzed according to instructions in accompanying chain-of-custody. Results are summarized on the following pages.

Please see quality control report for a summary of QC data pertaining to this project.

The sample(s) will be stored for 30 days after completion of analysis, then disposed of in accordance with State and Federal regulations. Sample(s) may be archived by prior arrangement.

Thank you for the opportunity to service the needs of your company.

Sincerely,

Hiram Cueto Lab Manager

## Argon Analytical Services, Inc.

2905 Railroad Ave Ceres, CA 95307

### **CHAIN OF CUSTODY**

1422

(209)581-9280 F	ax (209)581-92	282 info@ar	gonlabs.com														
Project No: Project Title: Location:  Sampler's Name: (print) Sampler's Signature	Le: Dw.	209 12 st. d. 14 ~Va-	AlL		Consul Address Contac Phone Fax: Client: Address	ss: :		Ecr =	Bill To:						- 1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	ķ	EDF Required
					1 4						/010					1	
	Ţ	URN AROUND T	IME	1 2	8	,			1	ANA	LYSIS		1				
RUSH	24 Hour	48 Hour	5-day Rush	Standard (10 days)	1000 S	EDO GE											COMMENTS
			<del></del> -		•				_	ļ <u> —</u>	-		<del> </del>	-			COMMENTO
Sample ID.	6/रहीरा	Time	# Containers	Matrix	X	 		<u> </u>		<del>                                     </del>	<u> </u>	<u> </u>					
1-12	612011	1405	3	auter												<del> </del>	
2.W	-U	1410	V	<i>Y</i>	X			<u> </u>			-	-	<del> </del>	<u> </u>			
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				<del> </del>	1						1						
					-	ĺ		1						-			
								}									
Relinquished By:  Relinquished By:	M		Date:	Time:	Receiv	- /	X	C	euT	to	Date:	128/	Tin Tin	7:00	)	SPECIA	AL INSTRUCTIONS:
Relinquished By:			Date:	Time:	Receiv	red By:					Date;		Tie	ne:			,

# **Argon Laboratories Sample Receipt Checklist**

Client Name:	Environmental	Comp	liance G	roup				Date	e & Time	Received:	0	3/28/11		17:00
Project Name:	Shore Acres G	as						Clie	ent Projec	t Number:		GH/	A.19009	<del>)</del>
Received By:	1.C.	<u></u>		Matr	rix:	Water	<b>7</b>	Soil			Slud	ge		
Sample Carrier:	Client	Lab	oratory		Fed Ex		UPS		Othe	r 🗌				
Argon Labs Project	Number:	<u>L106</u>	<u> 6079</u>											
Shipper Container in g	good condition?					Sample	es receive	in prop	per contai	ners?	Yes	<b>V</b>	No	
	N/A	Yes	1	No		Sample	es receive	i intact'	?		Yes	7	No	
Samples received und	der refrigeration?	Yes	7	No		Sufficie	nt sample	volume	e for reque	sted tests?	Yes	7	No	
Chain of custody pres	ent?	Yes	V	No		Sample	s receive	d within	holding ti	ne?	Yes	7	No	
Chain of Custody sign	ned by all parties?	Yes	1	No		Do sam	iples cont	ain prop	oer preser N/A	vative?	Yes	<b>4</b>	No	
Chain of Custody mat	ches all sample la	bels?				Do VOA	vials conta	in zero l	headspace	?				
		Yes	<b>J</b>	No				(None	submitte	<b>i</b> [])	Yes	7	No	
·	AAIN II	N-7 61	CODONO	- MILOT	DE DETA	n E6 B	I TUE CO	NARACNI	re electi	ON BELOV	ır			
	AN1						————							
Date Client Contact	ted:	· · · · · · · · · · · · · · · · · · ·		_	Pe	rson Co	ontacted:							
Contacted By:	·				Subject:								<u>-</u>	
Comments:														
Action Taken:												<del></del>		
асион такен:														
				OITICO	NAL TES	T(S) RE	QUEST /	OTHER	?					
Contacted By:					_	D	ate:				Tim	ie:		
Call Received By: _					•									
Comments:														
<u> </u>									•				· · · · · · · · · · · · · · · · · · ·	******

Environmental Compliance Group, LLC

270 Vintage Drive

Turlock, CA 95382

Project Number: GHA.19009

Project Name: Shore Acres Gas

Project Manager: Mike Sgourakis

mains I have the second market from

Work Order No.:

L106079

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
VW-1	L106079-01	Water	06/28/11 14:05	06/28/11 17:00
VW-2	L106079-02	Water	06/28/11 14:10	06/28/11 17:00

Environmental Compliance Group, LLC

270 Vintage Drive Turlock, CA 95382 Project Number: GHA.19009

Project Name: Shore Acres Gas Project Manager: Mike Sgourakis

L106079

Work Order No.:

TPH-gas & Volatile Organic Compounds by GC/MS

Analyte	Result	Reporting Limit	Units	Dilution	Analyzed	Method	Note
VW-1 (L106079-01) Water Sampled: 28-J							
Total Petroleum Hydrocarbons @	20000	2500	ug/L	50	09 <b>-</b> Jul-11	EPA 8260B	
Gasoline							
Benzene	2000	25	*	"	u	ıı .	
Toluene	490	25	"		11	a	
Xylenes, total	2400	50	"	u	P	ч	
Ethyl Benzene	1000	25		tt .	IJ	11	
t-Butanol	5300	250		IT	ij	IF.	
Methyl tert-Butyl Ether	1500	25	"	H	u	rr .	
Di-Isopropyl Ether	ND	25	11	"	**	"	
Ethyl tert-Butyl Ether	ND	25	#	0	n,	"	
tert-Amyl Methyl Ether	ND	25	n	п	n	ıı	
1,2-Dichloroethane	ND	25	н	11	u	и	
1,2-Dibromoethane (EDB)	ND	25	"	11	n	н	
Surr. Rec.:		84 %			"	"	
VW-2 (L106079-02) Water Sampled: 28-J	un-11 14:10 Receiv	ved: 28-Jun-1	1 17:00				
Total Petroleum Hydrocarbons @	33000	2500	ug/L	50	09-Jul-11	EPA 8260B	
Gasoline							
Benzene	3100	25	"	**	ii	4	
Toluene	2000	25	"	"	II .	11	
Xylenes, total	3500	50	"	"	"	it.	
Ethyl Benzene	790	25	11	"	#	"	
t-Butanol	4100	250	19	"	11	"	
Methyl tert-Butyl Ether	670	25	p	п	ii		
Di-Isopropyl Ether	ND	25	"	n	11	w.	
Ethyl tert-Butyl Ether	ND	25	"	n	Ħ	16	
tert-Amyl Methyl Ether	ND	25	"	н	"	IF.	
1,2-Dichloroethane	ND	25	17	u	u	H	
1,2-Dibromoethane (EDB)	ND	25	n				
Surr, Rec.:		99 %			"	п	

Approved By

Environmental Compliance Group, LLC

270 Vintage Drive Turlock, CA 95382 Project Number: GHA 19009

Project Name: Shore Acres Gas

Project Manager: Mike Sgourakis

Work Order No.:

L106079

### TPH-gas & Volatile Organic Compounds by GC/MS - Quality Control

### **Argon Laboratories**

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

	_			
Ratch	•	.101150	_ н РА	5030R

Blank (L101150-BLK1)				Prepared &	Analyzed:	07/09/11				
Surrogate: Fluorobenzene	44.5		ug/L	50		89	70-130			
Total Petroleum Hydrocarbons @ Gasoline	ND	50								
Benzene	ND	0.5	**							
Toluene	ND	0.5	11			-				
Xylenes, total	ND	1.0	n							
Ethyl Benzene	ND	0.5								
t-Butanol	ND	5.0	u							
Methyl tert-Butyl Ether	ND	0.5	11							
Di-Isopropyl Ether	ND	0.5	ır							
Ethyl tert-Butyl Ether	ND	0.5	"							
tert-Amyl Methyl Ether	ND	0.5	"							
1,2-Dichloroethane	ND	0.5	"							
1,2-Dibromoethane (EDB)	ND	0.5	11							
LCS (L101150-BS1)				Prepared &	Analyzed:	07/09/11				
Methyl tert-Butyl Ether	23.3		ug/L	25		93	80-120			
LCS Dup (L101150-BSD1)				Prepared &	Analyzed:	07/09/11				
Methyl tert-Butyl Ether	23.5		ug/L	25		94	80-120	0.9	20	
Matrix Spike (L101150-MS1)	Source	e: L106076	-01	Prepared &	Analyzed:	07/09/11				
Total Petroleum Hydrocarbons @ Gasoline	890		ug/L	1000	ND	89	70-130			
Matrix Spike Dup (L101150-MSD1)	Source	e: L106076	01	Prepared &	Analyzed:	07/09/11				
Total Petroleum Hydrocarbons @ Gasoline	902		ug/L	1000	ND	90	70-130	Ĭ	20	

Approved By

ETGOTI | **aboratories** 2905 Railroad Ave. Ceres, CA 95307 (209)581-9280 Fax (209)581-9282

Environmental Compliance Group, LLC

270 Vintage Drive

Turlock, CA 95382

Project Number: GHA.19009

Project Name: Shore Acres Gas

Project Manager: Mike Sgourakis

Work Order No.:

ork Order No. L106079

**Notes and Definitions** 

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

Approved By

# argon laboratories

22 December 2011

Mike Sgourakis Environmental Compliance Group, LLC 270 Vintage Drive Turlock, CA 95382

RE: Shore Acres Gas Project Data

Enclosed are the results for sample(s) received on 12/13/11 16:10 by Argon Laboratories. The sample(s) were analyzed according to instructions in accompanying chain-of-custody. Results are summarized on the following pages.

Please see quality control report for a summary of QC data pertaining to this project.

The sample(s) will be stored for 30 days after completion of analysis, then disposed of in accordance with State and Federal regulations. Sample(s) may be archived by prior arrangement.

Thank you for the opportunity to service the needs of your company.

Sincerely,

Lab Manager

# Argon Analytical Services, Inc. CHAIN OF CUSTODY

Project Information:								Report To:								Samples Submitted To:					
Project No:	GHA.19009						Consultant: Environmental Compliance Grou										Argon Labs				
Project Title:	Shore Acres Gas					Address: 270 Vintage Drive						Address:						2905 Railroad Avenue			
Location:	403 East 12th Street Oakland, CA						Turfock, CA 95382											Ceres, CA 95307			
	Contact: Mike Sgourakis						Contact:														
Sampler's Name:	Phone: 916.600,4580					Phone:						(209) 581-9280									
(print)	Fax: 209,664,1040								Fax:			(209) 581-9282									
Sampler's Signatu	Bill To;						Date Results Rec					quired;	pired;								
	Client: Environmental Compliar Address: 270 Vintage Drive Turlock, CA						nce Group, LLC Date Report Re				port Req	uired:									
	AN/						ALYSIS														
Rusif	24 Hour 48 Hour		Standard (5 days)	Special (10-14 days) Hugarette Markettod 8015M		BTEX, 5 oxygenates, 1,2-DCA, EDB by EPA Method 8260B										EDF Reports					
				1		<u> </u>	Ø 2	-						<u> </u>			ш	COMMENTS			
Sample ID.	Dat		Time	# Containers	Matrix		2.7					ļ	-			<u> </u>	<u> </u>	Preservative			
MVV-1	12/11	И	Love	3	Confine	X	X						1				X	<u> </u>			
MW-2			८२५३		1											<u> </u>	1				
MW-3			10360																		
MW-4			0939																		
MW-5			OND				1.														
MW-6			1014																		
VW-1			JEX17	/									1								
VW-2	ل		<del>७१४</del>	v	J	Ą	ď										4				
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	L								<u></u>			<u> </u>									
Relinquished By: JAM Dater Time: 121(31(1 1510					Show the River					313/117610					SPEC	SPECIAL INSTRUCTIONS; Global ID#					
Relinquished By: Date: Time:					Received By:					Date:	• • • • • • • • • • • • • • • • • • • •					T0600174667					
Relinquished By: Date: Time:					Received By:					Date:	Date: Time:										

# **Argon Laboratories Sample Receipt Checklist**

Client Name:	Environmental	Comp	liance G	roup				Date	& Time Re	ceived:	12/13/11 16:10			
Project Name:	Shore Acres						Clien	it Project N	lumber:	GHA.19009			)	
Received By:	S.H.		Matr	_Matrix:		<b>~</b>	Soil			Slud	ge			
Sample Carrier:	Client 🔽	Lab	oratory		Fed Ex		UPS		Other					
Argon Labs Project	Number:	2042												
Shipper Container in			Sample	es received	in prop	er containe	rs?	Yes	<b>✓</b>	No				
	N/A	Yes	7	No		Sample	es received	l intact?			Yes	1	No	
Samples received und	der refrigeration?	Yes	$\checkmark$	No		Sufficie	nt sample	volume	for request	ed tests?	Yes	<b>V</b>	No	
Chain of custody pres	sent?	Yes	<b>✓</b>	No		Sample	es received	within	holding time	?	Yes	1	No	
Chain of Custody sign	No		Do san	nples conta	ain prop	er preserva N/A	tive?	Yes	<b>7</b>	No				
Chain of Custody mai	tches all sample la		Do VOA	vials conta	in zero h	eadspace?								
		Yes	<b>V</b>	No				(None	submitted	□ )	Yes	<b>V</b>	No	
	ANY "N	io" Ri	SPONSI	E MUST	BE DETA	ILED IN	THE CO	MENT	S SECTION	BELOW	V			
Date Client Contacted: Person Contacted:														
Contacted By:	Subject:	ect:												
Comments:														
Action Taken:		······································												
riodor ranon.														
ADDITIONAL TEST(S) REQUEST / OTHER														
Contacted By:							ate:				Tim	e:		
Call Received By:														
Comments:					<b></b>									•
L						•								

Environmental Compliance Group, LLC

270 Vintage Drive Turlock, CA 95382 Project Number: GHA.19009

Project Name: Shore Acres Gas

Project Manager: Mike Sgourakis

Work Order No.: L112042

#### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-I	L112042-01	Water	12/11/11 10:40	12/13/11 16:10
MW-2	L112042-02	Water	12/11/11 09:53	12/13/11 16:10
MW-3	L112042-03	Water	12/11/11 10:36	12/13/11 16:10
MW-4	L112042-04	Water	12/11/11 09:30	12/13/11 16:10
MW-5	L112042-05	Water	12/11/11 09:10	12/13/11 16:10
MW-6	L112042-06	Water	12/11/11 10:14	12/13/11 16:10
VW-1	L112042-07	Water	12/11/11 10:17	12/13/11 16:10
VW-2	L112042-08	Water	12/11/11 09:25	12/13/11 16:10

Environmental Compliance Group, LLC

270 Vintage Drive Turlock, CA 95382 Project Number: GHA.19009

Project Name: Shore Acres Gas

Project Manager: Mike Sgourakis

Work Order No.:

L112042

#### Total Petroleum Hydrocarbons @ Gasoline

Analyte	Result	Reporting Limit	Units	Dilution	• • •	Analyzed	Method	Notes
MW-1 (L112042-01) Water Sampled: 11-I	Dec-11 10:40 Rece	ived: 13-Dec-1	1 16:10					
Total Petroleum Hydrocarbons @ Gasoline	23000	620	ug/L	12.5		19-Dec-11	8015M	
Surr. Rec.:		120 %				, "	п	
MW-2 (L112042-02) Water Sampled: 11-I	Dec-11 09:53 Rece	ived: 13-Dec-1	1 16:10		* · ·			
Total Petroleum Hydrocarbons @ Gasoline	8300	250	ug/L	5		19-Dec-11	8015M	
Surr. Rec.:		110%				"	ø	
MW-3 (L112042-03) Water Sampled: 11-I	Dec-11 10:36 Rece	ived: 13-Dec-1	1 16:10					
Total Petroleum Hydrocarbons @ Gasoline	64000	2000	ug/L	40		19-Dec-11 ,	8015M	
Surr. Rec.:		109 %				,,	н	
MW-4 (L112042-04) Water Sampled: 11-L	Dec-11 09:30 Rece	ived: 13-Dec-1	1 16:10					
Total Petroleum Hydrocarbons @ Gasoline	46000	2000	ug/L	40		19-Dec-11	8015M	
Surr. Rec.:		120 %				.tt	"	
MW-5 (L112042-05) Water Sampled: 11-L	Dec-11 09:10 Rece	ived: 13-Dec-1	1 16:10					
Total Petroleum Hydrocarbons @ Gasoline	110000	5000	ug/L	100		19-Dec-11	8015M	
Surr. Rec.:		109 %				n	n	
MW-6 (L112042-06) Water Sampled: 11-D	Dec-11 10:14 Rece	ived: 13-Dec-1	1 16:10					
Total Petroleum Hydrocarbons @ Gasoline	13000	500	ug/L	10		19-Dec-11	8015M	
Surr. Rec.:		110 %				"	н	
VW-1 (L112042-07) Water Sampled: 11-D	ec-11 10:17 Recei	ived: 13-Dec-1	1 16:10					
Total Petroleum Hydrocarbons @ Gasoline	27000	1200	ug/L	25		19-Dec-11	8015M	
Surr. Rec.:		115%				n	н	

Approved By

Environmental Compliance Group, LLC

270 Vintage Drive

Turlock, CA 95382

Project Number: GHA.19009

Project Name: Shore Acres Gas

Project Manager: Mike Sgourakis

Work Order No.:

L112042

#### Total Petroleum Hydrocarbons @ Gasoline

Analyte	Result	Reporting Limit	Units	Dilution	Analyzed	Method	Notes
VW-2 (L112042-08) Water Sampled: 11-	Dec-11 09:25 Receiv	ed: 13-Dec-1	1 16:10				
Total Petroleum Hydrocarbons @ Gasoline	70000	2500	ug/L	50	19-Dec-11	8015M	
Surr. Rec.:		113 %			n	n	

Approved By

Environmental Compliance Group, LLC

270 Vintage Drive Turlock, CA 95382 Project Number: GHA.19009

Project Name: Shore Acres Gas

Project Manager: Mike Sgourakis

Work Order No.:

L112042

Volatile Organic Compounds by EPA Method 8260B

		Reporting					
Analyte	Result	Limit	Units	Dilution	Analyzed	Method	Note
MW-1 (L112042-01) Water	Sampled: 11-Dec-11 10:40 Rece	ived: 13-Dec-1	11 16:10			***************************************	
Benzene	2900	20	ug/L	40	21-Dec-11	8260B	
Toluene	1000	20	rt	u	ű		
Xylenes, total	3000	40	н	"	п	n	
Ethylbenzene	720	20	11	«	u	н	
t-Butanol	1600	200	11	u	ű	n	
Methyl tert-Butyl Ether	1800	20	**	m .	ü	"	
Di-Isopropyl Ether	ND	20	11	u	(1	"	
Ethyl tert-Butyl Ether	ND	20	"	u	ü	17	
tert-Amyl Methyl Ether	ND	20		u .	и	11	
1,2-Dichloroethane	ND	20		u	(i	**	
1,2-Dibromoethane (EDB)	ND	20		п	М	•	
Surr. Rec.;		110 %			"	"	
MW-2 (L112042-02) Water	Sampled: 11-Dec-11 09:53 Recei	ived: 13-Dec-1	1 16:10				
Benzene	170	2,5	ug/L	5	21-Dec-11	8260B	
Toluene	120	2.5	"	n	tt	ш	
Xylenes, total	1500	5.0	n	h	#	n	
Ethylbenzene	450	2.5	"	"	II .	н	
-Butanol	110	25	rr ·	"	n	"	
Methyl tert-Butyl Ether	45	2.5	"	"	n	n	
Di-Isopropyl Ether	ND	2.5	H*	n	в	n	
Ethyl tert-Butyl Ether	ND	2,5	н	19	ıı	n	
ert-Amyl Methyl Ether	ND	2.5	Ħ	n	IJ	n	
	ND	2.5	**	11	n	"	
,2-Dichloroethane	111						
,2-Dichloroethane ,2-Dibromoethane (EDB)	ND	2.5	. "	n	ų	n	

Approved By

Environmental Compliance Group, LLC

270 Vintage Drive Turlock, CA 95382 Project Number: GHA.19009

Project Name: Shore Acres Gas Project Manager: Mike Sgourakis

Work Order No.: L112042

Volatile Organic Compounds by EPA Method 8260B

Analyte	Result	Reporting Limit	Units	Dilution	Analyzed	Method	Notes
MW-3 (L112042-03) Water Sampled	: 11-Dec-11 10:36 Recei	ved: 13-Dec-1	1 16:10				
Benzene	12000	100	ug/L	200	21-Dec-11	8260B	
Toluene	3100	100	4	n	u	ú	
Xylenes, total	4500	200	11	"	**	"	
Ethylbenzene	1600	100	Ħ	"	n	17	
t-Butanol	1800	1000	"	u .	n	**	
Methyl tert-Butyl Ether	7400	100	n	u	ii	n	
Di-Isopropyl Ether	ND	100		**	11	)I	
Ethyl tert-Butyl Ether	ND	100		"	Ħ		
tert-Amyl Methyl Ether	ND	100	11	"	ıı	"	
1,2-Dichloroethane	ND	100	11		ıı	"	
1,2-Dibromoethane (EDB)	ND	100	II.	u		17	
Surr, Rec,;		110 %			"	tt	
MW-4 (L112042-04) Water Sampled	: 11-Dec-11 09:30 Recei	ved: 13-Dec-1	11 16:10				
Benzene	2100	25	ug/L	50	21-Dec-11	8260B	
Toluene	3400	25	11	ц	it	1†	
Xylenes, total	7000	50	If	et .	il	TP .	
Ethylbenzene	1800	25	**	17	ū	rt	
t-Butanol	ND	250	"	"	**	"	
Methyl tert-Butyl Ether	ND	25		11	"	"	
Di-Isopropyl Ether	ND	25	u	u	ii	"	
Ethyl tert-Butyl Ether	ND	25	11	11	п	17	
tert-Amyl Methyl Ether	ND	25	ır	и	Ħ	n	
1,2-Dichloroethane	ND	25	n	n .	n	"	
1,2-Dibromoethane (EDB)	ND	25		и	u	H	
		03 %	<u> </u>		"	n	

Surr. Rec.:

93 %

Approved By

Environmental Compliance Group, LLC

270 Vintage Drive Turlock, CA 95382 Project Number: GHA,19009

Project Name: Shore Acres Gas

Project Manager: Mike Sgourakis

Work Order No.:

L112042

Volatile Organic Compounds by EPA Method 8260B

Analyte	Result	Reporting Limit	Units	Dilution	Analyzed	Method	Notes
MW-5 (L112042-05) Water	Sampled: 11-Dec-11 09:10 Rece	ived: 13-Dec-1	1 16:10				
Benzene	7800	120	ug/L	250	21-Dec-11	8260B	
Toluene	14000	120	u	n	"	41	
Xylenes, total	20000	250	u	11	u	**	
Ethylbenzene	4200	120	**	If	ш	n	
-Butanol	1600	1200	u	11	и	11	
Methyl tert-Butyl Ether	690	120		tt .	11	TT .	
Di-Isopropyl Ether	ND	120	n	ır	n	ч	
Ethyl tert-Butyl Ether	ND	120	"	n	#	**	
tert-Amyl Methyl Ether	ND	120	#	tt .	Ħ	11	
1,2-Dichloroethane	ND	120	**	rr .	Ħ	11	
I,2-Dibromoethane (EDB)	ND	120	16	n	)I	**	
Surr. Rec.:		106 %			u	"	
MW-6 (L112042-06) Water	Sampled: 11-Dec-11 10:14 Rece	ived: 13-Dec-1	1 16:10				
Benzene	660	10	ug/L	20	21-Dec-I l	8260B	
Toluene	190	10	17	U	tt .	19	
Xylenes, total	1500	20	11	n .	fr	#	
Ethylbenzene	610	10	11		"	11	
-Butanol	1300	100	17	u .	"	**	
Methyl tert-Butyl Ether	290	10	11	u	U	n	
Di-Isopropyl Ether	ND	10	"	и	u	n	
Ethyl tert-Butyl Ether	ND	10	n	11	4	n	
ert-Amyl Methyl Ether	ND	10	"	11	tt	II .	
1,2-Dichloroethane	ND	10	n	11	Ħ	"	
,2-Dibromoethane (EDB)	ND	10		**	"	·	
Surr. Rec.:		107 %			11	n	

Approved By

Environmental Compliance Group, LLC

270 Vintage Drive Turlock, CA 95382 Project Number: GHA.19009

Project Name: Shore Acres Gas

Work Order No.: Project Manager: Mike Sgourakis

L112042

#### Volatile Organic Compounds by EPA Method 8260B

Analyte	Result	Reporting Limit	Units	Dilution	Analyzed	Method	Notes
VW-1 (L112042-07) Water Sampled:	11-Dec-11 10:17 Receive	d: 13-Dec-1	1 16:10				
Benzene	2600	25	ug/L	50	21-Dec-I 1	8260B	
Toluene	270	25	"	"	17	n	
Xylenes, total	4400	50	"	u .	n	IJ	
Ethylbenzene	1400	25	и	u	II .	ш	
t-Butanol	1000	250	17	u	ш	a	
Methyl tert-Butyl Ether	490	25	17	. 11	"	u	
Di-Isopropyl Ether	ND	25	n	H .	ıτ	**	
Ethyl tert-Butyl Ether	ND	25	н	"	n	11	
tert-Amyl Methyl Ether	ND	25	п	n	п	11	
1,2-Dichloroethane	ND	25		n	ű	н	
1,2-Dibromoethane (EDB)	ND	25		u .	11	п	
Surr. Rec.:		106 %			"	n	
VW-2 (L112042-08) Water Sampled:	11-Dec-11 09:25 Receive	ed: 13-Dec-1	1 16:10				
Benzene	2800	50	ug/L	100	21-Dec-11	8260B	
Toluene	6900	50	"	и .	11	rr	
Xylenes, total	13000	100		U	n	n	
Ethylbenzene	2700	50	u	н	n	"	
t-Butanol	880	500	"	**	4	"	
Methyl tert-Butyl Ether	540	50	17	#	17	**	
Di-Isopropy! Ether	ND	50	TP .	rr .	n	11	
Ethyl tert-Butyl Ether	ND	50	n	**	Ü	н	
-	ND	50	н	U	"	n	
tert-Amyl Methyl Ether							
tert-Amyl Methyl Ether 1,2-Dichloroethane	ND	50		"	**		

Surr. Rec.:

108 %

Environmental Compliance Group, LLC

270 Vintage Drive Turlock, CA 95382 Project Number: GHA.19009

Project Name: Shore Acres Gas

Project Manager: Mike Sgourakis

Work Order No.:

L112042

#### Total Petroleum Hydrocarbons @ Gasoline - Quality Control

#### **Argon Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L102151 - EPA 5030B	TO THE PARTY OF TH	25.00				····	W.			
Blank (L102151-BLK1)				Prepared &	Analyzed:	12/19/11				
Surrogate: a,a,a-Trifluorotoluene	50.5		ug/L	50		101	70-130			
Total Petroleum Hydrocarbons @ Gasoline	ND	50	u							
LCS (L102151-BS1)				Prepared &	k Analyzed	: 12/19/11				
Total Petroleum Hydrocarbons @ Gasoline	1040		ug/L	1000		104	80-120			
LCS Dup (L102151-BSD1)				Prepared &	k Analyzed	: 12/19/11				
Total Petroleum Hydrocarbons @ Gasoline	1080		ug/L	1000		108	80-120	3	20	
Matrix Spike (L102151-MS1)	Sou	rce: L112051	-06	Prepared &	k Analyzed	: 12/19/11				
Total Petroleum Hydrocarbons @ Gasoline	911		ug/L	1000	ND	91	70-130			
Matrix Spike Dup (L102151-MSD1)	Sou	rce: L112051	-06	Prepared &	& Analyzed	: 12/19/11				
Total Petroleum Hydrocarbons @ Gasoline	928		ug/L	1000	ND	93	70-130	2	20	

Environmental Compliance Group, LLC

270 Vintage Drive Turlock, CA 95382 Project Number: GHA.19009

Project Name: Shore Acres Gas

Project Manager: Mike Sgourakis

Work Order No.: L112042

Volatile Organic Compounds by EPA Method 8260B - Quality Control

#### **Argon Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L102150 - EPA 5030B	-					* *******	·			
Blank (L102150-BLK1)				Prepared &	z Analyzed:	12/21/11				
Surrogate: Fluorobenzene	51.0		ug/L	50		102	70-130			
Benzene	ND	0.5	и							
Toluene	ND	0.5								
Xylenes, total	ND	1.0	"							
Ethylbenzene	ND	0,5	**							
t-Butanol	ND	5.0	n							
Methyl tert-Butyl Ether	ND	0.5	n							
Di-Isopropyl Ether	ND	0.5	"							
Ethyl tert-Butyl Ether	ND	0.5								
tert-Amyl Methyl Ether	ND	0.5	u							
1,2-Dichloroethane	ND	0.5	11							
1,2-Dibromoethane (EDB)	ND	0.5	ıT							
LCS (L102150-BS1)				Prepared &	& Analyzed	12/21/11				
Benzene	25.6		ug/L	25		102	80-120			
LCS Dup (L102150-BSD1)				Prepared &	& Analyzed	: 12/21/11				
Benzene	25.9		ug/L	25		104	80-120	1	20	
Matrix Spike (L102150-MS1)	Sou	rce: L112042-	02	Prepared &	& Analyzed	: 12/21/11				
Methyl tert-Butyl Ether	25.3		ug/L	25	0.4	99	70-130			
Matrix Spike Dup (L102150-MSD1)	Sot	ırce: L112042-	-02	Prepared &	& Analyzed	: 12/21/11				
Methyl tert-Butyl Ether	27,5		ug/L	25	0.4	108	70-130	8	20	

Approved By

Environmental Compliance Group, LLC

270 Vintage Drive Turlock, CA 95382 Project Number: GHA,19009

Project Name: Shore Acres Gas

Project Manager: Mike Sgourakis

Work Order No.:

L112042

#### **Notes and Definitions**

DET Analyte DETECTED

Analyte NOT DETECTED at or above the reporting limit ND

NR Not Reported

Sample results reported on a dry weight basis dry

RPD Relative Percent Difference



Report Number: 77930

Date: 07/01/2011

### Laboratory Results

Drew Van Allen Environmental Compliance Group 270 Vintage Dr Turlock, CA 95381

Subject: 4 Vapor Samples
Project Name: Shore Acres Gas
Project Number: GHA.19009

Dear Mr. Van Allen,

Chemical analysis of the samples referenced above has been completed. Summaries of the data are contained on the following pages. Sample(s) were received under documented chain-of-custody. US EPA protocols for sample storage and preservation were followed. Testing procedures comply with the 2003 NELAC standard. All soil samples are reported on a total weight (wet weight) basis unless noted otherwise in the case narrative. Laboratory results relate only to the samples tested. This report may be freely reproduced in full, but may only be reproduced in part with the express permission of Kiff Analytical, LLC. Kiff Analytical, LLC is certified by the State of California under the National Environmental Laboratory Accreditation Program (NELAP), lab # 08263CA. If you have any questions regarding procedures or results, please call me at 530-297-4800.

Sincerely,



Project Name: Shore Acres Gas

Project Number: GHA.19009

Sample: VW-1-INIT

Matrix : Air

Lab Number: 77930-01

Report Number: 77930 Date: 07/01/2011

Sample Date :06/24/2011

Sample Date :06/24/2011		Method			
Parameter	Measured Value	Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	9.4	0.20	ppmv	EPA 8260B	06/27/11 11:21
Toluene	1.1	0.15	ppmv	EPA 8260B	06/27/11 11:21
Ethylbenzene	1.3	0.15	ppmv	EPA 8260B	06/27/11 11:21
Total Xylenes	2.7	0.15	ppmv	EPA 8260B	06/27/11 11:21
Methyl-t-butyl ether (MTBE)	1.3	0.15	ppmv	EPA 8260B	06/27/11 11:21
TPH as Gasoline	190	15	ppmv	EPA 8260B	06/27/11 11:21
1,2-Dichloroethane-d4 (Surr)	96.8		% Recovery	EPA 8260B	06/27/11 11:21
Toluene - d8 (Surr)	97.2		% Recovery	EPA 8260B	06/27/11 11:21

Sample: VW-1-DAY 2

Matrix : Air

Lab Number: 77930-02

Sample Date :06/25/2011

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	15	0.10	ppmv	EPA 8260B	06/27/11 18:31
Toluene	5.8	0.090	ppmv	EPA 8260B	06/27/11 18:31
Ethylbenzene	4.5	0.080	ppmv	EPA 8260B	06/27/11 18:31
Total Xylenes	10	0.080	ppmv	EPA 8260B	06/27/11 18:31
Methyl-t-butyl ether (MTBE)	2.1	0.10	ppmv	EPA 8260B	06/27/11 18:31
TPH as Gasoline	500	8.0	ppmv	EPA 8260B	06/27/11 18:31
1,2-Dichloroethane-d4 (Surr)	95.8		% Recovery	EPA 8260B	06/27/11 18:31
Toluene - d8 (Surr)	97.6		% Recovery	EPA 8260B	06/27/11 18:31



Project Name: Shore Acres Gas

Project Number: GHA.19009

Sample: VW-1-END

Matrix : Air

Lab Number: 77930-03

Report Number: 77930 Date: 07/01/2011

Sample Date :06/26/2011

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	21	0.20	ppmv	EPA 8260B	06/27/11 13:58
Toluene	13	0.20	ppmv	EPA 8260B	06/27/11 13:58
Ethylbenzene	9.0	0.15	ppmv	EPA 8260B	06/27/11 13:58
Total Xylenes	23	0.15	ppmv	EPA 8260B	06/27/11 13:58
Methyl-t-butyl ether (MTBE)	1.9	0.20	ppmv	EPA 8260B	06/27/11 13:58
TPH as Gasoline	1400	20	ppmv	EPA 8260B	06/27/11 13:58
1,2-Dichloroethane-d4 (Surr)	95.1		% Recovery	EPA 8260B	06/27/11 13:58
Toluene - d8 (Surr)	95.6		% Recovery	EPA 8260B	06/27/11 13:58

Sample: VW-2-INIT

Matrix : Air

Lab Number: 77930-04

Sample Date :06/26/2011

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	140	3.0	ppmv	EPA 8260B	06/27/11 19:08
Toluene	240	2.5	ppmv	EPA 8260B	06/27/11 19:08
Ethylbenzene	84	2.0	ppmv	EPA 8260B	06/27/11 19:08
Total Xylenes	220	2.0	ppmv	EPA 8260B	06/27/11 19:08
Methyl-t-butyl ether (MTBE)	9.2	2.5	ppmv	EPA 8260B	06/27/11 19:08
TPH as Gasoline	11000	250	ppmv	EPA 8260B	06/27/11 19:08
1,2-Dichloroethane-d4 (Surr) Toluene - d8 (Surr)	99.8 98.6		% Recovery % Recovery	EPA 8260B EPA 8260B	06/27/11 19:08 06/27/11 19:08

Report Number: 77930

Date: 07/01/2011

QC Report : Method Blank Data

Project Name: Shore Acres Gas

Project Number: GHA.19009

<u>Parameter</u>	Measured Value	Method Reporti Limit		Analysis Method	Date Analyzed
Benzene	< 0.050	0.050	ppmv	EPA 8260B	06/27/2011
Ethylbenzene	< 0.050	0.050	ppmv	EPA 8260B	06/27/2011
Toluene	< 0.050	0.050	ppmv	EPA 8260B	06/27/2011
Total Xylenes	< 0.050	0.050	ppmv	EPA 8260B	06/27/2011
Methyl-t-butyl ether (MTBE)	< 0.10	0.10	ppmv	EPA 8260B	06/27/2011
TPH as Gasoline	< 5.0	5.0	ppmv	EPA 8260B	06/27/2011
1,2-Dichloroethane-d4 (Surr)	100		%	EPA 8260B	06/27/2011
Toluene - d8 (Surr)	98,2		%	EPA 8260B	06/27/2011

		Method			
	Measured	Reportir	ng	Analysis	Date
<u>Parameter</u>	Value	Limit	Units	Method	Analyzed

KI	FF	
Analyt	ical LLC	V

2795 2nd Street, Suite 300 Davis, CA 95618

Lab: 530.297.4800 Fax: 530.297.4802

Page

of 1

Project Contact (Hardcop Drew Van Allen	y or PDF	To):		California EDF Report?																																		
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Shore Acres Gas				Drev	√Va	r Print Name: an Allen (Mike Sowaki)										1~			1	ž	DB)	9	ΑB	돕		ŝ	601	Ē	747	🚍		<u>*</u>			4	18hr	ו בֿי	
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Distribution: White - Lab; Pink - Originator

Rev: 061708



## SAMPLE RECEIPT CHECKLIST

RECEIVER	
MMS Initials	

SRG#: 17930 Date: 002/11
Project ID: Shove Acres Gas
Method of Receipt: Courier Over-the-counter Shipper
COC Inspection Is COC present?  Custody seals on shipping container? Is COC Signed by Relinquisher?  Is COC Signed by Relinquisher?  Is sampler name legibly indicated on COC? Is analysis or hold requested for all samples Is the turnaround time indicated on COC? Is COC free of whiteout and uninitialed cross-outs?  Yes  No  Yes  No  Yes  No  Yes  No  No  Yes  No  No  No  No  No  No  No  No  No  N
Sample Inspection   Coolant Present:
Are the Sample ID's indicated:



Report Number: 77965

Date: 07/01/2011

### Laboratory Results

Drew Van Allen Environmental Compliance Group 270 Vintage Dr Turlock, CA 95381

Subject: 2 Vapor Samples
Project Name: Shore Acres Gas
Project Number: GHA.19009

Dear Mr. Van Allen,

Chemical analysis of the samples referenced above has been completed. Summaries of the data are contained on the following pages. Sample(s) were received under documented chain-of-custody. US EPA protocols for sample storage and preservation were followed. Testing procedures comply with the 2003 NELAC standard. All soil samples are reported on a total weight (wet weight) basis unless noted otherwise in the case narrative. Laboratory results relate only to the samples tested. This report may be freely reproduced in full, but may only be reproduced in part with the express permission of Kiff Analytical, LLC. Kiff Analytical, LLC is certified by the State of California under the National Environmental Laboratory Accreditation Program (NELAP), lab # 08263CA. If you have any questions regarding procedures or results, please call me at 530-297-4800.

Sincerely.



Project Name: Shore Acres Gas

Project Number: GHA.19009

Sample: VW-2-DAY 2

Matrix : Air

Lab Number: 77965-01

Report Number: 77965 Date: 07/01/2011

Sample Date :06/27/2011

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	68	0.60	ppmv	EPA 8260B	06/30/11 00:41
Toluene	99	0.50	ppmv	EPA 8260B	06/30/11 00:41
Ethylbenzene	24	0.40	ppmv	EPA 8260B	06/30/11 00:41
Total Xylenes	64	0.40	ppmv	EPA 8260B	06/30/11 00:41
Methyl-t-butyl ether (MTBE)	3.6	0.50	ppmv	EPA 8260B	06/30/11 00:41
TPH as Gasoline	4700	80	ppmv	EPA 8260B	06/30/11 02:55
1,2-Dichloroethane-d4 (Surr)	90.3		% Recovery	EPA 8260B	06/30/11 00:41
Toluene - d8 (Surr)	94.8		% Recovery	EPA 8260B	06/30/11 00:41

Sample: VW-2-END

Matrix : Air

Lab Number: 77965-02

Sample Date: 06/28/2011

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	44	0.60	ppmv	EPA 8260B	06/30/11 04:01
Toluene	68	0.50	ppmv	EPA 8260B	06/30/11 04:01
Ethylbenzene	16	0.40	ppmv	EPA 8260B	06/30/11 04:01
Total Xylenes	43	0.40	ppmv	EPA 8260B	06/30/11 04:01
Methyl-t-butyl ether (MTBE)	3.1	0.50	ppmv	EPA 8260B	06/30/11 04:01
TPH as Gasoline	3200	50	ppmv	EPA 8260B	06/30/11 04:01
1,2-Dichloroethane-d4 (Surr)	96.1		% Recovery	EPA 8260B	06/30/11 04:01
Toluene - d8 (Surr)	96.3		% Recovery	EPA 8260B	06/30/11 04:01

QC Report : Method Blank Data

Report Number: 77965 Date: 07/01/2011

Project Name: Shore Acres Gas

Project Number: GHA,19009

Date Analyzed

Method Reporting Limit Units

		Method					
	Measured	Reporting		Analysis	Date		Measured
Parameter	Value	Limit	Chits	Method	Analyzed	Parameter	Value
Benzene	< 0.050	0.050	Amdd	EPA 8260B	06/30/2011		
Ethylbenzene	< 0.050	0.050	hpmv	EPA 8260B	06/30/2011		
Toluene	< 0.050	0.050	hmdd	<b>EPA 8260B</b>	06/30/2011		
Total Xylenes	< 0.050	0.050	vmqq	EPA 8260B	06/30/2011		
Methyl-t-butyl ether (MTBE)	< 0.10	0.10	<b>A</b> wdd	EPA 8260B	06/30/2011		
TPH as Gasoline	< 5.0	5.0	ppmv	EPA 8260B	06/30/2011		
1,2-Dichloroethane-d4 (Surr)	100		%	EPA 8260B	06/30/2011		
Toluene - d8 (Surr)	101		%	EPA 8260B	06/30/2011		
Benzene	< 0.050	0.050	ppmv	EPA 8260B	06/29/2011		
Ethylbenzene	< 0.050	0.050	vmqq	EPA 8260B	06/29/2011		
Toluene	< 0.050	0.050	bpmv	EPA 8260B	06/29/2011		
Total Xylenes	< 0.050	0.050	hmmdd	EPA 8260B	06/29/2011		
Methyl-t-butyl ether (MTBE)	< 0.10	0.10	n:udd	EPA 8260B	06/29/2011		
1,2-Dichloroethane-d4 (Surr)	100		%	EPA 8260B	06/29/2011		
Toluene - d8 (Surr)	99,4		%	EPA 8260B	06/29/2011		

2795 2nd Street, Suite 300 Davis, CA 95618 530-297-4800



2795 2nd Street, Suite 300 Davis, CA 95618 Lab: 530.297.4800 Fax: 530.297.4802

SRG#/Lab No.

77965

Page 1 of

Project Contact (Hardcopy or PDF Drew Van Allen	To):	.207100	California EDF Report?											Cha	in-c	of-C	Cus	toc	ly F	₹ec	orc	l ar	nd /	4na	ılysi	is R	equ	uest									
Company / Address:			Sa	mpli	ng Ço	mpa	ny L	og C	ode		*****					╁					-			Αn	alvs	sis F	₹eai	uest			—	—	—		TA	TΙ	
270 Vintage Drive, Turlock, Ca Phone Number: 209.664.1035	A 95382		EC Glo	CGT obal ID: 0600174667							· ·	ľ												EASE		CLE ,					12						
Fax Number: 209.664.1040			ED	DF Deliverable To (Email Address): g.ust@gmail.com												A 8260E	zeoB)	<u>~</u>							ē.								,	_			
Project #: P.O. #: GHA.19009			Bill	to:	LLC	,,,,		<u></u>	- "							1			rBA) (EP	(EPA 8;	4 8260		٥	Water)				00.7 / 60.				<u></u>			24	hr	se Only
Project Name: Shore Acres Gas			Sa Dre Sa	mple ew V	er Prir /an Ai er Sig	nt Na Ilen natu	re:	Mic	No.	ml	2	٥٤	77	aki	Š	8260B)			5 Oxygenates (MTBE, DIPE, ETBE, TAME, TBA) (EPA 8260B)	7 Oxygenates (5 oxy + EtOH, MeOH) (EPA 8260B)	Lead Scav. (1,2 DCA & 1,2 EDB) (EPA 8260B)	Volatile Halocarbons (EPA 8260B)	Volatile Organics Full List (EPA 8260B)	Volatile Organics (EPA 524.2 Drinking Water)	115M)	8015M)	CAM 17 Metals (EPA 200.7 / 6010)	5 Waste Oil Metals (Cd,Cr,NI,Pb,Zn) (EPA 200.7 / 6010)	Mercury (EPA 245.1 /7470 /7471)	(6010)		TPHg, BTEX, and MTBE by EPA 8260B			□ 48i	] hr	For Lab Use Only
Project Address:	Samp	oling		(	Conta	iner			Pres	erva	ative	Ţ		Matri	ix	] [	_	30B)	GP.	† \$	Š	ns (E	=	FP	A 80	EPA	7A 2	ů,	1.7	7.00	ि	ΜTB					
403 East 12th Street Oakland, CA			≰									,				0.5 ppb (	A 8260B	(EPA 826	ss (MTBE,	ates (5 o)	, (1,2 D(	alocarbo	ganics F	ganics (	esel (EP	otor Oil (	etals (E	Metals (C	PA 245.	(EPA 2	ad (STL	EX, and !			72	hr	
Sample Designation	Date	Time	40 ml VO	Sleeve	Poly	Glass	2000	豆 모	HNO3	None		18/242	Water	Soil	Ī	MTBE @ 0.5 ppb (EPA 8260B)	BTEX (EPA 8260B)	TPH Gas (EPA 8260B)	5 Oxygenate	7 Oxygena	Lead Scar	Volatiie Ha	Volatile O	Volatile Or	TPH as Di	TPH as Motor Oil (EPA 8015M)	CAM 17 N	5 Waste Oil	Mercury (E	Total Lead (EPA 200.7 / 6010)	W.E.T. Lead (STLC)	трна, вт			1 v	vk	
VW-2-DAY 2	6/27/2011	1132				- 1	(						$\perp$	,	<u> </u>																	х				-	01
VW-2-END	6/28/2011	(1)	-	-		<u> </u> ;	4	-	L		<u> </u>	+	+	,	<u> </u>	-	_		_		_	_					_	_	_			×	-	_	_		2
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Distribution: White - Lab; Pink - Originator Rev: 061708



SAMPLE RECEIPT CHECKLIST

RECE	IVER
Init	ials

SRG#: //965	Date: 06 2-1 1/
Project ID: Space Acres	<del>5</del> 95
	e-counter Shipper
COC Inspection Is COC present? Custody seals on shipping container?	Yes No Intact Broken Not present N/A  Yes No Yes No Yes No Yes No Yes No Yes No Yes No Yes No Yes No Yes No Yes No
Is there sufficient sample to perform testing?  Does any sample contain product, have strong odor or are otherwise susp  Receipt Details  Matrix  Container type  # of container type  # of container type  # of container type	Yes         ⋈ No           Yes         ⋈ No           Yes, on COC         Not indicated           Yes         No           Yes         No           Yes         No           Yes         No           Yes         No
If Sample ID's are listed on both COC and containers, do they all match? Is the Project ID indicated: On COC On sample containers, do they all match? If project ID is listed on both COC and containers, do they all match? Are the sample collection dates indicated: On COC On sample collection dates are listed on both COC and containers, do they all match?	iner(s) On Both Not indicated  Yes No N/A  ple container(s) No N/A  ple container(s) No N/A  ple container(s) On Both Not indicated  tch? Yes No N/A  ple container(s) On Both Not indicated
,	

# **GROUNDWATER LEVEL DATA FORM**

PROJECT NAME: Shore Acres PROJECT NUMBER: GHA.19009
PROJECT MANAGER: mss TASK NUMBER:
SITE ADDRESS: 403 East 12th Street, Oakland, CA

WELL ID	TIME	DEPTH TO BOTTOM	DEPTH TO WATER	DEPTH TO PRODUCT	PRODUCT THICKNESS	PRODUCT THICKNESS X 0.8	COMMENTS
MW-1	8:49	19.96	11.69				
MW-2	8:45	20.03	11.98				
MVV-3	8:51	17.83	12-13	·			
MVV-4	8:46	18.89	11.89				
MW-5	8:52	18.80	12.09				
MW-6	8:48	19.92	11.69				
VW-1	8.50	18.75	12.09			<u> </u> - <del> </del>	
VW-2	8:47	1973	17.12				·
		· · · · · · · · · · · · · · · · · · ·					
-							
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FIELD TECHNICIAN:	Dur	
DATE:	12/11/11	

PROJECT NA PROJECT MA SITE ADDRE	ANAGER:	Shore Acres mss 403 East 12th	Street, Oaklar	Т	PROJECT NUM ASK NUMBE		GHA.19009		
	WELL ID:	MW-1			ТҮРЕ О	F WELL:	Monitoring		
WATER COL	Well De <sub>l</sub>	Total Depth: _ oth to Water: _ umn Length: _	11.69	\	WELL DIAME 2-inch: _ 4-inch: _ 6-inch: _	V	- - -		
	UME CALCU Water Colum 8.27 er Column Le	n Length x Mu	ltiplier x No. V O. 17 Multiplier		Purge Volume  3  No. Volumes	=	Purge Volume		
MULTIPLIEF	MULTIPLIER DATA:  Multiplier for Schedule 40 PVC; Gallons/Linear Foot Based on Casing Diameter:  2-inch: 0.17  4-inch: 0.65  6-inch: 1.5								
PURGE MET	Disp	oosable Bailer PVC Bailer ersible Pump Other		SAMPLE	<b>/IETHOD:</b> Dispos	able Baile Pump Othe	er D:		
TIME	VOLUME PURGED (gal)	рН	TEMP. (°C)	COND. (uS/cm)	DO (mg/l)	ORP (mV)	COMMENTS		
1023		6,90	18.6 18.5 18,6	777					
107,9	1.25	6,90	18,5	703 191					
1037	41	(C) (D)		Ŧ_V.					
						<u> </u>			
				-					
			<del> </del>						
						<u> </u>			

FIELD TECHNICIAN: \_ DATE: \_

PROJECT N PROJECT M SITE ADDRE	ANAGER:	Shore Acres mss 403 East 12th Street, Oakland, CA			PROJECT NU TASK NUMBI		GHA.19009
	WELL ID:	MV.	2		TYPE	OF WELL:	Monitoring
	LUMN DATA: Well Dep Water Col	ETER:	- - -				
PURGE VOL	UME CALCU Water Colum	LATION: ո Length x Mu	ıitiplier x No. ∖	/olumes = F	Purge Volume		11
	er Column Le	x _	0.17 Multiplier	x	3 No. Volumes	<b>=</b>	Purge Volume
MULTIPLIER	R DATA: Multiplier for S	Schedule 40 F 2-inch: 4-inch: 6-inch:	PVC; Gallons/l 0.17 0.65 1.5	inear Foot.	Based on Cas	sing Diame	ter:
PURGE ME	Disp	osable Bailer PVC Bailer ersible Pump Other		SAMPLE N	METHOD: Dispos	sable Baile Pump Other	
TIME	VOLUME PURGED (gal)	рН	TEMP. (°C)	COND. (uS/cm)	DO (mg/l)	ORP (mV)	COMMENTS
0941	1.5	6.90	1917	694		<u> </u>	
0945 0949	2,75	6,92	19,1	699	<u></u>	<del>                                     </del>	
0963	4	6,10	している	011		<del> </del>	
070 2				<del> </del>			
						<del> </del>	+
<u> </u>				-		<del>                                     </del>	
					<u> </u>	<u> </u>	

FIELD TECHNICIAN: \_\_\_\_\_ DATE: \_\_\_\_

PROJECT NA PROJECT MA SITE ADDRES	NAGER:	Shore Acres mss 403 East 12th	Street, Oaklar	7	PROJECT NUI ASK NUMBE	-	GHA.19009
	WELL ID:	MU-	3		TYPE O	F WELL:	Monitoring
WATER COL	Well De Water Co	Total Depth: _ pth to Water: _ lumn Length: _		١	WELL DIAME <sup>*</sup> 2-inch: _ 4-inch: _ 6-inch: _		
PURGE VOL	UME CALCU Vater Colum	JLATION: nn Length x Mu	ltiplier x No. V	olumes = P	urge Volume		
Wate	5.70 er Column Le	y ength	O.() Multiplier	х _	No. Volumes	=	Purge Volume
MULTIPLIER I	DATA: Multiplier for	Schedule 40 F 2-inch: 4-inch: 6-inch:	PVC; Gallons/L 0.17 0.65 1.5			ng Diame	ter:
PURGE MET	Dis	posable Bailer PVC Bailer nersible Pump Other		SAMPLE N		able Baile Pump Other	
TIME	VOLUME PURGED (gal)	рН	TEMP. (°C)	COND. (uS/cm)	DO (mg/l)	ORP (mV)	COMMENTS
10:25	1.D 2.0 3.0	6.84	18.0 18.1	946			ssuffet

FIELD TECHNICIAN:	me I
DATE:	ishi!

PROJECT NA PROJECT MA SITE ADDRE	ANAGER:	Shore Acres mss 403 East 12th Street, Oakland, CA			PROJECT NUI FASK NUMBE		GHA.19009
,	•	MU.	-		TYPE O	F WELL:	Monitoring
WATER COL	Well De <sub>l</sub>	Total Depth: _ oth to Water: _ umn Length: _	(feet) 17 8 9 11 8 9		WELL DIAME 2-inch: _ 4-inch: _ 6-inch: _		· 3 · 6 -
PURGE VOL	Water Colum	n Length x Mu			ourge Volume		<b>*</b> (
Wat	7-00 er Column Le	. × _ ngth	<i>O.(</i> ) Multiplier	х .	No. Volumes	=	Purge Volume
MULTIPLIER	R DATA: Multiplier for	Schedule 40 F 2-inch: 4-inch: 6-inch:	0.17 0.65 1.5	/	Based on Cas	ing Diame	eter:
PURGE MET	Disp	osable Bailer PVC Bailer ersible Pump Other		SAMPLE N			
TIME	VOLUME PURGED (gal)	рН	TEMP. (°C)	COND. (uS/cm)	DO (mg/l)	ORP (mV)	COMMENTS
প্রাণ	1.25	6,92	20,0	650			, , , , , , , , , , , , , , , , , , , ,
0913	2,5°	7.01	20,6	652			
3930	7,45						
		<del> </del>					
					<u> </u>	<u> </u>	

PROJECT NA PROJECT MA SITE ADDRE	ANAGER:	Shore Acres mss 403 East 12th	Street, Oakla	T		CT NUM IUMBEF		SHA.19009
	WELL ID:	ML	1.5	•	T	YPE O	= WELL: <u> </u>	Monitoring
WATER COL	Well De	Total Depth: _ pth to Water: _ lumn Length: _	(feet) 18-80 12-09 5-71	١	2 4	DIAMET -inch: -inch: -inch:	ER:	
PURGE VOL	UME CALCU	JLATION: n Length x Mu	ltiplier x No. V		urge V	olume	_	3
Wate	er Column Le	x _ ength	Multiplier	х _	No. Vo	<u>7</u> lumes	= .	Purge Volume
MULTIPLIER PURGE MET	Multiplier for F <b>HOD:</b> Disp Subm	Schedule 40 F 2-inch: 4-inch: 6-inch: posable Bailer PVC Bailer persible Pump Other	0.17 0.65 1.5	SAMPLE N	IETHO	D:	ng Diamet ble Bailer Pump: Other:	
TIME	VOLUME PURGED (gal)	рН	TEMP. (°C)	COND. (uS/cm)	DO	(mg/l)	ORP (mV)	COMMENTS
0900	C.	7/13	[9,3	909				
0904 0900	7.0	7.05	70.9	953				
2000	3,0	6.89	<del>~~, 7</del>	<u>  T                                 </u>				Saupla
0910								
				<u> </u>			<u> </u>	
	7.5							

FIELD TECHNICIAN: DATE:

PROJECT NAME: PROJECT MANAGER SITE ADDRESS:	Shore Acres mss 403 East 12th	Street, Oaklar	٦	PROJECT NUI TASK NUMBE	_	GHA.19009
WELL	. ID: <u>MW</u>	-6		TYPE O	F WELL:	Monitoring
	NTA: Well Total Depth: _ Depth to Water: _ r Column Length: _	(feet) 19.92 11-69 8.23	,	NELL DIAME  2-inch: 4-inch: 6-inch:		
PURGE VOLUME CA	LCULATION: olumn Length x Mu	ıltiplier x No. V	olumes = F	urge Volume		
Water Colum	3 x	Ocl 7 Multiplier	x	No. Volumes	= .	4-2 Purge Volume
MULTIPLIER DATA: Multiplie	r for Schedule 40 F 2-inch: 4-inch: 6-inch:	PVC; Gallons/L 0.17 0.65 1.5	inear Foot	Based on Casi	ng Diamet	er:
PURGE METHOD:	Disposable Bailer PVC Bailer ubmersible Pump Other		SAMPLE M	METHOD: Disposa	able Bailer Pump: Other:	
TIME PURG	ED pH	TEMP. (°C)	COND. (uS/cm)	DO (mg/l)	ORP (mV)	COMMENTS
1001 1.5 1005 3.0 1009 H.5 1014	6,88	(8,7 18,7 18,1	789 805 801			

FIELD TECHNICIAN: \_\_\_\_ DATE: \_\_\_

PROJECT NAME: PROJECT MANAGER: SITE ADDRESS:	Shore Acres mss 403 East 12th	Street, Oakla	•	PROJECT NUI TASK NUMBE		GHA.19009
WELL ID:	<u> VW-</u>	<u> </u>		ТҮРЕ О	F WELL:	Monitoring
De Water Co	I Total Depth: pth to Water: plumn Length: _	(feet) (3-75 (2-09 6-66		WELL DIAME <sup>-</sup> 2-inch: _ 4-inch: _ 6-inch: _	TER:	
PURGE VOLUME CALCI Water Colun	JLATION: nn Length x Mu	ultiplier x No. V	/olumes = F	urge Volume		_
Water Column Lo	_ x	Multiplier 0-65	X	3 No. Volumes 3	= =	Purge Volume 13.3
MULTIPLIER DATA:  Multiplier for	Schedule 40 F 2-inch: 4-inch: 6-inch:	PVC; Gallons/L 0.17 0.65 1.5	inear Foot	Based on Casi	ng Diame	ter:
	posable Bailer PVC Bailer nersible Pump Other		SAMPLE N		able Baile Pump Other	:
VOLUME TIME PURGED (gal)	рН	TEMP. (°C)	COND. (uS/cm)	DO (mg/l)	ORP (mV)	COMMENTS
DISTE T	679	19.6	1036			
10:05 10	6.80	19-6	122			
10:12	0.00	7,0	1017			556n/16.
(0)(/						
				N N		
	<del>                                     </del>					

FIELD TECHNICIAN: 12/11/11

PROJECT NAME: PROJECT MANAGER: SITE ADDRESS:	Shore Acres mss 403 East 12t	h Street, Oakla		PROJECT NÜ TASK NUMBE		GHA.19009
WELL ID	. V 4	1-2	) #5% - 10 - 10	TYPE C	F WELL:	: Monitoring
De	: I Total Depth: epth to Water: olumn Length:	12:12		WELL DIAME 2-inch: _ 4-inch: _ 6-inch: _	TER:	- - -
PURGE VOLUME CALC Water Colum		√. ultiplier x No.\	/olumes = i	Purge Volume		
Water Column L	_ x ength		X	No. Volumes	=	15.2 Purge Volume
MULTIPLIER DATA: Multiplier for	Schedule 40 2-inch: 4-inch: 6-inch:	0.65	Linear Foot			eter:
	oosable Bailer PVC Bailer nersible Pump Other		SAMPLE I		able Baile Pump Othei	):
VOLUME TIME PURGED (gal)	рН	TEMP.	COND. (uS/cm)	DO (mg/l)	ORP (mV)	COMMENTS
905 5.7	6.97	20.6	819			
9:15 10.4	6.90	20.4	₫ <b>₼</b> ₽			
9:25 160	6.27	20.3	789			
			•			Vision William
					<u> </u>	
				A. +5.	. 1.54	
FIELD TECHNICIAN						

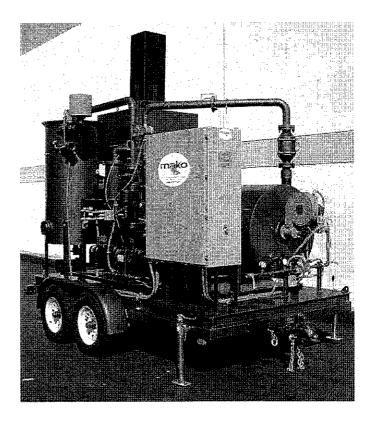


1280 N Red Gum Street Anaheim, CA 92806 • 714-632-1400

# 300 CFM Makotherm (HV) Thermal-Catalytic Oxidizer / High Vacuum System

#### Standard Features:

- · Small Footprint Skid Mounting
- · Entrained Liquid Separator
- · Dilution / Process Valves
- Stainless Steel Transfer Pump
- · Oil Sealed Liquid Ring Blower
- · Oil Cooler Assembly
- 20 Horsepower TEFC Motor
- · Sound Enclosure
- · Oxidizer Chamber
- · Excess Air Packaged Burner
- · Supplemental Fuel Train
- · Flame Arrestor
- Digital Temperature Controller
- Digital Dilution Controller
- Pitot Tube / Pressure Transmitter
- · Digital Chart Recorder



#### **Standard Options:**

Trailer Mounted System • Stainless Steel Heat Exchanger • Single Phase System Platinum Coated Catalyst Cell • Remote Telemetry • Totally Enclosed System UL Listed Electrical Enclosure E306379

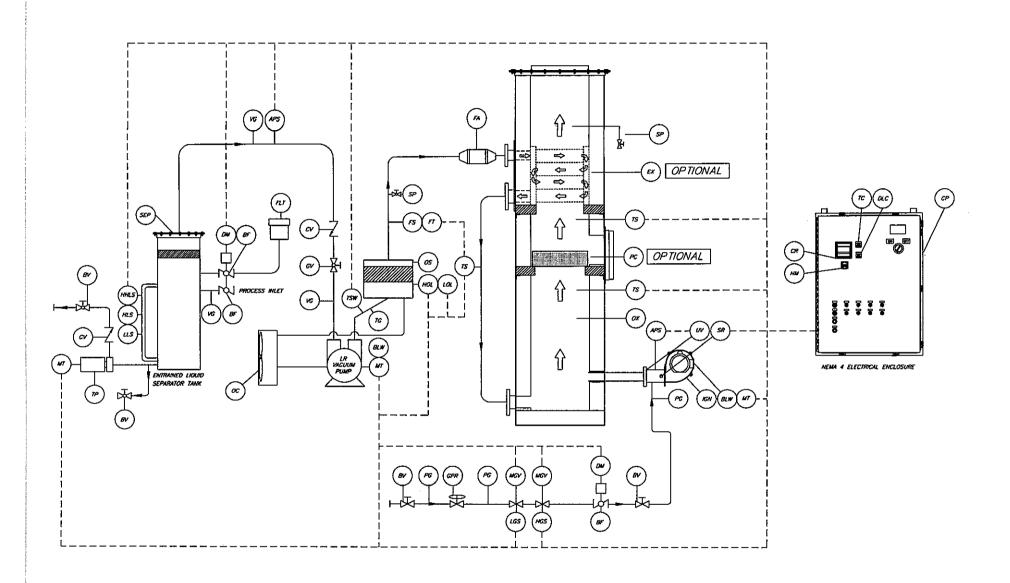
#### **Standard Performance Specifications:**

Skid Dimensions = 7' Width x 7' Length x 13' Height 3/16" Heavy Duty Steel Construction Throughout Electrical Requirement = 208/240 Volt/3 Phase/100 Amp Electrical Requirement = 208/240 Volt/1 Phase/150 Amp Fuel Requirement = LPG or Natural Gas / 5 PSI / 400SCFH

Process Flow = 300 CFM and up to 28" Hg. Vacuum

VOC Loading = 15,000 PPMV Maximum

Destruction Efficiency = 98%+



# **MAKO INDUSTRIES**

THERMAL - CATALYTIC OXIDIZER

PROCESS INSTRUMENTATION DRAWING

DATE: 9/15/08

FILE:

300 Makotherm.PID

300 CFM Makotherm (HV)

GHA. 19009 DPZ test 6-24-6-28

Messe Msgarkus ECG

					4.4.6.2	V			_			
Extraction Well (time)	Extraction Well Vo.	Temp.	Flowrate SCFM	Influent ppm	Well MW-Z	Well NV-4	Well NV-5	Well MU-6	Well MG-}	Well WW-3	Well Wu-2	W4 Tre
6/24 13:00	10.83			里子	10.75	10-65	(0-82	10.45	10.43	10-86	10.59	
20:15	23 5	1498/67	68	62	0	0	0.25	0	0	0	0	
23:15	23/5	150767	79	68	0	0	0.45	0	0	0	0	
6/25 6:15	2314	1518/68	135	135	0	6	0.55	6.03	0.02	0.62	0.01	
7:15	23/4	1520/64	7.5	128	6	D	0.55		0.02	0.02	0.0	,
8:15	2314	1521/65		156	_ 0	<u> </u>	0.55	0.03	0.03	0.02		60
9:15	2314	1523/65		147	0	0	0.60	0.04	6.03	0.04	0.02	
10:15	23/4	1292/17	70	171	0	0	0.75	0.05	0.03	0.05	002	-
11:15	2314	1527/66		175	0	0	0.85	0.06	0.03		0.02	74
12:15	2314	1534/67	88	158	0	0	6.85	0.07	0.03	0.05	0.02	
13:15	23/4	1535 68	230	165	0	0	0-85	0.08	0.03	0.05	0-02	81
13-,15				里子	11.83	11.73	13,88	14.18	14.91	15-44	11.51	8
14:15	2314	1535 70	217	171	0	0	0-85	008	0.03	0.05	0.03	-
				-left	site							- Ta
19:15				Syste	m of	+ upa	n arr	<del>                                     </del>				ر ر ا
]] 3	2314	1535 71	203	112	0	0	0.90	0.08	0.03	0-05	0.03	7
6126				left	site							
6:15	23/3	1559/67	33	272	0	0	0.90	0.07	0-03	0.05	0-03	

propose 925 595 9161 Couchy Instrat 530 753 1829 Patrick

111

Extraction Well (time)	Extraction Well Vacuum	Temp. °F	Flowrate SCFM	Influent ppm	Well MV-Z	Well Nw4	Well MW-5	Well WU-b	Well MU-(	Well MW-3	Well VW-2	Ta
6267:15	23/3	1568 63	181	281	0	0	0.90	0.06	0.01	0.05	0.03	
8:15	23/3	1549/63	33	272	0	0	0.90	0.06	0-01	0.05	0.03	
8:30	23 3			<b>V</b> _	12.18	12-06	14.24	14.44	15.12	15-65	12.24	48
It I	23 3	1598/64	52	278	Ô	0	0-90	0 065	0.01	0.05	0.03	
10:15	23/3	1598 85	50	285	0	0	1.0	0.07	0.0	0.05	0.03	
11:15	, ·	160165	128	265	0	0	1.0	0.07	0.01	0.05	0.03	
12:15		1602/65	43	213	0	0	1.0	0.07	0-01	0.05	003	
13:15	23/3	1604/165		193	0	0	1.0	0.07	601	0.05	0.03	
14:15	23/3	1611 66	41	173	0	0	1.0	0.67	6.01	0:05	003	
	23/3	1.3.1		Y	12-27	12-14	14.25	14.43	15-03	15-58	12.42	7
		<u></u>			<u>.</u>							
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72"

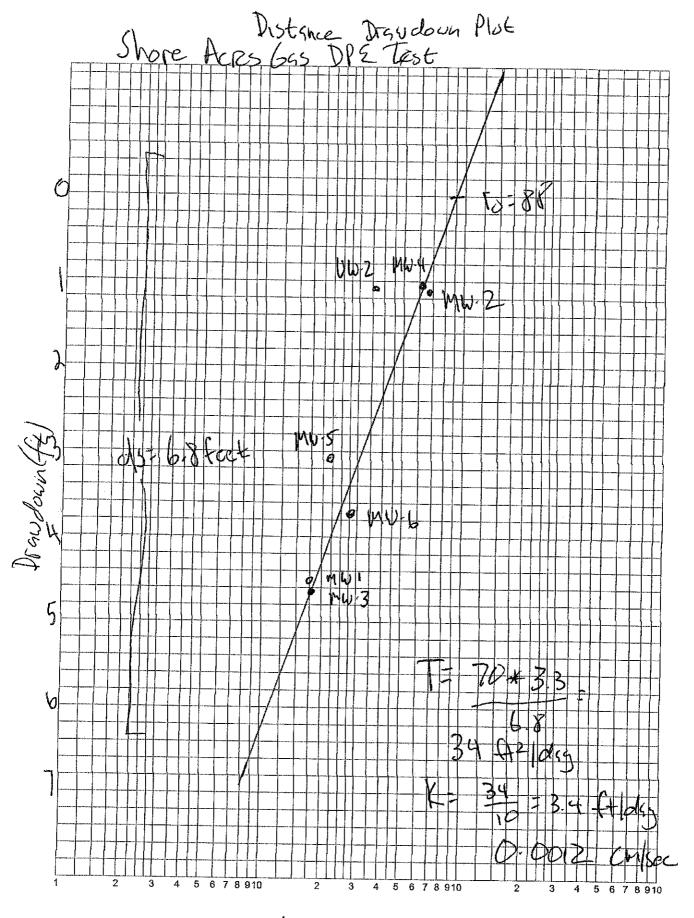
1/W-2

Extraction   Extraction   Well   Well   Well   Well   Well   Well   Well   Well   Well   Well   Well   Well   Wurs   MU-6   MU-1   MU-5   MU-6   MU-6   MU-1   MU-5   MU-6   MU	+ 72 + 80
46% per 15:00 24/12" 1698 61 130 396 0.01 0 0.4 + + + + 17:00 24 10 1741 62 140 326 0.07 0.085 0.55 + + + +	+ 80
17:00 24 10 1741 62 140 326 0.05 0.08 0.55 + + +	+ 80
17:00 24 10 1741 62 140 326 0.05 0.08 0.55 + + +	•
	•
	1 1 5
	= 700 this test
19:00 7410 133 145 397 0.07 0.0 0.75 + + +	+ 2'
127 1020 28 /8 15136 23 N/m 1990 0.03 0.0 0.85 L	
1130 26 13 1350 20 (552 0.03 0.0 0.00 1 1	
130 20/0 1490 20 1400 003 0.02 0.00 4 6 6	
1332 28 9 1638 35 0.03 0.02 0.05	-
1470 78 8 1552 30 1364 0.03 0.02 0.85	
1530 2019 154 29 1374 603 602 600	
428 0930 23/8 15/9 18 1772 0.01 0.01 0.55 0.01	-
1000 15.63 13.17 14.08 12.73 12.42 13.51	12,42
150 210 1703 26 1454 0.01 0.01 0.75 0.01 + E	<del>-   </del>
1130 2318 1706 21 1667 0.01 601 0.75 001 - 1	- n
120 21 1709 25 1609 603 003 1,0 001 F F	
177 23/10 1702 31 1514 0.01 0.01 0.01 1	

18,65 14.3 14.24 (F.62 1337-1330 4.18 1351 15.05 HIL 15,50 DS7 199 15.25 1354 1559 1355 15,01 1340 1401 HB1 1341 14,61 1313 Mrsi 14,42 1345

1347

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Distance (ff)

Time Drawdown Plot Shore Acres Gas DPE Test Drawdorn (4) 2 3 4 5 8 7 8 910 Time (minutes)