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#### 9:01 am, Jun 05, 2012

Alameda County Environmental Health Paulette Satterley 14601 Guadalupe Dr. Rancho Murieta, Ca 95683 Telephone 916-768-2003

May 25, 2012

Ms. Barbara Jakub Alameda County Environmental Health Services 1131 Harbor Bay Parkway, Suite 250 Alameda, CA 94502

Re: Fuel Leak Case No: RO0000133

Enclosed please find the 2012 First Semi-Annual Groundwater Monitoring Report dated 5-23-2012. This report was prepared by Taber Consultants of West Sacramento, California.

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

Sincerely,

Paulette Salerley

Paulette Satterley

# 2012 FIRST SEMI-ANNUAL MONITORING REPORT

Former City of Paris Cleaners 3516 Adeline Street Oakland, California 94608

#### USTCF Claim #002192

#### **Prepared For:**

Ms. Paulette Satterley 14601 Guadalupe Drive Rancho Murieta, CA 95683

#### **Prepared By:**

Taber Consultants 3911 West Capitol Avenue West Sacramento, CA 95691

Taber Project No. 2011-0107

May 23, 2012



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# 1.0 INTRODUCTION

### 1.1 **Project Description**

On behalf of Ms. Paulette Satterley, Taber Consultants has prepared this 2012 First Semi-Annual Monitoring Report for submittal to the San Francisco Bay Regional Water Quality Control Board (SFBRWQCB) and Alameda County Health Care Services Agency (ACHSA). The scope of work conducted during this project complies with existing SFBRWQCB and ACHSA directive letters.

### 1.2 Site Location and Description

The former City of Paris Cleaners, located at 3516 Adeline St., Oakland, CA, is a former dry cleaning, laundry and dyeing operation currently owned by Mrs. Debra Runyon. The site location is shown on Figure 1. A site plan is shown on Figure 2. The facility operated as City of Paris Cleaners and Dyers for about 40 years until the 1960's, but cleaning materials and tanks were not completely removed from the site until 1992. The site buildings remained vacant for a number of years following the closure of the dry cleaning operation, and then the owner converted them to residential and light commercial use.

The site lies at the southeastern corner of the intersection of 35th Street and Adeline Street at approximately 30 feet above mean sea level (amsl) in the northwest portion of the City of Oakland, California. The site buildings currently house on-site living quarters and City of Paris Studios, a workshop for art, art restoration, collectibles and hobbies. Mrs. Runyon acquired the property in July 2000.

#### 1.3 Chronological Site History and Subsurface Investigations

In 1987, Frank Champion, the owner at that time, applied for permits for remove Stoddard Solvent storage tanks at the site. Mr. Champion applied for five permits, obtaining permission to remove two 1000-gallon tanks, a 500-gallon tank, a 250-gallon tank and a 150-gallon tank. Underground storage tanks at the site were used to store Stoddard Solvent, the dry cleaning solvent used during operation of the dry cleaning facility until the 1960s when the facility was closed.

On October 4, 1990, Semco Company of San Mateo excavated and reported removing one 750-gallon and two 1,000-gallon underground tanks used to store Stoddard Solvent. Six soil samples were collected in conjunction with the UST removal.

On July 31 and August 1 and 2, 1991, Uriah Inc. (UES) performed a soil vapor survey at the site using photoionization technology (a Photovac TIP I) in an attempt to define the approximate boundaries of soil impacted by Stoddard Solvent. Soil vapors were found to be widely distributed across the site, but due to physical impediments posed by site structures, sidewalks, etc., the full extent of the impacted soil was not defined.



UES contracted W.A. Craig to over excavate the eastern portion of the tank pit on August 30, 1991. Approximately 44 cubic yards were excavated and placed in a cell for on-site bioremediation of the impacted soil. During over excavation, EUS reports that the contractor discovered an additional 250-gallon UST containing "a small volume of liquid" that was stored in a 55-gallon drum on site after removing an aliquot for analysis. This UST was removed and disposed by W. A. Craig on October 31, 1991. An additional 15 cubic yards was over excavated from the tank pit by W.A. Craig on January 27, 1992 and added to the on-site bioremediation cell.

On March 31, 1992, composite samples of the on-site bioremediated soil were analyzed to verify that sufficient hydrocarbon removal had occurred to reuse as fill on the site. No additional soils were excavated due to safety concerns regarding building foundation integrity; however soil samples were collected from the tank pit side walls. ACHCSA approved use of the bioremediated soil as backfill, and W. A. Craig backfilled the tank pit with bioremediated soil and clean fill on April 21, 1992.

On October 29 and 30, 1992, UES supervised on-site installation of ground water monitoring wells. Soils Exploration Services of Vacaville, California, installed three 30-foot monitoring wells. Initial depth to groundwater measurements in the wells ranged from 13 to 14 feet below grade. Beginning November 18, 1992, groundwater samples were analyzed for Total Petroleum Hydrocarbons as Stoddard Solvent (TPH-SS), TPH as diesel (TPH-D), TPH as gasoline (TPH-G), methyl tertiary butyl ether (MTBE), and benzene, toluene, ethyl benzene and total xylenes (BTEX). Samples from all three monitoring wells contained TPH-SS ranging from 630 parts per billion (ppb) in MW-2 to 11,000 ppb in MW-3. TPH-D, TPH-G, MTBE and BTEX concentrations were below laboratory detection limits.

On March 19, 1998, Dugan Associates of San Jose, California (Dugan) advanced six on and offsite soil borings to a total depth of 18 feet below grade. Five of the soil borings were advanced on the north side of 35th Street in the projected downgradient direction from the site (EB-2 through EB-6). One soil boring was advanced on-site to the northwest of the former UST location (EB-1). At each soil boring, Dugan collected a soil sample at 5, 10 and 15 feet below grade and one grab-groundwater sample at 18 feet below grade. The on-site soil boring (EB-1) groundwater sample concentration was 270,000 ppb TPH-SS, with one off-site groundwater sample (EB-5) reporting 780 ppb TPH-SS. Concentrations of analytes for all other groundwater samples from the soil borings were below laboratory detection limits. Soil samples at EB-1 contained 310 and 340 ppb of TPH-SS at 10 and 15 ft. below grade, respectively, and trace amounts of total xylenes and/or toluene.

In September, 1999, ACHSA issued a directive letter which required groundwater analysis for semi-volatile organics (SVOCs) and volatile organics (VOCs) historically associated with dry cleaning operations. In December 1999, using EPA method 625 and 3510, or 8270 and 3550, 1,2-dichlorobenzene (DCB), 1,1-dichloroethane (1,1 DCA), 2-methylnaphthalene and naphthalene were detected in samples from one or more wells. Concentrations of other SVOC and VOC analytes were below laboratory detection limits, including denser than aqueous phase



liquids (DNAPLs, i.e. pentachlorophenol (PCP)). At that time Dugan defined a north-trending groundwater gradient at 0.003 ft./ft.

In their September, 1999 letter, the ACHSA also noted that according to a database search they believed a 97-foot industrial well had been drilled at the site. The well was located southeast of Monitoring Well 3 (Figure 2).

In March 2002, in compliance with an ACHSA directive letter, WellTest, Inc. (formerly Dugan and Associates) redeveloped the three monitoring wells (by purging 10 well-volumes) and sampled the three wells pursuant to quarterly monitoring responsibilities. WellTest, Inc. also sampled the industrial well on-site. The analytical results of the sampling indicated up to 11,000 micrograms per liter ( $\mu$ g/L) of TPH-SS in the sample from MW-1, no BTEX above laboratory detection limits, up to 31  $\mu$ g/L MTBE in the sample from MW-3, 0.61  $\mu$ g/L DCB in the sample from MW-1, and 130  $\mu$ g/l Naphthalene in MW-1. The groundwater gradient was also defined to the southeast at 0.14 ft./ft., which appears to be an anomalously steep gradient for this site. This steep gradient may be a result of sediment blocking some or all of the screened section of one or more well. When Dugan redeveloped the wells in 2002, they appear to have adversely impacted the ability of the wells to adjust to changing water levels.

Taber Consultants, formerly Western Resource Management (WRM), assumed environmental consulting responsibilities for the site commencing in June 2007. Taber performed groundwater monitoring at the site for the first and second semi-annual periods of 2009. In response to a query by ACHSA, Taber submitted a well completion report request to the California Department of Water Resources, in which undated well boring logs for a well at the City of Paris Cleaners, at 3516 Adeline Street, indicated a 97-foot industrial well on the site. Taber also found well drilling information for another industrial well drilled in 1927 for the City of Paris Cleaners, drilled to 295 feet. The location of this well is unknown, and the well could have been covered by buildings constructed after the well was taken out of service.

July 28, 2009, ACHCSA advised Responsible Parties that The California State Water Resources Control Board (State Water Board) had approved Resolution No. 2009-0042, which reduced quarterly groundwater monitoring requirements to semiannual or less frequent monitoring at all sites. In 2009, Taber reduced monitoring at the City of Paris Cleaners site to two semi-annual monitoring events at the site in February and August. Corresponding reports were the First Semi-Annual and Second Semi-Annual Monitoring Reports.

In August of 2009 Taber Consultants evaluated using the HydraSleeve<sup>®</sup> no-purge sampling protocol at the site. With verbal authorization from Barbara Jakub of ACHCSA, on March 17, 2010, Taber Consultants implemented ongoing use of the HydraSleeve<sup>®</sup> sampling protocol for all wells at the site.

In March 2011 Taber Consultants resurveyed top of well casings during groundwater monitoring activities. In May 2011 Taber Consultants conducted site investigation activities which included: video well logging to evaluate well screen and casing condition; hydrogeology characterization using cone penetrometer testing (CPT), the GeoProbe® hydraulic profiling tool (CPT),



continuous push soil borings; assessing distribution of impacted soil by analyzing soil samples and grab groundwater samples; and assessing site groundwater chemistry by analyzing grab groundwater samples for natural attenuation parameters. The findings of the investigation are detailed in the *Site Investigation Report, Human Health Risk Assessment Report,* and *Natural Attenuation Analysis Report* dated February 1, 2012.

### 1.4 Zimmerman Residence Plume

A source of TPH-G, BTEX and MTBE has been identified at the adjacent property to the south and southeast of the City of Paris site. This site, referred to as the Zimmerman Residence, is located approximately 60 feet to the southwest and up-gradient/cross-gradient of the former City of Paris Cleaners site. The Zimmerman Residence property includes a residential building and a warehouse, and spans the distance from Adeline Street to Chestnut Street to the east.

On February 22, 2000, one 3,750-gallon gasoline UST was removed from the sidewalk between the warehouse building and Chestnut Street. The former UST location is approximately 220 feet southeast of the City of Paris site. Site investigations were conducted at the site in June 2006, October 2007, December 2007 and May 2008.

Soil and groundwater samples from the Zimmerman residence site contained TPH-G, TPH-D and BTEX. Maximum concentrations reported in groundwater samples from soil borings were 120,000 µg/L TPH-G (S-4), 12,000 TPH-D (SB-14), 10,000 µg/L benzene (SB-11), 930 µg/L toluene (pit water), 3,500 µg/L ethyl-benzene (S-4), and 7,900 µg/L xylenes (SB-11), respectively. Grab groundwater samples taken in May 2008 had concentrations of 740 µg/L TPH-G in soil boring SB-27 (east of the industrial well W-IND at the site), 3,600 µg/L TPH-G in soil boring SB-25 (on the southeast corner of the site), and 2,300 µg/L TPH-G in soil boring SB-26 (south of the monitoring wells at the site).

At the Zimmerman site, approximately 1,100 tons of gasoline-impacted soil was removed from the warehouse interior adjacent to Chestnut Street in March 2009. During soil removal, AEI Consultants (AEI), the environmental consultant for this project, reported that while no groundwater was collected from the excavation during excavation activities, a light sheen of free product was seen on the water seeping into the pit during excavation. In March, 2009, AEI injected hydrogen peroxide into the permeable bridge they had installed in the backfill area as a measure to treat the free product and to mitigate plume migration from the source. An injection well was installed in the tank excavation area at the Zimmerman residence in May 2009 to aerate impacted groundwater.

Correspondence from Alameda County dated December 29, 2008, notes that sorbed-phase soil concentrations of petroleum hydrocarbons further than 100 feet from the tank on Chestnut Street indicated an additional source was likely at the site.

Seven groundwater monitoring wells (MW-1 through MW-7) and one injection well (IW-1) are at the Zimmerman Residence site. Groundwater monitoring has being ongoing since April 2009. Based on the *First Semi-Annual Groundwater Monitoring* report dated September 30, 2011 by AEI Consultants Environmental & Engineering Services, elevated TPH-G and benzene



concentrations have been detected in groundwater samples. The highest TPH-G and benzene concentrations indicated in the report were 27,000  $\mu$ g/L (May 5, 2011 sample from MW-2) and 3,800  $\mu$ g/L (August 27, 2009 sample from MW-3), respectively. The closest well to the former City of Paris site is MW-4 located approximately 60 feet southeast. Concentrations in MW-4 groundwater samples collected on May 5, 2011 were 5,900  $\mu$ g/L TPH-G and 560  $\mu$ g/L benzene. MTBE concentration have not been reported because of elevated reporting limits ranging from 5 and 1,200  $\mu$ g/L; resulting in a lack of meaningful data regarding MTBE concentrations in groundwater at the Zimmerman Residence site.



### 2.0 GROUNDWATER MONITORING ACTIVITIES AND RESULTS

On February 22, 2012, Taber Consultants visited the site to measure water levels and collect groundwater samples from monitoring wells MW-1 through MW-3 and the industrial well W-IND.

#### 2.1 Groundwater Elevation Measurements

Depth-to-groundwater was measured in wells MW-1, MW-2, MW-3 and W-IND using a water level meter capable of measurements to within 0.01 foot. Depth to groundwater was 11.35, 10.61, 10.84, and 11.84 feet below top of casing (BTOC) in MW-1, MW-2, MW-3 and W-IND, respectively. Depth to groundwater data were converted to groundwater elevations referenced to feet above mean sea level (amsl). Corresponding groundwater elevations were 19.95, 20.42, 20.29, and 20.64 feet amsl.

### 2.2 Groundwater Sampling and Analysis

Following groundwater level measurements, the four wells were sampled in accordance with the HydraSleeve<sup>®</sup> no-purge sampling protocol. The HydraSleeve<sup>®</sup> was lowered into the well, water levels were allowed to equilibrate, and then a representative sample from the groundwater was collected using the HydraSleeve<sup>®</sup> as it was carefully retrieved from the well. Taber Consultants then transferred the sample from the HydraSleeve<sup>®</sup> into the laboratory-supplied containers. The samples were transported in an iced cooler with chain-of-custody documentation to Sparger Technology, Inc. (Sparger), of Rancho Cordova, California, a state certified analytical laboratory (ELAP Certification #1614).

The groundwater samples were analyzed for TPH-SS and TPH-G by EPA Method 8015B; and BTEX and MTBE by EPA Method 8260B.

#### 2.3 Analytical Results

TPH-SS was detected in the groundwater samples from monitoring wells MW-1, MW-2 and MW-3 at concentrations of 5,000  $\mu$ g/L, 400  $\mu$ g/L and 2,000  $\mu$ g/L, respectively. TPH-G, which has the laboratory note "Non-typical TPH pattern present in gas range," was detected in the groundwater samples from monitoring wells MW-1, MW-2 and MW-3 at concentrations of 4,200  $\mu$ g/L, 250  $\mu$ g/L, and 1,900  $\mu$ g/L, respectively. No MTBE or BTEX was detected at or above the laboratory reporting limits in the monitoring well samples. No analytes were detected at or above the laboratory reporting limits in well W-IND.

Groundwater elevations based on the February 22, 2012, water level measurements in the wells are shown on Figure 3. The Laboratory analytical results are shown on Figure 4 and summarized in Table 1. A historical summary of groundwater elevations and analytical results for the wells is included in Table 2. Trend graphs of concentrations of TPH-SS, TPH-G and groundwater elevations for MW-1, MW-2, and MW-3 are shown on Charts 1, 2 and 3. The field



data sheets are included in Appendix A. The laboratory analytical reports and chain-of-custody documentation are included in Appendix B.

### 2.4 Schedule of Upcoming Activities

An *Additional Site Investigation Work Plan* to investigate the western boundary of the plume and conduct a geophysical study has been prepared and will be submitted to ACHSA concurrently with this monitoring report. A work plan to conduct remediation pilot testing at the site will be prepared and submitted in July, 2012. The second semi-annual groundwater monitoring event is scheduled for August 2012.



### 3.0 CONCLUSIONS AND RECOMMENDATIONS

The groundwater elevation contours and flow direction for the first semi-annual 2012 was not assessed because of the close spacing of the monitoring wells at the site and historical results indicating that groundwater flow direction beneath the site is not consistent with other sites in the general area conducting environmental groundwater monitoring. Based on monitoring results of wells in the upper groundwater zone at four nearby UST release sites, groundwater in the area flows west-southwest. Three of the sites are to the east and up-gradient of the subject site; Shell Gas Station at 3420 San Pablo Avenue, Thrifty Gas Station at 3400 San Pablo Avenue, and the Zimmerman Residence at 3442 Adeline Street (closest and adjacent to the site). The fourth site is to the north-northwest and cross-gradient to up-gradient of the subject site; Ambassador Laundry at 3623 Adeline Street.

During the May 2011 Site Investigation, the boundaries of the TPH-SS plume were reasonably defined to the east, north and south, however the non-detect boundary on the western edge of the site was not defined. Taber Consultants will prepare a work plan in May 2012 to advance at three additional borings in the Adeline Street area east of the source area to determine the western plume boundary as directed in the ACHSA directive dated April 10, 2012.

The California Department of Health Services (DHS) and the EPA have established Maximum Contaminant Levels (MCLs) for certain chemicals as part of drinking water standards. The MCLs are numerical limits that are used by the RWQCB as water quality goals. MCLs have not been established for middle distillates like TPH-SS, however there is a taste and odor threshold used for comparison as described below. MCLs have been established for benzene (1  $\mu$ g/L), toluene (150  $\mu$ g/L), ethyl-benzene (300  $\mu$ g/L), xylenes (1,750  $\mu$ g/L) and MTBE (13  $\mu$ g/L).

The TPH taste and odor threshold of 100  $\mu$ g/L is used by the San Francisco Bay RWQCB as an environmental screening level (ESL) for middle distillates. Concentrations of TPH-SS in MW-1, MW-2 and MW-3 groundwater samples exceed the TPH screening level. Historically, the concentrations of TPH-SS at the site have also exceeded the groundwater nuisance and odor concerns screening level of 5,000  $\mu$ g/L for TPH. MTBE concentrations have been below the MCL in groundwater from MW-1 and MW-2 and occasionally above the MCL in MW-3. The concentrations over time have fluctuated seasonally, however, since 2007 there appears to be a consistent decreasing trend in groundwater sample concentrations.

Because the TPH-SS concentrations within the plume do not appear to be attenuating at a sufficient rate to meet water quality objectives within a reasonable period of time, Taber Consultants recommends performing a remedial action pilot test at the site to evaluate the potential to reduce TPH-SS concentrations at the site. Taber Consultants will prepare the work plan for interim remedial activity during the third quarter of 2012 as directed in the ACHSA directive dated April 10, 2012.



#### 4.0 REPORT DISTRIBUTION

Ms. Paulette Satterley 14601 Guadalupe Drive Rancho Murieta, CA 95683

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Ms. Barbara Jakub Alameda County Health Care Services Agency 1131 Harbor Parkway, Suite 250 Alameda CA, 94502

Ms. Cherie McCaulou San Francisco Bay Regional Water Quality Control Board 1515 Clay St., Suite 1400 Oakland, CA 94612



#### 5.0 REMARKS AND SIGNATURE

The interpretations and/or conclusions contained in this report represent our professional opinions and are based in part on information supplied by the client. These opinions are based on currently available information and were developed in accordance with currently accepted geologic, hydrogeologic, and engineering practices in Alameda County, California in 2012. Other than this, no warranty is implied or intended.

This report has been prepared solely for the use of Ms. Paulette Satterley. Any reliance on this report by third parties shall be at such parties' sole risk. The work described herein was performed under the direct supervision of the professional geologist, registered with the State of California, whose signature appears below.

We appreciate the opportunity to provide you with geologic, engineering and environmental consulting services and trust this report meets your needs. If you have any questions or concerns, please call us at (916) 371-1690.

Sincerely,

Taber Consultants

Ellen Pyatt, MSc. Project Geologist

Mrs & Bath

Thomas E. Ballard, P.G. #7299, C.H.G. #961 Principal Hydrogeologist



FIGURES





**ADELINE STREET** 





Oakland, California

Groundwater Analytical Summary

April 2012

Figure 4

2011-0107

<50 -Total petroleum hydrocarbons as gasoline in µg/l

< 0.5 Methyl tertiary-butyl ether in µg/l

**ADELINE STREET** 

В

MTBE

Groundwater Monitoring Data from February 22, 2012

TABLES

#### TABLE 1 2012 FIRST SEMI-ANNUAL GROUNDWATER ELEVATION AND ANALYTICAL RESULTS

#### City of Paris Cleaners 3516 Adeline Street, Oakland, California 94608

		El	evation Su	mmary	Analytical Summary						
Well ID	Date	Top of Casing Elevation (feet amsl)	Depth to Water (feet BTOC)	Groundwater Elevation (feet amsl)	TPH-SS	TPH-G	Benzene	Toluene (ug/l)	Ethyl benzene	Xylenes	MTBE
MW-1	02/22/12	31.30	11.35	19.95	5000	4200	<100	<100	<100	<100	<50
MW-2	02/22/12	31.03	10.61	20.42	400	250	<1.0	<1.0	<1.0	<1.0	<0.50
MW-3	02/22/12	31.13	10.84	20.29	2000	1900	<10	<10	<10	<10	<5.0
W-IND	02/22/12	32.48	11.84	20.64	<50	<50	<1.0	<1.0	<1.0	<1.0	<0.50

#### Explanation:

TPH-G = Total petroleum hydrocarbons as gasoline, analyzed by EPA Method 8015B. TPH-SS = Total petroleum hydrocarbons as stoddard solvent, analyzed by the 8015B. Benzene, toluene, ethylbenzene, and total xylenes analyzed by EPA Method 8260B. MTBE = Methyl tertiary-butyl ether, analyzed by EPA Method 8260B.

amsl = Above mean sea level. BTOC = Below top of casing.

ug/I = Micrograms per liter.

<1.0 = Not detected at or above indicated laboratory reporting limit.

On March 17, 2010, Taber Consultants implemented the HydraSleeve® no purge protocol for all wells. On March 23, 2011, Taber Consultants resurveyed top of casing elevations for all wells.

### TABLE 2 **GROUNDWATER ELEVATION AND ANALYTICAL RESULTS** SUMMARY City of Paris Cleaners 3516 Adeline Street, Oakland, California 94608

		Ele	evation Su	immary					Α	nalytical S	Summary				
Well ID	Date	Top of Casing Elevation (feet amsl)	Depth to Water (feet BTOC)	Groundwater Elevation (feet amsl)	TPH-SS	TPH-G	Benzene	Toluene	Ethyl benzene	Xylenes (ug/	MTBE	1,2-DCB	1,1-DCA	2-Methyl- Naphthalene	Naphthalene
Groundwa	ater Sample	Locations													
EB1-18	03/19/98	18' bgs (	Groundwater	Grab Sample	270000		<5.0	93	66	1700	<100				
EB2-18	03/19/98	18' bgs (	Groundwater	Grab Sample	<1.0		<0.5	<0.5	<0.5	<0.5	<5.0				
EB3-18	03/19/98	18' bgs (	Groundwater	Grab Sample	<1.0		<0.5	<0.5	<0.5	<0.5	<5.0				
EB4-18	03/19/98	18' bgs (	Groundwater	Grab Sample	<1.0		<0.5	<0.5	<0.5	<0.5	<5.0				
EB5-18	03/19/98	18' bgs (	Groundwater	Grab Sample	780		<0.5	<0.5	<0.5	2	<5.0				
EB6-18	03/19/98	18' bgs (	Groundwater	Grab Sample	<1.0		<0.5	<0.5	<0.5	<0.5	<5.0				
MW-1	11/18/92	17.44	13.99	3.45	1800	NA	<0.5	<0.5	<0.5	<0.5	NA				
MW-1	11/4/1993	17.44	16.79	0.65	2000	<50	<0.5	<0.5	<0.5	<0.5	NA				
MW-1	3/8/1994	17.44	14.14	3.3	150	NA	35	40	72	120	NA				
MW-1	8/2/1994	17.44	13.18	4.26	2100	<50	<0.5	<0.5	<0.5	<0.5	NA				
MW-1	2/8/1995	17.44	10.92	6.52	620	<50	< 0.5	< 0.5	< 0.5	< 0.5	NA				
MW-1**	7/8/1996	17.44	11.62	5.82	37000	110000	1.6	<0.5	< 0.5	74	7.9				
MVV-1	10/9/1996	17.44	14.11	3.33	42000	NA	<0.5	5	< 0.5	<0.5	NA				
MVV-1	3/18/1997	17.44	12.37	5.07	2600	NA	<0.5	1.5	1.5	9.6	< 6.0				
MVV-1	6/19/1997	17.44	13.26	4.18	660	NA	<0.5	< 0.5	1.2	0.71	< 5.0				
MVV-1	11/14/1997	17.44	11.45	5.99	10000	NA	<0.5	< 0.5	110	1.2	<5.0				
	12/15/1999	17.44	11.31	6.13	<20	<50	<0.5	<0.5	<0.5	<0.5	NA 15 0	<0.5	0.59	<0.5	<0.5
	03/22/02	17.44	8.97	8.47	11000						<5.0				130
	04/15/03	17.44	9.23	8.21	3900		<2.5	<2.5	<2.5	<b>3</b>	9 <500				
V VV -	03/20/04	17.44	10.52	7.1Z 5.01	2000	24000	<0.5	<0.5	<0.5	<50 27	<500 <5				
V VV = 1	09/30/04	17.44	12.62	2.91	15000	2000	<0.5 0	<0.5	<0.5	2.1	<50				
V VV = 1 N/(N/ 1	11/20/07	17.44	12.05	3.01	15000	11000	L.	<0	<0	15	<50				
$M/\Lambda/_1$	12/20/07	17.44	11 51	5.49	45000	110000	20	50	20	100	<5				
$M/\Lambda/_1$	05/23/08	17.44	1/ 1/	3.30	4200	<500	<1	<1	<1	20	<0.50				
$M/\Lambda/_1$	03/23/08	17.44	13 78	3.6	4200	12000	<1	<1	<1	<1	<0.50				
$M/\Lambda/_1$	12/18/08	17 44	10.70	6 73	9900	2700	<1	<1	<1	<1	<0.50				
M/V = 1	02/19/09	17 44	8 91	8 53	500	3100	<10	<10	<10	<10	<5				
MW-1	08/11/09	17 44	13 35	4 09	13000	7800	<10	<10	<10	<10	5.9				
MW-1 NP	08/11/09	17.44	13.35	4.09	6000	10000	<10	<10	<10	<10	<5				

### TABLE 2 **GROUNDWATER ELEVATION AND ANALYTICAL RESULTS** SUMMARY City of Paris Cleaners 3516 Adeline Street, Oakland, California 94608

		Ele	evation Su	mmary					A	nalytical S	Summary				
		Top of Casing	Denth to	Groundwater					Ethyl					2-Methyl-	
Well ID	Date	Elevation	Water	Elevation	TPH-SS	TPH-G	Benzene	Toluene	benzene	Xvlenes	MTBE	1 2-DCB	1 1-DCA	Naphthalene	Naphthalene
	Duto	(feet amsl)	(feet BTOC)	(feet amsl)			Denzenie	l'oluollo	DONZONO	(ua/	l)	1,2 000	1,1 2071	rapitalono	rapititatorio
MW-1	03/17/10	17 44	9.31	8 13	4000	12000	<20	<20	<20	20	<u>,</u> <10				
MW-1	08/18/10	17.44	12.65	4.79	2000	6900	<100	<100	<100	<100	<50				
MW-1	03/23/11	31.30	6.75	24.55	8800	8100	<10	<10	<10	<10	<5				
MW-1 <sup>a</sup>	08/25/11	31.30	11.35	19.95	2100	7200	<1	<1	<1	<1	21				
MW-1	02/22/12	31.30	11.35	19.00	5000	4200	<100	<100	<100	<100	<50				
	02/22/12	01.00	11.00	10.00	0000	4200	100	100	100	100	-00				
MW-2	11/18/92	17.31	13.18	4.13	630	NA	<0.5	<0.5	<0.5	<0.5	NA				
MW-2	11/04/93	17.31	14.84	2.47	3200	<50	<0.5	<0.5	<0.5	<0.5	NA				
MW-2	03/08/94	17.31	11.5	5.81	45	NA	1.4	2	11	19	NA				
MW-2	08/02/94	17.31	13.14	4.17	170	<50	<0.5	<0.5	<0.5	<0.5	NA				
MW-2	02/08/95	17.31	8.18	9.13	570	<50	<0.5	<0.5	<0.5	<0.5	NA				
MW-2**	07/08/96	17.31	11.06	6.25	1800	2800	<0.5	2.6	15	24	6.3				
MW-2	10/09/96	17.31	12.38	4.93	4100	NA	<0.5	0.57	<0.5	<0.5	NA				
MW-2	03/18/97	17.31	10.61	6.7	240	<0.5	0.57	<0.5	<0.5	5.3	NA				
MW-2	06/19/97	17.31	11.68	5.63	2500	NA	<0.5	<0.5	9.1	<0.5	<5.0				
MW-2	11/14/97	17.31	10.61	6.7	130	NA	<0.5	<0.5	0.9	1.2	<5.0				
MW-2	12/15/99	17.31	10.97	6.34	<20	<50	<0.5	<0.5	<0.5	<0.5	NA	<0.5	0.53	<0.5	49
MW-2	03/22/02	17.31	8.82	8.49	170	13000	410	1000	210	1100	<5.0				<10
MW-2	04/15/03	17.31	8.52	8.79	99		<0.5	<0.5	<0.5	0.76	10				
MW-2	03/26/04	17.31	9.32	7.99	120	93	<0.5	<0.5	<0.5	0.76	5.4				
MW-2	09/30/04	17.31	11.62	5.69	<50	<50	<0.5	<0.5	<0.5	<0.5	<5				
MW-2	09/09/05	17.31	12.75	4.56	120	98	<0.5	<0.5	<0.5	<0.5	<5				
MW-2	11/30/07	17.31	11.06	6.25											
MW-2	12/20/07	17.31	9.95	7.36	<50	3000	<1	1.6	<1	2.4	2.9				
MW-2	05/23/08	17.31	12.46	4.85	300	1100	<1	<1	<1	<1	3.5				
MW-2	08/12/08	17.31	12.08	5.23	2200	350	<1	<1	<1	<1	<0.50				
MW-2	12/18/08	17.31	10.58	6.73	300	<50	<1	<1	<1	<1	7.3				
MW-2	02/19/09	17.31	8.22	9.09	300	300	<1	<1	<1	<1	3.4				
MW-2	08/11/09	17.31	13.00	4.31	600	610	<1	<1	<1	<1	3.8				
MW-2	03/17/10	17.31	8.95	8.36	<50	<50	<1	<1	<1	<1	1.8				
MW-2	08/18/10	17.31	12.15	5.16	<50.0	70	<1.0	<1.0	<1.0	<1.0	2.4				
MW-2	03/23/11	31.03	6.22	24.81	200	<50	<1.0	<1.0	<1.0	<1.0	3.6				
MW-2	08/25/11	31.03	11.06	19.97	<50	<50	<1.0	<1.0	<1.0	<1.0	1.5				
MW-2	02/22/12	31.03	10.61	20.42	400	250	<1.0	<1.0	<1.0	<1.0	<0.50				

### TABLE 2 **GROUNDWATER ELEVATION AND ANALYTICAL RESULTS** SUMMARY City of Paris Cleaners 3516 Adeline Street, Oakland, California 94608

		Ele	evation Su	mmary					Α	nalytical S	Summary				
		Top of Casing	Depth to	Groundwater					Ethyl					2-Methyl-	
Well ID	Date	Elevation	Water	Elevation	TPH-SS	TPH-G	Benzene	Toluene	benzene	Xylenes	MTBE	1,2-DCB	1,1-DCA	Naphthalene	Naphthalene
		(feet amsl)	(feet BTOC)	(feet amsl)						(ug/	1)				
MW-3	11/18/92	17.44	13.93	3.51	11000	NA	<0.5	<0.5	<0.5	<0.5	NA				
MW-3	11/04/93	17.44	15.16	2.28	320	<50	<0.5	<0.5	<0.5	<0.5	NA				
MW-3	03/08/94	17.44	13.43	4.01	45	NA	0.8	0.9	5	10	NA				
MW-3	08/02/94	17.44	12.82	4.62	<20	<50	<0.5	<0.5	<0.5	<0.5	NA				
MW-3	02/08/95	17.44	7.62	9.82	<20	<50	<0.5	<0.5	<0.5	<0.5	NA				
MW-3**	07/08/96	17.44	10.97	6.47	2500	2200	1	<0.5	8.8	8	10				
MW-3	10/09/96	17.44	11.84	5.6	2600	NA	<0.5	<0.5	<0.5	<0.5	NA				
MW-3	03/18/97	17.44	10.16	7.28	2500	NA	<0.5	0.61	0.63	5.2	NA				
MW-3	06/19/97	17.44	11.40	6.04	21000	NA	<0.5	<0.5	11	<0.5	<5.0				
MW-3	11/14/97	17.44	10.71	6.73	1,400	NA	<0.5	<0.5	28	28	<5.0				
MW-3	12/15/99	17.44	10.96	6.48	<20	<50	<0.5	<0.5	<0.5	<0.5	NA	0.87	0.57	25	88
MW-3	03/22/02	17.44	10.97	6.47	420	<50	<0.5	<0.5	<0.5	<0.5	31				<50
MW-3	04/15/03	17.44	8.31	9.13	2700		<0.5	<0.5	<0.5	<0.5	40				
MW-3	03/26/04	17.44	8.61	8.83	2700	1900	<1.7	<1.7	<1.7	4.3	<17				
MW-3	09/30/04	17.44	11.1	6.34	3900	2600	<0.5	<0.5	<0.5	3.2	<10				
MW-3	09/09/05	17.44	13.75	3.69	4000	2600	<0.5	<0.5	0.57	2.7	12				
MW-3	11/30/07	17.44	13.9	3.54											
MW-3	12/20/07	17.44	10.79	6.65	18000	12000	<1	1.6	1.1	2.4	9.2				
MW-3	05/23/08	17.44	15.2	2.24	900	3000	<1	<1	<1	<1	9.1				
MW-3	08/12/08	17.44	14.14	3.3	1900	4300	<1	<1	<1	<1	6.5				
MW-3	12/18/08	17.44	12.53	4.91	5000	610	<1	1	<1	<1	20				
MW-3	02/19/09	17.44	11.11	6.33	1500	1300	<1	1	<1	<1	9				
MW-3	08/11/09	17.44	15.22	2.22	1000	2200	<10	<10	<10	<10	7.3				
MW-3 NP	08/11/09	17.44	15.22	2.22	3000	6700	<10	<10	<10	<10	<5				
MW-3	03/17/10	17.44	11.94	5.5	3000	4600	<10	<10	<10	<10	9.4				
MW-3	08/18/10	17.44	12.86	4.58	1000	3500	<50	<50	<50	<50	<25				
MW-3 <sup>a</sup>	03/23/11	31.13	3.58	27.55	500	<50	<1.0	<1.0	<1.0	<1.0	<0.50				
MW-3	08/25/11	31.13	11.85	19.28	<50	2300	<1.0	<1.0	<1.0	<1.0	4.5				
MW-3	02/22/12	31 13	10.84	20.29	2000	1900	<10	<10	<10	<10	<5.0				
	02/22/12	01110	10.01	20.20			10		10	10	0.0				
W-IND	03/22/02	NA			<50	190	<0.5	<0.5	<0.5	0.8	<5.0				
W-IND	04/15/03	NA													
W-IND	03/26/04	NA			500	200	< 0.5	<0.5	< 0.5	< 0.5	<5				
W-IND	09/30/04	NA			<50	<50	< 0.5	< 0.5	< 0.5	< 0.5	<5				
W-IND W-IND	03/26/04 09/30/04	NA NA			<b>500</b> <50	<b>200</b> <50	<0.5 <0.5	<0.5 <0.5	<0.5 <0.5	<0.5 <0.5	<5 <5				

#### TABLE 2 GROUNDWATER ELEVATION AND ANALYTICAL RESULTS SUMMARY City of Paris Cleaners

3516 Adeline Street, Oakland, California 94608

		Ele	evation Su	mmary		Analytical Summary									
		Top of Casing	Depth to	Groundwater					Ethyl					2-Methyl-	
Well ID	Date	Elevation	Water	Elevation	TPH-SS	TPH-G	Benzene	Toluene	benzene	Xylenes	MTBE	1,2-DCB	1,1-DCA	Naphthalene	Naphthalene
		(feet amsl)	(feet BTOC)	(feet amsl)						(ug/l	)				
W-IND	09/09/05	NA			<50	<50	<0.5	<0.5	<0.5	<0.5	<5				
W-IND	11/30/07	NA	12.92												
W-IND	12/20/07	NA	11.68		<50	500	<1	1	<1	2.2	<.50				
W-IND	05/23/08	NA	12.72		300	250	<1	3.7	<1	2.4	<0.50				
W-IND	08/12/08	NA	13.42		<50	<50.0	<1	<1	<1	<1	<0.50				
W-IND	12/18/08	NA	12.65		<50	<50	<1	<1	<1	<1	0.7				
W-IND	02/19/09	NA	9.74		<50	<50	<1	<1	<1	<1	<0.5				
W-IND	08/11/09	NA	14.13		<50	<50	<1	<1	<1	<1	<0.5				
W-IND	03/17/10	NA	9.78		<50	<50	<1	<1	<1	<1	<0.5				
W-IND	08/18/10	NA	12.84		<50	<50	<1.0	<1.0	<1.0	<1.0	<0.50				
W-IND	03/23/11	32.48	8.32	24.16	<50	<50	<1.0	<1.0	<1.0	<1.0	<0.50				
W-IND	08/25/11	32.48	12.34	20.14	<50	<50	<1.0	<1.0	<1.0	<1.0	<0.50				
W-IND	02/22/12	32.48	11.84	20.64	<50	<50	<1.0	<1.0	<1.0	<1.0	<0.50				

#### **Explanation:**

TPH-G = Total petroleum hydrocarbons as gasoline, analyzed by EPA Method 8015B. TPH-SS = Total petroleum hydrocarbons as stoddard solvent, analyzed by the 8015B. Benzene, toluene, ethylbenzene, and total xylenes analyzed by EPA Method 8260B. MTBE = Methyl tertiary-butyl ether, analyzed by EPA Method 8260B.

amsl = Above mean sea level. BTOC = Below top of casing.

ug/I - Micrograms per liter.

<1.0 = Not detected at or above indicated laboratory reporting limit. -- = not analyzed

NA = Data not available •• Components found in the gasoline range, however they are not characteristic of gasoline components.

NP = HydraSleeve® no purge protocol

On March 17, 2010, Taber Consultants implemented the HydraSleeve  $\ensuremath{\mathbb{B}}$  no purge protocol for all wells.

On March 23, 2011, Taber Consultants resurveyed top of casing elevations for all wells.

MW-3<sup>a</sup> During the 3/23/11 monitoring event, Taber Consultants replaced a damaged well cap. See First Semiannual Monitoring Report 2011 for discussion.

CHARTS







APPENDICES

## APPENDIX A FIELD DATA SHEETS

# Taber Consultants Groundwater/Liquid Level Data (Measurements in Feet)

Project Address:

City of Paris Cleaners 3516 Adeline Street Oakland, CA.

- PC

22/12 Date:

Project: 2011-107

Recorded by:

Well No.	Time	Depth to Groundwater	Measured Total Depth	Sleeve Deployment Time	Sample Time	Comments
<b>MW-1</b>	08135	11.35	29,80	OB : 40	09:15	
MW-2	08:45	10.61	29.50	08:50	09:30	
MW-3	08:40	10.84	29,70	08:45	09:45	
IND	08:00	11.84	72.85	08:05	08:30	
						· · · · · · · · · · · · · · · · · · ·
				·		

Notes: All walls Sompline of Ayple Strains Somple Veluma Pan wall ; H Voors (w/inc); 1= 500 ml Homben.

# APPENDIX B LABORATORY ANALYTICAL REPORTS



Tom Ballard Taber Consultants 3911 West Capitol Ave. West Sacramento, CA 95691

Client	Taber Co	nsultants
Workorder	20199	NoPurge_CityOfParis
Received	02/23/12	

The samples were received in EPA specified containers. The samples were transported and received under documented chain of custody and stored at four (4) degrees C until analysis was performed.

Sparger Technology, Inc. ID Suffix Keys - These descriptors will follow the Sparger Technology, Inc. ID numbers and help identify the specific sample and clarify the report.

DUP - Matrix Duplicate MS - Matrix Spike MSD - Matrix Spike Duplicate LCS - Lab Control Sample LCSD - Lab Control Sample Duplicate RPD - Relative Percent Difference QC - Additional Quality Control DIL - Results from a diluted sample ND - None Detected RL - Reporting Limit

Note: In an effort to conserve paper, the results are printed on both sides of the paper.

MES

Ray James Laboratory Director

Tom Ballard Taber Consultants 3911 West Capitol Ave. West Sacramento, CA 95691

Workorder 20199

Enclosed are the results from samples received on February 23, 2012.

The requested analyses are listed below.

SAMPLE	SAMPLE DESCRIPTION	DATE COLLECTED	TEST METHOD
20199001	MW-1, Water	02/22/12	8015B TEPH 8015B TPHgas 8260B BTEX/FOC W
20199002	MW-2, Water	02/22/12	8015B TEPH 8015B TPHgas 8260B BTEX/FOC W
20199003	MW-3, Water	02/22/12	8015B TEPH 8015B TPHgas 8260B BTEX/FOC W
20199004	W-IND, Water	02/22/12	8015B TEPH 8015B TPHgas 8260B BTEX/FOC W



**Test Certificate of Analysis** 

Client ID	Taber Consultants						
Workorder #	20199		We	orkorder ID	NoPurge_City	OfParis	
Laboratory ID	20199001		Sa	npled	02/22/12		
Sample ID	MW-1		Re	ceived	02/23/12		
Matrix	Water		Re	ported	03/08/12		
8015B TEPH Parameter		Method	Prep Date	Analyzed	Result	<b>RL</b> Units	Dilution
Stoddard Sol	vent	8015B TEPH	02/25/12	03/06/12	2 5000	50.0 ug/L	1:1
Laboratory ID	20199001		Sa	npled	02/22/12		
Sample ID	MW-1		Re	ceived	02/23/12		
Matrix	Water		Re	ported	03/08/12		
8015B TPH Garameter	as	Method	Prep Date	Analyzed	Result	<b>RL</b> Units	Dilution
TPHgas		8015B TPHgas	03/05/12	03/05/12	2 4200	500 ug/L	1:10
Surrogates		Result	Recovery	Limits			
Trifluorotol	uene	21 ug/L	105 %	(65 - 135	5)		

1 - Non-typical TPH pattern present in gas range.

Laboratory ID	20199001		Sar	npled 0	2/22/12		
Sample ID	MW-1		Re	ceived 0	2/23/12		
Matrix	Water		Re	ported 0	3/08/12		
8260B BTEX/C Parameter	)xygenates	Method	Prep Date	Analyzed	Result	<b>RL</b> Units	Dilution
Methyl-tert-b	utyl-ether	8260B BTEX/FC	DC 03/05/12	03/05/12	ND	50 ug/L	1:100
Benzene		8260B BTEX/FO	DC 03/05/12	03/05/12	ND	100 ug/L	1:100
Toluene		8260B BTEX/FO	DC 03/05/12	03/05/12	ND	100 ug/L	1:100
Ethylbenzene		8260B BTEX/FO	DC 03/05/12	03/05/12	ND	100 ug/L	1:100
Xylene,Total		8260B BTEX/FC	DC 03/05/12	03/05/12	ND	100 ug/L	1:100

Surrogates	Result	Recovery	Limits
1,2-Dichloroethane-d4	51 ug/L	102 %	(65 - 135)



**Test Certificate of Analysis** 

Client ID	Taber Consultants						
Workorder #	20199		We	orkorder ID	NoPurge_City	OfParis	
Laboratory ID	20199002		Sa	npled	02/22/12		
Sample ID	MW-2		Re	ceived	02/23/12		
Matrix	Water		Re	ported	03/08/12		
8015B TEPH Parameter		Method	Prep Date	Analyzed	Result	<b>RL</b> Units	Dilution
Stoddard Sol	vent	8015B TEPH	02/25/12	03/06/12	2 400	50.0 ug/L	1:1
Laboratory ID	20199002		Sa	npled	02/22/12		
Sample ID	MW-2		Re	ceived	02/23/12		
Matrix	Water		Re	ported	03/08/12		
8015B TPH Ga Parameter	as	Method	Prep Date	Analyzed	Result	<b>RL</b> Units	Dilution
TPHgas		8015B TPHgas	03/05/12	03/05/12	2 250	50 ug/L	1:1
Surrogates		Result	Recovery	Limits			
Trifluorotol	uene	22 ug/L	110 %	(65 - 135	)		

1 - Non-typical TPH pattern present in gas range.

Laboratory ID	20199002		Sar	npled 02	2/22/12		
Sample ID	MW-2		Re	ceived 02	2/23/12		
Matrix	Water		Rej	ported 03	3/08/12		
8260B BTEX/C Parameter	)xygenates	Method	Prep Date	Analyzed	Result	<b>RL</b> Units	Dilution
Methyl-tert-b	utyl-ether	8260B BTEX/FC	DC 03/05/12	03/05/12	ND	0.50 ug/L	1:1
Benzene		8260B BTEX/FC	DC 03/05/12	03/05/12	ND	1.0 ug/L	1:1
Toluene		8260B BTEX/FC	DC 03/05/12	03/05/12	ND	1.0 ug/L	1:1
Ethylbenzene		8260B BTEX/FC	DC 03/05/12	03/05/12	ND	1.0 ug/L	1:1
Xylene,Total		8260B BTEX/FC	DC 03/05/12	03/05/12	ND	1.0 ug/L	1:1

Surrogates	Result	Recovery	Limits
1,2-Dichloroethane-d4	51 ug/L	102 %	(65 - 135)



**Test Certificate of Analysis** 

Client ID	Taber Consultants						
Workorder #	20199		W	orkorder ID	NoPurge_City	OfParis	
Laboratory ID	20199003		Sa	mpled	02/22/12		
Sample ID	MW-3		Re	ceived	02/23/12		
Matrix	Water		Re	ported	03/08/12		
8015B TEPH Parameter		Method	Prep Date	Analyzed	Result	<b>RL</b> Units	Dilution
Stoddard Sol	vent	8015B TEPH	02/25/12	03/06/12	2 2000	50.0 ug/L	1:1
Laboratory ID	20199003		Sa	mpled	02/22/12		
Sample ID	MW-3		Re	ceived	02/23/12		
Matrix	Water		Re	ported	03/08/12		
8015B TPH Garameter	as	Method	Prep Date	Analyzed	Result	<b>RL</b> Units	Dilution
TPHgas		8015B TPHgas	03/05/12	03/05/12	2 1900	50 ug/L	1:1
Surrogates		Result	Recovery	Limits			
Trifluorotol	uene	22 ug/L	110 %	(65 - 135	5)		

1 - Non-typical TPH pattern present in gas range.

Laboratory ID	20199003		Sar	npled 02	2/22/12		
Sample ID	MW-3		Re	ceived 02	2/23/12		
Matrix	Water		Rej	ported 03	3/08/12		
8260B BTEX/C Parameter	Dxygenates	Method	Prep Date	Analyzed	Result	<b>RL</b> Units	Dilution
Methyl-tert-b	outyl-ether	8260B BTEX/FC	DC 03/05/12	03/05/12	ND	5.0 ug/L	1:10
Benzene		8260B BTEX/FO	DC 03/05/12	03/05/12	ND	10 ug/L	1:10
Toluene		8260B BTEX/FO	DC 03/05/12	03/05/12	ND	10 ug/L	1:10
Ethylbenzene		8260B BTEX/FO	DC 03/05/12	03/05/12	ND	10 ug/L	1:10
Xylene,Total		8260B BTEX/FC	DC 03/05/12	03/05/12	ND	10 ug/L	1:10

Surrogates	Result	Recovery	Limits
1,2-Dichloroethane-d4	50 ug/L	100 %	(65 - 135)



**Test Certificate of Analysis** 

Client ID Workorder #	Taber Consultants 20199			Workorder II	D NoPurge_City	OfParis	
Laboratory ID Sample ID Matrix	20199004 W-IND Water			Sampled Received Reported	02/22/12 02/23/12 03/08/12		
Parameter		Method	Prep Da	ate Analyzed	Result	<b>RL</b> Units	Dilution
Stoddard Sol	vent	8015B TEPH	02/25	/12 03/06/1	.2 ND	50.0 ug/L	1:1
Laboratory ID Sample ID Matrix	20199004 W-IND Water			Sampled Received Reported	02/22/12 02/23/12 03/08/12		
8015B TPH G Parameter	as	Method	Prep Da	ate Analyzed	Result	<b>RL</b> Units	Dilution
TPHgas		8015B TPHga	as 03/05	/12 03/05/1	.2 ND	50 ug/L	1:1
<b>Surrogates</b> Trifluorotol	uene	<b>Result</b> 20 ug/L	<b>Recovery</b> १०० %	<b>Limits</b> (65 – 13	5)		
Laboratory ID Sample ID Matrix	20199004 W-IND Water			Sampled Received Reported	02/22/12 02/23/12 03/08/12		
8260B BTEX/ Parameter	Oxygenates	Method	Prep Da	ate Analyzed	Result	<b>RL</b> Units	Dilution
Methyl-tert- Benzene Toluene Ethylbenzene Xylene,Total	butyl-ether	8260B BTEX/ 8260B BTEX/ 8260B BTEX/ 8260B BTEX/ 8260B BTEX/	<pre>/FOC 03/05 /FOC 03/05 /FOC 03/05 /FOC 03/05 /FOC 03/05</pre>	/12 03/05/1 /12 03/05/1 /12 03/05/1 /12 03/05/1 /12 03/05/1	2 ND 2 ND 2 ND 2 ND 2 ND 2 ND	0.50 ug/L 1.0 ug/L 1.0 ug/L 1.0 ug/L 1.0 ug/L	1:1 1:1 1:1 1:1 1:1
Surrogates		Result	Recovery	Limits			
1,2-Dichloro	ethane-d4	52 ug/L	104 %	(65 - 13	5)		



LINIONNE	intai Laburaturie	S N	Method Blank	Report			
Client ID Laboratory ID	Taber Consultants 103220			Sample ID Matrix	MB for HBN 4 Water	27404 [SGXV/2815]	
Parameter		Method	Prep Date	Analyzed	Result	<b>RL</b> Units	Dilution
Stoddard Sol	vent	8015B TEPH	02/25/12	03/06/12	ND	50.0 ug/L	1:1
Client ID Laboratory ID	Taber Consultants 103221	Lal	o Control San	nple Report Sample ID Matrix	LCS for HBN 4 Water		
Parameter		Method	Prep Date	Analyzed	Result	<b>RL</b> Units	Dilution
Stoddard Sol	vent	8015B TEPH	02/25/12	03/06/12	864	50.0 ug/L	1:1
		Lab Co	ntrol Sample	Duplicate Repo	ort		
Client ID Laboratory ID	Taber Consultants 103222			Sample ID Matrix	LCSD for HBN 427404 [SGXV/2815 Water		
Parameter		Method	Prep Date	Analyzed	Result	<b>RL</b> Units	Dilution
Stoddard Sol	vent	8015B TEPH	02/25/12	03/06/12	779	50.0 ug/L	1:1
		Ν	Method Blank	Report			
Client ID Laboratory ID	Taber Consultants 103231			Sample ID Matrix	MB for HBN 4 Water	27414 [VGXV/3129]	
Parameter		Method	Prep Date	Analyzed	Result	<b>RL</b> Units	Dilution
TPHgas		8015B TPHgas	03/05/12	03/05/12	ND	50 ug/L	1:1
Surrogates Trifluorotol	uene	<b>Result</b> 21 ug/L	<b>Recovery</b> 105 %	7 <b>Limits</b> (65 – 1	35)		
Client ID Laboratory ID	Taber Consultants 103232	Lal	o Control San	nple Report Sample ID Matrix	LCS for HBN 4 Water	127414 [VGXV/3129	]
Parameter		Method	Prep Date	Analyzed	Result	<b>RL</b> Units	Dilution
TPHgas		8015B TPHgas	03/05/12	03/05/12	998	50 ug/L	1:1



LINIOITTE	nual Laboratorie	Lab Co	ntrol Sample	Duplicate Repo	ort		
Client ID Laboratory ID	Taber Consultants 103233			Sample ID Matrix	LCSD for HBN Water	427414 [VGXV/3	3129
Parameter		Method	Prep Date	Analyzed	Result	<b>RL</b> Units	Dilution
TPHgas		8015B TPHgas	03/05/12	03/05/12	1040	50 ug/L	1:1
		Ν	Aatrix Spike	Report			
Client ID Laboratory ID	Taber Consultants 103234			Sample ID Matrix	MS for HBN 42 Water	27414 [VGXV/312	29]
Parameter		Method	Prep Date	Analyzed	Result	<b>RL</b> Units	Dilution
TPHgas		8015B TPHgas	03/05/12	03/05/12	995	50 ug/L	1:1
		Matr	ix Spike Dup	licate Report			
Client ID Laboratory ID	Taber Consultants 103235	Sample IDMSD for HBN 427414 [VGXV/3MatrixWater			129]		
Parameter		Method	Prep Date	Analyzed	Result	<b>RL</b> Units	Dilution
TPHgas		8015B TPHgas	03/05/12	03/05/12	1040	50 ug/L	1:1
		Ν	Aethod Blank	Report			
Client ID Laboratory ID	Taber Consultants 103236			Sample ID Matrix	MB for HBN 4 Water	27417 [VMXV/339	98]
Parameter		Method	Prep Date	Analyzed	Result	<b>RL</b> Units	Dilution
Methyl-tert-	butyl-ether	8260B BTEX/FC	DC03/05/12	03/05/12	ND	0.50 ug/L	1:1
Benzene		8260B BTEX/FC	C03/05/12	03/05/12	ND	1.0 ug/L	1:1
Toluene		8260B BTEX/FC	C03/05/12	03/05/12	ND	1.0 ug/L	1:1
Ethylbenzene		8260B BTEX/FC	C03/05/12	03/05/12	ND	1.0 ug/L	⊥:⊥ 1•1
Ayrelle, locar		0200B BIEA/FC	1003/05/12	03/05/12	ND	1.0 ug/L	1.1
Surrogates		Result	Recovery	Limits			
1,2-Dichloro	ethane-d4	49 ug/L	98 %	(65 - 1	35)		
		Lat	o Control San	nple Report			
Client ID Laboratory ID	Taber Consultants 103237			Sample ID Matrix	LCS for HBN 4 Water	27417 [VMXV/33	98]
Parameter		Method	Prep Date	Analyzed	Result	<b>RL</b> Units	Dilution
Methyl-tert-	butyl-ether	8260B BTEX/FC	C03/05/12	03/05/12	56	0.50 ug/L	1:1
Benzene		8260B BTEX/FC	003/05/12	03/05/12	58	1.0 ug/L	1:1



Environmen	ital Laboratorie	S	Lab Control San	ple Report			
Client ID Laboratory ID	Taber Consultants 103237			Sample ID Matrix	LCS for HBN 4 Water	27417 [VMXV/33	98]
Parameter		Method	Prep Date	Analyzed	Result	<b>RL</b> Units	Dilution
(continued)							
Toluene		8260B BT	TEX/FOC03/05/12	03/05/12	58	1.0 ug/L	1:1
Ethylbenzene		8260B BT	TEX/FOC03/05/12	03/05/12	57	1.0 ug/L	1:1
Xylene,Total		8260B BT	TEX/FOC03/05/12	03/05/12	171	1.0 ug/L	1:1
		Ι	Lab Control Sample	Duplicate Repo	ort		
Client ID Laboratory ID	Taber Consultants 103238			Sample ID Matrix	LCSD for HBN Water	[ 427417 [VMXV/:	3398
Parameter		Method	Prep Date	Analyzed	Result	<b>RL</b> Units	Dilution
Methyl-tert-b	utyl-ether	8260B BT	TEX/FOC03/05/12	03/05/12	53	0.50 ug/L	1:1
Benzene		8260B BT	TEX/FOC03/05/12	03/05/12	56	1.0 ug/L	1:1
Toluene		8260B BT	TEX/FOC03/05/12	03/05/12	54	1.0 ug/L	1:1
Ethylbenzene		8260B BT	TEX/FOC03/05/12	03/05/12	55	1.0 ug/L	1:1
Xylene,Total		8260B BT	TEX/FOC03/05/12	03/05/12	163	1.0 ug/L	1:1
			Matrix Spike	Report			
Client ID Laboratory ID	Taber Consultants 103239			Sample ID Matrix	MS for HBN 42 Water	27417 [VMXV/339	98]
Parameter		Method	Prep Date	Analyzed	Result	<b>RL</b> Units	Dilution
Methyl-tert-b	utyl-ether	8260B BT	TEX/FOC03/05/12	03/05/12	51	0.50 ug/L	1:1
Benzene		8260B BT	TEX/FOC03/05/12	03/05/12	54	1.0 ug/L	1:1
Toluene		8260B BT	TEX/FOC03/05/12	03/05/12	53	1.0 ug/L	1:1
Ethylbenzene		8260B BT	TEX/FOC03/05/12	03/05/12	53	1.0 ug/L	1:1
Xylene,Total		8260B BT	TEX/FOC03/05/12	03/05/12	156	1.0 ug/L	1:1
			Matrix Spike Dup	licate Report			
Client ID Laboratory ID	Taber Consultants 103240			Sample ID Matrix	MSD for HBN Water	427417 [VMXV/3	398]
Parameter		Method	Prep Date	Analyzed	Result	<b>RL</b> Units	Dilution
Methyl-tert-b	utyl-ether	8260B BT	TEX/FOC03/05/12	03/05/12	54	0.50 ug/L	1:1
Benzene	-	8260B BT	TEX/FOC03/05/12	03/05/12	57	1.0 ug/L	1:1
Toluene		8260B BT	TEX/FOC03/05/12	03/05/12	55	1.0 ug/L	1:1
Ethylbenzene		8260B BT	TEX/FOC03/05/12	03/05/12	55	1.0 ug/L	1:1



Livionne		<b>,</b> 1	Matrix Spike Dup	licate Report			
Client ID Laboratory ID	Taber Consultants 103240			Sample ID Matrix	MSD for HBN 4 Water	427417 [VMXV/3	398]
Parameter (continued)		Method	Prep Date	Analyzed	Result	RL Units	Dilution
Xylene,Total		8260B BTE2	K/FOC03/05/12	03/05/12	164	1.0 ug/L	1:1



ies OC SUMMARY

Client ID QC Batch Matrix	Taber Consultants VGX 3249 Water		2													
		Spike	Spike Dup	Recovery		RPD										
Parameter		%Recovery	%Recovery	Limits	RPD	Limits										
TPHgas		100	104	(65-135)	3.9	(20 MAX)										
Client ID	Taber Consultants		Origin	al 2019200	1											
QC Batch Matrix	VMX 3436 Water		2													
		Spike	Spike Dup	Recovery		RPD										
Parameter		%Recovery	%Recovery	Limits	RPD	Limits										
Benzene		108	114	(65-135)	5.4	(20 MAX)										
Toluene		106	110	(65-135)	3.7	(20 MAX)										
Ethylbenzene		106	110	(65-135)	3.7	(20 MAX)										
Xylene,Total		104	109	(65-135)	4.7	(20 MAX)										
Client ID	Taber Consultants		Samples Lab Control Sample [103221]													
QC Batch Matrix	SGX 2843 Water			Lab Con	trol Sample D	uplicate [103222]										
Parameter		Check %Recovery	Check Dup %Recovery	Recovery Limits	RPD	RPD Limits										
Stoddard Solvent		86	78	(65-135)	9.8	(20 MAX)										
Client ID QC Batch Matrix	Taber Consultants VGX 3249 Water	SamplesLab Control Sample [103232]Lab Control Sample Duplicate [103233]														
	w alci	Check	Check Dun	Recovery		RPD										
Parameter		%Recoverv	%Recoverv	Limits	RPD	Limits										
TPHgas		100	104	(65-135)	3.9	(20 MAX)										
Client ID	Taber Consultants		Sampl	es Lab Con	trol Sample [1	03237]										
QC Batch	VMX 3436			Lab Con	trol Sample D	uplicate [103238]										
Matrix	Water				-											
		Check	Check Dup	Recovery		RPD										
Parameter		%Recovery	%Recovery	Limits	RPD	Limits										
Methyl-tert-	butyl-ether	112	106	(65-135)	5.5	(20 MAX)										
Benzene		116	112	(65-135)	3.5	(20 MAX)										
Toluene		116	108	(65-135)	7.1	(20 MAX)										
Ethylbenzene		114	110	(65-135)	3.6	(20 MAX)										



QC SUMMARY

Client ID	Taber Consultants		Samples Lab Control Sample [103237											
QC Batch	VMX 3436		Lab Control Sample Duplicate [103238]											
Matrix	Water		(continued)											
		Check	Check Dup	Recovery		RPD								
Parameter		%Recovery	%Recovery	Limits	RPD	Limits								
Xylene,Total		114	109	(65-135)	4.5	(20 MAX)								

Sparger Technology, Inc. Environmental Laborationes				3738 Bradview Drive Sacramento, CA 95827 Lab: 916.369.7688 COC # / Fax: 916.369.7689								C#/La	20199 .ab No Page 1 of 1																
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12030518 D OXYFV2 M



1. State 1.







12030510 D TPHGV4 M Mon Mar 05 17:04:26 2012



12030512 D TPHGV4 M Mon Mar 05 17:57:22 2012









03051214 D TPHST1B.M Wed Mar 07 13:51:31 2012 5890







03051217.D TPHST1B.M Wed Mar 07 13:51:41 2012