



Engineering and constructing a better tomorrow

July 24, 2009

Mr. Brian Jankauskas
New York State Department of Environmental Conservation
Division of Environmental Remediation
Remedial Bureau E, 12th Floor
625 Broadway
Albany, New York 12233-7012

Subject: **Vapor Investigation Report – Amendment 1**
Eugene’s Dry Cleaners, Site No. 1-52-157
Work Assignment #D004434-27
MACTEC Engineering and Consulting, P.C., Project No. 3612072087

Dear Mr. Jankauskas:

In March, 2009, MACTEC Engineering and Consulting, P.C. (MACTEC), under contract to the New York State Department of Environmental Conservation (NYSDEC), conducted additional field sampling as part of a Vapor Investigation (VI) at the Eugene’s Dry Cleaners site (Site) (Site # 1-52-157) in the town of Babylon, Suffolk County (Figure 1). This letter report documents the scope of work and the results of sampling performed.

The Site is the location of a former dry cleaning facility with known releases of organic chlorinated solvent chemicals. This VI was conducted in accordance with the NYSDEC requirements described in Work Assignment No. D004434-27, dated March 28, 2007 (NYSDEC, 2007), and with the April 2006 Superfund Standby Contract No. D004434 between the NYSDEC and MACTEC. The additional activities were described in Amendment 1 to the WA, which was approved by the NYSDEC in February 2009 (NYSDEC, 2009). Additional details on Site History and previous VI results are provided in the Final Vapor Investigation Report (MACTEC, 2008).

Amendment 1 activities were conducted in accordance with procedures described in an earlier Work Plan (WP) (MACTEC, 2007). For the March 2009 field work, MACTEC prepared an

updated Site-specific Health and Safety Plan (HASP) (MACTEC 2009) that supports a program HASP (MACTEC 2005). Sampling methods and equipment were the same as those described in the 2008 VI Report. Air and soil vapor samples were analyzed by Con-Test Laboratory of East Longmeadow, Massachusetts (see Attachment 6). The groundwater samples were analyzed by Mitkem Laboratory of Warwick, Rhode Island. Both are New York State Department of Health (NYSDOH)-approved and Environmental Laboratory Accreditation Program-certified laboratories and were the laboratories used during the earlier sampling work at the Site.

AMENDMENT 1 SCOPE OF WORK

The March 2009 additional sampling event included the following activities:

- Installation of two permanent sub-slab sampling points at Structure 05 (05A and 05B),
- Indoor Air Sampling at one structure (05),
- Installation of two monitoring wells (PW-9 and PW-10),
- Abandonment of one existing monitoring well (PW-6),
- Groundwater sampling of eight on-site monitoring wells, and
- Elevation survey of the eight wells

These activities are documented in more detail below. Sample locations are illustrated on Figure 2.

Indoor Air Sampling. MACTEC collected a second round of basement air samples at Structure 05, a commercial structure located adjacent and to the east of the former dry cleaner. When first sampled in January 2008, basement air in the crawlspace of Structure 05 contained low levels (9.8 micrograms per cubic meter [$\mu\text{g}/\text{m}^3$]) of tetrachloroethene (PCE). No sub-slab sample was collected at that time.

On March 23, 2009, two permanent sub-slab sampling points were installed in the crawlspace of Structure 05. Two sub-slab samples (ECSS05A and ECSS05B) and one basement air sample (ECBA05C) were collected over a 24-hour period starting on March 24, 2009. A sample of the outdoor (ambient) air (ECAA003) was also collected over the same time period from a location inside the Site fence to the west of Structure 05.

Soil vapor samples were collected into clean-certified, SUMMA-type canisters. In all cases, flow rates were less than 0.2 liters per minute, as requested by NYSDOH. Samples were shipped to Con-Test laboratory and analyzed for volatile organic compounds (VOCs) by United States Environmental Protection Agency (USEPA) Method TO-15 with minimum reporting limits of 1.0 ug/m³. March 2009 indoor air results are attached in Table 1.

The Indoor Air Quality Questionnaire and Inventory Form are attached in Appendix A. Photographs of the deployed canisters are attached in Appendix B.

Monitoring Well Installation. On March 24 and March 25, 2009, Aquifer Drilling and Testing (ADT) of New York, under subcontract to MACTEC, installed two monitoring wells in the city of Babylon right-of-way south of the Site. MACTEC worked closely with the NYSDEC, the Site property owner, neighboring property owners, and utility companies while obtaining access to these exploration locations. To assist the assessment of groundwater flow direction at the Site, two Geoprobe[®] borings were completed as monitoring wells (PW-9 and PW-10). These locations were chosen to determine groundwater conditions down-gradient to the Site and to replace an existing monitoring well (PW-6) that was found to be obstructed.

ADT used a Geoprobe[®] 6610 DT rubber-mounted track rig sampling device to collect soil and install monitoring wells. The Geoprobe[®] pushed and/or hammered rods and probe tips into the subsurface for soil collection. Soils were collected in a two-inch acetate tube using a 5-foot long core sampler. Upon retrieval, the tubes were removed from the core barrel and opened lengthwise to provide access to the soils. Soils were logged and based on the PID readings and physical evidence such as color or odor. Visible contamination or odors were not detected in either boring.

Groundwater at the Site was encountered at approximately 6 feet bgs. The two-inch diameter monitoring wells were installed after soils were removed from each boring, by advancing four-inch hollow stem augers (HSA). Monitoring wells were constructed using two-inch inside diameter schedule 40 polyvinyl chloride (PVC), with 10 foot lengths of 0.01-inch machine slotted well screens. The wells were screened across the water table to determine water table elevations and provide data to map water table elevations. The wells were constructed with #00N sand pack from the well bottom to two feet above the screen top, a minimum two feet of bentonite seal placed above the sand pack, and native soil as backfill. Wells were sealed at the ground surface with

Portland Cement. The wells were fit with a two-inch compression cap and a six-inch flush mount road box. Soil boring and monitoring well construction field data records are included in Appendix A. The wells were developed no sooner than 24 hours after installation by using pump and surge techniques as described in the Section 4.4.4 of the QAPP (MACTEC, 2007).

Monitoring Well Abandonment. Monitoring well PW-6, an existing well, was abandoned due to an obstruction that prevented sampling. PW-6 was overdrilled using HSAs to remove a section of the well riser. The resulting borehole was backfilled with bentonite and native soil to the ground surface.

Groundwater Elevations. Groundwater level measurements were collected from the eight existing monitoring wells on Site on March 24, 2009. Well caps were opened and the wells were allowed to equilibrate to atmospheric pressure. The depths to water were measured from the top of well risers using a conductivity probe. Groundwater table elevations were calculated from the well riser elevations. Well information and groundwater measurements are presented in Table 2. Groundwater elevation contours at the Site are detailed in Figure 3.

Groundwater Sampling. To assess groundwater conditions at and adjacent to the Site, eight monitoring wells were sampled. Groundwater samples were obtained from March 24 through March 26, 2009 using low-flow sampling procedures as described in the WP. Groundwater parameters including water levels, turbidity, temperature, dissolved oxygen, specific conductance, pH and redox potential were recorded on a field data record. Low flow sampling requirements were met while sampling these eight monitoring wells. Groundwater samples were submitted to Mitkem Laboratories for analysis for VOCs by Method 8260.

Groundwater field data records are attached in Appendix A. The March 2009 groundwater sampling results are attached in Table 3.

Elevation Survey. An elevation survey was performed by YEC, Inc. The survey provided Sata Plan coordinates for all well locations and determined well rim and riser elevations in NACD88 to 0.01 foot accuracy. These elevations are provided on Table 3.

DATA USABILITY ASSESSMENT

MACTEC reviewed the laboratory data results to establish that the results met data quality objectives. Project chemist review was completed based on NYSDEC Division of Environmental Remediation guidance for Data Usability Summary Reports (DUSR) (NYSDEC, 2002). The review included evaluations of sample collection, data package completeness, holding times, quality control data (blanks, instrument calibrations, duplicates, surrogate recovery, and spike recovery), data transcription, electronic data reporting, calculations, and data qualification.

Air samples and soil vapor samples were analyzed by Con-Test Analytical Laboratory of East Longmeadow, Massachusetts for VOCs by USEPA Method TO-15. Groundwater samples were analyzed by Mitkem Laboratory of Warwick, Rhode Island. Both laboratories provided Category B deliverables as defined in the NYSDEC Analytical Services Protocols (NYSDEC, 2000).

Separate DUSRs were prepared for the groundwater samples and the air/soil vapor samples (Attachment C). With the exception of the items discussed in the DUSR, the results are interpreted to be usable as reported by the laboratory. The chemist review added various data validation qualifiers, as dictated by the guidelines. These include:

- U indicates that the analyte was not detected above the reported detection limit
- UJ indicates that the analyte was not detected above the reported detection limit and the detection limit is estimated
- J indicates that the concentration is estimated

RESULTS

Summary tables presenting detected compounds are presented in the following tables:

Table 1: March 2009 Indoor Air Results

Table 3: March 2009 Groundwater Results

Indoor Air. Two permanent sub-slab sampling points were installed in the basement crawlspace at Structure 05. At sub-slab sample ECSS05A (located near the west wall of Structure 05 and therefore

closest to the nearby former dry-cleaner) PCE was reported at 3,400 $\mu\text{g}/\text{m}^3$. PCE in ECSS05B was reported at 300 $\mu\text{g}/\text{m}^3$. Crawlspace air sample ECBA05C contained PCE at 2.1 $\mu\text{g}/\text{m}^3$. This is slightly lower than the result from 2008 (9.8 $\mu\text{g}/\text{m}^3$).

In June 2009, a sub-slab vapor mitigation system was installed in the western portion of the basement crawlspace at Structure 05.

Groundwater. Groundwater samples from Site monitoring wells contained low levels of chlorinated hydrocarbons. The highest reported levels of PCE (43 J micrograms per liter ($\mu\text{g}/\text{L}$)) and TCE (5.2 J $\mu\text{g}/\text{L}$) were reported at well PW-8. PW-10, located downgradient of PW-8, contained PCE and TCE as well as cis-1,2-dichloroethene and vinyl chloride, two compounds that may indicate that natural biodegradation is occurring as impacted groundwater migrates southward. No VOCs were detected in the sample from PW-4, located in the neighborhood to the south of the Site.

MACTEC understands that the NYSDEC will review this data and, in consultation with the New York State Department of Health (NYSDOH), determine if further characterization is warranted

MACTEC appreciates the opportunity to support the NYSDEC at the Eugene’s Dry Cleaners Site.

Sincerely,

MACTEC Engineering and Consulting, P.C.



John W. Peterson.
Principal Professional



Eric C. Sandin
Project Manager

Enclosures (3)

REFERENCES

- MACTEC Engineering and Consulting, Inc. P.C., 2005. *Program Health and Safety Plan*. Prepared for New York State Department of Environmental Conservation, Albany, New York. 2005.
- MACTEC Engineering and Consulting, Inc. P.C., 2008. Vapor Investigation Work Plan Eugene’s Dry Cleaner Site No. 1-52-157, Final, August 2007
- MACTEC Engineering and Consulting, Inc. P.C., 2008. Vapor Investigation Report Eugene’s Dry Cleaner Site No. 1-52-157, Final, October 2008
- MACTEC Engineering and Consulting, Inc. P.C., 2009. MACTEC Short Form HASP for Eugene’s Dry Cleaner Site No. 1-52-157, et al, March 2009
- New York State Department of Environmental Conservation (NYSDEC), 2000. “*Analytical Services Protocols*”; 6/00 Edition, June 2000.
- New York State Department of Environmental Conservation (NYSDEC), 2002. “*Guidance for the Development of Data Usability Reports*”; Division of Environmental Remediation; 2002.
- New York State Department of Environmental Conservation (NYSDEC), 2007. Work Assignment #D003826-26, Active Industrial Uniform, Site # 1-52-125 - letter dated March 28, 2007.
- New York State Department of Environmental Conservation (NYSDEC), 2009. Letter from Cruden, Michael J. to Weber, William (MACTEC) February 6, MACTEC Engineering and Consulting, Portland, Maine



Legend

- Structure Sample
- Monitoring Well
- Approximate Site Boundary

N

0 35 70 Feet

Prepared/Date: MJW 07/01/09
Checked/Date: ECS 07/01/09

VI REPORT - AMENDMENT 1
EUGENE'S DRY CLEANERS
BABYLON, NY



SAMPLE LOCATIONS
PROJECT 3612072087
FIGURE 2



Table 1 - March 2009 Indoor Air Sampling Results

Structure ID Location ID Field Sample ID Field Sample Date QC Code	Ambient Air		Structure 05					
	AA-03		BA-05C		SS-05A		SS-05B	
	3/24/2009		3/24/2009		3/24/2009		3/24/2009	
	ECAA003		ECBA05C		ECSS05A		ECSS05B	
	FS		FS		FS		FS	
Parameter Name	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
1,1,1-Trichloroethane	0.19	UJ	0.19	UJ	0.54	UJ	0.67	J
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.27	U	0.49		0.76	U	0.76	U
1,2,4-Trimethylbenzene	0.18	U	0.46		0.5	U	0.5	U
1,4-Dichlorobenzene	0.21	U	5.1		0.67		0.88	
2-Butanone	0.13	U	3.5		2.4	U	4.5	
2-Hexanone	0.14	U	0.58		0.4	U	0.4	U
2-Propanol	0.7	J	3.3	J	3.3	J	2.6	J
Acetone	11	UJ	12	UJ	28	J	38	J
Benzene	0.12	U	0.52		0.32	U	0.74	
Carbon disulfide	0.12	U	0.12	U	1.4		2.9	
Carbon tetrachloride	0.22	U	0.4		0.62	U	0.62	U
Chloroform	0.17	U	0.17	U	1.4		1.7	
Chloromethane	1.1		1.1		0.2	U	0.2	U
Dichlorodifluoromethane	2		2		2.2		3.9	
Ethanol	4.2	J	36	J	3.7	J	4.8	J
Ethyl benzene	0.16	U	0.25		0.44	U	0.44	U
Heptane	0.14	U	0.62		0.4	U	0.79	
Hexane	0.13	U	0.42		1.2		0.82	
Methylene chloride	6.6		1.7	U	2.9	U	2.6	U
Tetrachloroethene	0.24	U	2.1		3400		300	
Toluene	0.14	U	4.4		0.66		2	
Trichloroethene	0.19	U	0.19	U	8.7		0.54	U
Trichlorofluoromethane	0.96		1.1		1		1.3	
Xylene, m/p	0.31	U	0.64		0.86	U	0.86	U
Xylene, o	0.16	U	0.26		0.44	U	0.44	U

Notes:

Only Detected Compounds shown.

Samples analyzed for VOCs by USEPA Method TO-15.

Location Name: AA = Ambient Air; SS = Sub-Slab Soil Vapor; BA = Basement Air

Results in microgram per cubic meter ($\mu\text{g}/\text{m}^3$)

QC Code:

FS = Field Sample

Qualifiers:

U = Not detected at a concentration greater than the RL

J = Estimated value

Detections are indicated in **BOLD**

Table 2: Survey Data and Water Level Measurements

Well ID	Northing	Easting	Casing Elevation	PVC Rim Elevation	Measured Depth to Water**	Water Elevation
PW-1	193878.66	1172198.14	10.13	9.83	6.44	3.39
PW-2	193686.92	1172192.01	11.05	10.85	7.87	2.98
PW-3	193640.51	1172342.86	9.78	9.59	6.76	2.83
PW-4	193318.14	1172372.79	7.46	7.31	5.19	2.12
PW-8	193643.95	1172278.86	10.38	10.20	7.36	2.84
PW-9	193510.31	1172307.02	9.38	8.65	5.92	2.73
PW-10	193523.86	1172356.50	8.99	8.69	5.99	2.70
P-1	193695.22	1172260.62	11.07	NM*	NM	NA

Notes:

* Outer casing only was surveyed at P-1, a 3/4-inch PVC piezometer with loose inner PVC.

** Water level measurements were obtained on 3/24 and 3/25/2009.

Elevations are in feet above mean sea level (NAVD88)

Wells were surveyed by YEC, Inc. April 2009

NM = Not measured NA = Not available

Prepared by: ECS 7/1/2009

Checked by: BAS 7/13/2009

Table 3 - March 2009 Groundwater Sample Results

Location		P-1		PW-1		PW-2		PW-3		PW-3		PW-4		PW-8		PW-9		PW-10	
Field Sample Date		3/24/2009		3/25/2009		3/25/2009		3/24/2009		3/24/2009		3/24/2009		3/24/2009		3/26/2009		3/26/2009	
Field Sample ID		ECP01		ECPW1		ECPW2		ECPW3		ECPW3DUP		ECPW4		ECPW8		ECPW9		ECPW10	
QC Code		FS		FS		FS		FS		FD		FS		FS		FS		FS	
Parameter Name	Criteria	Result	Qualifier																
1,2,3-Trichlorobenzene	5*	5	U	5	U	5	U	5	U	2.5	J	5	U	5	U	5	U	5	U
1,2,4-Trichlorobenzene	5*	5	U	5	U	5	U	5	U	1.4	J	5	U	5	U	5	U	5	U
Chloroform	7*	5	U	5	U	5	U	5	U	1.1	J	5	U	5	U	5	U	5	U
Cis-1,2-Dichloroethene	5	5	U	5	U	5	U	5	U	5	U	5	U	3.3	J	5	U	9.3	J
Hexachlorobutadiene	0.5*	5	U	5	U	5	U	5	U	2.3	J	5	U	5	U	5	U	5	U
Methyl Tertbutyl Ether	10	1.4	J	5	U	5	U	5	U	5	U	5	U	5	U	5	U	1.6	J
Naphthalene	10	5	U	5	U	5	U	5	U	1.9	J	5	U	5	U	5	U	5	U
Tetrachloroethene	5	1.7	J	5	U	5	U	5	U	5	U	5	U	4.3	J	1.0	J	12	J
Trichloroethene	5	5	U	5	U	5	U	5	U	5	U	5	U	5.2	J	5	U	4.1	J
Vinyl chloride	2	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	1.1	J

Notes:

Results in microgram per liter (µg/L)

Only detected compounds shown.

Samples analyzed for VOCs by EPA Method 8260B

QC Code:

FS = Field Sample

FD = Field Duplicate

Qualifiers:

U = Not detected at a concentration greater than the reporting limit

J = Estimated value

Criteria = Values from Technical and Operational

Guidance Series (TOGS) 1.1.1, Ambient Water

Quality Standards and Guidance values and

Groundwater Effluent Limitations (NYSDEC, 2008).

* = New York State Standard

Detections are indicated in **BOLD**

Highlighted results exceed criteria

ATTACHMENT A

MARCH 2009 FIELD DATA RECORDS

INDOOR AIR SAMPLING RECORD

Project Name: Eugene's Dry Cleaners Client: NYSDEL Location ID: Talbot's
 Project Number: 3612072087 Collector: PSM/BAS Date: 3.23.09

SUMMA Canister Record Information:

A		Subslab B		Basement			
SUBSLAB SOIL VAPOR SAMPLE		INDOOR AIR - BASEMENT		INDOOR AIR - FIRST FLOOR		ASSOCIATED AMBIENT	
Flow Regulator No:	3256	Flow Regulator No:	3345	Flow Regulator No:	3023	Flow Regulator No:	3172
Flow Rate (mL/min):	~4	Flow Rate (mL/min):	~4	Flow Rate (mL/min):	~4	Flow Rate (mL/min):	~4
Canister Serial No:	1784	Canister Serial No:	1199	Canister Serial No:	1853	Canister Serial No:	1386
Start Date/Time:	3-23-09 1615	Start Date/Time:	3-23-09 1628	Start Date/Time:	3-23-09 1633	Start Date/Time:	3-23-09 2053
Start Pressure ("Hg):	-30 ⁺	Start Pressure ("Hg):	-30	Start Pressure ("Hg):	-30 ⁺	Start Pressure ("Hg):	-29
Stop Date/Time:	3-24-09 1640	Stop Date/Time:	3-24-09 1651	Stop Date/Time:	3-24-09 1648	Stop Date/Time:	3-24-09 1706
Stop Pressure ("Hg):	-8	Stop Pressure ("Hg):	-9	Stop Pressure ("Hg):	-12	Stop Pressure ("Hg):	-9
Sample ID:	ECSS05A	Sample ID:	ECSS05B	Sample ID:	ECBA05C	Sample ID:	ECAA003

Other Sampling Information:

Finished Basement, Crawl Space, Unfinished Basement	Story/Level:	Room:	Direction from Building:
Crawl space	Story/Level:	Room:	W
Floor Slab Thickness: 2"	Thickness	Room: Crawl space	Distance from Building: 75'
Potential Vapor Entry Points: Sump/Utilities	Potential Vapor Entry Points: Sump/Utilities	Potential Vapor Entry Points: Sump/Utilities	Distance from Roadway: 100'
Floor Surface: Concrete	Floor Surface: Concrete	Floor Surface: Concrete	Ground Surface: asphalt
Noticable Odor: none	Noticable Odor: none	Noticable Odor: none	Noticable Odor: none
PID Reading (ppb): 20 (not PID)	PID Reading (ppb): 300 (not PID)	PID Reading (ppb): 20.1	PID Reading (ppb): 0
Intake Depth/Height: 7" below slab	Intake Height: 7" below slab	Intake Height: 2'	Intake Height Above Ground Surface: 3'
Helium Test Conducted? Breakthrough %: No	Helium Test Indoor Air Temp: No	Indoor Air Temp: 55°F	Intake Tubing Used? Yes

Comments/Location Sketch:



511 Congress Street, Portland, ME 04101

AIR SAMPLING RECORD

FIELD DATA RECORD - GROUNDWATER SAMPLING

PROJECT Eugene's Dry Cleaners 3612072007 DATE 3.25.09
 WELL ID PW-1 BOTTLE TIME 1000
 SAMPLE ISIS ID ELPW1 START 0905 END 1010
 QC SAMPLES COLLECTED NA DUPLICATE ID _____ MS ID _____ MSD ID _____

WATER LEVEL / WELL DATA
 MEASURED WELL DEPTH 9.9 FT (TOR) HISTORICAL WELL DEPTH — FT (TOR) PROTECTIVE CASING STICKUP (FROM GROUND) — FT PROTECTIVE CASING / WELL DIFFERENCE 0.35 FT
 DEPTH TO WATER 6.44 FT (TOR) SCREEN LENGTH — FT WELL DIAMETER 1 IN WELL MATERIAL HDPE
 HEIGHT OF WATER COLUMN 3.5 FT x 0.041 (1 in) 0.16 GAL/FT (2 IN) 0.65 GAL/FT (4 IN) = 0.14 GAL/VOL TOTAL VOLUME PURGED 2.7 GAL
 1.5 GAL/FT (6 IN)
 Total purge volume = (ml per min.) x time (min.) x 0.00026 gal/ml AMBIENT AIR 0 PPM WELL MOUTH 1.3 PPM

PURGE DATA

TIME	DEPTH TO WATER (ft)	PURGE RATE (mL/min)	TEMP. (degrees C)	pH (units)	TURBIDITY (NTU)	SPEC. COND. (µmhos/cm)	Error D.O. (mg/L)	ORP (mV)	Comments
0925	Begin Purging @				300 ml/min				clear
0927	9.51	300			19.5				"
0932	Hookup to YSI								"
0938	9.52	300	11.17	6.57	12.5	273	—	191.7	"
0943	9.52	300	11.16	6.57	5.76	273	—	192.6	"
0948	9.52	300	11.14	6.54	3.07	273	—	194.9	"
0953	9.52	300	11.21	6.53	2.76	274	—	196.0	"
0958	9.52	300	11.23	6.54	1.80	277	—	196.4	"
1000	Collect Sample								ELPW1

EQUIPMENT DOCUMENTATION

PURGING SAMPLING

PERISTALTIC PUMP SUBMERSIBLE PUMP BLADDER PUMP PVC/SILICON TUBING TEFLON/SILICON TUBING WATERA IN LINE FILTER PRESS/VAC FILTER

DECON FLUIDS USED: METHANOL LIQUINOX POTABLE WATER DEIONIZED WATER HEXANE NITRIC ACID NONE - Dedicated Tubing

WATER LEVEL EQUIPMENT USED: ELECTRIC COND. PROBE FLOAT ACTIVATED KECK INTERFACE PROBE

NUMBER OF FILTERS USED 0

ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS
<input checked="" type="checkbox"/> <u>TCL VOLs</u>	<u>B260B</u>	<u>N</u>	<u>HCl/4%</u>	<input checked="" type="checkbox"/> <u>2x40mL</u>	<u>ELPW1</u>
<input type="checkbox"/>				<input type="checkbox"/>	
<input type="checkbox"/>				<input type="checkbox"/>	
<input type="checkbox"/>				<input type="checkbox"/>	
<input type="checkbox"/>				<input type="checkbox"/>	
<input type="checkbox"/>				<input type="checkbox"/>	

NOTES AND SAMPLE OBSERVATIONS

Purge water PID headspace = 0 ppm

Stabilization is considered achieved when three consecutive readings are taken at 3 to 5 min. intervals within the following limits:
 Temp. - 3 %; Turbidity 10% > than 1 NTU; DO - 10%; Sp. Cond. - 3%; pH - 0.1 unit; ORP - 10 mV.

SIGNATURE: P. Mueller
 RECEIVED BY: BShaw

FIELD DATA RECORD - GROUNDWATER SAMPLING

PROJECT Eugene's Dry Cleaners 3612072087 DATE 3-24-09
 WELL ID PW-2 START 1140 END 1400 BOTTLE TIME 1350
 SAMPLE ISIS ID ELPW2
 QC SAMPLES COLLECTED DPLICATE ID 5
 MS ID 5
 MSD ID 5

WATER LEVEL / WELL DATA

MEASURED WELL DEPTH 10.5 HISTORICAL WELL DEPTH 10.5 PROTECTIVE CASING STICKUP (FROM GROUND) — FT PROTECTIVE CASING / WELL DIFFERENCE 0.25 FT
 DEPTH TO WATER 7.87 FT (TOR) SCREEN LENGTH — FT WELL DIAMETER 1 IN WELL MATERIAL PVC HDPE
 HEIGHT OF WATER COLUMN 2.6 FT x 0.041 (1 in) GAL/FT (2 IN) = 0.11 GAL/VOL TOTAL VOLUME PURGED 3.7 GAL
 0.16 GAL/FT (2 IN) 0.65 GAL/FT (4 IN) 1.5 GAL/FT (6 IN)
 Total purge volume = (ml per min.) x time (min.) x 0.00026 gal/ml AMBIENT AIR 0.0 PPM WELL MOUTH 0.6 PPM

PURGE DATA

TIME	DEPTH TO WATER (ft)	PURGE RATE (mL/min)	TEMP. (degrees C)	pH (units)	TURBIDITY (NTU)	SPEC. COND. (µmhos/cm)	D.O. (mg/L)	ORP (mV)	Comments
1200	Begin	purging @ 300 ml/min							cloudy
1202	8.00	300 (1 in)			103				clearing
1205	Hookup	to YSI							clear
1207	8.02	300	8.16	6.48	101	291	23.07	145.0	"
1212	8.01	300	8.35	6.53	102	286	23.06	142.8	"
1217	8.01	300	8.33	6.58	133	291	19.69	142.7	"
1222	8.01	300	8.40	6.58	72.9	287	13.92	141.6	"
1227	8.01	300	8.39	6.62	25.7	295	8.44	141.3	"
1232	8.01	300	8.45	6.62	20.7	296	8.93	141.4	"
1237	8.01	300	8.48	6.63	16.9	296	8.40	141.4	"
1242	8.01	300	8.44	6.65	14.7	298	8.36	141.6	"
1247	8.01	300	8.42	6.65	14.3	297	8.21	141.9	"

EQUIPMENT DOCUMENTATION

1250 collect sample ELPW2

PURGING SAMPLING DECON FLUIDS USED WATER LEVEL EQUIPMENT USED

PERISTALTIC PUMP METHANOL ELECTRIC COND. PROBE

SUBMERSIBLE PUMP LIQUINOX FLOAT ACTIVATED

BLADDER PUMP POTABLE WATER KECK INTERFACE PROBE

PVC/SILICON TUBING DEIONIZED WATER

TEFLON/SILICON TUBING HEXANE

WATERA NITRIC ACID

IN LINE FILTER NONE- Dedicated Tubing

PRESS/VAC FILTER

NUMBER OF FILTERS USED 1

ANALYTICAL PARAMETERS

	METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS
<input checked="" type="checkbox"/>	TCL VOCs	8260B	N	HCl / 4°C	2x 40mL	<u>ELPW2</u>
<input type="checkbox"/>						
<input type="checkbox"/>						
<input type="checkbox"/>						
<input type="checkbox"/>						
<input type="checkbox"/>						

NOTES AND SAMPLE OBSERVATIONS

2.6 ppm for headspace on purge water

Stabilization is considered achieved when three consecutive readings are taken at 3 to 5 min. intervals within the following limits:
 Temp. - 3%; Turbidity 10% > than 1 NTU; DO - 10%; Sp. Cond. - 3%; pH - 0.1 unit; ORP - 10 mV.

SIGNATURE: Philip J. Miller P. Miller
 RECEIVED BY: B. Shew

FIELD DATA RECORD - GROUNDWATER SAMPLING

PROJECT Eugene's Dry Cleaners 3612072087 DATE 3-24-09
 WELL ID PW-3 START 1030 END 1120 BOTTLE TIME 1110
 SAMPLE ISIS ID ELPW3
 OC SAMPLES COLLECTED DUPLICATE ID ELPW3DUP
 MS ID ELPW3MS/MSD
 MSD ID ELPW3MSD

WATER LEVEL / WELL DATA
 MEASURED WELL DEPTH 10.0 FT (TOR) HISTORICAL WELL DEPTH — FT (TOR) PROTECTIVE CASING STICKUP (FROM GROUND) — FT PROTECTIVE CASING / WELL DIFFERENCE 0.25 FT
 DEPTH TO WATER 6.76 FT (TOR) SCREEN LENGTH — FT WELL DIAMETER 1 IN WELL MATERIAL HDPE
 HEIGHT OF WATER COLUMN 3.2 FT x 0.041 (1 in) GAL/FT (2 IN) 0.16 GAL/FT (4 IN) = 0.13 GAL/VOL TOTAL VOLUME PURGED 2.6 GAL
 0.65 GAL/FT (4 IN) 1.5 GAL/FT (6 IN)
 *Total purge volume = (ml per min.) x time (min.) x 0.00026 gal/ml AMBIENT AIR 0.0 PPM WELL MOUTH 0 PPM

PURGE DATA

TIME	DEPTH TO WATER (ft)	PURGE RATE (mL/min)	TEMP. (degrees C)	pH (units)	TURBIDITY (NTU)	SPEC. COND. (µmhos/cm)	D.O. (mg/L)	ORP (mV)	Comments
1035	Begin Purging	@ 280 mL/min							clear
1040	7.27	280			16.2				clear
1042	Hook up to YSI								"
1047	7.30	280	9.90	5.90	10.3	246	15.43	110.6	"
1052	7.30	280	9.95	5.87	2.16	248	10.36	119.2	"
1057	7.30	300	10.04	5.87	1.56	249	7.83	120.5	"
1102	7.30	300	10.02	5.86	1.08	253	7.61	121.6	"
1107	7.30	300	10.09	5.88	1.12	254	6.81	127.5	"
1110	Collect Sample								<u>ELPW3</u> <u>ELPW3DUP</u> <u>ELPW3MS</u> <u>ELPW3MSD</u> and <u>ELPW3MS/MSD</u> (PJM)

EQUIPMENT DOCUMENTATION

PURGING SAMPLING

PERISTALTIC PUMP SUBMERSIBLE PUMP BLADDER PUMP PVC/SILICON TUBING TEFLON/SILICON TUBING WATERA IN LINE FILTER PRESS/VAC FILTER

DECON FLUIDS USED METHANOL LIQUINOX POTABLE WATER DEIONIZED WATER HEXANE NITRIC ACID NONE- Dedicated Tubing

WATER LEVEL EQUIPMENT USED ELECTRIC COND. PROBE FLOAT ACTIVATED KECK INTERFACE PROBE

NUMBER OF FILTERS USED 0

ANALYTICAL PARAMETERS

METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS
<input checked="" type="checkbox"/> <u>TCL VOLCS</u>	<input checked="" type="checkbox"/> <u>N</u>	<input checked="" type="checkbox"/> <u>HCl/4°C</u>	<input checked="" type="checkbox"/> <u>2x40mL</u>	<input checked="" type="checkbox"/>	<u>ELPW3</u>
<input checked="" type="checkbox"/> <u>"</u>	<input checked="" type="checkbox"/> <u>"</u>	<input checked="" type="checkbox"/> <u>"</u>	<input checked="" type="checkbox"/> <u>"</u>	<input checked="" type="checkbox"/>	<u>ELPW3DUP</u>
<input checked="" type="checkbox"/> <u>"</u>	<input checked="" type="checkbox"/> <u>"</u>	<input checked="" type="checkbox"/> <u>"</u>	<input checked="" type="checkbox"/> <u>"</u>	<input checked="" type="checkbox"/>	<u>ELPW3MS/MSD</u>

NOTES AND SAMPLE OBSERVATIONS

ELPW3MS + ELPW3MSD are one sample labelled ELPW3MS/MSD

0.0 ppm headspace - purge water

Stabilization is considered achieved when three consecutive readings are taken at 3 to 5 min. intervals within the following limits:
 Temp. - 3%; Turbidity 10% > than 1 NTU; DO - 10%; Sp. Cond. - 3%; pH - 0.1 unit; ORP - 10 mV.

SIGNATURE: P. Muller
 RECEIVED BY: B. Shaw

LOW FLOW GROUNDWATER SAMPLING RECORD

PROJECT: Eugene's Dr Oceanway SAMPLE I.D. NUMBER: EC-PW4 SAMPLE TIME: 1550
 EXPLORATION ID: PW-4 SITE: Babylon NY DATE: 3-24-09
 TIME START: 1445 END: 1555 JOB NUMBER: 3612072087 FILE TYPE: NYSDEC

WATER LEVEL / PUMP SETTINGS

MEASUREMENT POINT: TOP OF WELL RISER
 TOP OF PROTECTIVE CASING
 OTHER

PROTECTIVE CASING STICKUP (FROM GROUND): 0.0 FT
 PROTECTIVE CASING / WELL DIFFERENCE: 0.2 FT

INITIAL DEPTH TO WATER: 5.19 FT
 FINAL DEPTH TO WATER: — FT
 DRAWDOWN VOLUME (initial - final x 0.16 (2-inch) or x 0.65 (4-inch)): 40.1 GAL
 TOTAL VOL. PURGED: ~3.9 GAL (purge rate (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter)

WELL DEPTH (TOR): 9.4 FT
 SCREEN LENGTH: UNKNOWN FT
 RATIO OF DRAWDOWN VOLUME TO TOTAL VOLUME PURGED: —

PID AMBIENT AIR: <0.1 PPM
 PID WELL MOUTH: <0.1 PPM
 PRESSURE TO PUMP: — PSI
 REFILL TIMER SETTING: — SECONDS

WELL DIAMETER: 1 IN
 WELL INTEGRITY: YES NO N/A
 CAP:
 CASING LOCKED:
 COLLAR:

DISCHARGE TIMER SETTING: — SECONDS

PURGE DATA

TIME	DEPTH TO WATER (ft)	PURGE RATE (ml/m)	TEMP. (deg. c)	SPECIFIC CONDUCTANCE (ms/cm)	pH (units)	DISS. O2 (mg/L)	TURBIDITY (ntu)	REDOX (mv)	PUMP INTAKE DEPTH (ft)	COMMENTS
1450	Pump on	250	9.8	0.173	5.8	2.5	414	220	~7	pump on
1505	—	250	9.7	0.169	5.9	3.0	459	230	—	purge water beginning to clear
1513	—	250	9.5	0.165	5.4	3.1	127	250	—	
1518	—	250	9.4	0.163	5.1	4.0	61.1	270	—	
1523	—	250	9.4	0.164	5.1	3.8	45.9	270	—	
1528	—	250	9.3	0.164	5.0	3.9	38.2	260	—	
1533	—	250	9.4	0.166	5.1	3.6	31.8	270	—	
1538	—	250	9.4	0.167	5.1	3.8	29.0	260	—	
1543	—	250	9.4	0.168	5.1	3.7	28.1	260	—	
1548	—	250	9.4	0.168	5.1	3.8	27.8	260	—	
1550	Sample time	—	—	—	—	—	—	—	—	Sample time
1553	Pump off	—	—	—	—	—	—	—	—	remove much of the silt in bowl

EQUIPMENT DOCUMENTATION

TYPE OF PUMP: MARSCHALK BLADDER SIMCO BLADDER GEOPUMP
 TYPE OF TUBING: SILASTIC HIGH DENSITY POLYETHYLENE OTHER
 TYPE OF PUMP MATERIAL: POLYVINYL CHLORIDE STAINLESS STEEL OTHER none
 TYPE OF BLADDER MATERIAL: TEFLON OTHER none

ANALYTICAL PARAMETERS

To Be Collected: VOC SVOC PEST / PCBs TAL INORGANICS Other

METHOD NUMBER: VAL#5
 8260B 17063, 17061
 CLP
 CLP
 CLP

PRESERVATION METHOD: HCL / 4 DEG. C
 4 DEG. C
 4 DEG. C
 HNO3 to pH <2

VOLUME REQUIRED: 2 X 40 mL
 2 X 1 L AG
 2 X 1 L AG
 1 X 1 LP

SAMPLE COLLECTED: VOC SVOC PEST / PCBs TAL INORGANICS

PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED: YES NO NUMBER OF GALLONS GENERATED: ~3.9

Signature: _____

NOTES/LOCATION SKETCH

Site Property sketch showing well locations PW-9, PW-10, and PW-4. Includes a north arrow.

MACTEC
 511 Congress Street, Portland, Maine 04101

FIGURE 4-16
 LOW FLOW GROUNDWATER DATA RECORD
 NYSDEC QUALITY ASSURANCE PROGRAM PLAN
 *PW-4

FIELD DATA RECORD - GROUNDWATER SAMPLING

PROJECT Eugene's Dry Cleaners

3612072007

DATE 3.24.09

WELL ID PW-8

START 1450 END 1600

BOTTLE TIME 1545

SAMPLE ISIS ID ECPW8

QC SAMPLES COLLECTED DUPLICATE ID
 MS ID
 MSD ID

WATER LEVEL / WELL DATA

MEASURED WELL DEPTH 11.3 FT (TOR) HISTORICAL WELL DEPTH — FT (TOR) PROTECTIVE CASING STICKUP (FROM GROUND) — FT PROTECTIVE CASING / WELL DIFFERENCE 0.2 FT
 DEPTH TO WATER 7.36 FT (TOR) SCREEN LENGTH — FT WELL DIAMETER 1 IN WELL MATERIAL HDPE
 HEIGHT OF WATER COLUMN 3.9 FT x 0.16 GAL/FT (2 IN) = 0.16 GAL/VOL TOTAL VOLUME PURGED 3.9 GAL
 0.65 GAL/FT (4 IN) = 1.5 GAL/FT (6 IN)
 Total purge volume = (ml per min.) x time (min.) x 0.00026 gal/ml AMBIENT AIR 0 PPM WELL MOUTH 0 PPM

PURGE DATA

TIME	DEPTH TO WATER (ft)	PURGE RATE (mL/min)	TEMP. (degrees C)	pH (units)	TURBIDITY (NTU)	SPEC. COND. (µmhos/cm)	D.O. (mg/L)	ORP (mV)	Comments
1455	Begin purging								cloudy
1458	7.42	300			58.3				clearing
1459	Connect to YSI								clearing
1501	7.43	300	10.22	6.32	27.9	344	9.83	103.4	clear
1506	7.43	300	9.82	6.30	19.3	333	8.73	107.9	"
1511	7.43	300	9.74	6.32	15.1	327	8.99	112.4	"
1516	7.43	300	9.72	6.33	8.38	321	9.10	116.0	"
1521	7.43	300	9.67	6.34	6.22	320	8.67	117.6	"
1526	7.43	300	9.70	6.34	4.57	318	7.78	117.3	"
1531	7.43	300	9.65	6.33	3.09	314	7.17	116.1	"
1536	7.43	300	9.67	6.34	2.64	313	7.11	115.3	"
1541	7.43	300	9.68	6.33	2.16	312	6.80	115.0	"

EQUIPMENT DOCUMENTATION

1545 Collect Sample ECPW8

PURGING SAMPLING
 PERISTALTIC PUMP SUBMERSIBLE PUMP BLADDER PUMP PVC/SILICON TUBING TEFLON/SILICON TUBING WATERA IN LINE FILTER PRESS/VAC FILTER
 DECON FLUIDS USED: METHANOL LIQUINOX POTABLE WATER DEIONIZED WATER HEXANE NITRIC ACID NONE - Dedicated Tubing
 WATER LEVEL EQUIPMENT USED: ELECTRIC COND. PROBE FLOAT ACTIVATED KECK INTERFACE PROBE
 NUMBER OF FILTERS USED 0

ANALYTICAL PARAMETERS

	METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS
<input checked="" type="checkbox"/>	TCL VOCs	B260B	N	HCl/4°C	2x 40mL	<input checked="" type="checkbox"/> ECPW8
<input type="checkbox"/>						
<input type="checkbox"/>						
<input type="checkbox"/>						
<input type="checkbox"/>						
<input type="checkbox"/>						

NOTES AND SAMPLE OBSERVATIONS

Purge water TOC = 0 ppm

Stabilization is considered achieved when three consecutive readings are taken at 3 to 5 min. intervals within the following limits:
 Temp. - 3 %; Turbidity 10% > than 1 NTU; DO - 10%; Sp. Cond. - 3%; pH - 0.1 unit; ORP - 10 mV.

SIGNATURE: [Signature] P. Muller
 RECEIVED BY: [Signature] B. Skow

FIELD DATA RECORD - GROUNDWATER SAMPLING

PROJECT Eugene's Dry Cleaners

3612072007

DATE 3.26.09

WELL ID PW-9

START 1400 END 1540

BOTTLE TIME 1535

SAMPLE ISIS ID ELPW9

QC SAMPLES COLLECTED Duplicates: MS ID MSD ID

WATER LEVEL / WELL DATA

MEASURED WELL DEPTH 15.1 FT (TOR) HISTORICAL WELL DEPTH 15.1 FT (TOR) PROTECTIVE CASING STICKUP (FROM GROUND) FT PROTECTIVE CASING / WELL DIFFERENCE 0.8 FT

DEPTH TO WATER 5.92 FT (TOR) SCREEN LENGTH 10 FT WELL DIAMETER 2 IN WELL MATERIAL PVC

HEIGHT OF WATER COLUMN 9.2 FT 0.16 GAL/FT (2 IN) 0.65 GAL/FT (4 IN) = 1.5 GAL/VOL 1.5 GAL/FT (6 IN) TOTAL VOLUME PURGED 3.0 GAL

Total purge volume = (ml per min.) x time (min.) x 0.0026 gal/ml AMBIENT AIR 0.0 PPM WELL MOUTH 0.0 PPM

PURGE DATA

TIME	DEPTH TO WATER (ft)	PURGE RATE (ml/min)	TEMP. (degrees C)	pH (units)	TURBIDITY (NTU)	SPEC. COND. (µmhos/cm)	Error D.O. (mg/L)	ORP (mV)	Comments
1457	Begin Purging @			300	ml/min				clear
1500	5.92	300			14.9				"
1502	Hookup to YSI								"
1502	5.92	300	9.21	6.59	12.9	501	-	206.8	"
1507	5.92	300	9.28	6.55	11.5	480	-	199.6	"
1512	5.92	300	9.32	6.55	8.33	480	-	195.3	"
1517	5.92	300	9.33	6.54	6.79	481	-	187.7	"
1522	5.92	300	9.34	6.56	4.77	484	-	180.4	"
1527	5.92	300	9.33	6.56	4.21	486	-	175.0	"
1532	5.92	300	9.34	6.56	2.92	486	-	170.9	"
1535	Collect Sample								<u>ELPW9</u>

EQUIPMENT DOCUMENTATION

PURGING SAMPLING PERISTALTIC PUMP SUBMERSIBLE PUMP BLADDER PUMP PVC/SILICON TUBING TEFLON/SILICON TUBING WATERA IN LINE FILTER PRESS/VAC FILTER

DECON FLUIDS USED METHANOL LIQUINOX POTABLE WATER DEIONIZED WATER HEXANE NITRIC ACID NONE- Dedicated Tubing

WATER LEVEL EQUIPMENT USED ELECTRIC COND. PROBE FLOAT ACTIVATED KECK INTERFACE PROBE

NUMBER OF FILTERS USED 0

ANALYTICAL PARAMETERS

TCL VOCs METHOD NUMBER 8260B FILTERED N PRESERVATION METHOD Hcl/4°C VOLUME REQUIRED 2x40ml SAMPLE COLLECTED SAMPLE BOTTLE ID NUMBERS ELPW9

NOTES AND SAMPLE OBSERVATIONS

intake tubing @ 12' bgs

Stabilization is considered achieved when three consecutive readings are taken at 3 to 5 min. intervals within the following limits:
Temp. - 3%; Turbidity 10% > than 1 NTU; DO - 10%; Sp. Cond. - 3%; pH ±0.1 unit; ORP - 10 mV.

SIGNATURE: [Signature] RECEIVED BY: B. Shan.

FIELD DATA RECORD - GROUNDWATER SAMPLING

PROJECT Eugene's Dry Cleaners 3612072087 DATE 3.26.09
 WELL ID PW-10 START 1545 END 1645 BOTTLE TIME 1635
 SAMPLE ISIS ID ECPW10
 QC SAMPLES COLLECTED DPLICATE ID 5
 MS ID 5
 MSD ID 5

WATER LEVEL / WELL DATA
 MEASURED WELL DEPTH 15.4 FT (TOR) HISTORICAL WELL DEPTH 15.4 FT (TOR) PROTECTIVE CASING STICKUP (FROM GROUND) - FT PROTECTIVE CASING / WELL DIFFERENCE 0.35 FT
 DEPTH TO WATER 5.99 FT (TOR) SCREEN LENGTH 10 FT WELL DIAMETER 2 IN WELL MATERIAL PVC
 HEIGHT OF WATER COLUMN 9.4 FT x 0.16 GAL/FT (2 IN) 0.65 GAL/FT (4 IN) = 1.5 GAL/VOL TOTAL VOLUME PURGED 3.1 GAL
 1.5 GAL/FT (6 IN)
 Total purge volume = (ml per min.) x time (min.) x 0.00026 gal/ml AMBIENT AIR 0 PPM WELL MOUTH 0 PPM

PURGE DATA

TIME	DEPTH TO WATER (ft)	PURGE RATE (ml/min)	TEMP. (degrees C)	pH (units)	TURBIDITY (NTU)	SPEC. COND. (u/mhos/cm)	Error D.O. (mg/L)	ORP (mV)	Comments
1555	Begin Purging				300 ml/min				clear
1558	6.01	300			29.5				"
1559	Hookup to YSI								"
1600	6.01	300	9.40	6.76	21.0	519		-18.4	"
1605	6.09	300	9.46	6.83	20.1	521		-60.5	"
1610	6.01	300	9.53	6.85	17.4	520		-71.2	"
1615	6.01	300	9.52	6.86	12.5	520		-80.9	"
1620	6.01	300	9.57	6.87	7.80	517		-83.2	"
1625	6.01	300	9.53	6.88	6.69	520		-86.3	"
1630	6.01	300	9.54	6.88	5.78	517		-89.8	"
1635	Collect Sample								<u>ECPW10</u>

EQUIPMENT DOCUMENTATION

PURGING SAMPLING
 PERISTALTIC PUMP DECON FLUIDS USED METHANOL WATER LEVEL EQUIPMENT USED ELECTRIC COND. PROBE
 SUBMERSIBLE PUMP LIQUINOX FLOAT ACTIVATED
 BLADDER PUMP POTABLE WATER KECK INTERFACE PROBE
 PVC/SILICON TUBING DEIONIZED WATER
 TEFLON/SILICON TUBING HEXANE
 WATERA NITRIC ACID
 IN LINE FILTER NONE- Dedicated Tubing
 PRESS/VAC FILTER
 NUMBER OF FILTERS USED 0

ANALYTICAL PARAMETERS

	METHOD NUMBER	FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS
<input checked="" type="checkbox"/>	TCL Vocs	8260B	N	HCl/40C	2x40ml	<input checked="" type="checkbox"/> ECPW10
<input type="checkbox"/>						
<input type="checkbox"/>						
<input type="checkbox"/>						
<input type="checkbox"/>						
<input type="checkbox"/>						
<input type="checkbox"/>						

NOTES AND SAMPLE OBSERVATIONS

Purge water P.D < 5 ppm
 slight petroleum odor

Stabilization is considered achieved when three consecutive readings are taken at 3 to 5 min. intervals within the following limits:
 Temp. - 3%; Turbidity 10% > than 1 NTU; DO - 10%; Sp. Cond. - 3%; pH - 0.1 unit; ORP - 10 mV.

SIGNATURE: [Signature] P. Muller
 RECEIVED BY: [Signature] B. Shaw

Test Boring Log

Project Fugere's Dry Cleanert		Boring/Well No. PW-9	Project No. 3612072087	
Client NYSDEC	Site Babylon, NY		Sheet No. 1 of 2	
Logged By B Shaw	Ground Elevation 9.38	Start Date March 24, 2009	Finish Date March 24, 2009	
Drilling Contractor ADT-NY	Driller's Name (NAY) Tim Kamentuk	Rig Type 6010 DT Geoprobe		
Drilling Method Direct Push/Auger (NSA)	Protection Level D	P.I.D. (eV) 10.8	Casing Size NA	Auger Size 3 7/8"
Soil Drilled 16'	Rock Drilled NA	Total Depth 16'	Depth to Groundwater/Date 5.92' (TOR) 03/25/2009	Piez <input type="checkbox"/> Well <input checked="" type="checkbox"/> Boring <input type="checkbox"/>

Depth (Feet)	Sample No. & Penetration/ Recovery (Feet)	Sample Type	SPT Blows/6" or Core Rec./Rqd. %	SPT-N (Blows/Ft.)	Graphic Log	Sample Description	USCS Group Symbol	Notes on Drilling	Monitoring (ppm)		Lab Tests
									PI Meter Field Scan	PI Meter Head Space	
0-1.5						DK fine, silty gravelly, sandy loam, damp, WG, dense/medium. SP/NP, some roots/brick ceramic					
1.5-3.8						brownish orange sand damp, PS, NP, dense, some fine gravel, well drained					
3.8-5	3.5 / 5.0					lt yellowish brown gravelly sand, loose/medium, well rounded gravel, damp, NP			CO.1		A-2

150

S

✓
MW (07/13/09)

FIGURE 4-6
TYPICAL TEST BORING LOG
NYSDEC QUALITY ASSURANCE PROGRAM PLAN

Test Boring Log

Project Eugene's Dry Cleaners		Boring/Well No. PW 9	Project No. 3612072087	
Client NYSDEC	Site Babylon, NY		Sheet No. 2 of 2	
Logged By B Shaw	Ground Elevation 9.38 msl	Start Date March 24, 2009	Finish Date March 24, 2009	
Drilling Contractor ADT - NY	Driller's Name Jiri Kamanick	Rig Type 6616DT - Geoprobe		
Drilling Method Direct Push / HSA	Protection Level D	P.I.D. (eV) 10.8	Casing Size NA	Auger Size, 3 7/8
Soil Drilled 16'	Rock Drilled NA	Total Depth 16'	Depth to Groundwater/Date 5.92' (TW); 03/25/2009.	Piez <input type="checkbox"/> Well <input checked="" type="checkbox"/> Boring <input type="checkbox"/>

Depth (Feet)	Sample No. & Penetration/ Recovery (Feet)	Sample Type	SPT Blows/6" or Core Rec./Rqd. %	SPT-N (Blows/Ft.)	Graphic Log	Sample Description	USCS Group Symbol	Notes on Drilling	Monitoring (ppm)		Lab Tests
									PI Meter Field Scan	PI Meter Head Space	
5											
6											
7	3.0					5-10 Lt yellowish orange sand w/ some gravel, fine gravel to m coarse sand, PS, NP, loose, damp to saturated (w - 80%), well rounded to rounded fine gravels			6.1	0.6	
8	5.0								1.3		
9									6.6		
10									6.1		

S2
P
1102

✓
MW (07113)09

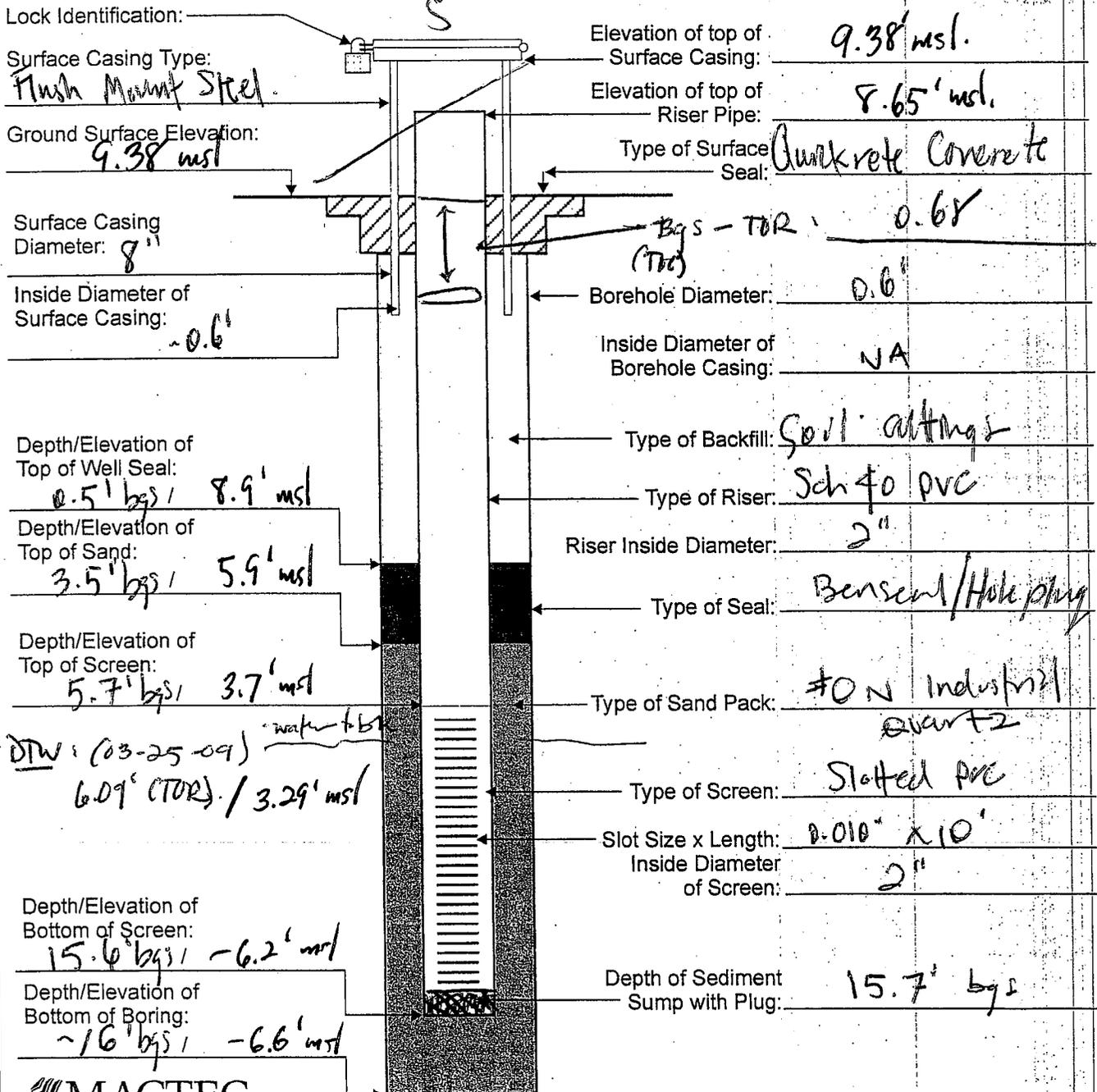
FIGURE 4-6
TYPICAL TEST BORING LOG
NYSDEC QUALITY ASSURANCE PROGRAM PLAN
— ABB Environmental Services, Inc. —

Overburden Well Construction Diagram

Well No.: PW-9

Project No.: 3612072087	Project Name: Eugene's Dry Cleaner
	Project Area: Babylon, NY - NYSDEC
Contractor: ADT, NY	Driller: Jiri Kaminicki
Logged By: B. Shaw	Method: Direct Push / HSA
Checked By: PASADUEN	Date: 7/13/09
	Well Development Date: March 25, 2009

Not To Scale



511 Congress Street
Portland, ME 04101

FIGURE 4-7
OVERBURDEN MONITORING WELL CONSTRUCTION DIAGRAM
NYSDEC QUALITY ASSURANCE PROJECT PLAN

WELL DEVELOPMENT RECORD

Project: Eugene's Dry Cleaners	Well Installation Date: March 24, 2009	Project No: 3612072087
Client: NYSDEC - Babylon, NY	Well Development Date: March 25, 2009	Logged by: BAS
Well/Site I.D.: PW-9	Weather: 38° F, Sunny	Checked by: MW (07/11/04)
		Start Date: 3-25-09
		Finish Date: 3-25-09

Well Construction Record Data:		Well Diameter: 2 in.	Start Time: 1045	Finish Time: 1130
Bottom of Screen: 15.0 ft.	<input type="checkbox"/> From Ground Surface <input checked="" type="checkbox"/> From Top of Riser	Fluids Lost during Drilling: 0 gal.		
Sediment Sump/Plug: 0.2 ft.				
Screen Length: 9.9 ft.				

Protective Casing Stick-up: 0 ft.	Protective Casing/Well Diff.: 0.68 ft.	PID Readings: Ambient Air 0.1 ppm
		Well Mouth 20.1 ppm

Well Levels:		Sediment:	
Initial: 6.09 ft.	Well Depth before Development: 15.08 ft.	(from top of PVC)	
End of Development: 6.09 ft.	Well Depth after Development: 15.08 ft.		
24 Hours after Development: NA ft.	Sediment Depth Removed: 0 ft.		
HT of Water Column: 9.0 ft.	<input type="checkbox"/> 1.68* gal./ft. = 1.4 gal./vol. <input checked="" type="checkbox"/> 0.16	*for 4" HSA Installed Wells	

Equipment:		Approximate Recharge Rate: 1.7 gpm
<input type="checkbox"/> Dedicated Submersible Pump <input checked="" type="checkbox"/> Surge Block + whale pump <input type="checkbox"/> Bailer <input type="checkbox"/> 2" <input type="checkbox"/> _____ <input type="checkbox"/> Grundfos Pump 2" _____ 4" _____	Total Gallons Removed: ~32 gal.	
Well Development Criteria Met:		<input checked="" type="checkbox"/> Well water clear to unaided eye <input checked="" type="checkbox"/> Sediment thickness remaining in well is <1.0% of screen length <input checked="" type="checkbox"/> Total water removed = a minimum of 5x calculated well volume plus 5x drilling fluid lost <input checked="" type="checkbox"/> Turbidity < 5NTUs <input checked="" type="checkbox"/> 10% change in field parameters
Notes: /S		
End of Well Development Sample (1 pint) Collected? <input checked="" type="checkbox"/>		

Water Parameter Measurements							
Record at start, twice during and at the end of development (minimum): (C)							
Time	Volume	Total Gallons	pH	Temp.	ms/cm Conductance	Turbidity	Pumping Rate
1049	Pump on	~0					~1.7 gal/min
1053	5 gal	~3.6	6.8	9.8	512	7100	↓
1056	10 gal	~7.1	6.9	9.6	505	7100	
1059	15 gal	~10.7	6.9	9.7	507	76.3	
1102	20 gal	~14.3	6.9	9.7	507	9.6	
1105	25 gal	~17.9	7.0	9.6	502	4.6	
1108	30 gal	~21.5	6.9	9.8	499	2.8	

Well Developer's Signature: _____



FIGURE 4-9
WELL DEVELOPMENT RECORD
NYSDEC QUALITY ASSURANCE PROGRAM PLAN

Test Boring Log

Project Eugene's Dry Cleaners		Boring/Well No. PW-10	Project No. 3612072087	
Client NYSDEC	Site Babylon, NY		Sheet No. 1 of 2	
Logged By BShen	Ground Elevation 8.99 msl	Start Date March 25, 2009	Finish Date March 25, 2009	
Drilling Contractor HJ-NY	Driller's Name Jain Kamenick	Rig Type GC10DT - Geoprobe		
Drilling Method Direct Push / Auger (ASD)	Protection Level D	P.I.D. (eV) 10.8	Casing Size NA	Auger Size 3 7/8"
Soil Drilled 16'	Rock Drilled NA	Total Depth 16'	Depth to Groundwater/Date 5.99' (TOR); 03/25/2009	Piez <input type="checkbox"/> Well <input checked="" type="checkbox"/> Boring <input type="checkbox"/>

Depth (Feet)	Sample No. & Penetration/Recovery (Feet)	Sample Type	SPT Blows/6" or Core Rec./Rqd. %	SPT-N (Blows/Ft.)	Graphic Log	Sample Description	USCS Group Symbol	Notes on Drilling	Monitoring (ppm)			Lab Tests
									PI Meter Field Scan	PI Meter Head Space		
1						0-2 DK olive sandy lean WG, SP, damp, w/ fine gravel	Fill					
2	3.2					2-5 dk orange brown to lt orange brown, fine to med coarse sand, trace silt @ 2-3'; PS, NP/SP, wet to damp; med dense to loose	Plastic		107			
3	5.0											
4												
5												

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MSW 7/13/09

FIGURE 4-6
TYPICAL TEST BORING LOG
NYSDEC QUALITY ASSURANCE PROGRAM PLAN
ABB Environmental Services, Inc.

Test Boring Log

Project Eugene's Dry Cleaners		Boring/Well No. PW-10	Project No. 362072087
Client NYSDEC	Site Babylon, NY		Sheet No. 2 of 2
Logged By B Shaw	Ground Elevation 8.99 msl	Start Date March 24, 2009	Finish Date March 25, 2009
Drilling Contractor ADT-NY	Driller's Name Jiri Kamenreck	Rig Type 6610DT-Geoprobe	
Drilling Method Direct Push / HSA	Protection Level D	P.I.D. (eV) 10.8	Casing Size NA Auger Size 3 1/8"
Soil Drilled 16'	Rock Drilled NA	Total Depth 16'	Depth to Groundwater/Date 5.99' (TOP); 03/25/09
		Piez	Well <input checked="" type="checkbox"/> Boring <input type="checkbox"/>

Depth (Feet)	Sample No. & Penetration/Recovery (Feet)	Sample Type	SPT Blows/6" or Core Rec./Req. %	SPT-N (Blows/Ft.)	Graphic Log	Sample Description	USCS Group Symbol	Notes on Drilling	Monitoring (ppm)		Lab Tests
									PI Meter Field Scan	PI Meter Head Space	
5						5-6.8 Lt orange clean fine to coarse sand, dup, PS, NP, loose					
6						6.8-9.2 orange/brown, medium coarse sand, PS, wet, SP/NP, M.D. vec					
7	4.3					9.2-10 Lt Brown / orange brown gravelly sand, fine gravel to fines, dense / medium WG, saturated, NP					
8	5.0										
9											
10											

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S

MW 07/13/09

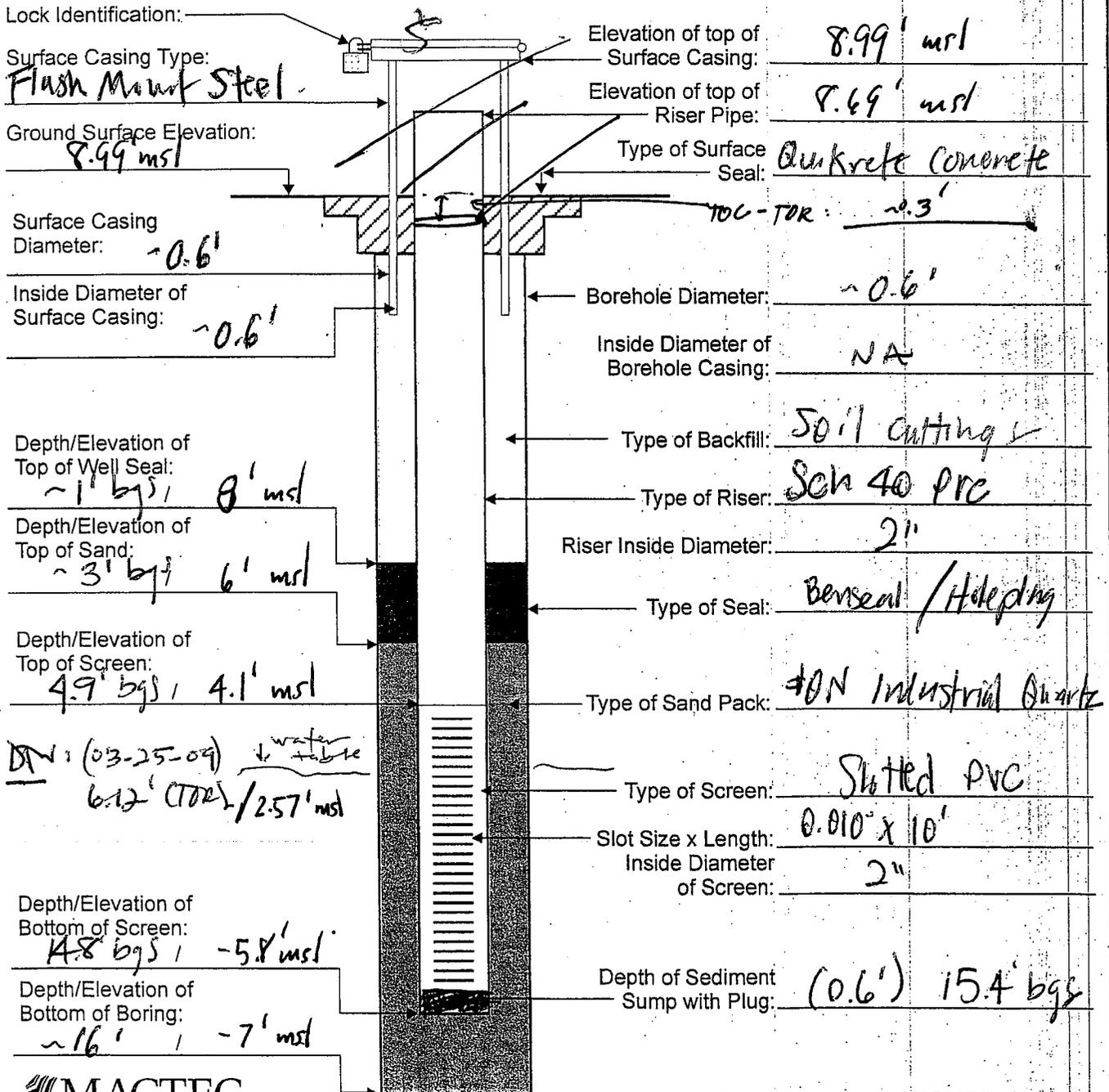
FIGURE 4-6
TYPICAL TEST BORING LOG
NYSDEC QUALITY ASSURANCE PROGRAM PLAN

Overburden Well Construction Diagram

Well No.: PW-10

Project No.: 3612072087	Project Name: Eugene's Dry Cleaners	
	Project Area: Babylon, NY - NYSDEC	
Contractor: ADT, NY	Driller: Jim Kamenick	Method: Direct Push / HSA
Logged By: B. Shaw	Date Started: 03-25-09	Completed: 03-25-09
Checked By: W. W. W.	Date: 7/17/09	Well Development Date: March 25, 2009

Not To Scale



MACTEC

511 Congress Street
Portland, ME 04101

FIGURE 4-7
OVERBURDEN MONITORING WELL CONSTRUCTION DIAGRAM
NYSDEC QUALITY ASSURANCE PROJECT PLAN

WELL DEVELOPMENT RECORD

Project: Eugene's Dry Cleaners	Well Installation Date: March 25, 2009	Project No. 3612072087
Client: NYSDEC - Babylon, NY	Well Development Date: March 25, 2009	Logged by: BAS
Well/Site I.D.: PW-10	Weather: 56°F Sunny	Checked by: MW (07/13/09)
		Start Date: 3-25-09
		Finish Date: 3-25-09

Well Construction Record Data:		Well Diameter: 2 in.	Start Time: 1800	Finish Time: 1840
Bottom of Screen: 14.6 ft.] From Ground Surface <input type="checkbox"/> From Top of Riser <input checked="" type="checkbox"/>			
Sediment Sump/Plug: 15.15 ft.				
Screen Length: 9.9 ft.	Fluids Lost during Drilling: 0 gal.			

Protective Casing Stick-up: 0 ft.	Protective Casing/Well Diff.: 0.75 ft.	PID Readings:
		Ambient Air: 0.1 ppm
		Well Mouth: 0.1 ppm

Well Levels:		Sediment:	
Initial: 6.12 ft.	Well Depth before Development: 15.15 ft.	(from top of PVC)	
End of Development: 6.39 ft.	Well Depth after Development: 15.15 ft.		
24 Hours after Development: NA ft.	Sediment Depth Removed: 0 ft.		
HT of Water Column: ~9 ft.	$\times \frac{1.68 \text{ gal./ft.}}{0.16} = 1.4 \text{ gal./vol.}$		*for 4" HSA Installed Wells

Equipment:		Approximate Recharge Rate: ~1 gpm
<input type="checkbox"/> Dedicated Submersible Pump <input checked="" type="checkbox"/> Surge Block + w/air pump <input type="checkbox"/> Bailer <input type="checkbox"/> 2" <input type="checkbox"/> _____ <input type="checkbox"/> Grundfos Pump 2" _____ 4" _____		Total Gallons Removed: ~30 gal.
Well Development Criteria Met: 5 /		■ Well water clear to unaided eye <input checked="" type="checkbox"/> <input type="checkbox"/> ■ Sediment thickness remaining in well is <1.0% of screen length <input checked="" type="checkbox"/> <input type="checkbox"/> ■ Total water removed = a minimum of 5x calculated well volume plus 5x drilling fluid lost <input checked="" type="checkbox"/> <input type="checkbox"/> ■ Turbidity < 5NTUs <input type="checkbox"/> <input checked="" type="checkbox"/> ■ 10% change in field parameters <input type="checkbox"/> <input checked="" type="checkbox"/>
Notes: 5 /		End of Well Development Sample (1 pint) Collected? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

Water Parameter Measurements							
Record at start, twice during and at the end of development (minimum):							
Time	Volume	Total Gallons	pH	Temp. (°C)	Conductance (µmS/cm)	Turbidity	Pumping Rate
1807	Pump	0	PW-10				
1811	~3.6	5	6.9	10.3	565	71000	~1.25 gal/min
1815	~7.1	10	7.0	10.3	525	71000	
1819	~10.7	15	6.8	10.1	534	177	
1824	~14.3	20	7.0	10.0	533	57.2	
1829	~17.9	25	7.0	10.1	527	17.5	
1833	~21.5	30	7.0	10.1	524	8.0	

Well Developer's Signature:



FIGURE 4-9
WELL DEVELOPMENT RECORD
NYSDEC QUALITY ASSURANCE PROGRAM PLAN

ATTACHMENT B

MARCH 2009 PHOTOGRAPH LOG

STRUCTURE 05 PHOTOGRAPHS



Entrance to Structure 05.



Basement layout at Structure 05.

STRUCTURE 05 PHOTOGRAPHS



Basement layout at Structure 05 (continued).



Installing soil vapor sampling point SV-5A.

STRUCTURE 05 PHOTOGRAPHS



Installing soil vapor sampling point SV-5A (continued).



Sub slab sampling at SV-5A.

STRUCTURE 05 PHOTOGRAPHS



Indoor air sampling at Structure 05.

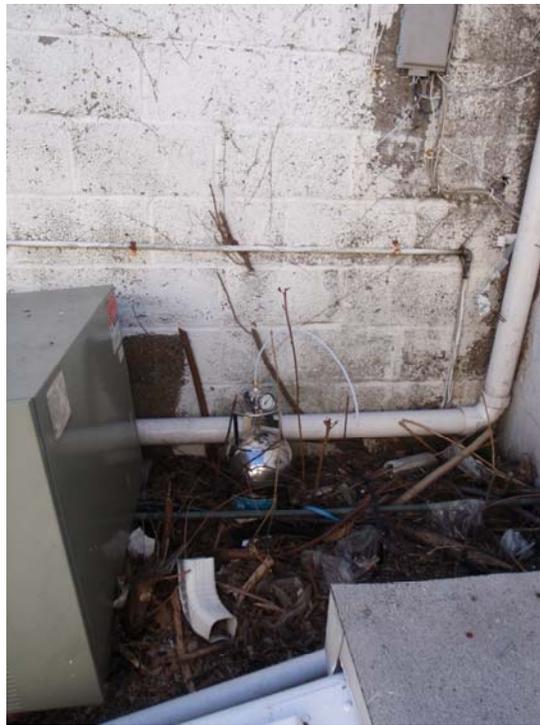


Sub slab sampling at SV-5B.

STRUCTURE 05 PHOTOGRAPHS



Ambient air sample at Eugene's Dry Cleaners.



Ambient air sample at Eugene's Dry Cleaners (continued).

ATTACHMENT C

DATA USABILITY SUMMARY REPORTS

**DATA USABILITY SUMMARY REPORT
2009 SAMPLING EVENT
EUGENES DRY CLEANERS SITE
BABYLON, NEW YORK**

1.0 Introduction:

Sub-slab vapor, indoor air samples, and outdoor air samples were collected at the Eugene's Dry Cleaners site (Site) from March 23rd through March 24th, 2009. Samples were analyzed by Contest Analytical Laboratory (Contest) in East Longmeadow, Massachusetts. A listing of samples included in this investigation is presented in Table 1. Samples were analyzed for Volatile Organic Compounds (VOCs) by EPA Method TO-15.

Deliverables for the off-site laboratory analyses included a Category B deliverable as defined in the New York State Department of Environmental Conservation (NYSDEC) Analytical Services Protocols (NYSDEC, 2005).

A project chemist review was completed based on NYSDEC Division of Environmental Remediation guidance for Data Usability Summary Reports (NYSDEC, 2002). Laboratory quality control (QC) limits were used during the data evaluation unless noted otherwise. The project chemist review included evaluations of sample collection, data package completeness, holding times, QC data (blanks, instrument calibrations, duplicates, surrogate recovery, and spike recovery), data transcription, electronic data reporting, calculations, and data qualification.

Final sample results are presented on Table 2. The following qualifiers are used in the final data presentation.

U = target analyte is not detected at the reported detection limit

J = concentration is estimated

UJ = target analyte is not detected at the reported detection limit and is estimated

With the exception of the items discussed below, results are interpreted to be usable as reported by the laboratory.

2.0 Volatile Organic Compounds

Blank Contamination

Acetone, 2-butanone, ethanol, and methylene chloride are reported in the method blanks associated with samples ECBA05C and ECAA003. Acetone, 2-butanone, and methylene chloride are reported in the method blanks associated with samples ECSS05A and ECSS05B. Action limits were established at ten times the reported concentrations for acetone, 2-butanone, and methylene chloride, and five times the reported concentrations for ethanol. Results for acetone, 2-butanone, ethanol, and methylene chloride less than the action limits were qualified non-detect (U). The following samples were qualified:

Field Sample ID	QC code	Analyte	Final Conc. ($\mu\text{g}/\text{m}^3$)	Final Qual	Lab Conc. ($\mu\text{g}/\text{m}^3$)	Lab Qual
ECAA003	FS	Acetone	11	UJ	11	
ECAA003	FS	2-Butanone	0.13	U	0.13	
ECBA05C	FS	Acetone	12	UJ	12	
ECBA05C	FS	Methylene chloride	1.7	U	1.7	
ECSS05A	FS	Methylene chloride	2.9	U	2.9	
ECSS05A	FS	2-Butanone	2.4	U	2.4	
ECSS05B	FS	Methylene chloride	2.6	U	2.6	

Initial Calibration

In the initial calibration, the percent relative standard deviation (RSD) for propene (37), acetone (42), and ethanol (41) exceeds the QC limit of 30. The results for propene, acetone, and ethanol were qualified estimated (J/UJ).

Continuing Calibration

In the continuing calibration, the percent difference for 1,2-dichloroethane (22), 1,1,1-trichloroethane (22), 2-propanol (isopropanol) (21), and 1,2,4-trichlorobenzene (21) exceed the QC limit of 20. The results for 1,2-dichloroethane (22), 1,1,1-trichloroethane, 2-propanol (isopropanol), and 1,2,4-trichlorobenzene were qualified estimated (J/UJ).

VOC- Sample Reporting

The following samples were analyzed at dilutions due to elevated concentrations of target compounds above the instrument calibration range. Target compounds which were not detected were reported with elevated reporting limits:

Field Sample ID	QC code	Dilution Factor
ECSS05A	FS	2
ECSS05B	FS	2

Reference:

New York State Department of Environmental Conservation (NYSDEC), 2005. "Analytical Services Protocols"; July 2005.

New York State Department of Environmental Conservation (NYSDEC), 2002. "Technical Guidance for Site Investigation and Remediation-Appendix 2B"; Draft DER-10; Division of Environmental Remediation; December 2002.

Data Validator: Wolfgang Calicchio

Date: May 1, 2009

Quality Assurance Officer: Chris Ricardi, NRCC-EAC

Date:

TABLE 1 - DUSR – EUGENES DRY CLEANERS SITE

SDG	Sample ID	QC Code	Lab ID	Method	Sample Date	Notes
LIMIT-24321	ECAA003	FS	09B09632	TO-15	3/24/2009	
LIMIT-24321	ECBA05C	FS	09B09631	TO-15	3/24/2009	
LIMIT-24321	ECSS05A	FS	09B09629	TO-15	3/24/2009	
LIMIT-24321	ECSS05B	FS	09B09630	TO-15	3/24/2009	

TABLE 2 - RESULTS SUMMARY
DATA USABILITY SUMMARY REPORT
MARCH 2009 SOIL VAPOR AND AMBIENT AIR SAMPLING
EUGENES CLEANERS SITE
BABYLON, NEW YORK

Lab Sample Delivery Group			LIMIT-24321	LIMIT-24321	LIMIT-24321	LIMIT-24321
Loc Name			SS-05A	SS-05B	BA-05C	AA-03
Field Sample Date			3/24/2009	3/24/2009	3/24/2009	3/24/2009
Field Sample Id			ECSS05A	ECSS05B	ECBA05C	ECAA003
Qc Code			FS	FS	FS	FS
Analysis Method	Param Name	Units	Result	Qualifier	Result	Qualifier
TO-15	1,1,1-Trichloroethane	ug/m3	0.54	UJ	0.67	J
TO-15	1,1,2,2-Tetrachloroethane	ug/m3	0.68	U	0.68	U
TO-15	1,1,2-Trichloro-1,2,2-Trifluoroethane	ug/m3	0.76	U	0.76	U
TO-15	1,1,2-Trichloroethane	ug/m3	0.54	U	0.54	U
TO-15	1,1-Dichloroethane	ug/m3	0.4	U	0.4	U
TO-15	1,1-Dichloroethene	ug/m3	0.4	U	0.4	U
TO-15	1,2,4-Trichlorobenzene	ug/m3	0.74	UJ	0.74	UJ
TO-15	1,2,4-Trimethylbenzene	ug/m3	0.5	U	0.5	U
TO-15	1,2-Dibromoethane	ug/m3	0.76	U	0.76	U
TO-15	1,2-Dichloro-1,1,2,2-tetrafluoroethane	ug/m3	0.7	U	0.7	U
TO-15	1,2-Dichlorobenzene	ug/m3	0.6	U	0.6	U
TO-15	1,2-Dichloroethane	ug/m3	0.4	UJ	0.4	UJ
TO-15	1,2-Dichloropropane	ug/m3	0.46	U	0.46	U
TO-15	1,3,5-Trimethylbenzene	ug/m3	0.5	U	0.5	U
TO-15	1,3-Dichlorobenzene	ug/m3	0.6	U	0.6	U
TO-15	1,4-Dichlorobenzene	ug/m3	0.67		0.88	
TO-15	2-Butanone	ug/m3	2.4	U	4.5	
TO-15	2-Hexanone	ug/m3	0.4	U	0.4	U
TO-15	2-Propanol	ug/m3	3.3	J	2.6	J
TO-15	4-Ethyltoluene	ug/m3	0.5	U	0.5	U
TO-15	4-Methyl-2-pentanone	ug/m3	0.4	U	0.4	U
TO-15	Acetone	ug/m3	28	J	38	J
TO-15	Benzene	ug/m3	0.32	U	0.74	
TO-15	Benzyl chloride	ug/m3	0.52	U	0.52	U
TO-15	Bromodichloromethane	ug/m3	0.66	U	0.66	U
TO-15	Bromoform	ug/m3	1.1	U	1.1	U
TO-15	Bromomethane	ug/m3	0.38	U	0.38	U
TO-15	Butadiene, 1,3-	ug/m3	0.22	U	0.22	U
TO-15	Carbon disulfide	ug/m3	1.4		2.9	
TO-15	Carbon tetrachloride	ug/m3	0.62	U	0.62	U
TO-15	Chlorobenzene	ug/m3	0.46	U	0.46	U
TO-15	Chlorodibromomethane	ug/m3	0.86	U	0.86	U
TO-15	Chloroethane	ug/m3	0.26	U	0.26	U
TO-15	Chloroform	ug/m3	1.4		1.7	
TO-15	Chloromethane	ug/m3	0.2	U	0.2	U
TO-15	Cis-1,2-Dichloroethene	ug/m3	0.4	U	0.4	U
TO-15	cis-1,3-Dichloropropene	ug/m3	0.44	U	0.44	U
TO-15	Cyclohexane	ug/m3	0.34	U	0.34	U
TO-15	Dichlorodifluoromethane	ug/m3	2.2		3.9	
TO-15	Ethanol	ug/m3	3.7	J	4.8	J
TO-15	Ethyl acetate	ug/m3	0.73	U	0.73	U
TO-15	Ethyl benzene	ug/m3	0.44	U	0.44	U
TO-15	Heptane	ug/m3	0.4	U	0.79	
TO-15	Hexachlorobutadiene	ug/m3	2.2	U	2.2	U
TO-15	Hexane	ug/m3	1.2		0.82	
TO-15	Methyl Tertbutyl Ether	ug/m3	0.36	U	0.36	U
TO-15	Methylene chloride	ug/m3	2.9	U	2.6	U
TO-15	Naphthalene	ug/m3	1.3	U	1.3	U
TO-15	o-Xylene	ug/m3	0.44	U	0.44	U
TO-15	Propylene	ug/m3	0.35	UJ	0.35	UJ
TO-15	Styrene	ug/m3	0.42	U	0.42	U
TO-15	Tetrachloroethene	ug/m3	3,400		300	
TO-15	Tetrahydrofuran	ug/m3	0.3	U	0.3	U
TO-15	Toluene	ug/m3	0.66		2	
TO-15	trans-1,2-Dichloroethene	ug/m3	0.4	U	0.4	U
TO-15	trans-1,3-Dichloropropene	ug/m3	0.44	U	0.44	U
TO-15	Trichloroethene	ug/m3	8.7		0.54	U
TO-15	Trichlorofluoromethane	ug/m3	1		1.3	
TO-15	Vinyl acetate	ug/m3	1.5	U	1.5	U
TO-15	Vinyl chloride	ug/m3	0.26	U	0.26	U
TO-15	Xylene, m/p	ug/m3	0.86	U	0.86	U

Notes:
µg/m3 = micrograms per cubic meter
Qualifiers
U = not detected at the reporting limit
J = estimated concentration
QC Code
FS = Field Sample

**DATA USABILITY SUMMARY REPORT
2009 GROUNDWATER SAMPLING EVENT
EUGENES DRY CLEANERS SITE
BABYLON, NEW YORK**

1.0 Introduction

Eleven groundwater samples were collected at the Eugene's Dry Cleaners site (Site) from March 23rd through March 26th, 2009. Samples were analyzed by Mitkem Laboratory (Mitkem) in Warwick, Rhode Island. A listing of samples included in this investigation is presented in Table 1. Samples were analyzed for the following parameters:

- Volatile Organic Compounds (VOCs) by USEPA Method 8260B

Deliverables for the off-site laboratory analyses included a Category B deliverable as defined in the New York State Department of Environmental Conservation (NYSDEC) Analytical Services Protocols (NYSDEC, 2005).

A project chemist review was completed based on NYSDEC Division of Environmental Remediation guidance for Data Usability Summary Reports (NYSDEC, 2002). Laboratory quality control (QC) limits were used during the data evaluation unless noted otherwise. The project chemist review included evaluations of sample collection, data package completeness, holding times, QC data (blanks, instrument calibrations, duplicates, surrogate recovery, and spike recovery), data transcription, electronic data reporting, calculations, and data qualification.

A summary of the final field sample data is presented in Table 2. Results are interpreted to be usable as reported by the laboratory unless discussed in the following sections.

U = target analyte is not detected at the reported detection limit

J = concentration is estimated

UJ = target analyte is not detected at the reported detection limit and is estimated

With the exception of the items discussed below, results are interpreted to be usable as reported by the laboratory.

2.0 Volatile Organic Compounds

Initial Calibration

The initial calibration had relative response factors (RRFs) that were below the validation guideline response goal of 0.05 for acetone (0.026) and 2-butanone (0.019). Relative standard deviation (RSD) criteria for initial calibration were met for these compounds indicating that a linear calibration was obtained for the working range of the instrument. Validation guidelines specify the rejection (R qualification) of results with low RRF, but based on initial calibration RSD and professional judgment, reporting limits for acetone and 2-butanone were non-detect and were qualified estimated (UJ) in all samples due to the low response factors.

Continuing Calibration

The continuing calibration had RRFs that were below the validation guideline response goal of 0.05 for acetone (0.027) and 2-butanone (0.019). Continuing calibration percent difference met method goals for these compounds indicating accurate measurements were made using these RRF values. Based on professional judgment, reporting limits for acetone and 2-butanone were qualified estimated (UJ) due to the low response factors.

In addition, the percent difference between the initial and continuing calibration factors was greater than the control limit of 25 for trichlorofluoromethane (30), 1,2-dichloroethane (25). The results for trichlorofluoromethane and 1,2-dichloroethane were non-detect for all samples and were qualified as estimated (UJ).

Surrogate Recoveries

The surrogate dibromofluoromethane exceeded the upper QC limit of 115 percent recovery for all samples associated with the data package (ranging from 116 percent to 123 percent recovery). Results could potentially be biased high due to the high surrogate recovery. With the exception of samples ECPW8 and ECPW10, no compounds were detected above the quantitation limits in samples. Detected results for cis-1,2-dichloroethene, tetrachloroethene and trichloroethene reported in samples ECPW8 and ECPW10 were qualified as estimated (J) and may be slightly biased high.

Matrix Spike/Matrix Duplicate Spike Samples

Sample ECPW3 was analyzed as the MS/MSD. The MS/MSD associated with sample ECPW3 reported relative percent differences (RPDs) for dichlorodifluoromethane (44), trichlorofluoromethane (42) and 1,1,2-trichloro-1,2,2-trifluoroethane (51) that were greater than laboratory control limits indicating a potential high bias. The results for associated compounds were non-detect and therefore required no further action. In addition, the percent recoveries for 1,1-dichloropropene (74), 1,1,2-trichloro-1,2,2-trifluoroethane (63), cyclohexane (57) and methylcyclohexane (57) were below laboratory control limits indicating a potential low bias. The results for these compounds were non-detect in samples ECGS0403 and ECGS0403DUP and were qualified as estimated (UJ) for all samples in the data set.

**TABLE 1
SAMPLE SUMMARY**

SDG	Sample Name	Date Collected	Method	Parameter	Type
H0507	ECP01	03/24/2009	8260	VOC	FS
H0507	ECPW1	03/25/2009	8260	VOC	FS
H0507	ECPW2	03/25/2009	8260	VOC	FS
H0507	ECPW3	03/24/2009	8260	VOC	FS
H0507	ECPW3DUP	03/24/2009	8260	VOC	FD
H0507	ECPW3MS/MSD	03/24/2009	8260	VOC	MS/MSD
H0507	ECPW4	03/24/2009	8260	VOC	FS
H0507	ECPW8	03/24/2009	8260	VOC	FS
H0507	ECPW9	03/26/2009	8260	VOC	FS
H0507	ECPW10	03/26/2009	8260	VOC	FS
H0507	Trip blank	03/26/2009	8260	VOC	QC

Reference:

New York State Department of Environmental Conservation (NYSDEC), 2005. "Analytical Services Protocols"; July 2005.

New York State Department of Environmental Conservation (NYSDEC), 2002. "Technical Guidance for Site Investigation and Remediation-Appendix 2B"; Draft DER-10; Division of Environmental Remediation; December 2002.

Data Validator: Brandon A. L. Shaw

Date: May 2, 2009

Quality Assurance Officer: Chris Ricardi, NRCC-EAC

Date: May 11, 2009

**TABLE 2 - RESULTS SUMMARY
DATA USABILITY SUMMARY REPORT
MARCH 2009 GROUNDWATER SAMPLING
EUGENE'S DRY CLEANING SITE
BABYLON, NEW YORK**

Lab Sample Delivery Group			H0507									
Loc Name			P-1	PW-1	PW-10	PW-2	PW-3	PW-3	PW-4			
Field Sample Date			3/24/2009	3/25/2009	3/26/2009	3/25/2009	3/24/2009	3/24/2009	3/24/2009			
Field Sample ID			ECP01	ECPW1	ECPW10	ECPW2	ECPW3	ECPW3DUP	ECPW4			
QC Code			FS	FS	FS	FS	FS	FD	FS			
Analysis Method	Parameter	Units	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
SW8260	1,1,1,2-Tetrachloroethane	ug/l	5	U	5	U	5	U	5	U	5	U
SW8260	1,1,1-Trichloroethane	ug/l	5	U	5	U	5	U	5	U	5	U
SW8260	1,1,2,2-Tetrachloroethane	ug/l	5	U	5	U	5	U	5	U	5	U
SW8260	1,1,2-Trichloro-1,2,2-Trifluoroethane	ug/l	5	UJ	5	UJ	5	UJ	5	UJ	5	UJ
SW8260	1,1,2-Trichloroethane	ug/l	5	U	5	U	5	U	5	U	5	U
SW8260	1,1-Dichloroethane	ug/l	5	U	5	U	5	U	5	U	5	U
SW8260	1,1-Dichloroethene	ug/l	5	U	5	U	5	U	5	U	5	U
SW8260	1,1-Dichloropropene	ug/l	5	UJ	5	UJ	5	UJ	5	UJ	5	UJ
SW8260	1,2,3-Trichlorobenzene	ug/l	5	U	5	U	5	U	5	U	2.5	J
SW8260	1,2,3-Trichloropropane	ug/l	5	U	5	U	5	U	5	U	5	U
SW8260	1,2,4-Trichlorobenzene	ug/l	5	U	5	U	5	U	5	U	1.4	J
SW8260	1,2,4-Trimethylbenzene	ug/l	5	U	5	U	5	U	5	U	5	U
SW8260	1,2-Dibromo-3-chloropropane	ug/l	5	U	5	U	5	U	5	U	5	U
SW8260	1,2-Dibromoethane	ug/l	5	U	5	U	5	U	5	U	5	U
SW8260	1,2-Dichlorobenzene	ug/l	5	U	5	U	5	U	5	U	5	U
SW8260	1,2-Dichloroethane	ug/l	5	UJ	5	UJ	5	UJ	5	UJ	5	UJ
SW8260	1,2-Dichloropropane	ug/l	5	U	5	U	5	U	5	U	5	U
SW8260	1,3,5-Trimethylbenzene	ug/l	5	U	5	U	5	U	5	U	5	U
SW8260	1,3-Dichlorobenzene	ug/l	5	U	5	U	5	U	5	U	5	U
SW8260	1,3-Dichloropropane	ug/l	5	U	5	U	5	U	5	U	5	U
SW8260	1,4-Dichlorobenzene	ug/l	5	U	5	U	5	U	5	U	5	U
SW8260	2,2-Dichloropropane	ug/l	5	U	5	U	5	U	5	U	5	U
SW8260	2-Butanone	ug/l	5	UJ	5	UJ	5	UJ	5	UJ	5	UJ
SW8260	2-Chlorotoluene	ug/l	5	U	5	U	5	U	5	U	5	U
SW8260	2-Hexanone	ug/l	5	U	5	U	5	U	5	U	5	U
SW8260	4-Chlorotoluene	ug/l	5	U	5	U	5	U	5	U	5	U
SW8260	4-iso-Propyltoluene	ug/l	5	U	5	U	5	U	5	U	5	U
SW8260	4-Methyl-2-pentanone	ug/l	5	U	5	U	5	U	5	U	5	U
SW8260	Acetic acid, methyl ester	ug/l	5	U	5	U	5	U	5	U	5	U
SW8260	Acetone	ug/l	5	UJ	5	UJ	5	UJ	5	UJ	5	UJ
SW8260	Benzene	ug/l	5	U	5	U	5	U	5	U	5	U
SW8260	Bromobenzene	ug/l	5	U	5	U	5	U	5	U	5	U
SW8260	Bromochloromethane	ug/l	5	U	5	U	5	U	5	U	5	U
SW8260	Bromodichloromethane	ug/l	5	U	5	U	5	U	5	U	5	U
SW8260	Bromoform	ug/l	5	U	5	U	5	U	5	U	5	U
SW8260	Bromomethane	ug/l	5	U	5	U	5	U	5	U	5	U
SW8260	Carbon disulfide	ug/l	5	U	5	U	5	U	5	U	5	U
SW8260	Carbon tetrachloride	ug/l	5	U	5	U	5	U	5	U	5	U
SW8260	Chlorobenzene	ug/l	5	U	5	U	5	U	5	U	5	U
SW8260	Chlorodibromomethane	ug/l	5	U	5	U	5	U	5	U	5	U
SW8260	Chloroethane	ug/l	5	U	5	U	5	U	5	U	5	U
SW8260	Chloroform	ug/l	5	U	5	U	5	U	5	U	1.1	J
SW8260	Chloromethane	ug/l	5	U	5	U	5	U	5	U	5	U

**TABLE 2 - RESULTS SUMMARY
DATA USABILITY SUMMARY REPORT
MARCH 2009 GROUNDWATER SAMPLING
EUGENE'S DRY CLEANING SITE
BABYLON, NEW YORK**

Lab Sample Delivery Group			H0507		H0507		H0507		H0507		H0507		H0507	
Loc Name			P-1		PW-1		PW-10		PW-2		PW-3		PW-3	
Field Sample Date			3/24/2009		3/25/2009		3/26/2009		3/25/2009		3/24/2009		3/24/2009	
Field Sample ID			ECP01		ECPW1		ECPW10		ECPW2		ECPW3		ECPW3DUP	
QC Code			FS		FS		FS		FS		FS		FD	
Analysis Method	Parameter	Units	Result	Qualifier										
SW8260	Cis-1,2-Dichloroethene	ug/l	5	U	5	U	9.3	J	5	U	5	U	5	U
SW8260	cis-1,3-Dichloropropene	ug/l	5	U	5	U	5	U	5	U	5	U	5	U
SW8260	Cyclohexane	ug/l	5	UJ										
SW8260	Dibromomethane	ug/l	5	U	5	U	5	U	5	U	5	U	5	U
SW8260	Dichlorodifluoromethane	ug/l	5	U	5	U	5	U	5	U	5	U	5	U
SW8260	Ethyl benzene	ug/l	5	U	5	U	5	U	5	U	5	U	5	U
SW8260	Hexachlorobutadiene	ug/l	5	U	5	U	5	U	5	U	5	U	2.3	J
SW8260	Iodomethane	ug/l	5	U	5	U	5	U	5	U	5	U	5	U
SW8260	Isopropylbenzene	ug/l	5	U	5	U	5	U	5	U	5	U	5	U
SW8260	Methyl cyclohexane	ug/l	5	UJ										
SW8260	Methyl Tertbutyl Ether	ug/l	1.4	J	5	U	1.6	J	5	U	5	U	5	U
SW8260	Methylene chloride	ug/l	5	U	5	U	5	U	5	U	5	U	5	U
SW8260	n-Butylbenzene	ug/l	5	U	5	U	5	U	5	U	5	U	5	U
SW8260	Naphthalene	ug/l	5	U	5	U	5	U	5	U	5	U	1.9	J
SW8260	Propylbenzene	ug/l	5	U	5	U	5	U	5	U	5	U	5	U
SW8260	sec-Butylbenzene	ug/l	5	U	5	U	5	U	5	U	5	U	5	U
SW8260	Styrene	ug/l	5	U	5	U	5	U	5	U	5	U	5	U
SW8260	tert-Butylbenzene	ug/l	5	U	5	U	5	U	5	U	5	U	5	U
SW8260	Tetrachloroethene	ug/l	1.7	J	5	U	12	J	5	U	5	U	5	U
SW8260	Toluene	ug/l	5	U	5	U	5	U	5	U	5	U	5	U
SW8260	trans-1,2-Dichloroethene	ug/l	5	U	5	U	5	U	5	U	5	U	5	U
SW8260	trans-1,3-Dichloropropene	ug/l	5	U	5	U	5	U	5	U	5	U	5	U
SW8260	Trichloroethene	ug/l	5	U	5	U	4.1	J	5	U	5	U	5	U
SW8260	Trichlorofluoromethane	ug/l	5	UJ										
SW8260	Vinyl acetate	ug/l	5	U	5	U	5	U	5	U	5	U	5	U
SW8260	Vinyl chloride	ug/l	5	U	5	U	1.1	J	5	U	5	U	5	U
SW8260	Xylene, m/p	ug/l	5	U	5	U	5	U	5	U	5	U	5	U
SW8260	Xylene, o	ug/l	5	U	5	U	5	U	5	U	5	U	5	U
SW8260	Xylenes, Total	ug/l	5	U	5	U	5	U	5	U	5	U	5	U

**TABLE 2 - RESULTS SUMMARY
DATA USABILITY SUMMARY REPORT
MARCH 2009 GROUNDWATER SAMPLING
EUGENE'S DRY CLEANING SITE
BABYLON, NEW YORK**

Lab Sample Delivery Group			H0507		H0507		H0507	
Loc Name			PW-8		PW-9		QC	
Field Sample Date			3/24/2009		3/26/2009		3/26/2009	
Field Sample ID			ECPW8		ECPW9		TRIP BLANK	
QC Code			FS		FS		TB	
Analysis Method	Parameter	Units	Result	Qualifier	Result	Qualifier	Result	Qualifier
SW8260	1,1,1,2-Tetrachloroethane	ug/l	5	U	5	U	5	U
SW8260	1,1,1-Trichloroethane	ug/l	5	U	5	U	5	U
SW8260	1,1,2,2-Tetrachloroethane	ug/l	5	U	5	U	5	U
SW8260	1,1,2-Trichloro-1,2,2-Trifluoroethane	ug/l	5	UJ	5	UJ	5	U
SW8260	1,1,2-Trichloroethane	ug/l	5	U	5	U	5	U
SW8260	1,1-Dichloroethane	ug/l	5	U	5	U	5	U
SW8260	1,1-Dichloroethene	ug/l	5	U	5	U	5	U
SW8260	1,1-Dichloropropene	ug/l	5	UJ	5	UJ	5	U
SW8260	1,2,3-Trichlorobenzene	ug/l	5	U	5	U	5	U
SW8260	1,2,3-Trichloropropane	ug/l	5	U	5	U	5	U
SW8260	1,2,4-Trichlorobenzene	ug/l	5	U	5	U	5	U
SW8260	1,2,4-Trimethylbenzene	ug/l	5	U	5	U	5	U
SW8260	1,2-Dibromo-3-chloropropane	ug/l	5	U	5	U	5	U
SW8260	1,2-Dibromoethane	ug/l	5	U	5	U	5	U
SW8260	1,2-Dichlorobenzene	ug/l	5	U	5	U	5	U
SW8260	1,2-Dichloroethane	ug/l	5	UJ	5	UJ	5	U
SW8260	1,2-Dichloropropane	ug/l	5	U	5	U	5	U
SW8260	1,3,5-Trimethylbenzene	ug/l	5	U	5	U	5	U
SW8260	1,3-Dichlorobenzene	ug/l	5	U	5	U	5	U
SW8260	1,3-Dichloropropane	ug/l	5	U	5	U	5	U
SW8260	1,4-Dichlorobenzene	ug/l	5	U	5	U	5	U
SW8260	2,2-Dichloropropane	ug/l	5	U	5	U	5	U
SW8260	2-Butanone	ug/l	5	UJ	5	UJ	5	U
SW8260	2-Chlorotoluene	ug/l	5	U	5	U	5	U
SW8260	2-Hexanone	ug/l	5	U	5	U	5	U
SW8260	4-Chlorotoluene	ug/l	5	U	5	U	5	U
SW8260	4-iso-Propyltoluene	ug/l	5	U	5	U	5	U
SW8260	4-Methyl-2-pentanone	ug/l	5	U	5	U	5	U
SW8260	Acetic acid, methyl ester	ug/l	5	U	5	U	5	U
SW8260	Acetone	ug/l	5	UJ	5	UJ	5	U
SW8260	Benzene	ug/l	5	U	5	U	5	U
SW8260	Bromobenzene	ug/l	5	U	5	U	5	U
SW8260	Bromochloromethane	ug/l	5	U	5	U	5	U
SW8260	Bromodichloromethane	ug/l	5	U	5	U	5	U
SW8260	Bromoform	ug/l	5	U	5	U	5	U
SW8260	Bromomethane	ug/l	5	U	5	U	5	U
SW8260	Carbon disulfide	ug/l	5	U	5	U	5	U
SW8260	Carbon tetrachloride	ug/l	5	U	5	U	5	U
SW8260	Chlorobenzene	ug/l	5	U	5	U	5	U
SW8260	Chlorodibromomethane	ug/l	5	U	5	U	5	U
SW8260	Chloroethane	ug/l	5	U	5	U	5	U
SW8260	Chloroform	ug/l	5	U	5	U	5	U
SW8260	Chloromethane	ug/l	5	U	5	U	5	U

**TABLE 2 - RESULTS SUMMARY
DATA USABILITY SUMMARY REPORT
MARCH 2009 GROUNDWATER SAMPLING
EUGENE'S DRY CLEANING SITE
BABYLON, NEW YORK**

Lab Sample Delivery Group Loc Name Field Sample Date Field Sample ID QC Code			H0507		H0507		H0507	
			PW-8		PW-9		QC	
			3/24/2009		3/26/2009		3/26/2009	
			ECPW8		ECPW9		TRIP BLANK	
			FS		FS		TB	
Analysis Method	Parameter	Units	Result	Qualifier	Result	Qualifier	Result	Qualifier
SW8260	Cis-1,2-Dichloroethene	ug/l	3.3	J	5	U	5	U
SW8260	cis-1,3-Dichloropropene	ug/l	5	U	5	U	5	U
SW8260	Cyclohexane	ug/l	5	UJ	5	UJ	5	U
SW8260	Dibromomethane	ug/l	5	U	5	U	5	U
SW8260	Dichlorodifluoromethane	ug/l	5	U	5	U	5	U
SW8260	Ethyl benzene	ug/l	5	U	5	U	5	U
SW8260	Hexachlorobutadiene	ug/l	5	U	5	U	5	U
SW8260	Iodomethane	ug/l	5	U	5	U	5	U
SW8260	Isopropylbenzene	ug/l	5	U	5	U	5	U
SW8260	Methyl cyclohexane	ug/l	5	UJ	5	UJ	5	U
SW8260	Methyl Tertbutyl Ether	ug/l	5	U	5	U	5	U
SW8260	Methylene chloride	ug/l	5	U	5	U	5	U
SW8260	n-Butylbenzene	ug/l	5	U	5	U	5	U
SW8260	Naphthalene	ug/l	5	U	5	U	5	U
SW8260	Propylbenzene	ug/l	5	U	5	U	5	U
SW8260	sec-Butylbenzene	ug/l	5	U	5	U	5	U
SW8260	Styrene	ug/l	5	U	5	U	5	U
SW8260	tert-Butylbenzene	ug/l	5	U	5	U	5	U
SW8260	Tetrachloroethene	ug/l	43	J	1	J	5	U
SW8260	Toluene	ug/l	5	U	5	U	5	U
SW8260	trans-1,2-Dichloroethene	ug/l	5	U	5	U	5	U
SW8260	trans-1,3-Dichloropropene	ug/l	5	U	5	U	5	U
SW8260	Trichloroethene	ug/l	5.2	J	5	U	5	U
SW8260	Trichlorofluoromethane	ug/l	5	UJ	5	UJ	5	U
SW8260	Vinyl acetate	ug/l	5	U	5	U	5	U
SW8260	Vinyl chloride	ug/l	5	U	5	U	5	U
SW8260	Xylene, m/p	ug/l	5	U	5	U	5	U
SW8260	Xylene, o	ug/l	5	U	5	U	5	U
SW8260	Xylenes, Total	ug/l	5	U	5	U	5	U