



CLOUGH HARBOUR & ASSOCIATES LLP

July 31, 2006

Mr. Fred Jakes
Solvents & Petroleum Service, Inc.
1405 Brewerton Road
Syracuse, New York 13208

RECEIVED
NYSDEC

AUG 09 2006

Bureau of Hazardous Waste &
Radiation Management
Division of Solid & Hazardous Materials

RE: June 2006 Environmental Monitoring Summary
Solvents & Petroleum Service, Inc.
CHA Project No.: 08423.1009.1102

Dear Fred:

Clough Harbour & Associates LLP (CHA) has completed the first round of monitoring for the 2006 environmental monitoring program at the Solvents and Petroleum Services, Inc. (SPS) facility, located at 1405 Brewerton Road in the Town of Salina, New York. This letter provides a summary of the groundwater sampling performed and the results of that sampling as well as the recently completed well repairs.

Well Condition Summary

During our December 2005 monitoring activities at the SPS facility, CHA noted three of the on-site monitoring wells were in poor condition. There was no protective casing around well MW-2S to protect it from traffic and the cap on the well riser was insufficient to keep surface water from running down into the well. Well MW-3S was not sampled during the December 2005 sampling event because there was an obstruction in the well preventing CHA from lowering the submersible pump into the well. While CHA could not determine what the obstruction was, CHA believes that the riser pipe was offset or "kinked" approximately five feet below the top of the riser pipe. Finally, the concrete surface seal around well MW-4R was damaged.

The following paragraphs summarize the work completed at each of the above referenced monitoring wells. CHA retained a drilling subcontractor, Parratt-Wolff, Inc. (PW), to complete the well repair work for wells MW-2S and MW-4R on April 21, 2006 and the replacement of well MW-3S on June 2, 2006. All activities were conducted under the direction of an on-site CHA engineer.

MW-2S

After removing the existing gravel and soil around the existing riser pipe at well MW-2S, a new protective casing was set around the riser in a concrete pad. The protective casing is a flush-mount style steel casing with a bolt-on cover that was set at an elevation slightly higher than the surrounding grade. The concrete pad was sloped away from casing to provide positive drainage around the casing. Finally, a new rubber gripper plug was installed in the riser pipe.

MW-3S & MW-3N

Due to the difficulty and potential costs associated with repairing well MW-3S, the well was abandoned. The well was abandoned by lifting the well casing and riser pipe up out of the ground using a chain attached to the drill rig. However, the well screen came detached from the riser pipe during the well extraction and had to be abandoned in place. PW was unable to setup over the well to over-drill it due to access restrictions, including the presence of soft soils around the well, the need to cut large trees that could fall on the perimeter fencing or on the adjacent trailers, and the present structures (i.e. a dog pen and storage trailers) that could not be moved with ease. PW did grout the open hole and screen with a cement-bentonite mixture to seal the former well location.

A boring was advanced approximately ten (10) feet north of the former well MW-3S to facilitate the installation of a replacement monitoring well, designated as well MW-3N, as shown on Figure 1. Chainsaws and other hand tools were utilized to clear the vegetation and to provide access to the area north of the former well MW-3S. However, due to lean of the existing trees surrounding the former monitoring well MW-3S location and nearby structures, no trees larger than four inches in diameter were removed.

A soil boring was advanced using a hollow-stem auger drill rig (Ingersoll-Rand A300) mounted on a truck carrier. The boring was sampled continuously with a two-inch outside diameter (O.D.) split-spoon sampler to a depth of 16-feet below the ground surface. The split spoon sampler was advanced by hydraulic push methods. Soil classification information, visual and olfactory indicators of contamination, and other observations made during the advancement of the boring were recorded on a log (included in Attachment A). ← not included

All soil samples were placed into labeled glass jars for future reference. However, no soil or groundwater samples were submitted for laboratory analysis. A groundwater sample was collected from the well during the next routine sampling event, completed June 21, 2006 (see Page 3). A petroleum odor (slight to moderate) was noted in one of the soil samples (5.5 to 6 feet below the ground surface) collected during the boring.

The well screen for replacement well MW-3N was installed from a depth of 6 to 16 feet below the ground surface. Although the existing well MW-3S was only 10-feet deep (as measured from the ground surface), the existing well was often pumped dry during well sampling events due to the limited water column in the well. By installing the replacement well further into the water table, CHA anticipates that the new well will not be pumped dry during future sampling events.

The replacement well was constructed of two-inch Schedule 40 polyvinyl chloride (PVC) with a ten foot long section of factory slotted, 0.010-inch (No. 10) well screen. A sand filter pack was placed around the screen from the bottom of the boring to a level of approximately two (2) feet above the top of the screen. An approximately two (2)-foot layer of medium-sized bentonite pellets was then placed on top of the filter pack to provide a watertight seal on top of the sand pack. Given the proximity of the screen to the site surface, no grout was installed around the well riser. Rather, an approximately two (2) foot thick concrete surface seal was placed immediately on top of the bentonite seal to secure the protective steel casing.

The PVC riser for the well was extended approximately two (2) feet above the ground surface. An air vent was cut into the top of riser pipe, just below the locking gripper plug to vent the well and avoid the potential buildup of gases within the well. A four (4) inch diameter protective steel casing with a lockable cover set in an eighteen (18) inch diameter concrete surface seal was placed over the PVC well riser to protect the well. A weep hole was drilled at the base of the steel casing to drain condensation from the casing and to help reduce the likelihood of freeze/thaw damage. The well identification number was painted on exterior of the steel-casing using a permanent yellow paint pen. A well construction diagram for well MW-3N has been included

↑
not included

CHA

in Attachment B.
Well MW-4R

The concrete surface seal around the protective steel casing on this well was in poor condition and the casing was resting on the well riser pipe. To repair this well, the casing was lifted off the well and a Sonotube was installed around the well riser to serve as a form a new concrete surface seal. Once the concrete was poured into the form, the steel casing was reset. In addition, a new padlock, keyed the same as the lock placed on well MW-3N, was installed on this well.

Groundwater Monitoring System Inspection Forms

Based upon the previously described activities, CHA has updated the New York State Department of Environmental Conservation's (NYSDEC's) Table 4 – Groundwater Monitoring System Inspection forms for each well and included the forms in Attachment A. As indicated on these tables, the recent well repair and replacement activities have adequately addressed the deficiencies with the monitoring well conditions observed during the December 2005 monitoring event.

Sampling Effort

CHA performed the first round of groundwater monitoring for this year on June 21, 2006. CHA collected a groundwater sample from on-site wells MW-1S, MW-2S, MW-3N, and MW-4R this quarter. Prior to collecting a groundwater sample from each well, CHA measured the depth to water in the wells to calculate the necessary purge volumes. The wells were then purged using a Grundfos Rediflow 2 submersible pump. CHA purged approximately three well volumes from each well in an effort to reduce sample turbidity and stabilize other water quality parameters prior to sampling. The purged water was discharged into a 55-gallon polyethylene drum supplied by SPS.

CHA monitored redox potential, conductivity, pH, turbidity, temperature, and dissolved oxygen of the groundwater throughout the purging process using a Horiba U-22 water quality meter equipped with an enclosed flow-through cell. The sampling effort was documented on well sampling logs, which are included in Attachment B. After the samples were collected, CHA packed the samples in ice and transported them with a chain of custody to Upstate Laboratories, Inc. (ULI), an ASP-certified laboratory. In accordance with CHA's Sampling & Analysis Plan, dated June 24, 2003, the samples were analyzed for volatile organic compounds (VOCs) via EPA Method 8021.

In addition, the groundwater sample collected from well MW-4R was analyzed for wet chemistry parameters this quarter to assist CHA in reevaluating the effectiveness of natural attenuation at the site. The selected wet chemistry parameters included for this site include alkalinity, chloride, total & ferrous iron, nitrate, sulfate, sulfide, and total organic carbon (TOC).

Sample Results

Table C-1 (included in Attachment C) summarizes the sample results for this monitoring event, as well as all historical data for each of the four sampling points, wells MW-1S, MW-2S, MW-3N, and MW-4R. The complete laboratory data set from Upstate Laboratories, Inc. is included in Attachment D. It should be noted that this was the first time well MW-3N was sampled. However, the sample collected from well MW-3N has been compared to the historical data for former well MW-3S given its relatively close

proximity to this former well. As more data becomes available for well MW-3N, the comparison to well MW-3S data will be discontinued.

MW-1S

As shown in Table C-1 and on Figure 2, the concentrations of benzene, toluene, ethylbenzene, and xylene (BTEX compounds) all decreased for this quarter. Benzene, xylene and toluene were detected at the lowest concentrations to date and ethylbenzene was detected at the lowest concentration since the July 1995 sampling event. Since the water level in well MW-1 decreased (depth to groundwater increased), the decreased BTEX concentrations does not appear to be attributable to only a change in the capacity of the aquifer.

SPS personnel have begun air sparging well MW-1S at the request of the New York State Department of Environmental Conservation (NYSDEC). The air sparging apparatus was removed from the well removed at least 24 hours prior to the well sampling event. While no long-term data is available since the commencement of the air sparging activities, the preliminary results indicate that the sparging is reducing the BTEX levels in the vicinity of well MW-1S.

MW-2S

None of the VOCs analyzed for by the laboratory were detected in the groundwater sample collected from well MW-2S this quarter.

MW-3N

None of the VOCs analyzed for by the laboratory were detected in the groundwater sample collected from well MW-3N this quarter.

MW-4R

As shown in Table C-1 and on Figures 3 and 4, the concentrations of 1,2-dichloroethene (DCE) and vinyl chloride remained relatively unchanged between the December 2005 and June 2006 sampling event, while the water level decreased slightly. The concentration of both DCE and vinyl chloride are within the range of historical data measured in previous summer monitoring events.

Most of the wet chemistry parameters remained relatively unchanged between the June 2005 (last time wet chemistry parameters analyzed) and June 2006 sampling events, and are consistent with historical data for well MW-4R.

Evaluation of Natural Attenuation

In an effort to reevaluate the effectiveness of natural attenuation at the SPS facility this quarter, CHA also reviewed the field water quality data for well MW-4R in detail this quarter. A summary of the water quality data for well MW-4R from December 2002 to June 2006 is provided in the following table:

MW-4R Water Quality Data Summary

Water Quality Parameter	Dec 2002	Jun 2003	Sep 2003	Dec 2003	Mar 2004	Jun 2004	Sep 2004	Dec 2004	Mar 2005	Jun 2005	Sept 2005	Dec 2005	Jun 2006
Dissolved Oxygen (mg/L)	2.45	1.14	0.47	6.1	0.00	0.43	1.46	0.09	0.00	0.38	5.87	0.00	0.00
Redox Potential (mV)	-117	-114	-124	-140	-74	-120	-129	-85	-96	-137	-155	-114	-124
Conductivity (MS/cm)	2.19	2.11	2.12	2.00	2.57	2.05	1.85	2.01	2.21	2.55	2.06	2.15	2.3
pH	5.86	6.66	6.77	6.74	7.46	6.60	6.65	7.26	7.19	6.59	6.60	6.88	6.41
Temperature (°C)	12.7	12.6	15.7	12.2	7.7	11.6	16.9	13.1	9.6	13.66	18.27	11.11	13.4

Notes: 1. All data represents final stabilized parameter reading prior to sample collection.

As shown in the table above, the dissolved oxygen levels have remained below 0.5 mg/L since March of 2004, with the exception of the September 2004 and September 2005 monitoring events. The redox potential, conductivity, pH, and temperature of the groundwater collected from MW-4R in June of 2006 were consistent with the historical data for the well.

After reviewing the analytical and field data available for well MW-4R, CHA used the United States Environmental Protection Agency's (USEPA's) *Natural Attenuation Screening Protocol* model to re-evaluate the effectiveness natural attenuation at the SPS facility. A copy of the evaluation worksheet has been included in Attachment E. In comparing the March 2005 evaluation with the June 2006 results, the only significant change is that the oxidation reduction potential (ORP) is now consistently less than -100 millivolts. As a result, the effectiveness of natural attenuation score increased slightly this quarter to 20, which is considered "adequate evidence for anaerobic biodegradation of chlorinated organics."

In summary, it appears that natural attenuation continues to be a viable remedy for the site. While the concentrations of 1,2-DCE and vinyl chloride appear to fluctuate with groundwater levels, the overall trend in concentrations is downward. Although a decrease in contaminant concentrations appears to be relatively slow, the historical groundwater quality data for well MW-4R this quarter supports the fact that anaerobic biodegradation of the remaining chlorinated solvents is supported at the SPS facility.

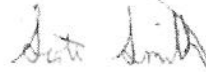
Future Work

The next quarter of groundwater sampling is scheduled for the week of December 10, 2006. According to our monitoring schedule, CHA will collect samples from wells MW-1S, MW-2S, MW-3N, and MW-4R for VOC analysis only. We will be submitting a separate proposal for the next year of semi-annual monitoring at the facility. Upon approval, CHA will contact you the week of December 3, 2006 to schedule an exact date to complete the sampling.

CHA has included two additional copies of this letter report for your submission to the NYSDEC. If you have any questions, please don't hesitate to call us at (315) 471-3920.

Very truly yours,

CLOUGH HARBOUR & ASSOCIATES LLP



Scott Smith, P.E.
Senior Engineer



Christopher Burns, Ph.D., P.G.
Principal

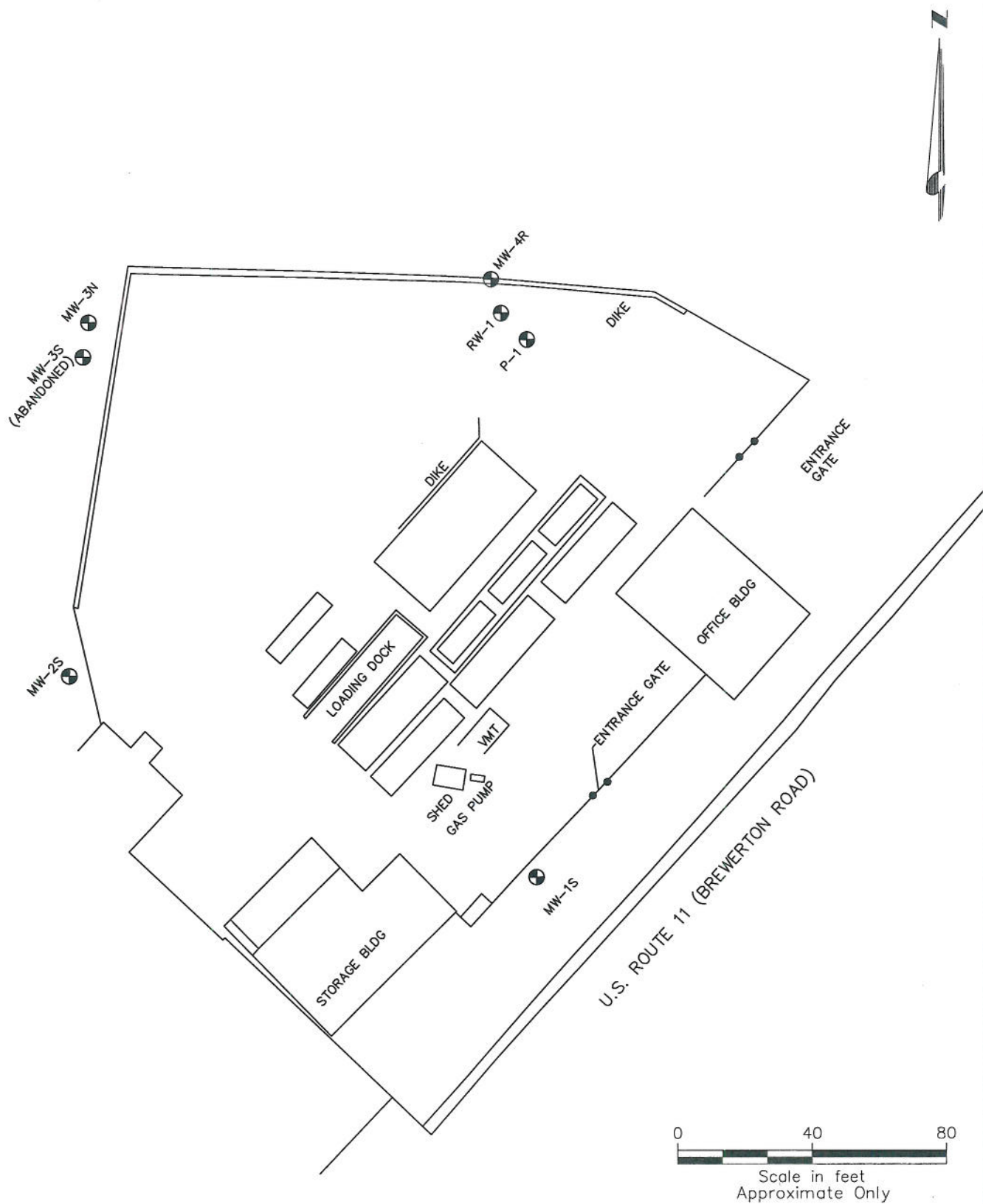
SS/mw

Attachments

I:\8423\Reports\Environmental Monitoring\2006 June\07-31-06_Transmittal.doc

Figures

File: I:\8423\REPORTS\ENVIRONMENTAL MONITORING\2006 JUNE\FIGURE 1 - WELL LOCATION MAP.DWG Saved: 6/27/2006 7:51:04 AM Plotted: 7/24/2006 4:17:35 PM User: Smith, Scott



Drawing Copyright © 2006 Clough, Harbour & Associates LLP

CHA
CLOUGH HARBOUR & ASSOCIATES LLP
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WELL LOCATION MAP
SOLVENTS & PETROLEUM SERVICES, INC.
1405 BREWERTON ROAD
TOWN OF SALINA, NEW YORK

PROJECT NO.
8423

DATE: 06/02/06

FIGURE 1

Figure 2
MW-1S Concentration vs. Time (1993-2004)

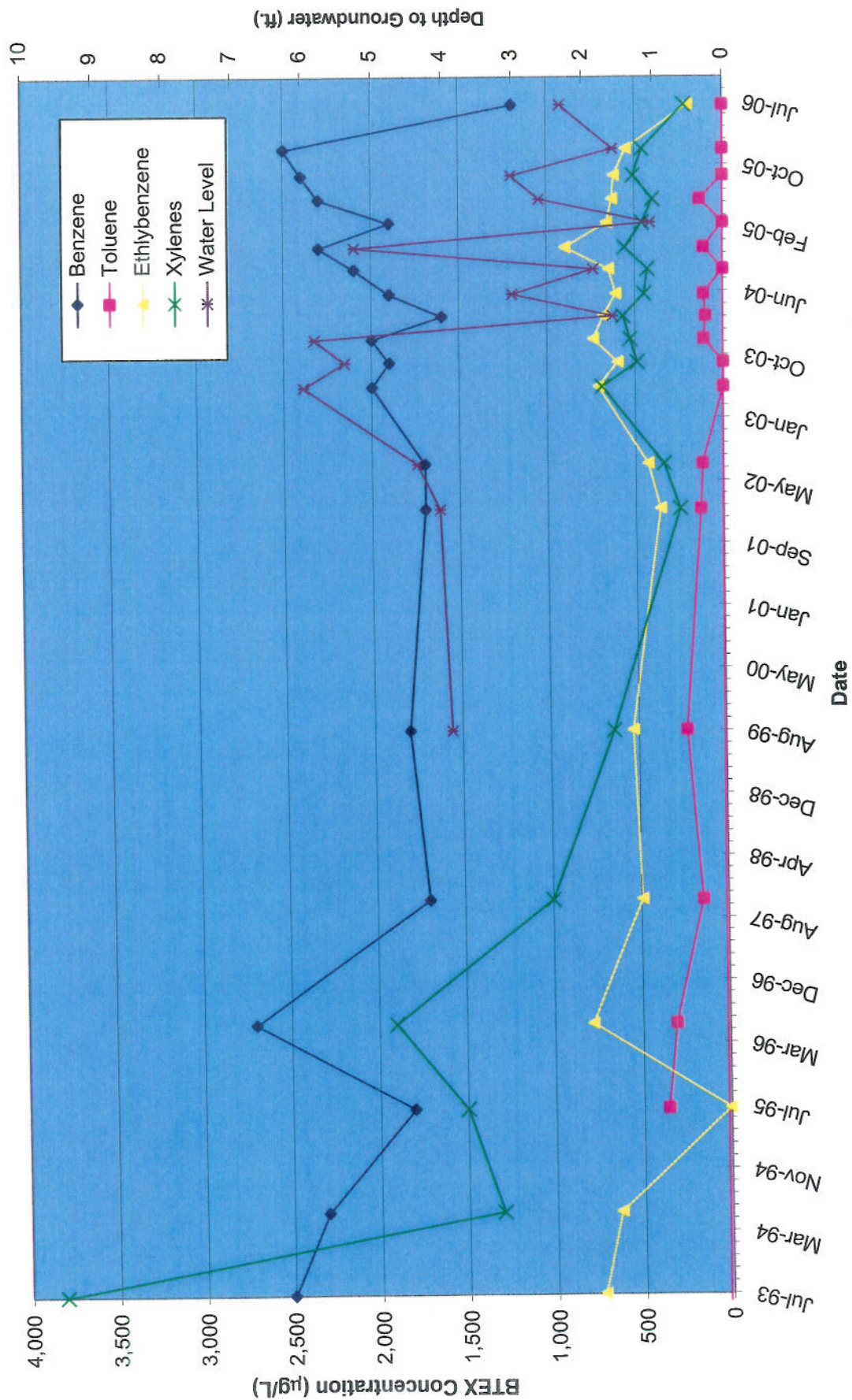


Figure 3
MW-4R Concentration vs. Time (1997-2006)

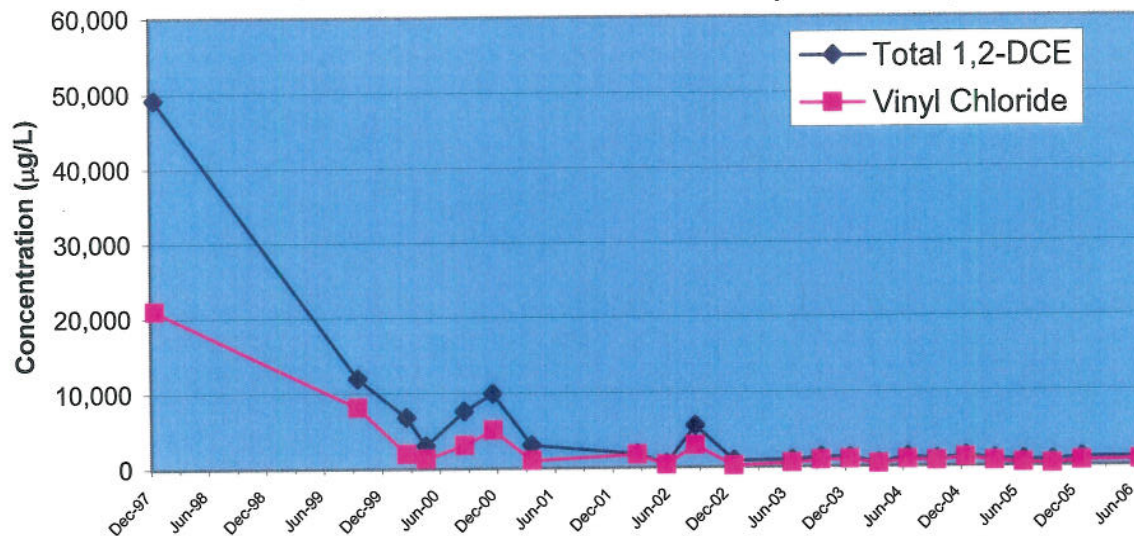
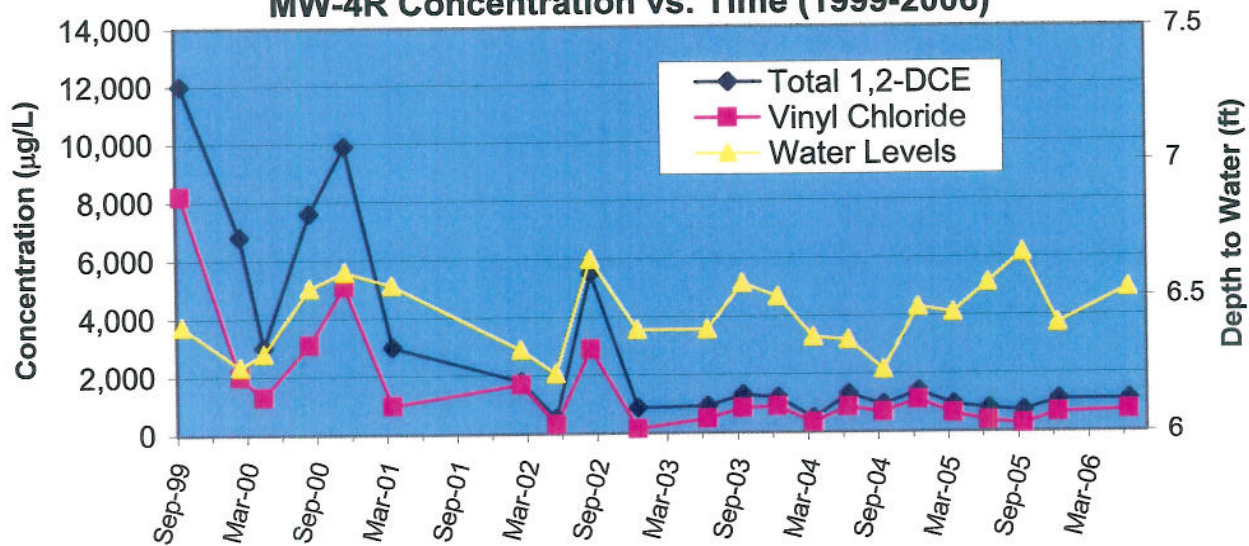


Figure 4
MW-4R Concentration vs. Time (1999-2006)



Attachment A
Groundwater Monitoring System Inspection Forms

TABLE 4
GROUNDWATER MONITORING SYSTEM
INSPECTION
 Solvents & Petroleum Services, Inc.

Well Designation: MW-1S

Date of Inspection: 06/21/06

Time of Inspection: 1245

Inspector's Name(s): Scott Smith/Katie Flood

Item	Types Of Problems	*Status		Comments	Action	Date
		A	U			
Well Condition	Flagging Visibility (if applicable)	-	-	In parking lot - visible.	None	N/A
	Well Number Readable on Casing	A		In traffic area, markings do not remain.		
	Integrity of Surface Seal/Apron	A		Faded paint pen label is visible.		
	Integrity of Surface Casing	A		Concrete in good condition.		
	Corrosion	A		Bolts on casing sometimes loose.		
	Inner Casing/Screen Integrity	A		Integrity of casing not compromised.		
	Measuring Point Visibility	A		Riser and screen appear in good condition.		
	Total Depth	A		Acceptable		
	Siltation	A		No significant change.		
	Recharge Rate	A		No evidence of significant siltation in well		
	Other-	A		Acceptable		
Security	Security Cap in Place	A		Flush mount casing. Cap w/ bolts & gripper plug in place.	None	N/A
	Lock in Place	A				
	Lock Functional	A				
	Other	A				

*Status U=unacceptable
 A=acceptable

TABLE 4
GROUNDWATER MONITORING SYSTEM
INSPECTION
Solvents & Petroleum Services, Inc.

Well Designation: MW-3N (Replacement for MW-3S)

Date of Inspection: 06/21/06

Time of Inspection: 1100

Inspector's Name(s): Scott Smith/Katie Flood

Item	Types Of Problems	*Status		Comments	Action	Date
		A	U			
Well Condition	Flagging Visibility (if applicable)	-	-	Stickup well casing visible.	New monitoring well installed to replace former well MW-3S.	Completed 06/02/06
	Well Number Readable on Casing	A		Well ID marked on casing upon installation.		
	Integrity of Surface Seal/Apron	A		New/good.		
	Integrity of Surface Casing	A		New/good.		
	Corrosion	A		None.		
	Inner Casing/Screen Integrity	A		New/good.		
	Measuring Point Visibility	A		Acceptable		
	Total Depth	A		No significant change.		
	Siltation	A		No significant siltation in bottom of well.		
	Recharge Rate	A		Acceptable		
Security	Other-				New locking cap and padlock installed during well installation.	Completed 06/02/06
	Security Cap in Place	A		New cap installed		
	Lock in Place	A		New lock installed		
	Lock Functional	A		Lock is functional.		
	Other					

*Status U=unacceptable
A=acceptable

Attachment B
Well Sampling Logs

Clough, Harbour & Associates LLP						Sample/Well Designation: MW-1S				
Well Sampling/Development Log										
Project Name: Solvents & Petroleum Services, Inc.						Logged By: Scott Smith/Katie Flood				
Project Location: 1405 Brewerton Road, Syracuse, NY						Date: 06/21/06				
Project Number: 08423.1009.1102						Screen Length:				
Purge Information:										
(1) Depth to Bottom of Well: <u>12.8</u> ft. (from TOC)						(2) Depth to Water: <u>2.31</u> ft. (from TOC)				
(3) Column of Water: <u>10.49</u> ft. [(1) - (2)]						(4) Well Riser Diameter: <u>2</u> in.				
(5) Volume Conversion: <u>0.163</u> gal./ft. (see below)						(6) 1 Well Volume: <u>1.7</u> gal. [(3) x (5)]				
Method of Purging: ☐ WaTerra ☐ Bailer ☒ Submersible ☐ Other: _____										
Volume Conversion: (gal./ft.)										
2" = 0.163		4" = 0.653		6" = 1.469		8" 2.611		10" = 4.08		
Field Analysis:										
Volume Purged (gal.)	1	2	3	4	5	6				
Time	1243	1245	1248	1251	1254	1258				
ORP/EH (mV)	-39	-70	-80	-84	-91	-99				
pH	7.12	7.32	7.11	6.98	6.95	6.83				
Cond. (MS/CM)	2.9	2.9	2.9	2.9	3.0	3.0				
Turbidity (NTU)	170	77	72	75	49	52				
D.O. (mg/L)	3.64	2.97	2.96	5.22	4.87	2.57				
Temperature (°C)	17.1	19.0	18.8	18.7	18.0	18.4				
Total Volume Purged: <u>6</u> gal.						Total Purge Time: <u>15</u> minutes				
Sampling Information:										
Sampling Method: <u>Grundfos RediFlo2</u>						No. of Bottles: <u>2</u>				
Sampling Time: <u>1300</u>										
Sample Analyses: <u>VOCs (Method 8021)</u>										
Comments: Need 3/4-inch ratchet to remove well cap. Purge water has petroleum odor.										

Clough, Harbour & Associates LLP					Sample/Well Designation: MW-3N				
Well Sampling/Development Log									
Project Name: Solvents & Petroleum Services, Inc.					Logged By: Scott Smith/Katie Flood				
Project Location: 1405 Brewerton Road, Syracuse, NY					Date: 06/21/06				
Project Number: 08423.1009.1102					Screen Length: 10'				
Purge Information:									
(1) Depth to Bottom of Well: <u>18.58</u> ft. (from TOC)					(2) Depth to Water: <u>8.82</u> ft. (from TOC)				
(3) Column of Water: <u>9.76</u> ft. [(1) – (2)]					(4) Well Riser Diameter: <u>2</u> in.				
(5) Volume Conversion: <u>0.163</u> gal./ft. (see below)					(6) 1 Well Volume: <u>1.6</u> gal. [(3) x (5)]				
Method of Purging: ☐ WaTerra ☐ Bailer ☒ Submersible ☐ Other: _____									
Volume Conversion: (gal./ft.)									
2" = 0.163		4" = 0.653		6" = 1.469		8" = 2.611		10" = 4.08	
Field Analysis:									
Volume Purged (gal.)	1	2	3	4	5	6	7		
Time	1102	1105	1109	1114	1116	1120	1125		
ORP/EH (mV)	-74	-79	-85	-95	-107	-115	-124		
pH	6.46	6.3	6.46	6.51	6.53	6.54	6.54		
Cond. (MS/CM)	2.2	2.1	2.1	2.0	1.9	1.8	1.8		
Turbidity (NTU)	-5	-5	970	520	410	470	340		
D.O. (mg/L)	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Temperature (°C)	11.3	11.7	11.4	11.5	11.3	11.3	12.3		
Total Volume Purged: <u>7</u> gal.					Total Purge Time: <u>23</u> minutes				
Sampling Information:									
Sampling Method: <u>Grundfos RediFlo2</u>					No. of Bottles: <u>2</u>				
Sampling Time: <u>1126</u>									
Sample Analyses: <u>VOCs (Method 8021)</u>									
Comments: -5 reading for Turbidity is expected to indicate the turbidity levels above the calibration range of the instrument (e.g. >999 NTU). DO probe may have malfunctioned. Although readings expected to be relatively low, the readings were not consistent with historical data.									

Attachment C
Data Summary Table

TABLE C-1
SOLVENTS AND PETROLEUM SERVICE, INC.
SUMMARY MONITORING DATA

ANALYTE	UNIT	Reg. Limit**	MW-1S																				
			Jul-93	May-94	Aug-94	Jul-95	Jun-96	Oct-97	Sep-99	Feb-02	Aug-02	Jun-03	Sep-03	Dec-03	Mar-04	Jun-04	Sep-04	Dec-04	Mar-05	Jun-05	Sep-05	Dec-05	Jun-06
BTEX Compounds																							
Benzene	µg/l	1	2500	2300	NA	1800	2700	1700	1800	1700	2000	1900	2000	1600	1900	2100	2300	1900	2300	2400	2500	1200	
Toluene	µg/l	5	350	300	NA	140	220	130	120	<100	<100	110	100	110	<100	110	<100	130	<100	<100	100	52	
Ethylbenzene	µg/l	5	730	630	NA	<100	780	490	530	360	430	710	600	740	680	610	650	900	660	630	620	550	
Xylenes	µg/l	5	3800	1300	NA	1500	1900	1000	640	250	340	690	490	530	570	450	430	560	460	400	510	460	
Solvents																							
1,1-Dichloroethane	µg/l	5	<100	<5	NA	<100	<100	<5	<60	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<50	
1,1-Dichloroethene	µg/l	5	ND	ND	NA	ND	ND	<5	<60	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<50	
total 1,2-Dichloroethene	µg/l	5	<100	<5	NA	<100	<100	<5	<60	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<50	
Chloroethane	µg/l	5	<100	<5	NA	<100	<100	<10	<60	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<50	
Chloromethane	µg/l	-	NA	NA	NA	NA	NA	NA	440	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<50	
Dibromochloromethane	µg/l	50	NA	NA	NA	NA	NA	NA	NA	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<50	
Methylene Chloride	µg/l	5	NA	NA	NA	NA	NA	NA	NA	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<50	
Tetrachloroethene	µg/l	5	NA	NA	NA	NA	NA	NA	NA	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<50	
Trichloroethene	µg/l	5	<100	<5	NA	<100	<100	<5	<60	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<50	
Vinyl Chloride	µg/l	2	<100	<5	NA	<100	<100	<10	<40	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<50	
Other VOCs																							
Acetone	µg/l	5	ND	ND	ND	ND	ND	ND	<200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
2-Butanone	µg/l	5	ND	ND	ND	ND	ND	ND	<200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
n-Butylbenzene	µg/l	5	ND	ND	NA	ND	ND	6.3	NA	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<50	
sec-butylbenzene	µg/l	5	ND	ND	NA	ND	ND	8.4	NA	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<50	
1,4-Dichlorobenzene	µg/l	3	NA	NA	NA	NA	NA	NA	NA	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<50	
Isopropylbenzene	µg/l	5	ND	ND	NA	ND	ND	60	NA	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<50	
p-Isopropyltoluene	µg/l	5	ND	ND	NA	ND	ND	8.7	NA	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<50	
Naphthalene	µg/l	10	ND	ND	NA	ND	ND	77	NA	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<50	
n-Propylbenzene	µg/l	5	ND	ND	NA	ND	ND	64	NA	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<50	
1,2,4-Trimethylbenzene	µg/l	5	ND	ND	NA	ND	ND	330	NA	<100	<100	140	100	130	140	<100	<100	<100	<100	<100	<100	<50	
1,3,5-Trimethylbenzene	µg/l	5	ND	ND	NA	ND	ND	100	NA	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<50	

Note: Inorganic results have been excluded for clarity, but are available upon request.

* NYS Groundwater Standards
 Boldface values exceed Standard
 Well MW-4S renamed MW-4R after it was deepened in 1997
 NA - Not analyzed
 ND - Not Detected
 Units for Sediment Samples are ug/kg

TABLE C-1
SOLVENTS AND PETROLEUM SERVICE, INC.
SUMMARY MONITORING DATA

ANALYTE	UNIT	Reg. Limit*	MW-3S																				MW-3N	
			Jul-93	May-94	Aug-94	Jul-95	Jun-96	Oct-97	Sep-99	Feb-02	Aug-02	Jun-03	Sep-03	Dec-03	Mar-04	Jun-04	Sep-04	Dec-04	Mar-05	Jun-05	Sep-05	Dec-05	Jun-06	
BTEX Compounds																								
Benzene	µg/l	1	<1	1.7	NA	<1	1	0.67	<3	<0.5	<0.5	0.7	<0.5	<0.5	<0.5	0.89	<0.5	1.2	3.1	<0.5	<0.5	NS	<0.5	
Toluene	µg/l	5	<1	<1	NA	<1	<1	<0.5	<3	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	NS	<1	
Ethylbenzene	µg/l	5	<1	<1	NA	<1	<1	<0.5	<3	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	4	<1	1.0	NS	<1	
Xylenes	µg/l	5	<3	<2	NA	<3	<3	<0.5	<3	<1	<1	<1	<2	<2	<2	<1	<1	<1	3	<1	<1	NS	<1	
Solvents																								
1,1-Dichloroethane	µg/l	5	<1	<1	NA	<1	<1	0.51	<3	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	NS	<1	
1,1,1-Dichloroethane	µg/l	5	ND	ND	NA	ND	ND	<0.5	<3	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	NS	<1	
total 1,2-Dichloroethane	µg/l	5	<1	<1	NA	4	45	14.9	5	<0.5	0.7	<0.5	1	<1	<1	<1	<1	<1	<1	<1	<1	NS	<1	
Chloroethane	µg/l	5	<1	<1	NA	<1	<1	<1.0	<3	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	NS	<1	
Chloromethane	µg/l	-	NA	NA	NA	NA	NA	NA	<3	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	NS	<1	
Dibromochloromethane	µg/l	50	NA	NA	NA	NA	NA	NA	NA	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	NS	<1	
Methylene Chloride	µg/l	5	NA	NA	NA	NA	NA	NA	NA	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	NS	<1	
Tetrachloroethene	µg/l	5	NA	NA	NA	NA	NA	NA	NA	<0.5	<0.5	<0.5	2	<1	<1	<1	<1	<1	<1	<1	<1	NS	<1	
Trichloroethene	µg/l	5	<1	<1	NA	<1	2	<0.5	<3	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	NS	<1	
Vinyl Chloride	µg/l	2	<1	<5	NA	<1	1	2.7	<3	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	NS	<1	
Other VOCs																								
Acetone	µg/l	5	ND	ND	ND	ND	ND	ND	<10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NS	NA	
2-Butanone	µg/l	5	ND	ND	ND	ND	ND	ND	<10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NS	NA	
n-Butylbenzene	µg/l	5	ND	ND	NA	ND	ND	<0.5	NA	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	NS	<1	
sec-butylbenzene	µg/l	5	ND	ND	NA	ND	ND	<0.5	NA	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	NS	<1	
1,4-Dichlorobenzene	µg/l	3	NA	NA	NA	NA	NA	NA	NA	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	NS	<1	
Isopropylbenzene	µg/l	5	ND	ND	NA	ND	ND	<0.5	NA	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	NS	<1	
p-Isopropyltoluene	µg/l	5	ND	ND	NA	ND	ND	<0.5	NA	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	NS	<1	
Napthalene	µg/l	10	ND	ND	NA	ND	ND	<0.5	NA	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	NS	<1	
n-Propylbenzene	µg/l	5	ND	ND	NA	ND	ND	<0.5	NA	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	NS	<1	
1,2,4-Trimethylbenzene	µg/l	5	ND	ND	NA	ND	ND	<0.5	NA	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	NS	<1	
1,3,5-Trimethylbenzene	µg/l	5	ND	ND	NA	ND	ND	<0.5	NA	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	NS	<1	

Note: Inorganic results have been excluded for clarity, but are available upon request.

* NYS Groundwater Standards
 Boldface values exceed Standard
 Well MW-4S renamed MW-4R after it was deepened in 1997
 NA - Not analyzed
 ND - Not Detected
 Units for Sediment Samples are ug/kg

TABLE C-1
SOLVENTS AND PETROLEUM SERVICE, INC.
SUMMARY MONITORING DATA

ANALYTE	UNIT	Reg. Limit*	MW-4R																							
			Dec-97	Sep-99	Feb-00	Apr-00	Aug-00	Nov-00	Mar-01	Feb-02	May-02	Aug-02	Dec-02	Jun-03	Sep-03	Dec-03	Mar-04	Jun-04	Sep-04	Dec-04	Mar-05	Jun-05	Sep-05	Dec-05	Jun-06	
Inorganics																										
Alkalinity (Total)	µg/kg	-																								
Ammonia	µg/kg	2	NA	500	NA	NA	NA	NA	NA	500	380	460	530	NA	NA	NA	580	NA	NA	NA	350	700	NA	NA	500	
Chloride	µg/kg	250	NA	370	NA	NA	NA	NA	NA	210	110	330	140	NA	NA	NA	220	NA	NA	NA	184	250	NA	NA	NA	
Nitrate-Nitrogen	µg/kg		NA	NA	NA	NA	NA	NA	NA	<0.2	<0.2	<0.2	<0.2	NA	NA	NA	<0.2	NA	NA	NA	<0.2	<0.2	NA	NA	371	
Sulfate	µg/kg	250	NA	190	NA	NA	NA	NA	NA	140	35	310	92	NA	NA	NA	54	NA	NA	NA	37.1	35.2	NA	NA	91.8	
Sulfide	µg/kg		NA	NA	NA	NA	NA	NA	NA	<0.1	<0.1	<0.1	<0.1	NA	NA	NA	<0.1	NA	NA	NA	<0.1	<0.1	NA	NA	<0.1	
TDS	µg/kg	500	NA	1500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
TOC	µg/kg		NA	NA	NA	NA	NA	NA	NA	12	15	14	150	NA	NA	NA	15	NA	NA	NA	14	20	NA	NA	19	
Arsenic	µg/kg	0.025	<0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Barium	µg/kg	1	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Calcium	µg/kg	-	NA	270	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Copper	µg/kg	0.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Iron (Ferrous)	µg/kg		NA	NA	NA	NA	NA	NA	NA	12	1.5	1.7	13	NA	NA	NA	0.44	NA	NA	NA	1.32	0.22	NA	NA	1.66	
Iron (Total)	µg/kg	0.3	NA	NA	NA	NA	NA	NA	NA	12	11	13	14	NA	NA	NA	15	NA	NA	NA	22	24	NA	NA	23	
Magnesium	µg/kg	35	NA	34	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Potassium	µg/kg		NA	11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Sodium	µg/kg	20	NA	81	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Gases																										
Carbon Dioxide	mg/l		NA	NA	NA	NA	NA	NA	NA	580	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Hydrogen	%		NA	NA	NA	NA	NA	NA	NA	<1.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Methane	µg/l		NA	NA	NA	NA	NA	NA	NA	9300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Petroleum																										
Gasoline	µg/l	-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Lubricating Oil	µg/l	-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Diesel	µg/l	-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	

* NYS Groundwater Standards
 Boldface values exceed Standard
 Well MW-4S renamed MW-4R after it was deepened in 1997
 NA - Not analyzed
 ND - Not Detected
 Units for Sediment Samples are µg/kg

Attachment D
Laboratory Analytical Data

Upstate Laboratories, Inc.

Shipping: 6034 Corporate Dr. * E. Syracuse, NY 13057-1017 * (315) 437-0255 * Fax (315) 437-1209

Mailing: Box 169 * Syracuse, NY 13206

Albany (518) 459-3134 * Binghamton (607) 724-0478 * Buffalo (716) 649-2533

Rochester (585) 436-9070 * New Jersey (201) 343-5353 * South Carolina (864) 878-3280

Mr. Scott Smith
Clough, Harbour & Associates
441 S. Salina St.
The Galleries of Syracuse
Syracuse, NY 13202

Monday, July 10, 2006

RE: Solvents and Petroleum Wells

Order No.: U0606415

Dear Mr. Scott Smith:

Upstate Laboratories, Inc. received 5 sample(s) on 6/21/2006 for the analyses presented in the following report.

All analytical results relate to the samples as received by the laboratory.

All analytical data conforms with standard approved methodologies and quality control. Our quality control narrative will be included should any anomalies occur.

We have included the Chain of Custody Record as part of your report. You may need to reference this form for a more detailed explanation of your samples. Samples will be disposed of approximately one month from final report date.

Should you have any questions regarding these tests, please feel free to give us a call.

Thank you for your patronage.

Sincerely,

UPSTATE LABORATORIES, INC.


Anthony J. Scala

President/CEO

Confidentiality Statement: This report is meant for the use of the intended recipient. It may contain confidential information, which is legally privileged or otherwise protected by law. If you have received this report in error, you are strictly prohibited from reviewing, using, disseminating, distributing or copying the information.

Upstate Laboratories, Inc.

Date: 10-Jul-06

CLIENT: Clough, Harbour & Associates
Lab Order: U0606415
Project: Solvents and Petroleum Wells
Lab ID: U0606415-001

Client Sample ID: MW-1S
Collection Date: 6/21/06 1:00:00 PM

Matrix: WATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA 8021 LIST BY EPA METHOD 8260		SW8021B		Analyst: DTS		
Dichlorodifluoromethane	ND	50		µg/L	50	6/30/06 3:03:00 PM
Ethylbenzene	200	50		µg/L	50	6/30/06 3:03:00 PM
Hexachlorobutadiene	ND	50		µg/L	50	6/30/06 3:03:00 PM
Isopropylbenzene	ND	50		µg/L	50	6/30/06 3:03:00 PM
m,p-Xylene	220	50		µg/L	50	6/30/06 3:03:00 PM
Methylene chloride	ND	50		µg/L	50	6/30/06 3:03:00 PM
n-Butylbenzene	ND	50		µg/L	50	6/30/06 3:03:00 PM
n-Propylbenzene	ND	50		µg/L	50	6/30/06 3:03:00 PM
Naphthalene	ND	50		µg/L	50	6/30/06 3:03:00 PM
o-Xylene	ND	50		µg/L	50	6/30/06 3:03:00 PM
sec-Butylbenzene	ND	50		µg/L	50	6/30/06 3:03:00 PM
Styrene	ND	50		µg/L	50	6/30/06 3:03:00 PM
tert-Butylbenzene	ND	50		µg/L	50	6/30/06 3:03:00 PM
Tetrachloroethene	ND	50		µg/L	50	6/30/06 3:03:00 PM
Toluene	52	50		µg/L	50	6/30/06 3:03:00 PM
trans-1,2-Dichloroethene	ND	50		µg/L	50	6/30/06 3:03:00 PM
trans-1,3-Dichloropropene	ND	50		µg/L	50	6/30/06 3:03:00 PM
Trichloroethene	ND	50		µg/L	50	6/30/06 3:03:00 PM
Trichlorofluoromethane	ND	50		µg/L	50	6/30/06 3:03:00 PM
Vinyl chloride	ND	50		µg/L	50	6/30/06 3:03:00 PM

NOTES:

The reporting limits were raised due to the high concentration of target compounds.

Approved By: PFFDate: 7-10-06

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Qualifiers: * Low Level
B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit

** Value exceeds Maximum Contaminant Value
E Value above quantitation range
J Analyte detected below quantitation limits
S Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Date: 10-Jul-06

CLIENT: Clough, Harbour & Associates
Lab Order: U0606415
Project: Solvents and Petroleum Wells
Lab ID: U0606415-002

Client Sample ID: MW-2S
Collection Date: 6/21/06 10:20:00 AM
Matrix: WATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA 8021 LIST BY EPA METHOD 8260		SW8021B		Analyst: DTS		
Dichlorodifluoromethane	ND	1.0		µg/L	1	6/26/06 5:41:00 PM
Ethylbenzene	ND	1.0		µg/L	1	6/26/06 5:41:00 PM
Hexachlorobutadiene	ND	1.0		µg/L	1	6/26/06 5:41:00 PM
Isopropylbenzene	ND	1.0		µg/L	1	6/26/06 5:41:00 PM
m,p-Xylene	ND	1.0		µg/L	1	6/26/06 5:41:00 PM
Methylene chloride	ND	1.0		µg/L	1	6/26/06 5:41:00 PM
n-Butylbenzene	ND	1.0		µg/L	1	6/26/06 5:41:00 PM
n-Propylbenzene	ND	1.0		µg/L	1	6/26/06 5:41:00 PM
Naphthalene	ND	1.0		µg/L	1	6/26/06 5:41:00 PM
o-Xylene	ND	1.0		µg/L	1	6/26/06 5:41:00 PM
sec-Butylbenzene	ND	1.0		µg/L	1	6/26/06 5:41:00 PM
Styrene	ND	1.0		µg/L	1	6/26/06 5:41:00 PM
tert-Butylbenzene	ND	1.0		µg/L	1	6/26/06 5:41:00 PM
Tetrachloroethene	ND	1.0		µg/L	1	6/26/06 5:41:00 PM
Toluene	ND	1.0		µg/L	1	6/26/06 5:41:00 PM
trans-1,2-Dichloroethene	ND	1.0		µg/L	1	6/26/06 5:41:00 PM
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	6/26/06 5:41:00 PM
Trichloroethene	ND	1.0		µg/L	1	6/26/06 5:41:00 PM
Trichlorofluoromethane	ND	1.0		µg/L	1	6/26/06 5:41:00 PM
Vinyl chloride	ND	1.0		µg/L	1	6/26/06 5:41:00 PM

Approved By: PFF

Date: 7-10-06

Page 4 of 11

Qualifiers: * Low Level
B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit

** Value exceeds Maximum Contaminant Value
E Value above quantitation range
J Analyte detected below quantitation limits
S Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Date: 10-Jul-06

CLIENT: Clough, Harbour & Associates
Lab Order: U0606415
Project: Solvents and Petroleum Wells
Lab ID: U0606415-003

Client Sample ID: MW-3N
Collection Date: 6/21/06 11:26:00 AM

Matrix: WATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA 8021 LIST BY EPA METHOD 8260		SW8021B		Analyst: DTS		
Dichlorodifluoromethane	ND	1.0		µg/L	1	6/26/06 6:24:00 PM
Ethylbenzene	ND	1.0		µg/L	1	6/26/06 6:24:00 PM
Hexachlorobutadiene	ND	1.0		µg/L	1	6/26/06 6:24:00 PM
Isopropylbenzene	ND	1.0		µg/L	1	6/26/06 6:24:00 PM
m,p-Xylene	ND	1.0		µg/L	1	6/26/06 6:24:00 PM
Methylene chloride	ND	1.0		µg/L	1	6/26/06 6:24:00 PM
n-Butylbenzene	ND	1.0		µg/L	1	6/26/06 6:24:00 PM
n-Propylbenzene	ND	1.0		µg/L	1	6/26/06 6:24:00 PM
Naphthalene	ND	1.0		µg/L	1	6/26/06 6:24:00 PM
o-Xylene	ND	1.0		µg/L	1	6/26/06 6:24:00 PM
sec-Butylbenzene	ND	1.0		µg/L	1	6/26/06 6:24:00 PM
Styrene	ND	1.0		µg/L	1	6/26/06 6:24:00 PM
tert-Butylbenzene	ND	1.0		µg/L	1	6/26/06 6:24:00 PM
Tetrachloroethene	ND	1.0		µg/L	1	6/26/06 6:24:00 PM
Toluene	ND	1.0		µg/L	1	6/26/06 6:24:00 PM
trans-1,2-Dichloroethene	ND	1.0		µg/L	1	6/26/06 6:24:00 PM
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	6/26/06 6:24:00 PM
Trichloroethene	ND	1.0		µg/L	1	6/26/06 6:24:00 PM
Trichlorofluoromethane	ND	1.0		µg/L	1	6/26/06 6:24:00 PM
Vinyl chloride	ND	1.0		µg/L	1	6/26/06 6:24:00 PM

Approved By: PFFDate: 7-10-06

Page 6 of 11

Qualifiers: * Low Level
B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit

** Value exceeds Maximum Contaminant Value
E Value above quantitation range
J Analyte detected below quantitation limits
S Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Date: 10-Jul-06

CLIENT: Clough, Harbour & Associates
Lab Order: U0606415
Project: Solvents and Petroleum Wells
Lab ID: U0606415-004

Client Sample ID: MW-4R
Collection Date: 6/21/06 12:08:00 PM

Matrix: WATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA 8021 LIST BY EPA METHOD 8260		SW8021B		Analyst: DTS		
Dichlorodifluoromethane	ND	50		µg/L	50	6/30/06 3:46:00 PM
Ethylbenzene	ND	50		µg/L	50	6/30/06 3:46:00 PM
Hexachlorobutadiene	ND	50		µg/L	50	6/30/06 3:46:00 PM
Isopropylbenzene	ND	50		µg/L	50	6/30/06 3:46:00 PM
m,p-Xylene	ND	50		µg/L	50	6/30/06 3:46:00 PM
Methylene chloride	ND	50		µg/L	50	6/30/06 3:46:00 PM
n-Butylbenzene	ND	50		µg/L	50	6/30/06 3:46:00 PM
n-Propylbenzene	ND	50		µg/L	50	6/30/06 3:46:00 PM
Naphthalene	ND	50		µg/L	50	6/30/06 3:46:00 PM
o-Xylene	ND	50		µg/L	50	6/30/06 3:46:00 PM
sec-Butylbenzene	ND	50		µg/L	50	6/30/06 3:46:00 PM
Styrene	ND	50		µg/L	50	6/30/06 3:46:00 PM
tert-Butylbenzene	ND	50		µg/L	50	6/30/06 3:46:00 PM
Tetrachloroethene	ND	50		µg/L	50	6/30/06 3:46:00 PM
Toluene	ND	50		µg/L	50	6/30/06 3:46:00 PM
trans-1,2-Dichloroethene	ND	50		µg/L	50	6/30/06 3:46:00 PM
trans-1,3-Dichloropropene	ND	50		µg/L	50	6/30/06 3:46:00 PM
Trichloroethene	ND	50		µg/L	50	6/30/06 3:46:00 PM
Trichlorofluoromethane	ND	50		µg/L	50	6/30/06 3:46:00 PM
Vinyl chloride	740	50		µg/L	50	6/30/06 3:46:00 PM

NOTES:

The reporting limits were raised due to the high concentration of target compounds.

ICP METALS, TOTALS		E200.7		(E200.7)		Analyst: EA
Iron	23	0.030		mg/L	1	6/26/06 12:11:26 PM
ALKALINITY ON AQUEOUS SAMPLES		E310.2		Analyst: ADM		
Alkalinity, Total (As CaCO3)	500	10		mg/LCaCO3	1	7/5/06
CHLORIDE WATERS BY LACHAT		E325.2		Analyst: BS		
Chloride	371	10.0		mg/L	10	6/29/06
NITROGEN, AMMONIA (AS N)		E350.2		Analyst: BS		
Nitrogen, Ammonia (As N)	12.2	0.500		mg/L	1	7/3/06
NITRATE-NITRITE IN WATERS		E353.1		Analyst: BS		
Nitrogen, Nitrate-Nitrite	ND	0.20		mg/L	1	7/7/06 4:00:00 PM
NITRATE		E353.1		Analyst: BS		
Nitrogen, Nitrate (As N)	ND	0.20	H	mg/L	1	7/7/06 4:00:00 PM
SULFATE		E375.4		Analyst: DD		

Approved By: PFF

Date: 7-10-06

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Qualifiers: * Low Level
 B Analyte detected in the associated Method Blank
 H Holding times for preparation or analysis exceeded
 ND Not Detected at the Reporting Limit

** Value exceeds Maximum Contaminant Value
 E Value above quantitation range
 J Analyte detected below quantitation limits
 S Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Date: 10-Jul-06

CLIENT: Clough, Harbour & Associates
Lab Order: U0606415
Project: Solvents and Petroleum Wells
Lab ID: U0606415-005

Client Sample ID: ULI Trip Blank
Collection Date: 6/21/06

Matrix: WATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA 8021 LIST BY EPA METHOD 8260		SW8021B		Analyst: DTS		
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	6/26/06 7:50:00 PM
1,1,1-Trichloroethane	ND	1.0		µg/L	1	6/26/06 7:50:00 PM
1,1,2,2-Tetrachloroethane	ND	1.0		µg/L	1	6/26/06 7:50:00 PM
1,1,2-Trichloroethane	ND	1.0		µg/L	1	6/26/06 7:50:00 PM
1,1-Dichloroethane	ND	1.0		µg/L	1	6/26/06 7:50:00 PM
1,1-Dichloroethene	ND	1.0		µg/L	1	6/26/06 7:50:00 PM
1,1-Dichloropropene	ND	1.0		µg/L	1	6/26/06 7:50:00 PM
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	6/26/06 7:50:00 PM
1,2,3-Trichloropropane	ND	1.0		µg/L	1	6/26/06 7:50:00 PM
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	6/26/06 7:50:00 PM
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	6/26/06 7:50:00 PM
1,2-Dibromo-3-chloropropane	ND	1.0		µg/L	1	6/26/06 7:50:00 PM
1,2-Dibromoethane	ND	1.0		µg/L	1	6/26/06 7:50:00 PM
1,2-Dichlorobenzene	ND	1.0		µg/L	1	6/26/06 7:50:00 PM
1,2-Dichloroethane	ND	1.0		µg/L	1	6/26/06 7:50:00 PM
1,2-Dichloropropane	ND	1.0		µg/L	1	6/26/06 7:50:00 PM
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	6/26/06 7:50:00 PM
1,3-Dichlorobenzene	ND	1.0		µg/L	1	6/26/06 7:50:00 PM
1,3-Dichloropropane	ND	1.0		µg/L	1	6/26/06 7:50:00 PM
1,4-Dichlorobenzene	ND	1.0		µg/L	1	6/26/06 7:50:00 PM
2,2-Dichloropropane	ND	1.0		µg/L	1	6/26/06 7:50:00 PM
2-Chlorotoluene	ND	1.0		µg/L	1	6/26/06 7:50:00 PM
4-Chlorotoluene	ND	1.0		µg/L	1	6/26/06 7:50:00 PM
4-Isopropyltoluene	ND	1.0		µg/L	1	6/26/06 7:50:00 PM
Benzene	ND	0.50		µg/L	1	6/26/06 7:50:00 PM
Bromobenzene	ND	1.0		µg/L	1	6/26/06 7:50:00 PM
Bromochloromethane	ND	1.0		µg/L	1	6/26/06 7:50:00 PM
Bromodichloromethane	ND	1.0		µg/L	1	6/26/06 7:50:00 PM
Bromoform	ND	1.0		µg/L	1	6/26/06 7:50:00 PM
Bromomethane	ND	1.0		µg/L	1	6/26/06 7:50:00 PM
Carbon tetrachloride	ND	1.0		µg/L	1	6/26/06 7:50:00 PM
Chlorobenzene	ND	1.0		µg/L	1	6/26/06 7:50:00 PM
Chloroethane	ND	1.0		µg/L	1	6/26/06 7:50:00 PM
Chloroform	ND	1.0		µg/L	1	6/26/06 7:50:00 PM
Chloromethane	ND	1.0		µg/L	1	6/26/06 7:50:00 PM
cis-1,2-Dichloroethene	ND	1.0		µg/L	1	6/26/06 7:50:00 PM
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	6/26/06 7:50:00 PM
Dibromochloromethane	ND	1.0		µg/L	1	6/26/06 7:50:00 PM
Dibromomethane	ND	1.0		µg/L	1	6/26/06 7:50:00 PM

Approved By: PFF

Date: 7-10-06

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Qualifiers: * Low Level
B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit

** Value exceeds Maximum Contaminant Value
E Value above quantitation range
J Analyte detected below quantitation limits
S Spike Recovery outside accepted recovery limits

Upstate Laboratories, Inc.

Chain of Custody Record

6034 Corporate Drive E. Syracuse New York 13057
(315) 437 0255 Fax 437 1209

Client: Clough Harbour and Associates

Project #: Project Name

Client Contact: Kathryn Flood

Phone #

Solvents and Petroleum Wells

No.

of Containers

Remarks

Sample ID

Date

Time

Matrix

GRAB OR COMP

U/I Internal Use Only

1) 2) 3) 4) 5) 6) 7) 8) 9) 10)

He 7-7 He 7-7

MW-1S

6/21/06 1300

water

GRAB

001

2) X

MW-2S

6/21/06 1020

water

GRAB

002

2) X

MW-3N

6/21/06 1126

water

GRAB

003

2) X

MW-4R

6/21/06 1208

water

GRAB

004

3) X

X X X X X X X X

MULTI TRIP Blank

6/21/06

water

GRAB

-5

1) X

Parameter and Method

Sample bottle:

Type

Size

Preservative

Sampled by (Print)

Scott Smith

Name of Courier

1) EPA 8021

GLASS

40mL

1:1 HCL

Company: CHA

Received by: (sign)

Head, Delivered

2) Alkalinity

GLASS

250mL

NONE

Relinquished by: (sign)

Date

Received by: (sign)

3) T-Fe & Fe2+(Ferrous Iron)/Fe3+(Ferric Iron) Calculated

PLASTIC

500mL

HNO3

Relinquished by: (sign)

Date

Received by: (sign)

4) Sulfide

PLASTIC

120mL

NaOH Zn Acetate

Relinquished by: (sign)

Date

Received by: (sign)

5) TOC

PLASTIC

120mL

1:1 HCL

Relinquished by: (sign)

Date

Received by: (sign)

6) NH3, SO4, CL-

PLASTIC

500mL

NONE

Relinquished by: (sign)

Date

Received by: (sign)

7) Ferrous Iron

PLASTIC

120mL

NaOH Zn Acetate

Relinquished by: (sign)

Date

Received by: (sign)

8) NITRATE

PLASTIC

500mL

NONE

Relinquished by: (sign)

Date

Received by: (sign)

9) NITRATE - NITRITE

PLASTIC

500mL

NONE

Relinquished by: (sign)

Date

Received by: (sign)

10)

PLASTIC

500mL

NONE

Relinquished by: (sign)

Date

Received by: (sign)

Syracuse

Rochester

Buffalo

Albany

Binghamton

Fair Lawn (NJ)

Attachment E
Natural Attenuation Evaluation Worksheet

Natural Attenuation Screening Protocol		Interpretation	Score	Score: 20 <i>Scroll to End of Table</i>	
The following is taken from the USEPA protocol (USEPA, 1998). The results of this scoring process have no regulatory significance.		Inadequate evidence for anaerobic biodegradation* of chlorinated organics	0 to 5		
		Limited evidence for anaerobic biodegradation* of chlorinated organics	6 to 14		
		Adequate evidence for anaerobic biodegradation* of chlorinated organics	15 to 20		
		Strong evidence for anaerobic biodegradation* of chlorinated organics	>20		
Analysis	Concentration in Most Contam. Zone	Interpretation	Yes	No	Points Awarded
Oxygen*	<0.5 mg/L	Tolerated, suppresses the reductive pathway at higher concentrations	☒	☐	3
	> 5mg/L	Not tolerated; however, VC may be oxidized aerobically	☐	☒	0
Nitrate*	<1 mg/L	At higher concentrations may compete with reductive pathway	☒	☐	2
Iron II*	>1 mg/L	Reductive pathway possible; VC may be oxidized under Fe(III)-reducing conditions	☒	☐	3
Sulfate*	<20 mg/L	At higher concentrations may compete with reductive pathway	☐	☒	0
Sulfide*	>1 mg/L	Reductive pathway possible	☐	☒	0
Methane*	>0.5 mg/L	Ultimate reductive daughter product, VC Accumulates	☒	☐	3
Oxidation Reduction Potential* (ORP)	<50 millivolts (mV)	Reductive pathway possible	☒	☐	1
	<-100mV	Reductive pathway likely	☒	☐	2
pH*	5 < pH < 9	Optimal range for reductive pathway	☒	☐	0
TOC	>20 mg/L	Carbon and energy source; drives dechlorination; can be natural or anthropogenic	☐	☒	0
Temperature*	>20°C	At T >20°C biochemical process is accelerated	☐	☒	0
Carbon Dioxide	>2x background	Ultimate oxidative daughter product	☐	☒	0
Alkalinity	>2x background	Results from interaction of carbon dioxide with aquifer minerals	☐	☒	0
Chloride*	>2x background	Daughter product of organic chlorine	☒	☐	2
Hydrogen	>1 nM	Reductive pathway possible, VC may accumulate	☐	☒	0
Volatile Fatty Acids	>0.1 mg/L	Intermediates resulting from biodegradation of aromatic compounds; carbon and energy source	☐	☐	
BTEX*	>0.1 mg/L	Carbon and energy source; drives dechlorination	☐	☒	0
PCE*		Material released	☐	☒	0
TCE*		Daughter product of PCE ^{a/}	☐	☒	0
DCE*		Daughter product of TCE. If cis is greater than 80% of total DCE it is likely a daughter product of TCE ^{a/} ; 1,1-DCE can be a chem. reaction product of TCA	☒	☐	2
VC*		Daughter product of DCE ^{a/}	☒	☐	2
1,1,1-Trichloroethane*		Material released	☐	☒	0
DCA		Daughter product of TCA under reducing conditions	☐	☒	0
Carbon Tetrachloride		Material released	☐	☒	0
Chloroethane*		Daughter product of DCA or VC under reducing conditions	☐	☒	0
Ethene/Ethane	>0.01 mg/L	Daughter product of VC/ethene	☐	☒	0
	>0.1 mg/L	Daughter product of VC/ethene	☐	☒	0
Chloroform		Daughter product of Carbon Tetrachloride	☐	☒	0
Dichloromethane		Daughter product of Chloroform	☐	☒	0

* required analysis.

a/ Points awarded only if it can be shown that the compound is a daughter product (i.e., not a constituent of the source NAPL).

SCORE

Reset