# DNAPL REMOVAL STATUS REPORT AUGUST 17, 2012 THROUGH JANUARY 10, 2013

ANDERSON CLEANERS JAMESTOWN, NEW YORK BCP SITE #C907027

Prepared For: Anderson Cleaners

5 Hunt Road

Jamestown, New York

Prepared By: Day Environmental, Inc.

1563 Lyell Avenue

Rochester, New York 14606

Project No.: 3563S-04

Date: February 14, 2013

**LOCATION:** Anderson Cleaners

5 Hunt Road

Jamestown, New York BCP Site #C907027

**REPORT PERIOD:** August 17, 2012 through January 10, 2013

BACKGROUND: Day Environmental, Inc. (DAY), on behalf of Anderson Cleaners, prepared a document titled *Draft Remedial Action Work Plan, Anderson Cleaners, 5 Hunt Road, Jamestown, New York NYSDEC Brownfield Cleanup Program Site #C907027* dated August 2012 (the Work Plan). Section 2.0 of this document described the installation and operation of a dense non-aqueous phase liquid (DNAPL) removal system proposed for the Anderson Cleaners site (the Site). The New York State Department of Environmental Conservation (NYSDEC) approved the installation of the DNAPL removal system in a letter dated June 27, 2012. The dense non-aqueous phase liquid (DNAPL) removal system was installed at the Anderson Cleaners facility in June and July 2012, in accordance with the provisions outlined in the Work Plan, and the system began operation on August 17, 2012. A plan showing the components of the DNAPL removal system is included as Figure 1, and the location of the extraction wells included in the DNAPL removal system are presented on Figure 2. As shown on Figure 1 and Figure 2, the DNAPL removal system consists of four extraction wells (up to three of which are operated at one time). These extraction wells include existing monitoring wells PW-3, MW-207, and two "new" wells designated EW-1 and EW-2. Copies of the test boring/installation logs for these wells are included in Attachment A.

**PUMPING RATES:** The system operated continuously throughout the report period with one to three pumps activated at any one time. [Note: During the initial operation of the system (i.e., August 17, 2012 through November 13, 2012), the pumps were installed within wells PW-3, MW-207 and EW-2. Between November 13, 2012 and the end of the report period, the pump in MW-207 was moved between this well and EW-1.

The pumping rates remained relatively consistent throughout the report period typically ranging from 0.3 gallons per minute (gpm) to 0.5 gpm depending on the number of pumps operating.

**DNAPL REMOVAL/DISPOSAL:** Prior to the installation of the DNAPL removal system, DNAPL was removed from monitoring wells MW-207 and PW-3 using a portable vacuum purge system. On September 25, 2008, Solvents & Petroleum Services, Inc. removed 55 gallons of DNAPL that was collected from these locations for off-site disposal. On November 30, 2012, Solvents & Petroleum Services, Inc. removed 39 gallons of DNAPL collected by the DNAPL removal system for off-site disposal. Copies of the completed waste manifest forms for the DNAPL removed/disposed are included in Attachment B.

The DNAPL removal system operated throughout the report period, but the quantity of DNAPL removed per unit of time decreased. During the initial two months of operation DNAPL was removed at an approximate rate of 78 ounces per day. The rate of DNAPL removed during the next month (i.e., between October 15, 2012 and November 15, 2012) decreased to approximately 22 ounces per day. For the remainder of the report period (i.e., between about November 15, 2012 and January 10, 2013) the DNAPL removal rate decreased to about 3 ounces per day. It is not clear if the decreasing quantity of DNAPL is related to seasonal conditions, the pumping rates of the extraction wells or an indication that the amount of DNAPL present within the subsurface amenable to physical removal has decreased.

**ANALYTICAL LABORATORY RESULTS:** During the operation of the DNAPL removal system, water samples were collected from various points along the treatment train and submitted to Spectrum Analytical, Inc. (Spectrum) for testing of halogenated volatile organic compounds (VOCs). Specifically, a sample was collected on August 22, 2012 from a sample port located immediately before the granular

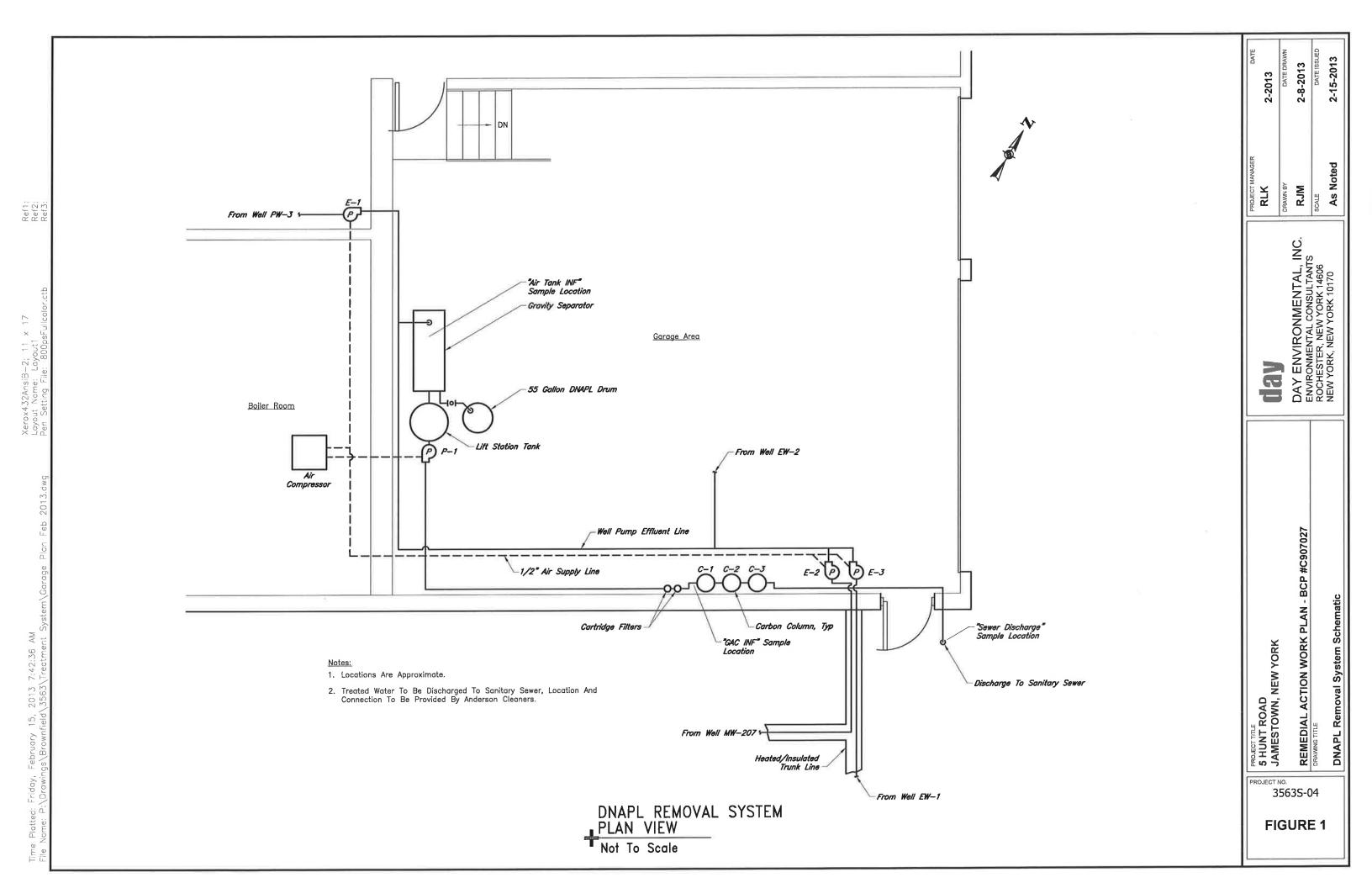
activated carbon (GAC) drums. This sample, designated "GAC INF" contained a tetrachloroethene (PCE) concentration of 106,000 ug/l and a cis-1,2 dichloroethene (cis-1,2 DCE) concentration of 3,140 ug/l. On October 13, 2012, samples were collected from the top of the gravity separator tank (designated "Air Tank Influent"); the sample port located immediately before the GAC drums (designated "Carbon Filter Influent", which is the same location where GAC INF was collected); and at the discharge location to the sanitary sewer (designated "Sewer Discharge"). The Air Tank Influent sample contained concentrations of PCE (131,000 ug/l), trichloroethene (TCE, 2,300 J ug/l), and cis-1,2 DCE (8,250 ug/l). The Carbon Filter Influent sample contained concentrations of PCE (52,700 ug/l), TCE (1,080 ug/l, and cis-1,2 DCE (2,940 ug/l). The Sewer Discharge sample did not contain detectable concentrations of VOCs (detection limits ranging between 0.3 ug/l and 1.5 ug/l). Copies of the laboratory report prepared by Spectrum and executed chain-of-custody documentation for the samples collected are included in Attachment C.

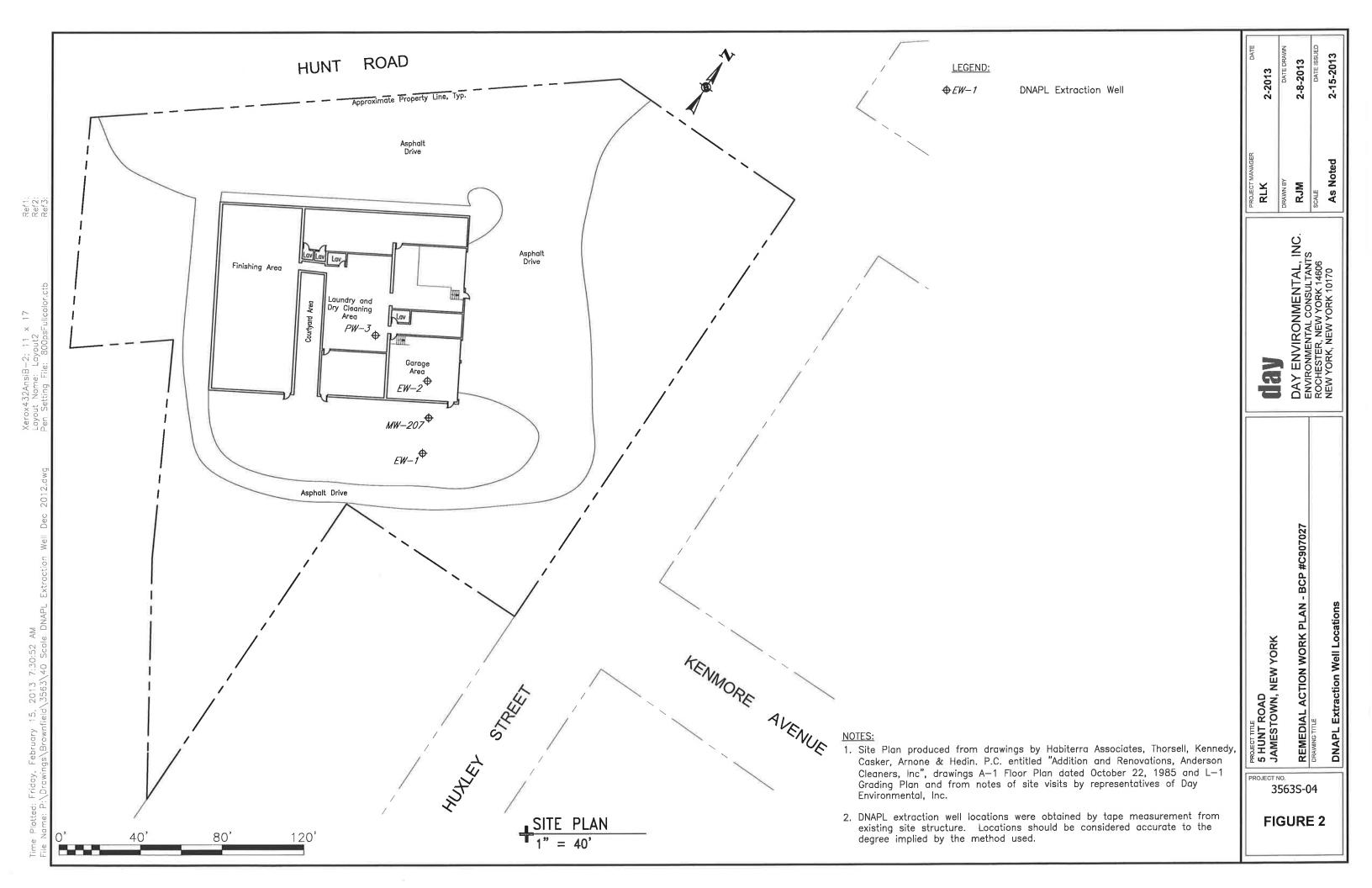
# **DISCUSSION AND RECOMMENDATIONS:**

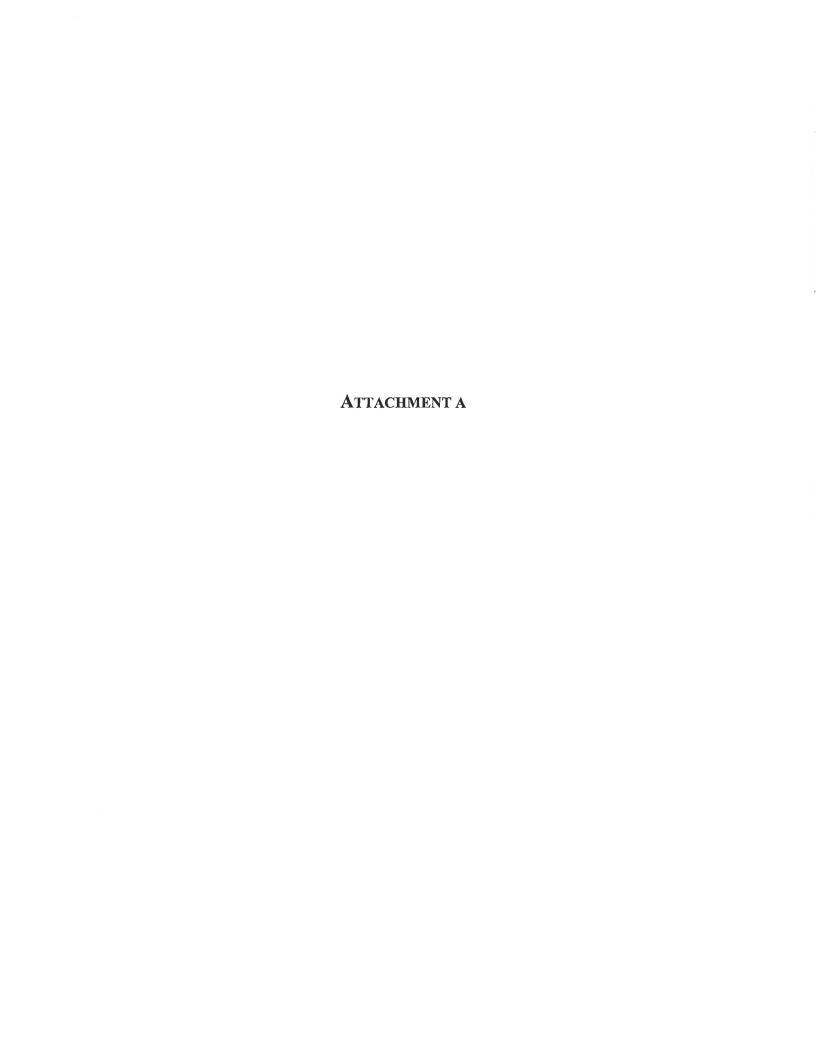
- 1. The DNAPL removal system is an effective method of removing a source area of the contaminants present at the Site. Although the rate of DNAPL removal has decreased, it is recommended that the DNAPL removal system continue to operate to assess seasonal impacts on the removal and the impact of altering pumping rates.
- 2. The operation of the DNAPL removal system will be altered to evaluate the on-going effectiveness of the physical removal of DNAPL. During the future operation of the DNAPL removal system, extraction wells will be turned off for extended periods of time to assess if there is an increase in the amount of DNAPL that can be removed when the well is reactivated. In addition, the pumping rates will be varied by increasing and decreasing the air pressures that power the pumps to assess what (if any) alternating pumping rates has on the quantity of DNAPL that can be recovered.
- 3. The VOC concentrations measured in samples collected from the GAC influent sample port and the sewer discharge location indicate the GAC is effectively removing residual VOCs from the water. Additional samples will be collected to assess current conditions, and the results of this sampling will also be used to determine if the GAC drums need to be replaced.
- 4. Depending on the results of the evaluations of the DNAPL removal system described above, and the analytical laboratory test results, additional remedial efforts designed as a polishing step to remove residual DNAPL to the extent possible will be evaluated. These measures could include chemical oxidation, biostimualtion and/or bioaugmentation or a combination of these remedial alternatives. The specific measures undertaken will be based on site conditions, pilot testing and discussions with vendors. Prior to implementation, an addendum remedial action work plan will be submitted to the NYSDEC.

**SCHEDULE:** During the week of February 11, 2013, water samples will be collected prior to the GAC drums and at the sewer discharge location. These samples will be submitted to an analytical laboratory and tested for halogenated VOCs. Depending on the results of this testing, GAC drums may require replacement. It is anticipated that the DNAPL removal system will continue to be operated through at least May 31, 2013, and the effectiveness of individual extraction wells will be evaluated by shutting down specific wells, varying the pumping rates, etc. The effectiveness of the continued operation of the DNAPL removal system will be determined after this evaluation period. If appropriate, proposed modifications to the system will be identified at that time.









# Day Environmental, Inc. 40 Commercial Street Rochester, New York 14614 (585) 454-0210

**Project:** 5 Hunt Road, Jamestown, NY **DAY Representative:** C. Davidson

**Drilling Contractor: SLC Environmental Services** 

Drilling Rig: Geoprobe 54LT (track mount)

Sampling Method: Direct Push

Completion Method: 1" PVC Well Installed

**BORING NUMBER: PW-3** 

Project No: 3292S-03

Boring Location: See Site Plan

Ground Surface Elevation: NA

Start Date: 10/13/04

Borehole Diameter: 2.25"

Water Level: 1.72' (10/21/04)

Datum: NA

Completion Date: 10/13/04

Borehole Depth: 15.4'

			-				The second secon
Blows per 0.5'	Number	Depth (feet)	% Recovery	N-Value or RQD %	Peak PID Reading (ppm)	Well Installation Log	Sample Description
NA	S-1	0-4	20	NA	41.2		Concrete Stone sub-base Gray to brown Sandy Silt and Gravel (FILL), moist
					391		chemical-type odor
NA	NA	4-15.4	NA	NA			NOTE: Stone sub-base falling into borehole from underseath concrete surface. Concrete becoming undercut, a disposable point was used to advance boring. This stopped "fall in" and ensured a proper well installation.
							Refusal <b>@</b> 15.4'
	NA NA	NA S-1	NA NA 4-15.4	NA NA 4-15.4 NA	NA NA 4-15.4 NA NA	NA NA 4-15.4 NA NA	NA NA 4-15.4 NA NA

File: 3292pw3.log

da	AY ENVIRONMENTAL, INC.  ENVIRONMENTAL CONSULTANTS  AN AFFILIATE OF DAY ENGINEERING, P.C.												
DAY	ENVIR	RONME	NTAL, II	NC.					AN AFFILIATE OF DAY ENGINEERING, P.C.				
Proje Proje	ct #: ct Addre	ess:	3563S- 5 Hunt Jamest		w York			Ground Elevation: Datum:	TEST BORING TB-209 / MW-207				
II .	Represe		R. Kam				-	Date Started: 12/28/2006 Date Ended: 12/28/2006					
II .	ig Contra oling Met		SJB Se 2" Split				-	Borehole Depth: 14.0' Borehole Diarmeter: 11-inch  Completion Method: Well Installed Backfilled with Grout Backfilled	ackfilled with Cuttings				
							•	Water Level (Date):					
Depth (ft)	Blows per 0.5 ft.	Sample Number	Sample Depth (ft)	% Recovery	N-Value or RQD%	Headspace PID (ppm)	PID Reading (ppm)	Sample Description	Notes				
1	1 1 2 3	S-1	0-2	50	3	0	0	Very Loose, Brown, Clayey Silt, little Sand, trace Organics (roots), moist (FILL)	-				
3	1 2 2 3	S-2	2-4	58	4	0	0	Black, TOPSOIL, original ground surface	-				
5	4 4 5 7	S-3	4-6	100	5	646	6	Loose, Gray, clayey SiLT, some Sand, moist	-				
7	4 4 5 7	S-4	6-8	67	9	5,6	Ö	Loose, Gray, Silty SAND, some Clay, trace Gravel, moist	-				
9	1 3 4 6	S-5	8-10	58	7	662		little Gravel Loose, Brown, medium to coarse SAND,Μηὰς	chemical odor				
11	3 5 8	S-6	10-12	50	13	585	158	Medium Dense, Brown, Silty SAND, trace Clay, moist					
13	5 9 14 25	S-7	12-14	100	23	9999+	187 5,675	Medium Dense, Brown, Silty SAND, little Clay, Rock fragments, wet (TILL)	=:				
15								Bottom of Hole 14.0'					
	2) Stratif 3) PID re 4) NA = N 5) Heads	ication lin eadings a Not Availa pace PID	es represe e referenc ble or Not readings r	ent approx sed to a be Applicable	imate boi enzene st	undaries tandard m	Transition easured in	Fluctuations of groundwater levels may occur due to seasonal factors and other conditions, is may be gradual, the headspace above the sample using a MiniRae 2000 equipped with a 10,6 eV lamp,	TEST BORING TB-209 / MW-207				
ROCH (585) 4	O COMMERCIAL STREET  OCHESTER, NEW YORK 14614-1008  NEW YORK, NEW YORK 10165-1617  85) 454-0210  (212) 986-8645  AX (585) 454-0825  www.dayenvironmental.com  FAX (212) 986-8657												
								www.dayenvironmental.com	FAX (212) 986-8657				

day		ENVIRONMENTAL CONSULTANTS
DAY ENVIRONMENTAL, INC.		AN AFFILIATE OF DAY ENGINEERING, P.C.
	MONITORING WELL INSTALLATION LOG	
Project #: 3563S-04 Project Address: 5 Hunt Road Jamestown, New York DAY Representative: Ray Kampff	Ground Elevation:         Datum:           Date Started:         12/27/2006         Date Ended:	MONITORING WELL MW-207  Page 1 of 1  12/27/2006
Drilling Contractor: SJB Services	Water Level (Date/Time):	
Refer to Test Boring Log TB-208 (MW-206) for Soil Description	Depth to Top of Riser Pipe (ft)  2.0 Depth to Bottom of Cement Surface Patch (ft)  Backfill Type  2.0 Depth to Top of Bentonite Seal (ft)  8.0 Depth to Bottom of Bentonite Seal (ft)  9.0 Depth to Top of Well Screen (ft)  11.0 Diameter of Borehole (in)  Backfill Type Sand  4.0 Inside Diameter of Well (in)  Type of Pipe Stainless Steel  Screen slot size #10  14.0 Depth to Bottom of Well Screen (ft)  14.0 Depth of Borehole (ft)	
Notes: 1) Water levels were made at the times and ur 2) NA = Not Available or Not Applicable	der conditions stated Fluctuations of groundwater levels may occur due to seasonal factors at	nd other conditions,
		MONITORING WELL MW-207

nes0289(Anders 3563S-04) Well Installation Logs 12-28-06.xls

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day		ENVIRONMENTAL CONSULTANTS							
DAY ENVIRONMENTAL, INC.		ATE OF DAY ENGINEERING, P.C.							
Project #: 3563R-04	MONITORING WELL CONSTRUCTION DIAGRAM	MONITORING WELL EW-1							
Project Address: 5 Hunt Road		INIOINITORING WELL EW-1							
DAY Representative: C. Hampton Drilling Contractor: QISI	Ground Elevation: Datum: Date Started:	7/19/2012							
	Water Level (Date): 7.22 BTOC (7/20/12) 21.05 depth								
Notes: 1) Water levels were made at the times and u 2) NA = Not Available or Not Applicable	nder conditions stated. Fluctuations of groundwater levels may occur due to seasonal facto	rs and other conditions.							
		MONITORING WELL EW-1							

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day		ENVIRONMENTAL CONSULTANTS							
DAY ENVIRONMENTAL, INC.		LIATE OF DAY ENGINEERING, P.C.							
	MONITORING WELL CONSTRUCTION DIAGRAM	1							
Project #: 3563R-04 Project Address: 5 Hunt Road		MONITORING WELL EW-2							
Jamestown, NY DAY Representative: C. Hampton Drilling Contractor: QISI	Ground Elevation:								
Notes: 1) Water levels were made at the times and 2) NA = Not Available or Not Applicable	under conditions stated. Fluctuations of groundwater levels may occur due to seasonal fac	ctors and other conditions.							
		MONITORING WELL EW-2							

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Report Date: 31-Aug-12 09:27



# ☑ Final Report☐ Re-Issued Report☐ Revised Report

# SPECTRUM ANALYTICAL, INC. Featuring HANIBAL TECHNOLOGY Laboratory Report

Day Environmental, Inc. 1563 Lyell Avenue Rochester, NY 14606 Attn: Ray Kampff

Project: Anderson Cleaners Treatment System, NY

Project #: [none]

Laboratory ID

Client Sample ID

Matrix

Date Sampled

Date Received

SB55122-01

**GAC INF** 

Ground Water

22-Aug-12 14:30

27-Aug-12 09:45

I attest that the information contained within the report has been reviewed for accuracy and checked against the quality control requirements for each method. These results relate only to the sample(s) as received.

All applicable NELAC requirements have been met.

Massachusetts # M-MA138/MA1110 Connecticut # PH-0777 Florida # E87600/E87936 Maine # MA138 New Hampshire # 2538 New Jersey # MA011/MA012 New York # 11393/11840 Pennsylvania # 68-04426/68-02924 Rhode Island # 98 USDA # S-51435



Authorized by:

Nicole Leja Laboratory Director

Tréch Leja

Spectrum Analytical holds certification in the State of New York for the analytes as indicated with an X in the "Cert." column within this report. Please note that the State of New York does not offer certification for all analytes. Please refer to our website for specific certification holdings in each state.

Please note that this report contains 4 pages of analytical data plus Chain of Custody document(s). When the Laboratory Report is indicated as revised, this report supersedes any previously dated reports for the laboratory ID(s) referenced above. Where this report identifies subcontracted analyses, copies of the subcontractor's test report are available upon request. This report may not be reproduced, except in full, without written approval from Spectrum Analytical, Inc.

Spectrum Analytical, Inc. is a NELAC accredited laboratory organization and meets NELAC testing standards. Use of the NELAC logo however does not insure that Spectrum is currently accredited for the specific method or analyte indicated. Please refer to our "Quality" web page at www.spectrum-analytical.com for a full listing of our current certifications and fields of accreditation. States in which Spectrum Analytical, Inc. holds NELAC certification are New York, New Hampshire, New Jersey and Florida, All analytical work for Volatile Organic and Air analysis are transferred to and conducted at our 830 Silver Street location (NY-11840, FL-E87936 and NJ-MA012).

Please contact the Laboratory or Technical Director at 800-789-9115 with any questions regarding the data contained in this laboratory report,

# **CASE NARRATIVE:**

The samples were received 5.4 degrees Celsius, please refer to the Chain of Custody for details specific to temperature upon receipt. An infrared thermometer with a tolerance of  $\pm$ 1.0 degrees Celsius was used immediately upon receipt of the samples.

If a Matrix Spike (MS), Matrix Spike Duplicate (MSD) or Duplicate (DUP) was not requested on the Chain of Custody, method criteria may have been fulfilled with a source sample not of this Sample Delivery Group.

See below for any non-conformances and issues relating to quality control samples and/or sample analysis/matrix.

# SW846 8260C

# Calibration:

### 1208066

Analyte quantified by quadratic equation type calibration.

Chloromethane

trans-1,2-Dichloroethene

trans-1,3-Dichloropropene

# This affected the following samples:

1220823-BLK1

1220823-BS1

1220823-BSD1

GAC INF

S210301-ICV1

S210506-CCV1

# S210301-ICV1

Analyte percent recovery is outside individual acceptance criteria (80-120).

Dichlorodifluoromethane (Freon12) (72%)

Vinyl chloride (78%)

# This affected the following samples:

1220823-BLK1

1220823-BS1

1220823-BSD1

GAC INF

S210506-CCV1

# Samples:

# S210506-CCV1

Analyte percent difference is outside individual acceptance criteria (20), but within overall method allowances.

1,1-Dichloroethene (-21.3%)

Dichlorodifluoromethane (Freon12) (-31.8%)

Trichlorofluoromethane (Freon 11) (-26.0%)

Vinyl chloride (-33,5%)

# This affected the following samples:

1220823-BLK1

1220823-BS1

1220823-BSD1

GAC INF

SB55122-01

GAC INF

Sample dilution required for high concentration of target analytes to be within the instrument calibration range.

Client Project # [none]

Matrix Ground Water Collection Date/Time 22-Aug-12 14:30 Received 27-Aug-12

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cer															
Volatile O	rganic Compounds																											
	rganic Halocarbons		GS1																									
	by method SW846 5030 V				.0.0																							
75-27-4	Bromodichloromethane	< 958	U	μg/l	1000	958	2000	SW846 8260C		29-Aug-12	JEG	1220823																
75-25-2	Bromoform	< 1210	U	μg/l	2000	1210	2000			3 <b>4</b> 0°	<b>M</b>	( 14)	Х															
4-83-9	Bromomethane	< 2280	U	µg/l	4000	2280	2000		95	(1)	*	790	Х															
66-23-5	Carbon tetrachloride	< 1100	U	µg/l	2000	1100	2000	3 <b>0</b> 707	<b>6</b> 0	(000)	<b>X</b>	1000	Х															
08-90-7	Chlorobenzene	< 1310	U	µg/l	2000	1310	2000		**		**		Х															
5-00-3	Chloroethane	< 2070	U	µg/l	4000	2070	2000	30	**	1001	**	1097	Х															
67-66-3	Chloroform	< 1380	U	μg/l	2000	1380	2000				**	*	Х															
4-87-3	Chloromethane	< 2950	U	μg/l	4000	2950	2000		190	(40)	**	71007	Х															
24-48-1	Dibromochloromethane	< 578	U	μg/l	1000	578	2000		1.00	361	*		Х															
5-50-1	1,2-Dichlorobenzene	< 1340	U	μg/l	2000	1340	2000				*	**	Х															
41-73-1	1,3-Dichlorobenzene	< 1420	U	μg/l	2000	1420	2000	**	(14)	(44.)		2000	Χ															
06-46-7	1,4-Dichlorobenzene	< 1250	U	µg/l	2000	1250	2000	*	( 🙀				Χ															
75-71-8	Dichlorodifluoromethane (Freon12)	< 894	U	µg/l	4000	894	2000	31	000	×	**	((41)	Х															
5-34-3	1,1-Dichloroethane	< 1360	U	µg/l	2000	1360	2000		**	*	**		Х															
07-06-2	1,2-Dichloroethane	< 1560	U	μg/l	2000	1560	2000	*	((00)	( <del>0</del>	W:	(0)	Х															
5-35-4	1,1-Dichloroethene	< 976	U	µg/l	2000	976	2000	<b>#</b>		**	*		Х															
56-59-2	cis-1,2-Dichloroethene	3,140		µg/l	2000	1430 2000		*	(00)	34	**	500	Х															
56-60-5	trans-1,2-Dichloroethene	< 1360	< 1360	< 1360	< 1360	< 1360	< 1360	< 1360	< 1360	< 1360	< 1360	< 1360	< 1360	< 1360	< 1360	< 1360	< 1360	U	μg/l	2000	1360	2000	**	**	**	100		Х
8-87-5	1,2-Dichloropropane	< 1420	U	μg/l	2000	1420	2000	**	((**)	(8)	**	(.0).	Х															
0061-01-5	cis-1,3-Dichloropropene	< 504	U	μg/l	1000	504	2000			34	iii	•	Х															
0061-02-6	trans-1,3-Dichloropropene	< 998	U	μg/l	1000	998	2000		0.00	"	**	.00	Х															
5-09-2	Methylene chloride	< 1380	U	μg/l	4000	1380	2000	**	*	(iii	#		Х															
9-34-5	1,1,2,2-Tetrachloroethane	< 698	U	μg/l	1000	698	2000	**	199	39			Х															
27-18-4	Tetrachloroethene	106,000		μg/l	2000	1490	2000	**	35#6	166	*	200	Х															
1-55-6	1,1,1-Trichloroethane	< 1160	U	μg/l	2000	1160	2000	*			10		Х															
9-00-5	1,1,2-Trichloroethane	< 1280	U	μg/l	2000	1280	2000	H	2000	W	60	300	Х															
9-01-6	Trichloroethene	< 1510	U	μg/ł	2000	1510	2000	×		₩	+		Х															
5-69-4	Trichlorofluoromethane (Freon 11)	< 1260	U	μg/l	2000	1260	2000	*	(fee),	ж	*	100	Х															
5-01-4	Vinyl chloride	< 1610	U	μg/l	2000	1610	2000	n		*	**	w	Х															
urrogate r	recoveries:																											
60-00-4	4-Bromofluorobenzene	80			70-13	0 %		*		**	*	*																
037-26-5				70-130 %				W	::•::		**	0,000																
7060-07-0	1,2-Dichloroethane-d4	110			70-13					<i>iii</i>	#	ii.																
868-53-7	Dibromofluoromethane	110			70-13				2.00		**																	

# Notes and Definitions

GS1 Sample dilution required for high concentration of target analytes to be within the instrument calibration range.

U Analyte included in the analysis, but not detected at or above the MDL.

dry Sample results reported on a dry weight basis

NR Not Reported

RPD Relative Percent Difference

<u>Laboratory Control Sample (LCS)</u>: A known matrix spiked with compound(s) representative of the target analytes, which is used to document laboratory performance.

Matrix Duplicate: An intra-laboratory split sample which is used to document the precision of a method in a given sample matrix.

Matrix Spike: An aliquot of a sample spiked with a known concentration of target analyte(s). The spiking occurs prior to sample preparation and analysis. A matrix spike is used to document the bias of a method in a given sample matrix.

<u>Method Blank</u>: An analyte-free matrix to which all reagents are added in the same volumes or proportions as used in sample processing. The method blank should be carried through the complete sample preparation and analytical procedure. The method blank is used to document contamination resulting from the analytical process.

Method Detection Limit (MDL): The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero and is determined from analysis of a sample in a given matrix type containing the analyte.

Reportable Detection Limit (RDL): The lowest concentration that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions. For many analytes the RDL analyte concentration is selected as the lowest non-zero standard in the calibration curve. While the RDL is approximately 5 to 10 times the MDL, the RDL for each sample takes into account the sample volume/weight, extract/digestate volume, cleanup procedures and, if applicable, dry weight correction. Sample RDLs are highly matrix-dependent.

<u>Surrogate</u>: An organic compound which is similar to the target analyte(s) in chemical composition and behavior in the analytical process, but which is not normally found in environmental samples. These compounds are spiked into all blanks, standards, and samples prior to analysis. Percent recoveries are calculated for each surrogate.

<u>Continuing Calibration Verification:</u> The calibration relationship established during the initial calibration must be verified at periodic intervals. Concentrations, intervals, and criteria are method specific.

Validated by: Nicole Leja

SPECTRUM ANALYTHEM, AND FEATURING THE STRAIN THEMSOLDEN

# CHAIN OF CUSTODY RECORD

Skiandard TAT - 7 to 10 business days

Rush TAT - Date Needed:

Special Handling:

5(55120-

All TATs subject to laboratory approval.  Min. 24-hour northwinen needed for rushes.  Samples disposed of after 60 days unless otherwise increased.	Project No.: ANDERSON CLEANERS	Site Name:	Location: TREATMENT STSTEM State: NY	simpler(s): TON POSZAR	List preservative code below: QA/QC Reporting Notes:
Page 1 of 1 Samples disposed of after 60 of 1 of	lavoice To: MIRE LYONS	SHOW RD Site	LAMESTONN, NY 14701 Local	P.O. No.: RQN:	5=NaOH 6=Ascorbic Acid 7=CH5OH 11= 12=
SPECTRUM ANALYTEM, UNG. Festioning BASSHEAL, TRCHNOLDSEN	Report To T BUNGOLMOUTAL ATTAINS PAY KAMPFE	SKAMPTE @ DYTMAIL. NET	Telephone #: 585 454 0210	Project Mgr   KAMPPF	1=Na <sub>3</sub> N2O <sub>3</sub> 2=HCl 3=H <sub>3</sub> SO <sub>4</sub> 4=HNO <sub>3</sub> 8= NaHSO <sub>4</sub> 9= Deionized Water 10= H <sub>3</sub> PO <sub>4</sub>

		Rely	ojisi	SZeO H	Salaw-specially reporting standards		Time: Temp*C [2] EDD Formar	10:35 BE-mail to REMANTE & DATAML. NET
77	S		IA VC	xinsM DV lo u	7		Date:	3/1/1/2
oundwater WW=Wastewater	SO=Soil SI,=Sludge A=Air X3=	, and a second	=Composite	Date: Time:	2		Method by:	
DW Drinking Water GW-Groundwater WW-Wastewater	O=Oil SW= Surface Water Si		(i=Grab C=Composite	Lab.1d: Sample 1d:	55/32-01 GAC INF		Relinquished by:	Lyllin Some

SUBSISA!

Special Handling:

A Rush TAT - Date Needed: 5 7000 All TATs subject to laboratory approval.

Min. 24-hour notification needed for rushes.
 Samples disposed of after 60 days unless

otherwise instructed.



# CHAIN OF CUSTODY RECORD

Page | of

MA DEP MCP CAM Report: Yes D NoD ☐ Standard ☐ No QC ☐ DQA\* ☐ NY ASP A\* ☐ NY ASP B\* CT DPH RCP Report: Yes | No | State-specific reporting standards QA/QC Reporting Notes: \* additional charges may apply DEFI QA/QC Reporting Level O THER II\* O THER IV\* 7 State: □ NJ Reduced\* ANDERSON CLEANERS TREATMENT STIFFAM □ Other 100 BSZAR List preservative code below: Analyses: Project No.: Location: Sampler(s): Site Name: Temp C 8260 HALOCARBONS 470 Time: # of Plastic Containers: 7=CH3OH ANDERSON CLEANERS # of Clear Glass RON MIKE LYDNS とつうつういいかつ asulO radmA lo# 5=: NaOH 6-Ascorbic Acid 1 Date: s IsiV AOV 10# SHOW RD 3 XrusM 0 Type Invoice To: P.O. No.: DW=Drinking Water GW=Groundwater WW=Wastewater O=Oil SW=Surface Water SO=Soil SL=Sludge A-Air 1430 Time: Received by: 10= H3PO4 4-HNO3 2 HM: 8 22 12 Date: G=Grab C=Composite DY BUNROWNER TO 585 454 0210 2=HCl 3=H2SO4 PRAMPIE @ DAYMAIL. NET 9= Deionized Water RAY KAMPA Sample Id: CAC INF Relinquished by: RAY KAMPIF 1=Na2S2O3 8= NaHSO4 Telephone #: Project Mgr. Report To: 6513B0 Lab Id:

Ciced: me Hedice 11 Almgren Drive • Agawam, MA 01001 • 413-789-9018 • FAX 413-789-4076 • www.spectrum-analytical.com

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Condition upon receipt: Revised Feb 2012

B-mail to RKAMPTF @ DATMOL. NET

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☐ EDD Format

From: (315) 214-5777 Mike Mapother Spectrum Analytical, Inc. 6263 East Taft Road

North Syracuse, NY 13212

Origin ID: SYRA



**BILL SENDER** 

SHIP TO: (413) 789-9018 SAMPLE RECEIVING SPECTRUM ANALYTICAL 11 ALMGREN DR

AGAWAM, MA 01001

Ship Date: 24AUG12 ActWgt: 10.0 LB CAD: 102252630/INET3300

Delivery Address Bar Code



Ref# Invoice #

PO# Dept#

> ### SATURDAY ### A2 PRIORITY OVERNIGHT

TRK# 0201 7988 2151 0941

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# CHAIN OF CUSTODY RECORD

Page | of |

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Special F	Standard TAT - 7 to

Standard TAT - 7 to 10 bus □ Rush TAT - Date Needed:

· Min. 24-hour notification needed for rushes. · All TATs subject to laboratory approval.

· Samples disposed of after 60 days unless otherwise instructed.

ANDERSON CLEANERS			SAT STEM State: NY	TON ROGAL		low: QA/QC Reporting Notes:	* additional charges may apply	MA DEP MCP CAM Report: Yes □No□	CT DPH RCP Report: Yes □ No □  QA/QC Reporting Level	☐ Standard ☐ No QC ☐ DQA*	□ NY ASPA* □ NY ASP B* □ NJ Reduced* □ NJ Full* □ TITED IT*	Other	State-specific reporting standards:			~	On.				RUAMDE O DAMANI NET		t: O Refinerated DIVOA Frozen Soil Jar Frozen
Project No.: AND		Site Iname:	Location: TREATMENT STSTEM	V)	Sampler(s):	List preservative code below:		Analyses:												☐ EDD Format		E-mail to	Condition upon receipt:
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NHD JAIZ	1	ールフ		210	4	SO <sub>4</sub> 4=HNO <sub>3</sub>			SO=Soil SL=Sludge		C=Composite		Date:	8/22/12						Rece	Methons	July 2	
Report To: LAT BANKON MCNIA	5 (	B DATMAIL. NEI		535 454 0210	RAY KAMPRE	2O <sub>2</sub> 2=HCl 3=H <sub>2</sub> SO <sub>4</sub>	0,	Water GW=Groundwater	Water X2=		G=Grab C=C		Sample Id:	GAC INF						Relinquished by:	in chi	Monne	
Report To:	TAT TAMPT	RYAMPEP RYAMPEP		Telephone #:_	Project Mgr.	1=Na,S203	8= NaHSO <sub>4</sub>	DW=Drinking Water	O=Oil SW= X1=				Lab Id:							Relin	/ Carry	Valler	

Report Date: 25-Oct-12 13:53



# ☑ Final Report☐ Re-Issued Report☐ Revised Report

# SPECTRUM ANALYTICAL, INC. Featuring HANIBAL TECHNOLOGY Laboratory Report

Day Environmental, Inc. 1563 Lyell Avenue Rochester, NY 14606 Attn: Ray Kampff

Project: 5 Hunt Rd. Jamestown, NY

Project #: 35635-04

Laboratory ID	Client Sample ID	<u>Matrix</u>	Date Sampled	Date Received
SB58271-01	Air Tank Influent	Waste Water	13-Oct-12 10:30	16-Oct-12 21:00
SB58271-02	Carbon Filter Influent	Waste Water	13-Oct-12 10:40	16-Oct-12 21:00
SB58271-03	Sewer Discharge	Waste Water	13-Oct-12 10:50	16-Oct-12 21:00

I attest that the information contained within the report has been reviewed for accuracy and checked against the quality control requirements for each method. These results relate only to the sample(s) as received.

All applicable NELAC requirements have been met.

Massachusetts # M-MA138/MA1110 Connecticut # PH-0777 Florida # E87600/E87936 Maine # MA138 New Hampshire # 2538 New Jersey # MA011/MA012 New York # 11393/11840 Pennsylvania # 68-04426/68-02924 Rhode Island # 98 USDA # S-51435



Authorized by:

Nicole Leja Laboratory Director

Spectrum Analytical holds certification in the State of New York for the analytes as indicated with an X in the "Cert." column within this report. Please note that the State of New York does not offer certification for all analytes. Please refer to our website for specific certification holdings in each state.

Please note that this report contains 8 pages of analytical data plus Chain of Custody document(s). When the Laboratory Report is indicated as revised, this report supersedes any previously dated reports for the laboratory ID(s) referenced above. Where this report identifies subcontracted analyses, copies of the subcontractor's test report are available upon request. This report may not be reproduced, except in full, without written approval from Spectrum Analytical, Inc.

Spectrum Analytical, Inc. is a NELAC accredited laboratory organization and meets NELAC testing standards, Use of the NELAC logo however does not insure that Spectrum is currently accredited for the specific method or analyte indicated. Please refer to our "Quality" web page at www.spectrum-analytical.com for a full listing of our current certifications and fields of accreditation. States in which Spectrum Analytical, Inc., holds NELAC certification are New York, New Hampshire, New Jersey and Florida. All analytical work for Volatile Organic and Air analysis are transferred to and conducted at our 830 Silver Street location (NY-11840, FL-E87936 and NJ-MA012).

Please contact the Laboratory or Technical Director at 800-789-9115 with any questions regarding the data contained in this laboratory report.

# CASE NARRATIVE:

The samples were received 1.1 degrees Celsius, please refer to the Chain of Custody for details specific to temperature upon receipt. An infrared thermometer with a tolerance of +/- 1.0 degrees Celsius was used immediately upon receipt of the samples.

If a Matrix Spike (MS), Matrix Spike Duplicate (MSD) or Duplicate (DUP) was not requested on the Chain of Custody, method criteria may have been fulfilled with a source sample not of this Sample Delivery Group.

See below for any non-conformances and issues relating to quality control samples and/or sample analysis/matrix.

# SW846 8260C

# Calibration:

### 1210050

Analyte quantified by quadratic equation type calibration.

Dibromochloromethane

This affected the following samples:

1226087-BLK1

1226087-BS1

1226087-BSD1

Air Tank Influent

Carbon Filter Influent

S212821-ICV1

S213114-CCV1

Sewer Discharge

# S212821-ICV1

Analyte percent recovery is outside individual acceptance criteria (80-120).

Dichlorodifluoromethane (Freon12) (71%)

This affected the following samples:

1226087-BLK1

1226087-BS1

1226087-BSD1

Air Tank Influent

Carbon Filter Influent

S213114-CCV1

Sewer Discharge

# Laboratory Control Samples:

# 1225991 BS/BSD

1,1,2,2-Tetrachloroethane percent recoveries (69/72) are outside individual acceptance criteria (70-130), but within overall method allowances. All reported results of the following samples are considered to have a potentially low bias:

Air Tank Influent

Bromomethane percent recoveries (137/137) are outside individual acceptance criteria (70-130), but within overall method allowances. All reported results of the following samples are considered to have a potentially high bias:

Air Tank Influent

# Spikes:

1225991-MS1

Source: SB58271-01

# SW846 8260C

# Spikes:

1225991-MS1

Source: SB58271-01

The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.

1,1,2,2-Tetrachloroethane

1225991-MSD1

Source: SB58271-01

The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.

1,1,2,2-Tetrachloroethane

# Samples:

# S213061-CCV1

Analyte percent difference is outside individual acceptance criteria (20), but within overall method allowances.

1,1,2,2-Tetrachloroethane (-29.6%)

Analyte percent drift is outside individual acceptance criteria (20), but within overall method allowances.

Bromomethane (42.6%)

This affected the following samples:

1225991-BLK1

1225991-BS1

1225991-BSD1

1225991-MS1

1225991-MSD1

Air Tank Influent

SB58271-01

Air Tank Influent

Sample data reported for QC purposes only.

SB58271-01RE1

Air Tank Influent

Sample dilution required for high concentration of target analytes to be within the instrument calibration range.

SB58271-02

Carbon Filter Influent

Sample dilution required for high concentration of target analytes to be within the instrument calibration range.

Client Project # 35635-04

Matrix Waste Water Collection Date/Time
13-Oct-12 10:30

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Ce
Volatile O	rganic Compounds												
	rganic Halocarbons	N/-+ NAO	QCR										
<u> </u>	by method SW846 5030 V Bromodichloromethane	< 2400	U, D	uall	2500	2400	5000	SW846 8260C	22 Oct 12	24-Oct-12	JEG	1225991	>
75-25-2	Bromoform	< 3020	U, D	μg/l	5000	3020	5000	3VV040 0200C	23-001-12	#	JEG	#	<i>,</i>
74-83-9	Bromomethane	< 5700	U, D	μg/l	10000	5700	5000	W	500	391	W.	300	)
6-23-5	Carbon tetrachloride	< 2740	U, D	µg/l	5000	2740	5000			liá	ii.		,
08-90-7	Chlorobenzene	< 3270	U, D	µg/l	5000	3270	5000			.,,			,
5-00-3	Chloroethane	< 5160	U, D	µg/l	10000	5160	5000	**			#	1003	,
7-66-3	Chloroform	< 3440	U, D	μg/l	5000	3440	5000			10	W.		)
4-87-3			U, D	μg/l			5000		(66)	)a	W	(94)	,
24-48-1	Chloromethane	< 7360	U, D	μg/l	10000	7360	5000			4		**	
5-50-1	Dibromochloromethane	< 1440	U, D	µg/l	2500	1440		•	000	**	(E	((00))	)
41-73-1	1,2-Dichlorobenzene	< 3340		µg/l	5000	3340	5000			·	66	(4)	>
	1,3-Dichlorobenzene	< 3560	U, D	μg/l	5000	3560	5000			20	90	1001	
06-46-7	1,4-Dichlorobenzene	< 3120	U, D	µg/i	5000	3120	5000	w			101		)
5-71-8	Dichlorodifluoromethane (Freon12)	< 2240	U, D	µg/I	10000	2240	5000						>
5-34-3	1,1-Dichloroethane	< 3400	U, D	μg/l	5000	3400	5000		11 11.0	**	200	(04)	)
07-06-2	1,2-Dichloroethane	< 3900	U, D	µg/l	5000	3900	5000				u		)
5-35-4	1,1-Dichloroethene	< 2440	U, D	μg/l	5000	2440	5000			**	149)	3864	)
56-59-2	cis-1,2-Dichloroethene	8,250	D	µg/l	5000	3580	5000	10		*		in	,
56-60-5	trans-1,2-Dichloroethene	< 3400	U, D	μg/l	5000	3400	5000	**	(4)	**	3.95	0	,
8-87-5	1,2-Dichloropropane	< 3560	U, D	μg/l	5000	3560	5000		100		**		)
0061-01-5	cis-1,3-Dichloropropene	< 1260	U, D	µg/l	2500	1260	5000	**	(10)	**	**	or .	)
0061-02-6	trans-1,3-Dichloropropene	< 2500	U, D	µg/l	2500	2500	5000	**	//44	**	(64)	2007	)
5-09-2	Methylene chloride	< 3450	U, D	µg/l	10000	3450	5000	**	(11)	Æ			)
9-34-5	1,1,2,2-Tetrachloroethane	< 1740	U, D	µg/l	2500	1740	5000	<i>ac</i>	1946 E	w	(0)	(***)	)
27-18-4	Tetrachloroethene	131,000	D	μg/l	5000	3720	5000	#		*		**	)
1-55-6	1,1,1-Trichloroethane	< 2910	U, D	μg/l	5000	2910	5000		(#0)	*	((4()	((44))	)
9-00-5	1,1,2-Trichloroethane	< 3210	U, D	μg/l	5000	3210	5000	••	*	*		(**)	)
9-01-6	Trichloroethene	< 3780	U, D	µg/l	5000	3780	5000	MC.	3002		9962	(00)	>
5-69-4	Trichlorofluoromethane (Freon 11)	< 3140	U, D	µg/l	5000	3140	5000	M.		#		44	>
5-01-4	Vinyl chloride	< 4040	U, D	µg/l	5000	4040	5000	16:	**	**	0.00	9000	×
urrogate r	ecoveries:												
50-00-4	4-Bromofluorobenzene	91			70-13	0 %			0997	**	.00	780	
37-26-5	Toluene-d8	99			70-13	0%		· ·		W.	u	361	
7060-07-0	1,2-Dichloroethane-d4	106			70-13	0 %			70			9	
368-53-7	Dibromofluoromethane	93			70-13	0 %		78	- WC	100	11600		
	is of Volatile Organic Halo	<u>carbons</u>	GS1										
5-27-4	Bromodichloromethane	< 1200	U, D	µg/l	1250	1200	2500	SW846 8260C	24-Oct-12	24-Oct-12	eq	1226087	>
-25-2	Bromoform	< 1510	U, D	μg/l	2500	1510	2500	И	II.	п	II	и	)
-83-9	Bromomethane	< 2850	U, D	μg/l	5000	2850	2500	п	U	"	"	11	)
5-23-5	Carbon tetrachloride	< 1370	U, D	μg/l	2500	1370	2500	U	п	U	п	п	)
8-90-7	Chlorobenzene	< 1640	U, D	μg/l	2500	1640	2500	U	п	п	u	п	,
5-00-3	Chloroethane	< 2580	U, D	µg/l	5000	2580	2500	ır	п	и	n	"	>
			•										-

<u>Client Project #</u> 35635-04

Matrix Waste Water Collection Date/Time
13-Oct-12 10:30

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cer
Volatile O	rganic Compounds												
	sis of Volatile Organic Halo		GS1										
	by method SW846 5030 V												
74-87-3	Chloromethane	< 3680	U, D	µg/l	5000	3680	2500	SW846 8260C		24-Oct-12	eq	1226087	
124-48-1	Dibromochloromethane	< 722	U, D	µg/l	1250	722	2500	*		**	(0)	**	Х
95-50-1	1,2-Dichlorobenzene	< 1670	U, D	µg/l	2500	1670	2500	**	300%	W.	) <b>H</b> (	(900)	Х
541-73-1	1,3-Dichlorobenzene	< 1780	Ų, D	μg/l	2500	1780	2500	*	(0)	**	.0		Х
106-46-7	1,4-Dichlorobenzene	< 1560	U, D	μg/l	2500	1560	2500		300.0	*	946	3,000	X
75-71-8	Dichlorodifluoromethane (Freon12)	< 1120	U, D	µg/l	5000	1120	2500			*			Х
75-34-3	1,1-Dichloroethane	< 1700	U, D	μg/l	2500	1700	2500	110	9990		(1987)	300	Χ
107-06-2	1,2-Dichloroethane	< 1950	U, D	µg/l	2500	1950	2500			**	0.00		Χ
75-35-4	1,1-Dichloroethene	< 1220	U, D	μg/l	2500	1220	2500	4.07		100	(41)		Χ
156-59-2	cis-1,2-Dichloroethene	6,150	D	μg/l	2500	1790	2500	898	3000	**	900	- 144	Х
156-60-5	trans-1,2-Dichloroethene	< 1700	U, D	μg/l	2500	1700	2500		W.	90	(10)	**	Χ
78-87-5	1,2-Dichloropropane	< 1780	U, D	μg/l	2500	1780	2500	((44))	340.7	ж	00401	264	Χ
10061-01-5	cis-1,3-Dichloropropene	< 630	U, D	µg/l	1250	630	2500	**			•	**	Х
10061-02-6	trans-1,3-Dichloropropene	< 1250	U, D	μg/l	1250	1250	2500	000	900	00			Х
75-09-2	Methylene chloride	< 1720	U, D	μg/l	5000	1720	2500	**		100		*	Χ
79-34-5	1,1,2,2-Tetrachloroethane	< 872	U, D	μg/l	1250	872	2500	((**)	395	100		77	Х
127-18-4	Tetrachloroethene	109,000	D	μg/l	2500	1860	2500	**	*	100			Х
71-55-6	1,1,1-Trichloroethane	< 1460	U, D	μg/l	2500	1460	2500	2.800	99	100	(00)	**	Х
79-00-5	1,1,2-Trichloroethane	< 1600	U, D	μg/l	2500	1600	2500					34	Х
79-01-6	Trichloroethene	2,300	J, D	μg/i	2500	1890	2500	3.97.	.,,	1990	780	**	Х
75-69-4	Trichlorofluoromethane (Freon 11)	< 1570	U, D	μg/l	2500	1570	2500	5000	*		3 <b>6</b> 6	*	X
75-01-4	Vinyl chloride	< 2020	U, D	μg/l	2500	2020	2500	187	:**	1080	(96)	**	Х
Surrogate r	recoveries:									=			
460-00-4	4-Bromofluorobenzene	98			70-13	0 %		m.	**	(**)		**	
2037-26-5	Toluene-d8	98			70-13	0 %		7000	**	(640)	300	м	
17060-07-0	1,2-Dichloroethane-d4	103			70-13	0 %		(#)	*	(4)	(6)	**	
1868-53-7	Dibromofluoromethane	104			70-13					000	140		

Client Project # 35635-04

**Matrix** Waste Water Collection Date/Time 13-Oct-12 10:40

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cer
Volatile O	rganic Compounds												
	rganic Halocarbons		GS1										
-	by method SW846 5030 V												
75-27-4	Bromodichloromethane	< 479	U, D	μg/l	500	479	1000	SW846 8260C		24-Oct-12	eq	1226087	
75-25-2	Bromoform	< 603	U, D	μg/l	1000	603	1000				*	*	Х
74-83-9	Bromomethane	< 1140	U, D	μg/l	2000	1140	1000		((**)	(#.)	**	20007	Х
56-23-5	Carbon tetrachloride	< 549	U, D	µg/l	1000	549	1000				u	**	Х
108-90-7	Chlorobenzene	< 654	U, D	μg/l	1000	654	1000	**	10.00		#	11967	Х
75-00-3	Chloroethane	< 1030	U, D	μg/l	2000	1030	1000	**		36	**		Х
67-66-3	Chloroform	< 689	U, D	µg/l	1000	689	1000	*	177	n	16		Х
74-87-3	Chloromethane	< 1470	U, D	μg/l	2000	1470	1000	**	50005		**		Х
124-48-1	Dibromochloromethane	< 289	U, D	μg/l	500	289	1000	*	(er		•		Х
95-50-1	1,2-Dichlorobenzene	< 668	U, D	μg/l	1000	668	1000	XI.	) <b>H</b> C	30	05	2000	Х
541-73-1	1,3-Dichlorobenzene	< 712	U, D	μg/l	1000	712	1000	*			(6)		Х
106-46-7	1,4-Dichlorobenzene	< 624	U, D	μg/l	1000	624	1000	**	3303	"	100	13965	Χ
75-71-8	Dichlorodifluoromethane (Freon12)	< 447	U, D	μg/l	2000	447	1000	×	*	h	*		Х
75-34-3	1,1-Dichloroethane	< 680	U, D	µg/l	1000	680	1000	**	000	**	00	((**))	Х
107-06-2	1,2-Dichloroethane	< 781	U, D	μg/l	1000	781	1000			*			Х
75-35-4	1,1-Dichloroethene	< 488	U, D	μg/l	1000	488	1000	m.	1,000	**	390	(100)	Χ
156-59-2	cis-1,2-Dichloroethene	2,940	D	μg/l	1000	716	1000				e e	*	Х
156-60-5	trans-1,2-Dichloroethene	< 681	U, D	μg/l	1000	681	1000	**	3.607	**	1.95	(00.0)	Х
78-87-5	1,2-Dichloropropane	< 712	U, D	μg/l	1000	712	1000	**	**	34	н	940	Х
10061-01-5	cis-1,3-Dichloropropene	< 252	U, D	μg/l	500	252	1000	**	. 11				Х
10061-02-6	trans-1,3-Dichloropropene	< 499	U, D	μg/l	500	499	1000	**	000	**		.61	Х
75-09-2	Methylene chloride	< 690	U, D	μg/l	2000	690	1000					•	Х
79-34-5	1,1,2,2-Tetrachloroethane	< 349	U, D	μg/l	500	349	1000	**	(340)	**	2907		Х
127-18-4	Tetrachloroethene	52,700	D	μg/l	1000	743	1000	•	10	**	(00)	•	Х
1-55-6	1,1,1-Trichloroethane	< 582	U, D	μg/l	1000	582	1000	"	D46		300	3000	Х
79-00-5	1,1,2-Trichloroethane	< 642	U, D	μg/l	1000	642	1000	•		*	(0)		Х
79-01-6	Trichloroethene	1,080	D	μg/l	1000	755	1000	00	.00		(00)	3.00(3)	Х
75-69-4	Trichlorofluoromethane (Freon 11)	< 628	U, D	µg/l	1000	628	1000	#	*	*			х
75-01-4	Vinyl chloride	< 807	U, D	μg/l	1000	807	1000	0.	(000	w	((00)	(00)	Х
Surrogate r	ecoveries:												
160-00-4	4-Bromofluorobenzene	99			70-13	0 %			(#)	**	1992	7897)	
2037-26-5	Toluene-d8	101			70-13	0 %		w		<u>w</u>			
7060-07-0	1,2-Dichloroethane-d4	103			70-13	0 %		4.00	(97)	<u>#</u>	, m		
1868-53-7	Dibromofluoromethane	107			70-13			196	0400	iii		Will	

<u>Client Project #</u> 35635-04

Matrix Waste Water Collection Date/Time 13-Oct-12 10:50

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cer
Volatile O	rganic Compounds												
Volatile O	rganic Halocarbons												
	by method SW846 5030 V	Vater MS											
75-27-4	Bromodichloromethane	< 0.5	U	μg/l	0,5	0.5	1	SW846 8260C	24-Oct-12		eq	1226087	
75-25-2	Bromoform	< 0.6	U	μg/l	1.0	0.6	1	377	*	**	*	*	Х
74-83-9	Bromomethane	< 1.1	U	μg/I	2.0	1.1	1		<b>(C</b>	9000		**	X
56-23-5	Carbon tetrachloride	< 0.5	U	μg/l	1.0	0.5	1	44	90		"	0.	Х
108-90-7	Chlorobenzene	< 0.7	U	μg/l	1.0	0.7	1	26	199.0	1,000	**		Х
75-00-3	Chloroethane	< 1.0	U	μg/l	2.0	1.0	1	*			**		Х
67-66-3	Chloroform	< 0.7	U	μg/l	1.0	0.7	1.	25		.01	10		X
4-87-3	Chloromethane	< 1.5	U	μg/l	2.0	1.5	1	**		166	**		X
124-48-1	Dibromochloromethane	< 0.3	U	μg/l	0.5	0.3	1	•		**	**	**	Х
95-50-1	1,2-Dichlorobenzene	< 0.7	U	μg/l	1.0	0.7	1		((00)	w	*	(100)	Х
41-73-1	1,3-Dichlorobenzene	< 0.7	U	μg/l	1.0	0.7	1				*		Χ
06-46-7	1,4-Dichlorobenzene	< 0.6	U	μg/l	1.0	0.6	1	×	(100)	98	**	(100)	Χ
75-71-8	Dichlorodifluoromethane (Freon12)	< 0.4	U	µg/l	2.0	0.4	Ĭ	#		*	u	**	Х
5-34-3	1,1-Dichloroethane	< 0.7	U	μg/l	1.0	0.7	1	300	2.00	34	110	3000	Х
07-06-2	1,2-Dichloroethane	< 0.8	U	μg/l	1.0	0.8	1	**		**	**		Х
5-35-4	1,1-Dichloroethene	< 0.5	U	μg/l	1.0	0.5	1	,,	((***)	99	**	(( <b>11</b> ))	Х
56-59-2	cis-1,2-Dichloroethene	< 0.7	U	μg/l	1.0	0.7	1	*	()	24	44		Х
56-60-5	trans-1,2-Dichloroethene	< 0.7	U	μg/l	1.0	0.7	1	**	27907		**	17990	Х
8-87-5	1,2-Dichloropropane	< 0.7	υ	μg/l	1.0	0.7	1	×	***	**		***	Х
0061-01-5	cis-1,3-Dichloropropene	< 0.3	U	μg/l	0.5	0.3	1		345		95		Х
0061-02-6	trans-1,3-Dichloropropene	< 0.5	U	μg/l	0.5	0.5	Ĩ	w		**	**	w	Х
5-09-2	Methylene chloride	< 0.7	U	μg/l	2.0	0.7	1	₩.	W	77	95		Х
9-34-5	1,1,2,2-Tetrachloroethane	< 0.3	U	μg/l	0.5	0.3	1	**	2007	100	16	500	Х
27-18-4	Tetrachloroethene	< 0.7	U	μg/l	1.0	0.7	1	**		*	**		Х
1-55-6	1,1,1-Trichloroethane	< 0.6	U	μg/l	1.0	0.6	1	W	200	34	H	2040	Х
9-00-5	1,1,2-Trichloroethane	< 0.6	U	μg/l	1.0	0.6	1	₩.		×			Х
9-01-6	Trichloroethene	< 0.8	U	µg/l	1.0	0.8	1	<b>W</b>	30	**	100	300	х
5-69-4	Trichlorofluoromethane (Freon 11)	< 0.6	U	µg/l	1.0	0.6	1	Œ		*	ĕ	•	Х
5-01-4	Vinyl chloride	< 0.8	U	μg/l	1.0	0.8	1	ж	340			((00)	Х
Surrogate r	recoveries:												
60-00-4	4-Bromofluorobenzene	101			70-13	0 %			0.000	**	120	(0)	
037-26-5	Toluene-d8	98			70-13	0 %		w		34		•	
7060-07-0	1,2-Dichloroethane-d4	101			70-13			**.	DAG.	**		(11)	
868-53-7	Dibromofluoromethane	106			70-130			W.	199	W	200	000	

# **Notes and Definitions**

D Data reported from a dilution

GS1 Sample dilution required for high concentration of target analytes to be within the instrument calibration range.

J Detected above the Method Detection Limit but below the Reporting Limit; therefore, result is an estimated concentration (CLP J-Flag).

QCR Sample data reported for QC purposes only.

QM7 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable

LCS recovery.

QM9 The spike recovery for this QC sample is outside the established control limits. The sample results for the QC batch were

accepted based on LCS/LCSD or SRM recoveries within the control limits.

U Analyte included in the analysis, but not detected at or above the MDL.

dry Sample results reported on a dry weight basis

NR Not Reported

RPD Relative Percent Difference

<u>Laboratory Control Sample (LCS)</u>: A known matrix spiked with compound(s) representative of the target analytes, which is used to document laboratory performance.

Matrix Duplicate: An intra-laboratory split sample which is used to document the precision of a method in a given sample matrix.

<u>Matrix Spike</u>: An aliquot of a sample spiked with a known concentration of target analyte(s). The spiking occurs prior to sample preparation and analysis. A matrix spike is used to document the bias of a method in a given sample matrix.

<u>Method Blank</u>: An analyte-free matrix to which all reagents are added in the same volumes or proportions as used in sample processing. The method blank should be carried through the complete sample preparation and analytical procedure. The method blank is used to document contamination resulting from the analytical process.

Method Detection Limit (MDL): The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero and is determined from analysis of a sample in a given matrix type containing the analyte.

Reportable Detection Limit (RDL): The lowest concentration that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions. For many analytes the RDL analyte concentration is selected as the lowest non-zero standard in the calibration curve. While the RDL is approximately 5 to 10 times the MDL, the RDL for each sample takes into account the sample volume/weight, extract/digestate volume, cleanup procedures and, if applicable, dry weight correction. Sample RDLs are highly matrix-dependent.

<u>Surrogate</u>: An organic compound which is similar to the target analyte(s) in chemical composition and behavior in the analytical process, but which is not normally found in environmental samples. These compounds are spiked into all blanks, standards, and samples prior to analysis. Percent recoveries are calculated for each surrogate.

<u>Continuing Calibration Verification:</u> The calibration relationship established during the initial calibration must be verified at periodic intervals. Concentrations, intervals, and criteria are method specific.

Validated by: Kimberly Wisk 16285 88

7							80		*	b				П	Τ		1	LESZ,
Special Handling:  Standard TAT - 7 to 10 business days  Rush TAT - Date Needed:  All TATs subject to laboratory approval.	<ul> <li>Min, 24-hour notification needed for rushes.</li> <li>Samples disposed of after 60 days unless otherwise instructed.</li> </ul>	40-	ζω)	NY State:	٧.۵	QA/QC Reporting Notes:	MA DEP MCP CAM Report: Yes 🗆 No 🗆	QA/QC Reporting Level	A* □ NY	Other     State-sneerific renorting standards:						TKIN SER CONTRACTOR		Refricerated   DIVOAFezzm   Soil lar Frezen
Standar Rush T	· Min. 24 · Samples otherwi	35635-04	5 Hord Row	Jamestown NY	C. Hamphon	code below;	35.	17-J-0						3,83	rmaf	L Kan	Ø.	receipt:
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CI		Litak				30, 4=HNO, iter 10= H4PO,	D/3		C=Composite	Date:	10/13/12	21/8/10/1	2/15/101		// Receive	Marin	11 de 2	
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)	SPECT	Ceport To: D	Rochest	e lenhone #:	roject Mgr.	1=Na <sub>2</sub> S2O <sub>3</sub> 8= NaHSO <sub>4</sub>	W=Drinking Water >=Oil SW=Surface	1=		Lab 1d:	# 10-1622	10 C	1. B		Reling	1	Musik	11/1/2



CHAIN OF CUSTODY RECORD    Rush 1/AT - 7 to 10 business days   Septectal Handling:	.,	
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FODY RECOR	EDD Format	
# of Amber Glass  # of Clear Glass  # of Plastic  # of Plastic  # of Plastic    Lis   Sa   Co   Co   Co   Co   Co   Co   Co   C		]
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Page Page Page Page Page Page Page Page		
CHAIN C  Invoice To:  F.O. No.:  HNO <sub>3</sub> 5=NaOH 6=  H3PO <sub>4</sub> 11=  WW=Wastewater  Saludge A=Air  X3=  10.20  12  10.30  12  10.30  12  10.30	Received by:	1
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# 11 Almgren Drive • Agawam, MA 01001 • 413-789-9018 • FAX 413-789-4076 • www.spectrum-analytical.com

Condition upon receipt:

E-mail to rkample