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SUPPLEMENTAL SOIL SAMPLING PROGRAM

Vibratech, Inc.
Buffalo, New York

4/95

CRA

CONESTOGA-ROVERS & ASSOCIATES
2055 Niagara Falls Boulevard, Suite Three
Niagara Falls, New York 14304
(716) 297-6150 Fax: (716) 297-2265

April 13, 1995

Reference No. 5927

Mr. Ralph Yorio
VIBRATECH, INC.
537 E. Delavan Avenue
Buffalo, NY 14211

Dear Mr. Yorio:

Re: Supplemental Soil Sampling Program
and Work Plan for Soil Remediation

Conestoga-Rovers & Associates (CRA) is pleased to submit the attached report presenting the results of the Supplemental Soil Sampling Program at Vibratech's Buffalo, New York Facility. Although some relatively low level concentrations of volatile organic compounds (VOCs) in soil were measured, there are no findings which indicate the scope of the planned soil remediation effort should be substantially expanded. However, as described in the attached report, some localized soil remediation near one of the soil borings located near the aboveground storage tanks (ASTs) should be considered in the preparation of the soil remediation work plan.

CRA recommends the use of ex situ soil vapor extraction to remediate VOC contaminated soil within the railroad spur area of the southern portion of the property. A preliminary outline for the Remediation Work Plan is included for your review. If you have any questions or comments concerning this outline or the attached report, please contact the undersigned. We appreciate the opportunity to provide these services to Vibratech.

Yours truly,

CONESTOGA-ROVERS & ASSOCIATES

Kelly R. McIntosh, P.E., P.HGW.

KRM/js/9

Encl.

WORK PLAN OUTLINE

1.0 INTRODUCTION

2.0 WORK PLAN
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- 2.2 EXCAVATION OF VOC CONTAMINATED SOILS
- 2.3 SVE PILE CONSTRUCTION
- 2.4 SVE EQUIPMENT
- 2.5 SVE SYSTEM OPERATION
- 2.6 SYSTEM MONITORING
- 2.7 SOIL PILE CONFIRMATORY SAMPLING
- 2.7.1 Treatment Cell Closure and Soil Disposition
- 2.8 DECONTAMINATION
- 2.8.1 Large Equipment
- 2.8.2 Soil Sampling Equipment
- 2.9 HANDLING OF GENERATED WASTE MATERIALS
- 2.10 PROJECT SCHEDULE

SUPPLEMENTAL SOIL SAMPLING PROGRAM

Vibratech, Inc.
Buffalo, New York

APRIL 1995

REF. NO. 5927 (3)

CONESTOGA-ROVERS & ASSOCIATES

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1.0 INTRODUCTION

Vibratech, Inc. (Vibratech) owns and operates a facility (Site) at 537 East Delavan Avenue in Buffalo, New York, which manufactures vibration dampers and rotary shock absorbers for the trucking and railroad industries.

In anticipation of the sale of the property, Vibratech retained Conestoga-Rovers & Associates (CRA) to conduct environmental investigations of the Site. Based on the results of these investigations, CRA delineated an area on the south side of the property where elevated concentrations of volatile organic compounds (VOCs) were measured in soil samples. This area of soil contamination is shown on Figure 1.1. VOC migration from soil has resulted in some localized detections of VOCs in groundwater.

Based on these findings, Vibratech has retained CRA to prepare a Work Plan for remediation of the soil VOC contamination. Prior to preparation of the Work Plan, CRA recommended additional soil sampling in the southern portion of the Site to improve the delineation of the area of soil to be remediated. This report presents the findings of this additional soil sampling.

2.0 WORK PERFORMED

Seven soil borings were advanced to refusal (bedrock) at the locations shown on Figure 2.1. Buffalo Drilling Company of Buffalo, New York, provided drilling services under the supervision of a qualified CRA geologist. Prior to drilling, and between drilling locations, the drilling and sampling equipment was cleaned in accordance with the protocols presented in the Supplemental Investigation Report (CRA, June 1994).

The soil samples were obtained using a 2-inch or 3-inch diameter split spoon sampler. Samples were placed immediately into the sample jars provided by the laboratory. After several minutes of equilibration time, measurements of VOC concentrations in the headspace were obtained using a photoionization detector (PID). From each boring, the sample with the highest PID measurement was submitted for chemical analyses. In a few cases, where the recovered sample volumes were low, soil from two split spoon samples was combined into a single sample jar for the headspace measurement and chemical analyses. Table 2.1 presents a summary of samples submitted for chemical analyses.

Samples were analyzed for Target Compound List (TCL) VOCs by General Testing Corporation (GTC). Samples were analyzed by Method 8260, referenced from "Test Methods for Evaluating Solid Waste", SW-846, 3rd Edition, 1986.

3.0 RESULTS

Appendix A presents soil boring logs, including the results of the PID headspace analyses. Appendix B presents the results of the chemical analyses and the Data Validation Report prepared by CRA.

Table 3.1 presents a summary of the analytical results. Acetone was detected in six of the seven borings at concentrations ranging from 0.27 milligrams per kilogram (mg/kg) to 3.2 mg/kg. VOCs other than acetone were detected in three of the seven borings. BH2-95, located adjacent to the southeast corner of the aboveground fuel oil tanks, contained 12 mg/kg of cis-1,2-dichloroethene, 1.4 mg/kg of trichloroethene, and 2.0 mg/kg of total xylene. 1,1-Dichloroethane was measured at 1.5 mg/kg in the sample from BH7-95, located approximately 35 feet south of BH2-95. In BH6-95, 1,1-dichloroethane and 2-butanone were detected at estimated concentrations below 0.1 mg/kg.

No other VOCs were detected in any soil boring.

4.0 RECOMMENDATIONS

The levels of VOCs measured in the soil borings do not warrant a major expansion of the planned remedial activities. However, it may be appropriate and efficient to conduct some limited localized remediation of soil in the immediate vicinity of BH2-95 at the same time the soil from the area delineated on Figure 1.1 is remediated. Provisions for this additional remedial effort should be included in the Work Plan for the soil remediation.

FIGURES

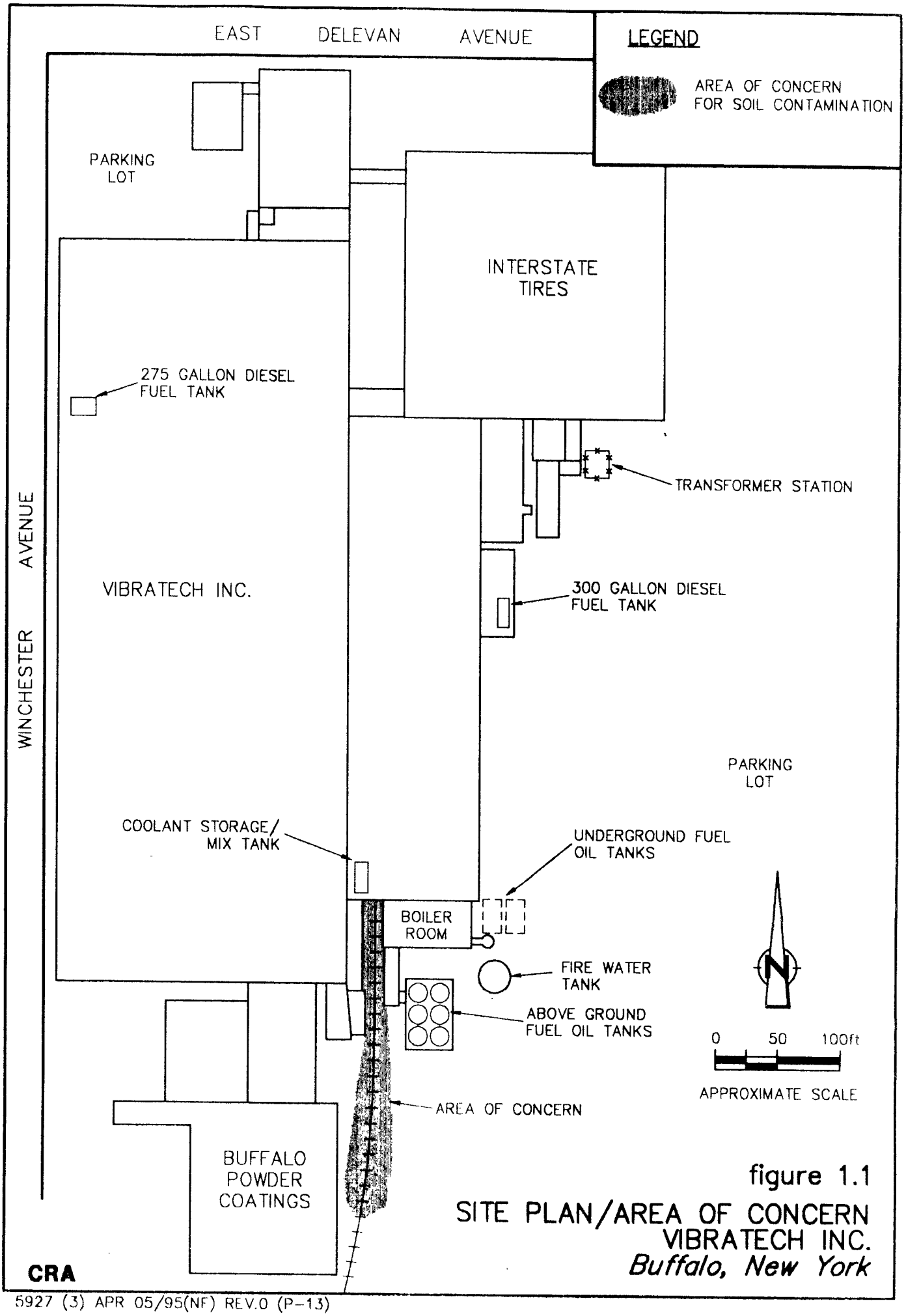

figure 1.1

SITE PLAN/AREA OF CONCERN
VIBRATECH INC.
Buffalo, New York

CRA

5927 (3) APR 05/95(NF) REV.0 (P-13)

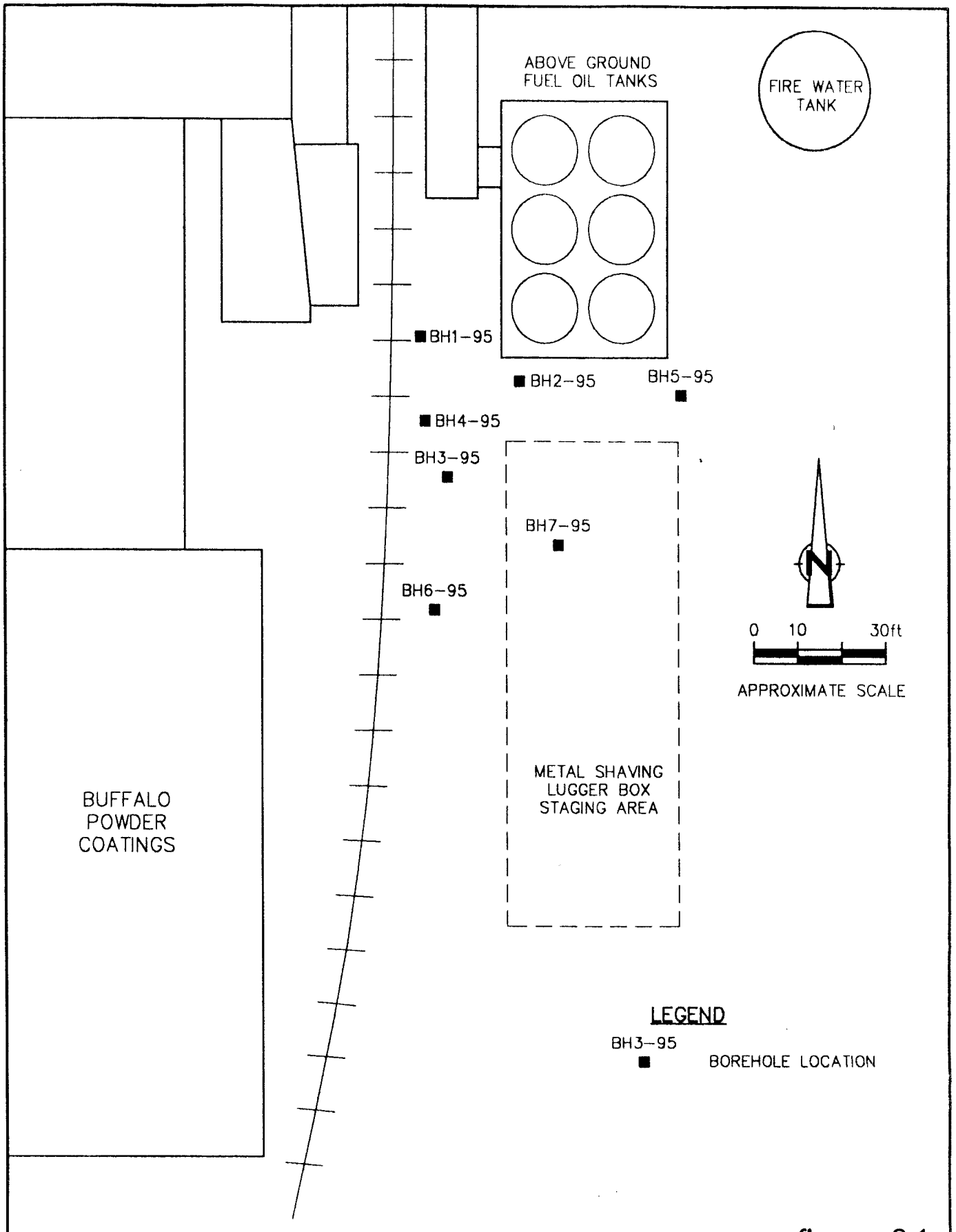

figure 2.1

SOIL BORING LOCATION PLAN
VIBRATECH INC.
Buffalo, New York

CRA

5927 (3) APR 05/95(NF) REV.0 (P-12)

TABLE 2.1

SAMPLE IDENTIFICATION KEY
SUPPLEMENTAL SOIL SAMPLING PROGRAM
VIBRATECH INC.
BUFFALO, NEW YORK
MARCH 1995

Sample Identification	*Sample Source*	*Time*	*Date*	*Matrix*	*Interval Sampled (feet)*	*Headspace (ppm)*	*Analyses*	*Comments*
S-5927-001	BH3-95	1045	03/02/95	Soil	1.5-4.3	10-20	TCL VOCs	
S-5927-002	BH1-95	1200	03/02/95	Soil	0.5-4.4	0.0	TCL VOCs	
S-5927-003	BH2-95	1215	03/02/95	Soil	1.0-3.9	75-120	TCL VOCs	
S-5927-004	BH4-95	1315	03/02/95	Soil	0.5-2.0	22	TCL VOCs	
S-5927-005	BH5-95	1415	03/02/95	Soil	1.5-2.2	27	TCL VOCs	
S-5927-006	BH5-95	1415	03/02/95	Soil	1.5-2.2	27	TCL VOCs	Duplicate sample of S-5927-005
S-5927-007	BH6-95	1500	03/02/95	Soil	1.0-2.7	5	TCL VOCs	MS/MSD
S-5927-008	BH7-95	1530	03/02/95	Soil	1.0-3.0	6	TCL VOCs	

Notes:
MS Matrix Spike
MSD Matrix Spike Duplicate
VOCs Volatile Organic Compounds
TCL Target Compound List

TABLE 3.1

ANALYTICAL RESULTS SUMMARY
SUPPLEMENTAL SOIL SAMPLING PROGRAM
VIBRATECH, INC.
BUFFALO, NEW YORK
MARCH 1995

Soil Boring ID:	BH1-95	*BH2-95*	*BH3-95*	*BH4-95*	*BH5-95*	*BH5-95*	*BH6-95*	*BH7-95*
Sample ID:	*S-5927-002*	*S-5927-003*	*S-5927-001*	*S-5927-004*	*S-5927-005*	*S-5927-006*	*S-5927-007*	*S-5927-008*
Sample Date:	*03/02/95*	*03/02/95*	*03/02/95*	*03/02/95*	*03/02/95*	*03/02/95* (*Dup. of S-5927-005*)	*03/02/95*	*03/02/95*
TCL Volatiles (ug/kg)								
Chloromethane	30 U	750 U	30 U	30 U	6.1 U	6.0 U	6.0 UJ	30 U
Bromomethane	30 U	750 U	30 U	30 U	6.1 U	6.0 U	6.0 UJ	30 U
Vinyl chloride	30 U	750 U	30 U	30 U	6.1 U	6.0 U	6.0 UJ	30 U
Chloroethane	30 U	750 U	30 U	30 U	6.1 U	6.0 U	6.0 UJ	30 U
Methylene Chloride	30 U	750 U	30 U	30 U	6.1 U	6.0 U	6.0 UJ	30 U
Acetone	2000	1500 U	2600	3200	280	270	2100 J	1600
Carbon disulfide	61 U	1500 U	60 U	60 U	12 U	12 U	12 UJ	60 U
1,1-Dichloroethene	30 U	750 U	30 U	30 U	6.1 U	6.0 U	6.0 UJ	30 U
1,1-Dichloroethane	30 U	750 U	30 U	30 U	6.1 U	6.0 U	12 J	1500
trans-1,2 Dichloroethene	30 U	750 U	30 U	30 U	6.1 U	6.0 U	6.0 UJ	30 U
cis-1,2-Dichloroethene	30 U	12000	30 U	30 U	6.1 U	6.0 U	6.0 UJ	30 U
Chloroform	30 U	750 U	30 U	30 U	6.1 U	6.0 U	6.0 UJ	30 U
2-Butanone	61 U	1500 U	60 U	60 U	12 U	12 U	59 J	60 U
1,2-Dichloroethane	30 U	750 U	30 U	30 U	6.1 U	6.0 U	6.0 UJ	30 U
1,1,1-Trichloroethane	30 U	750 U	30 U	30 U	6.1 U	6.0 U	6.0 UJ	30 U
Carbon tetrachloride	30 U	750 U	30 U	30 U	6.1 U	6.0 U	6.0 UJ	30 U
Bromodichloromethane	30 U	750 U	30 U	30 U	6.1 U	6.0 U	6.0 UJ	30 U
1,2-Dichloropropane	30 U	750 U	30 U	30 U	6.1 U	6.0 U	6.0 UJ	30 U
trans-1,3-Dichloropropene	30 U	750 U	30 U	30 U	6.1 U	6.0 U	6.0 UJ	30 U
Trichloroethene	30 U	1400	30 U	30 U	6.1 U	6.0 U	6.0 UJ	30 U
Dibromochloromethane	30 U	750 U	30 U	30 U	6.1 U	6.0 U	6.0 UJ	30 U
1,1,2-Trichloroethane	30 U	750 U	30 U	30 U	6.1 U	6.0 U	6.0 UJ	30 U
Benzene	30 U	750 U	30 U	30 U	6.1 U	6.0 U	6.0 UJ	30 U
cis-1,3-Dichloropropene	30 U	750 U	30 U	30 U	6.1 U	6.0 U	6.0 UJ	30 U
Bromoform	30 U	750 U	30 U	30 U	6.1 U	6.0 U	6.0 UJ	30 U
4-Methyl-2-pentanone	61 U	1500 U	60 U	60 U	12 U	12 U	12 UJ	60 U
2-Hexanone	61 U	1500 U	60 U	60 U	12 U	12 U	12 UJ	60 U
Tetrachloroethene	30 U	750 U	30 U	30 U	6.1 U	6.0 U	6.0 UJ	30 U
1,1,2,2-Tetrachloroethane	30 U	750 U	30 U	30 U	6.1 U	6.0 U	6.0 UJ	30 U
Toluene	30 U	750 U	30 U	30 U	6.1 U	6.0 U	6.0 UJ	30 U
Chlorobenzene	30 U	750 U	30 U	30 U	6.1 U	6.0 U	6.0 UJ	30 U
Ethylbenzene	30 U	750 U	30 U	30 U	6.1 U	6.0 U	6.0 UJ	30 U
Styrene	30 U	750 U	30 U	30 U	6.1 U	6.0 U	6.0 UJ	30 U
Xylene (total)	30 U	2000	30 U	30 U	6.1 U	6.0 U	6.0 UJ	30 U

Notes:
Dup. Field Duplicate
J Associated value is estimated.
TCL Target Compound List
U Non-detect at associated value.

APPENDIX A

STRATIGRAPHIC AND INSTRUMENTATION LOGS

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

(WL-01)
Page 1 of 1

PROJECT NAME: VIBRATECH
PROJECT NUMBER: 5927
CLIENT:
LOCATION: BUFFALO, NY

HOLE DESIGNATION: BH1-95
DATE COMPLETED: MARCH 2, 1995
DRILLING METHOD: 4 ¼" HSA
CRA SUPERVISOR: G. GILL

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. BGS	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE HNu (ppm)
	- Augered without sampling through 0.5ft of concrete	-.50	CUTTINGS	1SS		31	0
2.5	SM/SW-SAND (FILL), some silt, little to some gravel, fine to medium grained, gray and brown, moist	-3.00	8" Ø BOREHOLE	2SS		113	0
5.0	ML-SILT (NATIVE), little fine sand, some bedrock fragments, brown, moist	-4.40					
	- auger refusal on apparent bedrock						
	END OF HOLE @ 4.4ft BGS						
7.5							
10.0							
12.5							
15.0							
17.5							
20.0							
22.5							
25.0							
27.5							
30.0							
32.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE. REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: VIBRATECH
PROJECT NUMBER: 5927
CLIENT:
LOCATION: BUFFALO, NY

HOLE DESIGNATION: BH2-95
DATE COMPLETED: MARCH 2, 1995
DRILLING METHOD: 4 ¼" HSA
CRA SUPERVISOR: G. GILL

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. BGS	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE HNu (ppm)
	- Augered without sampling through 1ft of concrete	-1.00	CUTTINGS				
-2.5	SM-SAND (FILL), some gravel, fine to medium grained, black, moist, strong fuel oil odor	-2.10		1SS		13	120.0
	ML-SILT (NATIVE), trace fine sand, some bedrock fragments	-3.90	8" Ø BOREHOLE	2SS		-	76.0
-5.0	- auger refusal on apparent bedrock						
	END OF HOLE @ 3.9ft BGS						
-7.5							
-10.0							
-12.5							
-15.0							
-17.5							
-20.0							
-22.5							
-25.0							
-27.5							
-30.0							
-32.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: VIBRATECH
PROJECT NUMBER: 5927
CLIENT:
LOCATION: BUFFALO, NY

HOLE DESIGNATION: BH3-95
DATE COMPLETED: MARCH 2, 1995
DRILLING METHOD: 4 ¼" HSA
CRA SUPERVISOR: G. GILL

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. BGS	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE HNu (ppm)
	- Augered without sampling through 1.5ft of concrete and concrete fill		CUTTINGS				
	SM-SAND (FILL), some silt, little gravel, fine to medium grained, dark brown and black, moist	-1.50	8" Ø BOREHOLE				
2.5				1SS		18	10.0
	ML/SM-SILT (NATIVE), some fine sand, little gravel, gray, moist to wet	-3.70					
5.0	- auger refusal on apparent bedrock	-4.30		2SS		-	20.0
	END OF HOLE @ 4.3ft BGS						
7.5							
10.0							
12.5							
15.0							
17.5							
20.0							
22.5							
25.0							
27.5							
30.0							
32.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: VIBRATECH
PROJECT NUMBER: 5927
CLIENT:
LOCATION: BUFFALO, NY

HOLE DESIGNATION: BH4-95
DATE COMPLETED: MARCH 2, 1995
DRILLING METHOD: 4 ¼" HSA
CRA SUPERVISOR: G. GILL

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. BGS	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE HNu (ppm)
	- Augered without sampling through 0.5ft of concrete	-.50	CUTTINGS	1SS		22	22.0
2.5	SM/SW-SAND (FILL), some silt, some crushed stone, fine to medium grained, black and brown, moist	-2.00	8" Ø BOREHOLE	2SS		-	0
5.0	SM-SAND (FILL?), little to some silt, fine to medium grained, brown, moist	-3.50					
	- auger refusal on apparent bedrock						
7.5	END OF HOLE @ 3.5ft BGS						
10.0							
12.5							
15.0							
17.5							
20.0							
22.5							
25.0							
27.5							
30.0							
32.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE. REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

PROJECT NAME: VIBRATECH
PROJECT NUMBER: 5927
CLIENT:
LOCATION: BUFFALO, NY

HOLE DESIGNATION: BH5-95
DATE COMPLETED: MARCH 2, 1995
DRILLING METHOD: 4 ¼" HSA
CRA SUPERVISOR: G. GILL

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. BGS	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE HNu (ppm)
	- Augered without sampling through 1ft of concrete	-1.00	CUTTINGS				
	GM-GRAVEL (FILL), # 1 crushed stone, gray	-1.50					
2.5	ML/SM-SILT, little fine sand, little gravel, red brown and black staining, moist		8" Ø BOREHOLE	1SS		34	27.0
	- no staining below 2.2ft BGS	-3.80		2SS		-	0
5.0	- auger refusal on apparent bedrock						
	END OF HOLE @ 3.8ft BGS						
7.5							
10.0							
12.5							
15.0							
17.5							
20.0							
22.5							
25.0							
27.5							
30.0							
32.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE. REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: VIBRATECH
PROJECT NUMBER: 5927
CLIENT:
LOCATION: BUFFALO, NY

HOLE DESIGNATION: BH6-95
DATE COMPLETED: MARCH 2, 1995
DRILLING METHOD: 4 ¼" HSA
CRA SUPERVISOR: G. GILL

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. BGS	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE HNu (ppm)
	- Augered without sampling through 1ft of concrete	-1.00	CUTTINGS				
-2.5	ML/SW-SILT (FILL), some fine sand, some clay, little gravel, red brown and brown, moist, trace black staining	-2.70	8" Ø BOREHOLE	1SS		31	5.0
	ML/SW-SILT (NATIVE), some fine sand, some gravel, brown and gray, moist	-4.60		2SS		19	0
-5.0	- auger refusal on apparent bedrock						
	END OF HOLE @ 4.6ft BGS						
-7.5							
-10.0							
-12.5							
-15.0							
-17.5							
-20.0							
-22.5							
-25.0							
-27.5							
-30.0							
-32.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE. REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

PROJECT NAME: VIBRATECH
PROJECT NUMBER: 5927
CLIENT:
LOCATION: BUFFALO, NY

HOLE DESIGNATION: BH7-95
DATE COMPLETED: MARCH 2, 1995
DRILLING METHOD: 4 ¼" HSA
CRA SUPERVISOR: G. GILL

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. BGS	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE HNu (ppm)
	- Augered without sampling through 1ft of concrete	-1.00	CUTTINGS				
-2.5	SM-SAND (FILL), some silt, some gravel, fine to medium grained, gray and black stained, moist, slight fuel oil odor	-3.00	8" Ø BOREHOLE	1SS		19	6.0
-5.0	ML/SM-SILT (NATIVE), little fine sand, little clay, trace gravel, red-brown, moist	-4.50		2SS		21	0
	END OF HOLE @ 4.5ft BGS						
-7.5							
-10.0							
-12.5							
-15.0							
-17.5							
-20.0							
-22.5							
-25.0							
-27.5							
-30.0							
-32.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE. REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

APPENDIX B

ANALYTICAL DATA QUALITY ASSESSMENT AND VALIDATION

M E M O

TO: Kelly McIntosh REFERENCE NO: 5927

FROM: Darla Clark/Paul McMahon/ms/4 DATE: March 31, 1995

RE: Analytical Data Quality Assessment and Validation
Loading Dock/Lugger Storage Area Borehole Sampling
Vibratech Site, Buffalo, New York
March 1995

The following details an assessment and validation of analytical results reported by General Testing Corporation (GTC) for environmental samples collected in March 1995 from the Vibratech Site (Site). The soil samples collected were submitted for Target Compound List (TCL) volatile organic compounds (VOCs) as follows:

Parameter	*Matrix*	*Investigative Samples*	*Field Duplicates*	*MS/MSD*	*Total*
TCL VOCs	Soil	7	1	1/1	10

Notes:
MS/MSD - Matrix Spike/Matrix Spike Duplicate.

Samples were analyzed by Method 8260, referenced from "Test Methods for Evaluating Solid Waste", SW-846, 3rd Edition, 1986.

For sample identification and location, a sample identification key is presented in Table 1. A summary of the analytical results is presented in Table 2. Evaluation of the data was based on information obtained from finished data sheets, blank data, and recovery data from MS/MSD and surrogates. Quality Assurance/Quality Control (QA/QC) criteria by which these data have been assessed are referenced from the SW-846 method of analysis and the "National Functional Guidelines for Organic Data Review" (February 1994), both prepared by the United States Environmental Protection Agency (USEPA). The data validation reference will be referred to as the "Guidelines" hereafter.

ANALYTICAL ASSESSMENT AND VALIDATION

All samples were properly shipped and stored at 4°C (±2°C). All analyses were performed within the SW-846 recommended holding time of 14 days.

Surrogate compounds were added to all samples, blanks, and QC samples. All recoveries were acceptable, with the exception of 4-Bromofluorobenzene in sample

S-5927-007. The recovery was greater than 10 percent but less than the lower acceptance limit. Per the "Guidelines", associated sample results were qualified as estimated in Table 3.

Laboratory method blank analyses yielded non-detect results for all compounds, indicating that contamination was not a factor in this study.

MS/MSD analysis was performed on sample S-5927-007. All percent recoveries (%R) and relative percent differences (RPDs) were within the required control limits, indicating that good analytical accuracy and precision were achieved.

FIELD QA/QC RESULTS

One trip blank was submitted for VOC analysis. All compounds yielded non-detect results.

One field duplicate was collected for this project, as noted in Table 1. All data were comparable, indicating good sampling and analytical precision.

CONCLUSION

The data reported by GTC is acceptable for use with the qualifications noted herein.

TABLE 1

SAMPLE IDENTIFICATION KEY
LOADING DOCK/LUGGER STORAGE AREA BOREHOLE SAMPLING
VIBRATECH INC.
BUFFALO, NEW YORK
MARCH 1995

Sample Identification	*Sample Source*	*Time*	*Date*	*Matrix*	*Interval Sampled (feet)*	*Headspace (ppm)*	*Analyses*	*Comments*
S-5927-001	BH3-95	1045	03/02/95	Soil	1.5-4.3	10-20	TCL VOCs	
S-5927-002	BH1-95	1200	03/02/95	Soil	0.5-4.4	0.0	TCL VOCs	
S-5927-003	BH2-95	1215	03/02/95	Soil	1.0-3.9	75-120	TCL VOCs	
S-5927-004	BH4-95	1315	03/02/95	Soil	0.5-2.0	22	TCL VOCs	
S-5927-005	BH5-95	1415	03/02/95	Soil	1.5-2.2	27	TCL VOCs	
S-5927-006	BH5-95	1415	03/02/95	Soil	1.5-2.2	27	TCL VOCs	Duplicate sample of S-5927-005
S-5927-007	BH6-95	1500	03/02/95	Soil	1.0-2.7	5	TCL VOCs	MS/MSD
S-5927-008	BH7-95	1530	03/02/95	Soil	1.0-3.0	6	TCL VOCs	

Notes:
MS Matrix Spike
MSD Matrix Spike Duplicate
VOCs Volatile Organic Compounds
TCL Target Compound List

TABLE 2

ANALYTICAL RESULTS SUMMARY
LOADING DOCK/LUGGER STORAGE AREA BOREHOLE SAMPLING
VIBRATECH INC.
BUFFALO, NEW YORK
MARCH 1995

Sample ID:	*S-5927-001*	*S-5927-002*	*S-5927-003*	*S-5927-004*	*S-5927-005*	*S-5927-006*	*S-5927-007*	*S-5927-008*
Sample Date:	*03/02/95*	*03/02/95*	*03/02/95*	*03/02/95*	*03/02/95*	*03/02/95 (Dup. of S-5927-005)*	*03/02/95*	*03/02/95*
TCL Volatiles (ug/kg)								
Chloromethane	30 U	30 U	750 U	30 U	6.1 U	6.0 U	6.0 UJ	30 U
Bromomethane	30 U	30 U	750 U	30 U	6.1 U	6.0 U	6.0 UJ	30 U
Vinyl chloride	30 U	30 U	750 U	30 U	6.1 U	6.0 U	6.0 UJ	30 U
Chloroethane	30 U	30 U	750 U	30 U	6.1 U	6.0 U	6.0 UJ	30 U
Methylene Chloride	30 U	30 U	750 U	30 U	6.1 U	6.0 U	6.0 UJ	30 U
Acetone	2600	2000	1500 U	3200	280	270	2100 J	1600
Carbon disulfide	60 U	61 U	1500 U	60 U	12 U	12 U	12 UJ	60 U
1,1-Dichloroethene	30 U	30 U	750 U	30 U	6.1 U	6.0 U	6.0 UJ	30 U
1,1-Dichloroethane	30 U	30 U	750 U	30 U	6.1 U	6.0 U	12 J	1500
trans-1,2 Dichloroethene	30 U	30 U	750 U	30 U	6.1 U	6.0 U	6.0 UJ	30 U
cis-1,2-Dichloroethene	30 U	30 U	12000	30 U	6.1 U	6.0 U	6.0 UJ	30 U
Chloroform	30 U	30 U	750 U	30 U	6.1 U	6.0 U	6.0 UJ	30 U
2-Butanone	60 U	61 U	1500 U	60 U	12 U	12 U	59 J	60 U
1,2-Dichloroethane	30 U	30 U	750 U	30 U	6.1 U	6.0 U	6.0 UJ	30 U
1,1,1-Trichloroethane	30 U	30 U	750 U	30 U	6.1 U	6.0 U	6.0 UJ	30 U
Carbon tetrachloride	30 U	30 U	750 U	30 U	6.1 U	6.0 U	6.0 UJ	30 U
Bromodichloromethane	30 U	30 U	750 U	30 U	6.1 U	6.0 U	6.0 UJ	30 U
1,2-Dichloropropane	30 U	30 U	750 U	30 U	6.1 U	6.0 U	6.0 UJ	30 U
trans-1,3-Dichloropropene	30 U	30 U	750 U	30 U	6.1 U	6.0 U	6.0 UJ	30 U
Trichloroethene	30 U	30 U	1400	30 U	6.1 U	6.0 U	6.0 UJ	30 U
Dibromochloromethane	30 U	30 U	750 U	30 U	6.1 U	6.0 U	6.0 UJ	30 U
1,1,2-Trichloroethane	30 U	30 U	750 U	30 U	6.1 U	6.0 U	6.0 UJ	30 U
Benzene	30 U	30 U	750 U	30 U	6.1 U	6.0 U	6.0 UJ	30 U
cis-1,3-Dichloropropene	30 U	30 U	750 U	30 U	6.1 U	6.0 U	6.0 UJ	30 U
Bromoform	30 U	30 U	750 U	30 U	6.1 U	6.0 U	6.0 UJ	30 U
4-Methyl-2-pentanone	60 U	61 U	1500 U	60 U	12 U	12 U	12 UJ	60 U
2-Hexanone	60 U	61 U	1500 U	60 U	12 U	12 U	12 UJ	60 U
Tetrachloroethene	30 U	30 U	750 U	30 U	6.1 U	6.0 U	6.0 UJ	30 U
1,1,2,2-Tetrachloroethane	30 U	30 U	750 U	30 U	6.1 U	6.0 U	6.0 UJ	30 U
Toluene	30 U	30 U	750 U	30 U	6.1 U	6.0 U	6.0 UJ	30 U
Chlorobenzene	30 U	30 U	750 U	30 U	6.1 U	6.0 U	6.0 UJ	30 U
Ethylbenzene	30 U	30 U	750 U	30 U	6.1 U	6.0 U	6.0 UJ	30 U
Styrene	30 U	30 U	750 U	30 U	6.1 U	6.0 U	6.0 UJ	30 U
Xylene (total)	30 U	30 U	2000	30 U	6.1 U	6.0 U	6.0 UJ	30 U

Notes:
TCL Target Compound List
U Non-detect at associated value.
J Associated value is estimated.
Dup. Field Duplicate

TABLE 3

QUALIFIED ANALYTICAL RESULTS DUE TO OUTLYING SURROGATE RECOVERIES
LOADING DOCK/LUGGER STORAGE AREA BOREHOLE SAMPLING
VIBRATECH, INC.
BUFFALO, NEW YORK
MARCH 1995

Parameter	*Sample ID*	*Surrogate Compound*	*Surrogate Recovery (percent)*	*Control Limits*	*Associated Compounds*	*Sample Results (µg/kg)*	*Qualifier*
TCL Volatiles	S-5927-007	4-Bromofluorobenzene	64	74-121	Chloromethane	6.0 U	J
					Bromomethane	6.0 U	J
					Vinyl chloride	6.0 U	J
					Chloroethane	6.0 U	J
					Methylene Chloride	6.0 U	J
					Acetone	2100	J
					Carbon disulfide	12 U	J
					1,1-Dichloroethene	6.0 U	J
					1,1-Dichloroethane	12	J
					trans-1,2 Dichloroethene	6.0 U	J
					cis-1,2-Dichloroethene	6.0 U	J
					Chloroform	6.0 U	J
					2-Butanone	59	J
					1,2-Dichloroethane	6.0 U	J
					1,1,1-Trichloroethane	6.0 U	J
					Carbon tetrachloride	6.0 U	J
					Bromodichloromethane	6.0 U	J
					1,2-Dichloropropane	6.0 U	J
					trans-1,3-Dichloropropene	6.0 U	J
					Trichloroethene	6.0 U	J
					Dibromochloromethane	6.0 U	J
					1,1,2-Trichloroethane	6.0 U	J
					Benzene	6.0 U	J
					cis-1,3-Dichloropropene	6.0 U	J
					Bromoform	6.0 U	J
					4-Methyl-2-pentanone	12 U	J
					2-Hexanone	12 U	J
					Tetrachloroethene	6.0 U	J
					1,1,2,2-Tetrachloroethane	6.0 U	J
					Toluene	6.0 U	J
					Chlorobenzene	6.0 U	J
					Ethylbenzene	6.0 U	J
					Styrene	6.0 U	J
					Xylene (total)	6.0 U	J

Notes:
U Non-detect at associated value.
J Associated value is estimated.
TCL Target Compound List