POST-REMEDIATION GROUNDWATER MONITORING REPORT

FIRST SEMI-ANNUAL 1999 SAMPLING EVENT

Vibratech, Inc.
Buffalo, New York

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Vibratech, Inc.
Buffalo, New York

Conestoga-Rovers & Associates
2055 Niagara Falls Boulevard
Niagara Falls, New York 14304

FEBRUARY 2000
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1.0 INTRODUCTION

In 1996, Vibratech, Inc. (Vibratech) sold its facility located at 537 East Delavan Avenue in Buffalo, New York (Site). The facility had been used for manufacture of vibration dampers and rotary shock adsorbers for the trucking and railroad industries.

During environmental investigations conducted prior to the sale of the property, an area of soil contamination was discovered along a railroad spur on the south portion of the property. The chemicals of concern are volatile organic compounds (VOCs), specifically: 1,1-dichloroethane; 1,2-dichloroethane; cis-1,2-dichloroethene; trans-1,2-dichloroethene; toluene; 1,1,1-trichloroethane; trichloroethene; vinyl chloride; and total xylenes. The former area of soil contamination is shown on Figure 1.1.

These VOCs were also detected in groundwater. Figure 1.2 shows total VOC concentrations in Site monitoring wells.

In 1995-1996, the contaminated soil was excavated and disposed off-Site or treated on-Site using soil vapor extraction (SVE). This remedial action removed the source of groundwater contamination. Remaining chemical presence in groundwater is expected to naturally attenuate over time.

A post-remediation groundwater monitoring program was developed to continue to monitor VOC presence in groundwater. The program is described in a report written by Conestoga-Rovers & Associates (CRA) entitled "Post-Remediation Groundwater Monitoring Plan", dated April 1997. The plan provides for groundwater sample collection from three downgradient monitoring wells designated MW-2, MW-6, and MW-7. Groundwater samples are analyzed for selected VOCs using SW-846 Method 8620. The frequency of groundwater sampling specified in the Post-Remediation Groundwater Monitoring Plan is as follows:

i) quarterly for the first four quarters (first year);

ii) semi-annually during the second year; and

iii) annually during years three through five.

At the end of five years, the monitoring program will be re-evaluated. An earlier re-evaluation may be conducted but no changes from the above will be implemented without the consent of the New York State Department of Environmental Conservation (NYSDEC).

This report presents the results of the post-remediation sampling event which took place during the first half of 1999. This represents the completion of the second consecutive semi-annual sampling event (item ii), above). In accordance with the Post-Remediation Groundwater Monitoring Plan, the program will now move to annual sampling (item iii), above). The next scheduled sampling event will therefore constitute the first annual event and will be conducted during the first half of 2000.

2.0 WORK PERFORMED

CRA conducted the first semi-annual period 1999 groundwater sampling event at the Former Vibratech Facility at 537 East Delavan Avenue in Buffalo, New York on June 25, 1999.

Monitoring wells MW-2, MW-6, and MW-7 were sampled in accordance with the Post-Remediation Groundwater Monitoring Plan dated April 1997. During the sampling event, CRA personnel observed an oily-like, floating layer in monitoring well MW-6. The thickness of the layer was estimated to be approximately 0.1 feet. The oily material was sampled and sent to the analytical laboratory for analysis. The results are discussed in Section 3.0.

A blind duplicate sample was collected at MW-6 and identified as DRS-062599-MW9. A matrix spike and matrix spike duplicate (MS/MSD) was collected at MW-2 and identified as DRS-002599-MW2 MS/MSD. Samples were picked up by Columbia Analytical Services (CAS) on June 26, 1999. Samples were analyzed using SW-846 Method 8260.

3.0 RESULTS

3.1 DATA QUALITY

CRA performed an assessment and validation of the laboratory's analytical results. The data reported by CRA was determined to be acceptable for use without qualification. Appendix A contains the Analytical Data Quality Assessment and Validation Report.

3.2 ANALYTICAL RESULTS

The following chemicals were detected in samples collected during the first half of 1999:

Chemical	*MW-2 (µg/L)*	*MW-6 (µg/L)*	*MW-6 (Dup.) (µg/L*	*MW-7 (µg/L)*
1,1-Dichloroethane	230	93	94	ND
cis-1,2-Dichloroethane	320	97	98	ND
Toluene	ND	ND	ND	ND
1,1,1-Trichloroethane	15	ND	ND	ND
Trichloroethene	ND	6.0	5.8	ND
Vinyl chloride	140	61	60	ND
o-Xylene	ND	ND	ND	ND

Notes:
ND Non-detect.
µg/L Micrograms per liter

Figure 3.1 presents the results of the first semi-annual 1999 sampling event conducted during the first half of 1999. Figure 3.2 presents total VOC concentrations versus time graphs for monitoring wells MW-2, MW-6, and MW-7. The graphs show the following:

i) total VOC concentrations in the historically most-contaminated monitoring well (MW-2) have decreased from 1,718 µg/L (prior to remediation) to 705 µg/L (first semi-annual 1999);

ii) total VOC concentrations in well MW-6, located near the margin of the contaminant plume decreased slightly from 268 µg/L (second semi-annual 1998) to 257 µg/L (first semi-annual 1999); and

iii) VOCs have never been detected in well MW-7, located on the downgradient side of the Winchester Avenue sewer. The concentration trends will continue to be monitored and discussed in subsequent reports.

Table 3. 1 presents the results of the analysis of the oily material sampled from MW-6. These results suggest that the material is a lubricating oil rather than a fuel oil or gasoline. The layer in the well was thin (approximately 0.1 layer) and did not immediately reaccumulate in the well after it was evacuated. The presence/absence of this material will continue to be monitored during future sampling events and reported to NYSDEC in the Post-Remediation Groundwater Monitoring Report.

FIGURES

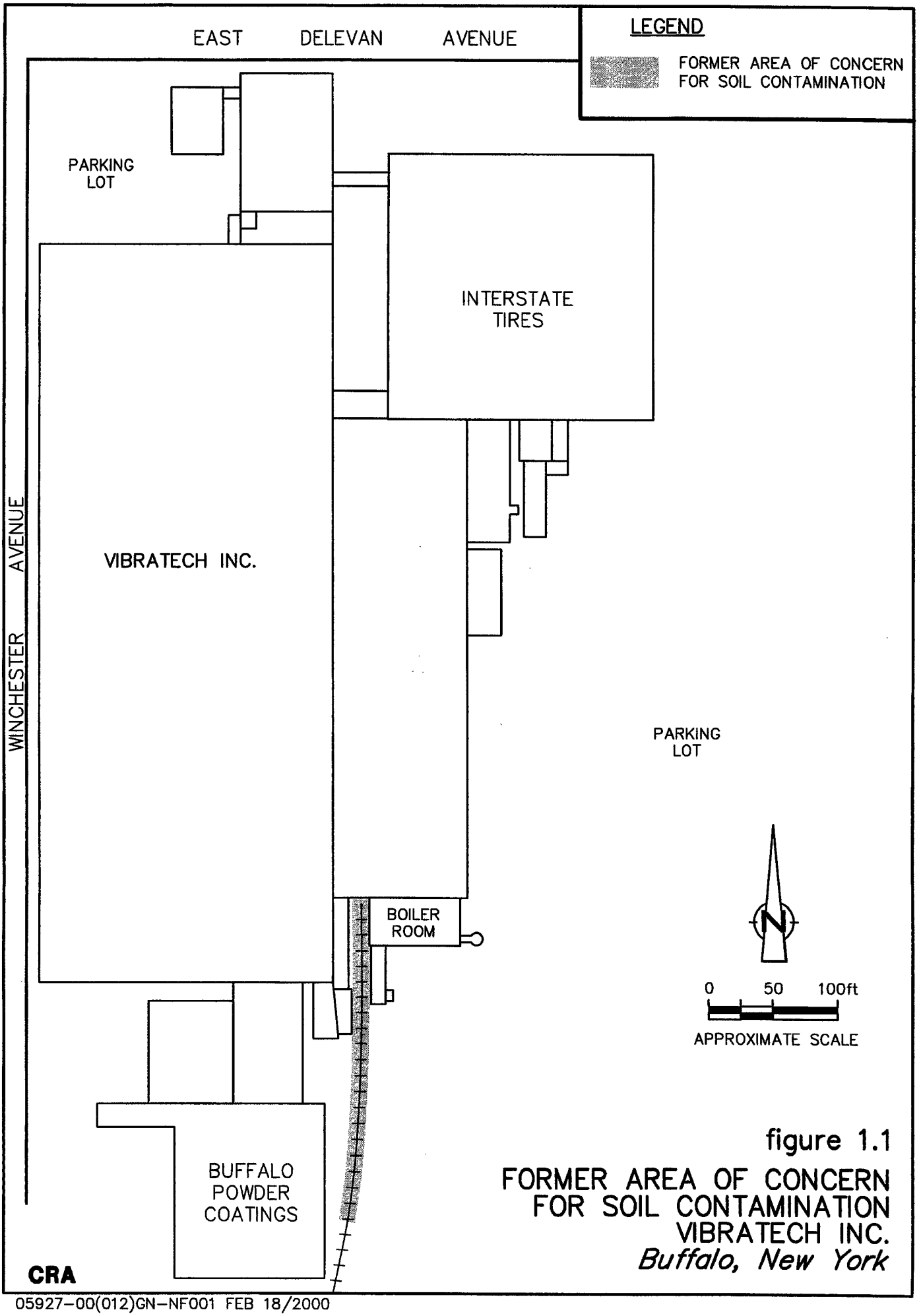

figure 1.1

FORMER AREA OF CONCERN FOR SOIL CONTAMINATION VIBRATECH INC.
Buffalo, New York

CRA

05927-00(012)GN-NF001 FEB 18/2000

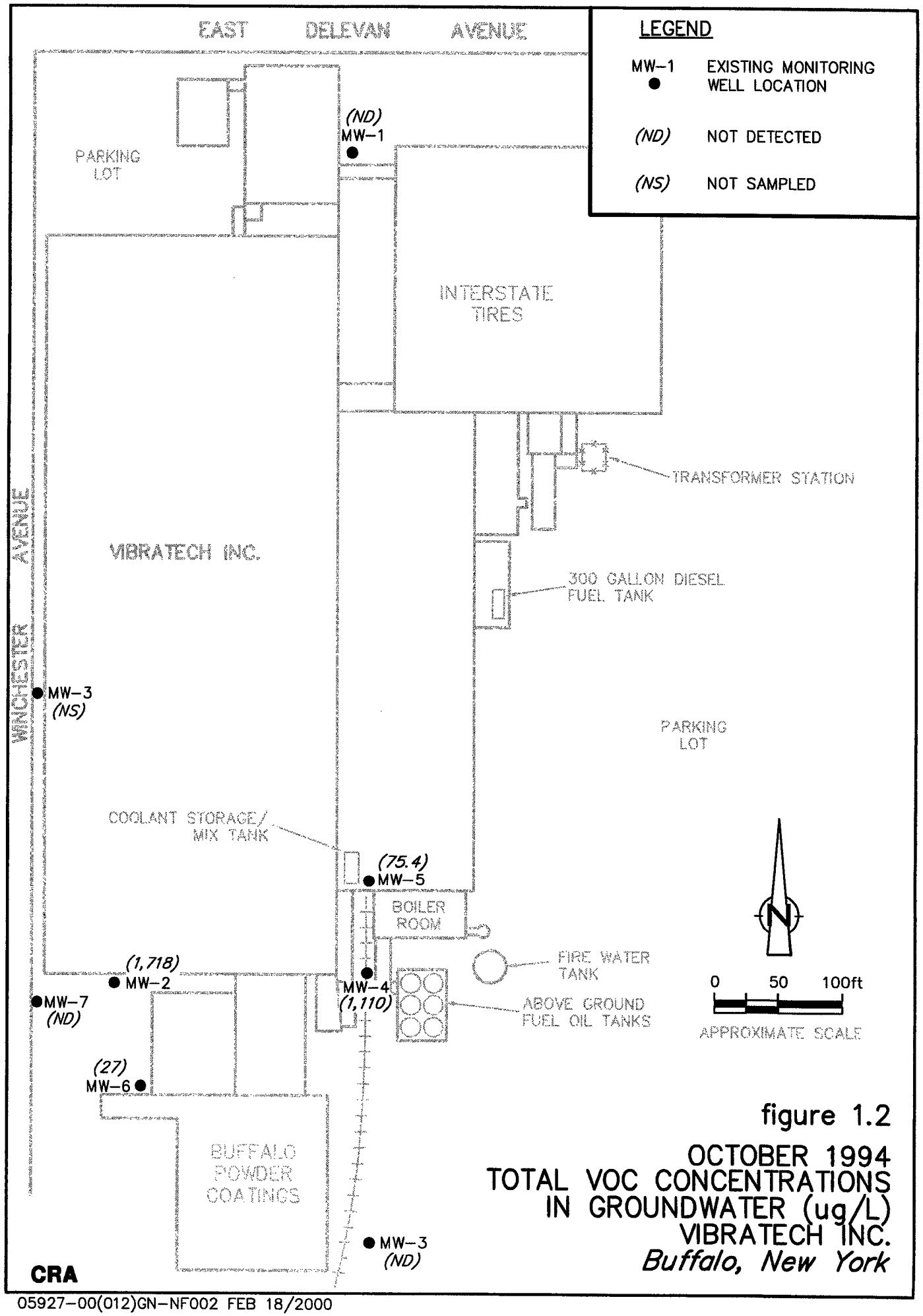

figure 1.2

OCTOBER 1994
TOTAL VOC CONCENTRATIONS
IN GROUNDWATER (ug/L)
VIBRATECH INC.
Buffalo, New York

CRA

05927-00(012)GN-NF002 FEB 18/2000

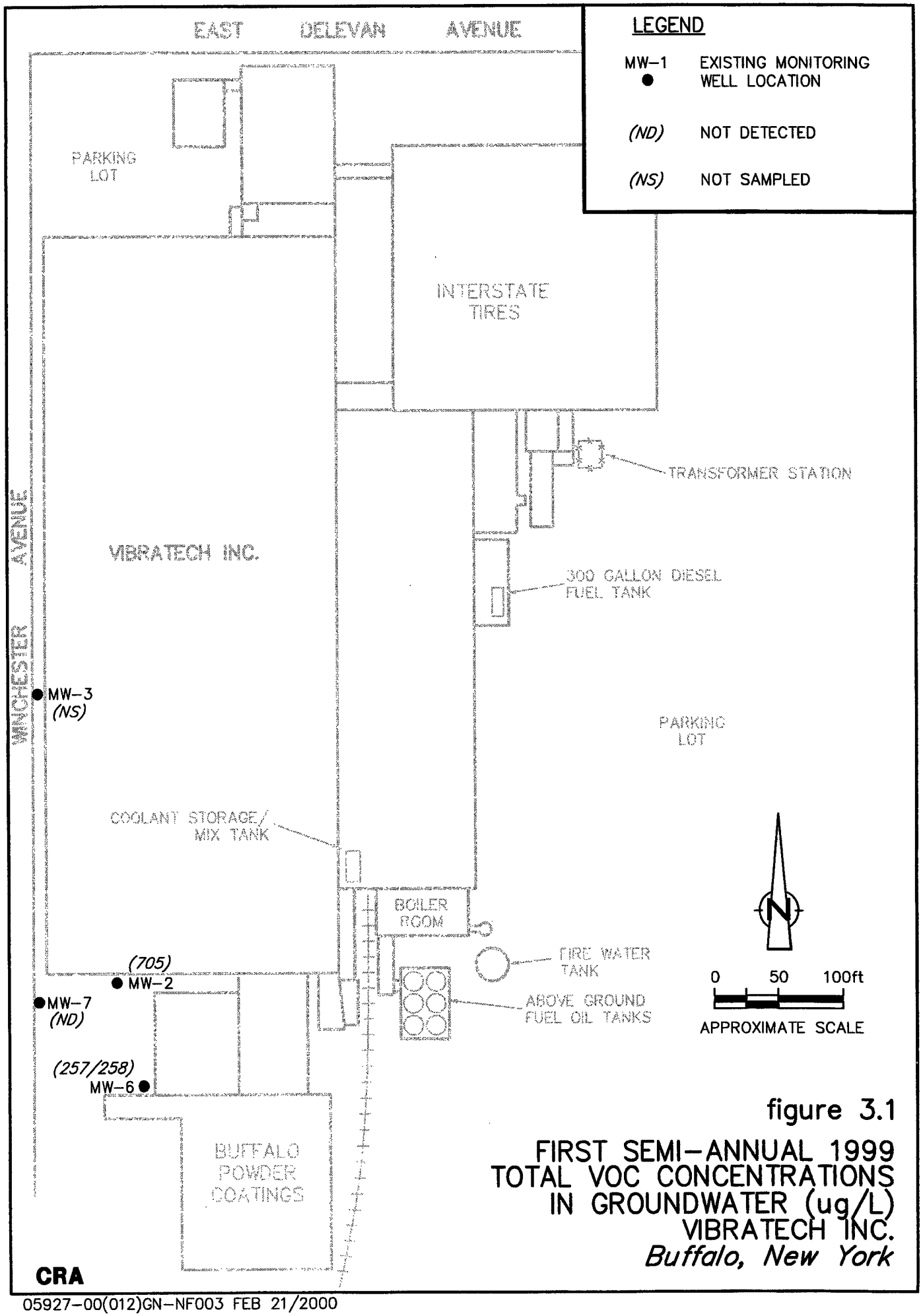

figure 3.1

FIRST SEMI-ANNUAL 1999
TOTAL VOC CONCENTRATIONS
IN GROUNDWATER (ug/L)
VIBRATECH INC.
Buffalo, New York

CRA

05927-00(012)GN-NF003 FEB 21/2000

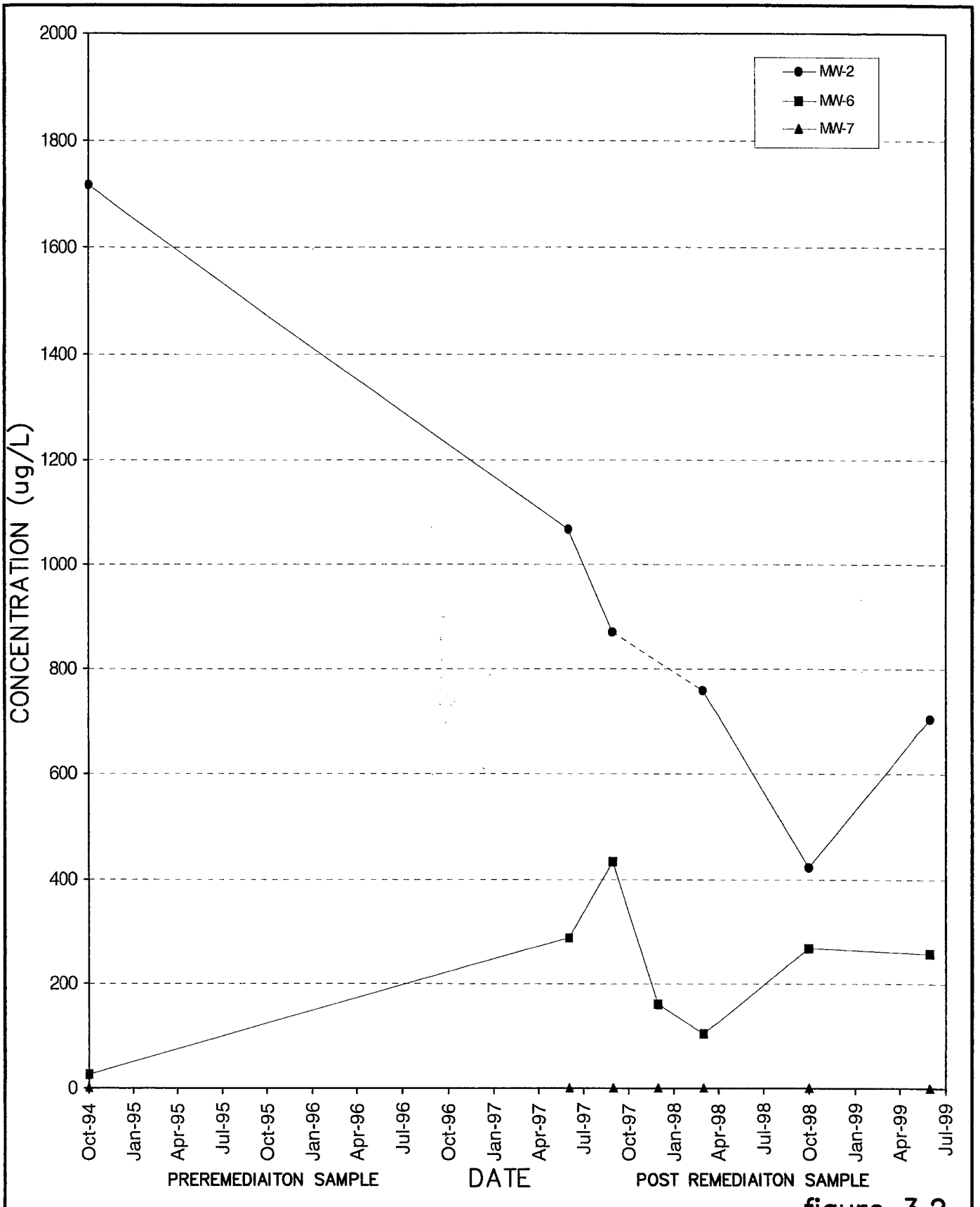

figure 3.2

TOTAL VOC CONCENTRATIONS
IN GROUNDWATER VERSUS TIME
VIBRATECH INC.
Buffalo, New York

CRA

05927-00(012)EX-NF001 FEB 18/2000

TABLES

TABLE 3.1

ANALYTICAL RESULTS SUMMARY - PETROLEUM PRODUCTS
VIBRATECH, INC.
BUFFALO, NEW YORK
JUNE 1999

	Sample ID:	*DRS-062599-MW6A*
	Collection Date:	*06/25/99*
Parameters	*Units*	
Petroleum Products		
as n-Dodecane	µg/Kg	10000000 U
Fuel oil #2/Diesel fuel	µg/Kg	10000000 U
Gasoline	µg/Kg	10000000 U
Kerosene	µg/Kg	10000000 U
Lube oil	µg/Kg	690000000

Notes:
U Non-detect at the associated value.

APPENDIX A

ANALYTICAL DATA QUALITY ASSESSMENT AND VALIDATION

CRA
CONESTOGA-ROVERS & ASSOCIATES
2055 Niagara Falls Blvd., Suite Three
Niagara Falls, NY 14304

TELEPHONE: (716) 297-6150
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MEMORANDUM

TO: Kelly McIntosh

REF. NO.: 5927

FROM: Paul McMahon/mk/18

DATE: July 29, 1999

C.C.: Dustin Steiner

RE: **Analytical Data Quality Assessment and Validation**
Groundwater Sampling
Vibratech Site, Buffalo, New York
June 1999

The following details an assessment and validation of analytical results reported by Columbia Analytical Services, Inc. (CAS) for environmental samples collected in June 1999 from the Vibratech Site (Site). The samples collected were submitted for Site-specific volatile organic compounds (VOCs) as follows:

Parameter	*Matrix*	*Investigative Samples*	*Field Duplicates*	*MS/MSD*	*Trip Blanks*	*Total*
VOCs	Water	3	1	1/1	1	7

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

Samples were analyzed by Method 8260B, referenced from "Test Methods for Evaluating Solid Waste", SW-846, 3rd Edition, 1986 and subsequent revisions. In addition, one sample was collected and submitted for petroleum products analysis by New York State Department of Health Method 310-13.

For sample identification and location, a sample collection summary is presented in Table 1. Summaries of the analytical results are presented in Tables 2A and 2B. Evaluation of the data was based on information obtained from finished data sheets, blank data, and recovery data from matrix, blank, and surrogate spikes. Quality Assurance/Quality Control (QA/QC) criteria by which these data have been assessed are referenced from the methods of analysis and the "National Functional Guidelines for Organic Data Review" (February 1994), prepared by the United States Environmental Protection Agency (USEPA).

ANALYTICAL ASSESSMENT AND VALIDATION

All samples were properly transported and stored at 4°C (±2°C). The VOC samples were preserved with hydrochloric acid to a pH of less than two. All VOC analyses were performed within the SW-846 recommended holding time of 14 days. The petroleum product sample was extracted within 7 days and analyzed within 40 days of collection.

The surrogate compounds 4-bromofluorobenzene, toluene-d_8, and dibromofluoromethane were added to all samples, blanks, and QC samples prior to VOC analysis. All recoveries were acceptable, indicating good analytical efficiency.

Laboratory method blank analyses yielded non-detect results for all analytes of interest, indicating that laboratory contamination was not a factor for this investigation.

Internal standard analyses were performed for VOCs per the method. All percent recoveries and retention times were acceptable, indicating good analytical performance.

One MS/MSD analysis for VOCs was performed on sample DRS-062599-MW2. All percent recoveries and relative percent differences (RPDs) were within the control limits, indicating that good analytical accuracy and precision were achieved.

Blank spikes were analyzed for VOCs and petroleum products. All percent recoveries were within the control limits, indicating good analytical accuracy.

FIELD QA/QC RESULTS

One trip blank was submitted with the VOC samples on June 25, 1999. No compounds of interest were detected in the trip blank.

One field duplicate sample was collected and submitted "blind" to the laboratory for analysis, as indicated in Table 1. The results showed acceptable agreement with the original sample, demonstrating good sampling and analytical precision.

CONCLUSION

The data reported by CAS are acceptable without qualification.

TABLE 1

SAMPLE COLLECTION SUMMARY
VIBRATECH, INC.
BUFFALO, NEW YORK
JUNE 1999

Sample Identification	*Sample Location*	*Sample Matrix*	*Collection Date*	*Collection Time*	*Sample Analyses**	*Comments*
DRS-062599-MW6	MW6	Water	06/25/99	1015	Site-Specific Volatiles	
DRS-062599-MW9	MW6	Water	06/25/99	1025	Site-Specific Volatiles	Field duplicate of DRS-062599-MW6
DRS-062599-MW2	MW2	Water	06/25/99	1100	Site-Specific Volatiles	
DRS-062599-MW7	MW7	Water	06/25/99	1120	Site-Specific Volatiles	
DRS-062599-MW6A	MW6A	Oil	06/25/99	1030	Petroleum Products	
Trip Blank	-	Water	06/25/99	-	Site-Specific Volatiles	

Notes:

* Site-Specific Volatiles:
1,1-Dichloroethane, 1,2-Dichloroethane, cis-1,2-Dichloroethene, trans-1,2-Dichloroethene, Toluene, 1,1,1-Trichloroethane, Trichloroethene, Vinyl Chloride, o-Xylene, m&p-Xylene.

TABLE 2A

ANALYTICAL RESULTS SUMMARY - VOLATILES
VIBRATECH, INC.
BUFFALO, NEW YORK
JUNE 1999

Parameters	*Units*	*Sample ID:* *DRS-062599-MW6* *Collection Date:* *06/25/99*	*DRS-062599-MW9* *06/25/99* *(Dup of DRS-062599-MW6)*	*DRS-062599-MW2* *06/25/99*	*DRS-062599-MW7* *06/25/99*
Volatiles					
1,1-Dichloroethane	µg/L	93	94	230	5.0 U
1,2-Dichloroethane	µg/L	5.0 U	5.0 U	10 U	5.0 U
cis-1,2-Dichloroethene	µg/L	97	98	320	5.0 U
trans-1,2-Dichloroethene	µg/L	5.0 U	5.0 U	10 U	5.0 U
Toluene	µg/L	5.0 U	5.0 U	10 U	5.0 U
1,1,1-Trichloroethane	µg/L	5.0 U	5.0 U	15	5.0 U
Trichloroethene	µg/L	6.0	5.8	10 U	5.0 U
Vinyl chloride	µg/L	61	60	140	5.0 U
o-Xylene	µg/L	5.0 U	5.0 U	10 U	5.0 U
m&p-Xylene	µg/L	5.0 U	5.0 U	10 U	5.0 U

Notes:
Dup Field Duplicate.
U Non-detect at the associated value.

TABLE 2B

ANALYTICAL RESULTS SUMMARY - PETROLEUM PRODUCTS
VIBRATECH, INC.
BUFFALO, NEW YORK
JUNE 1999

	Sample ID:	*DRS-062599-MW6A*
	Collection Date:	*06/25/99*
Parameters	*Units*	
Petroleum Products		
as n-Dodecane	µg/Kg	10000000 U
Fuel oil #2/Diesel fuel	µg/Kg	10000000 U
Gasoline	µg/Kg	10000000 U
Kerosene	µg/Kg	10000000 U
Lube oil	µg/Kg	690000000

Notes:
U Non-detect at the associated value.