File 835008

Woodward-Clyde

Engineering & sciences applied to the earth & its environment

April 21, 1997

Mr. David G. Pratt
Environmental Engineer I
Division of Hazardous Waste Remediation
New York State Department of Environmental Conservation
6274 East Avon-Lima Road
Avon, New York 14414

Subject: Monthly Operation Report (2/18/97 - 3/18/97)
Interim Remedial Measure (Index No. B8-315-90-01)
Griffin Technology, Incorporated Facility; Victor, New York
(W-C Project No. 6E06191)

Dear Mr. Pratt:

On behalf of Diebold, Incorporated (Diebold), Woodward-Clyde International-Americas (W-C) is pleased to submit this first monthly progress report of the Interim Remedial Measure (IRM) at the subject facility. In accordance with the Order on Consent (Index No. B8-315-90-01) agreement between the New York State Department of Environmental Conservation (NYSDEC) and Griffin Technology, Incorporated (Griffin), which became effective on October 22, 1996, a groundwater collection system was installed during December 1996 and January 1997. The system was turned on February 18, 1997 and is currently in operation. Information describing the IRM system and monitoring data collected during the first month of operation, as well as preliminary interpretations, are presented in the following subsections.

Description of IRM System

The IRM system consists of three groundwater recovery wells (designated "RW-01" through "RW-03") equipped with submersible pumps. Water recovered from each well is transported to a central discharge pipe through individual conduits connected to the pumps. Each conduit is equipped with a flow totalizing meter to measure the quantity of water extracted from each well. The individual conduits are manifolded to the central discharge pipe in a common access vault. The discharge pipe is also equipped with a flow totalizing meter which is used to measure the quantity of effluent discharged by the system for

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treatment at the local Publicly-Owned Treatment Works (POTW). The POTW servicing the facility is the Canandaguia-Farmington Water and Sewer District (FWSD).

In order to measure the effectiveness of the IRM system, two sets of nested piezometers (designated "PZ-01S/D" and "PZ-02S/D") were installed mid-way between the three recovery wells. These piezometers are used to measure the water level elevations in the overburden and bedrock formations underlying the area. In addition to these piezometers, nine previously installed groundwater monitoring wells (designated "MW-02", "MW-03", "MW-04", "MW-05S", "MW-05D", "MW-06S", "MW-06D", and "MW-10") are located in the immediate vicinity of the recovery wells. Monthly water elevations and semi-annual groundwater samples are being collected from these wells and used to measure the long-term effectiveness of the IRM system.

Upon completion of the IRM system installation activities, the location and elevation of each IRM system component was surveyed to a common reference datum by a New York State licensed surveyor. Figure 1 shows the IRM system layout, including nested piezometers and groundwater monitoring wells located in the immediate area.

Monitoring Data Collection

Collection of monitoring data has been performed in accordance with the Final Design Document submitted to the New York State Department of Environmental Conservation (NYSDEC) during October 1996. Monitoring data collected from the site during the first month of operation consisted of groundwater elevation measurements, effluent flow rates for each recovery well, total discharge to POTW, and effluent analytical samples.

In addition to this data, water samples were collected from each recovery wells prior to system start-up and elevations were measured to the nearest 0.01 ft in the wells and piezometers located in the immediate vicinity of the IRM system. The recovery well water samples were transported to Columbia Analytical Services, Inc. (CASI) for analysis of volatile organic compounds NYS method ASP 91-1.

On February 18, 1997, the IRM system was turned on. Data collection activities during the first month of operation consisted of collecting water elevations in each on-site well, and recording each flow meter reading of each recovery well on a weekly basis in order to determine the yield of each well and the IRM system. On March 1, 1997, following approximately two weeks of continuous operation, an effluent sample was collected from the sample port located on the central discharge pipe. The sample was transported to CASI and analyzed for VOC's by United States Environmental Protection Agency method 8260. The analytical method was chosen to comply with the monthly discharge requirements established by the FWSD.

Recovery Well Analytical Results

The analytical results of the recovery well water samples collected prior to initiation of the IRM system are summarized in Table 1. The analytical reports from CASI are included as Appendix A of this report. The results indicate that 1,2-dichloroethene, 1,1,1-trichloroethane, trichloroethene, and total xylenes were detected in the recovery well samples.

Groundwater Elevation Results

Groundwater elevations obtained prior to and during system operation are presented in Table 2. The data collected was used to prepare groundwater elevation contour maps of the overburden and bedrock formations in the vicinity of the IRM system. Groundwater elevation contour maps for the overburden formation are presented as Figures 2 and 3. Groundwater elevation contour maps for the bedrock formation are presented as Figures 4 and 5.

A comparison of the groundwater contour maps prepared for the first four weeks of IRM operation indicates that the recovery wells have influenced the groundwater flow patterns of the bedrock and overburden formations in the immediate vicinity. This is evidenced by the lowering of water elevations in the well and piezometers located in immediate vicinity of the IRM system. Additional water elevation data collected during subsequent months of IRM system operation will provide long-term information relating to the effectiveness of the

hydraulic control provided by the system. Future data collection will involve the collection of water elevations from four off-site wells located in the immediate vicinity of the IRM system. These wells are designated "MW-01", "MW-06S", "MW-06D", and "MW-11" on previously submitted figures. This additional data will assist with spatial interpretation of the data.

Effluent Analytical Results

The analytical results of the composite sample collected from the effluent discharge following 2 weeks of operation are summarized in Table 3. These results indicate that 1,2-dichloroethene, 1,1,1-trichloroethane, and trichloroethene were detected at concentrations of 6.5, 14.0, and 610 µg/l, respectively. The presence of these compounds in the system effluent is an indication of the effectiveness of the IRM system in that groundwater from the source area is being extracted from the formation. Continued monitoring of the system will provide additional information of the overall effectiveness of the IRM.

Effluent Discharge Measurements

The flow meter readings collected during the first 4 weeks of system operation are presented in Table 4. The average daily effluent discharge and average flow rate during each week of operation have been calculated and are provided this table along with a total discharge rate for the first month of operation. During the first month of operation, approximately 255,000 gallons of water was discharged to the POTW. Flow meter readings will continue to be collected on a monthly basis for the duration of the IRM activities.

The flow measurements indicate a trend toward increasing recovery well discharge rates. This is probably attributable to the development of the recovery wells and the removal of finer grained materials from the annular space surrounding the well. The flow rate data collected from the fourth week of system operation indicated an average recovery rate of 7 gallons per minute (gpm). The observed flow rate increases are likely to attenuate as the wells become fully developed.

Summary

Overall, the information collected during the first month of operation indicate the IRM system is effective in controlling on-site groundwater flow in that groundwater elevations indicate an on-site inward flow gradient. Continued operation and monitoring will provide additional long-term data trends necessary to determine the overall effectiveness of the IRM system.

Should you have any questions about the information contained herein, or require additional information, please do not hesitate to contact us.

Sincerely,

Kenneth M. Armstrong EIT, CHMM
Assistant Project Engineer

Martin L. Schmidt Ph.D.
Senior Consulting Professional

Enclosures

cc: Mark Tucker, Diebold, Inc.
Dave Rinehart, Diebold, Inc.
Jim Roetzer
File

Tables

TABLE 1
SUMMARY OF RECOVERY WELL ANALYTICAL RESULTS
PRIOR TO IRM START-UP
GRIFFIN TECHNOLOGY, INC.
VICTOR, NEW YORK

	Concentration			
Parameter	RW-01 (µg/l)	RW-02 (µg/l)	RW-03 (µg/l)	TRIP 2 (µg/l)
cis-1,2-Dichloroethene	23	3	2	ND
1,1,1-Trichloroethane	8	15	17	ND
Trichloroethene	300	550	490	ND
Xylenes (total)	ND	ND	3	ND

Notes

1. Samples collected on January 8, 1997.
2. Samples analyzed by NYS method ASP 91-1.
3. All results expressed in micrograms per liter (µg/l).
4. "ND" indicates not detected at method detection limits.
5. No other compounds detected at method detection limits.

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TABLE 2
GROUNDWATER ELEVATION MEASUREMENTS
GRIFFIN TECHNOLOGIES, INC.
VICTOR, NEW YORK

WELL NUMBER	GROUNDWATER ELEVATION(ft.)[1]				
	2/14/97[2]	2/22/97	3/01/97	3/08/97	3/14/97
MW-2S	632.46	632.17	634.22	633.92	634.86
MW-2D	633.69	632.17	634.25	634.00	634.90
MW-03	632.60	631.19	635.47	635.15	636.28
MW-04	631.76	627.63	632.02	632.14	633.63
MW-5S	631.23	626.43	630.47	630.50	631.73
MW-5D	631.20	623.36	623.96	623.81	624.73
PZ-1S	630.99	625.44	629.00	629.10	630.18
PZ-1D	631.33	624.92	628.38	628.41	629.50
PZ-2S	631.31	630.36	632.20	632.41	633.68
PZ-2D	631.26	627.88	632.20	632.38	633.74

NOTES

1. "[1]" Water level elevations relative to surveyors benchmark.
2. "[2]" indicates water level elevations prior to IRM system start-up.
3. "S" indicates overburden groundwater monitoring well or piezometer.
4. "D" indicates bedrock groundwater monitoring well or piezometer.

TABLE 3
SUMMARY OF EFFLUENT ANALYTICAL RESULTS
GRIFFIN TECHNOLOGY, INC.
VICTOR, NEW YORK

Parameter	Effluent Discharge Concentration (µg/l)
cis-1,2-Dichloroethene	6.5
1,1,1-Trichloroethane	14.0
Trichloroethene	610.0

Notes

1. Samples collected on March 1, 1997.
2. Samples analyzed for VOC's by USEPA method 8260.
3. All results expressed in micrograms per liter (µg/l).
4. No other compounds detected at method detection limits.

TABLE 4
FLOW METER MEASUREMENTS
GRIFFIN TECHNOLOGIES, INC.
VICTOR, NEW YORK

WELL IDENTIFICATION	Pre-Start 02/18/97	Week1 02/22/97	Week 2 03/01/97	Week 3 03/07/97	Week 4 03/14/97
	FLOW METER READINGS (GAL)				
RW-01	0	9,760	26,740	48,430	76,680
RW-02	0	12,000	31,840	54,310	82,290
RW-03	0	13,170	36,340	63,080	96,070
Average Daily Recovery (Gallons)	0	6,986	7,910	9,212	10,202
Average Flow Rate (gal./min.)	0.0	4.9	5.5	6.4	7.1
Total Discharged (Gallons)	0	34,930	94,920	165,820	255,040

NOTES

1. Flow meter readings prior to IRM intialization were 0.
2. Measurements taken on date shown on column header.

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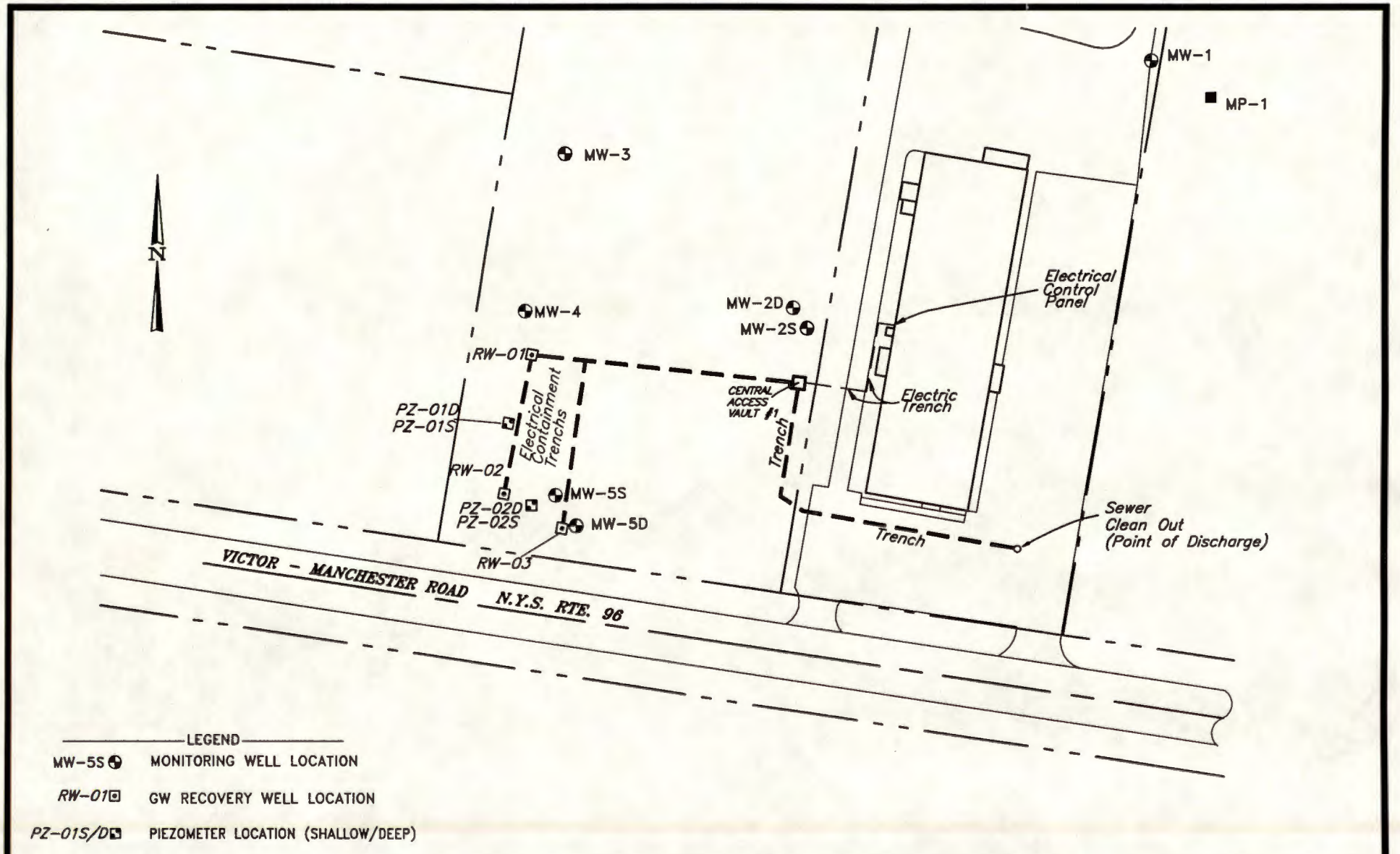
Figures



IRM SYSTEM LAYOUT

GRIFFIN TECHNOLOGY, INC. VICTOR, NEW YORK

DRAWN BY: MMS	CHECKED BY: KMA	PROJECT NUMBER: 6E06191	DATE: 4-10-97	FIGURE NO: 1

U:\6E06191\GWMAPS\FIG1.DWG

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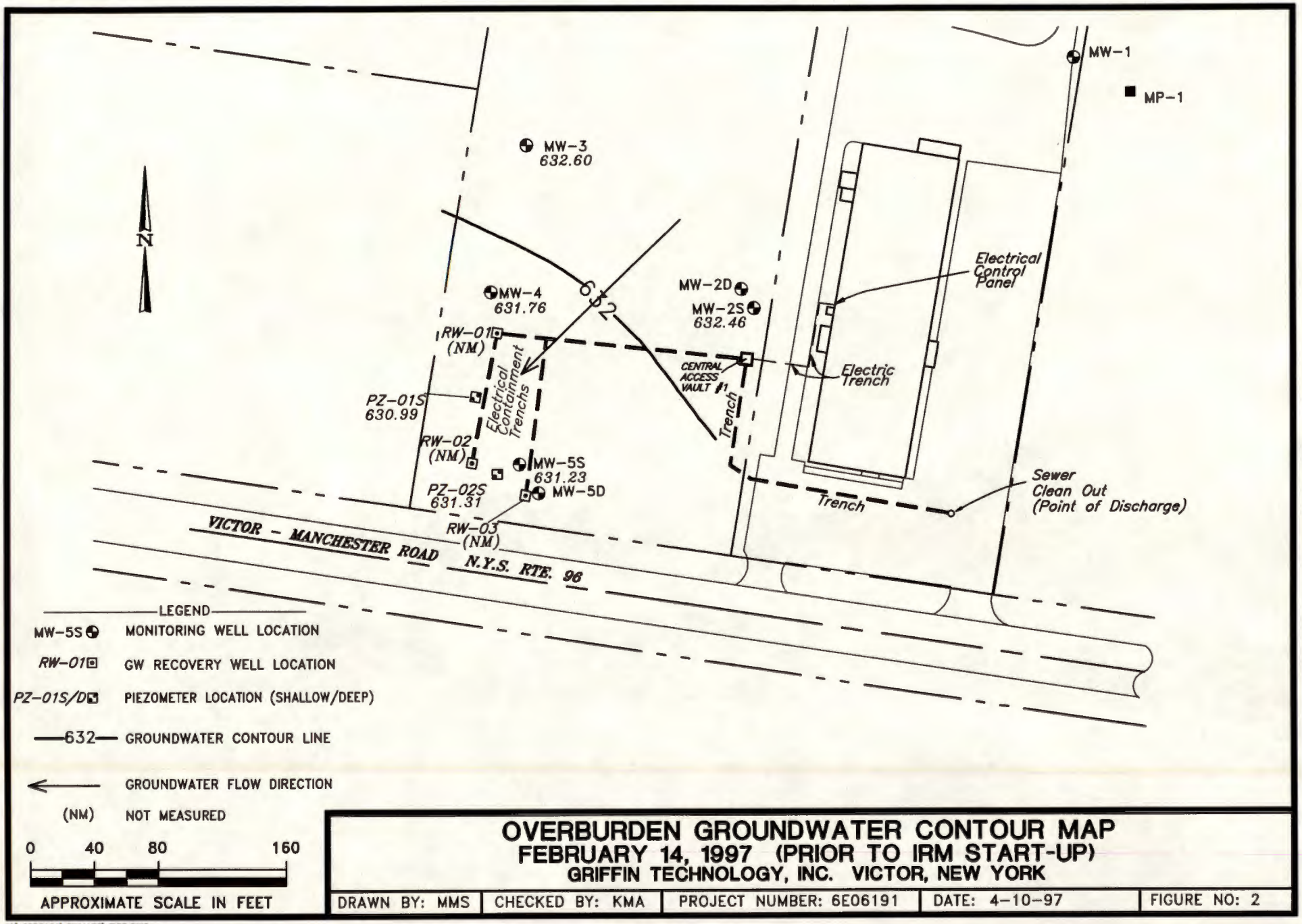
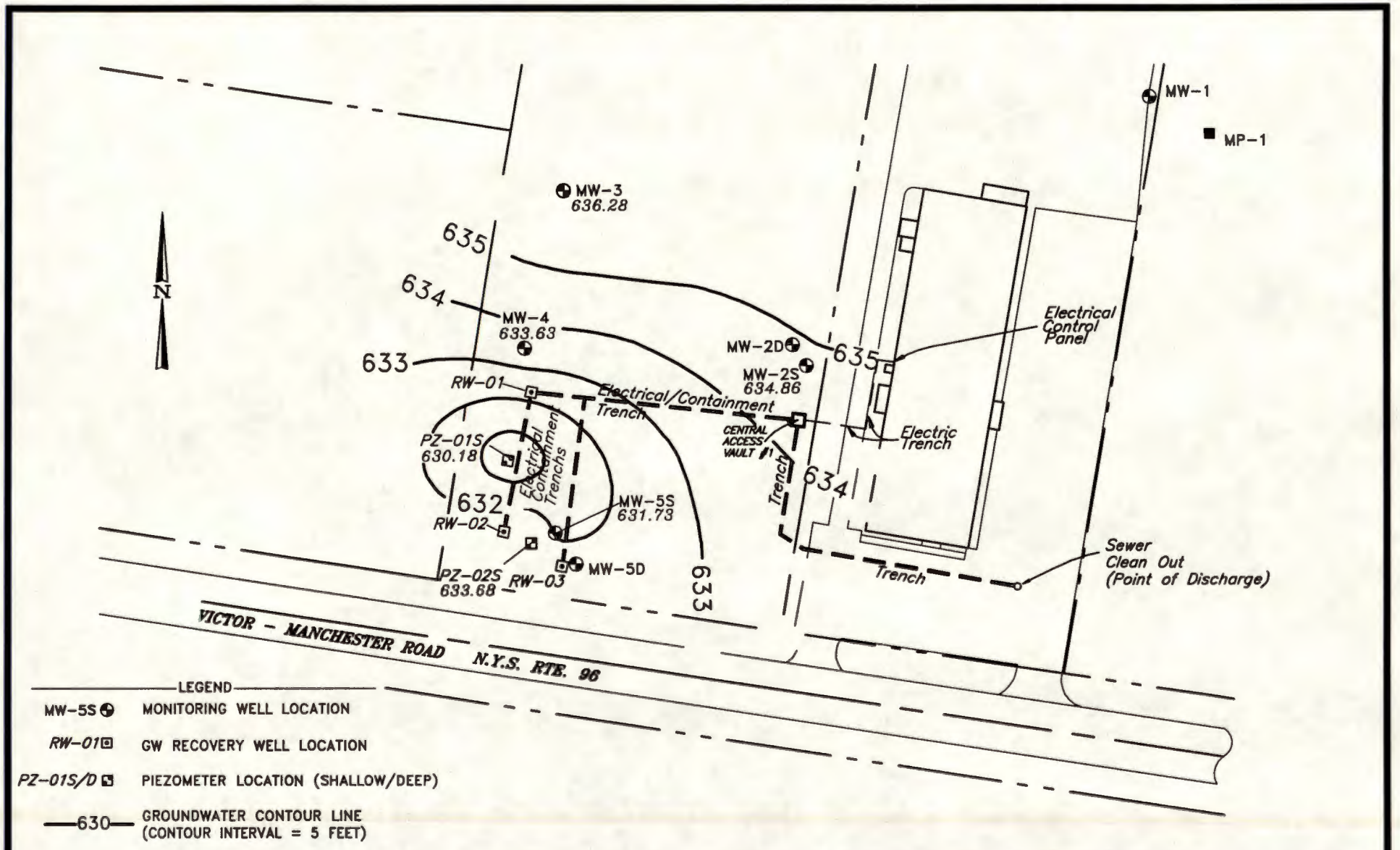


OVERBURDEN GROUNDWATER CONTOUR MAP
FEBRUARY 14, 1997 (PRIOR TO IRM START-UP)
GRIFFIN TECHNOLOGY, INC. VICTOR, NEW YORK

DRAWN BY: MMS	CHECKED BY: KMA	PROJECT NUMBER: 6E06191	DATE: 4-10-97	FIGURE NO: 2

U:\6E06191\GWMAPS\FIG2.DWG

Woodward-Clyde Consultants



OVERBURDEN GROUNDWATER CONTOUR MAP
MARCH 14, 1997
GRIFFIN TECHNOLOGY, INC. VICTOR, NEW YORK

DRAWN BY: MMS	CHECKED BY: KMA	PROJECT NUMBER: 6E06191	DATE: 04-10-97	FIGURE NO: 3

U:\6E06191\GWMAPS\FIG3.DWG

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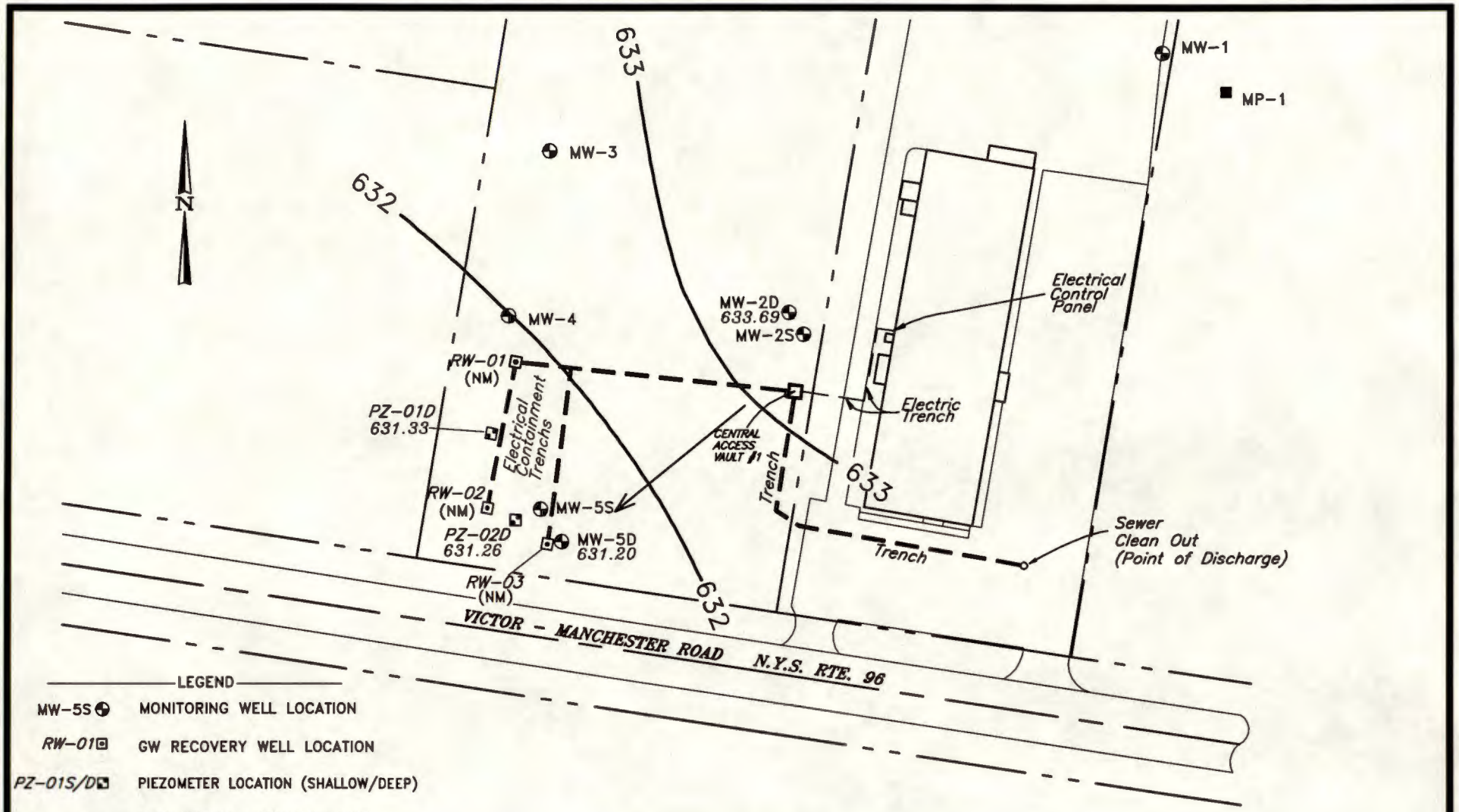
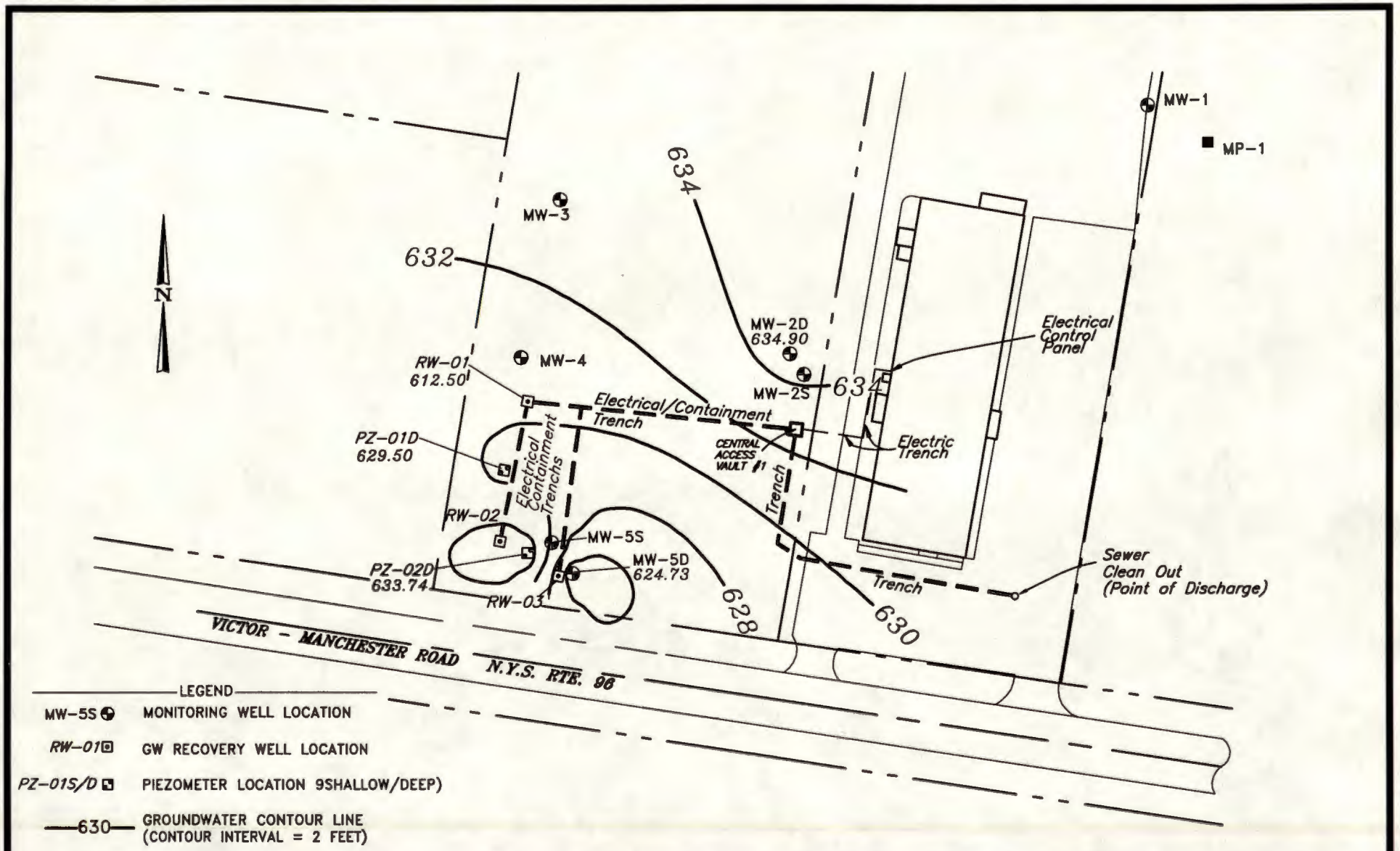


BEDROCK GROUNDWATER CONTOUR MAP
FEBRUARY 14, 1997 (PRIOR TO IRM START-UP)
GRIFFIN TECHNOLOGY, INC. VICTOR, NEW YORK

DRAWN BY: MMS	CHECKED BY: KMA	PROJECT NUMBER: 6E06191	DATE: 4-10-97	FIGURE NO: 4

U:\6E06191\GWMAPS\FIG4.DWG

Woodward-Clyde Consultants



BEDROCK GROUNDWATER CONTOUR MAP
MARCH 14, 1997
GRIFFIN TECHNOLOGY, INC. VICTOR, NEW YORK

DRAWN BY: MMS	CHECKED BY: KMA	PROJECT NUMBER: 6E06191	DATE: 04-10-97	FIGURE NO: 5

U:\6E06191\GWMAPS\FIG5.DWG

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Appendix A

COLUMBIA ANALYTICAL SERVICES, INC.
700 Exchange Street, Rochester, New York 14608
(716) 454-6810 • FAX (716) 454-6825

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

(800) 695-7222

DATE 1-8-97 PAGE 1 OF 1

PROJECT NAME Griffin IRM
PROJECT MANAGER/CONTACT Ken Armstrong
COMPANY/ADDRESS 30775 Bainbridge Rd, Ste 206 Solon, Ohio
TEL (216) 349-2708 FAX (216) 349-1514
SAMPLER'S SIGNATURE Bob Fabian

ANALYSIS REQUESTED

SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX	# OF CONTAINERS	GC/MS VOA's ☐ 8260 ☐ 624	GC/MS SVOA's ☐ 8270A ☐ 625	GC VOA's ☐ 8010/8020 ☐ 601/602	PESTICIDES/PCB's ☐ 8080 ☐ 608	STAR'S LIST 8021 VOA's ☐ TOTAL ☐ TCLP	STAR'S LIST 8270 SVOA's ☐ TOTAL ☐ TCLP	TCLP ☐ METALS ☐ VOA's ☐ SVOA's ☐ H/P	WASTE CHARACTERIZATION ☐ React ☐ Corros. ☐ Ignit.	METALS, TOTAL (LIST BELOW)	METALS, DISSOLVED (LIST BELOW)	ASP 91-1						PRESERVATION pH < 2.0	PRESERVATION pH > 12	PRESERVATION Other
RW-03	1-8-97	14:30		WATER	2											X								
RW-02	↓	14:40		↓	2											X								
RW-01		15:05			2											X								
Trip-2	↓			↓	2											X								

RELINQUISHED BY:
Signature: Bob Fabian
Printed Name: Bob Fabian
Firm: Woodward-Clyde
Date/Time: 1-8-97 16:35

RECEIVED BY:
Signature: Tom Hastings
Printed Name: Tom Hastings
Firm: [illegible]
Date/Time: 1/8/97 16:35

RELINQUISHED BY:
Signature
Printed Name
Firm
Date/Time

RECEIVED BY:
Signature
Printed Name
Firm
Date/Time

RELINQUISHED BY:
Signature
Printed Name
Firm
Date/Time

RECEIVED BY:
Signature
Printed Name
Firm
Date/Time

TURNAROUND REQUIREMENTS
__ 24 hr. __ 48 hr. __ 5 day
__ Standard (10-15 working days)
__ Provide Verbal Preliminary Results
__ Provide FAX Preliminary Results
Requested Report Date _____

REPORT REQUIREMENTS
__ 1. Routine Report
__ 2. Routine Rep. w/CASE Narrative
__ 3. EPA Level III Validatable Package
__ 4. N.J. Reduced Deliverables Level IV
__ 5. NY ASP/CLP Deliverables
__ 6. Site specific QC.

INVOICE INFORMATION:
P.O. #:
Bill To:

SAMPLE RECEIPT:
Shipping Via:
Shipping #:
Temperature:
Submission No:

SPECIAL INSTRUCTIONS/COMMENTS:
METALS
ORGANICS: ☐ TCL ☐ PPL ☐ AE Only ☐ BN Only ☐ Special List

65 RAMAPO VALLEY ROAD
MAHWAH, NJ 07430
201-512-3292
FAX 201-512-3362

435 LAWRENCE BELL DR.
AMHERST, NY 14221
716-634-0454
FAX 716-634-9019

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

RW01

Lab Name: CAS-ROC Contract: WCC

Lab Code: 14045 Case No.: GRIFFIN SAS No.: SDG No.: RW03

Matrix: (soil/water) WATER Lab Sample ID: 125276 2.5

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: R2274.D

Level: (low/med) LOW Date Received: 01/08/97

% Moisture: not dec. Date Analyzed: 01/15/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 2.5

Soil Extract Volume (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	25	U
75-01-4	Vinyl chloride	25	U
75-00-3	Chloroethane	25	U
74-83-9	Bromomethane	25	U
67-64-1	Acetone	25	U
75-35-4	1,1-Dichloroethene	25	U
75-09-2	Methylene chloride	25	U
75-15-0	Carbon disulfide	25	U
75-34-3	1,1-Dichloroethane	25	U
78-93-3	2-Butanone	25	U
540-59-0	1,2-Dichloroethene (total)	23	JD
67-66-3	Chloroform	25	U
107-06-2	1,2-Dichloroethane	25	U
71-55-6	1,1,1-Trichloroethane	8	JD
56-23-5	Carbon tetrachloride	25	U
71-43-2	Benzene	25	U
79-01-6	Trichloroethene	300	D
78-87-5	1,2-Dichloropropane	25	U
75-27-4	Bromodichloromethane	25	U
10061-01-5	cis-1,3-Dichloropropene	25	U
10061-02-6	trans-1,3-Dichloropropene	25	U
79-00-5	1,1,2-Trichloroethane	25	U
124-48-1	Dibromochloromethane	25	U
75-25-2	Bromoform	25	U
108-10-1	4-Methyl-2-pentanone	25	U
108-88-3	Toluene	25	U
591-78-6	2-Hexanone	25	U
127-18-4	Tetrachloroethene	25	U
108-90-7	Chlorobenzene	25	U
100-41-4	Ethylbenzene	25	U
1330-20-7	Xylenes (total)	25	U
100-42-5	Styrene	25	U
108-88-3	1,1,2,2-Tetrachloroethane	25	U

1/23

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

RW02

Lab Name: CAS-ROC Contract: WCC

Lab Code: 14045 Case No.: GRIFFIN SAS No.: SDG No.: RW03

Matrix: (soil/water) WATER Lab Sample ID: 125275 2.0

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: R2273.D

Level: (low/med) LOW Date Received: 01/08/97

% Moisture: not dec. Date Analyzed: 01/15/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 2.0

Soil Extract Volume (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	20	U
75-01-4	Vinyl chloride	20	U
75-00-3	Chloroethane	20	U
74-83-9	Bromomethane	20	U
67-64-1	Acetone	20	U
75-35-4	1,1-Dichloroethene	20	U
75-09-2	Methylene chloride	20	U
75-15-0	Carbon disulfide	20	U
75-34-3	1,1-Dichloroethane	20	U
78-93-3	2-Butanone	20	U
540-59-0	1,2-Dichloroethene (total)	3	JD
67-66-3	Chloroform	20	U
107-06-2	1,2-Dichloroethane	20	U
71-55-6	1,1,1-Trichloroethane	15	JD
56-23-5	Carbon tetrachloride	20	U
71-43-2	Benzene	20	U
79-01-6	Trichloroethene	550	ED
78-87-5	1,2-Dichloropropane	20	U
75-27-4	Bromodichloromethane	20	U
10061-01-5	cis-1,3-Dichloropropene	20	U
10061-02-6	trans-1,3-Dichloropropene	20	U
79-00-5	1,1,2-Trichloroethane	20	U
124-48-1	Dibromochloromethane	20	U
75-25-2	Bromoform	20	U
108-10-1	4-Methyl-2-pentanone	20	U
108-88-3	Toluene	20	U
591-78-6	2-Hexanone	20	U
127-18-4	Tetrachloroethene	20	U
108-90-7	Chlorobenzene	20	U
100-41-4	Ethylbenzene	20	U
1330-20-7	Xylenes (total)	20	U
100-42-5	Styrene	20	U
108-88-3	1,1,2,2-Tetrachloroethane	20	U

1/23

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

RW02DL

Lab Name: CAS-ROC Contract: WCC

Lab Code: 14045 Case No.: GRIFFIN SAS No.: _____ SDG No.: RW03

Matrix: (soil/water) WATER Lab Sample ID: 125275 5.0DL

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: R2275.D

Level: (low/med) LOW Date Received: 01/08/97

% Moisture: not dec. _____ Date Analyzed: 01/15/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 5.0

Soil Extract Volume _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	50	U
75-01-4	Vinyl chloride	50	U
75-00-3	Chloroethane	50	U
74-83-9	Bromomethane	50	U
67-64-1	Acetone	50	U
75-35-4	1,1-Dichloroethene	50	U
75-09-2	Methylene chloride	50	U
75-15-0	Carbon disulfide	50	U
75-34-3	1,1-Dichloroethane	50	U
78-93-3	2-Butanone	50	U
540-59-0	1,2-Dichloroethene (total)	50	U
67-66-3	Chloroform	50	U
107-06-2	1,2-Dichloroethane	50	U
71-55-6	1,1,1-Trichloroethane	12	JD
56-23-5	Carbon tetrachloride	50	U
71-43-2	Benzene	50	U
79-01-6	Trichloroethene	540	D
78-87-5	1,2-Dichloropropane	50	U
75-27-4	Bromodichloromethane	50	U
10061-01-5	cis-1,3-Dichloropropene	50	U
10061-02-6	trans-1,3-Dichloropropene	50	U
79-00-5	1,1,2-Trichloroethane	50	U
124-48-1	Dibromochloromethane	50	U
75-25-2	Bromoform	50	U
108-10-1	4-Methyl-2-pentanone	50	U
108-88-3	Toluene	50	U
591-78-6	2-Hexanone	50	U
127-18-4	Tetrachloroethene	50	U
108-90-7	Chlorobenzene	50	U
100-41-4	Ethylbenzene	50	U
1330-20-7	Xylenes (total)	50	U
100-42-5	Styrene	50	U
108-88-3	1,1,2,2-Tetrachloroethane	50	U

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

RW03

Lab Name: CAS-ROC Contract: WCC

Lab Code: 14045 Case No.: GRIFFIN SAS No.: SDG No.: RW03

Matrix: (soil/water) WATER Lab Sample ID: 125273 1.0

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: R2269.D

Level: (low/med) LOW Date Received: 01/08/97

% Moisture: not dec. Date Analyzed: 01/15/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
75-01-4	Vinyl chloride	10	U
75-00-3	Chloroethane	10	U
74-83-9	Bromomethane	10	U
67-64-1	Acetone	10	U
75-35-4	1,1-Dichloroethene	10	U
75-09-2	Methylene chloride	10	U
75-15-0	Carbon disulfide	10	U
75-34-3	1,1-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
540-59-0	1,2-Dichloroethene (total)	2	J
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
71-55-6	1,1,1-Trichloroethane	16	
56-23-5	Carbon tetrachloride	10	U
71-43-2	Benzene	10	U
79-01-6	Trichloroethene	440	E
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
124-48-1	Dibromochloromethane	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
1330-20-7	Xylenes (total)	3	J
100-42-5	Styrene	10	U
108-88-3	1,1,2,2-Tetrachloroethane	10	U

@1/23

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

RW03DL

Lab Name: CAS-ROC Contract: WCC

Lab Code: 14045 Case No.: GRIFFIN SAS No.: SDG No.: RW03

Matrix: (soil/water) WATER Lab Sample ID: 125273 5.0DL

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: R2272.D

Level: (low/med) LOW Date Received: 01/08/97

% Moisture: not dec. Date Analyzed: 01/15/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 5.0

Soil Extract Volume (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	50	U
75-01-4	Vinyl chloride	50	U
75-00-3	Chloroethane	50	U
74-83-9	Bromomethane	50	U
67-64-1	Acetone	50	U
75-35-4	1,1-Dichloroethene	50	U
75-09-2	Methylene chloride	50	U
75-15-0	Carbon disulfide	50	U
75-34-3	1,1-Dichloroethane	50	U
78-93-3	2-Butanone	50	U
67-66-3	Chloroform	50	U
107-06-2	1,2-Dichloroethane	50	U
71-55-6	1,1,1-Trichloroethane	17	JD
56-23-5	Carbon tetrachloride	50	U
71-43-2	Benzene	50	U
79-01-6	Trichloroethene	490	D
78-87-5	1,2-Dichloropropane	50	U
75-27-4	Bromodichloromethane	50	U
10061-01-5	cis-1,3-Dichloropropene	50	U
10061-02-6	trans-1,3-Dichloropropene	50	U
79-00-5	1,1,2-Trichloroethane	50	U
124-48-1	Dibromochloromethane	50	U
75-25-2	Bromoform	50	U
108-10-1	4-Methyl-2-pentanone	50	U
108-88-3	Toluene	50	U
591-78-6	2-Hexanone	50	U
127-18-4	Tetrachloroethene	50	U
108-90-7	Chlorobenzene	50	U
100-41-4	Ethylbenzene	50	U
1330-20-7	Xylenes (total)	50	U
100-42-5	Styrene	50	U
108-88-3	1,1,2,2-Tetrachloroethane	50	U

R 1/23

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TRIP2

Lab Name: CAS-ROC Contract: WCC

Lab Code: 14045 Case No.: GRIFFIN SAS No.: _____ SDG No.: RW03

Matrix: (soil/water) WATER Lab Sample ID: 125278 1.0

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: R2276.D

Level: (low/med) LOW Date Received: 01/08/97

% Moisture: not dec. _____ Date Analyzed: 01/15/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	Q	
74-87-3	Chloromethane	10	U
75-01-4	Vinyl chloride	10	U
75-00-3	Chloroethane	10	U
74-83-9	Bromomethane	10	U
67-64-1	Acetone	10	U
75-35-4	1,1-Dichloroethene	10	U
75-09-2	Methylene chloride	10	U
75-15-0	Carbon disulfide	10	U
75-34-3	1,1-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon tetrachloride	10	U
71-43-2	Benzene	10	U
79-01-6	Trichloroethene	10	U
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
124-48-1	Dibromochloromethane	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
1330-20-7	Xylenes (total)	10	U
100-42-5	Styrene	10	U
108-88-3	1,1,2,2-Tetrachloroethane	10	U

FR/23

COLUMBIA ANALYTICAL SERVICES, INC.
700 Exchange Street, Rochester, New York 14608
(716) 454-6810 • FAX (716) 454-6825

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

(800) 695-7222

DATE 3-1-97 PAGE 1 OF 1

PROJECT NAME Griffin IRM
PROJECT MANAGER/CONTACT Ken Armstrong
COMPANY/ADDRESS 30775 Bainbridge Rd., Ste 200 Solon, Ohio
TEL (216) 349-2708 FAX (216) 349-1514
SAMPLER'S SIGNATURE Bob Fabian

ANALYSIS REQUESTED

SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX	# OF CONTAINERS	GC/MS VOA's ☐ 8260 ☐ 624	GC/MS SVOA's ☐ 8270A ☐ 625	GC VOA's ☐ 8010/8020 ☐ 601/602	PESTICIDES/PCB's ☐ 8080 ☐ 608	STAR'S LIST 8021 VOA's ☐ TOTAL ☐ TCLP	STAR'S LIST 8270 SVOA's ☐ TOTAL ☐ TCLP	TCLP ☐ METALS ☐ VOA's ☐ SVOA's ☐ H/P	WASTE CHARACTERIZATION ☐ React ☐ Corros. ☐ Ignit.	METALS, TOTAL (LIST BELOW)	METALS, DISSOLVED (LIST BELOW)	8240							PRESERVATION pH < 2.0	PRESERVATION pH > 12	PRESERVATION Other
EFF-3-1-97	3-1-97	10:17	T3069L 132866 BB 3/3	WATER	3											X									

RELINQUISHED BY:
Signature Bob Fabian
Printed Name Bob Fabian
Firm Woodward-Clyde
Date/Time 3-1-97

RECEIVED BY:
Signature V Gardner B Bowe
Printed Name V Gardner
Firm CAS
Date/Time 3-1-97 @ 1100

RELINQUISHED BY:
Signature
Printed Name
Firm
Date/Time

RECEIVED BY:
Signature
Printed Name
Firm
Date/Time

RELINQUISHED BY:
Signature
Printed Name
Firm
Date/Time

RECEIVED BY:
Signature
Printed Name
Firm
Date/Time

TURNAROUND REQUIREMENTS
__ 24 hr. __ 48 hr. __ 5 day
__ Standard (10-15 working days)
__ Provide Verbal Preliminary Results
__ Provide FAX Preliminary Results
Requested Report Date _____

REPORT REQUIREMENTS
__ 1. Routine Report
__ 2. Routine Rep. w/CASE Narrative
__ 3. EPA Level III Validatable Package
__ 4. N.J. Reduced Deliverables Level IV
__ 5. NY ASP/CLP Deliverables
__ 6. Site specific QC.

INVOICE INFORMATION:
P.O. #:
Bill To:

SAMPLE RECEIPT:
Shipping Via: Client
Shipping #:
Temperature: NA
Submission No: 97-3-6

SPECIAL INSTRUCTIONS/COMMENTS:
METALS
ORGANICS: ☐ TCL ☐ PPL ☐ AE Only ☐ BN Only ☐ Special List

65 RAMAPO VALLEY ROAD, MAHWAH, NJ 07430 — 201-512-3292, FAX 201-512-3362
435 LAWRENCE BELL DR., AMHERST, NY 14221 — 716-634-0454, FAX 716-634-9019

COLUMBIA ANALYTICAL SERVICES

VOLATILE ORGANICS
METHOD 8260 TCL
Reported: 03/19/97

Woodward Clyde Consultants
Project Reference: GRIFFIN IRM
Client Sample ID : EFF-3-1-97

Date Sampled : 03/01/97 **Order #:** 132866 **Sample Matrix:** WATER
Date Received: 03/01/97 **Submission #:** 9703000006 **Analytical Run** 15657

DATE ANALYZED : 03/11/97
ANALYTICAL DILUTION: 1.0

ANALYTE	PQL	RESULT	UNITS
ACETONE	20	20 U	UG/L
BENZENE	5.0	5.0 U	UG/L
BROMODICHLOROMETHANE	5.0	5.0 U	UG/L
BROMOFORM	5.0	5.0 U	UG/L
BROMOMETHANE	5.0	5.0 U	UG/L
2-BUTANONE (MEK)	10	10 U	UG/L
CARBON DISULFIDE	10	10 U	UG/L
CARBON TETRACHLORIDE	5.0	5.0 U	UG/L
CHLOROBENZENE	5.0	5.0 U	UG/L
CHLOROETHANE	5.0	5.0 U	UG/L
CHLOROFORM	5.0	5.0 U	UG/L
CHLOROMETHANE	5.0	5.0 U	UG/L
DIBROMOCHLOROMETHANE	5.0	5.0 U	UG/L
1,1-DICHLOROETHANE	5.0	5.0 U	UG/L
1,2-DICHLOROETHANE	5.0	5.0 U	UG/L
1,1-DICHLOROETHENE	5.0	5.0 U	UG/L
CIS-1,2-DICHLOROETHENE	5.0	6.5	UG/L
TRANS-1,2-DICHLOROETHENE	5.0	5.0 U	UG/L
1,2-DICHLOROPROPANE	5.0	5.0 U	UG/L
CIS-1,3-DICHLOROPROPENE	5.0	5.0 U	UG/L
TRANS-1,3-DICHLOROPROPENE	5.0	5.0 U	UG/L
ETHYLBENZENE	5.0	5.0 U	UG/L
2-HEXANONE	10	10 U	UG/L
METHYLENE CHLORIDE	5.0	5.0 U	UG/L
4-METHYL-2-PENTANONE (MIBK)	10	10 U	UG/L
STYRENE	5.0	5.0 U	UG/L
1,1,2,2-TETRACHLOROETHANE	5.0	5.0 U	UG/L
TETRACHLOROETHENE	5.0	5.0 U	UG/L
TOLUENE	5.0	5.0 U	UG/L
1,1,1-TRICHLOROETHANE	5.0	14	UG/L
1,1,2-TRICHLOROETHANE	5.0	5.0 U	UG/L
TRICHLOROETHENE	5.0	610	UG/L
VINYL CHLORIDE	5.0	5.0 U	UG/L
O-XYLENE	5.0	5.0 U	UG/L
M+P-XYLENE	5.0	5.0 U	UG/L

SURROGATE RECOVERIES	QC LIMITS		
4-BROMOFLUOROBENZENE	(86 - 115 %)	109	%
TOLUENE-D8	(88 - 110 %)	101	%
DIBROMOFLUOROMETHANE	(86 - 118 %)	98	%

COLUMBIA ANALYTICAL SERVICES

VOLATILE ORGANICS
METHOD 8260 TCL
Reported: 03/19/97

Project Reference:
Client Sample ID : METHOD BLANK

Date Sampled : **Order #:** 135501 **Sample Matrix:** WATER
Date Received: **Submission #:** **Analytical Run** 15657

ANALYTE	PQL	RESULT	UNITS
DATE ANALYZED : 03/11/97			
ANALYTICAL DILUTION: 1.0			
ACETONE	20	20 U	UG/L
BENZENE	5.0	5.0 U	UG/L
BROMODICHLOROMETHANE	5.0	5.0 U	UG/L
BROMOFORM	5.0	5.0 U	UG/L
BROMOMETHANE	5.0	5.0 U	UG/L
2-BUTANONE (MEK)	10	10 U	UG/L
CARBON DISULFIDE	10	10 U	UG/L
CARBON TETRACHLORIDE	5.0	5.0 U	UG/L
CHLOROBENZENE	5.0	5.0 U	UG/L
CHLOROETHANE	5.0	5.0 U	UG/L
CHLOROFORM	5.0	5.0 U	UG/L
CHLOROMETHANE	5.0	5.0 U	UG/L
DIBROMOCHLOROMETHANE	5.0	5.0 U	UG/L
1,1-DICHLOROETHANE	5.0	5.0 U	UG/L
1,2-DICHLOROETHANE	5.0	5.0 U	UG/L
1,1-DICHLOROETHENE	5.0	5.0 U	UG/L
CIS-1,2-DICHLOROETHENE	5.0	5.0 U	UG/L
TRANS-1,2-DICHLOROETHENE	5.0	5.0 U	UG/L
1,2-DICHLOROPROPANE	5.0	5.0 U	UG/L
CIS-1,3-DICHLOROPROPENE	5.0	5.0 U	UG/L
TRANS-1,3-DICHLOROPROPENE	5.0	5.0 U	UG/L
ETHYLBENZENE	5.0	5.0 U	UG/L
2-HEXANONE	10	10 U	UG/L
METHYLENE CHLORIDE	5.0	5.0 U	UG/L
4-METHYL-2-PENTANONE (MIBK)	10	10 U	UG/L
STYRENE	5.0	5.0 U	UG/L
1,1,2,2-TETRACHLOROETHANE	5.0	5.0 U	UG/L
TETRACHLOROETHENE	5.0	5.0 U	UG/L
TOLUENE	5.0	5.0 U	UG/L
1,1,1-TRICHLOROETHANE	5.0	5.0 U	UG/L
1,1,2-TRICHLOROETHANE	5.0	5.0 U	UG/L
TRICHLOROETHENE	5.0	5.0 U	UG/L
VINYL CHLORIDE	5.0	5.0 U	UG/L
O-XYLENE	5.0	5.0 U	UG/L
M+P-XYLENE	5.0	5.0 U	UG/L

SURROGATE RECOVERIES	QC LIMITS		
4-BROMOFLUOROBENZENE	(86 - 115 %)	101	%
TOLUENE-D8	(88 - 110 %)	100	%
DIBROMOFLUOROMETHANE	(86 - 118 %)	98	%