GEC

Goldman Environmental Consultants, Inc.

Great Pond Center
15 Pacella Park Drive
Randolph, MA 02368-1755

617-961-1200
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November 13, 1996

RECEIVED
NOV 18 1996
HAZARDOUS WASTE REMEDIATION
NYSDEC REGION 1

Mr. Ajay Shah, P.E.
Division of Hazardous Waste Remediation
Department of Environmental Conservation
Building 40
SUNY - Stonybrook
Stonybrook, NY 11790-2356

RE: Quarterly Ground Water Sampling Results
Jameco Industries, Inc.
248 Wyandanch Avenue
Wyandanch, New York

Dear Mr. Shah:

Attached please find four copies of the Semi Annual Ground Water Sampling report, prepared by Goldman Environmental Consultants, Inc. (GEC) for the above-referenced site. As documented in the report, GEC conducted the sampling of select monitoring wells in early October, 1996 in accordance with the Maintenance Plan as modified.

These reports include summary tables and complete laboratory results. We trust that the information provided is complete.

We would be happy to discuss these results with you if you are interested. If you have any questions, please do not hesitate to contact me at (617) 961-1200.

Sincerely,
Goldman Environmental Consultants, Inc.

Samuel W. Butcher
Senior Project Manager / Hydrogeologist

cc: Ms. Camille Gagnon, Watts Industries - with copy of report
Paul Bartlett, GEC - without copy of report

PROJECT NUMBER 444-010-95

SEMI-ANNUAL GROUND WATER SAMPLING
JAMECO INDUSTRIES, INC.
248 WYANDANCH, AVE
WYANDANCH, NEW YORK

November 12, 1996

Prepared For:

New York State Department
of Environmental Conservation

and

Camille Gagnon
Watts Industries, Inc.
P.O. Box 6431
South Main Street
Franklin, NH 03235

GEC *Goldman Environmental Consultants, Inc.*
15 Pacella Park Drive
Randolph, MA 02368-1755
(617) 961-1200

SEMI-ANNUAL GROUND WATER SAMPLING REPORT
248 WYANDANCH AVENUE
WYANDANCH, NEW YORK

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1.0 Introduction

Goldman Environmental Consultants, Inc. (GEC) of Randolph, Massachusetts has been contracted by Watts Industries, Inc. (Watts) and Jameco Industries, Inc. (Jameco) to conduct Quarterly Ground Water Sampling at the Jameco facility located at 248 Wyandanch, Avenue in Wyandanch, New York. These activities are being conducted in accordance with Jameco's Maintenance Plan, that was approved by the New York Department of Environmental Conservation (NYSDEC).

The first quarterly sampling was conducted in July, 1994 by GEC and Jameco's previous consultants, AKRF, Inc. In conjunction with this sampling effort, GEC and AKRF also conducted a limited investigation to determine if there was evidence that a release of metals and/or chlorinated compounds had occurred beneath the site building. This investigation included the installation of three ground water observation wells through the floor of the building. As a result of this investigation dissolved-phase chlorinated compounds were detected in the shallow portions of the overburden aquifer beneath the building. Complete documentation of this investigation is presented in a document entitled Maintenance Plan First Quarterly Report prepared by AKRF and completed in August, 1994.

As a result of the investigations conducted by GEC and AKRF, and after conversations between GEC, Watts, and NYSDEC personnel, the scope of quarterly ground water sampling was amended so as to better characterize ground water conditions across the site. Changes in the scope were limited to adding one of the newly installed monitoring wells (MW-12) to the sampling list and removing two of the wells (MW-4 and MW-6) from the list. This revised sampling plan has been employed for several quarters. In addition, the sampling plan was further revised to reduce the frequency of sampling to semi-annual.

All activities were conducted in accordance with GEC's Standard Operating Procedures and QA/QC Plan, copies of which are attached as Appendix A.

2.0 Ground Water Sampling and Surveying

On October 9, 1996, GEC personnel collected ground water samples from monitoring wells MW-1, MW-3, MW-5, MW-7, MW-9 and MW-12. Prior to sample collection the approximate volume of standing water in each well was computed and a volume of water equal to between three and five times the volume of standing water was evacuated from the monitoring well. GEC utilized dedicated or precleaned standard check-valve bailers or pre-cleaned electric submersible pumps. The samples were collected using dedicated plastic bailers or electric peristaltic pumps and were stored on ice in laboratory-issued, preserved, glass and nalgene containers. All samples were shipped overnight to IEA, Inc. (IEA), a New York State certified laboratory in Monroe Connecticut under fully documented chain of custody procedures.

Prior to initiation of well evacuation and sampling activities, GEC measured the depth to water in all of the on-site monitoring wells. GEC personnel conducted a survey of monitoring wells, using standard "rod and level techniques" to determine the relative elevation of the monitoring wells as part of previous site investigations. Depth to water and ground water elevation for these wells is included in this Sampling Report.

The results of the ground water gauging and well survey were used to determine the relative elevation of ground water at the site and to determine the direction of ground water flow. As a result of these activities, the ground water flow at the site appears to be toward the southeast. Complete results of the gauging and survey are included as Table 1.

3.0 Laboratory Analysis

Ground water samples were submitted for laboratory analysis to determine the concentration of volatile organic compounds (VOCs) (via EPA Method 8240), hexavalent chromium (via Colorimetric, 307-B Methods) and 13 Priority Pollutant Metals (total). The laboratory results are summarized on Tables 2 and 3 attached, and a complete laboratory report is included as Appendix B. Also included on these tables are the results of the sampling that was conducted during previous rounds. The results of these analyses are also summarized in the paragraphs below.

Volatile Organic Compounds

Results of recent analyses indicate that the concentrations of volatile organic compounds in ground water at the site remain essentially unchanged from previous sampling rounds. Low concentrations of chlorinated compounds were detected in the upgradient observation well (MW-1) and higher concentrations were detected in a well situated within the building footprint and downgradient of the building. The single exception is MW-12, where concentrations of chlorinated compounds appears slightly higher than previous sampling events. Acetone was both reported at low concentrations in groundwater samples collected from the site. Acetone is a common laboratory reagents and its presence in the samples is likely the result of laboratory contamination.

Hexavalent Chrome and Metals

Concentrations of total and dissolved metals and hexavalent chrome remain essentially unchanged from previous sampling rounds. Concentrations are relatively low across the entire site but are somewhat higher in the immediate vicinity of the plating area (within the building footprint) and downgradient of the former leaching lagoons. Hexavalent chrome was detected in only one observation well (MW-12) located in the immediate vicinity of the plating operation. This result is curious since this is the first time that hexavalent chrome has been detected at this location, yet hexavalent chrome has not been used at the site for at least one year.

4.0 Conclusions

In accordance with the NYSDEC-approved Maintenance Plan, and on behalf of Jameco and Watts, GEC has completed the most recent round of ground water sampling at the Jameco facility, located at 248 Wyandanch, Avenue in Wyandanch, New York.

The results of the ground water sampling indicate that concentrations of volatile organic compound and metals remain generally unchanged from the previous sampling rounds. GEC will continue to collect ground water samples from designated wells on a regular basis. The next sampling round is tentatively scheduled for April, 1997.

5.0 Warranty

The conclusions contained in this report are based on the information readily available to GEC as of November 12, 1996. GEC provides no warranties on information provided by third parties and contained herein. Data compiled was in accordance with GEC's approved scope of services, and the NYSDEC -approved Maintenance Plan and should not be construed beyond its limitations. Any interpretations or use of this report other than those expressed herein are not warranted. The use, partial use, or duplication of this report without the express written consent of Goldman Environmental Consultants, Inc. is strictly prohibited.

Respectfully submitted,
Goldman Environmental Consultants, Inc.

Prepared By:

Samuel W. Butcher
Senior Project Manager

Reviewed By:

Gary W. Siegel, P.E.
Vice President,
Environmental Engineering

TABLES

Table 1
GROUNDWATER ELEVATION MEASUREMENTS
Jameco Industries, Inc.
Wyandanch, Ave., Wyandanch, New York
(unit, feet)

Well Number	Screened Interval Depth	Depth to Water	Measuring Point Elevation	Groundwater Elevation
MW-1				
10/4/94	6.43 to 16.43	11.27	101.47	90.20
1/26/95		11.08	101.47	90.39
4/19/95		11.15	101.47	90.32
7/24/95		12.34	101.47	89.13
10/12/95		12.72	101.47	88.75
1/17/96		11.88	101.47	89.59
4/11/96		10.21	101.47	91.26
10/9/96		10.93	101.47	90.54
MW-2				
10/4/94	6.00 to 16.00	11.02	100	88.98
1/26/95		10.79	100	89.21
4/19/95		10.90	100	89.10
7/24/95		11.92	100	88.08
10/12/95		12.16	100	87.84
1/17/96		Buried in snow	NA	NA
4/11/96		Covered	NA	NA
10/9/96		10.72	NA	NA
MW-3				
10/4/94	9.91 to 19.91	14.61	102.57	87.96
1/26/95		14.44	102.57	88.13
4/19/95		14.56	102.57	88.01
7/24/95		15.49	102.57	87.08
10/12/95		15.83	102.57	86.74
1/17/96		15.05	102.57	87.52
4/11/96		13.53	102.57	89.04
10/9/96		14.39	102.57	88.18
MW-4				
10/4/94	10.05 to 20.05	13.85	103.41	89.56
1/26/95		13.60	103.41	89.81
4/19/95		13.73	103.41	89.68
7/24/95		14.63	103.41	88.78
10/12/95		15.07	103.41	88.34
1/17/96		14.11	103.41	89.30
4/11/96		12.61	103.41	90.80
10/9/96		13.55	103.41	89.86
Well Number	**Screened Interval Depth**	**Depth to Water**	**Measuring Point Elevation**	**Groundwater Elevation**
MW-5				
10/4/94	6.27 to 16.27	10.44	99.32	88.88
1/26/95		10.18	99.32	89.14
4/19/95		10.37	99.32	88.95
7/24/95		11.31	99.32	88.01
10/12/95		11.64	99.32	87.68
1/17/96		Buried in snow	NA	NA
4/11/96		9.42	99.32	89.90
10/9/96		10.12	99.32	89.20
MW-6				
10/4/94	6.00 to 16.00	9.86	Not Found	NA
1/26/95		Not Found	NA	NA
4/19/95		Not Found	NA	NA
7/24/95		Not Found	NA	NA
10/12/95		Not Found	NA	NA
1/17/96		Not Located	NA	NA
4/11/96		Not Located	NA	NA
10/9/96		10	Not Found	NA
MW-7				
10/4/94	12.56 to 22.56	9.01	98.76	89.75
1/26/95		8.83	98.76	89.93
4/19/95		8.97	98.76	89.79
7/24/95		9.90	98.76	88.86
10/12/95		10.35	98.76	88.41
1/17/96		8.58	98.76	90.18

Prepared by CMB
Reviewed by SB
Revised 11/13/96

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GROUNDWATER ELEVATION MEASUREMENTS
Jameco Industries, Inc.
Wyandanch, Ave., Wyandanch, New York
(unit, feet)

4/11/96		7.97	98.76	90.79
10/9/96		8.70	98.76	90.06
MW-8				
10/4/94	10.89 to 20.89	10.70	99.47	88.77
1/26/95		10.43	99.47	89.04
4/19/95		10.60	99.47	88.87
7/24/95		11.42	99.47	88.05
10/12/95		11.89	99.47	87.58
1/17/96		Buried in snow	NA	NA
4/11/96		9.64	99.47	89.83
10/9/96		10.34	99.47	89.13

Well Number	Screened Interval Depth	Depth to Water	Measuring Point Elevation	Groundwater Elevation
MW-9				
10/4/94	10.57 to 20.57	8.90	97.80	88.90
1/26/95		8.68	97.80	89.12
4/19/95		8.88	97.80	88.92
7/24/95		9.72	97.80	88.08
10/12/95		9.98	97.80	87.82
1/17/96		9.28	97.80	88.52
4/11/96		7.88	97.80	89.92
10/9/96		8.55	97.80	89.25
MW-10		8.55	97.80	89.25
10/4/94	86.7 to 96.7	11.14	99.97	88.83
1/26/95		10.53	99.97	89.44
4/19/95		10.72	99.97	89.25
7/24/95		11.66	99.97	88.31
10/12/95		12.06	99.97	87.91
1/17/96		11.24	99.97	88.73
4/11/96		9.76	99.97	90.21
10/9/96		10.57	99.97	89.40
MW-11				
10/4/94	50.0 to 60.0	10.77	99.95	89.18
1/26/95		10.54	99.95	89.41
4/19/95		10.66	99.95	89.29
7/24/95		11.61	99.95	88.34
10/12/95		12.10	99.95	87.85
1/17/96		11.21	99.95	88.74
4/11/96		9.68	99.95	90.27
10.09/96		10.45	99.95	89.50
MW-12				
10/4/94	5.35 to 15.35	11.79	99.97	88.18
1/26/95		10.51	99.97	89.46
4/19/95		10.66	99.97	89.31
7/24/95		11.66	99.97	88.31
10/12/95		12.08	99.97	87.89
1/17/96		11.20	99.97	88.77
4/11/96		10.10	99.97	89.87
10/9/96		10.47	99.97	89.50

Well Number	Screened Interval Depth	Depth to Water	Measuring Point Elevation	Groundwater Elevation
MW-13*				
10/4/94		10.00/10.25	99.67	89.63**
1/26/95		9.85/9.86	99.67	89.82**
4/19/95		10.02/10.01	99.67	89.65**
7/24/95		Destroyed		
4/11/96		Destroyed		
10/9/96				
MW-14				
7/24/95	3-20	Not Gauged	100.07	NA
10/12/95		11.98	100.07	88.09
1/17/96		Not Located	NA	NA
4/11/96		9.51	100.07	
10/9/96		10.26	100.07	89.81
MW-15				
7/24/95	3-20	11.23/12.81	99.98	88.54**

Prepared by CMB
Reviewed by SB
Revised 11/13/96

Table 1
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Jameco Industries, Inc.
Wyandanch, Ave., Wyandanch, New York
(unit, feet)

10/12/95		Covered	NA	NA
1/17/96		10.93/11.38	99.98	88.99
4/11/96		9.50	99.98	90.48
10/9/96		10.20	99.98	89.78
MW-16				
7/24/95	5-25	11.49	99.97	88.48
10/12/95		Not Gauged	NA	NA
1/17/96		Under equipment	NA	NA
4/11/96		9.62	99.97	90.35
10/9/96		DNF		
MW-17				
7/24/95	5-25	Not Accessible	100.03	NA
10/12/95		12.08	100.03	87.95
1/17/96		Under equipment	NA	NA
4/11/96		9.74	100.03	90.29
10/9/96		DNF		

Well Number	Screened Interval Depth	Depth to Water	Measuring Point Elevation	Groundwater Elevation
MW-18				
7/24/95	5-25	11.55	99.97	88.42
10/12/95		12.02	99.97	87.95
1/17/96		11.16	99.97	88.81
4/11/96		9.65	99.97	90.32
10/9/96		10.42	99.97	89.55
MW-19				
7/24/95	5-25	11.21/13.35	100.00	88.51**
10/12/95		Not Gauged	NA	NA
1/17/96		11.00/11.35	100.00	88.95
4/11/96		9.54	100.00	90.46
10/9/96		10.27	100.00	89.73
MW-20				
7/24/95	5-25	11.47	100.00	88.53
10/12/95		Covered	NA	NA
1/17/96		11.09	100.00	88.91
4/11/96		9.63	100.00	90.37
10/9/96		10.33	100.00	89.67
MW-21				
7/24/95	3-20	11.46	100.02	88.48
10/12/95		11.96	100.02	88.06
1/17/96		11.09	100.02	88.93
4/11/96		9.62	100.02	90.40
10/9/96		10.33	100.02	89.69
MW-22				
7/24/95	3-20	11.48	99.95	88.48
10/12/95		11.98	99.95	87.97
1/17/96		Covered	NA	NA
4/11/96		9.58	99.95	90.37
10/9/96		10.30	99.95	89.65
MW-23				
7/24/95	3-20	11.45	100.10	88.48
10/12/95		11.92	100.10	88.18
1/17/96		11.07	100.10	89.03
4/11/96		9.57	100.10	90.53
10/9/96		10.31	100.10	89.79
MW-24				
10/9/96	6-21	9.99	NA	NA
MW-25				
10/9/96	6-21	9.90	NA	NA
MW-26				
10/9/96	6-21	9.99	NA	NA

* = Previously referred to as "Mystery Well"

** = Corrected for Petroleum Thickness assuming density of 0.87

Product thickness not measured during the 10/12/95 gauging event.

Table 2

Sample Identification	Chloro-methane	Chloro-form	1,1-dichloro-ethane	cis-1,2-dichloro-ethene	Ethyl Benzene	Methylene Chloride	4-Methyl-2-pentanone	Methyl-t-butyl ether	1,1,2,2-Tetra-chloroethane	Tetrachloro ethene	Toluene	Trans 1,2-DCE	1,1,1-Trichloro ethane	1,1,2-Trichloro ethane	Trichloro ethene	1,2,4-Trimethyl benzene	Vinyl Chloride	Xylenes (total)
MW-1																		
6/91	ND	ND	ND	ND	ND	ND	7	NA	ND	ND	ND	ND	11	ND	ND	ND	ND	ND
5/23/94	ND	ND	ND	ND	NA	0.2	NA	NA	ND	ND	ND	ND	30	ND	ND	ND	ND	NA
1/27/95	ND	ND	ND	ND	NA	ND	NA	NA	ND	ND	ND	ND	0.6	ND	ND	ND	ND	NA
4/19/95	ND	ND	ND	ND	ND	1	NA	NA	0.3	ND	ND	ND	0.6	ND	ND	ND	ND	ND
7/24/95	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	0.7	ND	ND	ND	ND	ND
10/12/95	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1/17/96	ND	ND	ND	ND	ND	7.1	NA	3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4/11/96	ND	ND	ND	ND	ND	ND	ND	1.7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
10/10/96	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-2																		
6/91	ND	ND	ND	ND	ND	ND	ND	NA	ND	1500	ND	ND	12	ND	5400	ND	ND	ND
5/23/94	ND	ND	ND	ND	NA	0.3	NA	NA	ND	28	ND	ND	4	0.4	1200	0.2	12	NA
1/27/95	ND	ND	ND	ND	NA	ND	NA	NA	ND	26	ND	ND	ND	ND	180	ND	33	NA
4/19/95	ND	ND	ND	ND	ND	ND	NA	NA	ND	11	ND	ND	ND	ND	46	ND	6	ND
7/24/95	ND	ND	ND	ND	ND	ND	ND	NA	ND	0.5	ND	ND	ND	ND	5	ND	ND	ND
10/12/95	ND	ND	ND	ND	ND	6.7	ND	NA	ND	ND	ND	ND	ND	ND	21	ND	ND	ND
10/10/96	ND	ND	ND	48	ND	ND	ND	NA	ND	37	ND	ND	ND	ND	7	ND	1J	ND
MW-3																		
6/91	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
5/23/94	ND	ND	ND	ND	NA	0.2	NA	NA	ND	ND	ND	ND	ND	ND	10	ND	ND	NA
1/27/95	ND	ND	ND	ND	NA	ND	NA	NA	ND	ND	ND	ND	ND	ND	4	ND	ND	NA
4/19/95	ND	ND	ND	ND	ND	ND	NA	NA	ND	25	ND	ND	ND	ND	170	ND	ND	ND
7/24/95	ND	ND	ND	ND	ND	ND	ND	NA	ND	4	ND	ND	ND	ND	12	ND	ND	ND
10/12/95	ND	ND	ND	ND	ND	12	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1/17/96	1.8***	ND	ND	ND	ND	8.1	NA	ND	ND	1.7	ND	ND	ND	ND	5.3	ND	ND	ND
4/11/96	ND	ND	ND	29	ND	1.1	ND	ND	ND	3.9	ND	ND	ND	ND	94	ND	ND	ND
10/10/06	ND	ND	ND	25	ND	ND	ND	NA	ND	9	ND	ND	ND	ND	160	ND	ND	ND
MW-5																		
6/91	ND	ND	ND	ND	2	6	46	NA	ND	30	14	ND	30	ND	17	ND	ND	5
5/23/94	ND	ND	ND	ND	NA	0.3	NA	NA	ND	9	0.9	ND	0.2	ND	14	ND	5	NA
1/27/95	ND	ND	ND	ND	NA	ND	NA	NA	ND	5	ND	ND	ND	ND	5	ND	0.5	NA
4/19/95	ND	ND	ND	ND	ND	ND	NA	NA	ND	4	ND	ND	ND	ND	5	ND	ND	ND
7/24/95	ND	ND	ND	ND	ND	ND	ND	NA	ND	280	ND	ND	ND	ND	9	ND	ND	ND
10/12/95	ND	ND	ND	ND	ND	11	ND	NA	ND	11	ND	ND	ND	ND	5.6	ND	ND	ND
4/11/96	ND	ND	ND	81	ND	ND	ND	4.1	ND	ND	ND	ND	ND	ND	2.0	ND	7.5	ND
10/10/96	ND	ND	ND	13	ND	ND	3JB	NA	ND	5	ND	ND	ND	ND	40	ND	30	ND
MW-7																		
6/91	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
5/23/94	ND	ND	ND	ND	NA	0.3	NA	NA	ND	30	ND	ND	ND	ND	4	ND	ND	NA
1/27/95	ND	ND	ND	ND	NA	ND	NA	NA	ND	39	ND	ND	ND	ND	3	ND	ND	NA
4/19/95	ND	ND	ND	ND	ND	ND	NA	NA	ND	15	ND	ND	ND	ND	0.6	ND	ND	ND
7/24/95	ND	ND	ND	ND	ND	ND	ND	NA	ND	13	ND	ND	ND	ND	0.8	ND	ND	ND
10/12/95	ND	ND	ND	ND	ND	12	ND	NA	ND	51	ND	ND	ND	ND	9.7	ND	ND	ND
1/17/96	ND	ND	ND	2.9	ND	7.6	NA	1.3	ND	17	ND	ND	ND	ND	1.3	ND	ND	ND
4/11/96	ND	ND	ND	ND	ND	2.3	ND	1.2	ND	1.3	ND	ND	ND	ND	ND	ND	ND	ND
10/10/96	ND	ND	ND	ND	ND	ND	ND	NA	ND	2J	ND	ND	ND	ND	160	ND	ND	ND
MW-9																		
6/91	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
5/23/94	ND	ND	ND	ND	NA	ND	NA	NA	ND	2	ND	ND	ND	ND	0.3	ND	ND	NA
1/27/95	ND	ND	ND	ND	NA	ND	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
4/19/95	ND	ND	ND	ND	ND	ND	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
7/24/95	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
10/12/95	ND	ND	ND	ND	ND	11	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1/17/96	ND	58	ND	ND	ND	8.8	NA	3.9	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4/11/96	ND	ND	ND	ND	ND	ND	ND	3.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
10/10/96	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-12																		
6/91	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	ND	NA	NA	NA	NA	NA	NA
5/23/94	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	ND	NA	NA	NA	NA	NA	NA
1/27/95	ND	ND	ND	ND	NA	370	NA	NA	ND	120	ND	ND	ND	ND	3300	ND	ND	NA
4/19/95	ND	ND	ND	ND	ND	ND	NA	NA	ND	400	ND	ND	ND	ND	1500	ND	58	ND
7/24/95	ND	ND	ND	ND	ND	ND	ND	NA	ND	100	ND	ND	ND	ND	1800	ND	54	ND
10/12/95	ND	ND	ND	ND	ND	11	ND	NA	ND	75	ND	ND	6.7	ND	1700	ND	17	ND
1/17/96	ND	13	ND	ND	ND	8	NA	ND	ND	75	ND	18	5.3	ND	1400	ND	ND	ND
4/11/96	ND	5.0	8.9	1,400	ND	14	1.2	ND	ND	220	ND	23	15	1.5	4,200	ND	94	ND
10/10/96	ND	ND	ND	1,800	ND	30J	ND	NA	ND	190	ND	ND	ND	ND	1,900	ND	66J	ND

Notes:

Standard* refers to the groundwater standard for each element for Class GA groundwaters (6NYCRR Parts 700-705)

MDL - Method Detection Limit NA - Not Analyzed ND - Not Detected NS - Not Sampled

MDL - Ranged from 0.20 ppb to 2 ppb depending on analysis and element.

No compounds were detected above detection limits for samples from 6/91 and 5/18/94.

Wells that were not sampled on specific dates were not included in the sample identification column.

Laboratory analyses were conducted via EPA Method 8260 or 542 or equivalent.

Complete laboratory reports for 1/27/95 sampling are included in GEC's Quarterly Monitoring Report.

Information on this table is summarized from previous investigations.

Acetone, dichlorodiflouromethane, 2-butanone and 2-hexanone were detected in several samples. These results were not tabulated as they are considered laboratory contaminants and not representative of site conditions.

* Reported as total 1,2-dichloroethene

** No guidance value exists

*** detected below quantitation limit

J - Compound was analyzed for and determined to be present in the sample. The concentration listed is an estimated value.

B - Analyte is found in the blanks as well as the sample.

Prepared by CMB
Reviewed by SB
Revised 11/13/96

Table 3

Sample Identification	Antimony	Arsenic	Beryllium	Cadmium	Chromium	Hexavalent Chromium	Copper	Lead	Mercury	Nickel	Selenium	Silver	Thallium	Zinc
MW-1														
5/23/95	32	0.019	ND	ND	0.029	0.02	0.026	0.035	0	ND	ND	ND	ND	0.173
1/27/95	ND	0.042	ND	0.0068	0.065	ND	0.084	0.056	0.00029	0.042	ND	0.01	ND	0.250
4/19/95	ND	0.035	ND	0.0061	0.040	NA	0.054	0.044	ND	ND	ND	ND	ND	0.16
7/24/95	ND	0.048	ND	0.0077	0.052	ND	0.071	0.044	0.00034	ND	ND	ND	ND	0.18
10/27/95	NA	0.083	NA	ND	0.075	ND	NA	0.057	ND	NA	ND	ND	NA	NA
1/17/96	ND	0.129	0.00555	ND	0.124	ND	0.141	0.0861	ND	0.105	0.00552	ND	ND	0.353
4/11/96	ND	0.0509	ND	ND	0.0527	ND	0.0626	0.0421	ND	0.0434	ND	ND	ND	0.182
10/10/96	0.006	0.0245	0.00260	0.003	0.0373	ND	0.0437	0.0340	0.000	0.0261	0.00400	0.001	0.006	0.149
MW-2														
5/23/95	0.038	0.007	ND	ND	8.88	0.24	3.16	0.087	0	4.49	ND	ND	ND	0.747
1/27/95	ND	0.03	ND	0.014	4	ND	3.8	0.079	0.00048	5.7	ND	0.01	ND	0.700
4/19/95	ND	0.060	ND	0.021	4.9	NA	3.5	0.11	0.00044	4.3	ND	ND	ND	0.69
7/24/95	ND	0.054	ND	0.019	3.9	ND	4.1	0.10	0.0013	3.6	ND	ND	ND	0.67
10/27/95	NA	0.086	NA	ND	4.09	ND	NA	0.108	0.0038	NA	ND	0.014	NA	NA
10/10/96	0.006	0.0676	0.0042	0.016	3.01	ND	3.34	0.0815	0.0002	2.53	0.014	0.001	0.0105	0.553
MW-3														
5/23/95	ND	ND	ND	ND	0.119	0.02	0.597	ND	ND	1.75	ND	ND	ND	0.109
1/27/95	ND	ND	ND	ND	0.32	ND	4.5	ND	ND	3.5	ND	0.011	ND	0.680
4/19/95	ND	ND	ND	ND	0.20	NA	2.8	ND	ND	2.0	ND	ND	ND	0.37
7/24/95	ND	ND	ND	ND	0.061	ND	6.6	ND	0.0002	4.2	ND	ND	ND	0.89
10/27/95	NA	ND	NA	ND	0.201	ND	NA	0.041	ND	NA	ND	ND	NA	NA
1/17/96	ND	ND	ND	ND	0.226	ND	4.630	0.0271	ND	2.640	ND	ND	ND	0.469
4/11/96	ND	0.00964	ND	ND	0.490	ND	3.030	0.0426	ND	3.350	ND	ND	ND	0.430
10/10/96	0.006	0.00600	0.001	0.001	0.183	ND	1.600	0.0331	0.0002	1.670	0.004	0.001	0.010	0.340
MW-5														
5/23/95	0.040	0.029	ND	ND	0.117	0.02	0.639	0.022	0	0.373	ND	ND	ND	0.582
1/27/95	ND	0.046	ND	0.0066	0.1	ND	0.73	0.020	ND	0.23	ND	0.013	ND	0.480
4/19/95	ND	0.049	ND	0.0081	0.13	NA	0.92	0.038	ND	0.27	ND	ND	ND	0.42
7/24/95	ND	0.048	ND	0.007	0.10	ND	0.75	0.018	0.00022	0.19	ND	ND	ND	0.36
10/27/95	NA	0.087	NA	ND	0.221	ND	NA	0.038	ND	NA	ND	ND	NA	NA
4/11/96	ND	0.0991	ND	ND	0.222	ND	1.330	0.0413	0.00025	0.469	0.00515	ND	ND	0.888
10/10/96	0.006	0.0745	0.0025	0.0089	0.22	ND	1.160	0.0383	0.00023	0.475	0.0124	0.001	0.0153	0.598
MW-7														
5/23/95	ND	0.005	ND	ND	ND	0.01	ND	0.006	ND	0.025	ND	ND	ND	0.026
1/27/95	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.011	ND	ND
4/19/95	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND
7/24/95	ND	ND	ND	0.0052	ND	ND	0.013	ND	ND	ND	ND	ND	ND	0.035
10/27/95	NA	0.015	NA	ND	0.021	ND	NA	0.011	ND	NA	ND	ND	NA	NA
1/17/96	ND	0.0104	ND	ND	ND	ND	0.0204	0.00718	ND	ND	0.00703	ND	ND	0.0333
4/11/96	ND	ND	ND	ND	ND	ND	0.0204	0.00919	ND	ND	ND	ND	ND	0.0327
10/10/96	0.006	0.0060	0.001	0.001	0.012	ND	0.0131	0.00450	0.000	0.007	0.00400	0.001	0.010	0.0220
MW-9														
5/23/95	ND	ND	ND	ND	ND	0.01	ND	0.005	0	ND	ND	ND	ND	0.034
1/27/95	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.011	ND	0.024
4/19/95	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	0.025
7/24/95	ND	0.013	ND	ND	0.017	ND	0.019	0.010	ND	ND	ND	ND	ND	0.10
10/27/95	NA	0.013	NA	ND	0.021	ND	NA	0.013	ND	NA	ND	ND	NA	NA
1/17/96	ND	0.0131	ND	ND	0.0243	ND	0.0282	0.0137	ND	0.0162	ND	ND	ND	0.108
4/11/96	ND	0.0124	ND	ND	ND	ND	0.0224	0.0126	ND	0.0158	ND	ND	ND	0.162
10/10/96	0.006	0.006	0.001	0.001	0.0082	ND	0.0098	0.0035	0.002	0.0040	0.004	0.001	0.015	101.000
MW-12														
5/23/95	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
1/27/95	0.18	0.11	0.019	0.082	18	ND	21	0.310	0.0013	21	0.0055	ND	ND	5.600
4/19/95	ND	0.10	0.015	0.059	14	NA	25	0.23	0.0013	22	ND	ND	ND	4.7
7/24/95	0.16	0.073	0.011	0.05	10	ND	13	0.16	0.0013	16	ND	ND	ND	3.0
10/27/95	NA	0.047	NA	0.017	5.870	ND	NA	0.09	0.0052	NA	ND	ND	NA	NA
1/17/96	ND	0.0423	ND	ND	ND	ND	ND	0.0761	0.00048	9.740	ND	ND	ND	4.260
4/11/96	ND	0.0245	ND	ND	2.550	0.0219	6.730	0.0462	0.00034	38.8	ND	ND	ND	5.0
10/10/96	0.006	0.015	0.003	0.008	2.070	ND	7.260	0.0358	0.00020	37.200	0.004	0.001	0.012	2.680
Standard	**0.003****	**0.025**	**0.003**	**0.01**	**0.05**	**0.05**	**0.2**	**0.025**	**0.002**	**No Stnd.**	**0.01**	**0.05**	**.004****	**0.300**

Notes:

Samples were analyzed via the following SW-846.

Standard * refers to the groundwater standard for each element for Class GA groundwaters (6NYCRR Parts 700-705).

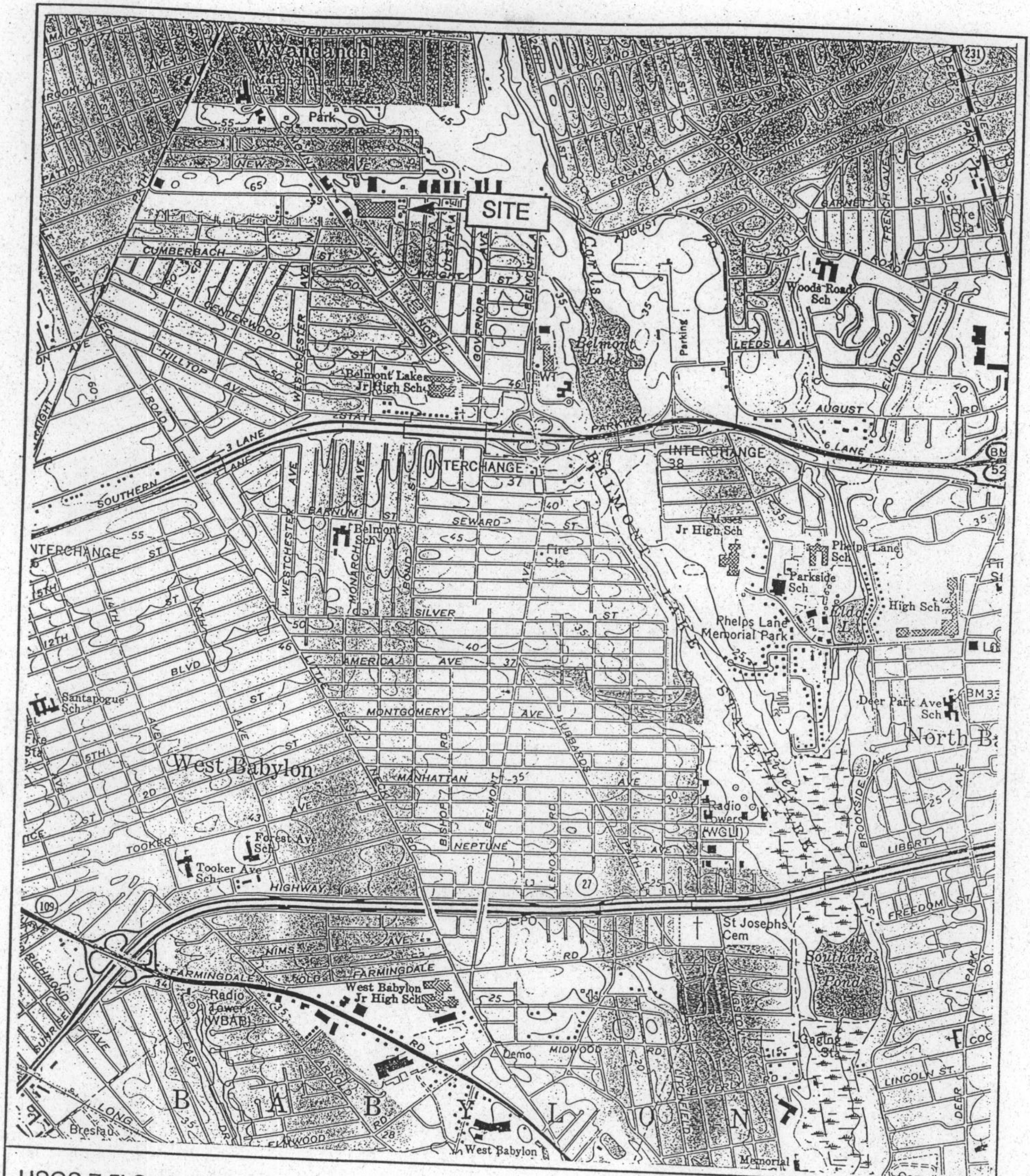
** Refers to a Guidance value where no Standard exists.

Barium was detected during 10/12/95 sampling period between 43.5 and 870 ppm.

MDL= Method Detection Limit (Method Detection Limit ranges from 0.00020 ppm to 0.2 ppm depending on analysis and element.
ND= Not Detected
NA= Not Analyzed
NS= Not Sampled

Prepared by CMB
Reviewed by SB
Revised 11/13/96

FIGURES



USGS 7.5' Series Topographic

BAY SHORE WEST, N.Y. Quadrangle

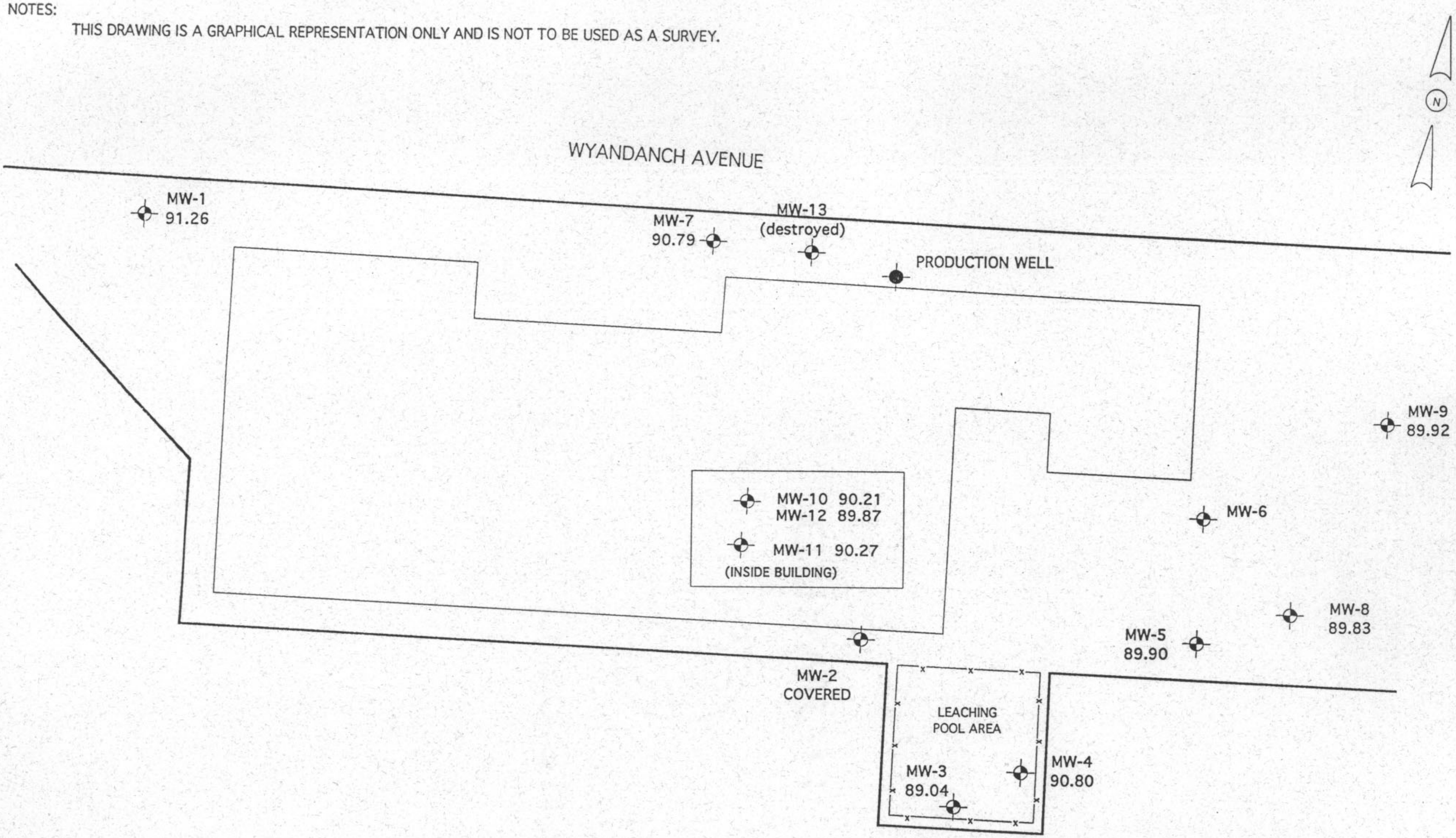
GEC Goldman Environmental Consultants, Inc.
15 Pacella Park Drive
Randolph, MA 02368
(617) 961-1200

SITE LOCATION MAP
248 WYANDANCH AVENUE
WYANDANCH, NEW YORK
Project No. 444-010-95

FIGURE 1
SCALE
1 : 24 000
N

NOTES:

THIS DRAWING IS A GRAPHICAL REPRESENTATION ONLY AND IS NOT TO BE USED AS A SURVEY.



GROUND WATER ELEVATION PLAN

JAMECO INDUSTRIES
248 WYANDANCH AVENUE
WYANDANCH, NEW YORK

JOB NUMBER: 444-006-94	SCALE: 1" = 100' ±
DATE: May 2, 1996	DRAWN BY: JRD
	CHECKED BY: SWB

GEC Goldman Environmental Consultants, Inc.
15 Pacella Park Drive
Randolph, MA 02368
(617) 961-1200 or (800) 446-2014

FIGURE
2

APPENDIX A

STANDARD OPERATING PROCEDURES

Standard Operating Procedure
Decontamination Procedures for Field Equipment

All field equipment (bailers, well sounder, gloves, etc.) must be decontaminated before each use, between samples and before it is returned to the equipment room. Decontamination procedures vary for the type of analyses to be performed. The following basic procedures should always be used to decontaminate equipment regardless of the type of analysis:

1) Scrub equipment with soapy water (Liquinox, Alconox, trisodiumphosphate or equivalent).
2) Rinse with tap water, if available.
3) Rinse with deionized water from green spray bottle.

For Metals, perform the following additional procedures:

4) Rinse with 10% nitric acid (HNO_3).
5) Final rinse with deionized water.

For base/neutral/acid extractables, PCB's and pesticides perform the following, additional procedures:

4) Rinse with acetone and let dry.
5) Rinse with hexane and let dry.
6) Final rinse with deionized water.

For Volatile Organics and all other analyses, perform the following additional procedures:

4) Rinse with methanol.
5) Final rinse with deionized water

<u>NOTE</u>: When sampling for more than one of the above types of analyses, use the protocol for volatile organics last.
Solvent use should be gauged carefully so that a minimal amount of solvent is left after use. Allow any remaining solvent to evaporate.

Standard Operating Procedure
Observation Well Sampling
Using a Bucket-Type Bailer

This protocol is designed to ensure that proper techniques are used, safety is considered and quality assurance maintained during the performance of observation well sampling. A GEC representative is assigned to oversee and/or perform all observation well sampling for the project. The duties of the representative are to ensure that the scope of work is followed.

Sampling of groundwater observation wells is the primary means by which the chemical characteristics of groundwater can be determined. Therefore, it is imperative that care be taken in the development and subsequent sampling of observation wells. Water standing in the well prior to sampling may be stagnant and may not be representative of true groundwater quality in the aquifer in question

Procedures for performance of groundwater observation well evacuation and sampling are outline in the following paragraphs:

<u>Well Evacuation</u>:

1) Prior to initiating any work, the Health and Safety Plan developed for the specific site activities should be reviewed by all field personnel. The indicated measures on the Plan should be enacted prior to initiation of the sampling activities. Any concerns not addressed in the Plan are to be brought immediately to the attention of the Health and Safety Officer. Personnel participating in the sampling will dress with protective equipment appropriate for the anticipated conditions.

2) Decontaminate all equipment to be used in the performance of the activities. Decontamination should at least be performed by alternately rinsing all equipment with methanol and distilled water and vigorously scrubbing the equipment with a clean brush.

3) The extent that contamination may be known at a given site, observation wells should be sampled in an order from "least contaminated" to "most contaminated".

4) Screen the well headspace with a photoionization detector (PID) or other appropriate instrumentation to confirm that concentrations of potential contaminants are within acceptable limits.

5) Test the well for accumulation of non-aqueous phase product (LNAPL or DNAPL) using a pre-cleaned interface probe or transparent disposable bailer. If present, collect a sample of the NAPL and place in an appropriate sample container. This sample should be kept away from other samples.

6) Measure and record the depth to NAPL(if present), depth to water, and total depth of the wells. If NAPL is present, sampling for dissolved phase contaminants should generally not be performed. In addition, if sampling is to be performed, appropriate measures should be taken to assure that any water removed from a contaminated well is disposed appropriately.

7) Calculate the volume of saturated well casing and the volume of water which will be removed to assure sufficient well evacuation. Evacuate well water into a clean, small (< 0.5 gallons), bucket or similar vessel in which precleaned and calibrated conductivity and pH probes have been placed. Attach a precleaned bailer to cable or line for lowering the bailer into the well. Lower the bailer slowly into the well until it contacts the water surface. Allow the bailer to sink and fill with a minimum of surface disturbance. Raise the bailer to the surface . Do not allow the bailer line to contact the ground. Drain the bailer into the small bucket.

8) Purging should continue until between three and five well volumes have been evacuated and pH, temperature, and specific conductivity values do not vary appreciably.

9) Record final pH, conductivity and temperature values.

10) Allow between one (1) and four (4) hours for the well to equilibrate prior to sampling. Discard string, and discard or decontaminate the bailer or pump in accordance with the Protocol for Decontamination.

Well Sampling:

1) Sampling of observation wells will be conducted only with clean, decontaminated Teflon, or stainless steel sampling bailers or with clean disposable bailers. Disposable bailers shall not be re-used for any purpose. In addition, disposable gloves are worn for each individual well sampling and line used to support the bailer is to be discarded between wells.

2) Samples at any given well will be collected in order of decreasing order of sensitivity to volatilization (i.e. VOC, total organic carbon, semi-volatile organics (BNA), ammonia, PCBs, pesticides, oil and grease, phenols, cyanide, sulfate and chloride, nitrate and ammonia, metals and radionuclides).

3) Lower the bailer slowly until it contacts the water surface. Allow the bailer to sink to a point such that the bailer becomes filled with water, but not to the point where the string comes in contact with the water. Note: Under specific sampling conditions this sample collection procedure may vary. Under these conditions specific notation is required regarding any modifications or amendments made to the Protocol.

4) Slowly raise the bailer to the surface and remove the bailer from the well. Care should be taken to ensure that the string and bailer do not come in contact with the ground or other potential contaminant sources.

5) Carefully and slowly transfer the contents of the bailer into appropriately preserved, pre-labeled containers. Check that the sample containers seal properly and that the cap is sealed tightly. Record applicable information in the field logbook and complete all chain-of-custody documents.

6) Discard string, and discard or decontaminate the bailer appropriately.

Standard Operating Procedure
Sample Preservation and Chain of Custody

This protocol is designed to ensure that proper techniques are employed in the preservation and chain-of custody of samples collected for laboratory analyses or for screening. This Protocol is intended to be consistent with Massachusetts Publication #WSC-310-91 (Standard References for Monitoring Wells), and 40 CFR 136 (Guidelines Establishing Test Procedures for the Analysis of Pollutants).

The results of screening and/or laboratory analysis of solid, liquid or gaseous media constitute the basis of evaluation of the majority of the disposal sites under investigation. It is therefore imperative that the preservation of the samples be appropriate to the media being analyzed as well as the analysis which is being performed. In addition, the integrity of the sample is dependent upon the premise that a clear chain of responsibility for the sample integrity has been maintained. Without this "Chain-of-Custody", the integrity of the laboratory results may inevitably come into question.

The preservation and Chain-of-Custody (COC) protocols outlined in the following paragraphs are not intended to be all inclusive, and this protocol is written with the understanding that the sampling of certain media or analyses may require specific sample preservation. This protocol is, however, intended to cover the majority of the media and analyses performed as well as the COC procedures employed at the majority of waste disposal sites.

A COC program must be followed during sampling and handling activities from the field through laboratory operations. This program is designed to assure that each sample is accounted for at all times. Field data sheets, COC records, and sample labels must also be completed by the appropriate sampling and laboratory personnel for each sample. The objective of the sample custody identification and control system is to assure, to the extent practical, that:

- all samples are uniquely identified;
- the correct samples are analyzed for the correct parameters and are traceable through their records;
- important sample characteristics are preserved;
- samples are protected from damage or loss;
- any processing of samples (e.g., filtration, preservation) is documented; and
- client confidentially is maintained.

A sample is considered under a COC if it meets all of the following criteria:

- the sample is in your custody,
- the sample is in your view, after being in your possession,
- the sample is in your possession and then you locked it up to prevent tampering, and
- the sample is in a designated, secured area.

The following paragraphs outline GEC's preservation and COC protocol.

1) Prior to initiating any work, the Health and Safety Plan developed for the specific site activities should be reviewed by all field personnel. The indicated measures on the Plan should be enacted prior to initiation of any sampling activities. Any concerns not addressed in the Plan are to be brought immediately to the attention of the Health and Safety Officer. Personnel participating in the excavations will dress with protective equipment appropriate for the anticipated conditions.

2) Sample integrity is assured by use of containers appropriate to both the matrix to be sampled and the analytes of interest. Sample containers must be prepared in the laboratory in a manner consistent with USEPA protocols. Unless the proper sample bottle preparation and sample preservation measures are taken in the field, sample composition can be altered by contamination, degradation, biological transformation, chemical interaction, and other factors during the time between sample collection and analysis. Prior to sampling GEC personnel will ensure that the sample containers obtained from either a laboratory or a commercial supplier have been prepared in accordance with DEP and EPA protocols. Sample containers are to be used once and discarded. Under no circumstance should a soil, water or gaseous media which has been collected for analysis be placed in a previously used sample container unless that container has been recleaned and preserved by a certified laboratory.

   As part of the COC protocol, sample containers should have prepared labels for each sample. The label should include sample identification, date and time of collection, sample parameters to be analyzed, any preservatives used, and the name of the sample collector.

   Upon collection of the sample(s), documentation of chain of custody (i.e. COC form) should be initiated and should include at least the following:

   - date and time of sampling;
   - sampling locations;
   - sample bottle identification;
   - and specific sample acquisition measures.

   The COC and sample description requires:

   - a unique identification of each sample;
   - the name(s), address(es) and telephone number(s) of the sampler(s) and the person(s) shipping the samples and all subsequent transfers of custody;
   - the type and method of analyses requested;

- the date and time of sample collection and transfer of custody; and the name(s) of those responsible for receiving the samples at the laboratory.

3) In some cases, field filtration of samples may be required. Information regarding the method of filtration should be determined in advance and communicated to the laboratory. Filtering of any sample collected for organic analysis should be avoided. Decanting of a liquid media is a preferred method for the removal of particulate matter. When field filtering is required, an appropriate filter medium must be selected to avoid potential sample contamination during the filtering process.

4) Sample holding times are specified for the initiation of chemical analyses, usually beginning at the time of sample collection but occasionally beginning at the time of sample receipt at the laboratory. This determination must be made prior to sampling to allow proper logistical planning for sample shipments. Holding times also vary with the regulatory basis under which analyses are conducted. It is essential that the laboratory be consulted before sampling take place in order to properly schedule work.

5) Sample containers are most often packed in plastic, insulated "coolers" for shipment. Bottles are to be packed tightly so that only minimal motion of the sample containers is possible. Materials which are considered to be highly hazardous may require special handling and packing for shipment. Ice, or a similar heat transfer fluid, should be placed over the top of the sample containers and should be placed within a water tight plastic bag to assure that the samples are kept as dry as possible. In addition, all applicable paper work should also be enclosed within a second water-tight bag and included in the cooler. The sample cooler should then be taped shut.

6) Upon receipt of the samples at the laboratory, any laboratory identification numbers should also be included on the COC form. Finally, those responsible for receipt of the samples should be indicated on the COC form as well as the date and time of the sample drop-off.

Standard Operating Procedure
Field Sampling Protocols
Quality Assurance/Quality Control

I. Purpose

The purpose of the GEC QA/QC program is to generate analytical data that is of known and defensible quality. These procedures apply to all projects in which sampling is involved. QA/QC from one project is not transferable to another.

II. Decontamination

1) Decontamination should be performed on all reusable field sampling equipment and protective gear. Sampling equipment should be decontaminated before the collection of a sample and after sampling has been completed. Protective gear should be decontaminated after the collection of a sample.

2) It is necessary to use the following decontamination solutions in the field:

   - Non-phosphate detergent plus tap water wash.
   - Distilled/ deionized water rinse.
   - 10% Nitric Acid rinse.*
   - Distilled/ deionized water rinse.*
   - Methanol rinse, when sampling volatiles only.
   - Acetone then hexane rinse.**
   - Distilled/ deionized water rinse. **

   * Only if sample is to be analyzed for metals.
   ** Only if sample is to be analyzed for semi-volatile organics, PCBs or pesticides.

3) Sample bottles and sampling equipment should not be stored near gasoline, solvents, or other potential sources of contamination. If unavoidable bottles and equipment should be sealed in containers or plastic.

4) Heavy equipment, including hand tools, should be cleaned by steam cleaning or manual scrubbing prior and subsequent to use in hazardous waste investigations.

III. Measures or Quality Control/Quality Assurance

1. Trip Blanks

- Trip blanks are used in order to detect additional sources of contamination that might affect analytical results. The following are potential sources of additional contamination:
  a. Sample containers,
  b. Contamination during shipment to and from the site,
  c. Ambient air contact with analytical instrumentation at the laboratory during analysis, or
  d. Laboratory reagent used in analytical procedures.

- One trip blank is required for every set of samples sent to the lab regardless of job size. Generally, the trip blank should be for VOCs. If, however, VOCs are not a parameter of the sampling round, consult the laboratory as to which parameter should have an associated trip blank.

- Trip blanks are to be kept with containers used in the sampling round at all times. More specifically, they should accompany the site specific sampling containers from the time the containers leave the laboratory until they are returned for analysis.

- Obtain containers and trip blanks prepared specifically for each job from the laboratory. Return unused containers to the laboratory upon completion of a project.

2. Field Blanks

- Field blanks are used to indicate potential contamination contracted from ambient air or from sampling equipment. It also serves as a QA/QC for decontamination procedures.

- Collect one set of field blanks for every 20 samples per project. It is not necessary to take a field blank for jobs in which less than 10 samples are collected.

- Procedure

  a. Collect two sets of sample containers to cover all sampling parameters. One set will be full of analyte free water (obtain extra analyte free water to fill two VOA vials). The other set is empty.
  b. Go to the most contaminated area and run the water from the full containers, through the decontaminated sampling equipment and into the associated empty containers.
  c. Send to the lab for analysis.

- Use containers and field blanks prepared specifically for job.

3. Duplicate Samples

- Duplicate samples are collected in order to serve as a laboratory check. Therefore, it is important that the lab does not know which samples are to serve for this purpose.

- Frequency

  a. Obtain one (1) duplicate sample for every 10 samples of each matrix. If less than ten samples are collected of a given matrix, a duplicate must be collected anyway.
  b. If a total of less than 10 samples are collected, collect one (1) duplicate of the majority medium.
  c. If a total of less than five (5) samples are collected, it is not necessary to collect a duplicate sample.

  * Note that the frequency as outlined here pertains to the number of samples collected per project, not per location of a given project.

- Procedures

  The idea behind the duplicate sample is to collect two samples as close to identical as possible.

  a. For water

     Alternately fill containers for the same parameter with equal amounts of liquid per bailer. Fill duplicate VOC vials from the same bailer of liquid.

  b. For soil

     -- VOC samples must be taken from the discreet sampling locations.
     -- For all other samples, mix the applicable soil in a decontaminated stainless steel or polyethylene bowl or tray. Then fill sample containers with the soil mix.
     -- When confronted with the option of collecting a water sample or a soil sample, choose the water sample.

- Labeling for the laboratory

  a. Label the containers normally and give the duplicate samples different reference numbers.

  b. Indicate the quantity of duplicates in the "special instructions" or "remarks" portion of the chain of custody and laboratory services sheet, however, do not indicate the reference numbers of the duplicates.

  c. Upon receipt of analytical results, contact the laboratory and convey all data pertaining to the duplicates for their QA/QC.

4. Background samples

- Background samples are taken only if it is required for comparison of site conditions to the surrounding environment. This is to be dictated by client needs on a site to site basis.

5. Performance Evaluation Samples

- The project manger should consider the use of the following performance evaluation samples on a periodic basis. Typically, these will be reserved for larger jobs:

   a. Laboratory performance evaluation samples

      -- Collect duplicate samples and send to two different laboratories for comparison. Avoid using soil samples for this procedure.
      -- Send a sample of known quantity and quality to the laboratory in order to determine laboratory performance. Such samples can be prepared by any laboratory.

   b. Gas chromatograph (GC) performance evaluation samples

      -- Acquire a sample of known quantity and quality from a laboratory. Analyze the sample with the gas chromatograph in order to determine the integrity of GC results.

IV. Field Sampling QA/QC

1) When sampling a well, collect VOA samples first and Oil & Grease samples last.

2) Start sampling at the presumed least contaminated areas, proceeding to the more contaminated areas.

3) Preservatives

   - Consult the laboratory in order to determine which sampling parameters require preservatives. The laboratory will provide sampling containers specific for each job.
   - It is necessary to fill the sample container when using preserved bottles; preservative is added with this assumption
   - If samples are not collected correctly, they will not pass GEC QA/QC.

4) A chain-of-custody must accompany each set of samples from the job site to the laboratory. Be sure to identify the presence of trip blanks on the chain-of-custody sheets.

5) If possible, use the numbering system outlined on the attached sheet for identifying samples.

V. Ordering Sample Containers

1) Pre-plan sampling strategy to determine the sample parameters, the number of sample points including QA/QC samples, and the matrix of the given sample points.

2) Call laboratory and tell them:

- Sample parameters,
- Number of samples to be collected,
- The number of container sets needed for trip blanks, field blanks, and duplicates, and
- The matrix of each sample to be collected.

3) Sample containers should be ordered specifically for each job. Any sample containers unused at the end of the job should be sent back to the laboratory.

VI. Conclusions

1) Pre-planning is crucial.

2) Keep open communication with the laboratory on all matters.

3) If you make a mistake in sampling collection, accept it, and retake the necessary samples.

APPENDIX B

LABORATORY ANALYTICAL REPORTS

IEA
An Aquarion Company

200 Monroe Turnpike
Monroe, Connecticut 06468

Phone 203·261·4458
Fax 203·268·5346

November 07, 1996

Mr. Sam Butcher
GOLDMAN ENVIRONMENTAL
15 Pacella Park Drive
Randolph, MA 02368-1755

Dear Mr. Butcher:

Please find enclosed the analytical results of 8 samples received at our laboratory on October 10, 1996. This report contains sections addressing the following information at a minimum:

- sample summary
- analytical methodology
- state certifications
- definition of data qualifiers and terminology
- analytical results
- chain-of-custody

IEA Report #	7096-2059A
Project ID:	JAMECO INDUSTRIES
Purchase Order #	444-010-95

Copies of this analytical report and supporting data are maintained in our files for a minimum of five years unless special arrangements have been made. Unless specifically indicated, all analytical testing was performed at this laboratory location and no portion of the testing was subcontracted.

We appreciate your selection of our services and welcome any questions or suggestions you may have relative to this report. Please contact your customer service representative at (203) 261-4458 for any additional information. Thank you for utilizing our services; we hope you will consider us for your future analytical needs.

I have reviewed and approved the enclosed data for final release.

Very truly yours,

Jeffrey C. Curran
Laboratory Manager

JCC

Schaumburg,
Illinois
847·705·0740

N. Billerica,
Massachusetts
508·667·1400

Whippany,
New Jersey
201·428·8181

Cary,
North Carolina
919·677·0090

7096-2059A

GOLDMAN ENVIRONMENTAL

Case Narrative

Metals - ICAP metals were determined using a JA61E trace ICAP; mercury was determined by the cold vapor technique utilizing the Thermo Jarrell Ash Model QS-1E mercury analyzer using guidance provided in SW846 according to the following Methods: ICAP-3010/6010; Mercury-7470.

One "N" flag resulted from spike analysis of sample MW-2 for mercury and one asterisk "*" resulted from duplicate analysis of sample MW-2 for thallium. There is no apparent reason for these flags.

No other problems occurred during analysis. All appropriate protocols were employed. All data appears to be consistent.

Classical Chemistry - Listed below are the Classical Chemistry analyte methods, reference, and PQL values for the sample analyzed in this SDG. All holding times were met and no analytical problems were encountered.

Analyte	Method	Reference	PQL (mg/L)
Hexavalent Chromium	7196	1	0.010

Reference:

1. Test Methods for the Evaluation of Solid Waste, SW846, 3rd edition, 1986.

Volatile Organics - Volatile organics were determined by purge and trap GC/MS using guidance provided in Method 8240A. The instrumentation used was a Tekmar Dynamic Headspace Concentrator interfaced with a Hewlett-Packard Model 5995 GC/MS/DS.

Sample Calculation:

Sample ID - MW-5
Compound - Acetone

$$\frac{(15845)(250)(1)}{(66724)(.901)(5)} = 13 \text{ ug/L}$$

Sample MW-12 was analyzed at a 1:25 dilution due to high target compound concentrations.

Aqueous

TABLE VO-1.0
7096-2059A
GOLDMAN ENVIRONMENTAL
TCL VOLATILE ORGANICS

All values are ug/L.

Client Sample I.D. Lab Sample I.D. Method Blank I.D. Dilution Factor	Method Blank VBLKG6 VBLKG6 1.00	MW-1 962059A-01 VBLKG6 1.00	MW-2 962059A-02 VBLKG6 1.00	Quant. Limits with no Dilution
Chloromethane	U	U	U	10
Bromomethane	U	U	U	10
Vinyl Chloride	U	U	1J	10
Chloroethane	U	U	U	10
Methylene Chloride	U	U	U	5.0
Acetone	U	U	U	10
Carbon Disulfide	U	U	U	5.0
Vinyl Acetate	U	U	U	10
1,1-Dichloroethene	U	U	U	5.0
1,1-Dichloroethane	U	U	U	5.0
1,2-Dichloroethene (total)	U	U	48	5.0
Chloroform	U	U	U	5.0
1,2-Dichloroethane	U	U	U	5.0
2-Butanone	U	U	U	10
1,1,1-Trichloroethane	U	U	U	5.0
Carbon Tetrachloride	U	U	U	5.0
Bromodichloromethane	U	U	U	5.0
1,2-Dichloropropane	U	U	U	5.0
cis-1,3-Dichloropropene	U	U	U	5.0
Trichloroethene	U	U	7	5.0
Dibromochloromethane	U	U	U	5.0
1,1,2-Trichloroethane	U	U	U	5.0
Benzene	U	U	U	5.0
trans-1,3-Dichloropropene	U	U	U	5.0
Bromoform	U	U	U	5.0
4-Methyl-2-Pentanone	U	U	U	10
2-Hexanone	U	U	U	10
Tetrachloroethene	U	U	37	5.0
Toluene	U	U	U	5.0
1,1,2,2-Tetrachloroethane	U	U	U	5.0
Chlorobenzene	U	U	U	5.0
Ethylbenzene	U	U	U	5.0
Styrene	U	U	U	5.0
Xylene (total)	U	U	U	5.0
Date Received Date Extracted Date Analyzed	 N/A 10/10/96	10/10/96 N/A 10/11/96	10/10/96 N/A 10/11/96	

See Appendix for qualifier definitions
Note: Compound detection limit = quantitation limit x dilution factor

Aqueous

TABLE VO-1.1
7096-2059A
GOLDMAN ENVIRONMENTAL
TCL VOLATILE ORGANICS

All values are ug/L.

Client Sample I.D.	MW-3	MW-7		
Lab Sample I.D. Method Blank I.D. Dilution Factor	962059A-03 VBLKG6 1.00	962059A-05 VBLKG6 1.00		Quant. Limits with no Dilution
Chloromethane	U	U		10
Bromomethane	U	U		10
Vinyl Chloride	U	U		10
Chloroethane	U	U		10
Methylene Chloride	U	U		5.0
Acetone	U	U		10
Carbon Disulfide	U	U		5.0
Vinyl Acetate	U	U		10
1,1-Dichloroethene	U	U		5.0
1,1-Dichloroethane	U	U		5.0
1,2-Dichloroethene (total)	25	U		5.0
Chloroform	U	U		5.0
1,2-Dichloroethane	U	U		5.0
2-Butanone	U	U		10
1,1,1-Trichloroethane	U	U		5.0
Carbon Tetrachloride	U	U		5.0
Bromodichloromethane	U	U		5.0
1,2-Dichloropropane	U	U		5.0
cis-1,3-Dichloropropene	U	U		5.0
Trichloroethene	160	U		5.0
Dibromochloromethane	U	U		5.0
1,1,2-Trichloroethane	U	U		5.0
Benzene	U	U		5.0
trans-1,3-Dichloropropene	U	U		5.0
Bromoform	U	U		5.0
4-Methyl-2-Pentanone	U	U		10
2-Hexanone	U	U		10
Tetrachloroethene	9	2J		5.0
Toluene	U	U		5.0
1,1,2,2-Tetrachloroethane	U	U		5.0
Chlorobenzene	U	U		5.0
Ethylbenzene	U	U		5.0
Styrene	U	U		5.0
Xylene (total)	U	U		5.0
Date Received Date Extracted Date Analyzed	10/10/96 N/A 10/11/96	10/10/96 N/A 10/11/96		

See Appendix for qualifier definitions
Note: Compound detection limit = quantitation limit x dilution factor

Aqueous

TABLE VO-1.2
7096-2059A
GOLDMAN ENVIRONMENTAL
TCL VOLATILE ORGANICS

All values are ug/L.

Client Sample I.D.	Method Blank	MW-2 MS	MW-2 MSD	Quant. Limits with no Dilution
Lab Sample I.D.	VBLKG7	962059A-02MS	962059A-02 MSD	
Method Blank I.D.	VBLKG7	VBLKG7	VBLKG7	
Dilution Factor	1.00	1.00	1.00	
Chloromethane	U	U	U	10
Bromomethane	U	U	U	10
Vinyl Chloride	U	1J	1J	10
Chloroethane	U	U	U	10
Methylene Chloride	U	U	U	5.0
Acetone	8J	U	U	10
Carbon Disulfide	U	U	U	5.0
Vinyl Acetate	U	U	U	10
1,1-Dichloroethene	U	51X	54X	5.0
1,1-Dichloroethane	U	U	U	5.0
1,2-Dichloroethene (total)	U	43	47	5.0
Chloroform	U	U	U	5.0
1,2-Dichloroethane	U	U	U	5.0
2-Butanone	U	U	U	10
1,1,1-Trichloroethane	U	U	U	5.0
Carbon Tetrachloride	U	U	U	5.0
Bromodichloromethane	U	U	U	5.0
1,2-Dichloropropane	U	U	U	5.0
cis-1,3-Dichloropropene	U	U	U	5.0
Trichloroethene	U	55X	63X	5.0
Dibromochloromethane	U	U	U	5.0
1,1,2-Trichloroethane	U	U	U	5.0
Benzene	U	56X	55X	5.0
trans-1,3-Dichloropropene	U	U	U	5.0
Bromoform	U	U	U	5.0
4-Methyl-2-Pentanone	2J	U	U	10
2-Hexanone	U	U	U	10
Tetrachloroethene	U	29	31	5.0
Toluene	U	48X	46X	5.0
1,1,2,2-Tetrachloroethane	U	U	U	5.0
Chlorobenzene	U	48X	46X	5.0
Ethylbenzene	U	U	U	5.0
Styrene	U	U	U	5.0
Xylene (total)	U	U	U	5.0
Date Received		10/10/96	10/10/96	
Date Extracted	N/A	N/A	N/A	
Date Analyzed	10/11/96	10/11/96	10/11/96	

See Appendix for qualifier definitions
Note: Compound detection limit = quantitation limit x dilution factor

Aqueous

TABLE VO-1.3
7096-2059A
GOLDMAN ENVIRONMENTAL
TCL VOLATILE ORGANICS

All values are ug/L.

Client Sample I.D.	MW-5	MW-9	TB	
Lab Sample I.D. Method Blank I.D. Dilution Factor	962059A-04 VBLKG7 1.00	962059A-06 VBLKG7 1.00	962059A-08 VBLKG7 1.00	Quant. Limits with no Dilution
Chloromethane	U	U	U	10
Bromomethane	U	U	U	10
Vinyl Chloride	3J	U	U	10
Chloroethane	U	U	U	10
Methylene Chloride	U	U	U	5.0
Acetone	13B	2JB	U	10
Carbon Disulfide	U	U	U	5.0
Vinyl Acetate	U	U	U	10
1,1-Dichloroethene	U	U	U	5.0
1,1-Dichloroethane	U	U	U	5.0
1,2-Dichloroethene (total)	13	U	U	5.0
Chloroform	U	U	U	5.0
1,2-Dichloroethane	U	U	U	5.0
2-Butanone	U	U	U	10
1,1,1-Trichloroethane	U	U	U	5.0
Carbon Tetrachloride	U	U	U	5.0
Bromodichloromethane	U	U	U	5.0
1,2-Dichloropropane	U	U	U	5.0
cis-1,3-Dichloropropene	U	U	U	5.0
Trichloroethene	4J	U	U	5.0
Dibromochloromethane	U	U	U	5.0
1,1,2-Trichloroethane	U	U	U	5.0
Benzene	U	U	U	5.0
trans-1,3-Dichloropropene	U	U	U	5.0
Bromoform	U	U	U	5.0
4-Methyl-2-Pentanone	3JB	U	U	10
2-Hexanone	U	U	U	10
Tetrachloroethene	5	U	U	5.0
Toluene	U	U	U	5.0
1,1,2,2-Tetrachloroethane	U	U	U	5.0
Chlorobenzene	U	U	U	5.0
Ethylbenzene	U	U	U	5.0
Styrene	U	U	U	5.0
Xylene (total)	U	U	U	5.0
Date Received	10/10/96	10/10/96	10/10/96	
Date Extracted	N/A	N/A	N/A	
Date Analyzed	10/11/96	10/11/96	10/11/96	

See Appendix for qualifier definitions
Note: Compound detection limit = quantitation limit x dilution factor

Aqueous

TABLE VO-1.4
7096-2059A
GOLDMAN ENVIRONMENTAL
TCL VOLATILE ORGANICS

All values are ug/L.

Client Sample I.D.	Method Blank	MW-12		Quant. Limits with no Dilution
Lab Sample I.D.	VBLKG8	962059A-07		
Method Blank I.D.	VBLKG8	VBLKG8		
Dilution Factor	1.00	25.0		
Chloromethane	U	U		10
Bromomethane	U	U		10
Vinyl Chloride	U	66J		10
Chloroethane	U	U		10
Methylene Chloride	U	30J		5.0
Acetone	U	210J		10
Carbon Disulfide	U	U		5.0
Vinyl Acetate	U	U		10
1,1-Dichloroethene	U	U		5.0
1,1-Dichloroethane	U	U		5.0
1,2-Dichloroethene (total)	U	1800		5.0
Chloroform	U	U		5.0
1,2-Dichloroethane	U	U		5.0
2-Butanone	U	U		10
1,1,1-Trichloroethane	U	U		5.0
Carbon Tetrachloride	U	U		5.0
Bromodichloromethane	U	U		5.0
1,2-Dichloropropane	U	U		5.0
cis-1,3-Dichloropropene	U	U		5.0
Trichloroethene	U	4900		5.0
Dibromochloromethane	U	U		5.0
1,1,2-Trichloroethane	U	U		5.0
Benzene	U	U		5.0
trans-1,3-Dichloropropene	U	U		5.0
Bromoform	U	U		5.0
4-Methyl-2-Pentanone	U	U		10
2-Hexanone	U	U		10
Tetrachloroethene	U	190		5.0
Toluene	U	U		5.0
1,1,2,2-Tetrachloroethane	U	U		5.0
Chlorobenzene	U	U		5.0
Ethylbenzene	U	U		5.0
Styrene	U	U		5.0
Xylene (total)	U	U		5.0
Date Received		10/10/96		
Date Extracted	N/A	N/A		
Date Analyzed	10/14/96	10/14/96		

See Appendix for qualifier definitions
Note: Compound detection limit = quantitation limit x dilution factor

Aqueous

TABLE VO-2.0
7096-2059A
GOLDMAN ENVIRONMENTAL
VOLATILE TENTATIVELY IDENTIFIED COMPOUNDS

Related Method Blank: VBLKG6

Lab Sample Id: VBLKG6   Client Sample Id: Method Blank

CAS#	Compound	RT	Estimated Conc., ug/L
	NONE DETECTED		

Lab Sample Id: 962059A-01   Client Sample Id: MW-1

CAS#	Compound	RT	Estimated Conc., ug/L
	NONE DETECTED		

Lab Sample Id: 962059A-02   Client Sample Id: MW-2

CAS#	Compound	RT	Estimated Conc., ug/L
	NONE DETECTED		

Lab Sample Id: 962059A-03   Client Sample Id: MW-3

CAS#	Compound	RT	Estimated Conc., ug/L
	NONE DETECTED		

Lab Sample Id: 962059A-05   Client Sample Id: MW-7

CAS#	Compound	RT	Estimated Conc., ug/L
	NONE DETECTED		

See Appendix for qualifier definitions

Aqueous

TABLE VO-2.1
7096-2059A
GOLDMAN ENVIRONMENTAL
VOLATILE TENTATIVELY IDENTIFIED COMPOUNDS

Related Method Blank: VBLKG7

Lab Sample Id: VBLKG7 Client Sample Id: Method Blank

CAS#	Compound	RT	Estimated Conc., ug/L
	NONE DETECTED		

Lab Sample Id: 962059A-04 Client Sample Id: MW-5

CAS#	Compound	RT	Estimated Conc., ug/L
87683	1,3-BUTADIENE, 1,1,2,3,4,4-H	33.23	7JN
1634044	PROPANE, 2-METHOXY-2-METHYL-	8.26	6JN

Lab Sample Id: 962059A-06 Client Sample Id: MW-9

CAS#	Compound	RT	Estimated Conc., ug/L
	NONE DETECTED		

Lab Sample Id: 962059A-08 Client Sample Id: TB

CAS#	Compound	RT	Estimated Conc., ug/L
	NONE DETECTED		

See Appendix for qualifier definitions

Aqueous

TABLE VO-2.2
7096-2059A
GOLDMAN ENVIRONMENTAL
VOLATILE TENTATIVELY IDENTIFIED COMPOUNDS

Related Method Blank: VBLKG8

Lab Sample Id: VBLKG8   Client Sample Id: Method Blank

CAS#	Compound	RT	Estimated Conc., ug/L
	NONE DETECTED		

Lab Sample Id: 962059A-07   Client Sample Id: MW-12

CAS#	Compound	RT	Estimated Conc., ug/L
	NONE DETECTED		

See Appendix for qualifier definitions

Aqueous

TABLE AS-1.0
7096-2059A
GOLDMAN ENVIRONMENTAL
PRIORITY POLLUTANT METALS

All values are ug/L.

Client Sample I.D. Lab Sample I.D.	MW-1 962059A-01	MW-2 962059A-02	MW-2 D 962059A-02D	MW-2 S 962059A-02S
Antimony	6.0U	6.0U	6.0U	384.
Arsenic	24.5	67.6	66.6	113.
Beryllium	2.6B	4.2B	3.9B	49.7
Cadmium	3.3B	16.0	14.6	21.8
Chromium	37.3	3010	2860	3190
Copper	43.7	3340	3170	3590
Lead	34.0	81.5	77.6	106.
Mercury	0.20UN	0.20UN	0.20U	1.4BN
Nickel	26.1B	2530	2430	2940
Selenium	4.0U	14.1	11.6	25.6
Silver	1.0U	1.0U	1.0U	41.4
Thallium	6.0U*	10.5*	23.6*	48.0
Zinc	149.	553.	520.	995.

See Appendix for qualifier definitions

Aqueous

TABLE AS-1.1
7096-2059A
GOLDMAN ENVIRONMENTAL
PRIORITY POLLUTANT METALS

All values are ug/L.

Client Sample I.D. Lab Sample I.D.	MW-3 962059A-03	MW-5 962059A-04	MW-7 962059A-05	MW-9 962059A-06
Antimony	6.0U	6.0U	6.0U	6.0U
Arsenic	6.0U	74.5	6.0U	6.8B
Beryllium	1.0U	2.5B	1.0U	1.0U
Cadmium	1.0U	8.9	1.0U	1.2B
Chromium	183.	220.	11.8	8.2B
Copper	1600	1160	13.1B	9.8B
Lead	33.1	38.3	4.5	3.5
Mercury	0.20UN	0.23BN	0.20UN	0.20UN
Nickel	1670	475.	7.2B	4.0B
Selenium	4.0U	12.4	4.0U	4.0U
Silver	1.0U	1.0B	1.0U	1.0U
Thallium	10.1*	15.3*	9.7B*	14.5*
Zinc	340.	598.	22.0	101.

See Appendix for qualifier definitions

Aqueous

TABLE AS-1.2
7096-2059A
GOLDMAN ENVIRONMENTAL
PRIORITY POLLUTANT METALS

All values are ug/L.

Client Sample I.D. Lab Sample I.D.	MW-12 962059A-07			
Antimony	6.0U			
Arsenic	15.0			
Beryllium	2.7B			
Cadmium	8.1			
Chromium	2070			
Copper	7260			
Lead	35.8			
Mercury	0.20UN			
Nickel	37200			
Selenium	4.0U			
Silver	1.0U			
Thallium	12.0*			
Zinc	2680			

See Appendix for qualifier definitions

TABLE CC-1.0
7096-2059A
GOLDMAN ENVIRONMENTAL
MISCELLANEOUS

All values are mg/L.

Parameter	MW-1	MW-2	MW-3	MW-5	MW-7	MW-9	MW-12
Hexavalent Chromium	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010

ORGANICS APPENDIX

U - Indicates that the compound was analyzed for but not detected.

J - Indicates that the compound was analyzed for and determined to be present in the sample. The mass spectrum of the compound meets the identification criteria of the method. The concentration listed is an estimated value, which is less than the specified minimum detection limit but is greater than zero.

B - This flag is used when the analyte is found in the blanks as well as the sample. It indicates possible sample contamination and warns the data user to use caution when applying the results of this analyte.

N - Indicates that the compound was analyzed for but not requested as an analyte. Value will not be listed on tabular result sheet.

S - Estimated due to surrogate outliers.

X - Matrix spike compound.

(1) - Cannot be separated.

(2) - Decomposes to azobenzene. Measured and calibrated as azobenzene.

A - This flag indicates that a TIC is a suspected aldol condensation product.

E - Indicates that it exceeds calibration curve range.

D - This flag identifies all compounds identified in an analysis at a secondary dilution factor.

C - Confirmed by GC/MS.

T - Compound present in TCLP blank.

P - This flag is used for a pesticide/aroclor target analyte when there is a greater than 25 percent difference for detected concentrations between the two GC columns (see Form X).

BQL - Below quanititation limit.

INORGANICS APPENDIX

C - Concentration qualifiers

U - Indicates analyte result less than instrument detection limit (IDL)

B - Indicates analyte result between IDL and contract required detection limit (CRDL)

Q - QC qualifiers

E - Reported value is estimated because of the presence of interference

M - Duplicate injection precision not met

N - Spiked sample recovery not within control limits

S - The reported value was determined by the method of standard additions (MSA)

W - Post-digest spike recovery furnace analysis was out of 85-115 percent control limit, while sample absorbance was less than 50 percent of spike absorbance

* - Duplicate analysis not within control limit

\+ - Correlation coefficient for MSA is less than 0.995

M - Method codes

P - ICP

A - Flame AA

F - Furnace AA

CV - Cold vapor AA (manual)

C - Cyanide

NR - Not Required

NC - Not Calculated as per protocols

STATE CERTIFICATIONS

In some instances it may be necessary for environmental data to be reported to a regulatory authority with reference to a certified laboratory. For your convenience, the laboratory identification numbers for the IEA-Connecticut laboratory are provided in the following table. Many states certify laboratories for specific parameters or tests within a category (i.e. method 325.2 for wastewater). The information in the following table indicates the lab is certified in a general category of testing such as drinking water or wastewater analysis. The laboratory should be contacted directly if parameter-specific certification information is required.

IEA-Connecticut
Certification Summary (as of February 1996)

State	Responsible Agency	Certification	Lab Number
California	Department of Health Services	Hazardous Waste	1778
Connecticut	Department of Health Services	Drinking Water, Wastewater	PH-0497
Kansas	Department of Health and Environmental Services	Drinking Water, Wastewater/Solid, Hazardous Waste	E-210/E-1185
Massachusetts	Department of Environmental Protection	Potable/Non-Potable Water	CT023
New Hampshire	Department of Environmental Services	Drinking Water, Wastewater	252891
New Jersey	Department of Environmental Protection	Drinking Water, Wastewater	46410
New York	Department of Health	CLP, Drinking Water, Wastewater, Solid/ Hazardous Waste	10602
North Carolina	Division of Environmental Management	Wastewater	388
North Dakota	Department of Health and Consolidated Laboratories	Non-Potable/Potable Hazardous Waste	R-138
Rhode Island	Department of Health	Chemistry...Non-Potable Water and Wastewater	A43
Washington	Department of Ecology	Wastewater/ Hazardous Waste	C231

7096-2059A
GOLDMAN ENVIRONMENTAL
SAMPLE SUMMARY

CLIENT ID	LAB ID	MATRIX	DATE COLLECTED	DATE RECEIVED
MW-1	962059A-01	WATER	10/09/96	10/10/96
MW-1	962059A-01D	WATER	10/09/96	10/10/96
MW-1	962059A-01S	WATER	10/09/96	10/10/96
MW-2	962059A-02	WATER	10/09/96	10/10/96
MW-2	962059A-02D	WATER	10/09/96	10/10/96
MW-2	962059A-02MS	WATER	10/09/96	10/10/96
MW-2	962059A-02MSB	WATER	10/09/96	10/10/96
MW-2	962059A-02MSD	WATER	10/09/96	10/10/96
MW-2	962059A-02S	WATER	10/09/96	10/10/96
MW-3	962059A-03	WATER	10/09/96	10/10/96
MW-5	962059A-04	WATER	10/09/96	10/10/96
MW-7	962059A-05	WATER	10/09/96	10/10/96
MW-9	962059A-06	WATER	10/09/96	10/10/96
MW-12	962059A-07	WATER	10/09/96	10/10/96
TB	962059A-08	WATER		10/10/96

IEA-CT ANALYTICAL SUMMARY

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Client ID: MW-1, MW-2, MW-3, MW-5, MW-7, MW-9, MW-12, TB, MW-1, MW-1, MW-2, MW-2, MW-2, MW-2, MW-2
Job Number: 7096-2059A

Date: 11/7/96

Qty	Matrix	Analysis	Description	Unit Price	Total Price
1	None	DISK	Diskette Prep.		
9	WATER	CR6-NSW846	Hexavalent Chromium		
9	WATER	MET-NSW846-PP	Pri Pol Metals		
2	WATER	VOA-N8240-TCL	TCL Volatile Organic		
9	WATER	VOA-N8240-TCL-10	TCL Volatile Organic		