DENR USE ONLY: ☐ Paper Report ☐ Electronic Data - Email CD (data loaded: Yes / No) Doc/Event #:

NC DENR
Division of Waste Management - Solid Waste

Environmental Monitoring Reporting Form

Notice: This form and any information attached to it are "Public Records" as defined in NC General Statute 132-1. As such, these documents are available for inspection and examination by any person upon request (NC General Statute 132-6).

Instructions:

- **Prepare one form for each individually monitored unit.**
- **Please type or print legibly.**
- Attach a notification table with values that attain or exceed NC 2L groundwater standards or NC 2B surface water standards. The notification must include a preliminary analysis of the cause and significance of each value. (e.g. naturally occurring, off-site source, pre-existing condition, etc.).
- Attach a notification table of any groundwater or surface water values that equal or exceed the reporting limits.
- Attach a notification table of any methane gas values that attain or exceed explosive gas levels. This includes any structures on or nearby the facility (NCAC 13B .1629 (4)(a)(i).
- In accordance with NC General Statutes Chapter 89C and 89E and NC Solid Waste Management Rules 15A NCAC 13B, be sure to affix a seal to the bottom of this page, when applicable.
- Send the original signed and sealed form, any tables, and Electronic Data Deliverable to: Compliance Unit, NCDENR-DWM, Solid Waste Section, 1646 Mail Service Center, Raleigh, NC 27699-1646.

Solid Waste Monitoring Data Submittal Information

Name of entity submitting data (laboratory, consultant, facility owner):

Richardson Smith Gardner and Associates, Inc.

Contact for questions about data formatting. Include data preparer's name, telephone number and E-mail address:

Name: Joan Smyth, P.G. Phone: 919-828-0577 x 122

E-mail: joan@rsgengineers.com

Facility name:	Facility Address:	Facility Permit #	NC Landfill Rule: (.0500 or .1600)	Actual sampling dates (e.g., October 20-24, 2006)
Halifax Closed MSW Landfill	Liles Road Halifax, NC 27839	42-04	.0500	August 9, 2007

Environmental Status: (Check all that apply)

☐ Initial/Background Monitoring ☒ Detection Monitoring ☒ Assessment Monitoring ☐ Corrective Action

Type of data submitted: (Check all that apply)

☒ Groundwater monitoring data from monitoring wells
☐ Groundwater monitoring data from private water supply wells
☐ Leachate monitoring data
☒ Surface water monitoring data
☐ Methane gas monitoring data
☐ Corrective action data (specify)
☒ Other(specify) Data from newly installed wells sampled 10/22/07

Notification attached?

☐ No. No groundwater or surface water standards were exceeded.
☒ Yes, a notification of values exceeding a groundwater or surface water standard is attached. It includes a list of groundwater and surface water monitoring points, dates, analytical values, NC 2L groundwater standard, NC 2B surface water standard or NC Solid Waste GWPS and preliminary analysis of the cause and significance of any concentration.
☐ Yes, a notification of values exceeding an explosive methane gas limit is attached. It includes the methane monitoring points, dates, sample values and explosive methane gas limits.

Certification

To the best of my knowledge, the information reported and statements made on this data submittal and attachments are true and correct. Furthermore, I have attached complete notification of any sampling values meeting or exceeding groundwater standards or explosive gas levels, and a preliminary analysis of the cause and significance of concentrations exceeding groundwater standards. I am aware that there are significant penalties for making any false statement, representation, or certification including the possibility of a fine and imprisonment.

Joan Smyth, P.G.	Senior Hydrogeologist	919-828-0577 x 122
Facility Representative Name (Print)	Title	(Area Code) Telephone Number

Joan Smyth 11/15/07
Signature Date

Affix NC Licensed/ Professional Geologist/Engineer Seal here:

NORTH CAROLINA LICENSED SEAL 1369 GEOLOGIST JOAN A. SMYTH

Revised 01/2007

Halifax County Landfill

Ground Water Monitoring Report

August 2007 Semi-annual Monitoring Event

Halifax County Landfill
Halifax County, North Carolina
NC Solid Waste Permit # 42-04

Prepared for:
Halifax County Solid Waste Department
P. O. Box 327
Halifax, North Carolina 27839

October 2007

Richardson Smith Gardner & Associates, Inc.
Engineering and Geological Services
14 North Boylan Avenue
Raleigh, North Carolina 27603

Ground Water Monitoring Report
Halifax County Landfill

August 2007 Semi - Annual Report

Prepared for:

Halifax County Solid Waste Department
P.O. Box 327
Halifax, North Carolina 27839

RSG Project No. **Halifax - 8**

Joan A. Smyth, P.G.
Senior Hydrogeologist

NORTH CAROLINA LICENSED SEAL 1369 GEOLOGIST JOAN A. SMYTH

October 2007

RICHARDSON SMITH GARDNER & ASSOCIATES
Engineering and Geological Services
14 N. Boylan Avenue
Raleigh, North Carolina 27603

Halifax County Landfill

Semi-annual Ground Water Monitoring Report
August 2007 Monitoring Event

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1.0 Introduction

The Halifax County Landfill, operating under Solid Waste Permit #42-04, is required to submit semi-annual ground water monitoring reports for assessment monitoring. This report presents the results of the second semi-annual monitoring event for 2007, conducted on August 9, 2007. This event was performed to comply with the semi-annual monitoring schedule required by NC Solid Waste Regulations.

The Halifax County Landfill is currently accepting C&D waste over the closed MSW landfill. All MSW is being transferred off-site to a lined landfill. The old landfill has been closed per Solid Waste Regulations and the certification report was submitted to the SWS in September 1998. The ground water monitoring network consists of 13 wells located around the perimeter of the landfill (**Figure 1**). Also included in the monitoring network are three surface water sampling points up and downstream of the landfill (**Figure 1**).

This report includes summaries of the field procedures, laboratory analyses, statistical analyses, and ground water characterization. Also included are summary tables of the results, graphs of the data, laboratory analytical reports, and statistical results.

2.0 Sampling Procedures

The sampling event, performed by Environment 1, Inc., consisted of collecting samples from nine ground water wells (MW-1, MW-2a, MW-2ad, MW-3a, MW-3d, MW-6d, MW-7d, MW-15r, & MW-16a), shown in **Figure 1**, in accordance with the approved site Sampling and Analysis Plan. Three additional wells (MW-17, MW-18s & MW-18D) were installed and sampled in October 2007. These wells are shown on **Figure 1**. Boring logs and well diagrams are included in **Appendix A**. Results from these analyses are included in this report. Also included in the analysis were trip and field blanks for quality control. Surface water samples were collected from three locations (SW-1 through SW-3) up and downstream from the landfill.

Sampling methods followed the protocol outlined in the North Carolina Water Quality Monitoring Guidance Document for Solid Waste Facilities (DENR, DWM). The depth to water in each well was gauged prior to purging and sampling. Field measurements of pH, specific conductivity, and temperature were obtained from each well. Water table elevations and field parameter results are included in **Tables 1 and 2** respectively.

All samples were collected by Environment 1, Inc. in laboratory prepared containers for the specified analytical procedures. Sampling equipment (bailers) were cleaned in the laboratory and transported to the site in aluminum foil. Ground water samples were properly preserved, placed on ice, and transported to the laboratory facility within the specified holding times for each analysis.

3.0 Field & Laboratory Results

3.1 Laboratory Analysis

The ground and surface water samples were transported to Environment 1, Inc., a North Carolina certified laboratory (NC Wastewater ID #10). Laboratory analysis consisted of the full suite of RCRA Subtitle D Appendix II constituents for most of the compliance wells (MW-2a, MW-2ad, MW-3a, MW-3d, MW-6d, MW-7d, MW-15r, MW-16a) and the newly installed wells (MW-17, MW-18S & MW-18D). Appendix I constituents were analyzed for the background well (MW-1), and surface water points. Parameters were reported at NC DWM Practical Quantitation Limits (PQLs). The laboratory analytical report is included as **Appendix B**, and an electronic of the recent most lab data and this report are included on CD.

3.2 Field and Laboratory Results

The field parameter results (**Table 2**) have remained consistent with previous sampling events. Detected constituents are presented in **Tables 3** and **4**.

Two (2) inorganic constituents, shown in **Table 3**, were detected above the PQL in four wells (MW-2ad, MW-6d, MW-15r and MW-16a). Mercury (MW-15r and MW-16a) was detected above their 2L standards. Analysis of newly installed wells indicates three inorganic constituents (barium, beryllium and zinc) detected above the PQL in MW-17 and MW-18s. Of these, beryllium was detected above the 2L standard in MW-17. These are highlighted on **Table 3**.

Ten (10) organic constituents, shown in **Table 4** were detected above the Practical Quantitation Limit (PQL) in five (5) monitoring wells. Five constituents were found at concentrations above their respective 2L standards. Analysis of ground water from the newly installed wells indicates two (2) organic constituents (tetrachloroethene and trichloroethene) detected above the PQL in MW-17. Of these, one is above the 2L standard (tetrachloroethene). The nested pair of MW-18s and MW-18d indicates no detectable constituents above the PQL.

Two pesticides (alpha-BHC and heptachlor) detected in one of the monitoring wells, MW-15r also have concentrations above their respective 2L standards. The results are included as **Table 4**.

No constituents were detected above the PQL in three surface water samples, SW-1, SW-2 and SW-3. The locations of these samples are shown on **Figure 1**.

Constituents detected below the PQL are, denoted as “J” values also included in **Table 3 & 4**.

4.0 Statistical Analysis and Results

4.1 Statistical Analysis

The laboratory data from the sampling event was reviewed and analyzed in order to evaluate trends and changes in the results as well as statistically significant differences between up and

down gradient wells. Data entry and analysis was performed using the Chempoint/ Chemstat statistical software package developed specifically for RCRA Subtitle D sites (Starpoint Software, Cincinnati, OH). Chemstat follows EPA and DWM protocols for approved statistical analysis methods for groundwater data.

The data from the August 2007 sampling event were added to our existing database for this site. The data were reviewed to evaluate the most appropriate analysis methods. Initial analysis consisted of a basic review of the data and of time-concentration graphs (included in **Appendix C**) to determine any major changes or trends in the data. Non-parametric testing methods were used due to the high percentage of non-detects, and the lack of normality, in the data.

Statistical analysis was performed using MW-1 as the upgradient or background well and MW-2a, MW-2ad, MW-3a, MW-3d, MW-6d, MW-7d, MW-15r, and MW-16a as the down gradient or compliance wells. The statistical analysis reports are summarized in **Table 5**

4.2 Statistical Results

Statistically significant differences from background concentrations (**Table 5**) were found for 1,1-dichloroethane (MW15r, MW-16a, MW-2ad and MW-3ad), 1,4-dichlorobenzene (MW-15r), barium (MW-6d), chlorobenzene (MW-6d), Cis-1,2-Dichloroethene (MW-15r, MW-2ad, MW-3a, and MW-16a), Mercury (MW-15r), methylene Chloride (MW-16a), tetrachloroethene (MW-16a),trichloroethene (MW-2ad and MW-16a) and Alpha-BHC (MW-15r).

4.3 2L/MCL Statistical Analysis

For wells that showed statistically significant differences from background concentrations, additional analysis was performed. This analysis has recently been required as part of ongoing Assessment monitoring for landfills in North Carolina. To perform the analysis, the respective 2L standard or MCL was determined for each parameter with statistically significant results. Each compliance well with statistical significance was re-analyzed against the lower of the 2L or MCL standard as a Ground Water Protection Standard (GWPS).

The statistical results for this additional analysis are presented in **Table 5**. An upper tolerance limit higher than the GWPS standard was considered to be a statistically significant result. This analysis indicated statistically significant results for barium (MW-6d), cis-1,2-Dichloroethene (MW-3a), mercury (MW-15r), methylene chloride (MW-16a), tetrachloroethene (MW-16a),trichloroethene (MW-2ad and MW-16a) and Alpha-BHC (MW-15r).

5.0 Ground Water Characterization

A potentiometric surface map was prepared from ground water elevation data collected during this sampling event. The data indicates that ground water is flowing generally to the west towards Brewer's Creek. This is consistent with ground water flow patterns previously detected for the site. The potentiometric surface map is attached as **Figure 1**.

Ground water flow velocities during the sampling event were calculated for each monitoring well using the equation: $V = KI/n$

where: K = hydraulic conductivity

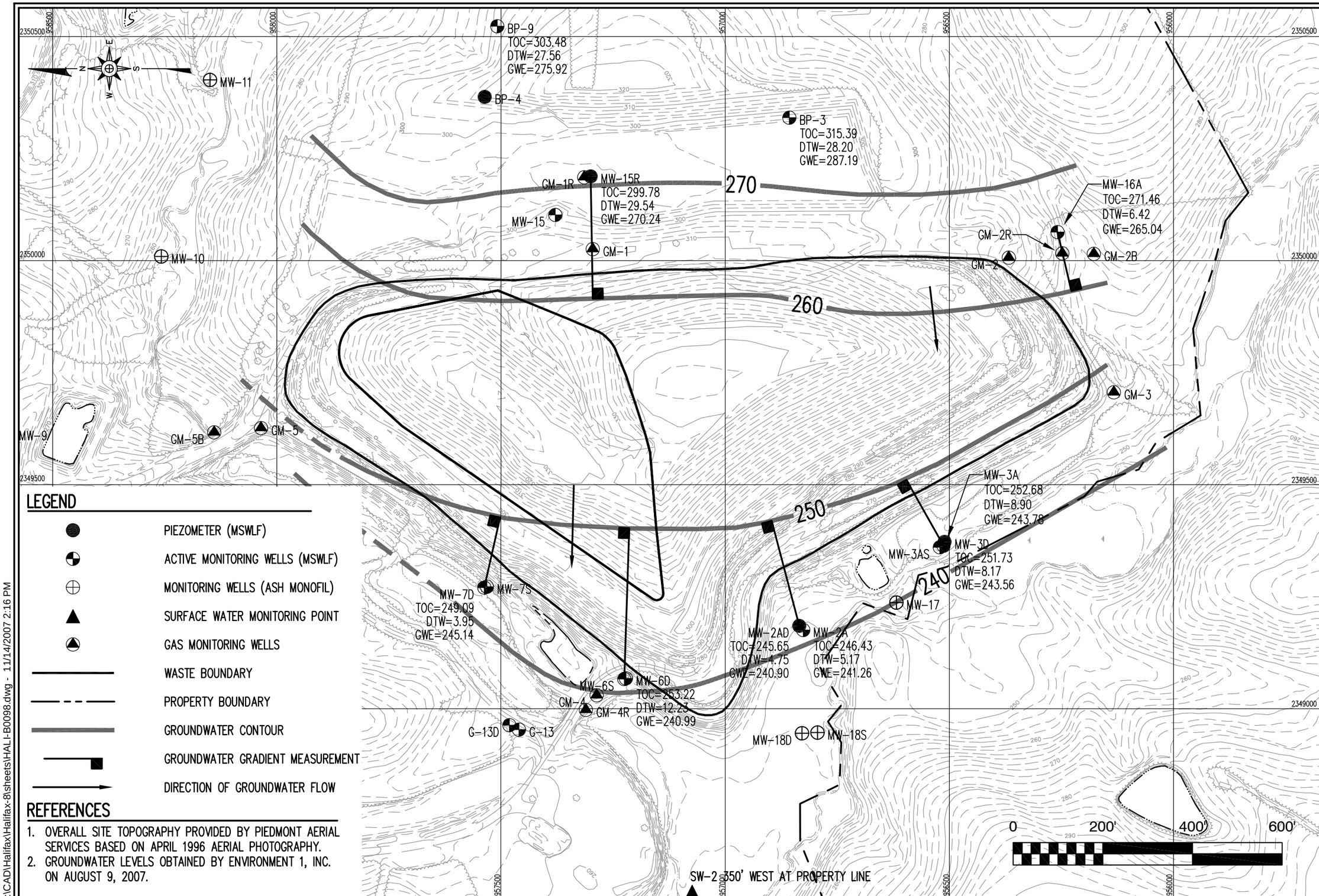
I = ground water gradient
n = porosity

Ground water flow velocities ranged from 0.011 ft/day (MW-16a) to 0.33 ft/day (MW-2a). These calculated flow velocities are included in **Table 1**.

6.0 Conclusions

A review of constituent graphs over time (**Appendix C**) indicates ground water impact at the site is relatively stable. Analysis of ground water from the newly installed wells indicates minimal impact in well MW-17. The next semi-annual event is scheduled for February 2008. The newly installed wells will be included in that event to further evaluate ground water quality at the site.

Figures



LEGEND

- PIEZOMETER (MSWLF)
- ACTIVE MONITORING WELLS (MSWLF)
- MONITORING WELLS (ASH MONOFIL)
- SURFACE WATER MONITORING POINT
- GAS MONITORING WELLS
- WASTE BOUNDARY
- PROPERTY BOUNDARY
- GROUNDWATER CONTOUR
- GROUNDWATER GRADIENT MEASUREMENT
- DIRECTION OF GROUNDWATER FLOW

REFERENCES

1. OVERALL SITE TOPOGRAPHY PROVIDED BY PIEDMONT AERIAL SERVICES BASED ON APRIL 1996 AERIAL PHOTOGRAPHY.
2. GROUNDWATER LEVELS OBTAINED BY ENVIRONMENT 1, INC. ON AUGUST 9, 2007.

RICHARDSON SMITH GARDNER & ASSOCIATES
Engineering and Geological Services
14 N. Boylan Ave.
Raleigh, N.C. 27603
ph: 919-828-0577
fax: 919-828-3899
www.rsgengineers.com

FIGURE NO.	1
FILE NAME	HALI-B0098
SCALE:	AS SHOWN
PROJECT NO.	HALIFAX-8
CHECKED BY:	
DRAWN BY:	C.T.J.
DATE:	Nov. 2007

TITLE:
HALIFAX COUNTY LANDFILL
GROUND WATER
POTENTIOMETRIC SURFACE MAP
AUGUST 9, 2007

G:\CAD\Halifax\Halifax-8\sheets\HALI-B0098.dwg - 1/14/2007 2:16 PM

Tables

Table 1
Halifax County Closed Landfill
Ground Water Elevations & Velocities

08/09/07

Monitoring Location	TOC Elevation (ft)	Depth to Water (ft)	Water Table Elevation (ft)	Hydraulic Conductivity** (ft/day)	Assumed Porosity***	Hydraulic Gradient (ft/ft)	Ground Water Velocity**** (ft/day)
MW-1*	--	29.33	--	--	--	--	--
MW-2a	246.43	5.17	241.26	1.835	0.2	0.036	0.330
MW-2ad*****	245.65	4.75	240.90	na	na	0.038	na
MW-3a	252.68	8.9	243.78	0.311	0.2	0.036	0.056
MW-3d*****	251.73	8.17	243.56	na	na	0.036	na
MW-6d*****	253.22	12.23	240.99	na	na	0.027	na
MW-7d*****	249.09	3.95	245.14	na	na	0.030	na
MW-15r	299.78	29.54	270.24	na	0.2	0.04	na
MW-16a	271.46	6.42	265.04	0.057	0.2	0.038	0.011
BP-3	315.39	28.2	287.19	--	--	--	--
BP-9	303.48	27.56	275.92	--	--	--	--

* MW-1 is not used in the ground water characterization calculations due to its remote location from the landfill
** Hydraulic Conductivity data from slug testing
*** Porosity values assumed from Groundwater & Wells (Driscoll)
**** Velocity Calculated from V=K*I/n
V = velocity
K = Hydraulic Conductivity
I = Gradient
n = Porosity
***** Deep well not used in velocity calculation

Table 2
Halifax County Closed Landfill
Field Parameters

08/09/07

Monitoring Location	pH (std units)	Specific Conductivity (umhos/cm)	Temperature (degrees C)
MW-1	5.2	55	16
MW-2a	6.4	223	19
MW-2ad	6.6	541	18
MW-3a	6.4	401	18
MW-3d	6.0	183	17
MW-6d	6.1	576	17
MW-7d	6.0	44	20
MW-15r	5.0	88	18
MW-16a	5.8	161	17
SW-1	6.7	122	25
SW-2	6.7	431	28
SW-3	6.7	1053	22

Table 3
Halifax County Closed Landfill
Detected Inorganic Constituents

08/09/07

Monitoring Location	PQL	2L Standard	MW-1	MW-2a	MW-2ad	MW-3a	MW-3d	MW-6d	MW-7d	MW-15r	MW-16a	MW-17	MW-18s	MW-18d	SW-1	SW-2	SW-3
Antimony	6	---	0.1 J	0.1 J	ND	ND	ND	ND	ND	0.1 J	ND	ND	ND	ND	ND	ND	ND
Arsenic	10	50	ND	1.7 J	0.9 J	1.4 J	ND	ND	ND	ND	ND	0.6 J	1.4 J	ND	1.6 J	1.9 J	1.6 J
Barium	100	2000	35.1 J	93.3 J	**108**	33.7 J	60.4 J	**547**	43.1 J	89.6 J	91.9 J	**110**	**139**	77.5 J	48 J	82.9 J	45 J
Beryllium	1	---	0.1 J	0.4 J	ND	0.1 J	0.3 J	0.4 J	0.2 J	0.2 J	0.5 J	**2**	0.9 J	ND	ND	ND	0.8 J
Cadmium	1	5	0.1 J	0.1 J	0.4 J	0.6 J	0.1 J	0.2 J	0.1 J	0.3 J	0.5 J	0.2 J	0.2 J	ND	0.2 J	0.6 J	0.9 J
Chromium, total	10	50	0.4 J	4.1 J	6.6 J	ND	0.4 J	ND	1.4 J	0.6 J	ND	1.7 J	2.1 J	ND	0.7 J	ND	ND
Cobalt	10	---	0.6 J	5.9 J	4.5 J	2.7 J	ND	4.4 J	ND	0.5 J	ND	2.5 J	5.3 J	ND	1.8 J	1.3 J	2.5 J
Copper	10	1000	1.2 J	1.1 J	0.9 J	0.5 J	0.5 J	0.8 J	1.1 J	1.5 J	0.9 J	3.6 J	3.6 J	ND	1.3 J	0.6 J	1 J
Lead	10	15	0.2 J	0.8 J	0.2 J	0.2 J	0.3 J	0.3 J	1 J	0.1 J	0.3 J	7.5 J	3.9 J	0.4 J	2.5 J	0.1 J	0.1 J
Mercury	0.2	1.1	ND	ND	0.06 J	0.04 J	0.15 J	0.08 J	ND	**6.65**	**0.44**	ND	ND	ND	ND	ND	ND
Nickel	50	100		2.5 J	5.7 J	ND	0.7 J	2.3 J	1.1 J	ND	ND	2.7 J	3 J	0.9 J	ND	1.2 J	3.3 J
Selenium	10	50	0.8 J	ND	ND	ND	ND	0.8 J	ND	ND	ND	ND	0.5 J	ND	ND	2.5 J	7.5 J
Thallium	5	---	0.1 J	ND	ND	ND	ND	ND	ND	0.2 J	ND	0.1 J	0.2 J	ND	ND	ND	ND
Tin	100	---	ND	0.9 J	0.8 J	0.6 J	0.6 J	1 J	0.7 J	1.3 J	0.6 J	ND	ND	ND	ND	ND	ND
Vanadium	25	---	ND	2.9 J	ND	ND	ND	0.7 J	ND	ND	ND	9.6 J	15.3 J	2 J	2.9 J	ND	3 J
Zinc	10	2100	3.1 J	4.6 J	5.8 J	2.7 J	5.5 J	ND	8.9 J	3.6 J	6.9 J	**36**	**44**	5.3 J	ND	2.9 J	ND

ND - Not detected at or above PQL
Shading - Levels above 2L standard or no 2L standard
Bold Letters - Constituent detected above PQL
J - Detected constituents below PQL limit

All PQLs, 2L Standards and Results are in ug/l.

Table 4
Halifax County Closed Landfill
Detected Organic Constituents

0

08/09/07

Monitoring Location	PQL	2L Standard	MW-1	MW-2a	MW-2ad	MW-3a	MW-3d	MW-6d	MW-7d	MW-15r	MW-16a	MW-17	MW-18s	MW-18d	SW-1	SW-2	SW-3
1,1,1-Trichloroethane	1	200	ND	ND	ND	ND	ND	ND	ND	0.2 J	0.3 J	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	5	700	ND	4.4 J	**36.8**	**5.6**	4.3 J	1 J	ND	**10.3**	**14.3**	3.10 J	1.2 J	1.5 J	ND	ND	ND
1,1-Dichloroethene	5	7	ND	0.2 J	0.4 J	0.3 J	0.3 J	ND	ND	ND	0.4 J	0.2 J	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	5	620	ND	ND	ND	ND	ND	0.3 J	ND	ND	0.9 J	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	1	0.38	ND	0.4 J	ND	ND	ND	0.2 J	ND	0.6 J	0.3 J	ND	ND	ND	ND	ND	ND
1,4-Dichloropropane	1	---	ND	ND	0.2 J	0.3 J	ND	ND	ND	ND	0.6 J	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	3	75	ND	ND	0.7 J	0.4 J	ND	1.9 J	ND	**10.2**	1.4 J	ND	ND	ND	ND	ND	ND
2-Butane	100	---	1.8 J	2.1 J	1.7 J	2.2 J	1 J	1.8 J	1.9 J	1.8 J	2.1 J	ND	1.4 J	ND	1.9 J	3.8 J	1.7 J
Acetone	100	700	ND	1.4 J	ND	1.4 J	ND	1.3 J	1.3 J	1.5 J	2.1 J	ND	9.10 J	ND	ND	2.2 J	2.6 J
Benzene	1	1	ND	ND	0.9 J	0.8 J	0.2 J	**2.1**	ND	0.3 J	**2.9**	ND	ND	ND	ND	ND	ND
Bis-(2-Ethylhexyl) Phthalate	15	---	ND	ND	ND	ND	ND	**15.1**	ND	**31**	**11.1**	ND	ND	ND	ND	ND	ND
cis-1,2-Dichlorethene	5	70	ND	2.7 J	**22.9**	**8.1**	1.2 J	ND	ND	**7.8**	**40.5**	1.4 J	0.2 J	0.8 J	ND	ND	ND
Chlorobenzene	3	50	ND	0.2 J	1.1 J	0.6 J	ND	**9.7**	ND	0.2 J	1.1 J	ND	ND	ND	ND	ND	ND
Chloroethane		2800	ND	2.5 J	ND	0.7 J	ND	0.6 J	ND	0.3 J	0.9 J	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	5	1400	ND	0.3 J	0.3 J	0.2 J	1.8 J	0.2 J	ND	0.4 J	4.7 J	ND	ND	ND	ND	ND	ND
Methylene chloride	5	5	ND	ND	0.2 J	ND	0.7 J	0.2 J	ND	**6.5**	**22.5**	0.2 J	ND	ND	ND	ND	ND
Tetrachloroethene	3	0.7	ND	ND	ND	0.4 J	1.9 J	ND	ND	**3.3**	**26.6**	**1.1**	ND	ND	ND	ND	ND
Trichloroethene	3	2.8	ND	0.6 J	**5.4**	2 J	1.9 J	ND	ND	**4.4**	**20.8**	**1.8**	ND	0.3 J	ND	ND	ND
Toluene	1	1000	0.4 J	0.4 J	0.5 J	0.5 J	0.6 J	0.5 J	0.4 J	0.4 J	0.6 J	ND	0.3 J	ND	0.4 J	0.3 J	0.3 J
Trans-1,2,-Dichloroethene	5	70	ND	ND	0.3 J	ND	ND	ND	ND	ND	0.4 J	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	1	2.8	ND	ND	ND	ND	ND	ND	ND	0.3 J	**1.3**	0.3 J	ND	ND	ND	ND	ND
Vinyl Chloride	5	0.015	ND	1.8 J	**5.8**	**4.7**	ND	**1.4**	ND	ND	0.8 J	ND	0.7 J	ND	ND	ND	ND
Xylenes	4	530	ND	ND	ND	ND	ND	ND	ND	2.2 J	2.3 J	ND	ND	ND	ND	ND	ND
Heptachlor	0.05	0.008	ND	ND	ND	ND	ND	ND	ND	**0.1**	ND	ND	ND	ND	ND	ND	ND
Alpha-BHC	0.05	---	ND	ND	ND	ND	ND	ND	ND	**0.292**	ND	ND	ND	ND	ND	ND	ND

ND - Not detected at or above PQL
Shading - Levels above 2L standard or no 2L standard
Bold Letters - Constituent detected above PQL
J - Detected constituents below PQL limit

All PQLs, 2L Standards and Results are in ug/l.

Table 5
Halifax County Landfill
Statistical Analysis Summary
8/9/2007

Monitoring Well	Parameters	Detected level in PPB	Detection Limit	Test Units	%ND	CL(%)	Test	Statistically Significant?	2L/MCL statistical analysis	Method for MCL analysis
MW-15r	1,1-Dichloroethane	10.3	<5	ug/l	49.16	---	Wilcoxon Rank	Y	N	MCL-PTI (1992)
MW-16a	1,1-Dichloroethane	14.3	<5	ug/l	49.16	---	Wilcoxon Rank	Y	N	MCL-PTI (1992)
MW-2ad	1,1-Dichloroethane	36.8	<5	ug/l	49.16	---	Wilcoxon Rank	Y	N	MCL-PTI (1992)
MW-3ad	1,1-Dichloroethane	5.6	<5	ug/l	49.16	---	Wilcoxon Rank	Y	N	MCL-PTI (1992)
MW-15r	1,4-Dichlorobenzene	10.2	<1	ug/l	90.32	---	PPL with 1/2 DL	Y	N	Poisson's Tolerance Interval
MW-16a	1,4-Dichlorobenzene	1.400	<1	ug/l	90.32	---	PPL with 1/2 DL	N	---	---
MW-6d	1,4-Dichlorobenzene	1.9	<1	ug/l	90.32	---	PPL with 1/2 DL	N	---	---
MW-15r	Alpha-BHC	0.292	<0.05	ug/l	86.95	91	NPPL	Y	Y	MCL-PTI (1992)
MW-2ad	Barium	0.108	<0.1	mg/l	81.81	94.1	NPPL	N	---	---
MW-6d	Barium	0.547	<0.1	mg/l	81.81	94.1	NPPL	Y	Y	MCL-PTI (1992)
MW-16a	Benzene	2.9	<1	ug/l	97.33	---	PPL with 1/2 DL	N	---	---
MW-6d	Benzene	2.1	<1	ug/l	97.33	---	PPL with 1/2 DL	N	---	---
MW-15r	Bis-(2-Ethylhexyl) Phthalate	31	<15	ug/l	85	75	NPPL	N	---	---
MW-6d	Bis-(2-Ethylhexyl) Phthalate	15.1	<15	ug/l	85	75	NPPL	N	---	---
MW-6d	Chlorobenzene	9.7	<3	ug/l	77.55	95	NPPL	Y	N	MCL-PTI (1992)
MW-15r	Cis-1,2-Dichloroethene	7.8	<5	ug/l	61.66	88.9	NPTL	Y	N	MCL-PTI (1992)
MW-16a	Cis-1,2-Dichloroethene	40.5	<5	ug/l	61.66	88.9	NPTL	Y	N	MCL-PTI (1992)
MW-2ad	Cis-1,2-Dichloroethene	22.5	<5	ug/l	61.66	88.9	NPTL	Y	N	MCL-PTI (1992)
MW-3ad	Cis-1,2-Dichloroethene	8.1	<5	ug/l	61.66	88.9	NPTL	Y	Y	MCL-PTI (1992)
MW-15r	Heptachlor	0.088	<0.05	ug/l	91	---	PPL with 1/2 DL	N	---	---
MW-15r	Mercury	0.00665	<0.0002	mg/l	82.22	83.3	NPTL	Y	Y	MCL-PTI (1992)
MW-16a	Mercury	0.00044	<0.0002	mg/l	82.22	83.3	NPTL	N	---	---
MW-15r	Methylene Chlrodie	6.5	<1	ug/l	78.58	93.8	NPPL	N	---	---
MW-16a	Methylene Chlrodie	22.5	<1	ug/l	78.58	93.8	NPPL	Y	Y	MCL-PTI (1992)
MW-15r	Tetrachlroethene	3.3	<1	ug/l	80	91.4	NPPL	N	---	---
MW-16a	Tetrachlroethene	26.6	<1	ug/l	80	91.4	NPPL	Y	Y	MCL-PTI (1992)
MW-3d	Tetrachlroethene	1.900	<1	ug/l	80	91.4	NPPL	N	---	---

Table 5
Halifax County Landfill
Statistical Analysis Summary
8/9/2007

Monitoring Well	Parameters	Detected level in PPB	Detection Limit	Test Units	%ND	CL(%)	Test	Statistically Significant?	2L/MCL statistical analysis	Method for MCL analysis
MW-15r	Trichlroethene	4.400	<1	ug/l	77.69	86.5	NPTL	N	---	---
MW-16a	Trichlroethene	20.800	<1	ug/l	77.69	86.5	NPTL	Y	Y	MCL-PTI (1992)
MW-2ad	Trichlroethene	5.400	<1	ug/l	77.69	86.5	NPTL	Y	Y	MCL-PTI (1992)
MW-3a	Trichlroethene	2	<1	ug/l	77.69	86.5	NPTL	N	---	---
MW-3d	Trichlroethene	1.9	<1	ug/l	77.69	86.5	NPTL	N	---	---
MW-16a	Trichlrofluoroemthane	1.3	<1	ug/l	98.27	---	PPL with 1/2 DL	N	---	---
MW-2a	Vinyl Chloride	1.8	<1	ug/l	90.75	---	PPL with 1/2 DL	N	---	---
MW-2ad	Vinyl Chloride	5.8	<1	ug/l	90.75	---	PPL with 1/2 DL	N	---	---
MW-3a	Vinyl Chloride	4.7	<1	ug/l	90.75	---	PPL with 1/2 DL	N	---	---
MW-6d	Vinyl Chloride	1.4	<1	ug/l	90.75	---	PPL with 1/2 DL	N	---	---

Legend:

%ND	Method chosen due to percent non-detects
NPPL	Non-parametric Tolerance Limit (Inter-well comparision)
NPTL	Non-parametric Tolerance Limit (Inter-well comparision)
PPL	Poisson Prediction Limit with 1/2 Detection Limit

Highlighting indicates statistical significance

Notes:
MW-1 used as background well

Appendix A

Well Boring Logs

Richardson Smith Gardner and Assoc
14 North Boylan Avenue, Raleigh NC 27603
(919) 828-0577

FIELD BOREHOLE LOG

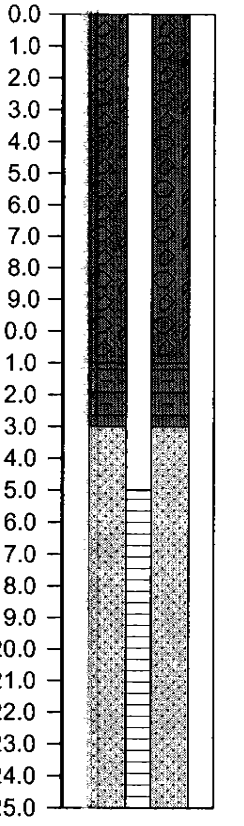
BOREHOLE NUMBER **MW-17** Page 1 of 1

PROJECT NAME: **Halifax Landfill**
LOCATION: **Halifax Co.**
DRILLING CO: **McCall Bros.**
DRILLING METHOD: **HSA**
FIELD PARTY: **Ken McDonald**
GEOLOGIST: **J. Smyth**
DATE BEGUN: **10/03/07** DATE COMPLETED: **10/03/07**

TOTAL DEPTH: **25**
GROUND SURFACE ELEVATION:
TOP OF CASING ELEVATION:

STATIC WATER LEVEL (TOC)		
Depth (ft)		
Time		
Date		

DEPTH	BLOW COUNT	SAMPLING METHOD	RECOVERY	DRILL METHOD	DESCRIPTION	LITHOLOGY	DEPTH	WELL INSTALLATION
0.0				HSA	SILTY CLAY: Wet, dark brown silty clay with organic matter.		0.0	
1.0							1.0	
2.0							2.0	
3.0							3.0	
4.0							4.0	
5.0	2,2,4,6	SS	16"				5.0	
6.0							6.0	
7.0							7.0	
8.0							8.0	
9.0							9.0	
10.0	4,6,10,12	SS	14"		SAPROLITE: Wet, very weathered to weathered K-spar granitic saprolite. Boring terminated at 25' below grade.		10.0	
11.0							11.0	
12.0							12.0	
13.0							13.0	
14.0							14.0	
15.0	11,16,22,27	SS	8"				15.0	
16.0							16.0	
17.0							17.0	
18.0							18.0	
19.0							19.0	
20.0	7,22,29,33	SS	6"				20.0	
21.0							21.0	
22.0							22.0	
23.0							23.0	
24.0							24.0	
25.0							25.0	



Richardson Smith Gardner and Assoc
14 North Boylan Avenue, Raleigh NC 27603
(919) 828-0577

FIELD BOREHOLE LOG

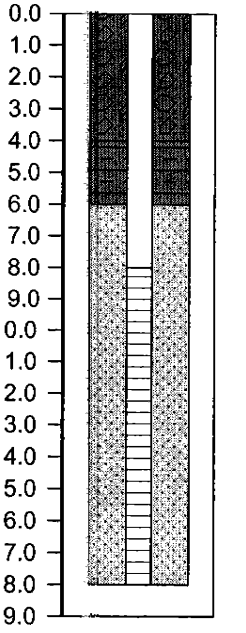
BOREHOLE NUMBER **MW-18s** Page 1 of 1

PROJECT NAME: **Halifax Landfill**
LOCATION: **Halifax Co.**
DRILLING CO: **McCall Bros.**
DRILLING METHOD: **HSA**
FIELD PARTY: **Ken McDonald**
GEOLOGIST: **J. Smyth**
DATE BEGUN: **10/16/07** DATE COMPLETED: **10/16/07**

TOTAL DEPTH: **19**
GROUND SURFACE ELEVATION:
TOP OF CASING ELEVATION:

STATIC WATER LEVEL (TOC)		
Depth (ft)		
Time		
Date		

DEPTH	BLOW COUNT	SAMPLING METHOD	RECOVERY	DRILL METHOD	DESCRIPTION	LITHOLOGY
0.0				HSA	SILTY CLAY: Moist to Wet gray green silty clay	
1.0						
2.0						
3.0						
4.0						
5.0						
6.0	2,2,1,2	SS	6"			
7.0						
8.0						
9.0						
10.0	3,2,3,11	SS	8"		CLAYEY SILTY SAND: Wet, dark gray, clayey silty sand with some partially weathered rock.	
11.0						
12.0						
13.0						
14.0						
15.0	18,26,27,26	SS	12"		SAPROLITE: Wet weathered potassium feldspar granite saprolite. Auger Refusal at 19 feet. Running sands backfilled hole to 18' where well was then set.	
16.0						
17.0						
18.0						
19.0						



Richardson Smith Gardner and Assoc
14 North Boylan Avenue, Raleigh NC 27603
(919) 828-0577

FIELD BOREHOLE LOG

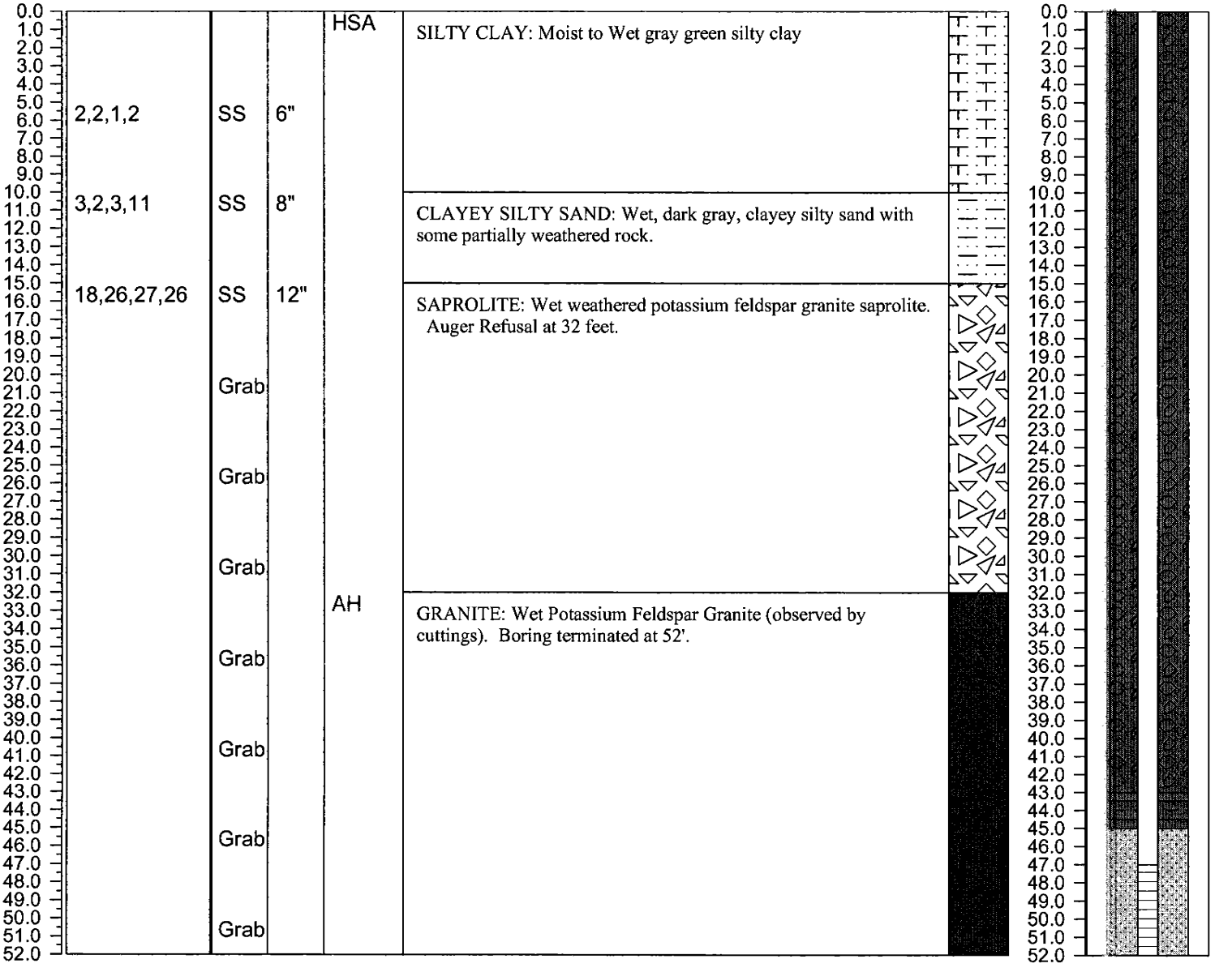
BOREHOLE NUMBER **MW-18d**

PROJECT NAME: **Halifax Landfill**
LOCATION: **Halifax Co.**
DRILLING CO: **McCall Bros.**
DRILLING METHOD: **HSA**
FIELD PARTY: **Ken McDonald**
GEOLOGIST: **J. Smyth**
DATE BEGUN: **10/16/07** DATE COMPLETED: **10/17/07**

TOTAL DEPTH: **52**
GROUND SURFACE ELEVATION:
TOP OF CASING ELEVATION:

STATIC WATER LEVEL (TOC)		
Depth (ft)		
Time		
Date		

DEPTH	BLOW COUNT	SAMPLING METHOD	RECOVERY	DRILL METHOD	DESCRIPTION	LITHOLOGY	DEPTH	WELL INSTALLATION
0.0–9.0	2,2,1,2	SS	6"	HSA	SILTY CLAY: Moist to Wet gray green silty clay			
9.0–15.0	3,2,3,11	SS	8"		CLAYEY SILTY SAND: Wet, dark gray, clayey silty sand with some partially weathered rock.			
15.0–32.0	18,26,27,26	SS	12"		SAPROLITE: Wet weathered potassium feldspar granite saprolite. Auger Refusal at 32 feet.			
20.0		Grab						
25.0		Grab						
30.0		Grab						
32.0–52.0		Grab		AH	GRANITE: Wet Potassium Feldspar Granite (observed by cuttings). Boring terminated at 52'.			
35.0		Grab						
40.0		Grab						
45.0		Grab						
50.0		Grab						



Appendix B

Laboratory Analytical Reports

Environment 1, Incorporated

REC'D AUG 31 2007

Drinking Water ID: [illegible]
Wastewater ID: 10

P.O. BOX 7085, 114 OAKMONT DRIVE
GREENVILLE, N.C. 27835-7085

PHONE (252) 756-6208
FAX (252) 756-0633

ID#: 6015

HALIFAX CO. LANDFILL (CLOSED MSW)
MR. FRANK RALPH
P.O. BOX 70
HALIFAX ,NC 27839

DATE COLLECTED: 08/09/07
DATE REPORTED : 08/29/07

REVIEWED BY:

PARAMETERS	MDL	SWSL	Well #1	Well #2A	Well #3D	Well #7D	SW-1	Analysis Date	Analyst	Method Code
PH (field measurement), Units			5.2	6.4	6.0	6.0	6.7	08/09/07	RJH	SM4500HB
Antimony, ug/l	0.05	6.0	0.1 J	0.1 J	--- U	--- U	--- U	08/14/07	LFJ	EPA200.8
Arsenic, ug/l	0.47	10.0	--- U	1.7 J	--- U	--- U	1.6 J	08/14/07	LFJ	EPA200.8
Barium, ug/l	0.04	100.0	35.1 J	93.3 J	60.4 J	43.1 J	48.0 J	08/14/07	LFJ	EPA200.8
Beryllium, ug/l	0.08	1.0	0.1 J	0.4 J	0.3 J	0.2 J	--- U	08/14/07	LFJ	EPA200.8
Cadmium, ug/l	0.06	1.0	0.1 J	0.1 J	0.1 J	0.1 J	0.2 J	08/14/07	LFJ	EPA200.8
Cobalt, ug/l	0.41	10.0	0.6 J	5.9 J	--- U	--- U	1.8 J	08/14/07	LFJ	EPA200.8
Copper, ug/l	0.20	10.0	1.2 J	1.1 J	0.5 J	1.1 J	1.3 J	08/14/07	LFJ	EPA200.8
Total Chromium, ug/l	0.24	10.0	0.4 J	4.1 J	0.4 J	1.4 J	0.7 J	08/14/07	LFJ	EPA200.8
Lead, ug/l	0.07	10.0	0.2 J	0.8 J	0.3 J	1.0 J	2.5 J	08/14/07	LFJ	EPA200.8
Mercury, ug/l	0.04	0.20		--- U	0.15 J	--- U		08/14/07	LFJ	EPA200.8
Nickel, ug/l	0.66	50.0	--- U	2.5 J	0.7 J	1.1 J	--- U	08/14/07	LFJ	EPA200.8
Selenium, ug/l	0.35	10.0	0.8 J	--- U	--- U	--- U	--- U	08/14/07	LFJ	EPA200.8
Silver, ug/l	0.52	10.0	--- U	--- U	--- U	--- U	--- U	08/14/07	LFJ	EPA200.8
Thallium, ug/l	0.07	5.0	0.1 J	--- U	--- U	--- U	--- U	08/14/07	LFJ	EPA200.8
Tin, ug/l	0.12	100.0		0.9 J	0.6 J	0.7 J		08/14/07	LFJ	EPA200.8
Vanadium, ug/l	0.42	25.0	--- U	2.9 J	--- U	--- U	2.9 J	08/14/07	LFJ	EPA200.8
Zinc, ug/l	0.20	10.0	3.1 J	4.6 J	5.5 J	8.9 J	13	08/14/07	LFJ	EPA200.8
Conductivity (at 25c), uMhos	1.0	1.0	55	223	183	44	122	08/09/07	RJH	SM2510B
Temperature, °C			16	19	17	20	25	08/09/07	RJH	SM2550B
Static Water Level, feet			29.33	5.17	8.17	3.95		08/09/07	RJH	
Well Depth, feet			42.36	17.21	52.07	39.57		08/09/07	RJH	

J = Between MDL and SWSL, U = Below ALL Quanititation Limits.

Environment 1, Incorporated

Drinking Water ID: 17715
Wastewater ID: 10

P.O. BOX 7085, 114 OAKMONT DRIVE
GREENVILLE, N.C. 27835-7085

PHONE (252) 756-6208
FAX (252) 756-0633

ID#: 6015

HALIFAX CO. LANDFILL (CLOSED MSW)
MR. FRANK RALPH
P.O. BOX 70
HALIFAX ,NC 27839

DATE COLLECTED: 08/09/07
DATE REPORTED : 08/29/07

REVIEWED BY:

PARAMETERS	MDL	SWSL	SW-2	SW-3	Well #2AD	Well #6D	Well #15R	Analysis Date	Analyst	Method Code
PH (field measurement), Units			6.7	6.7	6.6	6.1	5.0	08/09/07	RJH	SM4500HB
Antimony, ug/l	0.05	6.0	--- U	--- U	--- U	--- U	0.1 J	08/14/07	LFJ	EPA200.8
Arsenic, ug/l	0.47	10.0	1.9 J	1.6 J	0.9 J	--- U	--- U	08/14/07	LFJ	EPA200.8
Barium, ug/l	0.04	100.0	82.9 J	45.0 J	108	547	89.6 J	08/14/07	LFJ	EPA200.8
Beryllium, ug/l	0.08	1.0	--- U	0.8 J	--- U	0.4 J	0.2 J	08/14/07	LFJ	EPA200.8
Cadmium, ug/l	0.06	1.0	0.6 J	0.9 J	0.4 J	0.2 J	0.3 J	08/14/07	LFJ	EPA200.8
Cobalt, ug/l	0.41	10.0	1.3 J	2.5 J	4.5 J	4.4 J	0.5 J	08/14/07	LFJ	EPA200.8
Copper, ug/l	0.20	10.0	0.6 J	1.0 J	0.9 J	0.8 J	1.5 J	08/14/07	LFJ	EPA200.8
Total Chromium, ug/l	0.24	10.0	--- U	--- U	6.6 J	--- U	0.6 J	08/14/07	LFJ	EPA200.8
Lead, ug/l	0.07	10.0	0.1 J	0.1 J	0.2 J	0.3 J	0.1 J	08/14/07	LFJ	EPA200.8
Mercury, ug/l	0.04	0.20			0.06 J	0.08 J	6.65	08/14/07	LFJ	EPA200.8
Nickel, ug/l	0.66	50.0	1.2 J	3.3 J	5.7 J	2.3 J	--- U	08/14/07	LFJ	EPA200.8
Selenium, ug/l	0.35	10.0	2.5 J	7.5 J	--- U	0.8 J	--- U	08/14/07	LFJ	EPA200.8
Silver, ug/l	0.52	10.0	--- U	--- U	--- U	--- U	--- U	08/14/07	LFJ	EPA200.8
Thallium, ug/l	0.07	5.0	--- U	--- U	--- U	--- U	0.2 J	08/14/07	LFJ	EPA200.8
Tin, ug/l	0.12	100.0			0.8 J	1.0 J	1.3 J	08/14/07	LFJ	EPA200.8
Vanadium, ug/l	0.42	25.0	--- U	3.0 J	--- U	0.7 J	--- U	08/14/07	LFJ	EPA200.8
Zinc, ug/l	0.20	10.0	2.9 J	46	5.8 J	13	3.6 J	08/14/07	LFJ	EPA200.8
Conductivity (at 25c), uMhos	1.0	1.0	431	1053	541	576	88	08/09/07	RJH	SM2510B
Temperature, °C			26	22	18	17	18	08/09/07	RJH	SM2550B
Static Water Level, feet					4.75	12.23	29.54	08/09/07	RJH	
Well Depth, feet					41.75	43.55	46.41	08/09/07	RJH	

J = Between MDL and SWSL, U = Below ALL Quanititation Limits.

Environment 1, Incorporated

Drinking Water ID: 3715
Wastewater ID: 10

P.O. BOX 7085, 114 OAKMONT DRIVE
GREENVILLE, N.C. 27835-7085

PHONE (252) 756-6208
FAX (252) 756-0633

ID#: 6015

HALIFAX CO. LANDFILL (CLOSED MSW)
MR. FRANK RALPH
P.O. BOX 70
HALIFAX ,NC 27839

DATE COLLECTED: 08/09/07
DATE REPORTED : 08/29/07

REVIEWED BY:

PARAMETERS	MDL	SWSL	Well #3AD	Well #16A	BP-3	BP-9	Equipment Blank	Analysis Date	Analyst	Method Code
PH (field measurement), Units			6.4	5.8				08/09/07	RJH	SM4500HB
Antimony, ug/l	0.05	6.0	--- U	--- U				08/14/07	LFJ	EPA200.8
Arsenic, ug/l	0.47	10.0	1.4 J	--- U				08/14/07	LFJ	EPA200.8
Barium, ug/l	0.04	100.0	33.7 J	91.9 J				08/14/07	LFJ	EPA200.8
Beryllium, ug/l	0.08	1.0	0.1 J	0.5 J				08/14/07	LFJ	EPA200.8
Cadmium, ug/l	0.06	1.0	0.6 J	0.5 J				08/14/07	LFJ	EPA200.8
Cobalt, ug/l	0.41	10.0	2.7 J	--- U				08/14/07	LFJ	EPA200.8
Copper, ug/l	0.20	10.0	0.5 J	0.9 J				08/14/07	LFJ	EPA200.8
Total Chromium, ug/l	0.24	10.0	--- U	--- U				08/14/07	LFJ	EPA200.8
Lead, ug/l	0.07	10.0	0.2 J	0.3 J				08/14/07	LFJ	EPA200.8
Mercury, ug/l	0.04	0.20	0.04 J	0.44				08/14/07	LFJ	EPA200.8
Nickel, ug/l	0.66	50.0	--- U	--- U				08/14/07	LFJ	EPA200.8
Selenium, ug/l	0.35	10.0	--- U	--- U				08/14/07	LFJ	EPA200.8
Silver, ug/l	0.52	10.0	--- U	--- U				08/14/07	LFJ	EPA200.8
Thallium, ug/l	0.07	5.0	--- U	--- U				08/14/07	LFJ	EPA200.8
Tin, ug/l	0.12	100.0	0.6 J	0.6 J				08/14/07	LFJ	EPA200.8
Vanadium, ug/l	0.42	25.0	--- U	--- U				08/14/07	LFJ	EPA200.8
Zinc, ug/l	0.20	10.0	2.7 J	6.9 J				08/14/07	LFJ	EPA200.8
Conductivity (at 25c), uMhos	1.0	1.0	401	161				08/09/07	RJH	SM2510B
Temperature, °C			18	17				08/09/07	RJH	SM2550B
Static Water Level, feet			8.90	6.42	28.20	27.56		08/09/07	RJH	
Well Depth, feet			22.89	22.73				08/09/07	RJH	

J = Between MDL and SWSL, U = Below ALL Quanititation Limits.

Environment 1, Incorporated

Wastewater ID: 10

P.O. BOX 7085, 114 OAKMONT DRIVE
GREENVILLE, N.C. 27835-7085

PHONE (252) 756-6208
FAX (252) 756-0633

CLIENT: HALIFAX CO. LANDFILL (CLOSED MSW)
MR. FRANK RALPH
P.O. BOX 70
HALIFAX, NC 27839

CLIENT ID: 6015

ANALYST: CHS
DATE COLLECTED: 08/09/07
DATE EXTRACTED: 08/13/07
DATE ANALYZED: 08/16/07
DATE REPORTED: 08/29/07

REVIEWED BY:

PESTICIDES AND PCB'S
EPA METHOD 8081A

PARAMETERS, ug/l	MDL	SWSL	Well #2A	Well #3D	Well #7D	Well #2AD	Well #6D
1. Aldrin	0.029	0.05	--- U	--- U	--- U	--- U	--- U
2. Alpha-BHC	0.032	0.05	--- U	--- U	--- U	--- U	--- U
3. Beta-BHC	0.031	0.05	--- U	--- U	--- U	--- U	--- U
4. Delta-BHC	0.030	0.05	--- U	--- U	--- U	--- U	--- U
5. Gamma-BHC (Lindane)	0.032	0.05	--- U	--- U	--- U	--- U	--- U
6. Chlordane	0.320	0.50	--- U	--- U	--- U	--- U	--- U
7. 4,4-DDD	0.051	0.10	--- U	--- U	--- U	--- U	--- U
8. 4,4-DDE	0.049	0.10	--- U	--- U	--- U	--- U	--- U
9. 4,4-DDT	0.052	0.10	--- U	--- U	--- U	--- U	--- U
10. Dieldrin	0.042	0.07	--- U	--- U	--- U	--- U	--- U
11. Endosulfan I	0.056	0.10	--- U	--- U	--- U	--- U	--- U
12. Endosulfan II	0.046	0.10	--- U	--- U	--- U	--- U	--- U
13. Endosulfan Sulfate	0.072	0.10	--- U	--- U	--- U	--- U	--- U
14. Endrin	0.053	0.10	--- U	--- U	--- U	--- U	--- U
15. Endrin Aldehyde	0.068	0.10	--- U	--- U	--- U	--- U	--- U
16. Heptachlor	0.039	0.05	--- U	--- U	--- U	--- U	--- U
17. Hepthchlor Epoxide	0.042	0.07	--- U	--- U	--- U	--- U	--- U
18. Methoxychlor	0.530	1.00	--- U	--- U	--- U	--- U	--- U
19. Pcb's (Aroclors)	0.500	2.00	--- U	--- U	--- U	--- U	--- U
20. Toxaphene	0.690	1.00	--- U	--- U	--- U	--- U	--- U

J = Between MDL and SWSL, U = Below ALL Quanititation Limits.

Environment 1, Incorporated

Drinking Water Cert. #17715
Wastewater ID: 10

P.O. BOX 7085, 114 OAKMONT DRIVE
GREENVILLE, N.C. 27835-7085

PHONE (252) 756-6208
FAX (252) 756-0633

CLIENT: HALIFAX CO. LANDFILL (CLOSED MSW)
MR. FRANK RALPH
P.O. BOX 70
HALIFAX, NC 27839

CLIENT ID: 6015

ANALYST: CHS
DATE COLLECTED: 08/09/07
DATE EXTRACTED: 08/13/07
DATE ANALYZED: 08/16/07
DATE REPORTED: 08/29/07

REVIEWED BY: _____

PESTICIDES AND PCB'S
EPA METHOD 8081A

PARAMETERS, ug/l	MDL	SWSL	Well #15R	Well #3AD	Well #16A
1. Aldrin	0.029	0.05	--- U	--- U	--- U
2. Alpha-BHC	0.032	0.05	0.292	--- U	--- U
3. Beta-BHC	0.031	0.05	--- U	--- U	--- U
4. Delta-BHC	0.030	0.05	--- U	--- U	--- U
5. Gamma-BHC (Lindane)	0.032	0.05	--- U	--- U	--- U
6. Chlordane	0.320	0.50	--- U	--- U	--- U
7. 4,4-DDD	0.051	0.10	--- U	--- U	--- U
8. 4,4-DDE	0.049	0.10	--- U	--- U	--- U
9. 4,4-DDT	0.052	0.10	--- U	--- U	--- U
10. Dieldrin	0.042	0.07	--- U	--- U	--- U
11. Endosulfan I	0.056	0.10	--- U	--- U	--- U
12. Endosulfan II	0.046	0.10	--- U	--- U	--- U
13. Endosulfan Sulfate	0.072	0.10	--- U	--- U	--- U
14. Endrin	0.053	0.10	--- U	--- U	--- U
15. Endrin Aldehyde	0.068	0.10	--- U	--- U	--- U
16. Heptachlor	0.039	0.05	0.088	--- U	--- U
17. Hepthchlor Epoxide	0.042	0.07	--- U	--- U	--- U
18. Methoxychlor	0.530	1.00	--- U	--- U	--- U
19. Pcb's (Aroclors)	0.500	2.00	--- U	--- U	--- U
20. Toxaphene	0.690	1.00	--- U	--- U	--- U

NOTE: Well 3AD surrogate recovery
outside control limits

J = Between MDL and SWSL, U = Below ALL Quanititation Limits.

Environment 1, Incorporated

Drinking Water ID: 17315
Wastewater ID: 10

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GREENVILLE, N.C. 27835-7085

PHONE (252) 756-6208
FAX (252) 756-0633

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MR. FRANK RALPH
P.O. BOX 70
HALIFAX, NC 27839

CLIENT ID: 6015

ANALYST: CHS
DATE COLLECTED: 08/09/07
DATE EXTRACTED: 08/14/07
DATE ANALYZED: 08/15/07
DATE REPORTED: 08/29/07

REVIEWED BY:

LANDFILL APPENDIX II
EPA METHOD 8151A

PARAMETERS, ug/l	MDL	SWSL	Well #2A	Well #3D	Well #7D	Well #2AD	Well #6D
1. 2,4-D	0.36	2.0	--- U	--- U	--- U	--- U	--- U
2. Dinoseb	0.54	1.0	--- U	--- U	--- U	--- U	--- U
3. 2,4,5-TP	0.42	2.0	--- U	--- U	--- U	--- U	--- U
4. 2,4,5-T	0.47	2.0	--- U	--- U	--- U	--- U	--- U

J = Between MDL and SWSL, U = Below ALL Quanititation Limits.

Environment 1, Incorporated

Drinking Water ID: 17715
Wastewater ID: 10

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GREENVILLE, N.C. 27835-7085

PHONE (252) 756-6208
FAX (252) 756-0633

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MR. FRANK RALPH
P.O. BOX 70
HALIFAX, NC 27839

CLIENT ID: 6015

ANALYST: CHS
DATE COLLECTED: 08/09/07
DATE EXTRACTED: 08/14/07
DATE ANALYZED: 08/15/07
DATE REPORTED: 08/29/07

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LANDFILL APPENDIX II
EPA METHOD 8151A

PARAMETERS, ug/l	MDL	SWSL	Well #15R	Well #3AD	Well #16A
1. 2,4-D	0.36	2.0	--- U	--- U	--- U
2. Dinoseb	0.54	1.0	--- U	--- U	--- U
3. 2,4,5-TP	0.42	2.0	--- U	--- U	--- U
4. 2,4,5-T	0.47	2.0	--- U	--- U	--- U

J = Between MDL and SWSL, U = Below ALL Quanititation Limits.

Environment 1, Incorporated

Drinking Water ID: 37919
Wastewater ID: 10

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GREENVILLE, N.C. 27835-7085

PHONE (252) 756-6208
FAX (252) 756-0633

CLIENT: HALIFAX CO. LANDFILL (CLOSED MSW)
MR. FRANK RALPH
P.O. BOX 70
HALIFAX, NC 27839

CLIENT ID: 6015

ANALYST: MAO
DATE COLLECTED: 08/09/07
DATE REPORTED: 08/29/07

REVIEWED BY:

VOLATILE ORGANICS
EPA METHOD 8260B

PARAMETERS, ug/l	Date Analyzed: MDL	SWSL	08/13/07 Well #1	08/13/07 SW-1	08/16/07 SW-2	08/16/07 SW-3
1. Chloromethane	0.18	1.0	--- U	--- U	--- U	--- U
2. Vinyl Chloride	0.34	1.0	--- U	--- U	--- U	--- U
3. Bromomethane	0.26	10.0	--- U	--- U	--- U	--- U
4. Chloroethane	0.29	10.0	--- U	--- U	--- U	--- U
5. Trichlorofluoromethane	0.13	1.0	--- U	--- U	--- U	--- U
6. 1,1-Dichloroethene	0.14	5.0	--- U	--- U	--- U	--- U
7. Acetone	1.21	100.0	--- U	--- U	2.20 J	2.60 J
8. Iodomethane	0.12	10.0	--- U	--- U	--- U	--- U
9. Carbon Disulfide	0.14	100.0	--- U	--- U	--- U	--- U
10. Methylene Chloride	0.14	1.0	--- U	--- U	--- U	--- U
11. trans-1,2-Dichloroethene	0.13	5.0	--- U	--- U	--- U	--- U
12. 1,1-Dichloroethane	0.16	5.0	--- U	--- U	--- U	--- U
13. Vinyl Acetate	0.20	5.0	--- U	--- U	--- U	--- U
14. Cis-1,2-Dichloroethene	0.14	5.0	--- U	--- U	--- U	--- U
15. 2-Butanone	0.85	100.0	1.80 J	1.90 J	3.80 J	1.70 J
16. Bromochloromethane	0.11	3.0	--- U	--- U	--- U	--- U
17. Chloroform	0.13	5.0	--- U	--- U	--- U	--- U
18. 1,1,1-Trichloroethane	0.11	1.0	--- U	--- U	--- U	--- U
19. Carbon Tetrachloride	0.13	1.0	--- U	--- U	--- U	--- U
20. Benzene	0.16	1.0	--- U	--- U	--- U	--- U
21. 1,2-Dichloroethane	0.12	1.0	--- U	--- U	--- U	--- U
22. Trichloroethene	0.13	1.0	--- U	--- U	--- U	--- U
23. 1,2-Dichloropropane	0.17	1.0	--- U	--- U	--- U	--- U
24. Bromodichloromethane	0.13	1.0	--- U	--- U	--- U	--- U
25. Cis-1,3-Dichloropropene	0.17	1.0	--- U	--- U	--- U	--- U
26. 4-Methyl-2-Pentanone	0.68	100.0	--- U	--- U	--- U	--- U
27. Toluene	0.13	1.0	0.40 J	0.40 J	0.30 J	0.30 J
28. trans-1,3-Dichloropropene	0.14	1.0	--- U	--- U	--- U	--- U
29. 1,1,2-Trichloroethane	0.20	5.0	--- U	--- U	--- U	--- U
30. Tetrachloroethene	0.16	1.0	--- U	--- U	--- U	--- U
31. 2-Hexanone	1.00	50.0	--- U	--- U	--- U	--- U
32. Dibromochloromethane	0.14	1.0	--- U	--- U	--- U	--- U
33. 1,2-Dibromoethane	0.13	1.0	--- U	--- U	--- U	--- U
34. Chlorobenzene	0.13	3.0	--- U	--- U	--- U	--- U
35. 1,1,1,2-Tetrachloroethane	0.14	5.0	--- U	--- U	--- U	--- U
36. Ethylbenzene	0.16	1.0	--- U	--- U	--- U	--- U
37. Xylenes	0.48	4.0	--- U	--- U	--- U	--- U
38. Dibromomethane	0.17	10.0	--- U	--- U	--- U	--- U
39. Styrene	0.16	1.0	--- U	--- U	--- U	--- U
40. Bromoform	0.11	3.0	--- U	--- U	--- U	--- U
41. 1,1,2,2-Tetrachloroethane	0.16	1.0	--- U	--- U	--- U	--- U
42. 1,2,3-Trichloropropane	0.06	1.0	--- U	--- U	--- U	--- U
43. 1,4-Dichlorobenzene	0.21	1.0	--- U	--- U	--- U	--- U
44. 1,2-Dichlorobenzene	0.13	5.0	--- U	--- U	--- U	--- U
45. 1,2-Dibromo-3-Chloropropane	0.26	1.0	--- U	--- U	--- U	--- U
46. Acrylonitrile	1.49	200.0	--- U	--- U	--- U	--- U
47. trans-1,4-Dichloro-2-Butene	0.14	100.0	--- U	--- U	--- U	--- U

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Environment 1, Incorporated

Drinking Water ID: 17715
Wastewater ID: 10

P.O. BOX 7085, 114 OAKMONT DRIVE
GREENVILLE, N.C. 27835-7085

PHONE (252) 756-6208
FAX (252) 756-0633

CLIENT: HALIFAX CO. LANDFILL (CLOSED MSW)
MR. FRANK RALPH
P.O. BOX 70
HALIFAX, NC 27839

CLIENT ID: 6015

ANALYST: CHS
DATE COLLECTED: 08/09/07
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Page: 1

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SEMI-VOLATILE ORGANICS
EPA METHOD 8270C

PARAMETERS, ug/l	MDL	SWSL	Well #2A	Well #3D	Well #7D	Well #2AD	Well #6D
1. Acenaphthene	2.66	10.0	--- U	--- U	--- U	--- U	--- U
2. Acenaphthylene	2.60	10.0	--- U	--- U	--- U	--- U	--- U
3. Anthracene	2.97	10.0	--- U	--- U	--- U	--- U	--- U
4. Benzo[a]antrhacene	4.16	10.0	--- U	--- U	--- U	--- U	--- U
5. Benzo[b]fluoranthene	3.32	10.0	--- U	--- U	--- U	--- U	--- U
6. Benzo[k]fluoranthene	4.23	10.0	--- U	--- U	--- U	--- U	--- U
7. Benzo[g,h,i]perylene	2.61	10.0	--- U	--- U	--- U	--- U	--- U
8. Benzo[a]pyrene	3.27	10.0	--- U	--- U	--- U	--- U	--- U
9. 4-Bromophenyl Phenyl Ether	2.63	10.0	--- U	--- U	--- U	--- U	--- U
10. Butyl Benzyl Phthalate	5.78	10.0	--- U	--- U	--- U	--- U	--- U
11. Bis-(2-Chloroethoxy) Methane	3.14	10.0	--- U	--- U	--- U	--- U	--- U
12. Bis-(2-Chloroethyl) Ether	2.58	10.0	--- U	--- U	--- U	--- U	--- U
13. Bis-(2-Chloroisopropyl) Ether	2.58	10.0	--- U	--- U	--- U	--- U	--- U
14. 2-Chloronaphthalene	2.17	10.0	--- U	--- U	--- U	--- U	--- U
15. 4-Chlorophenyl Phenyl Ether	2.42	10.0	--- U	--- U	--- U	--- U	--- U
16. Chrysene	4.04	10.0	--- U	--- U	--- U	--- U	--- U
17. Dibenzo[a,h]anthracene	2.78	10.0	--- U	--- U	--- U	--- U	--- U
18. Di-N-Butyl Phthalate	3.09	10.0	--- U	--- U	--- U	--- U	--- U
19. Dimethyl Phthalate	3.78	10.0	--- U	--- U	--- U	--- U	--- U
20. Diethyl Phthalate	3.92	10.0	--- U	--- U	--- U	--- U	--- U
21. 2,4-Dinitrotoluene	3.95	10.0	--- U	--- U	--- U	--- U	--- U
22. 2,6-Dinitrotoluene	3.88	10.0	--- U	--- U	--- U	--- U	--- U
23. Di-N-Octyl Phthalate	2.81	10.0	--- U	--- U	--- U	--- U	--- U
24. Bis-(2-Ethylhexyl) Phthalate	9.97	15.0	--- U	--- U	--- U	--- U	15.10
25. Fluoranthene	3.92	10.0	--- U	--- U	--- U	--- U	--- U
26. Fluorene	2.95	10.0	--- U	--- U	--- U	--- U	--- U
27. Hexachlorobenzene	2.61	10.0	--- U	--- U	--- U	--- U	--- U
28. Hexachlorocyclopentadiene	4.16	10.0	--- U	--- U	--- U	--- U	--- U
29. Indeno[1,2,3-Cd]pyrene	2.91	10.0	--- U	--- U	--- U	--- U	--- U
30. Isophorone	3.74	10.0	--- U	--- U	--- U	--- U	--- U
31. Nitrobenzene	2.85	10.0	--- U	--- U	--- U	--- U	--- U
32. N-Nitrosodimethylamine	4.25	10.0	--- U	--- U	--- U	--- U	--- U
33. N-Nitrosodiphenylamine	3.95	10.0	--- U	--- U	--- U	--- U	--- U
34. N-Nitrosodi-N-Propylamine	4.06	10.0	--- U	--- U	--- U	--- U	--- U
35. Phenanthrene	3.24	10.0	--- U	--- U	--- U	--- U	--- U
36. Pyrene	3.63	10.0	--- U	--- U	--- U	--- U	--- U
37. 4-Chloro-3-Methylphenol	3.79	20.0	--- U	--- U	--- U	--- U	--- U
38. 2-Chlorophenol	2.75	10.0	--- U	--- U	--- U	--- U	--- U
39. O-Cresol	3.68	10.0	--- U	--- U	--- U	--- U	--- U
40. P-Cresol	4.12	10.0	--- U	--- U	--- U	--- U	--- U
41. 2,4-Dichlorophenol	5.19	10.0	--- U	--- U	--- U	--- U	--- U
42. 2,6-Dichlorophenol	4.89	10.0	--- U	--- U	--- U	--- U	--- U
43. 2,4-Dimethylphenol	3.21	10.0	--- U	--- U	--- U	--- U	--- U
44. 4,6-Dinitro-2-Methylphenol	4.77	50.0	--- U	--- U	--- U	--- U	--- U
45. 2,4-Dinitrophenol	4.37	50.0	--- U	--- U	--- U	--- U	--- U
46. Ethyl Methanesulfonate	5.26	10.0	--- U	--- U	--- U	--- U	--- U
47. Methyl Methanesulfonate	4.92	10.0	--- U	--- U	--- U	--- U	--- U
48. 2-Nitrophenol	3.64	10.0	--- U	--- U	--- U	--- U	--- U

J = Between MDL and SWSL, U = Below ALL Quanititation Limits.

Environment 1, Incorporated

Irrigation Water ID: 37719
Wastewater ID: 10

P.O. BOX 7085, 114 OAKMONT DRIVE
GREENVILLE, N.C. 27835-7085

PHONE (252) 756-6208
FAX (252) 756-0633

CLIENT: HALIFAX CO. LANDFILL (CLOSED MSW)
MR. FRANK RALPH
P.O. BOX 70
HALIFAX, NC 27839

REVIEWED BY:

CLIENT ID: 6015

ANALYST: CHS
DATE COLLECTED: 08/09/07
DATE EXTRACTED: 08/13/07
DATE ANALYZED: 08/22/07
DATE REPORTED: 08/29/07

SEMI-VOLATILE ORGANICS
EPA METHOD 8270C

PARAMETERS, ug/l	MDL	SWSL	Well #2A	Well #3D	Well #7D	Well #2AD	Well #6D
49. 4-Nitrophenol	3.17	50.0	--- U	--- U	--- U	--- U	--- U
50. Pentachlorophenol	5.33	25.0	--- U	--- U	--- U	--- U	--- U
51. Phenol	1.86	10.0	--- U	--- U	--- U	--- U	--- U
52. 2,3,4,6-Tetrachlorophenol	3.12	10.0	--- U	--- U	--- U	--- U	--- U
53. 2,4,5-Trichlorophenol	4.17	10.0	--- U	--- U	--- U	--- U	--- U
54. 2,4,6-Trichlorophenol	3.84	10.0	--- U	--- U	--- U	--- U	--- U
55. Acetophenone	2.89	10.0	--- U	--- U	--- U	--- U	--- U
56. 2-Acetylaminofluorene	3.98	20.0	--- U	--- U	--- U	--- U	--- U
57. 4-Aminobiphenyl	4.12	15.0	--- U	--- U	--- U	--- U	--- U
58. Benzyl Alcohol	4.47	20.0	--- U	--- U	--- U	--- U	--- U
59. 4-Chloroaniline	3.36	20.0	--- U	--- U	--- U	--- U	--- U
60. Chlorobenzilate	5.12	10.0	--- U	--- U	--- U	--- U	--- U
61. Diallate	2.98	10.0	--- U	--- U	--- U	--- U	--- U
62. Dibenzofuran	4.28	10.0	--- U	--- U	--- U	--- U	--- U
63. 3,3-Dichlorobenzidine	4.22	20.0	--- U	--- U	--- U	--- U	--- U
64. Dimethoate	3.98	20.0	--- U	--- U	--- U	--- U	--- U
65. P-Dimethylaminoazobenzene	2.89	10.0	--- U	--- U	--- U	--- U	--- U
66. 7,12-Dimethylbenz[a]anthracene	5.26	10.0	--- U	--- U	--- U	--- U	--- U
67. 3,3-Dimethylbenzadine	3.21	10.0	--- U	--- U	--- U	--- U	--- U
68. 1,3-Dinitrobenzene	2.89	20.0	--- U	--- U	--- U	--- U	--- U
69. Diphenylamine	5.10	10.0	--- U	--- U	--- U	--- U	--- U
70. Disulfoton	4.28	10.0	--- U	--- U	--- U	--- U	--- U
71. Famphur	3.98	20.0	--- U	--- U	--- U	--- U	--- U
72. Hexachloropropene	4.31	10.0	--- U	--- U	--- U	--- U	--- U
73. Isosafrole	2.88	10.0	--- U	--- U	--- U	--- U	--- U
74. Kepone	2.78	20.0	--- U	--- U	--- U	--- U	--- U
75. Methapyrilene	3.54	100.0	--- U	--- U	--- U	--- U	--- U
76. 3-Methylchloroanthrene	4.21	10.0	--- U	--- U	--- U	--- U	--- U
77. 2-Methylnaphthalene	3.79	10.0	--- U	--- U	--- U	--- U	--- U
78. Methyl Parathion	4.32	10.0	--- U	--- U	--- U	--- U	--- U
79. m-Cresol	3.81	10.0	--- U	--- U	--- U	--- U	--- U
80. 1,4-Naphthoquinone	4.00	10.0	--- U	--- U	--- U	--- U	--- U
81. 1-Naphthylamine	5.61	10.0	--- U	--- U	--- U	--- U	--- U
82. 2-Naphthylamine	4.62	10.0	--- U	--- U	--- U	--- U	--- U
83. 2-Nitroaniline	3.61	50.0	--- U	--- U	--- U	--- U	--- U
84. 3-Nitroaniline	4.81	50.0	--- U	--- U	--- U	--- U	--- U
85. 4-Nitroaniline	4.22	20.0	--- U	--- U	--- U	--- U	--- U
86. 5-Nitro-O-Toluidine	4.01	10.0	--- U	--- U	--- U	--- U	--- U
87. N-Nitrosodi-n-butylamine	3.63	10.0	--- U	--- U	--- U	--- U	--- U
88. N-Nitrosodiethylamine	3.83	20.0	--- U	--- U	--- U	--- U	--- U
89. N-Nitrosomethylethylamine	3.83	10.0	--- U	--- U	--- U	--- U	--- U
90. N-Nitrosopiperidine	5.19	20.0	--- U	--- U	--- U	--- U	--- U
91. N-Nitrosopyrrolidine	2.89	10.0	--- U	--- U	--- U	--- U	--- U
92. Parathion	3.12	10.0	--- U	--- U	--- U	--- U	--- U
93. Pentachlorobenzene	3.92	10.0	--- U	--- U	--- U	--- U	--- U
94. Pentachloronitrobenzene	3.71	20.0	--- U	--- U	--- U	--- U	--- U
95. Phenacetin	4.41	20.0	--- U	--- U	--- U	--- U	--- U
96. 1,4 Benzenediamine	2.99	10.0	--- U	--- U	--- U	--- U	--- U

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P.O. BOX 70
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SEMI-VOLATILE ORGANICS
EPA METHOD 8270C

PARAMETERS, ug/l	MDL	SWSL	Well #2A	Well #3D	Well #7D	Well #2AD	Well #6D
97. Phorate	3.86	10.0	--- U	--- U	--- U	--- U	--- U
98. Pronamide	3.69	10.0	--- U	--- U	--- U	--- U	--- U
99. Safrole	4.12	10.0	--- U	--- U	--- U	--- U	--- U
100. 1,2,4,5-Tetrachlorobenzene	5.01	10.0	--- U	--- U	--- U	--- U	--- U
101. Thionazin	4.62	20.0	--- U	--- U	--- U	--- U	--- U
102. O-Toluidine	4.11	10.0	--- U	--- U	--- U	--- U	--- U
103. 1,3,5-Trinitrobenzene	3.98	10.0	--- U	--- U	--- U	--- U	--- U
104. 0,0,0-Triethyl Phosphorothioate	3.61	10.0	--- U	--- U	--- U	--- U	--- U
105. Hexachloroethane	1.49	10.0	--- U	--- U	--- U	--- U	--- U
106. Isodrin	3.11	20.0	--- U	--- U	--- U	--- U	--- U

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P.O. BOX 7085, 114 OAKMONT DRIVE
GREENVILLE, N.C. 27835-7085

PHONE (252) 756-6208
FAX (252) 756-0633

CLIENT: HALIFAX CO. LANDFILL (CLOSED MSW)
MR. FRANK RALPH
P.O. BOX 70
HALIFAX, NC 27839

CLIENT ID: 6015

ANALYST: CHS
DATE COLLECTED: 08/09/07
DATE EXTRACTED: 08/13/07
DATE ANALYZED: 08/22/07
DATE REPORTED: 08/29/07

REVIEWED BY:

SEMI-VOLATILE ORGANICS
EPA METHOD 8270C

PARAMETERS, ug/l	MDL	SWSL	Well #15R	Well #3AD	Well #16A
1. Acenaphthene	2.66	10.0	--- U	--- U	--- U
2. Acenaphthylene	2.60	10.0	--- U	--- U	--- U
3. Anthracene	2.97	10.0	--- U	--- U	--- U
4. Benzo[a]antrhacene	4.16	10.0	--- U	--- U	--- U
5. Benzo[b]fluoranthene	3.32	10.0	--- U	--- U	--- U
6. Benzo[k]fluoranthene	4.23	10.0	--- U	--- U	--- U
7. Benzo[g,h,i]perylene	2.61	10.0	--- U	--- U	--- U
8. Benzo[a]pyrene	3.27	10.0	--- U	--- U	--- U
9. 4-Bromophenyl Phenyl Ether	2.63	10.0	--- U	--- U	--- U
10. Butyl Benzyl Phthalate	5.78	10.0	--- U	--- U	--- U
11. Bis-(2-Chloroethoxy) Methane	3.14	10.0	--- U	--- U	--- U
12. Bis-(2-Chloroethyl) Ether	2.58	10.0	--- U	--- U	--- U
13. Bis-(2-Chloroisopropyl) Ether	2.58	10.0	--- U	--- U	--- U
14. 2-Chloronaphthalene	2.17	10.0	--- U	--- U	--- U
15. 4-Chlorophenyl Phenyl Ether	2.42	10.0	--- U	--- U	--- U
16. Chrysene	4.04	10.0	--- U	--- U	--- U
17. Dibenzo[a,h]anthracene	2.78	10.0	--- U	--- U	--- U
18. Di-N-Butyl Phthalate	3.09	10.0	--- U	--- U	--- U
19. Dimethyl Phthalate	3.78	10.0	--- U	--- U	--- U
20. Diethyl Phthalate	3.92	10.0	--- U	--- U	--- U
21. 2,4-Dinitrotoluene	3.95	10.0	--- U	--- U	--- U
22. 2,6-Dinitrotoluene	3.88	10.0	--- U	--- U	--- U
23. Di-N-Octyl Phthalate	2.81	10.0	--- U	--- U	--- U
24. Bis-(2-Ethylhexyl) Phthalate	9.97	15.0	31.00	--- U	11.10 J
25. Fluoranthene	3.92	10.0	--- U	--- U	--- U
26. Fluorene	2.95	10.0	--- U	--- U	--- U
27. Hexachlorobenzene	2.61	10.0	--- U	--- U	--- U
28. Hexachlorocyclopentadiene	4.16	10.0	--- U	--- U	--- U
29. Indeno[1,2,3-Cd]pyrene	2.91	10.0	--- U	--- U	--- U
30. Isophorone	3.74	10.0	--- U	--- U	--- U
31. Nitrobenzene	2.85	10.0	--- U	--- U	--- U
32. N-Nitrosodimethylamine	4.25	10.0	--- U	--- U	--- U
33. N-Nitrosodiphenylamine	3.95	10.0	--- U	--- U	--- U
34. N-Nitrosodi-N-Propylamine	4.06	10.0	--- U	--- U	--- U
35. Phenanthrene	3.24	10.0	--- U	--- U	--- U
36. Pyrene	3.63	10.0	--- U	--- U	--- U
37. 4-Chloro-3-Methylphenol	3.79	20.0	--- U	--- U	--- U
38. 2-Chlorophenol	2.75	10.0	--- U	--- U	--- U
39. O-Cresol	3.68	10.0	--- U	--- U	--- U
40. P-Cresol	4.12	10.0	--- U	--- U	--- U
41. 2,4-Dichlorophenol	5.19	10.0	--- U	--- U	--- U
42. 2,6-Dichlorophenol	4.89	10.0	--- U	--- U	--- U
43. 2,4-Dimethylphenol	3.21	10.0	--- U	--- U	--- U
44. 4,6-Dinitro-2-Methylphenol	4.77	50.0	--- U	--- U	--- U
45. 2,4-Dinitrophenol	4.37	50.0	--- U	--- U	--- U
46. Ethyl Methanesulfonate	5.26	10.0	--- U	--- U	--- U
47. Methyl Methanesulfonate	4.92	10.0	--- U	--- U	--- U
48. 2-Nitrophenol	3.64	10.0	--- U	--- U	--- U

J = Between MDL and SWSL, U = Below ALL Quanititation Limits.

Environment 1, Incorporated

Drinking Water ID: 37715
Wastewater ID: 10

P.O. BOX 7085, 114 OAKMONT DRIVE
GREENVILLE, N.C. 27835-7085

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MR. FRANK RALPH
P.O. BOX 70
HALIFAX, NC 27839

CLIENT ID: 6015

ANALYST: CHS
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SEMI-VOLATILE ORGANICS
EPA METHOD 8270C

PARAMETERS, ug/l	MDL	SWSL	Well #15R	Well #3AD	Well #16A
49. 4-Nitrophenol	3.17	50.0	--- U	--- U	--- U
50. Pentachlorophenol	5.33	25.0	--- U	--- U	--- U
51. Phenol	1.86	10.0	--- U	--- U	--- U
52. 2,3,4,6-Tetrachlorophenol	3.12	10.0	--- U	--- U	--- U
53. 2,4,5-Trichlorophenol	4.17	10.0	--- U	--- U	--- U
54. 2,4,6-Trichlorophenol	3.84	10.0	--- U	--- U	--- U
55. Acetophenone	2.89	10.0	--- U	--- U	--- U
56. 2-Acetylaminofluorene	3.98	20.0	--- U	--- U	--- U
57. 4-Aminobiphenyl	4.12	15.0	--- U	--- U	--- U
58. Benzyl Alcohol	4.47	20.0	--- U	--- U	--- U
59. 4-Chloroaniline	3.36	20.0	--- U	--- U	--- U
60. Chlorobenzilate	5.12	10.0	--- U	--- U	--- U
61. Diallate	2.98	10.0	--- U	--- U	--- U
62. Dibenzofuran	4.28	10.0	--- U	--- U	--- U
63. 3,3-Dichlorobenzidine	4.22	20.0	--- U	--- U	--- U
64. Dimethoate	3.98	20.0	--- U	--- U	--- U
65. P-Dimethylaminoazobenzene	2.89	10.0	--- U	--- U	--- U
66. 7,12-Dimethylbenz[a]anthracene	5.26	10.0	--- U	--- U	--- U
67. 3,3-Dimethylbenzadine	3.21	10.0	--- U	--- U	--- U
68. 1,3-Dinitrobenzene	2.89	20.0	--- U	--- U	--- U
69. Diphenylamine	5.10	10.0	--- U	--- U	--- U
70. Disulfoton	4.28	10.0	--- U	--- U	--- U
71. Famphur	3.98	20.0	--- U	--- U	--- U
72. Hexachloropropene	4.31	10.0	--- U	--- U	--- U
73. Isosafrole	2.88	10.0	--- U	--- U	--- U
74. Kepone	2.78	20.0	--- U	--- U	--- U
75. Methapyrilene	3.54	100.0	--- U	--- U	--- U
76. 3-Methylchloroanthrene	4.21	10.0	--- U	--- U	--- U
77. 2-Methylnaphthalene	3.79	10.0	--- U	--- U	--- U
78. Methyl Parathion	4.32	10.0	--- U	--- U	--- U
79. m-Cresol	3.81	10.0	--- U	--- U	--- U
80. 1,4-Naphthoquinone	4.00	10.0	--- U	--- U	--- U
81. 1-Naphthylamine	5.61	10.0	--- U	--- U	--- U
82. 2-Naphthylamine	4.62	10.0	--- U	--- U	--- U
83. 2-Nitroaniline	3.61	50.0	--- U	--- U	--- U
84. 3-Nitroaniline	4.81	50.0	--- U	--- U	--- U
85. 4-Nitroaniline	4.22	20.0	--- U	--- U	--- U
86. 5-Nitro-O-Toluidine	4.01	10.0	--- U	--- U	--- U
87. N-Nitrosodi-n-butylamine	3.63	10.0	--- U	--- U	--- U
88. N-Nitrosodiethylamine	3.83	20.0	--- U	--- U	--- U
89. N-Nitrosomethylethylamine	3.83	10.0	--- U	--- U	--- U
90. N-Nitrosopiperidine	5.19	20.0	--- U	--- U	--- U
91. N-Nitrosopyrrolidine	2.89	10.0	--- U	--- U	--- U
92. Parathion	3.12	10.0	--- U	--- U	--- U
93. Pentachlorobenzene	3.92	10.0	--- U	--- U	--- U
94. Pentachloronitrobenzene	3.71	20.0	--- U	--- U	--- U
95. Phenacetin	4.41	20.0	--- U	--- U	--- U
96. 1,4 Benzenediamine	2.99	10.0	--- U	--- U	--- U

J = Between MDL and SWSL, U = Below ALL Quanititation Limits.

Environment 1, Incorporated

Drinking Water ID: 37715
Wastewater ID: 10

P.O. BOX 7085, 114 OAKMONT DRIVE
GREENVILLE, N.C. 27835-7085

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CLIENT: HALIFAX CO. LANDFILL (CLOSED MSW)
MR. FRANK RALPH
P.O. BOX 70
HALIFAX, NC 27839

CLIENT ID: 6015

ANALYST: CHS
DATE COLLECTED: 08/09/07
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REVIEWED BY:

SEMI-VOLATILE ORGANICS
EPA METHOD 8270C

PARAMETERS, ug/l	MDL	SWSL	Well #15R	Well #3AD	Well #16A
97. Phorate	3.86	10.0	--- U	--- U	--- U
98. Pronamide	3.69	10.0	--- U	--- U	--- U
99. Safrole	4.12	10.0	--- U	--- U	--- U
100. 1,2,4,5-Tetrachlorobenzene	5.01	10.0	--- U	--- U	--- U
101. Thionazin	4.62	20.0	--- U	--- U	--- U
102. O-Toluidine	4.11	10.0	--- U	--- U	--- U
103. 1,3,5-Trinitrobenzene	3.98	10.0	--- U	--- U	--- U
104. 0,0,0-Triethyl Phosphorothioate	3.61	10.0	--- U	--- U	--- U
105. Hexachloroethane	1.49	10.0	--- U	--- U	--- U
106. Isodrin	3.11	20.0	--- U	--- U	--- U

J = Between MDL and SWSL, U = Below ALL Quanititation Limits.

Environment 1, Incorporated

Drinking Water ID: 37711
Wastewater ID: 10

P.O. BOX 7085, 114 OAKMONT DRIVE
GREENVILLE, N.C. 27835-7085

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CLIENT: HALIFAX CO. LANDFILL (CLOSED MSW)
MR. FRANK RALPH
P.O. BOX 70
HALIFAX, NC 27839

CLIENT ID: 6015

ANALYST: MAO
DATE COLLECTED: 08/09/07
DATE ANALYZED: 08/16/07
DATE REPORTED: 08/29/07

REVIEWED BY:

LANDFILL APPENDIX II
EPA METHOD 8260B

PARAMETERS, ug/l	MDL	SWSL	Well #2A	Well #3D	Well #7D	Well #2AD	Well #6D
1. Chloromethane	0.18	1.0	--- U	--- U	--- U	--- U	--- U
2. Vinyl Chloride	0.34	1.0	1.80	--- U	--- U	5.80	1.40
3. Bromomethane	0.26	10.0	--- U	--- U	--- U	--- U	--- U
4. Chloroethane	0.29	10.0	--- U	--- U	--- U	2.50 J	0.60 J
5. Trichlorofluoromethane	0.13	1.0	--- U	--- U	--- U	--- U	--- U
6. 1,1-Dichloroethene	0.14	5.0	0.20 J	0.30 J	--- U	0.40 J	--- U
7. Acetone	1.21	100.0	1.40 J	--- U	1.30 J	--- U	1.30 J
8. Iodomethane	0.12	10.0	--- U	--- U	--- U	--- U	--- U
9. Carbon Disulfide	0.14	100.0	--- U	--- U	--- U	--- U	--- U
10. Methylene Chloride	0.14	1.0	--- U	0.70 J	--- U	0.20 J	0.20 J
11. trans-1,2-Dichloroethene	0.13	5.0	--- U	--- U	--- U	0.30 J	--- U
12. 1,1-Dichloroethane	0.16	5.0	4.40 J	4.30 J	--- U	36.80	1.00 J
13. Vinyl Acetate	0.20	5.0	--- U	--- U	--- U	--- U	--- U
14. Cis-1,2-Dichloroethene	0.14	5.0	2.70 J	1.20 J	--- U	22.90	--- U
15. 2-Butanone	0.85	100.0	2.10 J	1.00 J	1.90 J	1.70 J	1.80 J
16. Bromochloromethane	0.11	3.0	--- U	--- U	--- U	--- U	--- U
17. Chloroform	0.13	5.0	--- U	--- U	--- U	--- U	--- U
18. 1,1,1-Trichloroethane	0.11	1.0	--- U	--- U	--- U	--- U	--- U
19. Carbon Tetrachloride	0.13	1.0	--- U	--- U	--- U	--- U	--- U
20. Benzene	0.16	1.0	--- U	0.20 J	--- U	0.90 J	2.10
21. 1,2-Dichloroethane	0.12	1.0	--- U	--- U	--- U	0.40 J	0.20 J
22. Trichloroethene	0.13	1.0	0.60 J	1.90	--- U	5.40	--- U
23. 1,2-Dichloropropane	0.17	1.0	--- U	--- U	--- U	0.20 J	--- U
24. Bromodichloromethane	0.13	1.0	--- U	--- U	--- U	--- U	--- U
25. Cis-1,3-Dichloropropene	0.17	1.0	--- U	--- U	--- U	--- U	--- U
26. 4-Methyl-2-Pentanone	0.68	100.0	--- U	--- U	--- U	--- U	--- U
27. Toluene	0.13	1.0	0.40 J	0.60 J	0.40 J	0.50 J	0.50 J
28. trans-1,3-Dichloropropene	0.14	1.0	--- U	--- U	--- U	--- U	--- U
29. 1,1,2-Trichloroethane	0.20	5.0	--- U	--- U	--- U	--- U	--- U
30. Tetrachloroethene	0.16	1.0	--- U	1.90	--- U	--- U	--- U
31. 2-Hexanone	1.00	50.0	--- U	--- U	--- U	--- U	--- U
32. Dibromochloromethane	0.14	1.0	--- U	--- U	--- U	--- U	--- U
33. 1,2-Dibromoethane	0.13	1.0	--- U	--- U	--- U	--- U	--- U
34. Chlorobenzene	0.13	3.0	0.20 J	--- U	--- U	1.10 J	9.70
35. 1,1,1,2-Tetrachloroethane	0.14	5.0	--- U	--- U	--- U	--- U	--- U
36. Ethylbenzene	0.16	1.0	--- U	--- U	--- U	--- U	--- U
37. Xylenes	0.48	4.0	--- U	--- U	--- U	--- U	--- U
38. Dibromomethane	0.17	10.0	--- U	--- U	--- U	--- U	--- U
39. Styrene	0.16	1.0	--- U	--- U	--- U	--- U	--- U
40. Bromoform	0.11	3.0	--- U	--- U	--- U	--- U	--- U
41. 1,1,2,2-Tetrachloroethane	0.16	1.0	--- U	--- U	--- U	--- U	--- U
42. 1,2,3-Trichloropropane	0.06	1.0	--- U	--- U	--- U	--- U	--- U
43. 1,4-Dichlorobenzene	0.21	1.0	--- U	--- U	--- U	0.70 J	1.90
44. 1,2-Dichlorobenzene	0.13	5.0	--- U	--- U	--- U	--- U	0.30 J
45. 1,2-Dibromo-3-Chloropropane	0.26	1.0	--- U	--- U	--- U	--- U	--- U
46. Acrylonitrile	1.49	200.0	--- U	--- U	--- U	--- U	--- U
47. trans-1,4-Dichloro-2-Butene	0.14	100.0	--- U	--- U	--- U	--- U	--- U
48. Acrolein	5.46	50.0	--- U	--- U	--- U	--- U	--- U

J = Between MDL and SWSL, U = Below ALL Quanititation Limits.

Environment 1, Incorporated

Drinking Water ID: 17715
Wastewater ID: 10

P.O. BOX 7085, 114 OAKMONT DRIVE
GREENVILLE, N.C. 27835-7085

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MR. FRANK RALPH
P.O. BOX 70
HALIFAX, NC 27839

CLIENT ID: 6015

ANALYST: MAO
DATE COLLECTED: 08/09/07
DATE ANALYZED: 08/16/07
DATE REPORTED: 08/29/07

REVIEWED BY:

LANDFILL APPENDIX II
EPA METHOD 8260B

PARAMETERS, ug/l	MDL	SWSL	Well #2A	Well #3D	Well #7D	Well #2AD	Well #6D
49. Allyl Chloride	0.17	10.0	--- U	--- U	--- U	--- U	--- U
50. Chloroprene	0.16	20.0	--- U	--- U	--- U	--- U	--- U
51. 1,3-Dichlorobenzene	0.13	5.0	--- U	--- U	--- U	--- U	--- U
52. Dichlorodifluoromethane	0.16	5.0	0.30 J	1.80 J	--- U	0.30 J	0.20 J
53. 1,3-Dichloropropane	0.12	1.0	--- U	--- U	--- U	--- U	--- U
54. 2,2-Dichloropropane	0.18	15.0	--- U	--- U	--- U	--- U	--- U
55. 1,1-Dichloropropene	0.13	5.0	--- U	--- U	--- U	--- U	--- U
56. Ethyl Methacrylate	0.14	10.0	--- U	--- U	--- U	--- U	--- U
57. Hexachlorobutadiene	0.22	10.0	--- U	--- U	--- U	--- U	--- U
58. Isobutyl Alcohol	5.23	100.0	--- U	--- U	--- U	--- U	--- U
59. Methacrylonitrile	1.64	100.0	--- U	--- U	--- U	--- U	--- U
60. Methyl Methacrylate	0.10	30.0	--- U	--- U	--- U	--- U	--- U
61. Naphthalene	0.13	10.0	--- U	--- U	--- U	--- U	--- U
62. Propionitrile	1.60	150.0	--- U	--- U	--- U	--- U	--- U
63. 1,2,4-Trichlorobenzene	0.11	10.0	--- U	--- U	--- U	--- U	--- U
64. Acetonitrile	5.96	50.0	--- U	--- U	--- U	--- U	--- U

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Environment 1, Incorporated

Drinking Water ID: 37712
Wastewater ID: 10

P.O. BOX 7085, 114 OAKMONT DRIVE
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MR. FRANK RALPH
P.O. BOX 70
HALIFAX, NC 27839

CLIENT ID: 6015

ANALYST: MAO
DATE COLLECTED: 08/09/07
DATE ANALYZED: 08/16/07
DATE REPORTED: 08/29/07

REVIEWED BY:

LANDFILL APPENDIX II
EPA METHOD 8260B

PARAMETERS, ug/l	MDL	SWSL	Well #15R	Well #3AD	Well #16A	Equipment Blank	Trip Blank
1. Chloromethane	0.18	1.0	--- U	--- U	--- U	--- U	--- U
2. Vinyl Chloride	0.34	1.0	--- U	4.70	0.80 J	--- U	--- U
3. Bromomethane	0.26	10.0	--- U	--- U	--- U	--- U	--- U
4. Chloroethane	0.29	10.0	0.30 J	0.70 J	0.90 J	--- U	--- U
5. Trichlorofluoromethane	0.13	1.0	0.30 J	--- U	1.30	--- U	0.50 J
6. 1,1-Dichloroethene	0.14	5.0	--- U	0.30 J	0.40 J	--- U	--- U
7. Acetone	1.21	100.0	1.50 J	1.40 J	2.10 J	--- U	1.70 J
8. Iodomethane	0.12	10.0	--- U	--- U	--- U	--- U	--- U
9. Carbon Disulfide	0.14	100.0	--- U	--- U	--- U	--- U	--- U
10. Methylene Chloride	0.14	1.0	6.50	--- U	22.50	--- U	--- U
11. trans-1,2-Dichloroethene	0.13	5.0	--- U	--- U	0.40 J	--- U	--- U
12. 1,1-Dichloroethane	0.16	5.0	10.30	5.60	14.30	--- U	--- U
13. Vinyl Acetate	0.20	5.0	--- U	--- U	--- U	--- U	--- U
14. Cis-1,2-Dichloroethene	0.14	5.0	7.80	8.10	40.50	--- U	--- U
15. 2-Butanone	0.85	100.0	1.80 J	2.20 J	2.10 J	--- U	--- U
16. Bromochloromethane	0.11	3.0	--- U	--- U	--- U	--- U	--- U
17. Chloroform	0.13	5.0	--- U	--- U	--- U	--- U	--- U
18. 1,1,1-Trichloroethane	0.11	1.0	0.20 J	--- U	0.30 J	--- U	--- U
19. Carbon Tetrachloride	0.13	1.0	--- U	--- U	--- U	--- U	--- U
20. Benzene	0.16	1.0	0.30 J	0.80 J	2.90	--- U	--- U
21. 1,2-Dichloroethane	0.12	1.0	0.60 J	--- U	0.30 J	--- U	--- U
22. Trichloroethene	0.13	1.0	4.40	2.00	20.80	--- U	--- U
23. 1,2-Dichloropropane	0.17	1.0	--- U	0.30 J	0.60 J	--- U	--- U
24. Bromodichloromethane	0.13	1.0	--- U	--- U	--- U	--- U	--- U
25. Cis-1,3-Dichloropropene	0.17	1.0	--- U	--- U	--- U	--- U	--- U
26. 4-Methyl-2-Pentanone	0.68	100.0	--- U	--- U	--- U	--- U	--- U
27. Toluene	0.13	1.0	0.40 J	0.50 J	0.60 J	2.20	6.20
28. trans-1,3-Dichloropropene	0.14	1.0	--- U	--- U	--- U	--- U	--- U
29. 1,1,2-Trichloroethane	0.20	5.0	--- U	--- U	--- U	--- U	--- U
30. Tetrachloroethene	0.16	1.0	3.30	0.40 J	26.60	--- U	--- U
31. 2-Hexanone	1.00	50.0	--- U	--- U	--- U	--- U	--- U
32. Dibromochloromethane	0.14	1.0	--- U	--- U	--- U	--- U	--- U
33. 1,2-Dibromoethane	0.13	1.0	--- U	--- U	--- U	--- U	--- U
34. Chlorobenzene	0.13	3.0	0.20 J	0.60 J	1.10 J	--- U	--- U
35. 1,1,1,2-Tetrachloroethane	0.14	5.0	--- U	--- U	--- U	--- U	--- U
36. Ethylbenzene	0.16	1.0	--- U	--- U	--- U	--- U	--- U
37. Xylenes	0.48	4.0	2.20 J	--- U	2.30 J	--- U	--- U
38. Dibromomethane	0.17	10.0	--- U	--- U	--- U	--- U	--- U
39. Styrene	0.16	1.0	--- U	--- U	--- U	--- U	--- U
40. Bromoform	0.11	3.0	--- U	--- U	--- U	--- U	--- U
41. 1,1,2,2-Tetrachloroethane	0.16	1.0	--- U	--- U	--- U	--- U	--- U
42. 1,2,3-Trichloropropane	0.06	1.0	--- U	--- U	--- U	--- U	--- U
43. 1,4-Dichlorobenzene	0.21	1.0	10.20	0.40 J	1.40	--- U	--- U
44. 1,2-Dichlorobenzene	0.13	5.0	--- U	--- U	0.90 J	--- U	--- U
45. 1,2-Dibromo-3-Chloropropane	0.26	1.0	--- U	--- U	--- U	--- U	--- U
46. Acrylonitrile	1.49	200.0	--- U	--- U	--- U	--- U	--- U
47. trans-1,4-Dichloro-2-Butene	0.14	100.0	--- U	--- U	--- U	--- U	--- U
48. Acrolein	5.46	50.0	--- U	--- U	--- U	--- U	--- U

J = Between MDL and SWSL, U = Below ALL Quanititation Limits.

Environment 1, Incorporated

Drinking Water ID: 37715
Wastewater ID: 10

P.O. BOX 7085, 114 OAKMONT DRIVE
GREENVILLE, N.C. 27835-7085

PHONE (252) 756-6208
FAX (252) 756-0633

CLIENT: HALIFAX CO. LANDFILL (CLOSED MSW)
MR. FRANK RALPH
P.O. BOX 70
HALIFAX, NC 27839

CLIENT ID: 6015

ANALYST: MAO
DATE COLLECTED: 08/09/07
DATE ANALYZED: 08/16/07
DATE REPORTED: 08/29/07

REVIEWED BY:

LANDFILL APPENDIX II
EPA METHOD 8260B

PARAMETERS, ug/l	MDL	SWSL	Well #15R	Well #3AD	Well #16A	Equipment Blank	Trip Blank
49. Allyl Chloride	0.17	10.0	--- U	--- U	--- U	--- U	--- U
50. Chloroprene	0.16	20.0	--- U	--- U	--- U	--- U	--- U
51. 1,3-Dichlorobenzene	0.13	5.0	--- U	--- U	--- U	--- U	--- U
52. Dichlorodifluoromethane	0.16	5.0	0.40 J	0.20 J	4.70 J	--- U	--- U
53. 1,3-Dichloropropane	0.12	1.0	--- U	--- U	--- U	--- U	--- U
54. 2,2-Dichloropropane	0.18	15.0	--- U	--- U	--- U	--- U	--- U
55. 1,1-Dichloropropene	0.13	5.0	--- U	--- U	--- U	--- U	--- U
56. Ethyl Methacrylate	0.14	10.0	--- U	--- U	--- U	--- U	--- U
57. Hexachlorobutadiene	0.22	10.0	--- U	--- U	--- U	--- U	--- U
58. Isobutyl Alcohol	5.23	100.0	--- U	--- U	--- U	--- U	--- U
59. Methacrylonitrile	1.64	100.0	--- U	--- U	--- U	--- U	--- U
60. Methyl Methacrylate	0.10	30.0	--- U	--- U	--- U	--- U	--- U
61. Naphthalene	0.13	10.0	--- U	--- U	--- U	--- U	--- U
62. Propionitrile	1.60	150.0	--- U	--- U	--- U	--- U	--- U
63. 1,2,4-Trichlorobenzene	0.11	10.0	--- U	--- U	--- U	--- U	--- U
64. Acetonitrile	5.96	50.0	--- U	--- U	--- U	--- U	--- U

J = Between MDL and SWSL, U = Below ALL Quanititation Limits.

Environment 1, Inc.
P.O. Box 708, 114 Oakmont Dr.
Greenville, NC 27858

Phone (252) 756-6208 • Fax (252) 756-0633

CHAIN OF CUSTODY RECORD

CLIENT: 6015 **Week:** 33

HALIFAX CO. LANDFILL (CLOSED MSW)
MR. FRANK RALPH
P.O. BOX 70
HALIFAX NC 27839

(252) 583-1807

DISINFECTION: ☐ CHLORINE ☐ UV ☐ NONE ☐ _____

SAMPLE LOCATION	COLLECTION DATE	COLLECTION TIME	TOTAL CHLORINE, mg/l AT COLLECTION	TEMPERATURE, °C AT COLLECTION	# OF CONTAINERS	Field pH	Metals	Conductivity	Temperature	Field Parameter	EPA 8260B	8260 Dup. 1	EPA 8270C	8270C Dup. 1	EPA 8081A	8260B App. II	8260 App. II 1	8260 App. II 2	8260 App. II 3	8151A Landfill
CHLORINE NEUTRALIZED AT COLLECTION																				
pH CHECK (LAB)							12				12	12				12	12	12	12	
CONTAINER TYPE, P/G						P	P	P	P		G	G	G	G	G	G	G	G	G	G
CHEMICAL PRESERVATION						A	B	A	A		E	E	A	A	A	E	E	E	E	A
Well #1	08/09/07	0850		16	4	G	G	G	G	G	G	G								
Well #2A	08/09/07	1010		19	8	G	G	G	G	G			G	G	G	G	G			G
Well #3D	08/09/07	1020		17	8	G	G	G	G	G			G	G	G	G	G	G		G
Well #7D	08/09/07	1115		20	8	G	G	G	G	G			G	G	G	G	G			G
SW-1	08/09/07	1030		25	4	G	G	G	G		G	G								
SW-2	08/09/07	1125		26	4	G	G	G	G		G	G								
SW-3	08/09/07	0950		22	4	G	G	G	G		G	G								
Well #2AD	08/09/07	1005		18	8	G	G	G	G	G			G	G	G	G	G			G
Well #6D	08/09/07	1130		17	8	G	G	G	G	G			G	G	G	G	G			G
Well #15R	08/09/07	1050		18	8	G	G	G	G	G			G	G	G	G	G			G
Well #3AD	08/09/07	1015		18	10	G	G	G	G	G			G	G	G	G	G	G	G	G

PARAMETERS

A - NONE
B - HNO_3
C - H_2SO_4
D - NAOH
E - HCL
F - ZINC ACETATE
G - NA THIOSULFATE

CLASSIFICATION:
☐ WASTEWATER (NPDES)
☐ DRINKING WATER
☐ DWQ/GW
☒ SOLID WASTE SECTION

CHAIN OF CUSTODY MAINTAINED DURING SHIPMENT/DELIVERY: Y N

SAMPLES COLLECTED BY: (Please Print) Wayne Fox

SAMPLES RECEIVED IN LAB AT 1.0 °C

RELINQUISHED BY (SIG.) (SAMPLER)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME
Bill Wayne	08/09/07	Anthony Tate	8/9/07 2:20
RELINQUISHED BY (SIG.)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME
RELINQUISHED BY (SIG.)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME

COMMENTS:

Instructions for completing this form are on the reverse side.

Sampler must place a "C" for composite sample or a "G" for Grab sample in the blocks above for each parameter requested.

FORM #5

№ 147296

Environment 1, Inc.
P.O. Box 7085, 114 Oakmont Dr.
Greenville, NC 27858

Phone (252) 756-6208 • Fax (252) 756-0633

CHAIN OF CUSTODY RECORD

CLIENT: 6015 **Week: 33**

HALIFAX CO. LANDFILL (CLOSED MSW)
MR. FRANK RALPH
P.O. BOX 70
HALIFAX NC 27839

(252) 583-1807

DISINFECTION: ☐ CHLORINE ☐ UV ☐ NONE ☐ _____

SAMPLE LOCATION	COLLECTION DATE	COLLECTION TIME	TOTAL CHLORINE, mg/l AT COLLECTION	TEMPERATURE, °C AT COLLECTION	# OF CONTAINERS	Field pH	Metals	Conductivity	Temperature	Field Parameter	EPA 8260B	8260 Dup. 1	EPA 8270C	8270C Dup. 1	EPA 8081A	8260B App. II	8260 App. II 1	8260 App. II 2	8260 App. II 3	8151A Landfill
CHLORINE NEUTRALIZED AT COLLECTION																				
pH CHECK (LAB)							L									L	L			
CONTAINER TYPE, P/G						P	P	P	P		G	G	G	G	G	G	G	G	G	G
CHEMICAL PRESERVATION						A	B	A	A		E	E	A	A	A	E	E	E	E	A
Well #16A	08 09 07	1035		17	8	G	G	G	G	G			G	G	G	G	G			G
BP-3	08 09 07				1					G										
BP-9	08 09 07				1					G										
Equipment Blank	08 09 07				2											G	G			
Trip Blank					2															

PARAMETERS

A - NONE D - NAOH
B - HNO_3 E - HCL
C - H_2SO_4 F - ZINC ACETATE
G - NA THIOSULFATE

CLASSIFICATION:
☐ WASTEWATER (NPDES)
☐ DRINKING WATER
☐ DWQ/GW
☒ SOLID WASTE SECTION

CHAIN OF CUSTODY MAINTAINED DURING SHIPMENT/DELIVERY: (Y) N

SAMPLES COLLECTED BY: (Please Print) Bob Hogue / Fox

SAMPLES RECEIVED IN LAB AT 1.0 °C

RELINQUISHED BY (SIG.) (SAMPLER)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME
Bob Hogue	08 09 07	Anthony Fox	8/9/07 2:20
RELINQUISHED BY (SIG.)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME
RELINQUISHED BY (SIG.)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME

COMMENTS:

Instructions for completing this form are on the reverse side.

Sampler must place a "C" for composite sample or a "G" for Grab sample in the blocks above for each parameter requested.

FORM #5

№ 147295

Environment 1, Incorporated

REC'D NOV 08 2007

Drinking Water ID: [illegible]
Wastewater ID: 10

P.O. BOX 7085, 114 OAKMONT DRIVE
GREENVILLE, N.C. 27835-7085

PHONE (252) 756-6208
FAX (252) 756-0633

ID#: 6015 B

HALIFAX CO. LANDFILL (CLOSED MSW)
MR. FRANK RALPH
P.O. BOX 70
HALIFAX ,NC 27839

DATE COLLECTED: 10/22/07
DATE REPORTED : 11/05/07

REVIEWED BY:

PARAMETERS	MDL	SWSL	Well #17	Well #18 Shallow	Well #18 Deep	Analysis Date	Analyst	Method Code
Antimony, ug/l	0.05	6.0	--- U	--- U	--- U	10/30/07	CMF	EPA200.8
Arsenic, ug/l	0.47	10.0	0.6 J	1.4 J	--- U	10/30/07	CMF	EPA200.8
Barium, ug/l	0.04	100.0	110	139	77.5 J	10/30/07	CMF	EPA200.8
Beryllium, ug/l	0.08	1.0	2	0.9 J	--- U	10/30/07	CMF	EPA200.8
Cadmium, ug/l	0.06	1.0	0.2 J	0.2 J	--- U	10/30/07	CMF	EPA200.8
Cobalt, ug/l	0.41	10.0	2.5 J	5.3 J	--- U	10/30/07	CMF	EPA200.8
Copper, ug/l	0.20	10.0	3.6 J	3.6 J	--- U	10/30/07	CMF	EPA200.8
Total Chromium, ug/l	0.24	10.0	1.7 J	2.1 J	--- U	10/30/07	CMF	EPA200.8
Lead, ug/l	0.07	10.0	7.5 J	3.9 J	0.4 J	10/30/07	CMF	EPA200.8
Nickel, ug/l	0.66	50.0	2.7 J	3.0 J	0.9 J	10/30/07	CMF	EPA200.8
Selenium, ug/l	0.35	10.0	--- U	0.5 J	--- U	10/30/07	CMF	EPA200.8
Silver, ug/l	0.52	10.0	--- U	--- U	--- U	10/30/07	CMF	EPA200.8
Thallium, ug/l	0.07	5.0	0.1 J	0.2 J	--- U	03/05/07	CMF	EPA200.8
Vanadium, ug/l	0.42	25.0	9.6 J	15.3 J	2.0 J	03/05/07	CMF	EPA200.8
Zinc, ug/l	0.20	10.0	36	44	5.3 J	10/30/07	CMF	EPA200.8

J = Between MDL and SWSL, U = Below ALL Quanititation Limits.

Environment 1, Incorporated

Drinking Water ID: 07713
Wastewater ID: 10

P.O. BOX 7085, 114 OAKMONT DRIVE
GREENVILLE, N.C. 27835-7085

PHONE (252) 756-6208
FAX (252) 756-0633

CLIENT: HALIFAX CO. LANDFILL (CLOSED MSW)
MR. FRANK RALPH
P.O. BOX 70
HALIFAX, NC 27839

CLIENT ID: 6015 B

ANALYST: MAO
DATE COLLECTED: 10/22/07
DATE ANALYZED: 10/30/07
DATE REPORTED: 11/05/07

REVIEWED BY:

VOLATILE ORGANICS
EPA METHOD 8260B

PARAMETERS, ug/l	MDL	SWSL	Well #17	Well #18 Shallow	Well #18 Deep
1. Chloromethane	0.18	1.0	--- U	--- U	--- U
2. Vinyl Chloride	0.34	1.0	--- U	0.70 J	--- U
3. Bromomethane	0.26	10.0	--- U	--- U	--- U
4. Chloroethane	0.29	10.0	--- U	--- U	--- U
5. Trichlorofluoromethane	0.13	1.0	0.30 J	--- U	--- U
6. 1,1-Dichloroethene	0.14	5.0	0.20 J	--- U	--- U
7. Acetone	1.21	100.0	--- U	9.10 J	--- U
8. Iodomethane	0.12	10.0	--- U	--- U	--- U
9. Carbon Disulfide	0.14	100.0	--- U	--- U	--- U
10. Methylene Chloride	0.14	1.0	0.20 J	--- U	--- U
11. trans-1,2-Dichloroethene	0.13	5.0	--- U	--- U	--- U
12. 1,1-Dichloroethane	0.16	5.0	3.10 J	1.20 J	1.50 J
13. Vinyl Acetate	0.20	5.0	--- U	--- U	--- U
14. Cis-1,2-Dichloroethene	0.14	5.0	1.40 J	0.20 J	0.80 J
15. 2-Butanone	0.85	100.0	--- U	1.40 J	--- U
16. Bromochloromethane	0.11	3.0	--- U	--- U	--- U
17. Chloroform	0.13	5.0	--- U	--- U	--- U
18. 1,1,1-Trichloroethane	0.11	1.0	--- U	--- U	--- U
19. Carbon Tetrachloride	0.13	1.0	--- U	--- U	--- U
20. Benzene	0.16	1.0	--- U	--- U	--- U
21. 1,2-Dichloroethane	0.12	1.0	--- U	--- U	--- U
22. Trichloroethene	0.13	1.0	1.80	--- U	0.30 J
23. 1,2-Dichloropropane	0.17	1.0	--- U	--- U	--- U
24. Bromodichloromethane	0.13	1.0	--- U	--- U	--- U
25. Cis-1,3-Dichloropropene	0.17	1.0	--- U	--- U	--- U
26. 4-Methyl-2-Pentanone	0.68	100.0	--- U	--- U	--- U
27. Toluene	0.13	1.0	--- U	0.30 J	--- U
28. trans-1,3-Dichloropropene	0.14	1.0	--- U	--- U	--- U
29. 1,1,2-Trichloroethane	0.20	1.0	--- U	--- U	--- U
30. Tetrachloroethene	0.16	1.0	1.10	--- U	--- U
31. 2-Hexanone	1.00	50.0	--- U	--- U	--- U
32. Dibromochloromethane	0.14	3.0	--- U	--- U	--- U
33. 1,2-Dibromoethane	0.13	1.0	--- U	--- U	--- U
34. Chlorobenzene	0.13	3.0	--- U	--- U	--- U
35. 1,1,1,2-Tetrachloroethane	0.14	5.0	--- U	--- U	--- U
36. Ethylbenzene	0.16	1.0	--- U	--- U	--- U
37. Xylenes	0.48	5.0	--- U	--- U	--- U
38. Dibromomethane	0.17	10.0	--- U	--- U	--- U
39. Styrene	0.16	1.0	--- U	--- U	--- U
40. Bromoform	0.11	3.0	--- U	--- U	--- U
41. 1,1,2,2-Tetrachloroethane	0.16	3.0	--- U	--- U	--- U
42. 1,2,3-Trichloropropane	0.06	1.0	--- U	--- U	--- U
43. 1,4-Dichlorobenzene	0.21	1.0	--- U	--- U	--- U
44. 1,2-Dichlorobenzene	0.13	5.0	--- U	--- U	--- U
45. 1,2-Dibromo-3-Chloropropane	0.26	13.0	--- U	--- U	--- U
46. Acrylonitrile	1.49	200.0	--- U	--- U	--- U
47. trans-1,4-Dichloro-2-Butene	0.14	100.0	--- U	--- U	--- U

J = Between MDL and SWSL, U = Below ALL Quanititation Limits.

Environment 1, Inc.
P.O. Box 7085, 114 Oakmont Dr.
Greenville, NC 27858

Phone (252) 756-6208 • Fax (252) 756-0633

CHAIN OF CUSTODY RECORD

CLIENT: 6015 B **Week:** 1

HALIFAX CO. LANDFILL (CLOSED MSW)
MR. FRANK RALPH
P.O. BOX 70
HALIFAX NC 27839

(252) 583-1807

DISINFECTION: ☐ CHLORINE ☐ UV ☐ NONE ☐ _____

CHLORINE NEUTRALIZED AT COLLECTION

pH CHECK (LAB): <2 <2 <2 <2

CONTAINER TYPE, P/G: P G G G

CHEMICAL PRESERVATION: A E E E

A - NONE; B - HNO_3; C - H_2SO_4; D - NAOH; E - HCL; F - ZINC ACETATE; G - NA THIOSULFATE

SAMPLE LOCATION	COLLECTION DATE	COLLECTION TIME	TOTAL CHLORINE, mg/l AT COLLECTION	TEMPERATURE, °C AT COLLECTION	# OF CONTAINERS	Metals	EPA 8260B	8260 Dup. 1	8260 Dup. 2
Well #17	10/22/07	1:36			4	■	■	■	■
Trip Blank	↓				2		■	■	
Well #18 Shallow		1:14			3	■	■	■	
Well #18 Deep		1:21			3	■	■	■	

PARAMETERS

CLASSIFICATION:
- ☐ WASTEWATER (NPDES)
- ☐ DRINKING WATER
- ☐ DWQ/GW
- ☒ SOLID WASTE SECTION

CHAIN OF CUSTODY MAINTAINED DURING SHIPMENT/DELIVERY: Y N

SAMPLES COLLECTED BY: (Please Print) Joan Smyth

SAMPLES RECEIVED IN LAB AT 4.8 °C

RELINQUISHED BY (SIG.) (SAMPLER)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME
Joan Smyth	10/22/07 4:15	Anthony Fadler	10/23/07 10:00
RELINQUISHED BY (SIG.)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME
RELINQUISHED BY (SIG.)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME

COMMENTS:

Instructions for completing this form are on the reverse side.

Sampler must place a "C" for composite sample or a "G" for Grab sample in the blocks above for each parameter requested.

FORM #5

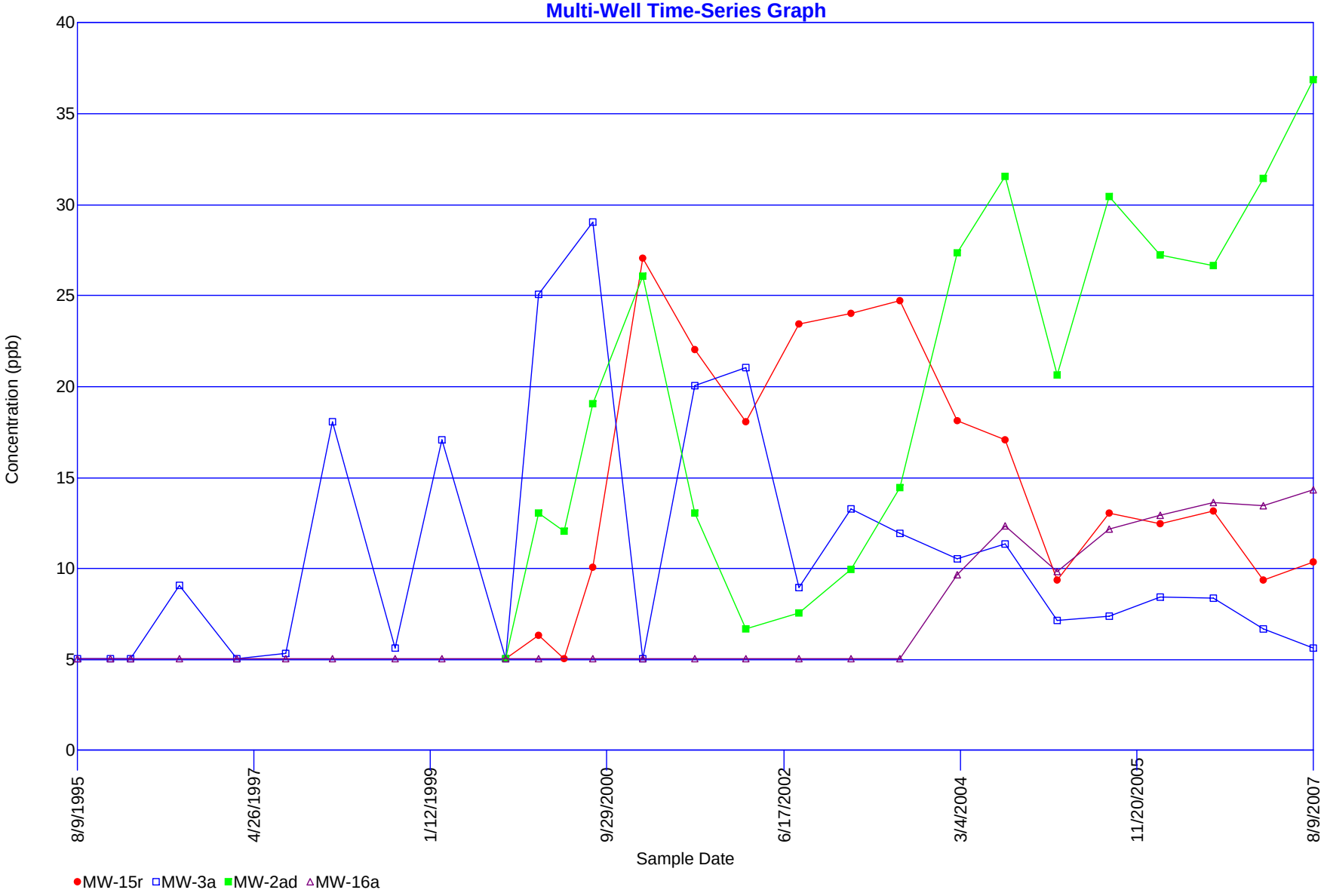
№ 156190

Appendix C

Time vs. Concentration Graphs

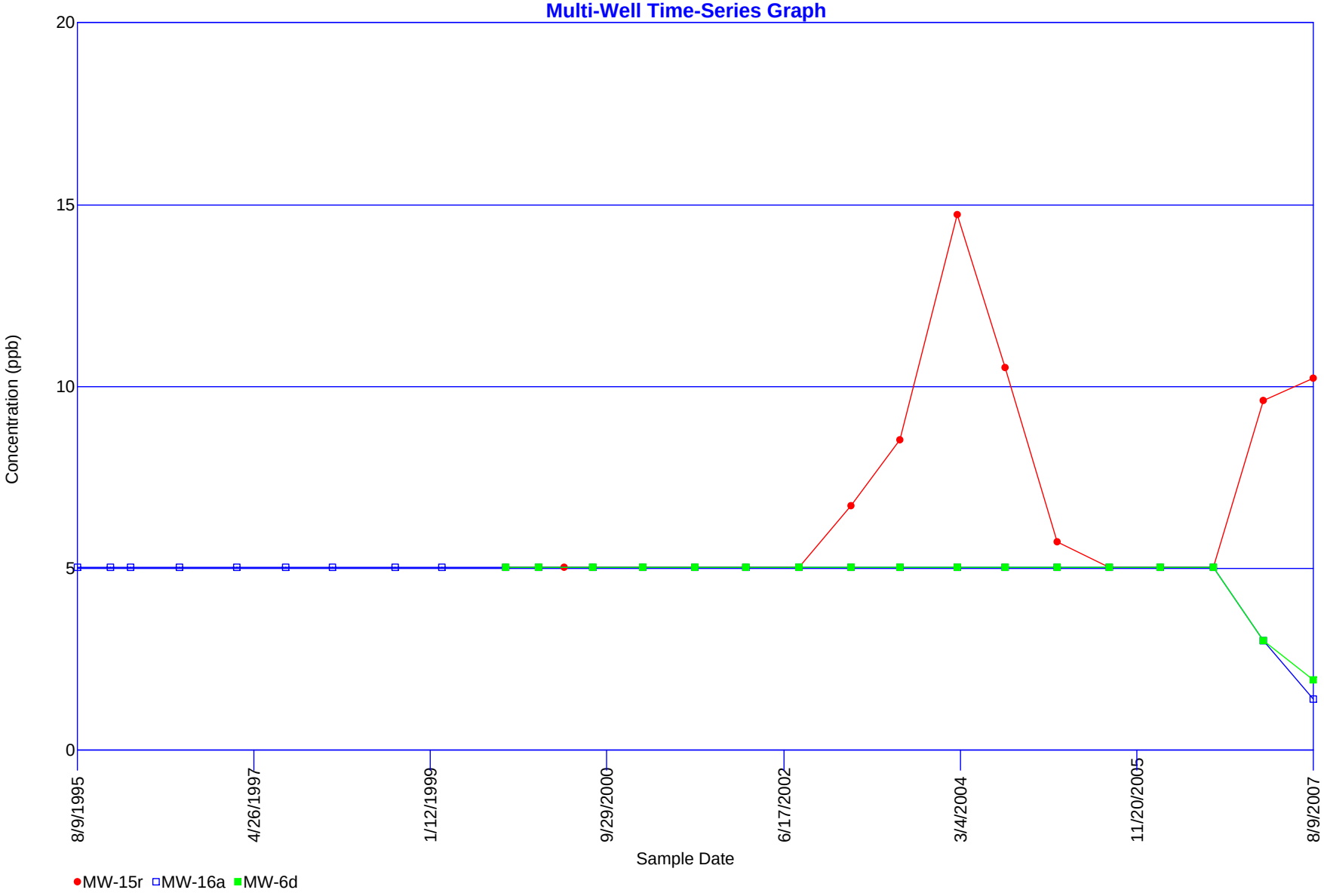
1,1-Dichloroethane

Multi-Well Time-Series Graph



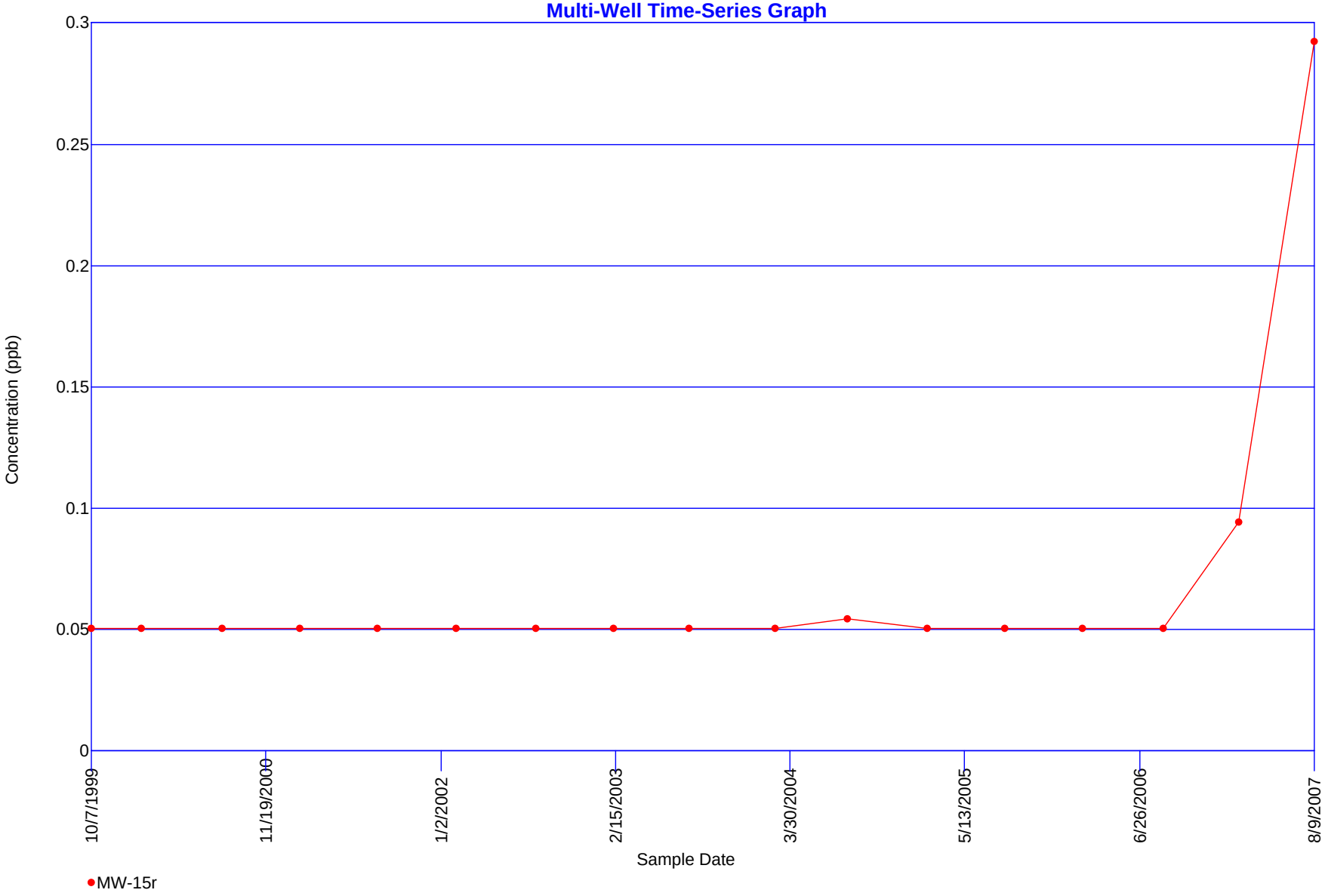
1,4-Dichlorobenzene

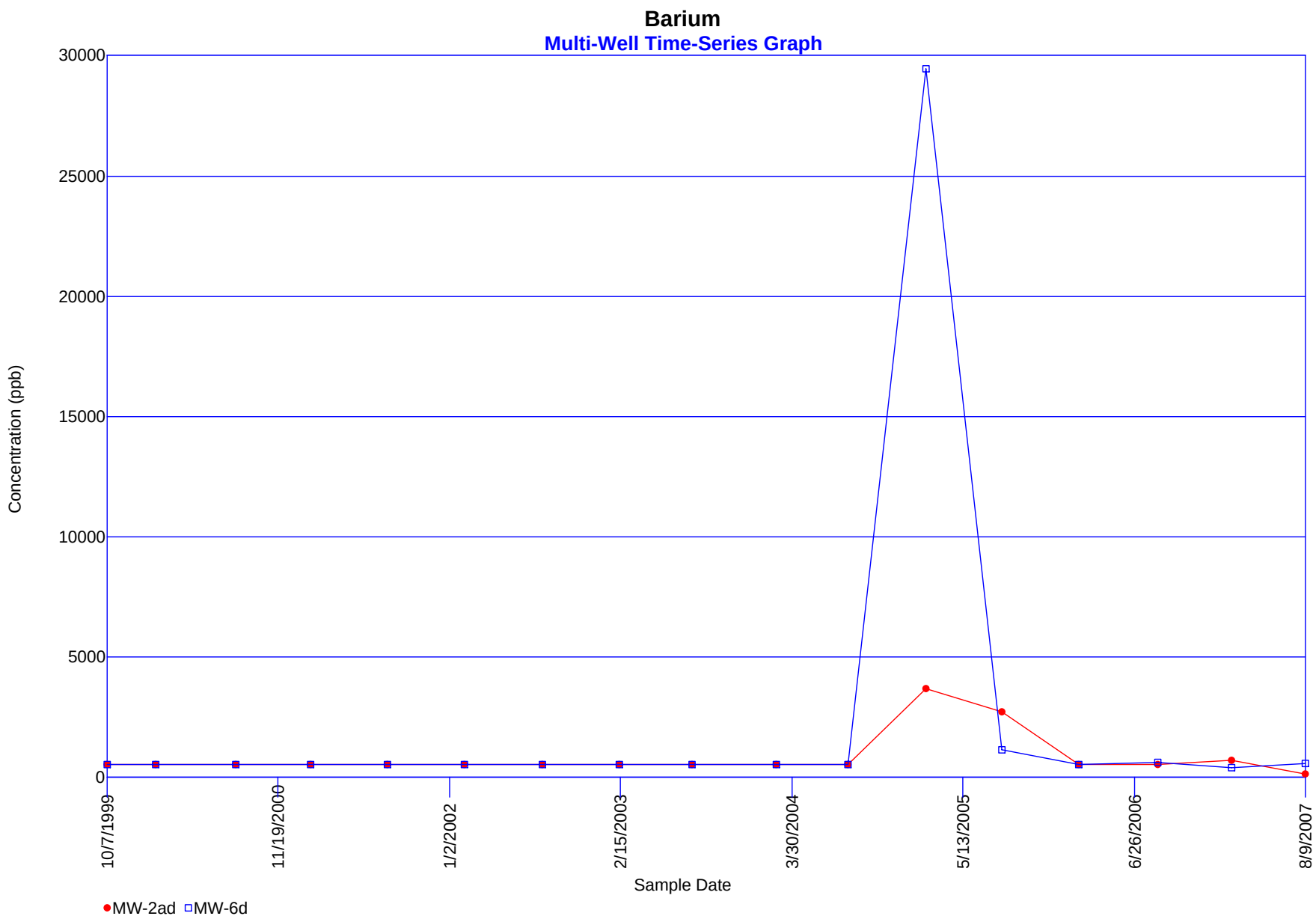
Multi-Well Time-Series Graph

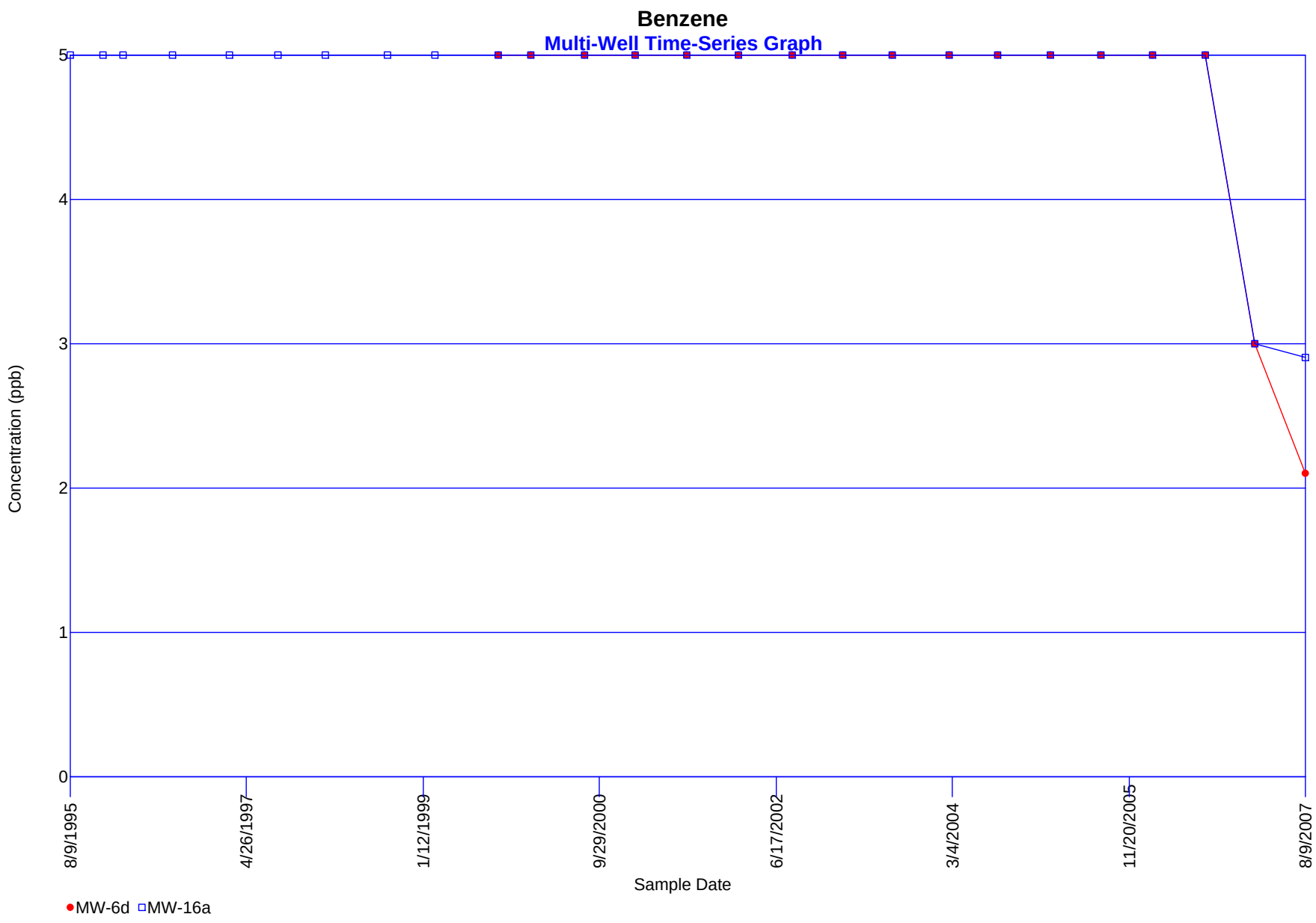


Alpha-BHC

Multi-Well Time-Series Graph

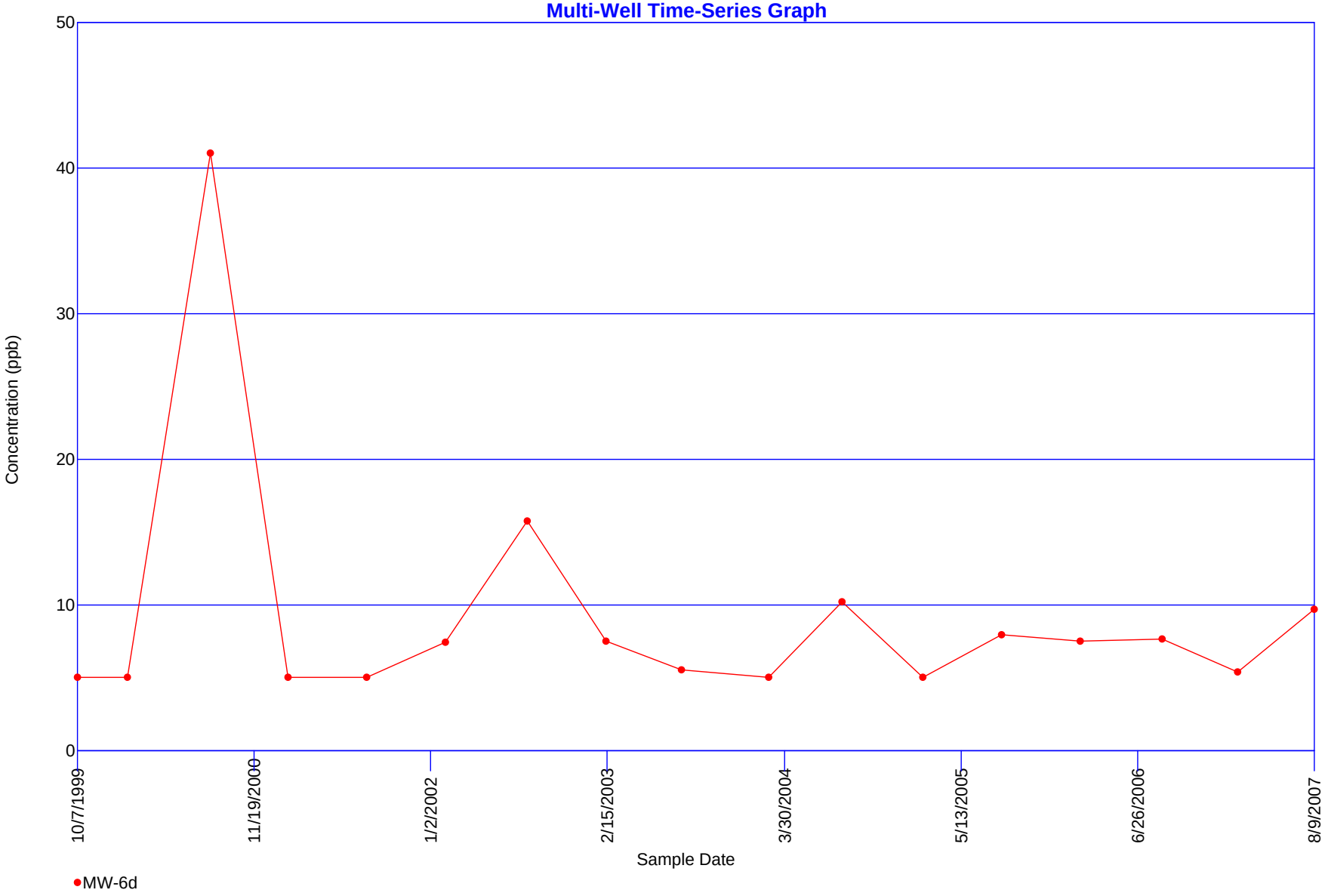


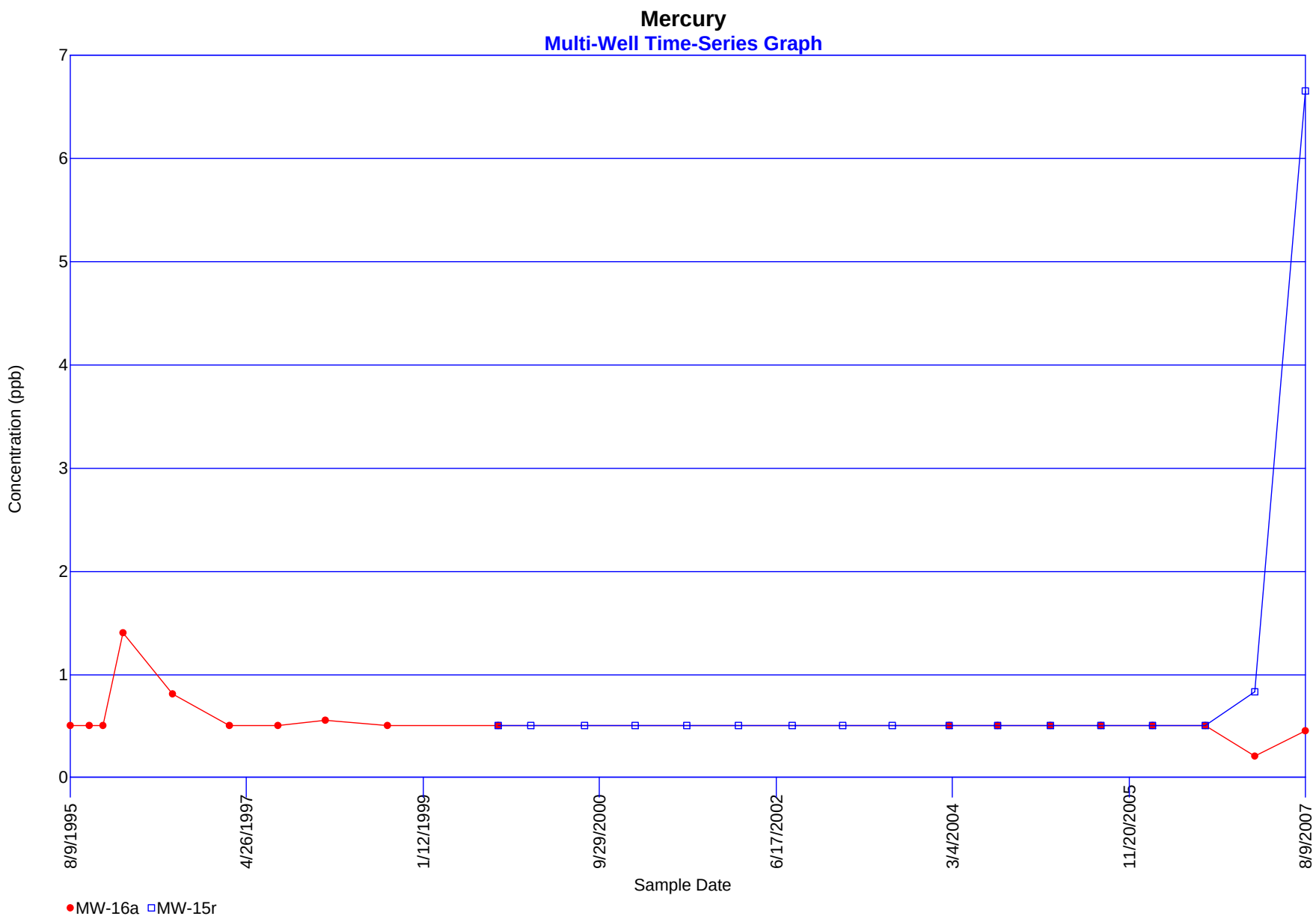

Barium
Multi-Well Time-Series Graph
30000
25000
20000
15000
10000
5000
0
Concentration (ppb)
10/7/1999
11/19/2000
1/2/2002
2/15/2003
3/30/2004
5/13/2005
6/26/2006
8/9/2007
Sample Date
MW-2ad
MW-6d


Benzene
Multi-Well Time-Series Graph
Concentration (ppb)
5
4
3
2
1
0
8/9/1995
4/26/1997
1/12/1999
9/29/2000
6/17/2002
3/4/2004
11/20/2005
8/9/2007
Sample Date
MW-6d
MW-16a

Chlorobenzene

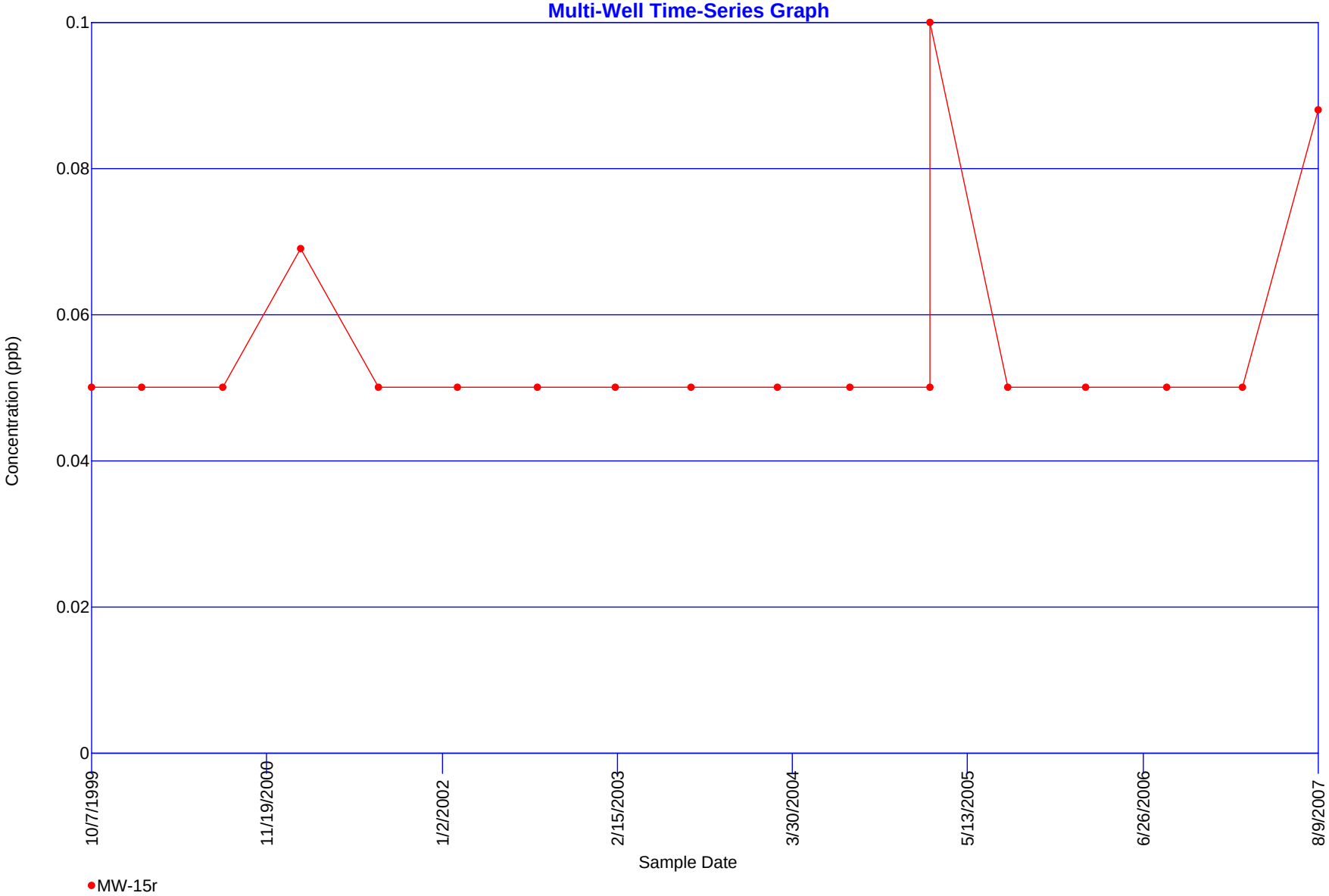
Multi-Well Time-Series Graph

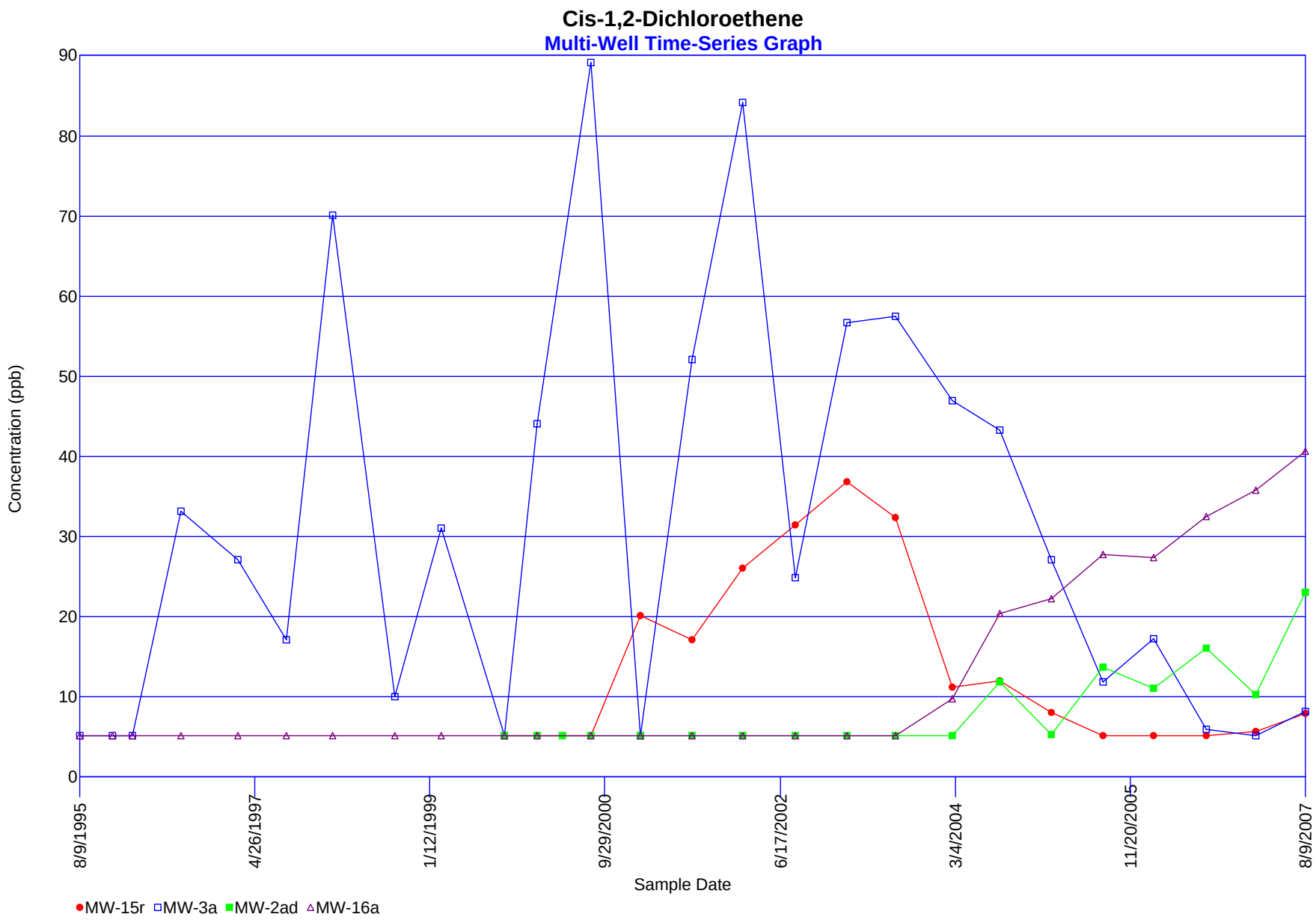


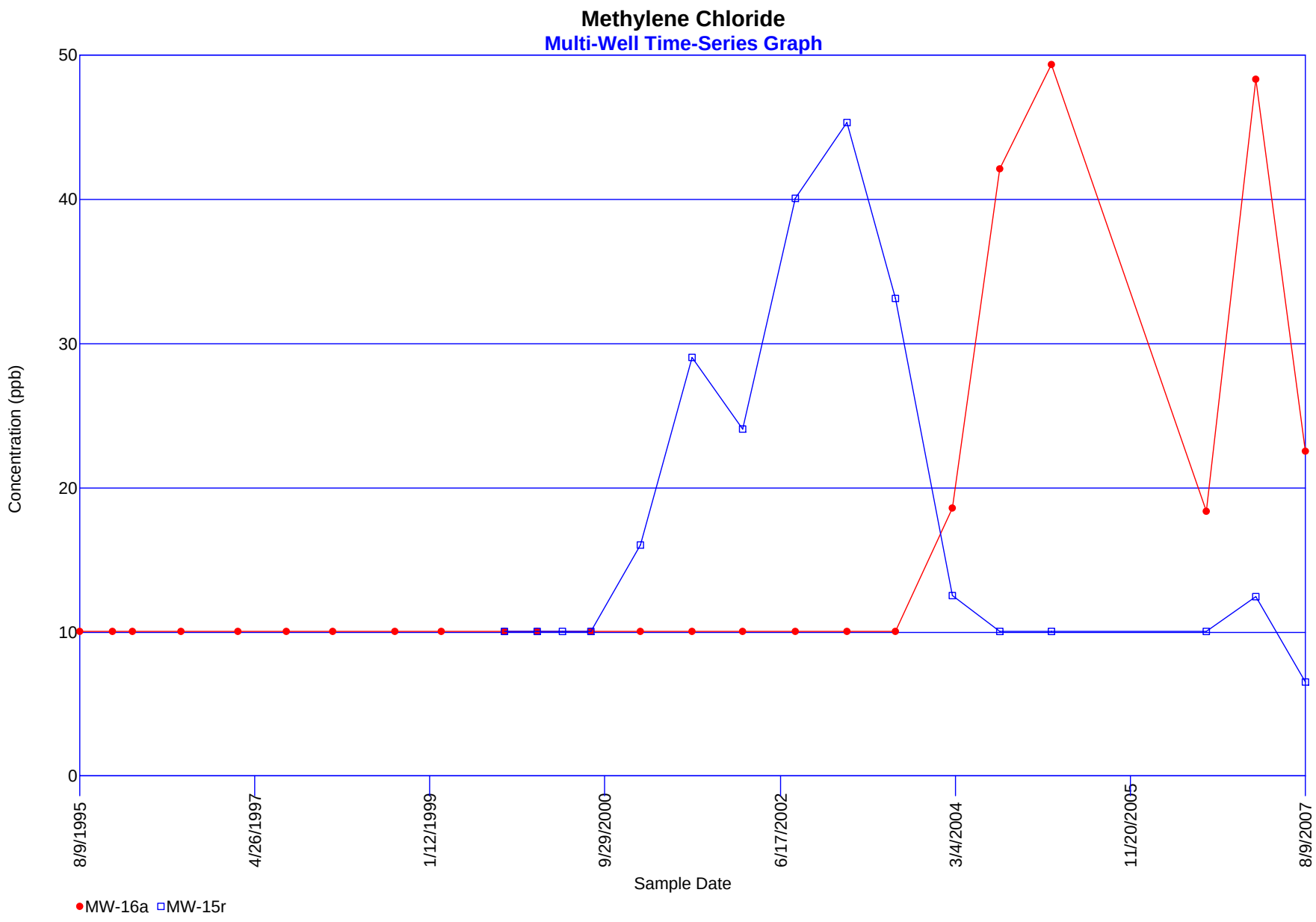

Mercury
Multi-Well Time-Series Graph
Concentration (ppb)
7
6
5
4
3
2
1
0
8/9/1995
4/26/1997
1/12/1999
9/29/2000
6/17/2002
3/4/2004
11/20/2005
8/9/2007
Sample Date
MW-16a
MW-15r

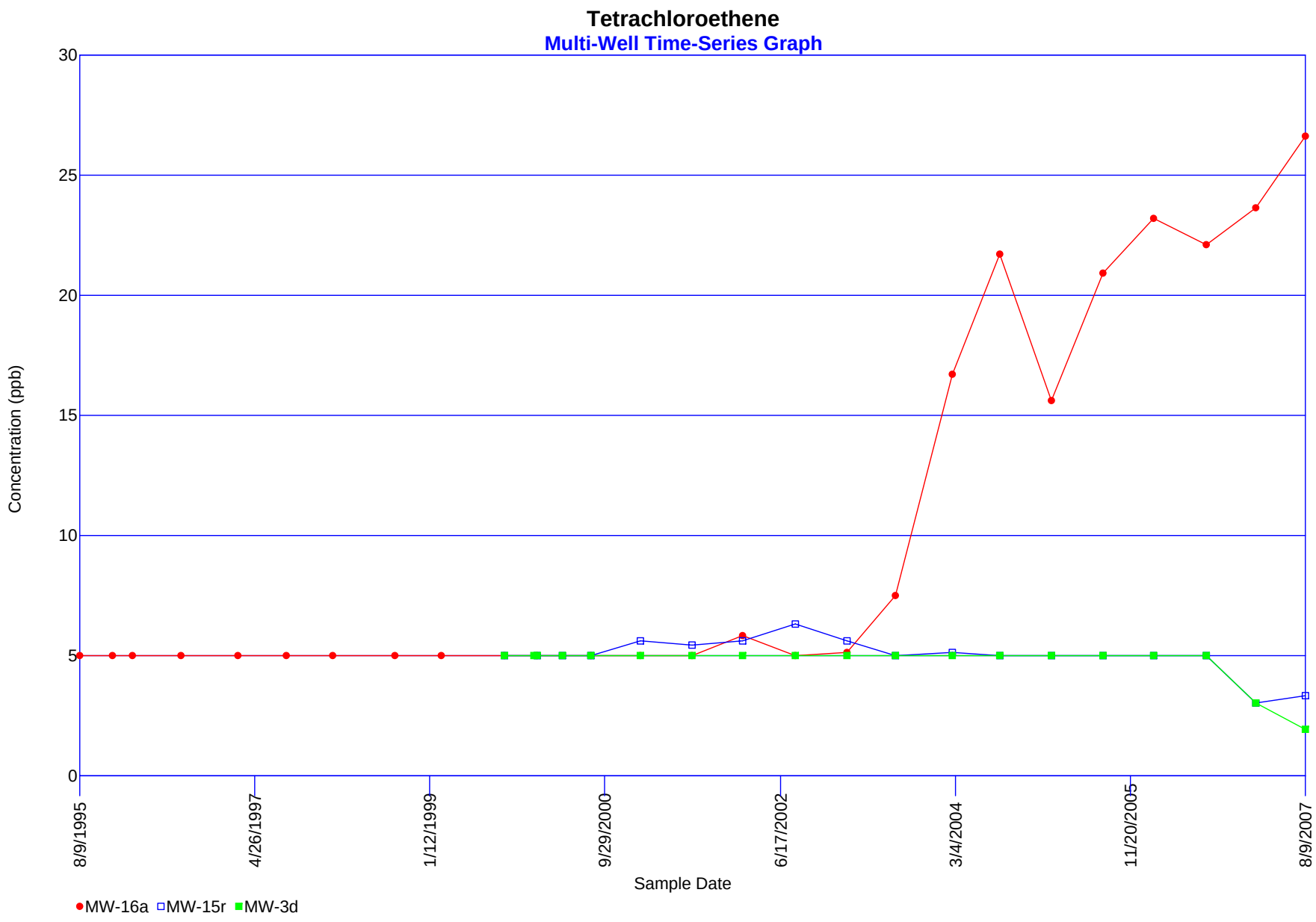
Heptachlor

Multi-Well Time-Series Graph



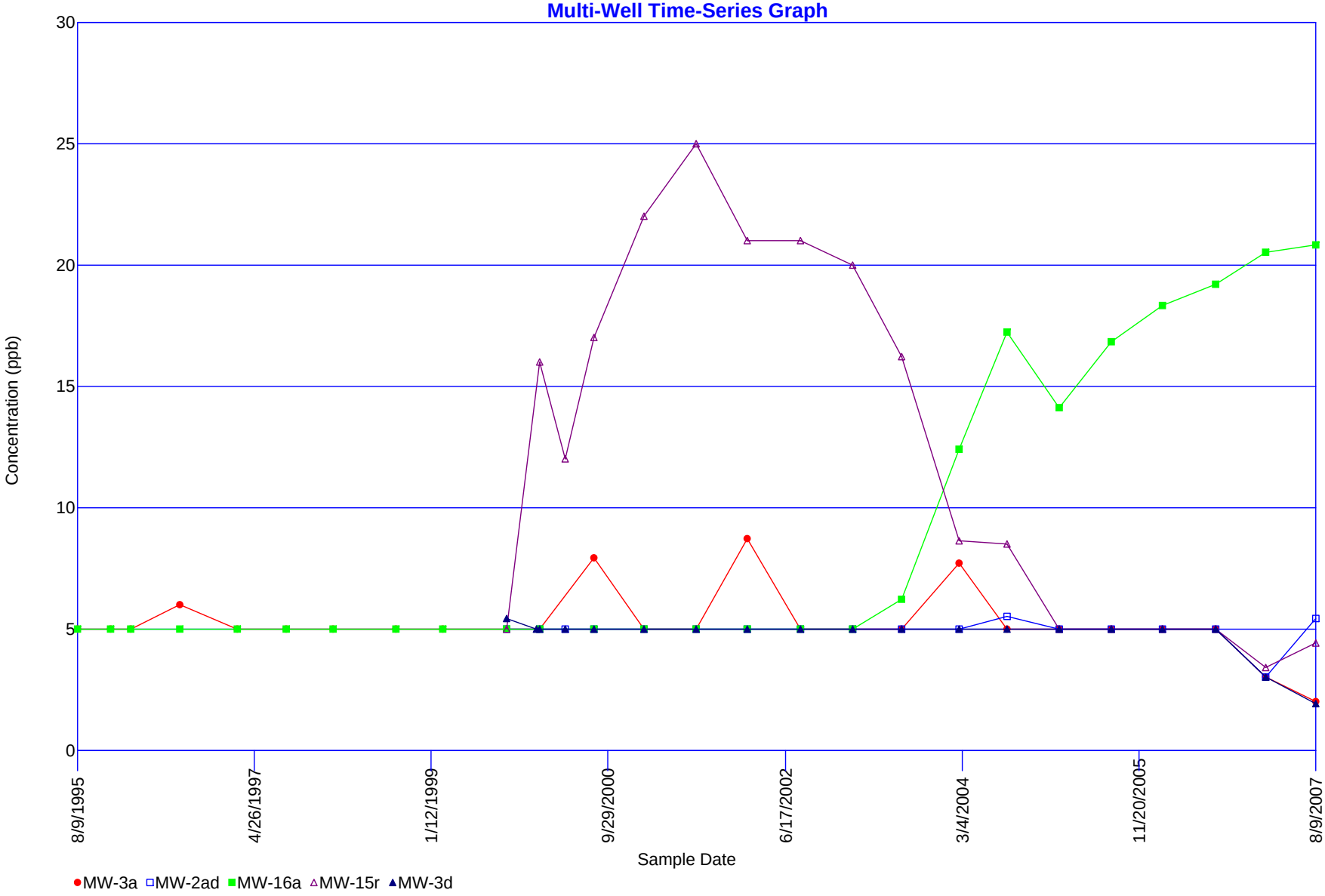

Cis-1,2-Dichloroethene
Multi-Well Time-Series Graph
Concentration (ppb)
90
80
70
60
50
40
30
20
10
0
8/9/1995
4/26/1997
1/12/1999
9/29/2000
6/17/2002
3/4/2004
11/20/2005
8/9/2007
Sample Date
MW-15r
MW-3a
MW-2ad
MW-16a

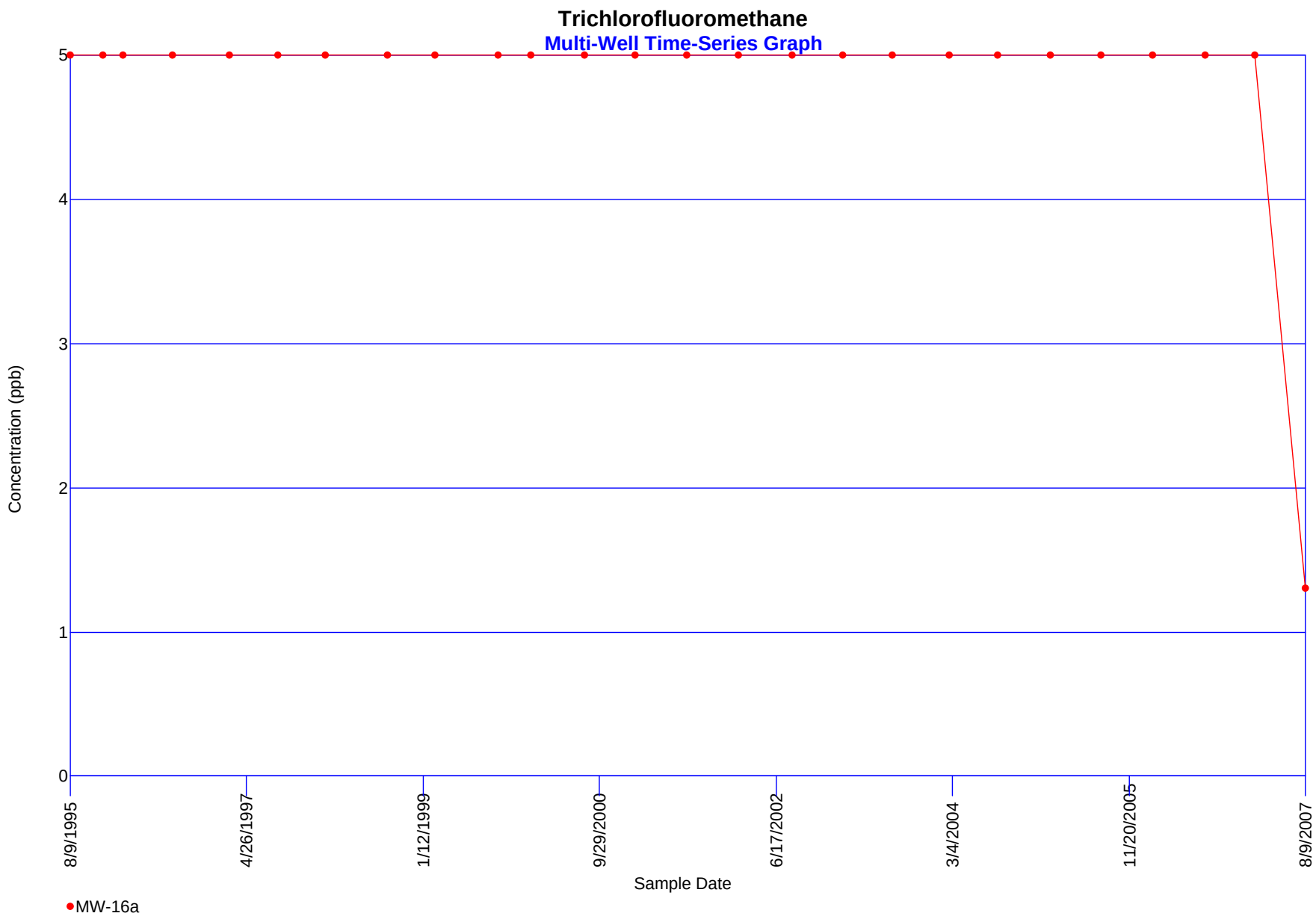

Methylene Chloride
Multi-Well Time-Series Graph
Concentration (ppb)
50
40
30
20
10
0
8/9/1995
4/26/1997
1/12/1999
9/29/2000
6/17/2002
3/4/2004
11/20/2005
8/9/2007
Sample Date
MW-16a
MW-15r

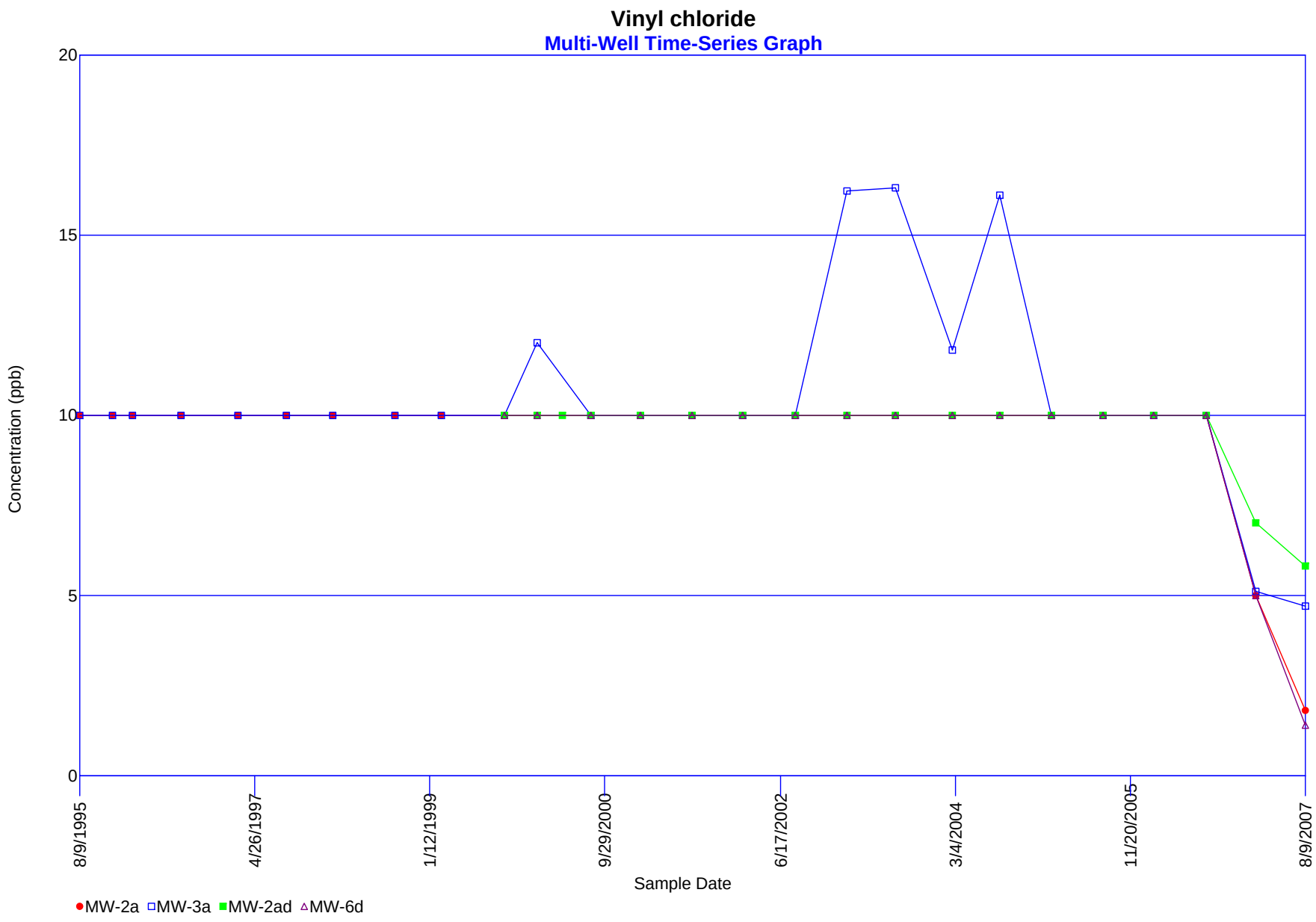

Tetrachloroethene
Multi-Well Time-Series Graph
Concentration (ppb)
30
25
20
15
10
5
0
8/9/1995
4/26/1997
1/12/1999
9/29/2000
6/17/2002
3/4/2004
11/20/2005
8/9/2007
Sample Date
MW-16a
MW-15r
MW-3d

Trichloroethene

Multi-Well Time-Series Graph




Trichlorofluoromethane
Multi-Well Time-Series Graph
Concentration (ppb)
5
4
3
2
1
0
8/9/1995
4/26/1997
1/12/1999
9/29/2000
6/17/2002
3/4/2004
11/20/2005
8/9/2007
Sample Date
MW-16a


Vinyl chloride
Multi-Well Time-Series Graph
Concentration (ppb)
20
15
10
5
0
8/9/1995
4/26/1997
1/12/1999
9/29/2000
6/17/2002
3/4/2004
11/20/2005
8/9/2007
Sample Date
MW-2a
MW-3a
MW-2ad
MW-6d