

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 A. Smyth, P.G. Phone: 919-828-0577 x 221

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)
Johnston County C&D landfill	680 County Home Road Smithfield, NC	51-03	.0500	October 28th - November 2nd 2009

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 Methane gas monitoring data
 Groundwater monitoring data from private water supply wells Corrective action data (specify) _____
 Leachate monitoring data Other(specify) _____
 Surface water monitoring data

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 A. Smyth, P.G.

Senior Hydrogeologist

919-828-0577 x 221

Facility Representative Name (Print)

Title

(Area Code) Telephone Number

Signature *Joan A. Smyth*

Date 11/2/10

Affix NC Licensed/Professional Geologist/Engineer Seal here:



**Johnston County C&D Landfill
Ground Water Monitoring Report**

**October 2009 Semi-annual
Monitoring Event**

**Johnston County Landfill
Smithfield, North Carolina
NC Solid Waste Permit # 51-03**

Prepared for:
Johnston County Department of Public Utilities
309 East Market Street
Smithfield, North Carolina 27577

January 2010



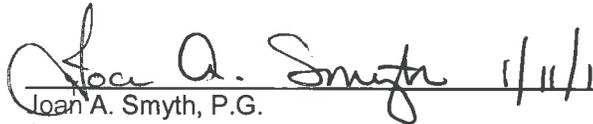
Fall 2009 Ground Water Monitoring Report

**Johnston County C&D Landfill
Smithfield, North Carolina
NC Solid Waste Permit # 51-03**

Prepared for:

**Johnston County Department of Public Utilities
309 East Market Street
Smithfield, North Carolina 27577**

RSG Project No. **Johnston - 4**


Joan A. Smyth, P.G.
Senior Hydrogeologist



January 2010



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**Johnston County – C&D Landfill
Semi-annual Ground Water Monitoring Report
October 2009 Sampling Event**

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1.0 Introduction

The Johnston County C&D Landfill, currently operating under Solid Waste Permit # 51-03 (C&D) is required to submit semi-annual ground water monitoring reports for the landfill. This lined C&D landfill received a permit to operate on 8/24/2007. This report presents the results of the second semi-annual monitoring event for 2009, conducted on October 28th – November 2nd, 2009. The event was performed to comply with the semi-annual monitoring schedule required by NC Solid Waste Regulations.

The ground water monitoring network for the C&D landfill includes 12 ground water monitoring wells. During this event, monitoring well MW-8d contained insufficient water to sample. Since this is a lined C&D landfill, a leachate sample is also collected. This report includes summaries of the field procedures, laboratory analyses, statistical analyses, and ground water characterization for the C&D site. Also included are graphs of the data over time, and laboratory analytical reports.

2.0 Site Geology

The site is underlain by sediments of the Middendorf Formation which were deposited largely in a deltaic system. According to Geology of the Carolinas (Horton/Zullo, 1991) the formation consists of unfossiliferous, interbedded, thin clay and sand. The stratigraphy tends to be very discontinuous, indicating that the sediment deposits are lenticular. Most of the sediments range from silty clay to a coarse clayey sand and gravel with thin lenses of dense clay. There are occasional concretions of iron oxide minerals which form very hard thin layers within the sand layers. In general, the unconsolidated sediments logged during drilling events at the site consisted of mainly medium to coarse sands with some silts and clays. The Middendorf Formation is underlain by highly weathered metamorphic rocks of the Carolina Slate Belt.

The thickness of the Middendorf Formation is controlled by topography with the bottom being relatively flat-lying at elevations of approximately 170 fmsl. The thickness of the unconsolidated sediment ranges from approximately 65 feet to less than 10 feet in the lower elevations surrounding the landfill.

3.0 Sampling Procedures

The sampling event, performed by trained personnel from Johnston County Landfill, on October 28th – November 2nd, 2009 from 11 ground water wells (CDMW-1, CDMW-2, CDMW-3, CDMW-4, CDMW-5, CDMW-5D, CDMW-6, CDMW-7, CDMW-8, CDMW-9, and CDMW-9D), shown in **Figure 1**. This sampling was conducted in accordance with the approved site Water Quality Monitoring Plan¹. Also included in the analysis was a trip blank for quality control.

Sampling methods followed the protocol outlined in the North Carolina Water Quality Monitoring Guidance Document for Solid Waste Facilities (NCDENR, DWM). The depth

¹ G.N. Richardson and Associates, Inc. Permit to Construct Application, Johnson Co. C&D Landfill – Area 2 (Appendix J). October 2005.

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 Johnston County personnel in laboratory prepared containers for the specified analytical procedures. Samples were collected using new factory sealed teflon bailers. Ground water samples were properly preserved, placed on ice, and transported to the laboratory facility, Environment 1, Inc., within the specified holding times for each analysis.

4.0 Field and Laboratory Results

4.1 Laboratory Analysis

All samples were transported to the laboratory facility under proper chain of custody and analyzed at the specified DWM Solid Waste Section Limits (SWSL)² for Appendix constituents. The laboratory report is attached for your review as **Appendix A**.

4.2 Field and Laboratory Results

Ground water and field measurements included in **Table 2**, remained similar to previous results. The laboratory analysis detected thirteen (13) inorganic constituents in all monitoring wells: arsenic, barium, beryllium, cadmium, cobalt, copper, iron, lead, manganese, nickel, total chromium, vanadium, and zinc. Of these, eight (8) inorganic constituents were found above the 2L standard in all monitoring wells:

- arsenic (CDMW-1);
- cadmium (CDMW-1);
- cobalt (CDMW-9);
- iron (all wells);
- lead (CDMW-1, CDMW-5, CDMW-6 & CDMW-9);
- manganese (CDMW-1, CDMW-2, CDMW-4, CDMW-5, CDMW-5D, CDMW-6, CDMW-7, CDMW-9 & CDMW-9D);
- total chromium (CDMW-9) and
- vanadium (CDMW-9).

Ten (10) organic constituents were detected in five (5) monitoring wells: 1,1-dichloroethane, 1,2-Dichloropropane, 1,4-dichlorobenzene, benzene, chlorobenzene, cis-1,2-dichloroethene, methylene chloride, tetrachloroethene, trichloroethylene, and vinyl chloride. Of these, six (6) organic constituents were found above the 2L standard in three (3) monitoring wells:

- 1,2-dichloropropane (CDMW-5D, CDMW-9 & CDMW-9D);
- 1,4-dichlorobenzene (CDMW-1, CDMW-2, CDMW-9 & CDMW-9D);

² New Guidelines for electronic submittal of environmental monitoring data memo, NCDENR DWM, Solid Waste Section, October 27, 2006.

- benzene (CDMW-1, CDMW-2, CDMW-9 & CDMW-9D);
- methylene chloride (CDMW-5D);
- tetrachloroethene (CDMW-9D); and
- vinyl chloride (CDMW-1, CDMW-2, CDMW-8 & CDMW-9).

Table 3 summarizes the list of constituents detected. Constituents detected below the SWSL are denoted as “J” values and are also included in **Table 3**.

5.0 Site Assessment/Remedial Action

The Johnston County lined C&D landfill has been constructed as a “piggy-back” landfill which partially covers a sideslope of the existing unlined Phase 3 MSW landfill. This “piggy-back” design of the lined C&D landfill is the latest phase of an ongoing remedial action for the unlined MSW landfills (Phases 3 and 4). This remedial action includes the construction of several lined “piggy-back” cells and a partial geomembrane cover to limit the infiltration of rainwater into the unlined waste mass. When all the phases of this remedial action are completed, approximately 70 to 75% of the Phase 3 and 4 landfills will be covered to reduce infiltration and the production of uncontrolled leachate.

Prior to construction of the C&D landfill, a ground water assessment was completed in the C&D area to evaluate the effect of the unlined landfills on ground water within and around the then proposed C&D landfill. The conclusions of this assessment indicated that some organic constituents were detected in CDMW-9 and CDMW-9d, and that several inorganic constituents were detected across the C&D area. Collection of filtered samples indicated the inorganic detections were due to suspended solids in the samples collected. This is in keeping with the data collected during the baseline sampling.

It should be noted that wells CDMW-1 and CDMW-2 located next to the unlined Phases 1 and 2 and CDMW-5 & CDMW-5D located adjacent to Phase 3 had not been installed at the time of the assessment. These wells are all located adjacent to unlined landfill phases. Additionally, analyses of groundwater samples collected prior to the placement of waste in the C&D landfill indicated impact from the existing unlined phases. Based upon this information, we conclude that the impact detected in these wells appears to be from the unlined MSW landfill units.

6.0 Statistical Analysis & Results

6.1 Statistical Analysis

The laboratory analytical results were entered into our statistical database for the site. 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 DSWM protocols for approved statistical analysis methods for groundwater data.

Due to the presence of contaminants in the ground water prior to the construction of the C&D landfill (see **Section 4.0**). Statistical analysis is performed using intrawell techniques. This allows for an evaluation of the relative significance of changing

contaminant levels in the ground water at a previously impacted well. Time versus concentration graphs were also reviewed for each detected constituent. These are included in **Appendix B**.

The following constituents were found to be statistically significant (See **Table 4**): arsenic (CDMW-1) and cadmium (CDMW-1). As stated above, prior assessment activities indicate inorganic constituents detected at the site and due to suspended solids in the samples collected.

6.2 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).

This analysis was performed using tolerance interval analysis. Since a smaller subset of wells was analyzed during this step, the compliance well data were retested for normal distribution. If the data were normally distributed, parametric tolerance intervals were constructed for each well and compared to the GWPS for each parameter. For those wells not exhibiting normal distribution, Poisson tolerance intervals were constructed. If the distribution of the data was marginally normal, both tests were run to cross-check the results. All of these cross-checks yielded the same results from both test methods.

The statistical results for this additional analysis are presented in **Table 4**. An upper tolerance limit higher than the GWPS standard was considered to be a statistically significant result. This analysis indicated statistically significant results of arsenic (CDMW-1) and cadmium (CDMW-1).

7.0 Ground Water Characterization

A potentiometric surface map was prepared from ground water elevation data collected during this sampling event. Ground water velocity was calculated for each monitoring well on-site using the equation $V = (KI)/n$ where:

K = hydraulic conductivity

I = ground water gradient

n = porosity

Slug tests were not performed on any of the C&D wells except CDMW-9 which was previously named as PZ-9 during site permitting activities. Piezometers PZ-1 to PZ-10, installed in 2003, were previously located within the C&D footprint. Using the data from the former piezometers, the average hydraulic conductivity and porosity was used for the evaluation of ground water flow in CDMW-1 through CDMW-8.

Ground water velocities ranged from 0.018 feet/day (CDMW-2) to 0.121 feet/day (CDMW-6). These calculations are included in **Table 5**. The data indicates that ground water is flowing generally to the north towards the tributaries of Middle Creek. This is consistent with ground water flow patterns previously seen at this site. The potentiometric surface map (**Figure 1**) is also attached for your review.

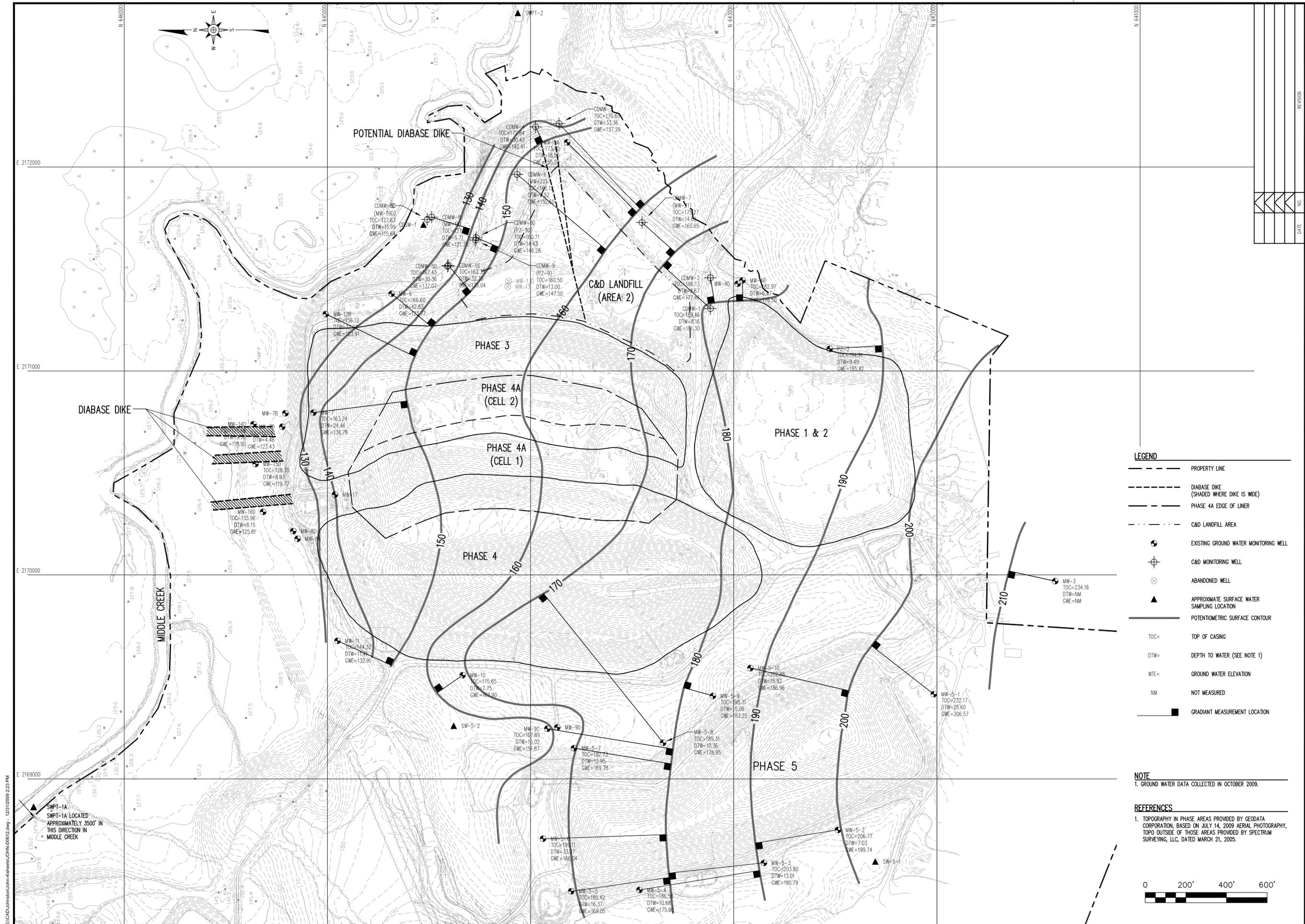
8.0 Conclusions

The results of this monitoring event indicate concentrations of eight (8) inorganic constituents and six (6) organic constituents above their respective ground water standards. The inorganic constituents are likely due to suspended solids in the samples. The majority of the organic constituents were previously detected prior to the placement of waste in the C&D landfill unit. Given the history of the site and the location of unlined landfills adjacent to the C&D landfill, these detections are likely due to prior impact from the unlined landfills.

As the C&D landfill is part of the overall site remediation, it is likely that over time the detected levels will decrease.

The next ground water monitoring event is scheduled for April 2010. A report will be submitted to NCDENR upon completion of laboratory and statistical analyses.

Figures



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SWPT-1A
SWPT-1A LOCATED
APPROXIMATELY 3500' IN
THIS DIRECTION IN
MIDDLE CREEK

- LEGEND**
- PROPERTY LINE
 - DIABASE DIKE (SHADED WHERE DIKE IS WIDE)
 - PHASE 4A EDGE OF LINER
 - C&D LANDFILL AREA
 - EXISTING GROUND WATER MONITORING WELL
 - ⊕ C&D MONITORING WELL
 - ⊗ ABANDONED WELL
 - ▲ APPROXIMATE SURFACE WATER SAMPLING LOCATION
 - POTENTIOMETRIC SURFACE CONTOUR
 - TOC= TOP OF CASING
 - DTW= DEPTH TO WATER (SEE NOTE 1)
 - WTE= GROUND WATER ELEVATION
 - NM NOT MEASURED
 - GRADIENT MEASUREMENT LOCATION

NOTE
1. GROUND WATER DATA COLLECTED IN OCTOBER 2009.

REFERENCES
1. TOPOGRAPHY IN PHASE AREAS PROVIDED BY GEODATA CORPORATION, BASED ON JULY 14, 2009 AERIAL PHOTOGRAPHY, TOPO OUTSIDE OF THOSE AREAS PROVIDED BY SPECTRUM SURVEYING, LLC, DATED MARCH 21, 2005.



DATE	NO.	REVISION

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PROJECT TITLE:
**JOHNSTON COUNTY LANDFILL
SMITHFIELD, NORTH CAROLINA**

DRAWING TITLE:
**GROUND WATER
POTENTIOMETRIC SURFACE MAP
FALL 2009**

DESIGNED BY: K.B.S.	DRAWN BY: J.A.L.
CHECKED BY: AS SHOWN	PROJECT NO.: JOHN-4
SCALE: DATE: DEC. 2009	FILE NAME: JOHN-D0612
SHEET NO.	DRAWING NO. FIG. 1

Tables

Table 1
Johnston County C&D Landfill
Ground Water Elevations & Velocities
10/28-29/2009

Well	Northing	Easting	TOC Elevation (feet)	Water Level (feet)	GW Elev (feet)	Hyd. Cond. (ft/day)	Porosity (%)	Gradient (ft/ft)	Velocity (ft/day)
CDMW-1	643114.61	2171305.99	189.46	8.16	181.3	0.232	0.25	0.035	0.032
CDMW-2	643114.86	2171456.69	186.13	8.67	177.46	0.232	0.25	0.019	0.018
CDMW-3	643860.05	2172212.35	170.65	33.36	137.29	0.232	0.25	0.038	0.035
CDMW-4	643975.97	2172197.24	172.84	30.43	142.41	0.232	0.25	0.094	0.087
CDMW-5	644405.08	2171517.29	167.39	32.35	135.04	0.232	0.25	0.031	0.029
CDMW-5D*	644409.22	2171513.79	167.43	30.36	137.07	NA	NA	0.076	NA
CDMW-6	644066.12	2171963.6	162.12	9.52	152.6	0.232	0.25	0.13	0.121
CDMW-7	643451.38	2171727.87	175.27	14.62	160.65	0.232	0.25	0.0425	0.039
CDMW-8	644487.1	2171754.2	127.41	5.71	121.7	0.232	0.25	0.092	NA
CDMW-8D*	644509	2171743	127.63	11.99	115.64	NA	NA	0.122	NA
CDMW-9	644270.74	2171641.69	160.5	13.00	147.5	0.259	0.25	0.021	NA
CDMW-9D*	644268.2	2171653.67	160.71	14.43	146.28	NA	NA	0.031	NA

Notes: Velocity Calculated from $V=K*I/n$
V = velocity
K = Hydraulic Conductivity
I = Gradient
n = Porosity
Hydraulic Conductivity data from slug testing
Porosity values assumed from Groundwater & Wells (Driscoll)
na = not available
* Deep wells not included in gradient calculation



By: KBS
 Date: 11/11/2009

Table 2
Johnston County C&D Landfill
Field Parameters
10/28-29/2009

Well Identification #	Static Water Level (ft) * (DTW)	Temperature (°Celsius)	Turbidity (NTU)	Specific Conductivity (uS/cm)	pH
CDMW-1	8.16	19.92	150	373	6.39
CDMW-2	8.67	19.94	341	691	6.43
CDMW-3	33.36	17.08	21.6	23	4.7
CDMW-4	30.43	17.31	18	43	5.84
CDMW-5	32.35	17.39	916	65	5.4
CDMW-5D	30.36	17.41	10.1	97	5.21
CDMW-6	9.52	17.31	852	59	6.77
CDMW-7	14.62	18.9	262	177	4.66
CDMW-8	5.71	16.76	23.3	104	4.53
CDMW-8D	11.99	IWV	IWV	IWV	IWV
CDMW-9	13	17.91	Off-Scale	164	5.37
CDMW-9D	14.43	17.31	10	190	5.43
Leachate Point	N/A	19.7	150	880	6.72

IWV = Insufficient Water Volume for Determination

N/A = Parameter not analyzed at this location.

Note: Data Collected by Kevin Shields of Johnston County

Table 3
Johnston County C&D Landfill
Detected Inorganic and Organic Constituents
10/28-29/2009

Constituents	SWSL	2L	CDMW-1	CDMW-2	CDMW-3	CDMW-4	CDMW-5	CDMW-5D	CDMW-6	CDMW-7	CDMW-8	CDMW-9	CDMW-9D
Inorganic													
Antimony	6	1.4	0.2J	0.2J	ND	0.1J	0.1J	0.8J	0.3J	0.2J	0.1J	0.2J	0.1J
Arsenic	10	50	71	4.8J	0.4J	0.3J	5.2J	0.5J	4.4J	1.2J	0.5J	12	18
Barium	100	2000	400	265	20.9J	5.1J	91.2J	11.3J	36J	96.8J	21.8J	78.3J	9J
Beryllium	1	4	1.6	0.2J	0.2J	0.1J	1.5	0.1J	1.9	0.9J	0.6J	1	ND
Cadmium	1	1.75	3.4	0.2J	ND	ND	1.1	0.1J	0.4J	0.7J	ND	0.9J	0.1J
Cobalt	10	70	6.4J	21	1.6J	1.2J	14	5.2J	12	14	3.3J	109	32
Copper	10	1000	17	5.5J	4.2J	6.6J	45	1.1J	21	26	2J	49	0.3J
Iron	300	300	223500	68650	2099	3214	100200	441	2782	7770	2832	135625	8980
Lead	10	15	63	9.4J	1.2J	1.2J	38	0.1J	19	7J	0.8J	39	0.1J
Manganese	50	50	2649	1945	44J	102	1441	66	737	168	35J	4569	1762
Mercury	0.2	1.05	0.14J	0.06J	ND	ND	0.18J	0.78J	0.03J	0.05J	ND	ND	0.06J
Nickel	50	100	1.4J	1.9J	1.8J	3.3J	62	3.7J	46.9J	10.1J	4.7J	88	7.3J
Selenium	10	50	6.7J	4.2J	0.3J	0.2J	2.4J	1J	0.7J	2.6J	1.7J	2.4J	1.1J
Silver	0.01	17.5	0.3J	0.1J	ND	ND	0.2J	0.1J	0.1J	0.1J	0.2J	0.2J	0.2J
Total Chromium	10	50	26	3.9J	0.6J	0.5J	27	ND	27	4.7J	1.5J	53	ND
Vanadium	25	3.5	225	16.9J	1.1J	0.8J	19.8J	ND	14.5J	7.3J	3.4J	31	0.3J
Thallium	5	0.28	1.5J	0.6J	ND	ND	0.1J	0.1J	ND	ND	ND	0.1J	0.1J
Zinc	10	1050	26	8J	7.1J	11	309	7.3J	182	24	19	366	4.2J
Organic													
1,1-Dichloroethane	5	70	ND	ND	ND	0.50J	4.40J	5.8	ND	1.80J	ND	6.2	8.4
1,1-Dichloroethene	5	7	ND	ND	ND	ND	ND	0.20J	ND	ND	ND	ND	0.20J
1,2-Dichlorobenzene	5	24	0.60J	0.50J	ND	ND	ND	ND	ND	ND	ND	0.30J	0.30J
1,2-Dichloroethane	1	0.38	ND	ND	ND	ND	ND	0.20J	ND	ND	ND	0.50J	0.60J
1,2-Dichloropropane	1	0.51	ND	ND	ND	ND	0.80J	1	ND	ND	ND	1.5	1.9
1,4-Dichlorobenzene	1	1.4	2.8	2.7	ND	ND	0.30J	1	ND	0.30J	ND	4.3	5.5
2-Butanone	100	4200	1.20J	ND	ND	ND	ND	0.90J	ND	ND	ND	ND	ND
2-Hexanone	50	280	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	100	700	12.00J	9.50J	ND	ND	6.90J	7.60J	4.20J	ND	4.80J	7.70J	4.90J
Benzene	1	1	2.4	2.4	ND	ND	0.30J	0.80J	ND	0.40J	ND	1.5	1.4
Chlorobenzene	3	50	3.9	3.8	ND	ND	0.20J	0.60J	ND	0.20J	ND	4.2	5.3
Chlorethane	10		ND	0.40J	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	1	2.6	ND	ND	ND	ND	ND	0.20J	ND	ND	ND	ND	ND
Cis-1,2-Dichloroethene	5	70	0.30J	0.50J	ND	ND	3.10J	4.20J	ND	1.20J	ND	16.1	18.8
Methylene Chloride	1	4.6	ND	0.20J	ND	ND	1.7	4.6	ND	0.90J	ND	1.3	0.90J
Tetrachloroethene	1	0.7	ND	ND	ND	ND	0.60J	0.70J	ND	0.40J	ND	0.60J	1.4
Toluene	1	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trans-1,2-Dichloroethene	5	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.20J	0.20J
Trichloroethene	1	2.8	ND	ND	ND	ND	0.70J	0.30J	ND	0.40J	ND	1	1.5
Trichlorofluoromethane	1	2.1	ND	ND	ND	ND	ND	0.30J	ND	ND	ND	ND	ND
Vinyl Chloride	1	0.015	1.6	1.4	ND	ND	ND	ND	ND	ND	1.3	1.2	ND

SWSL - Solid Waste Section Limit
 ND - Not detected at or above SWSL
 Shading - Levels above 2L standard or no 2L standard
 Bold Letters - Constituent detected above SWSL
 J - Detected constituents below SWSL limit

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

Note: Acetone detected in trip blank at 2.50J
 Acetone detected in equipment blank at 5.60J

Table 4
Johnston County C&D Landfill
Statistical Analysis Summary
10/28-29/2009

Location	Parameter	Result	Detection Limit	Test Units	%ND	Normality	Test	Statistically Significant?	2nd statistical Analysis	Test
CDMW-5D	1,1-Dichloroethane	5.8	<5	ug/l	10.34	Y	PPL (99% EPA)	N	---	---
CDMW-9	1,1-Dichloroethane	6.2	<5	ug/l	10.34	Y	PPL (99% EPA)	N	---	---
CDMW-9D	1,1-Dichloroethane	8.4	<5	ug/l	10.34	Y	PPL (99% EPA)	N	---	---
CDMW-5D	1,2-Dichloropropane	1	<1	ug/l	41.37	Y	PPL (99% EPA)	N	---	---
CDMW-9	1,2-Dichloropropane	1.5	<1	ug/l	41.37	Y	PPL (99% EPA)	N	---	---
CDMW-9D	1,2-Dichloropropane	1.9	<1	ug/l	41.37	Y	PPL (99% EPA)	N	---	---
CDMW-1	1,4-Dichlorobenzene	2.8	<1	ug/l	34.69	Y	PPL (99% EPA)	N	---	---
CDMW-2	1,4-Dichlorobenzene	2.7	<1	ug/l	34.69	Y	PPL (99% EPA)	N	---	---
CDMW-5D	1,4-Dichlorobenzene	1	<1	ug/l	34.69	Y	PPL (99% EPA)	N	---	---
CDMW-9	1,4-Dichlorobenzene	4.3	<1	ug/l	34.69	Y	PPL (99% EPA)	N	---	---
CDMW-9D	1,4-Dichlorobenzene	5.5	<1	ug/l	34.69	Y	PPL (99% EPA)	N	---	---
CDMW-1	Arsenic	0.071	<0.010	mg/l	10.34	N	NPPL	Y	Y	MCL - PTI
CDMW-9	Arsenic	0.012	<0.010	mg/l	10.34	N	NPPL	N	---	---
CDMW-9D	Arsenic	0.018	<0.010	mg/l	10.34	N	NPPL	N	---	---
CDMW-1	Barium	0.4	<0.100	mg/l	15.78	Y	PPL (99% EPA)	N	---	---
CDMW-2	Barium	0.265	<0.100	mg/l	15.78	Y	PPL (99% EPA)	N	---	---
CDMW-1	Benzene	2.4	<1	ug/l	30.76	N	NPPL	N	---	---
CDMW-2	Benzene	2.4	<1	ug/l	30.76	N	NPPL	N	---	---
CDMW-9	Benzene	1.5	<1	ug/l	30.76	N	NPPL	N	---	---
CDMW-9D	Benzene	1.4	<1	ug/l	30.76	N	NPPL	N	---	---
CDMW-1	Beryllium	0.0016	<0.001	mg/l	25.64	N	NPPL	N	---	---
CDMW-5	Beryllium	0.0015	<0.001	mg/l	25.64	N	NPPL	N	---	---
CDMW-6	Beryllium	0.0019	<0.001	mg/l	25.64	N	NPPL	N	---	---
CDMW-9	Beryllium	0.001	<0.001	mg/l	25.64	N	NPPL	N	---	---
CDMW-1	Cadmium	0.0034	<0.001	mg/l	35	Y	PPL (99% EPA)	Y	Y	MCL - PTI
CDMW-5	Cadmium	0.0011	<0.001	mg/l	35	Y	PPL (99% EPA)	N	---	---
CDMW-1	Chlorobenzene	3.9	<3	ug/l	33.3	Y	PPL (99% EPA)	N	---	---
CDMW-2	Chlorobenzene	3.8	<3	ug/l	33.3	Y	PPL (99% EPA)	N	---	---
CDMW-9	Chlorobenzene	4.2	<3	ug/l	33.3	Y	PPL (99% EPA)	N	---	---
CDMW-9D	Chlorobenzene	5.3	<3	ug/l	33.3	Y	PPL (99% EPA)	N	---	---
CDMW-9	Cis-1,2-Dichloroethene	16.1	<5	ug/l	0	Y	PPL (99% EPA)	N	---	---
CDMW-9D	Cis-1,2-Dichloroethene	18.8	<5	ug/l	0	Y	PPL (99% EPA)	N	---	---
CDMW-2	Cobalt	0.021	<0.010	mg/l	10.16	N	NPPL	N	---	---
CDMW-5	Cobalt	0.014	<0.010	mg/l	10.16	N	NPPL	N	---	---
CDMW-6	Cobalt	0.012	<0.010	mg/l	10.16	N	NPPL	N	---	---
CDMW-7	Cobalt	0.014	<0.010	mg/l	10.16	N	NPPL	N	---	---
CDMW-9	Cobalt	0.109	<0.010	mg/l	10.16	N	NPPL	N	---	---
CDMW-9D	Cobalt	0.032	<0.010	mg/l	10.16	N	NPPL	N	---	---

Table 4
Johnston County C&D Landfill
Statistical Analysis Summary
10/28-29/2009

Location	Parameter	Result	Detection Limit	Test Units	%ND	Normality	Test	Statistically Significant?	2nd statistical Analysis	Test
CDMW-1	Copper	0.017	<0.010	mg/l	26.53	N	NPPL	N	---	---
CDMW-5	Copper	0.045	<0.010	mg/l	26.53	N	NPPL	N	---	---
CDMW-6	Copper	0.021	<0.010	mg/l	26.53	N	NPPL	N	---	---
CDMW-7	Copper	0.026	<0.010	mg/l	26.53	N	NPPL	N	---	---
CDMW-9	Copper	0.049	<0.010	mg/l	26.53	N	NPPL	N	---	---
CDMW-1	Lead	0.063	<0.010	mg/l	12.82	N	NPPL	N	---	---
CDMW-5	Lead	0.038	<0.010	mg/l	12.82	N	NPPL	N	---	---
CDMW-6	Lead	0.019	<0.010	mg/l	12.82	N	NPPL	N	---	---
CDMW-9	Lead	0.039	<0.010	mg/l	12.82	N	NPPL	N	---	---
CDMW-5D	Mercury	0.00078	<0.0002	mg/l	0	N	NPPL	N	---	---
CDMW-5	Methylene Chloride	1.7	<1	ug/l	48.27	N	NPPL	N	---	---
CDMW-5D	Methylene Chloride	4.6	<1	ug/l	48.27	N	NPPL	N	---	---
CDMW-9	Methylene Chloride	1.3	<1	ug/l	48.27	N	NPPL	N	---	---
CDMW-5	Nickel	0.062	<0.050	mg/l	10.52	N	NPPL	N	---	---
CDMW-9	Nickel	0.088	<0.050	mg/l	10.52	N	NPPL	N	---	---
CDMW-9D	Tetrachloroethene	1.4	<1	ug/l	40	N	NPPL	N	---	---
CDMW-1	Total Chromium	0.026	<0.010	mg/l	12.82	N	NPPL	N	---	---
CDMW-5	Total Chromium	0.027	<0.010	mg/l	12.82	N	NPPL	N	---	---
CDMW-6	Total Chromium	0.027	<0.010	mg/l	12.82	N	NPPL	N	---	---
CDMW-9	Total Chromium	0.053	<0.010	mg/l	12.82	N	NPPL	N	---	---
CDMW-9	Trichloroethene	1	<1	ug/l	42.1	N	NPPL	N	---	---
CDMW-9D	Trichloroethene	1.5	<1	ug/l	42.1	N	NPPL	N	---	---
CDMW-1	Vanadium	0.225	<0.025	mg/l	26.31	N	NPPL	N	---	---
CDMW-9	Vanadium	0.031	<0.025	mg/l	26.31	N	NPPL	N	---	---
CDMW-1	Vinyl Chloride	1.6	<1	ug/l	46.15	N	NPPL	N	---	---
CDMW-2	Vinyl Chloride	1.4	<1	ug/l	46.15	N	NPPL	N	---	---
CDMW-9	Vinyl Chloride	1.3	<1	ug/l	46.15	N	NPPL	N	---	---
CDMW-9D	Vinyl Chloride	1.2	<1	ug/l	46.15	N	NPPL	N	---	---
CDMW-1	Zinc	0.026	<0.010	mg/l	13.04	N	NPPL	N	---	---
CDMW-4	Zinc	0.011	<0.010	mg/l	13.04	N	NPPL	N	---	---
CDMW-5	Zinc	0.309	<0.010	mg/l	13.04	N	NPPL	N	---	---
CDMW-6	Zinc	0.182	<0.010	mg/l	13.04	N	NPPL	N	---	---
CDMW-7	Zinc	0.024	<0.010	mg/l	13.04	N	NPPL	N	---	---
CDMW-8	Zinc	0.019	<0.010	mg/l	13.04	N	NPPL	N	---	---
CDMW-9	Zinc	0.366	<0.010	mg/l	13.04	N	NPPL	N	---	---

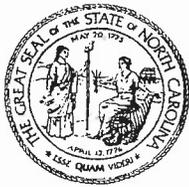
Legend:

- %ND Method chosen due to percent non-detects
- PPL Parametric Prediction Limit
- NPPL Non-parametric Prediction Interval

Shading indicates statistical significance.

Appendix A

Monitoring Well Information



NON RESIDENTIAL WELL CONSTRUCTION RECORD

North Carolina Department of Environment and Natural Resources- Division of Water Quality

WELL CONTRACTOR CERTIFICATION # 2091

1. WELL CONTRACTOR:

Ronald F. Barron
Well Contractor (Individual) Name

Engineering Tectonics
Well Contractor Company Name

STREET ADDRESS 1720 VARGRAVE ST.
Winston-Salem NC 27107
City or Town State Zip Code

(336) 724-6994
Area code- Phone number

2. WELL INFORMATION:

SITE WELL ID #(if applicable) CIDMW-2

STATE WELL PERMIT #(if applicable) N/A

DWQ or OTHER PERMIT #(if applicable) N/A

WELL USE (Check Applicable Box) Monitoring Municipal/Public

Industrial/Commercial Agricultural Recovery Injection

Irrigation Other (list use) _____

DATE DRILLED 8-29

TIME COMPLETED 2:00 AM PM

3. WELL LOCATION:

CITY: Smithfield COUNTY Johnston

680 Country Home Rd 27577
(Street Name, Numbers, Community, Subdivision, Lot No., Parcel, Zip Code)

TOPOGRAPHIC / LAND SETTING:

Slope Valley Flat Ridge Other _____
(check appropriate box)

LATITUDE 3

LONGITUDE _____

May be in degrees, minutes, seconds or in a decimal format

Latitude/longitude source: GPS Topographic map

(location of well must be shown on a USGS topo map and attached to this form if not using GPS)

4. FACILITY- Is the name of the business where the well is located.

FACILITY ID #(if applicable) N/A

NAME OF FACILITY Johnston Co. Landfill

STREET ADDRESS 680 Country Home Rd.
Smithfield NC 27577
City or Town State Zip Code

CONTACT PERSON Rick Proctor

MAILING ADDRESS 680 Country Home Rd.
Smithfield NC 27577
City or Town State Zip Code

(919) 938-4750
Area code - Phone number

5. WELL DETAILS:

a. TOTAL DEPTH: 20'

b. DOES WELL REPLACE EXISTING WELL? YES NO

c. WATER LEVEL Below Top of Casing: _____ FT.
(Use "*" if Above Top of Casing)

d. TOP OF CASING IS +3 FT. Above Land Surface*
*Top of casing terminated at/or below land surface may require a variance in accordance with 15A NCAC 2C .0118.

e. YIELD (gpm): N/A METHOD OF TEST N/A

f. DISINFECTION: Type N/A Amount N/A

g. WATER ZONES (depth): Clincan Pined

From _____ To _____ From _____ To _____

From _____ To _____ From _____ To _____

From _____ To _____ From _____ To _____

6. CASING:

From	To	Depth	Diameter	Weight	Thickness/	Material
From <u>+3</u>	To <u>5</u>	Ft. <u>2</u>	<u>2</u>	<u>Sch 10</u>		<u>PVC</u>
From _____	To _____	Ft. _____	_____	_____	_____	_____
From _____	To _____	Ft. _____	_____	_____	_____	_____

7. GROUT:

From	To	Depth	Material	Method
From <u>0</u>	To <u>2</u>	Ft. <u>Portland</u>	<u>Portland</u>	<u>Poured</u>
From _____	To _____	Ft. _____	_____	_____
From _____	To _____	Ft. _____	_____	_____

8. SCREEN:

From	To	Depth	Diameter	Slot Size	Material
From <u>5</u>	To <u>20</u>	Ft. <u>2</u> in.	<u>1010</u> in.	<u>PVC</u>	
From _____	To _____	Ft. _____	_____	_____	_____
From _____	To _____	Ft. _____	_____	_____	_____

9. SAND/GRAVEL PACK:

From	To	Depth	Size	Material
From <u>36"</u>	To <u>20</u>	Ft. <u>43</u>	<u>Sand</u>	
From <u>2</u>	To <u>36"</u>	Ft. <u>3/8</u>	<u>Beut-Chips</u>	
From _____	To _____	Ft. _____	_____	_____

10. DRILLING LOG

From _____ To _____ Formation Description

11. REMARKS:

Well set w/4" Above Ground
Protective casing

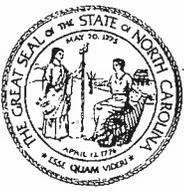
I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACCORDANCE WITH 15A NCAC 2C, WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER.

Ronald F. Barron ^{For Eng.}
SIGNATURE OF CERTIFIED WELL CONTRACTOR DATE 9-1-06

Ronald F. Barron
PRINTED NAME OF PERSON CONSTRUCTING THE WELL

Submit the original to the Division of Water Quality within 30 days. Attn: Information Mgt., 1617 Mail Service Center - Raleigh, NC 27699-1617 Phone No. (919) 733-7015 ext 568.

Form GW-1b Rev. 7/05



NON RESIDENTIAL WELL CONSTRUCTION RECORD

North Carolina Department of Environment and Natural Resources- Division of Water Quality

WELL CONTRACTOR CERTIFICATION # 2091

1. WELL CONTRACTOR:

Ronald F. Barton
Well Contractor (Individual) Name

Engineering Tectonic
Well Contractor Company Name

STREET ADDRESS 1720 VARGRAVE ST.
Winston-Salem NC 27107
City or Town State Zip Code

(336) 724-6994
Area code- Phone number

2. WELL INFORMATION:

SITE WELL ID #(if applicable) CDMWI-3

STATE WELL PERMIT #(if applicable) N/A

DWQ or OTHER PERMIT #(if applicable) N/A

WELL USE (Check Applicable Box) Monitoring Municipal/Public
Industrial/Commercial Agricultural Recovery Injection
Irrigation Other (list use) _____

DATE DRILLED 8-25/8-28

TIME COMPLETED 3:00 AM PM

3. WELL LOCATION:

CITY: Smithfield COUNTY: Johnston
680 Country Home Rd 27577
(Street Name, Numbers, Community, Subdivision, Lot No., Parcel, Zip Code)

TOPOGRAPHIC / LAND SETTING:

Slope Valley Flat Ridge Other _____
(check appropriate box)

LATITUDE 3 _____

LONGITUDE _____

May be in degrees, minutes, seconds or in a decimal format

Latitude/longitude source: GPS Topographic map
(location of well must be shown on a USGS topo map and attached to this form if not using GPS)

4. FACILITY- is the name of the business where the well is located.

FACILITY ID #(if applicable) N/A

NAME OF FACILITY: Johnston Co. Landfill

STREET ADDRESS 680 Country Home Rd.
Smithfield NC 27577
City or Town State Zip Code

CONTACT PERSON Rick Proctor

MAILING ADDRESS 680 Country Home Rd.
Smithfield NC 27577
City or Town State Zip Code

919-938-4750
Area code - Phone number

5. WELL DETAILS:

a. TOTAL DEPTH: 36'

b. DOES WELL REPLACE EXISTING WELL? YES NO

c. WATER LEVEL Below Top of Casing: _____ FT.
(Use "+" if Above Top of Casing)

d. TOP OF CASING IS +3 FT. Above Land Surface*
*Top of casing terminated at/or below land surface may require a variance in accordance with 15A NCAC 2C .0118.

e. YIELD (gpm): N/A METHOD OF TEST N/A

f. DISINFECTION: Type N/A Amount N/A

g. WATER ZONES (depth):
From 30 To 31 From _____ To _____
From _____ To _____ From _____ To _____
From _____ To _____ From _____ To _____

6. CASING:

Depth	Diameter	Thickness/Weight	Material
From <u>0</u> To <u>20</u> Ft.	<u>4"</u>	<u>Sch 40</u>	<u>PVC</u>
From _____ To _____ Ft.	_____	_____	_____
From _____ To _____ Ft.	_____	_____	_____

7. GROUT:

Depth	Material	Method
From <u>0</u> To <u>21</u> Ft.	<u>Portland</u>	<u>Tremie</u>
From _____ To _____ Ft.	_____	_____
From _____ To _____ Ft.	_____	_____

8. SCREEN:

Depth	Diameter	Slot Size	Material
From <u>26</u> To <u>36</u> Ft.	<u>2 in.</u>	<u>1010 in.</u>	<u>PVC</u>
From _____ To _____ Ft.	_____ in.	_____ in.	_____
From _____ To _____ Ft.	_____ in.	_____ in.	_____

9. SAND/GRAVEL PACK:

Depth	Size	Material
From <u>24</u> To <u>36</u> Ft.	<u>#3</u>	<u>SAND</u>
From <u>21</u> To <u>24</u> Ft.	<u>2/8</u>	<u>Bent. Chips</u>
From _____ To _____ Ft.	_____	_____

10. DRILLING LOG

From _____ To _____ Formation Description

11. REMARKS:

Well set w/ 4" Above Ground Protective casing

I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACCORDANCE WITH 15A NCAC 2C, WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER.

Ronald F. Barton For EMS
SIGNATURE OF CERTIFIED WELL CONTRACTOR DATE 8-1-06

Ronald F. Barton
PRINTED NAME OF PERSON CONSTRUCTING THE WELL

Well Construction Log

Well ID: PW-2 (mw-20)

Total Depth: 31.5'

CDMW-6

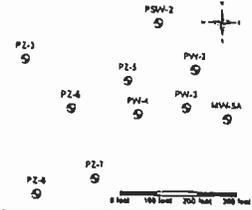


PROJECT INFORMATION

Site Name: Johnston County Landfill
Site Location: Smithfield, NC
Elevation: 161.62' TOC
Logged By: E. Itle
Date(s) Drilled: 6/15/04-6/16/04
Drilling Co.: Engineering Tectonics
Drilling Method: HSA, air rotary
Rig Type: Mobil B-57
Sample Method: Split spoon
Notes: WL 5.59' 6/17/04

SITE LOCATION

Northing: 643,871
Easting: 2,171,978
 Local System



Water level during drilling (below ground) Page 1 of 1
 Water level in completed well (below ground)

DEPTH	SOIL SYMBOLS	USCS	FORMATION	LITHOLOGY	WELL COMPLETION	WELL CONSTRUCTION
0	[Dotted pattern]	sc		SAND: yellowish orange, dry.	[Well casing diagram]	4" Steel protective cover with lock 2" expandable cap 2' x 2' x 4.0" Concrete pad
-5	[Horizontal line pattern]	sm		SILTY SAND: yellowish orange fine SAND with clay, dry, dense to very dense, slightly micaceous	[Well casing diagram]	4" Sch. 40 PVC casing set to 18.5 ft -21.5 to 3'; Riser: 2" Sch. 40 Type I PVC 0' to -17'; Grout
-18			-18'; Bedrock	SILTY SAND: yellowish orange and light gray fine SAND with clay, slightly moist, very dense, few fragments of rock at 17 ft.	[Well casing diagram]	-20' to -17'; Bentonite: Shur-pel pellets/chips
-20				MUDSTONE: light gray silty mudstone, fresh	[Well casing diagram]	-31.5' to -20'; Gravel: #3 DSI filter sand
-25				MUDSTONE: brown muddy weathered zone 20-21 ft.	[Well casing diagram]	
-25				MUDSTONE: brown muddy seam 24-28; producing minimal water	[Well casing diagram]	
-30				MUDSTONE: light gray silty mudstone, fresh	[Well casing diagram]	-31.5' to -21.5'; Screen: 2" Sch. 40 Type I PVC 0.010" slot

THE HUTCHINSON GROUP, LTD
 4280 Old William Penn Highway
 Murrysville, Pennsylvania 15668
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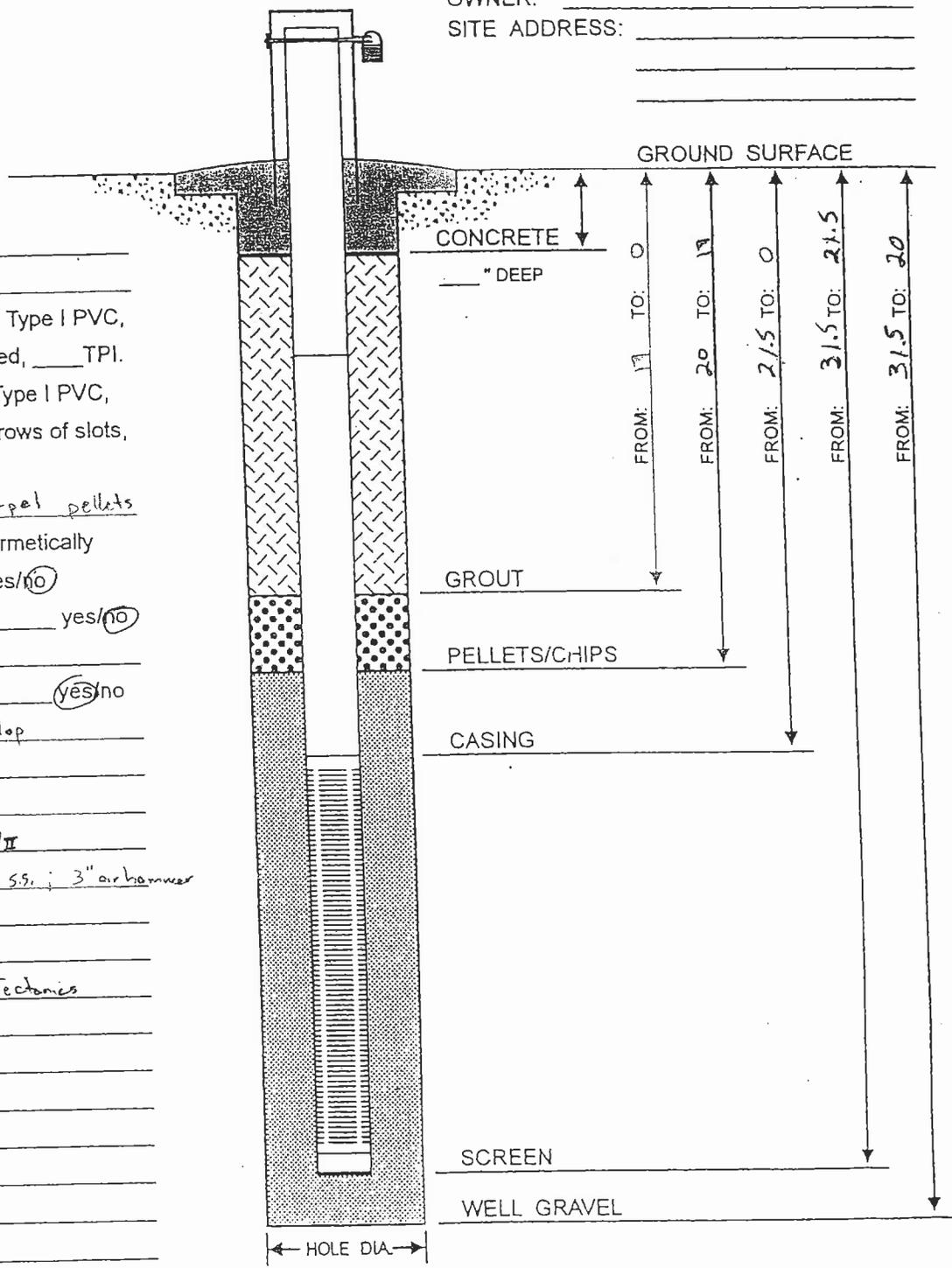
CDMW-6

DATE DRILLED: 6/15/04
 WELL TYPE: _____
 WELL #: PW-2 DEPTH: 31.5 ELEV.: _____
 PERMIT #: _____
 JOB #: _____
 PADLOCK KEY #: _____
 OWNER: _____
 SITE ADDRESS: _____

4" Sch 40 PVC casing 0-18.5'

Well Protector: _____
 Well top: +2.65'
 Casing: 2" Sch. 40 Type I PVC,
 Flush Joint Threaded, _____ TPI.
 Screen: 2" Sch. 40 Type I PVC,
0.010 slot, _____ rows of slots,
 _____" spacing.
 Pellets/Chips: DSI Shur-pel pellets
 Screens & casings were hermetically
 sealed: _____ yes/no
 Centralizers installed: _____ yes/no
 Material: _____
 Well developed: _____ yes/no
 Method: air develop
 Duration: 10 min
 Well gravel: DSI #3
 Grout mix: Portland Type I/II
 Drilling method: 6" auger w/SS; 3" air hammer
 Well driller: Ron Barron
 License #: _____
 Drilling co.: Engineering Technics
 Phone: _____
 Address: _____

 Engineer: _____
 Eng. firm: _____
 Phone: _____
 Address: _____



Well Construction Log

Well ID: PW-3 (mw-21)
 Total Depth: 45.0' CDmw-7

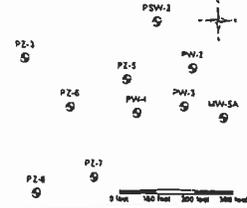


PROJECT INFORMATION

Site Name: Johnston County Landfill
Site Location: Smithfield, NC
Elevation: 165.89' TOC
Logged By: E. Itle
Date(s) Drilled: 6/14/04-6/16/04
Drilling Co.: Engineering Tectonics
Drilling Method: HSA, air rotary
Rig Type: Mobil B-57
Sample Method: Split spoon
Notes: WL 9.65' 6/17/04

SITE LOCATION

Northing: 643,774
Easting: 2,171,955
 Local System



Water level during drilling (below ground) Page 1 of 1
 Water level in completed well (below ground)

DEPTH	SOIL SYMBOLS	USCS	FORMATION	LITHOLOGY	WELL COMPLETION	WELL CONSTRUCTION
0	sm			SILTY SAND: yellowish orange fine SAND with clay, dry, dense		6" Steel protective cover with lock 4" expandable cap 2' x 2' x 4.0" Concrete pad 6" Sch. 40 PVC casing set to 25 ft
-5				SILTY SAND: yellowish orange and light gray fine SAND with clay, dry, very dense, few rock fragments at 19 ft.		0' to -28"; Grout
-10				SILTY SAND: highly weathered silty mudstone, very hard drilling		-35 to 3; Riser: 4" Sch. 40 Type I PVC
-15				MUDSTONE: silty mudstone, light gray, fresh, fracture at 26.5 producing minimal water		-33' to -28"; Bentonite: Shur-pet pellets/chips
-20			-25', bedrock	MUDSTONE: brown muddy seam 37 ft; producing minimal water		-45' to -33'; Gravel: #3 DSI filter sand
-25						-45' to -35'; Screen: 4" Sch. 40 Type I PVC 0.010" slot
-30						
-35						
-40						
-45						

LOG OF BORING NO. PW-3 (mw-21)

ELEV. (FEET M.S.L.)	DEPTH (FEET)	SAMPLE NO. AND TYPE	BLOWS PER 6-INCH INCREMENTS	SAMPLE RECOVERY (IN.)	PROFILE	COORDINATES		USCS SYMBOL	REMARKS
						N _____ E _____	SURFACE EL: _____		
						DESCRIPTION			
	40					Soft zone at 37', producing ~ 10 gpm			
	45					B o B @ 45'			
	50								
	55								
	60								
	65								
	70								

PROJECT NO.: 2948
 DATE BEGAN: 6/14/04
 DATE COMPLETED: 6/16/04
 FIELD GEOLOGIST: EAI
 CHECKED BY: _____

GWL: DEPTH _____ DATE/TIME _____
 GWL: DEPTH _____ DATE/TIME _____
 DRILLING METHOD: _____

NOTES:

Well Construction Log

Well ID: PSW-1 (MW-19)
 Total Depth: 10' CDMW-8

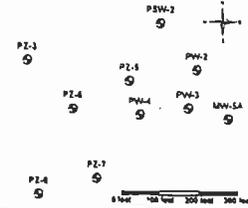


PROJECT INFORMATION

Site Name: Johnston County Landfill
 Site Location: Smithfield, NC
 Elevation: 133.88' TOC
 Logged By: E. Itle
 Date(s) Drilled: 6/17/04
 Drilling Co.: Engineering Tectonics
 Drilling Method: HSA, Split Spoon
 Rig Type: Mobil B-57
 Sample Method: Split spoon
 Notes: WL 4.26' 6/18/04

SITE LOCATION

Northing: 644,509
 Easting: 2,171,743
 Local System



▽ Water level during drilling (below ground)
 ▽ Water level in completed well (below ground)
 Page 1 of 1

DEPTH	SOIL SYMBOLS	USCS	FORMATION	LITHOLOGY	WELL COMPLETION	WELL CONSTRUCTION
0		SC		SILTY SAND: grayish brown silty very fine SAND, wet, abundant organic material		4" Steel protective cover with lock
				SILTY SAND: yellowish orange silty v.f. SAND with clay, moist		2" expandable cap
-5				SILTY SAND: light gray fine to medium silty SAND with clay, moist, loose, micaceous, some iron staining		2' x 2' x 4.0" Concrete pad
						0' to -2'; Grout
						-2' to -3.5'; Bentonite: 3/8" Shur-plug pellets/chips
						-5 to 3; Riser: 2" Sch. 40 Type I PVC
						-3.5' to -10'; Gravel: #3 DSI filter sand
						-10' to -5'; Screen: 2" Sch. 40 Type I PVC 0.010" slot
-10						End Cap: 2" Sch. 40 PVC

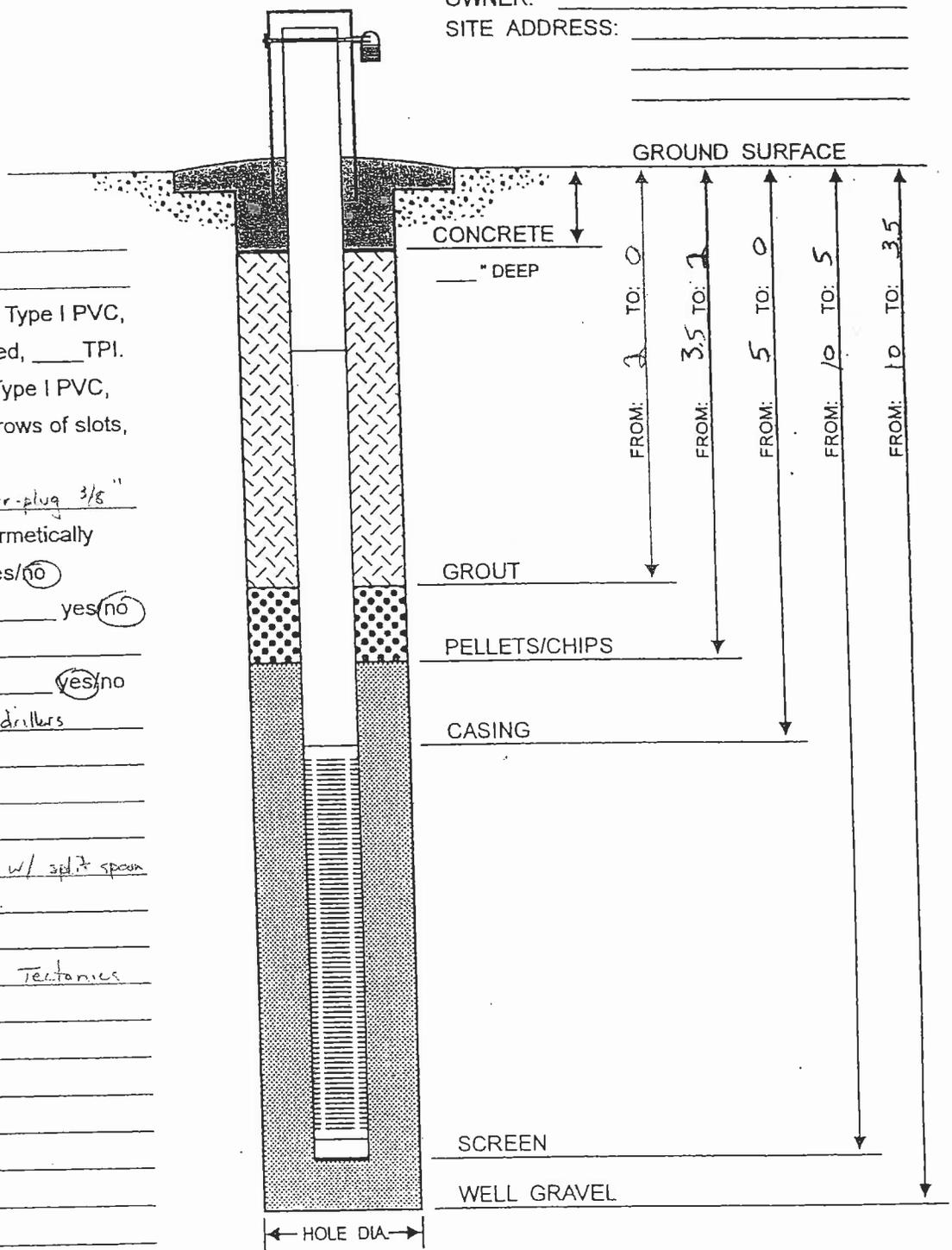
THE HUTCHINSON GROUP, LTD
 4280 Old William Penn Highway
 Murrysville, Pennsylvania 15668
 Phone 724-325-3996 -- Fax 724-733-7901
 www.geo-image.com

CDmw-8

DATE DRILLED: 6/17/04
 WELL TYPE: _____
 WELL #: Psw-1 DEPTH: 10' ELEV.: _____
 PERMIT #: (mw-19) (CDmw-8)
 JOB #: _____
 PADLOCK KEY #: _____
 OWNER: _____
 SITE ADDRESS: _____

Well Protector: +3.3'
 Well top: +3.0'
 Casing: 2" Sch. 40 Type I PVC,
 Flush Joint Threaded, _____ TPI.
 Screen: 2" Sch. 40 Type I PVC,
0.010 slot, _____ rows of slots,
 _____" spacing.
 Pellets/Chips: DSI Stur-plug 3/8"
 Screens & casings were hermetically
 sealed: _____ yes/no
 Centralizers installed: _____ yes/no
 Material: _____
 Well developed: _____ yes/no
 Method: surge by drillers
 Duration: _____
 Well gravel: DSI #3
 Grout mix: _____
 Drilling method: 6" auger w/ split spoon
 Well driller: Ron Barrer
 License #: _____
 Drilling co.: Engineering Tectonics
 Phone: ()
 Address: _____

 Engineer: _____
 Eng. firm: _____
 Phone: ()
 Address: _____



Well Construction Log

Well ID: PW-1 (mw-19d)
 Total Depth: -30.0' CDMw-8d

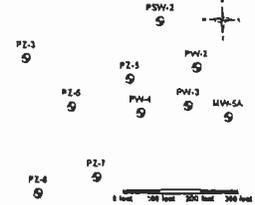


PROJECT INFORMATION

Site Name: Johnston County Landfill
 Site Location: Smithfield, NC
 Elevation:
 Logged By: E. Itle
 Date(s) Drilled: 6/17/04-6/21/04
 Drilling Co.: Engineering Tectonics
 Drilling Method: HSA, air rotary
 Rig Type: Mobil B-57
 Sample Method: Split spoon
 Notes:

SITE LOCATION

Northing: 643,756
 Easting: 2,171,831
 Local System



▽ Water level during drilling (below ground) Page 1 of 1
 ▼ Water level in completed well (below ground)

DEPTH	SOIL SYMBOLS	USCS	FORMATION	LITHOLOGY	WELL COMPLETION	WELL CONSTRUCTION
0		sm		SILTY SAND: See PSW-1 for boring description and blow counts		4" Steel protective cover with lock 2" expandable cap 2' x 2' x 4.0" Concrete pad
-5						4" Sch. 40 PVC casing set to -11.0 ft
-10			-11.0', bedrock	MUDSTONE: light gray silty mudstone, fresh, with a soft seam at -26 ft (water productive).		-25 to 3'; Riser: 2" Sch. 40 Type I PVC
-15						0' to -19'; Grout
-20						-23' to -19'; Bentonite: Shur-pel pellets/chips
-25						-30' to -23'; Gravel: #3 DSI filter sand
-30						-30' to -25'; Screen: 2" Sch. 40 Type I PVC 0.010" slot

THE HUTCHINSON GROUP, LTD
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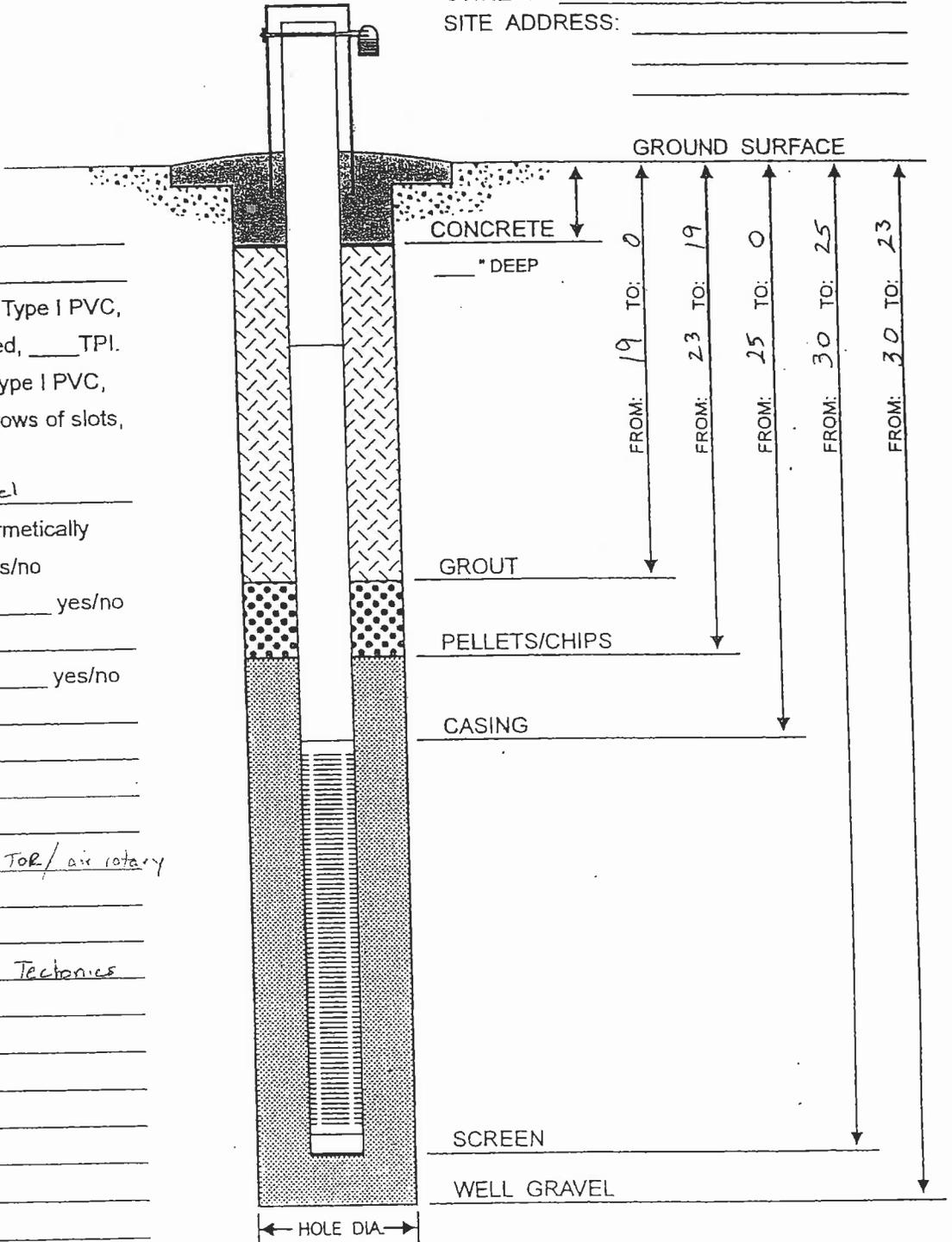
CDmw-8d

DATE DRILLED: 6/17/04-6/21/04
 WELL TYPE: _____
 WELL #: PW-18 DEPTH: 30' ELEV.: _____
 PERMIT #: _____
 JOB #: _____
 PADLOCK KEY #: _____
 OWNER: _____
 SITE ADDRESS: _____

4" pvc casing set to 11'

Well Protector: _____
 Well top: 3'
 Casing: 2" Sch. 40 Type I PVC,
 Flush Joint Threaded, _____ TPI.
 Screen: 2" Sch. 40 Type I PVC,
 _____ slot, _____ rows of slots,
 _____" spacing.
 Pellets/Chips: DSI Shur-pc1
 Screens & casings were hermetically
 sealed: _____ yes/no
 Centralizers installed: _____ yes/no
 Material: _____
 Well developed: _____ yes/no
 Method: _____
 Duration: _____
 Well gravel: DSI #3
 Grout mix: _____
 Drilling method: 6" auger to TOR / air rotary
 Well driller: Ren Barron
 License #: _____
 Drilling co.: Engineering Tectonics
 Phone: ()
 Address: _____

 Engineer: _____
 Eng. firm: _____
 Phone: ()
 Address: _____



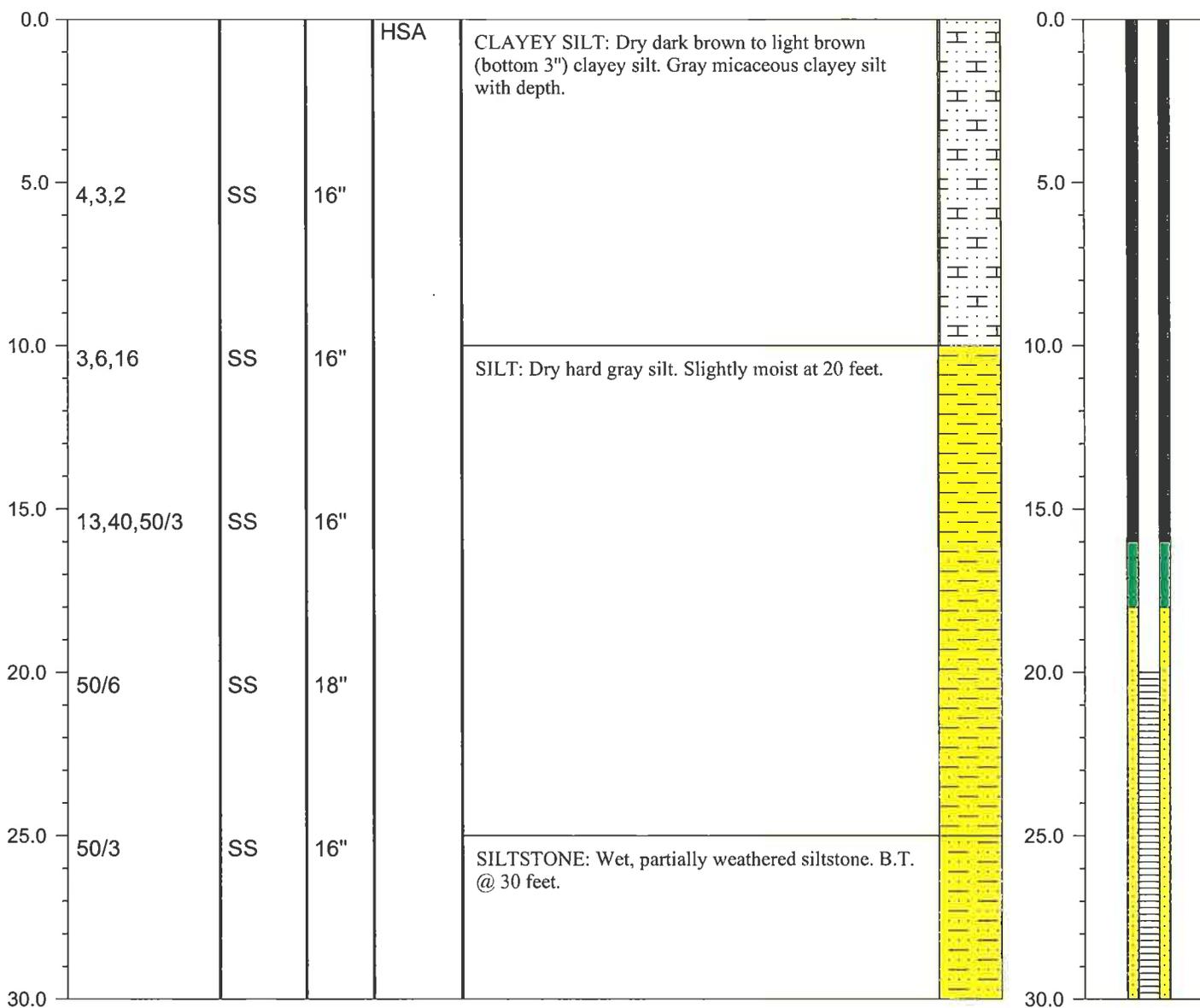


PROJECT NAME: **Johnston County Landfill**
 LOCATION: **Johnston County**
 DRILLING CO: **Engineering Techtonics, P.A.**
 DRILLING METHOD: **HSA**
 FIELD PARTY: **David Barron**
 GEOLOGIST: **Joan A. Smyth, P.G.**
 DATE BEGUN: **3/10/08** COMPLETED: **3/10/08**

TOTAL DEPTH: **30 ft.**
 TOP OF CASING ELEV.: **GROUND ELEV.:**
 NORTHING: **0** EASTING: **0**

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

DEPTH	BLOW COUNT	SAMPLING METHOD	RECOVERY	DRILL METHOD	DESCRIPTION	LITHOLOGY	DEPTH	WELL INSTALLATION
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G. N. Richardson & Associates, Inc.
 14 North Boylan Avenue, Raleigh NC 27603
 (919) 828-0577

FIELD BOREHOLE LOG

CDMw-9d

BOREHOLE NUMBER (PZ-9d) Page 1 of 2

PROJECT NAME: **Johnston County C&D Area**
 LOCATION: **Smithfield, NC**
 DRILLING CO: **Engineering Tectonics, P.A.**
 DRILLING METHOD: **HSA/RC/AH**
 FIELD PARTY: **R. Barron**
 GEOLOGIST: **J. Smyth**
 DATE BEGUN: **7/7/03** DATE COMPLETED: **7/8/03**

TOTAL DEPTH: **45**
 GROUND SURFACE ELEVATION: **na**
 TOP OF CASING ELEVATION: **160.71**

STATIC WATER LEVEL (BLS)		
Depth (ft)	na	na
Time	na	na
Date	na	na

DEPTH	BLOW COUNT	SAMPLING METHOD	RECOVERY	DRILL METHOD	DESCRIPTION	LITHOLOGY	DEPTH	WELL	INSTALLATION
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0.0				HSA	SOIL: Dry black soil.		0.0		
1.0							1.0		
2.0							2.0		
3.0							3.0		
4.0							4.0		
5.0							5.0		
6.0					SILTY CLAY: Dry reddish tan silty clay.		6.0		
7.0							7.0		
8.0							8.0		
9.0							9.0		
10.0							10.0		
11.0					SILTY CLAY: Moist reddish tan and brown silty clay with trace fine sand.		11.0		
12.0							12.0		
13.0							13.0		
14.0							14.0		
15.0							15.0		
16.0					CLAYEY SILTY SAND: Moist dark brown clayey silty coarse sand and gravel.		16.0		
17.0							17.0		
18.0							18.0		
19.0							19.0		
20.0							20.0		
21.0					SANDY SILT: Slightly greenish gray fine to coarse sandy silty with trace clay.		21.0		
22.0							22.0		
23.0							23.0		
24.0							24.0		
25.0	50/0.5"	SS	0"				25.0		
26.0					PWR: Partially weathered rock. No recovery from samples at 25 and 30 feet. Auger Refusal at 32.5 feet. Set outer casing at 32.5 feet.		26.0		
27.0							27.0		
28.0							28.0		
29.0							29.0		
30.0	50/0	SS	0"				30.0		
31.0							31.0		



G. N. Richardson & Associates, Inc.
 14 North Boylan Avenue, Raleigh NC 27803
 (919) 828-0677

FIELD BOREHOLE LOG CDMW-9d

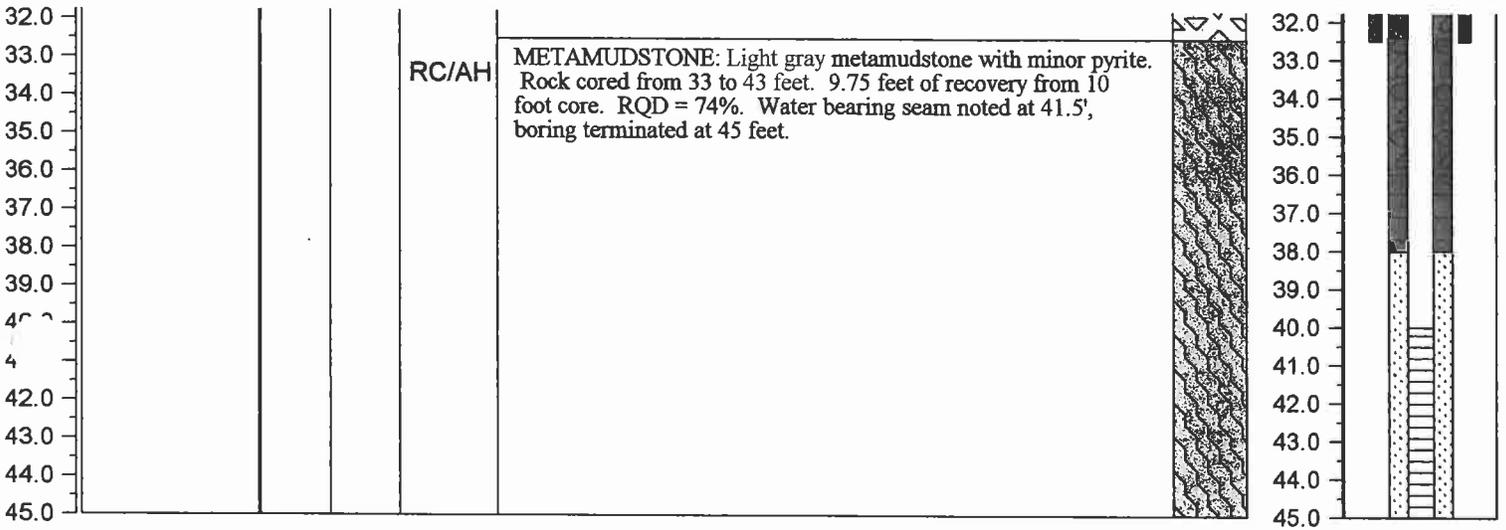
BOREHOLE NUMBER (PZ-9d) Page 2 of 2

PROJECT NAME: **Johnston County C&D Area**
 LOCATION: **Smithfield, NC**
 DRILLING CO: **Engineering Tectonics, P.A.**
 DRILLING METHOD: **HSA/RC/AH**
 FIELD PARTY: **R. Barron**
 GEOLOGIST: **J. Smyth**
 DATE BEGUN: **7/7/03** DATE COMPLETED: **7/8/03**

TOTAL DEPTH: **45**
 GROUND SURFACE ELEVATION: **na**
 TOP OF CASING ELEVATION: **160.71**

STATIC WATER LEVEL (BLS)		
Depth (ft)	na	na
Time	na	na
Date	na	na

DEPTH	BLOW COUNT	SAMPLING METHOD	RECOVERY	DRILL METHOD	DESCRIPTION	LITHOLOGY	DEPTH	WELL	INSTALLATION
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Appendix B

Laboratory Analytical Report

Environment 1, Incorporated

REC'D DEC 08 2009

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

ID#: 6058

JOHNSTON CO. (NEW) C&D LANDFILL
MR. KEVIN SHIELDS
P.O. BOX 2263
SMITHFIELD ,NC 27577

DATE COLLECTED: 10/28/09
DATE REPORTED : 12/01/09

REVIEWED BY: 

PARAMETERS	MDL	CDMW				Trip Blank	Analysis		Method Code
		SWSL	CDMW-1	CDMW-2	CDMW-3		CDMW-4	Date	
Total Alkalinity, mg/l	1.0	1.0	93	236	3	14	11/06/09	TRB	SM2320B
Chloride, mg/l	5.0	5.0	55	121	29	8	10/30/09	JIJ	SM4500-CLB
Total Dissolved Residue, mg/l	1.0	1.0	153	208	42	44	11/03/09	TRB	SM2540C
Sulfate, mg/l	5.0	250.0	15.0 J	---	12.7 J	---	11/10/09	TRB	SM426C
Antimony, ug/l	0.06	6.0	0.2 J	0.2 J	---	0.1 J	11/05/09	LFJ	EPA200.8
Arsenic, ug/l	0.17	10.0	71				11/23/09	CMF	SM3113B
Arsenic, ug/l	0.17	10.0		4.8 J	0.4 J	0.3 J	11/05/09	LFJ	EPA200.8
Barium, ug/l	0.04	100.0	400	265	20.9 J	5.1 J	11/05/09	LFJ	EPA200.8
Beryllium, ug/l	0.06	1.0	1.6	0.2 J	0.2 J	0.1 J	11/05/09	LFJ	EPA200.8
Cadmium, ug/l	0.04	1.0	3.4	0.2 J	---	---	11/05/09	LFJ	EPA200.8
Cobalt, ug/l	0.02	10.0	6.4 J	21	1.6 J	1.2 J	11/05/09	LFJ	EPA200.8
Copper, ug/l	0.04	10.0	17	5.5 J	4.2 J	6.6 J	11/05/09	LFJ	EPA200.8
Total Chromium, ug/l	0.10	10.0	26	3.9 J	0.6 J	0.5 J	11/05/09	LFJ	EPA200.8
Iron, ug/l	14.0	300.0	223500	68650	2099	3214	11/19/09	ADD	SM3111B
Manganese, ug/l	0.50	50.0	2649	1945	44 J	102	11/13/09	LFJ	EPA200.7
Lead, ug/l	0.04	10.0	63	9.4 J	1.2 J	1.2 J	11/05/09	LFJ	EPA200.8
Mercury, ug/l	0.03	0.20	0.14 J	0.06 J	---	---	11/05/09	LFJ	EPA200.8
Nickel, ug/l	0.04	50.0	1.4 J	1.9 J	1.8 J	3.3 J	11/05/09	LFJ	EPA200.8
Selenium, ug/l	0.12	10.0	6.7 J	4.2 J	0.3 J	0.2 J	11/05/09	LFJ	EPA200.8
Silver, ug/l	0.04	10.0	0.3 J	0.1 J	---	---	11/05/09	LFJ	EPA200.8
Thallium, ug/l	0.03	5.0	1.5 J	0.6 J	---	---	11/05/09	LFJ	EPA200.8
Vanadium, ug/l	0.28	25.0	225	16.9 J	1.1 J	0.8 J	11/05/09	LFJ	EPA200.8
Zinc, ug/l	0.14	10.0	26	8 J	7.1 J	11	11/05/09	LFJ	EPA200.8

J = Between MDL and SWSL, U = Below ALL Quantitation 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: JOHNSTON CO. (NEW) C&D LANDFILL
MR. KEVIN SHIELDS
P.O. BOX 2263
SMITHFIELD, NC 27577

CLIENT ID: 6058
ANALYST: MAO
DATE COLLECTED: 10/28/09
DATE ANALYZED: 11/11/09
DATE REPORTED: 12/01/09

Page: 1

REVIEWED BY: 

VOLATILE ORGANICS EPA METHOD 8260B

PARAMETERS, ug/l	MDL	SWSL	CDMW-1	CDMW-2	CDMW-3	CDMW-4	Trip Blank	
1. Chloromethane	0.18	1.0	---	U	---	U	---	U
2. Vinyl Chloride	0.34	1.0	1.60		1.40		---	U
3. Bromomethane	0.26	10.0	---	U	---	U	---	U
4. Chloroethane	0.29	10.0	---	U	0.40	J	---	U
5. Trichlorofluoromethane	0.13	1.0	---	U	---	U	---	U
6. 1,1-Dichloroethene	0.14	5.0	---	U	---	U	---	U
7. Acetone	1.21	100.0	12.00	J	9.50	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	---	U	0.20	J	---	U
11. trans-1,2-Dichloroethene	0.13	5.0	---	U	---	U	---	U
12. 1,1-Dichloroethane	0.16	5.0	---	U	---	U	0.50	J
13. Vinyl Acetate	0.20	50.0	---	U	---	U	---	U
14. Cis-1,2-Dichloroethene	0.14	5.0	0.30	J	0.50	J	---	U
15. 2-Butanone	0.85	100.0	1.20	J	---	U	---	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	2.40		2.40		---	U
21. 1,2-Dichloroethane	0.12	1.0	---	U	---	U	---	U
22. Trichloroethene	0.13	1.0	---	U	---	U	---	U
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	---	U	---	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	---	U	---	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	3.90		3.80		---	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	2.80		2.70		---	U
44. 1,2-Dichlorobenzene	0.13	5.0	0.60	J	0.50	J	---	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 Quantitation 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

ID#: 6058 A

JOHNSTON CO. (NEW) C&D LANDFILL
MR. KEVIN SHIELDS
P.O. BOX 2263
SMITHFIELD ,NC 27577

DATE COLLECTED: 10/28/09
DATE REPORTED : 12/01/09

REVIEWED BY: 

PARAMETERS	MDL	CDMW-6		Analysis		Method Code
		SWSL		Date	Analyst	
Total Alkalinity, mg/l	1.0	1.0	21	11/06/09	TRB	SM2320B
Chloride, mg/l	5.0	5.0	9	10/30/09	JIJ	SM4500-CLB
Total Dissolved Residue, mg/l	1.0	1.0	62	11/03/09	TRB	SM2540C
Sulfate, mg/l	5.0	250.0	---	U	11/10/09	TRB SM426C
Antimony, ug/l	0.06	6.0	0.3	J	11/05/09	LFJ EPA200.8
Arsenic, ug/l	0.17	10.0	4.4	J	11/05/09	LFJ EPA200.8
Barium, ug/l	0.04	100.0	36	J	11/05/09	LFJ EPA200.8
Beryllium, ug/l	0.06	1.0	1.9		11/05/09	LFJ EPA200.8
Cadmium, ug/l	0.04	1.0	0.4	J	11/05/09	LFJ EPA200.8
Cobalt, ug/l	0.02	10.0	12		11/05/09	LFJ EPA200.8
Copper, ug/l	0.04	10.0	21		11/05/09	LFJ EPA200.8
Total Chromium, ug/l	0.10	10.0	27		11/05/09	LFJ EPA200.8
Iron, ug/l	14.0	300.0	2782		11/19/09	ADD SM3111B
Manganese, ug/l	0.50	50.0	737		11/13/09	LFJ EPA200.7
Lead, ug/l	0.04	10.0	19		11/05/09	LFJ EPA200.8
Mercury, ug/l	0.03	0.20	0.03	J	11/05/09	LFJ EPA200.8
Nickel, ug/l	0.04	50.0	46.9	J	11/05/09	LFJ EPA200.8
Selenium, ug/l	0.12	10.0	0.7	J	11/05/09	LFJ EPA200.8
Silver, ug/l	0.04	10.0	0.1	J	11/05/09	LFJ EPA200.8
Thallium, ug/l	0.03	5.0	---	U	11/05/09	LFJ EPA200.8
Vanadium, ug/l	0.28	25.0	14.5	J	11/05/09	LFJ EPA200.8
Zinc, ug/l	0.14	10.0	182		11/05/09	LFJ EPA200.8

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

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

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

 CLIENT: JOHNSTON CO. (NEW) C&D LANDFILL
 MR. KEVIN SHIELDS
 P.O. BOX 2263
 SMITHFIELD, NC 27577

CLIENT ID: 6058 A

 ANALYST: MAO
 DATE COLLECTED: 10/28/09
 DATE ANALYZED: 11/11/09
 DATE REPORTED: 12/01/09

Page: 1

 REVIEWED BY: 
**VOLATILE ORGANICS
 EPA METHOD 8260B**

PARAMETERS, ug/l	MDL	SWSL	CDMW-6
1. Chloromethane	0.18	1.0	--- U
2. Vinyl Chloride	0.34	1.0	--- U
3. Bromomethane	0.26	10.0	--- U
4. Chloroethane	0.29	10.0	--- U
5. Trichlorofluoromethane	0.13	1.0	--- U
6. 1,1-Dichloroethene	0.14	5.0	--- U
7. Acetone	1.21	100.0	4.20 J
8. Iodomethane	0.12	10.0	--- U
9. Carbon Disulfide	0.14	100.0	--- U
10. Methylene Chloride	0.14	1.0	--- U
11. trans-1,2-Dichloroethene	0.13	5.0	--- U
12. 1,1-Dichloroethane	0.16	5.0	--- U
13. Vinyl Acetate	0.20	50.0	--- U
14. Cis-1,2-Dichloroethene	0.14	5.0	--- U
15. 2-Butanone	0.85	100.0	--- U
16. Bromochloromethane	0.11	3.0	--- U
17. Chloroform	0.13	5.0	--- U
18. 1,1,1-Trichloroethane	0.11	1.0	--- U
19. Carbon Tetrachloride	0.13	1.0	--- U
20. Benzene	0.16	1.0	--- U
21. 1,2-Dichloroethane	0.12	1.0	--- U
22. Trichloroethene	0.13	1.0	--- U
23. 1,2-Dichloropropane	0.17	1.0	--- U
24. Bromodichloromethane	0.13	1.0	--- U
25. Cis-1,3-Dichloropropene	0.17	1.0	--- U
26. 4-Methyl-2-Pentanone	0.68	100.0	--- U
27. Toluene	0.13	1.0	--- U
28. trans-1,3-Dichloropropene	0.14	1.0	--- U
29. 1,1,2-Trichloroethane	0.20	1.0	--- U
30. Tetrachloroethene	0.16	1.0	--- U
31. 2-Hexanone	1.00	50.0	--- U
32. Dibromochloromethane	0.14	3.0	--- U
33. 1,2-Dibromoethane	0.13	1.0	--- U
34. Chlorobenzene	0.13	3.0	--- U
35. 1,1,1,2-Tetrachloroethane	0.14	5.0	--- U
36. Ethylbenzene	0.16	1.0	--- U
37. Xylenes	0.48	5.0	--- U
38. Dibromomethane	0.17	10.0	--- U
39. Styrene	0.16	1.0	--- U
40. Bromoform	0.11	3.0	--- U
41. 1,1,2,2-Tetrachloroethane	0.16	3.0	--- U
42. 1,2,3-Trichloropropane	0.06	1.0	--- U
43. 1,4-Dichlorobenzene	0.21	1.0	--- U
44. 1,2-Dichlorobenzene	0.13	5.0	--- U
45. 1,2-Dibromo-3-Chloropropane	0.26	13.0	--- U
46. Acrylonitrile	1.49	200.0	--- U
47. trans-1,4-Dichloro-2-Butene	0.14	100.0	--- U

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

ID#: 6058

JOHNSTON CO. (NEW) C&D LANDFILL
MR. KEVIN SHIELDS
P.O. BOX 2263
SMITHFIELD ,NC 27577

DATE COLLECTED: 10/29/09
DATE REPORTED : 12/01/09

REVIEWED BY: 

PARAMETERS	MDL	CDMW-5		CDMW-5D	Analysis		Method	
		SWSL			Date	Analyst	Code	
Total Alkalinity, mg/l	1.0	1.0	22	33	11/06/09	TRB	SM2320B	
Chloride, mg/l	5.0	5.0	9	11	11/05/09	JIJ	SM4500-CLB	
Total Dissolved Residue, mg/l	1.0	1.0	49	65	11/03/09	TRB	SM2540C	
Sulfate, mg/l	5.0	250.0	---	U	9.9 J	11/10/09	TRB	SM426C
Antimony, ug/l	0.06	6.0	0.1 J	0.8 J	11/05/09	LFJ	EPA200.8	
Arsenic, ug/l	0.17	10.0	5.2 J	0.5 J	11/05/09	LFJ	EPA200.8	
Barium, ug/l	0.04	100.0	91.2 J	11.3 J	11/05/09	LFJ	EPA200.8	
Beryllium, ug/l	0.06	1.0	1.5	0.1 J	11/05/09	LFJ	EPA200.8	
Cadmium, ug/l	0.04	1.0	1.1	0.1 J	11/05/09	LFJ	EPA200.8	
Cobalt, ug/l	0.02	10.0	14	5.2 J	11/05/09	LFJ	EPA200.8	
Copper, ug/l	0.04	10.0	45	1.1 J	11/05/09	LFJ	EPA200.8	
Total Chromium, ug/l	0.10	10.0	27	---	U	11/05/09	LFJ	EPA200.8
Iron, ug/l	14.0	300.0	100200	441	11/19/09	ADD	SM3111B	
Manganese, ug/l	0.50	50.0	1441	66	11/13/09	LFJ	EPA200.7	
Lead, ug/l	0.04	10.0	38	0.1 J	11/05/09	LFJ	EPA200.8	
Mercury, ug/l	0.13	0.20	0.18 J		11/05/09	LFJ	EPA200.8	
Mercury, ug/l	0.13	0.20		0.78	11/19/09	ADD	EPA245.1	
Nickel, ug/l	0.04	50.0	62	3.7 J	11/05/09	LFJ	EPA200.8	
Selenium, ug/l	0.12	10.0	2.4 J	1 J	11/05/09	LFJ	EPA200.8	
Silver, ug/l	0.04	10.0	0.2 J	0.1 J	11/05/09	LFJ	EPA200.8	
Thallium, ug/l	0.03	5.0	0.1 J	0.1 J	11/05/09	LFJ	EPA200.8	
Vanadium, ug/l	0.28	25.0	19.8 J	---	U	11/05/09	LFJ	EPA200.8
Zinc, ug/l	0.14	10.0	309	7.3 J	11/05/09	LFJ	EPA200.8	

J = Between MDL and SWSL, U = Below ALL Quantitation 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: JOHNSTON CO. (NEW) C&D LANDFILL
MR. KEVIN SHIELDS
P.O. BOX 2263
SMITHFIELD, NC 27577

CLIENT ID: 6058
ANALYST: MAO
DATE COLLECTED: 10/29/09
DATE ANALYZED: 11/11/09
DATE REPORTED: 12/01/09

Page: 1

REVIEWED BY: 

VOLATILE ORGANICS EPA METHOD 8260B

PARAMETERS, ug/l	MDL	SWSL	CDMW-5	CDMW-5D
1. Chloromethane	0.18	1.0	--- U	0.20 J
2. Vinyl Chloride	0.34	1.0	--- U	--- U
3. Bromomethane	0.26	10.0	--- U	--- U
4. Chloroethane	0.29	10.0	--- U	--- U
5. Trichlorofluoromethane	0.13	1.0	--- U	0.30 J
6. 1,1-Dichloroethene	0.14	5.0	--- U	0.20 J
7. Acetone	1.21	100.0	6.90 J	7.60 J
8. Iodomethane	0.12	10.0	--- U	--- U
9. Carbon Disulfide	0.14	100.0	--- U	--- U
10. Methylene Chloride	0.14	1.0	1.70	4.60
11. trans-1,2-Dichloroethene	0.13	5.0	--- U	--- U
12. 1,1-Dichloroethane	0.16	5.0	4.40 J	5.80
13. Vinyl Acetate	0.20	50.0	--- U	--- U
14. Cis-1,2-Dichloroethene	0.14	5.0	3.10 J	4.20 J
15. 2-Butanone	0.85	100.0	--- U	0.90 J
16. Bromochloromethane	0.11	3.0	--- U	--- U
17. Chloroform	0.13	5.0	--- U	--- U
18. 1,1,1-Trichloroethane	0.11	1.0	--- U	--- U
19. Carbon Tetrachloride	0.13	1.0	--- U	--- U
20. Benzene	0.16	1.0	0.30 J	0.80 J
21. 1,2-Dichloroethane	0.12	1.0	--- U	0.20 J
22. Trichloroethene	0.13	1.0	0.70 J	0.30 J
23. 1,2-Dichloropropane	0.17	1.0	0.80 J	1.00
24. Bromodichloromethane	0.13	1.0	--- U	--- U
25. Cis-1,3-Dichloropropene	0.17	1.0	--- U	--- U
26. 4-Methyl-2-Pentanone	0.68	100.0	--- U	--- U
27. Toluene	0.13	1.0	--- U	--- U
28. trans-1,3-Dichloropropene	0.14	1.0	--- U	--- U
29. 1,1,2-Trichloroethane	0.20	1.0	--- U	--- U
30. Tetrachloroethene	0.16	1.0	0.60 J	0.70 J
31. 2-Hexanone	1.00	50.0	--- U	--- U
32. Dibromochloromethane	0.14	3.0	--- U	--- U
33. 1,2-Dibromoethane	0.13	1.0	--- U	--- U
34. Chlorobenzene	0.13	3.0	0.20 J	0.60 J
35. 1,1,1,2-Tetrachloroethane	0.14	5.0	--- U	--- U
36. Ethylbenzene	0.16	1.0	--- U	--- U
37. Xylenes	0.48	5.0	--- U	--- U
38. Dibromomethane	0.17	10.0	--- U	--- U
39. Styrene	0.16	1.0	--- U	--- U
40. Bromoform	0.11	3.0	--- U	--- U
41. 1,1,2,2-Tetrachloroethane	0.16	3.0	--- U	--- U
42. 1,2,3-Trichloropropane	0.06	1.0	--- U	--- U
43. 1,4-Dichlorobenzene	0.21	1.0	0.30 J	1.00
44. 1,2-Dichlorobenzene	0.13	5.0	--- U	--- U
45. 1,2-Dibromo-3-Chloropropane	0.26	13.0	--- U	--- U
46. Acrylonitrile	1.49	200.0	--- U	--- U
47. trans-1,4-Dichloro-2-Butene	0.14	100.0	--- U	--- U

J = Between MDL and SWSL, U = Below ALL Quantitation 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

ID#: 6058 A

JOHNSTON CO. (NEW) C&D LANDFILL
MR. KEVIN SHIELDS
P.O. BOX 2263
SMITHFIELD ,NC 27577

DATE COLLECTED: 10/29/09
DATE REPORTED : 12/01/09

REVIEWED BY: 

PARAMETERS	MDL	CDMW-7		CDMW-8		CDMW-8D		CDMW-9		CDMW-9D		Analysis		Method Code
		SWSL										Date	Analyst	
Total Alkalinity, mg/l	1.0	1.0	7	2	Missing	60	79	11/06/09	TRB	SM2320B				
Chloride, mg/l	5.0	5.0	19	17	Missing	15	14	11/05/09	JIJ	SM4500-CLB				
Total Dissolved Residue, mg/l	1.0	1.0	116	52	Missing	99	125	11/03/09	TRB	SM2540C				
Sulfate, mg/l	5.0	250.0	---	U	10.6 J	Missing	---	U	7.5 J	11/10/09	TRB	SM426C		
Antimony, ug/l	0.06	6.0	0.2 J	0.1 J	Missing	0.2 J	0.1 J	11/05/09	LFJ	EPA200.8				
Arsenic, ug/l	0.17	10.0	1.2 J	0.5 J	Missing	12	18	11/05/09	LFJ	EPA200.8				
Barium, ug/l	0.04	100.0	96.8 J	21.8 J	Missing	78.3 J	9 J	11/05/09	LFJ	EPA200.8				
Beryllium, ug/l	0.06	1.0	0.9 J	0.6 J	Missing	1	---	U	11/05/09	LFJ	EPA200.8			
Cadmium, ug/l	0.04	1.0	0.7 J	---	U	Missing	0.9 J	0.1 J	11/05/09	LFJ	EPA200.8			
Cobalt, ug/l	0.02	10.0	14	3.3 J	Missing	109	32	11/05/09	LFJ	EPA200.8				
Copper, ug/l	0.04	10.0	26	2 J	Missing	49	0.3 J	11/05/09	LFJ	EPA200.8				
Total Chromium, ug/l	0.10	10.0	4.7 J	1.5 J	Missing	53	---	U	11/05/09	LFJ	EPA200.8			
Iron, ug/l	14.0	300.0	7770	2832	Missing	135625	8980	11/19/09	ADD	SM3111B				
Manganese, ug/l	0.50	50.0	168	35 J	Missing	4569	1762	11/13/09	LFJ	EPA200.7				
Lead, ug/l	0.04	10.0	7 J	0.8 J	Missing	39	0.1 J	11/05/09	LFJ	EPA200.8				
Mercury, ug/l	0.03	0.20	0.05 J	---	U	Missing	---	U	0.06 J	11/05/09	LFJ	EPA200.8		
Nickel, ug/l	0.04	50.0	10.1 J	4.7 J	Missing	88	7.3 J	11/05/09	LFJ	EPA200.8				
Selenium, ug/l	0.12	10.0	2.6 J	1.7 J	Missing	2.4 J	1.1 J	11/05/09	LFJ	EPA200.8				
Silver, ug/l	0.04	10.0	0.1 J	0.2 J	Missing	0.2 J	0.2 J	11/05/09	LFJ	EPA200.8				
Thallium, ug/l	0.03	5.0	---	U	Missing	0.1 J	0.1 J	11/05/09	LFJ	EPA200.8				
Vanadium, ug/l	0.28	25.0	7.3 J	3.4 J	Missing	31	0.3 J	11/05/09	LFJ	EPA200.8				
Zinc, ug/l	0.14	10.0	24	19	Missing	366	4.2 J	11/05/09	LFJ	EPA200.8				

J = Between MDL and SWSL, U = Below ALL Quantitation 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: JOHNSTON CO. (NEW) C&D LANDFILL
MR. KEVIN SHIELDS
P.O. BOX 2263
SMITHFIELD, NC 27577

CLIENT ID: 6058 A
ANALYST: MAO
DATE COLLECTED: 10/29/09
DATE ANALYZED: 11/11/09
DATE REPORTED: 12/01/09

Page: 1

REVIEWED BY: 

VOLATILE ORGANICS EPA METHOD 8260B

PARAMETERS, ug/l	MDL	SWSL	CDMW-7	CDMW-8	CDMW-9	CDMW-9D	Trip Blank					
1. Chloromethane	0.18	1.0	---	U	---	U	---	U				
2. Vinyl Chloride	0.34	1.0	---	U	---	U	1.30	1.20	---	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	0.20	J		
7. Acetone	1.21	100.0	---	U	4.80	J	7.70	J	4.90	J	2.50	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	0.90	J	---	U	1.30	---	0.90	J	---	U
11. trans-1,2-Dichloroethene	0.13	5.0	---	U	---	U	0.20	J	0.20	J	---	U
12. 1,1-Dichloroethane	0.16	5.0	1.80	J	---	U	6.20	---	8.40	---	---	U
13. Vinyl Acetate	0.20	50.0	---	U	---	U	---	U	---	U	---	U
14. Cis-1,2-Dichloroethene	0.14	5.0	1.20	J	---	U	16.10	---	18.80	---	---	U
15. 2-Butanone	0.85	100.0	---	U	---	U	---	U	---	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	---	U	---	U	---	U	---	U	---	U
19. Carbon Tetrachloride	0.13	1.0	---	U	---	U	---	U	---	U	---	U
20. Benzene	0.16	1.0	0.40	J	---	U	1.50	---	1.40	---	---	U
21. 1,2-Dichloroethane	0.12	1.0	---	U	---	U	0.50	J	0.60	J	---	U
22. Trichloroethene	0.13	1.0	0.40	J	---	U	1.00	---	1.50	---	---	U
23. 1,2-Dichloropropane	0.17	1.0	---	U	---	U	1.50	---	1.90	---	---	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	---	U	---	U	---	U	---	U	---	U
28. trans-1,3-Dichloropropene	0.14	1.0	---	U	---	U	---	U	---	U	---	U
29. 1,1,2-Trichloroethane	0.20	1.0	---	U	---	U	---	U	---	U	---	U
30. Tetrachloroethene	0.16	1.0	0.40	J	---	U	0.60	J	1.40	---	---	U
31. 2-Hexanone	1.00	50.0	---	U	---	U	---	U	---	U	---	U
32. Dibromochloromethane	0.14	3.0	---	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	4.20	---	5.30	---	---	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	5.0	---	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	3.0	---	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	0.30	J	---	U	4.30	---	5.50	---	---	U
44. 1,2-Dichlorobenzene	0.13	5.0	---	U	---	U	0.30	J	0.30	J	---	U
45. 1,2-Dibromo-3-Chloropropane	0.26	13.0	---	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

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

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

PHONE (252) 756-6208
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CLIENT: JOHNSTON CO. (NEW) C&D LANDFILL
MR. KEVIN SHIELDS
P.O. BOX 2263
SMITHFIELD, NC 27577

CLIENT ID: 6058 A
ANALYST: MAO
DATE COLLECTED: 10/29/09
DATE ANALYZED: 11/11/09
DATE REPORTED: 12/01/09

Page: 2

REVIEWED BY: 

VOLATILE ORGANICS
EPA METHOD 8260B

PARAMETERS, ug/l	MDL	SWSL	Equipment Blank
1. Chloromethane	0.18	1.0	--- U
2. Vinyl Chloride	0.34	1.0	--- U
3. Bromomethane	0.26	10.0	--- U
4. Chloroethane	0.29	10.0	--- U
5. Trichlorofluoromethane	0.13	1.0	--- U
6. 1,1-Dichloroethene	0.14	5.0	--- U
7. Acetone	1.21	100.0	5.60 J
8. Iodomethane	0.12	10.0	--- U
9. Carbon Disulfide	0.14	100.0	--- U
10. Methylene Chloride	0.14	1.0	--- U
11. trans-1,2-Dichloroethene	0.13	5.0	--- U
12. 1,1-Dichloroethane	0.16	5.0	--- U
13. Vinyl Acetate	0.20	50.0	--- U
14. Cis-1,2-Dichloroethene	0.14	5.0	--- U
15. 2-Butanone	0.85	100.0	--- U
16. Bromochloromethane	0.11	3.0	--- U
17. Chloroform	0.13	5.0	--- U
18. 1,1,1-Trichloroethane	0.11	1.0	--- U
19. Carbon Tetrachloride	0.13	1.0	--- U
20. Benzene	0.16	1.0	--- U
21. 1,2-Dichloroethane	0.12	1.0	--- U
22. Trichloroethene	0.13	1.0	--- U
23. 1,2-Dichloropropane	0.17	1.0	--- U
24. Bromodichloromethane	0.13	1.0	--- U
25. Cis-1,3-Dichloropropene	0.17	1.0	--- U
26. 4-Methyl-2-Pentanone	0.68	100.0	--- U
27. Toluene	0.13	1.0	--- U
28. trans-1,3-Dichloropropene	0.14	1.0	--- U
29. 1,1,2-Trichloroethane	0.20	1.0	--- U
30. Tetrachloroethene	0.16	1.0	--- U
31. 2-Hexanone	1.00	50.0	--- U
32. Dibromochloromethane	0.14	3.0	--- U
33. 1,2-Dibromoethane	0.13	1.0	--- U
34. Chlorobenzene	0.13	3.0	--- U
35. 1,1,1,2-Tetrachloroethane	0.14	5.0	--- U
36. Ethylbenzene	0.16	1.0	--- U
37. Xylenes	0.48	5.0	--- U
38. Dibromomethane	0.17	10.0	--- U
39. Styrene	0.16	1.0	--- U
40. Bromoform	0.11	3.0	--- U
41. 1,1,2,2-Tetrachloroethane	0.16	3.0	--- U
42. 1,2,3-Trichloropropane	0.06	1.0	--- U
43. 1,4-Dichlorobenzene	0.21	1.0	--- U
44. 1,2-Dichlorobenzene	0.13	5.0	--- U
45. 1,2-Dibromo-3-Chloropropane	0.26	13.0	--- U
46. Acrylonitrile	1.49	200.0	--- U
47. trans-1,4-Dichloro-2-Butene	0.14	100.0	--- U

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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FAX (252) 756-0633

ID#: 6058

JOHNSTON CO. (NEW) C&D LANDFILL
MR. KEVIN SHIELDS
P.O. BOX 2263
SMITHFIELD ,NC 27577

DATE COLLECTED: 11/02/09
DATE REPORTED : 12/01/09

REVIEWED BY: 

PARAMETERS	MDL	Leachate		Analysis		Method Code	
		SWSL		Date	Analyst		
BOD, mg/l	2.0	2.0	11	11/04/09	TRB	SM5210B	
COD, mg/l	10.0	10.0	47	11/06/09	TRB	HACH8000	
Total Suspended Residue, mg/l	1.0	1.0	44	11/04/09	JIJ	SM2540D	
Ammonia Nitrogen as N, mg/l	0.04	0.04	28.00	11/05/09	TWA	EPA350.1	
Nitrate Nitrogen as N, mg/l	0.03	10.0	---	U	11/04/09	ANO	EPA353.2
Total Phosphorus as P, mg/l	0.04	0.04	0.16	11/09/09	TWA	EPA365.4	
Sulfate, mg/l	5.0	250.0	38.2	J	11/10/09	TRB	SM426C
Antimony, ug/l	0.06	6.0	0.1	J	11/12/09	CMF	EPA200.8
Arsenic, ug/l	0.17	10.0	9.0	J	11/12/09	CMF	EPA200.8
Barium, ug/l	0.04	100.0	278	11/12/09	CMF	EPA200.8	
Beryllium, ug/l	0.06	1.0	---	U	11/12/09	CMF	EPA200.8
Cadmium, ug/l	0.04	1.0	0.1	J	11/12/09	CMF	EPA200.8
Cobalt, ug/l	0.02	10.0	103	11/12/09	CMF	EPA200.8	
Copper, ug/l	0.04	10.0	2.0	J	11/12/09	CMF	EPA200.8
Total Chromium, ug/l	0.10	10.0	0.2	J	11/12/09	CMF	EPA200.8
Lead, ug/l	0.04	10.0	0.3	J	11/12/09	CMF	EPA200.8
Nickel, ug/l	0.04	50.0	5.0	J	11/26/09	CMF	EPA200.8
Selenium, ug/l	0.12	10.0	5.9	J	11/12/09	CMF	EPA200.8
Silver, ug/l	0.04	10.0	0.1	J	11/12/09	CMF	EPA200.8
Thallium, ug/l	0.03	5.0	0.3	J	11/12/09	CMF	EPA200.8
Vanadium, ug/l	0.28	25.0	1.9	J	11/12/09	CMF	EPA200.8
Zinc, ug/l	0.14	10.0	7.1	J	11/12/09	CMF	EPA200.8

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

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

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

CLIENT: JOHNSTON CO. (NEW) C&D LANDFILL
MR. KEVIN SHIELDS
P.O. BOX 2263
SMITHFIELD, NC 27577

CLIENT ID: 6058
ANALYST: MAO
DATE COLLECTED: 11/02/09 Page: 1
DATE ANALYZED: 11/13/09
DATE REPORTED: 12/01/09

REVIEWED BY: 

VOLATILE ORGANICS
EPA METHOD 8260B

PARAMETERS, ug/l	MDL	SWSL	Leachate
1. Chloromethane	0.18	1.0	0.40 J
2. Vinyl Chloride	0.34	1.0	3.60
3. Bromomethane	0.26	10.0	--- U
4. Chloroethane	0.29	10.0	0.60 J
5. Trichlorofluoromethane	0.13	1.0	0.30 J
6. 1,1-Dichloroethene	0.14	5.0	--- U
7. Acetone	1.21	100.0	43.30 J
8. Iodomethane	0.12	10.0	--- U
9. Carbon Disulfide	0.14	100.0	--- U
10. Methylene Chloride	0.14	1.0	1.00
11. trans-1,2-Dichloroethene	0.13	5.0	0.30 J
12. 1,1-Dichloroethane	0.16	5.0	1.10 J
13. Vinyl Acetate	0.20	50.0	--- U
14. Cis-1,2-Dichloroethene	0.14	5.0	12.70
15. 2-Butanone	0.85	100.0	--- U
16. Bromochloromethane	0.11	3.0	--- U
17. Chloroform	0.13	5.0	--- U
18. 1,1,1-Trichloroethane	0.11	1.0	--- U
19. Carbon Tetrachloride	0.13	1.0	--- U
20. Benzene	0.16	1.0	3.00
21. 1,2-Dichloroethane	0.12	1.0	0.90 J
22. Trichloroethene	0.13	1.0	0.80 J
23. 1,2-Dichloropropane	0.17	1.0	0.90 J
24. Bromodichloromethane	0.13	1.0	--- U
25. Cis-1,3-Dichloropropene	0.17	1.0	--- U
26. 4-Methyl-2-Pentanone	0.68	100.0	--- U
27. Toluene	0.13	1.0	1.90
28. trans-1,3-Dichloropropene	0.14	1.0	--- U
29. 1,1,2-Trichloroethane	0.20	1.0	--- U
30. Tetrachloroethene	0.16	1.0	0.20 J
31. 2-Hexanone	1.00	50.0	1.30 J
32. Dibromochloromethane	0.14	3.0	--- U
33. 1,2-Dibromoethane	0.13	1.0	--- U
34. Chlorobenzene	0.13	3.0	5.30
35. 1,1,1,2-Tetrachloroethane	0.14	5.0	--- U
36. Ethylbenzene	0.16	1.0	1.70
37. Xylenes	0.48	5.0	2.10 J
38. Dibromomethane	0.17	10.0	--- U
39. Styrene	0.16	1.0	--- U
40. Bromoform	0.11	3.0	--- U
41. 1,1,2,2-Tetrachloroethane	0.16	3.0	--- U
42. 1,2,3-Trichloropropane	0.06	1.0	--- U
43. 1,4-Dichlorobenzene	0.21	1.0	5.90
44. 1,2-Dichlorobenzene	0.13	5.0	0.60 J
45. 1,2-Dibromo-3-Chloropropane	0.26	13.0	--- U
46. Acrylonitrile	1.49	200.0	--- U
47. trans-1,4-Dichloro-2-Butene	0.14	100.0	--- U

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

3 Coolers - CHAIN OF CUSTODY RECORD

Environment 1, Inc.
 P.O. Box 7085, 114 Oakmont Dr.
 Greenville, NC 27858
 Phone (252) 756-6208 • Fax (252) 756-0633

CLIENT: 6054
 6033A
 6058
 JOHNSTON CO., (PHASE 4A)
 MR. KEVIN SHIELDS
 P.O. BOX 2263
 SMITHFIELD NC 27577

(919) 938-4747

Week: 42

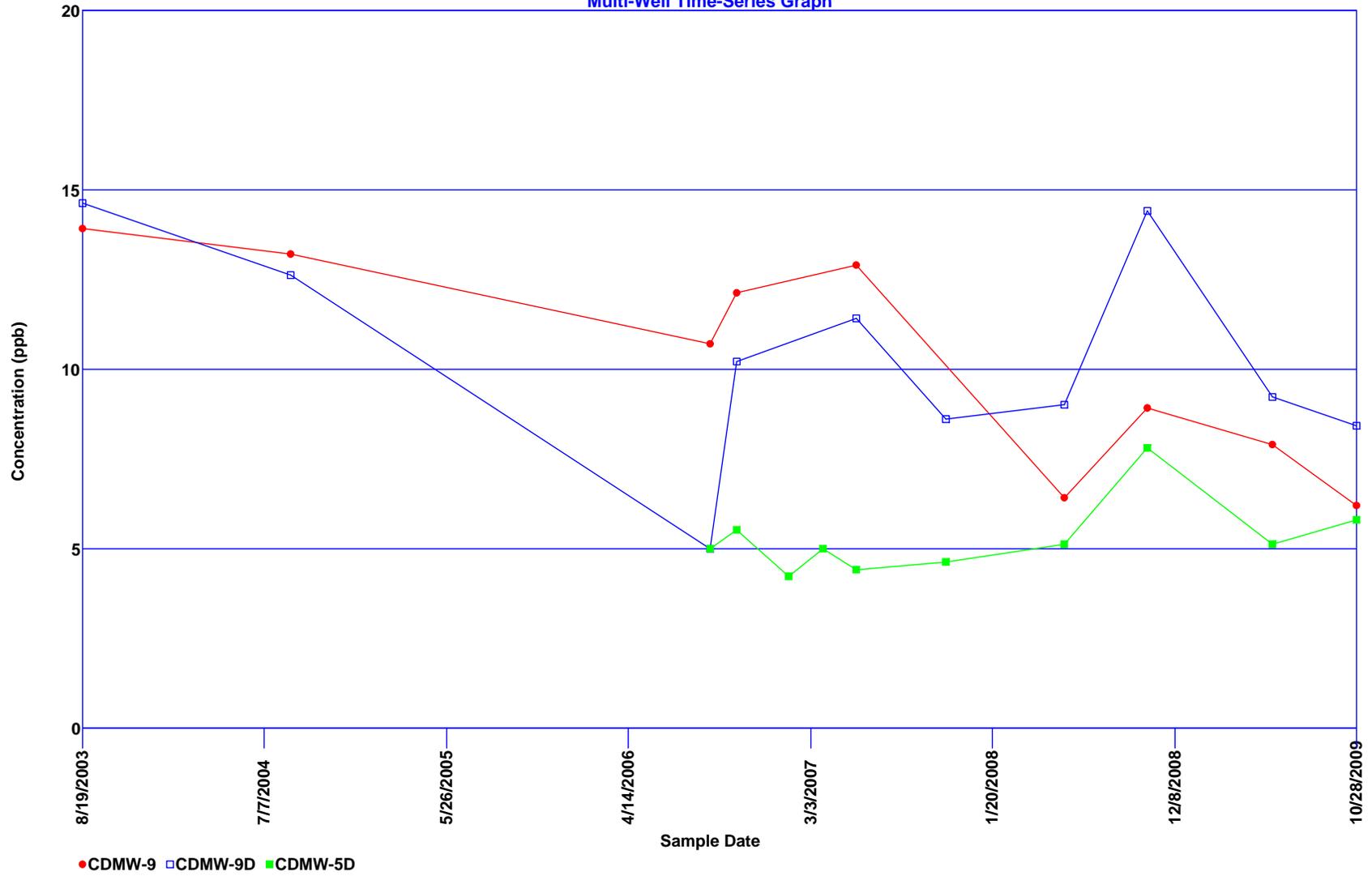
SAMPLE LOCATION	COLLECTION		TOTAL CHLORINE, mg/L	TEMPERATURE, °C	# OF CONTAINERS	DISINFECTION		BOD	COD	TSR	Ammonia Nitro.	Nitrate	T. Phosphorus	Sulfate	Metals	EPA 8260B	8260 Dup. 1	8260 Dup. 2	PARAMETERS	CHEMICAL PRESERVATION	CONTAINER TYPE, P/G	PH CHECK (LAB)	CHLORINE NEUTRALIZED AT COLLECTION
	DATE	TIME				CHLORINE	UV																
Leak Detect	11/02/09	10:21	N/A	20	11	<input type="checkbox"/>	A - NONE	D - NAOH															
Leachate Jun Box		11:14	N/A	23	10	<input type="checkbox"/>	B - HNO ₃	E - HCL															
LEACHATE (LAGOON)		09:20	N/A	19	10	<input type="checkbox"/>	C - H ₂ SO ₄	F - ZINC ACETATE															
LEACHATE (Q.D) 6058		12:14	N/A	20	10	<input type="checkbox"/>	G - NA THIOSULFATE																
TRIP BLANK		N/A	N/A	N/A	1	<input type="checkbox"/>	<input checked="" type="checkbox"/>																
RELINQUISHED BY (SIG.)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME	COMMENTS:																			
<i>[Signature]</i>	09:30 11/03/09	<i>[Signature]</i>	11/3/09 4:30																				
RELINQUISHED BY (SIG.)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME																				
RELINQUISHED BY (SIG.)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME																				

Environment 1, Inc. No 187555
 PLEASE READ Instructions for completing this form 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

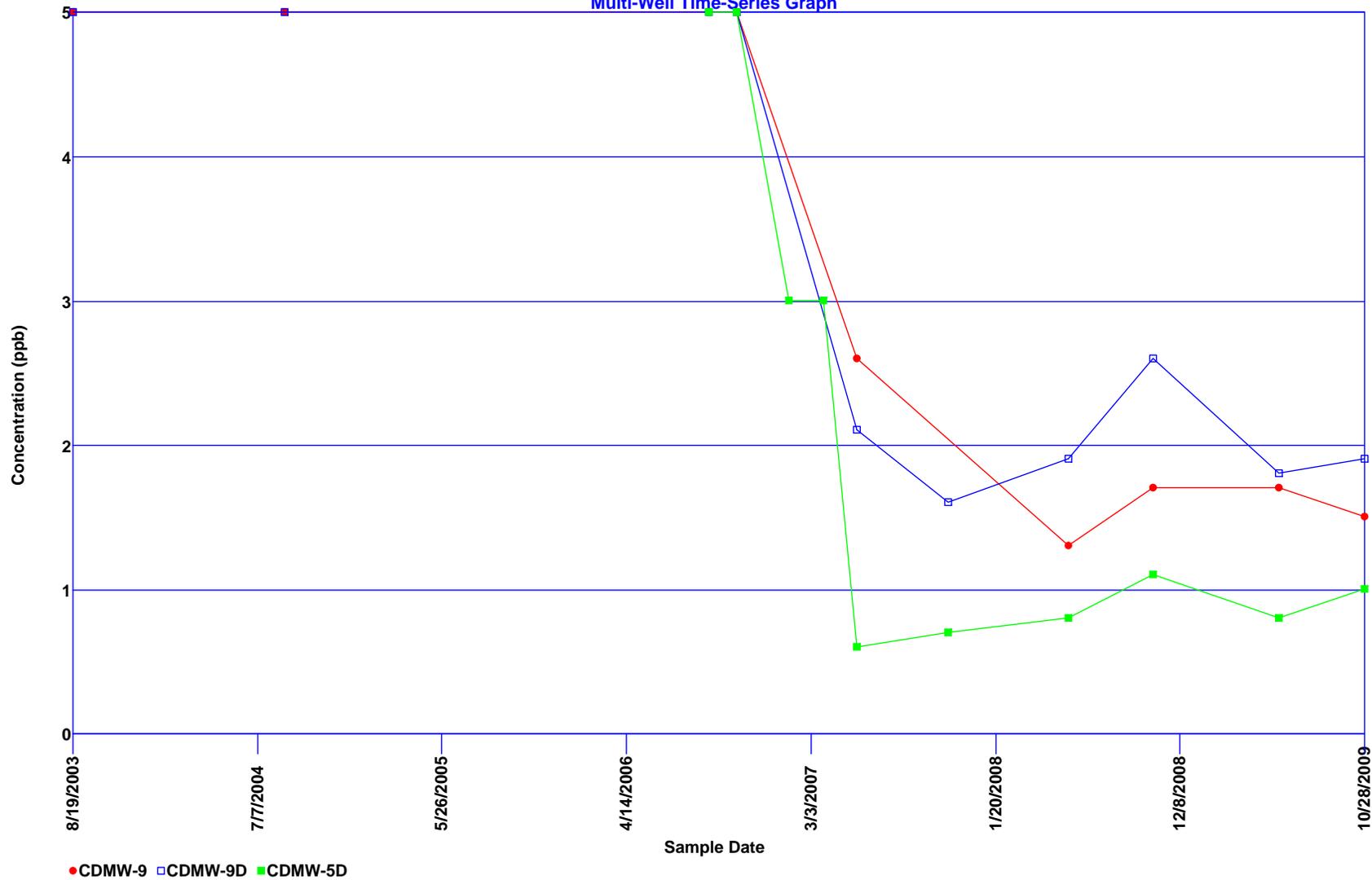
Appendix C

Time Vs. concentration Graphs

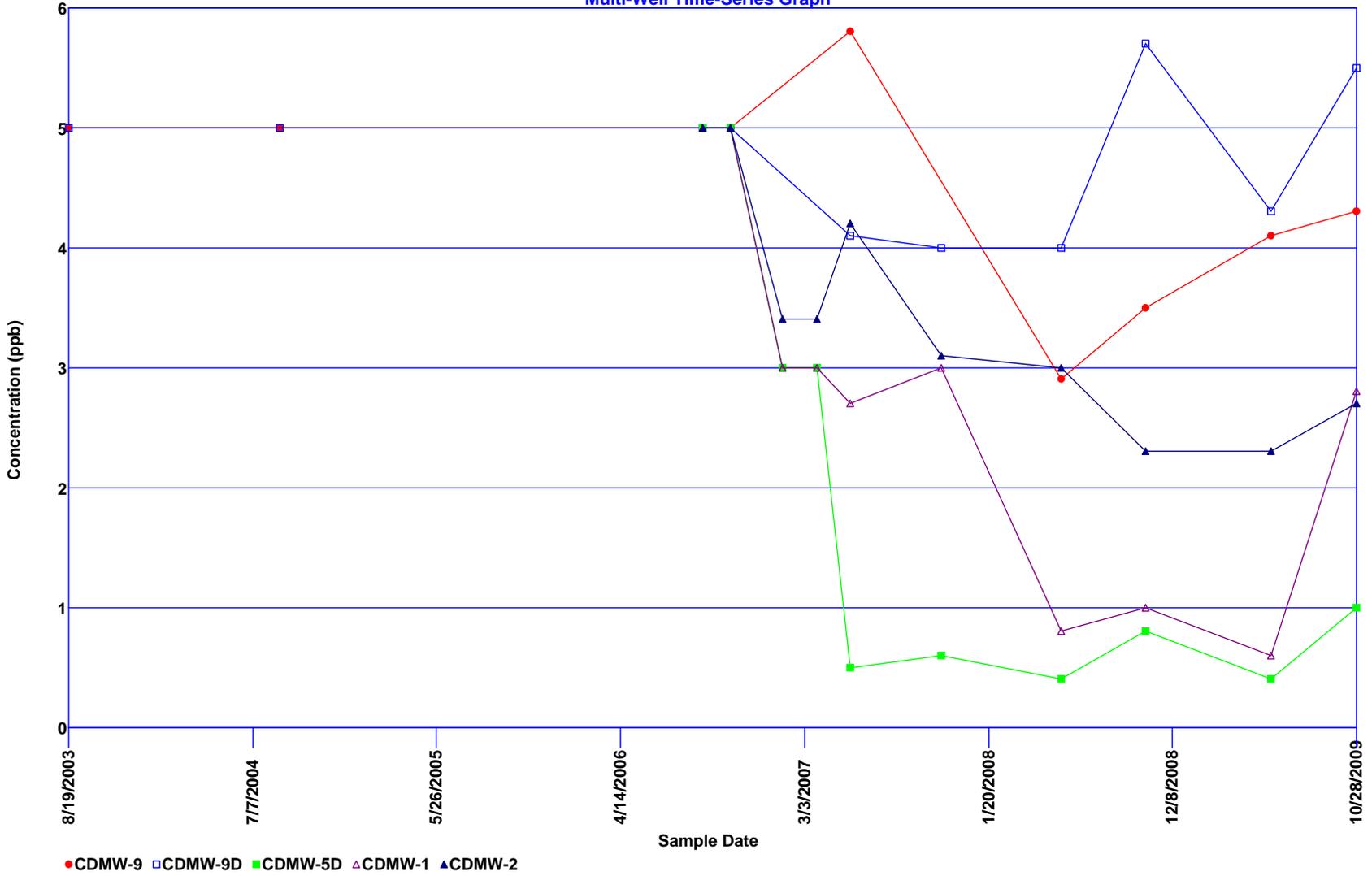
1,1-Dichloroethane
Multi-Well Time-Series Graph



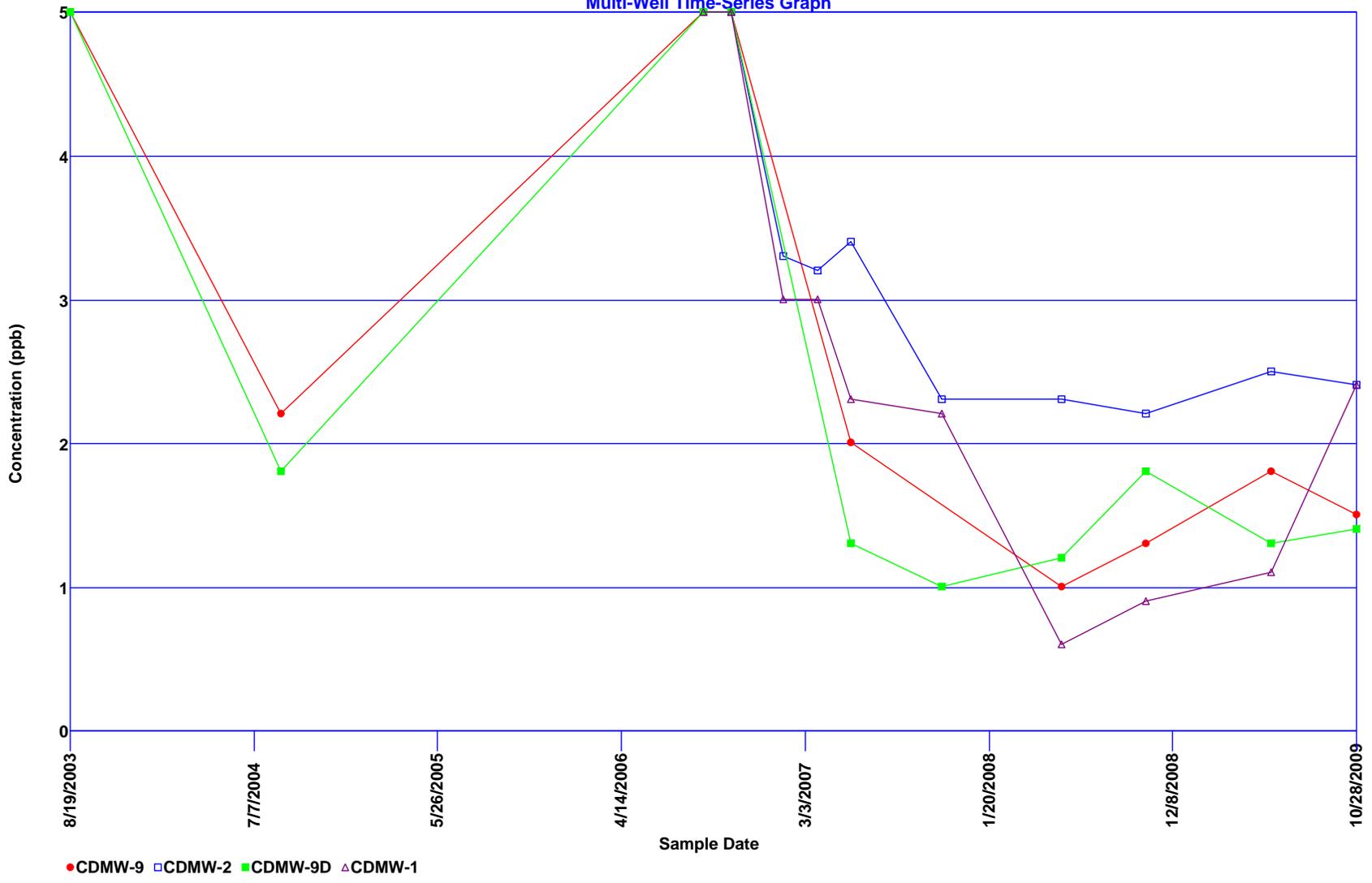
1,2-Dichloropropane
Multi-Well Time-Series Graph



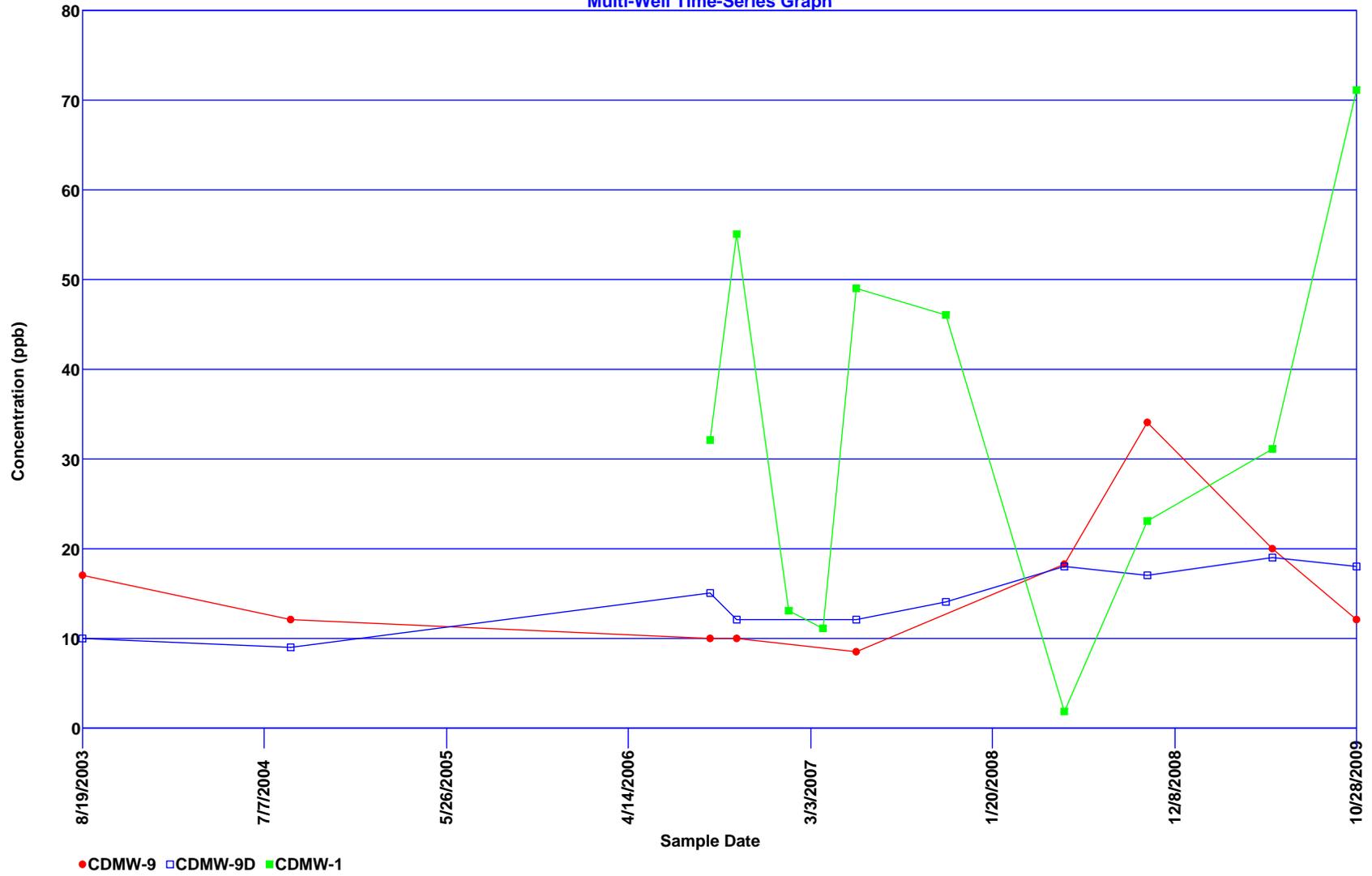
1,4-Dichlorobenzene
Multi-Well Time-Series Graph



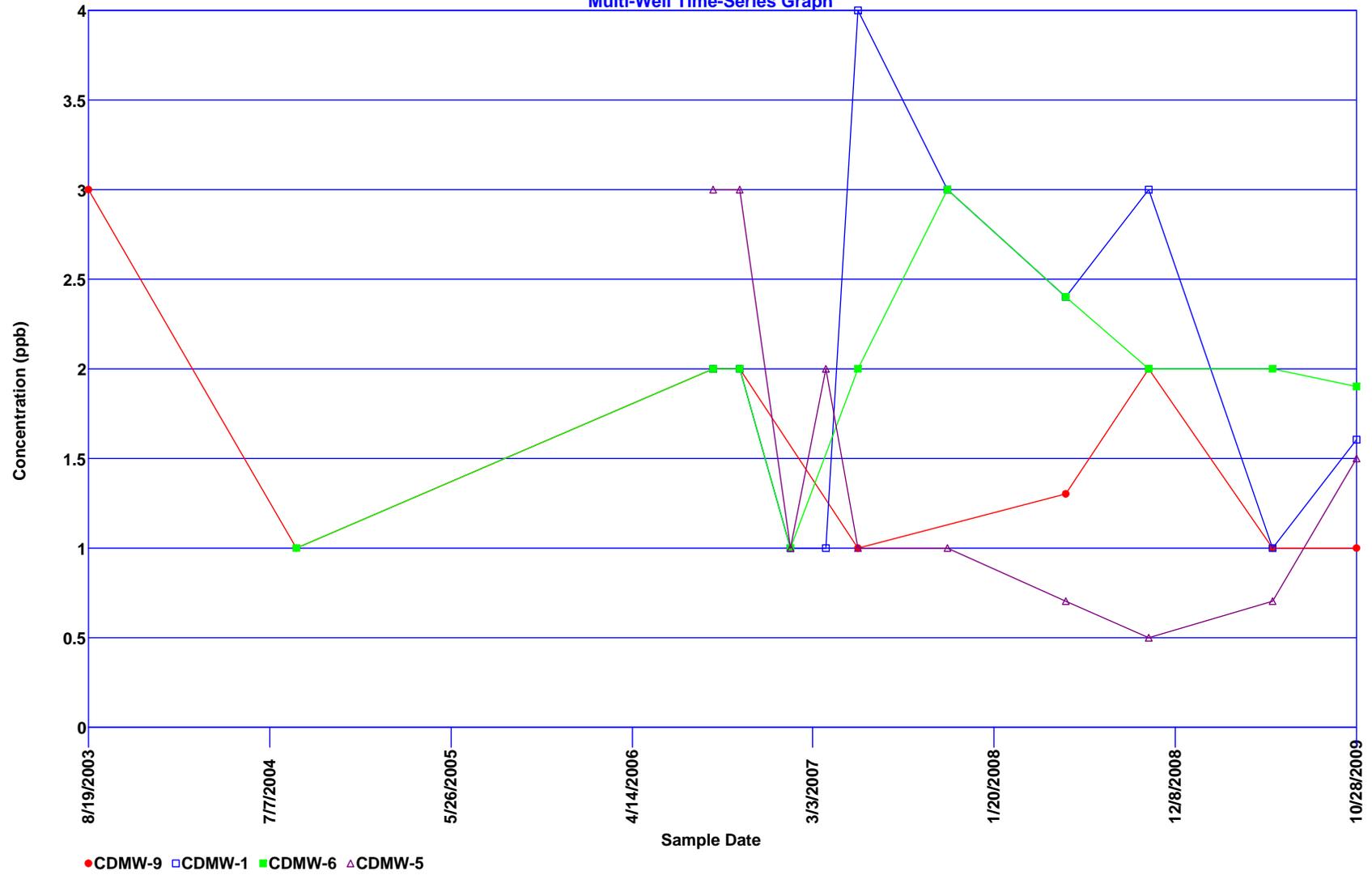
Benzene
Multi-Well Time-Series Graph



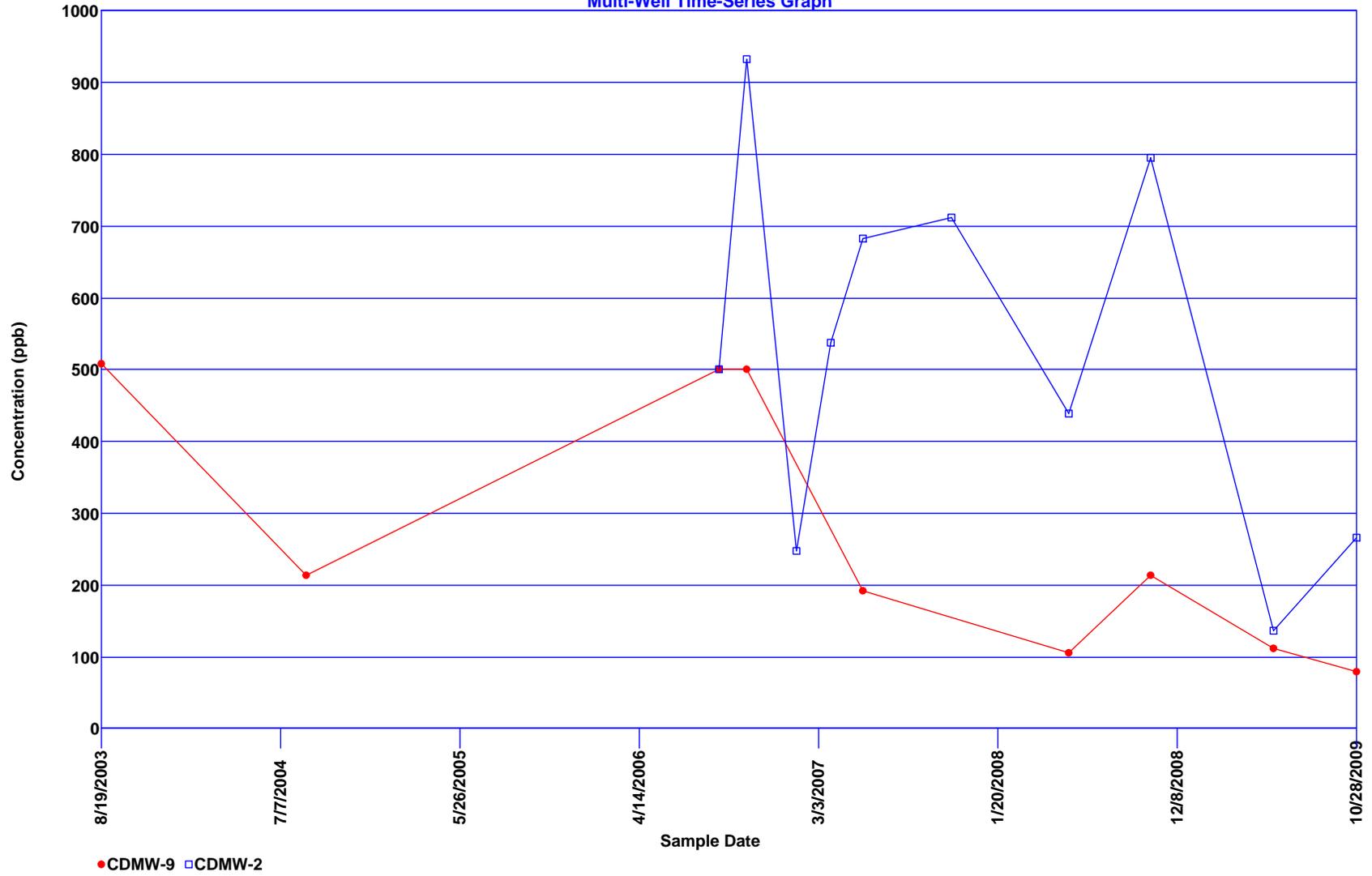
Arsenic Multi-Well Time-Series Graph



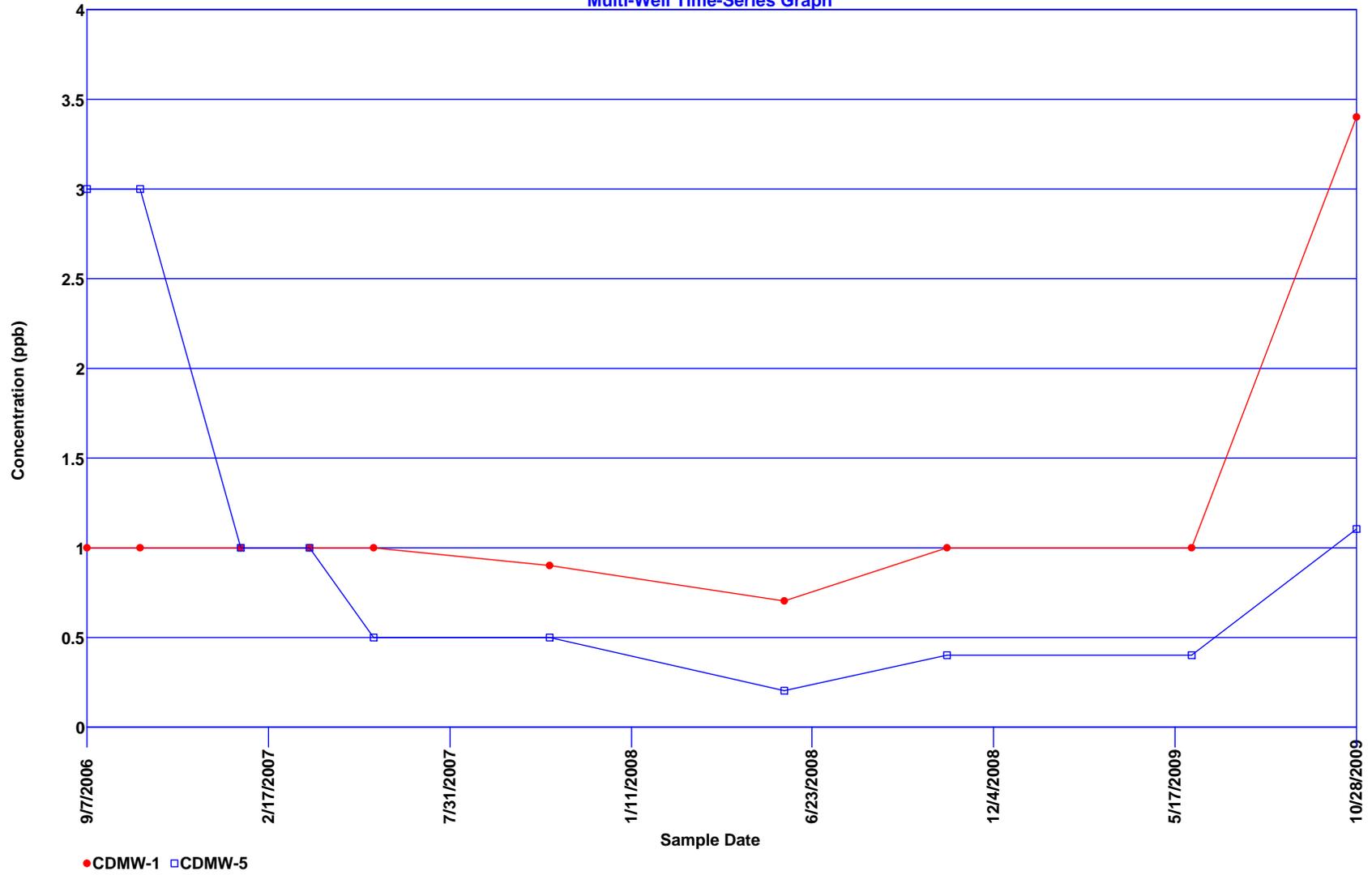
Beryllium Multi-Well Time-Series Graph



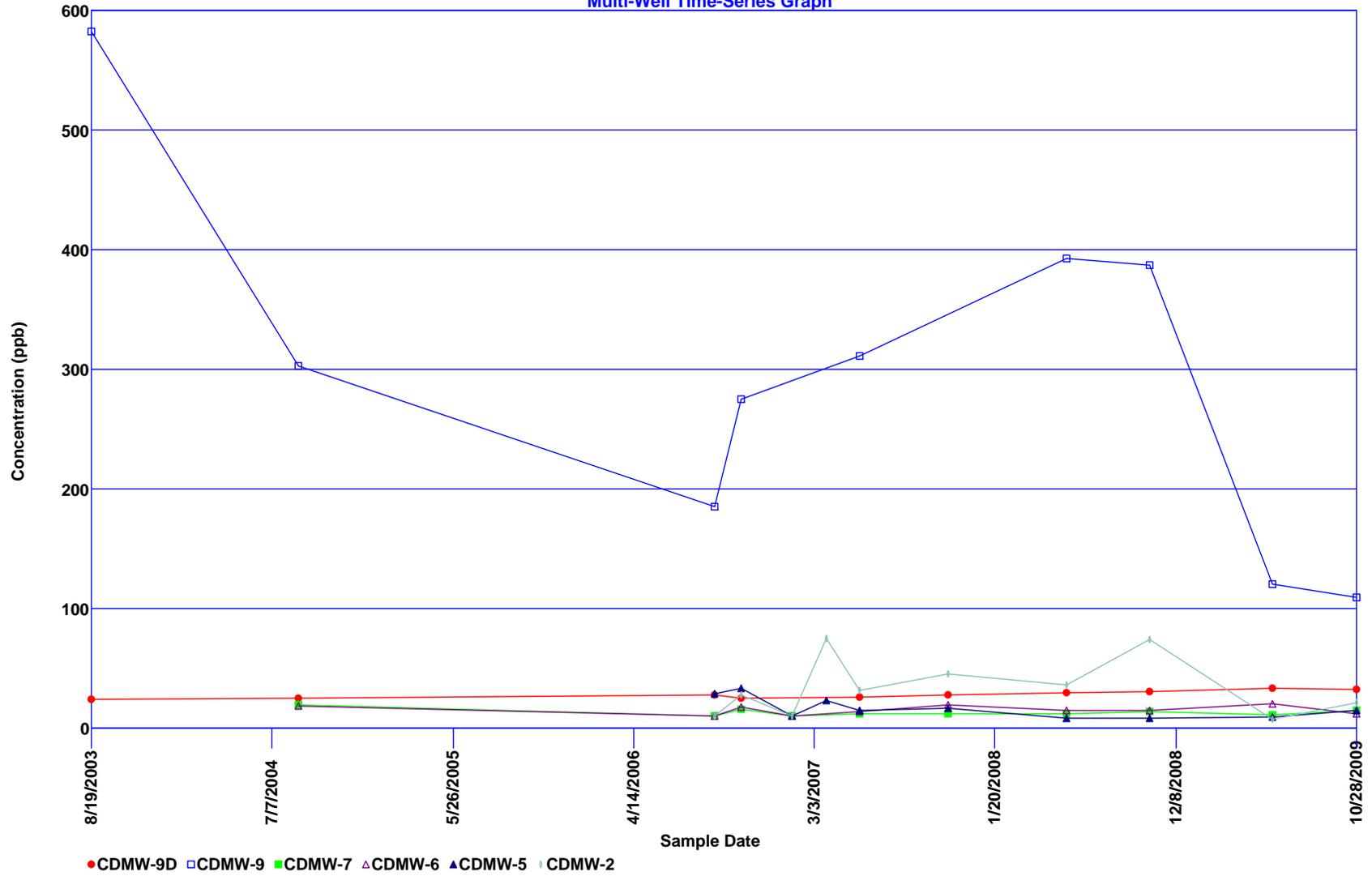
Barium
Multi-Well Time-Series Graph



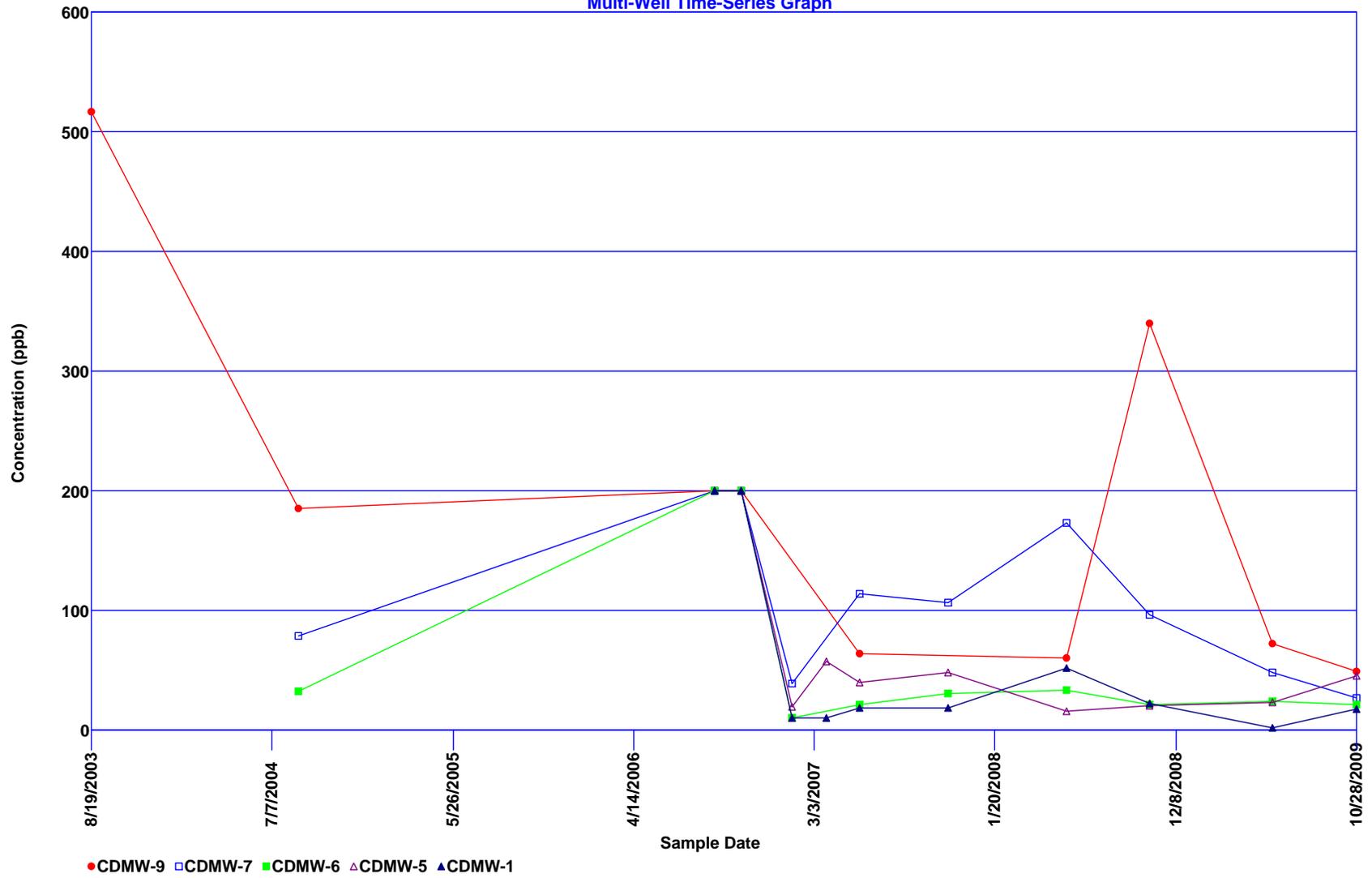
Cadmium
Multi-Well Time-Series Graph



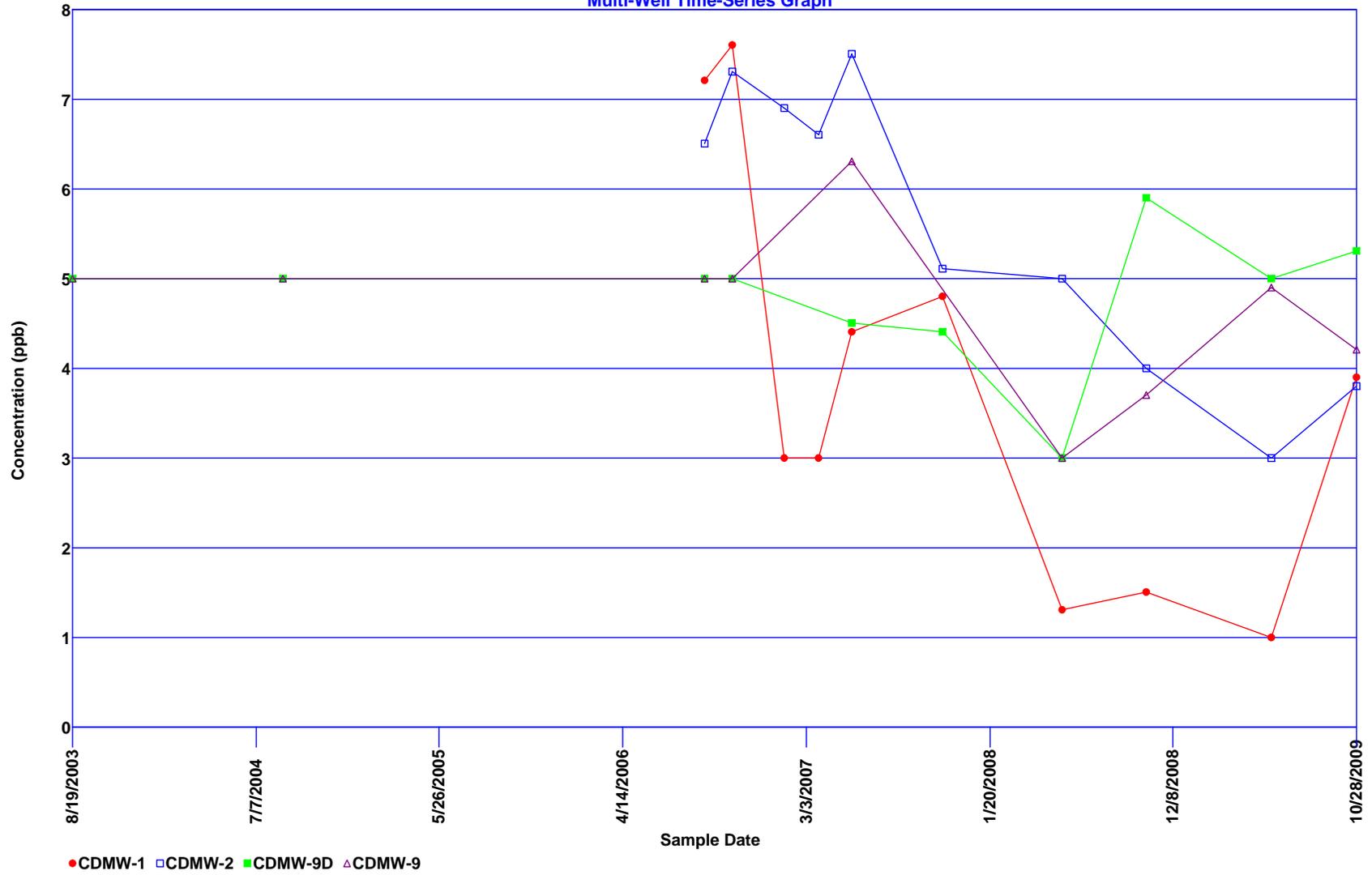
Cobalt
Multi-Well Time-Series Graph



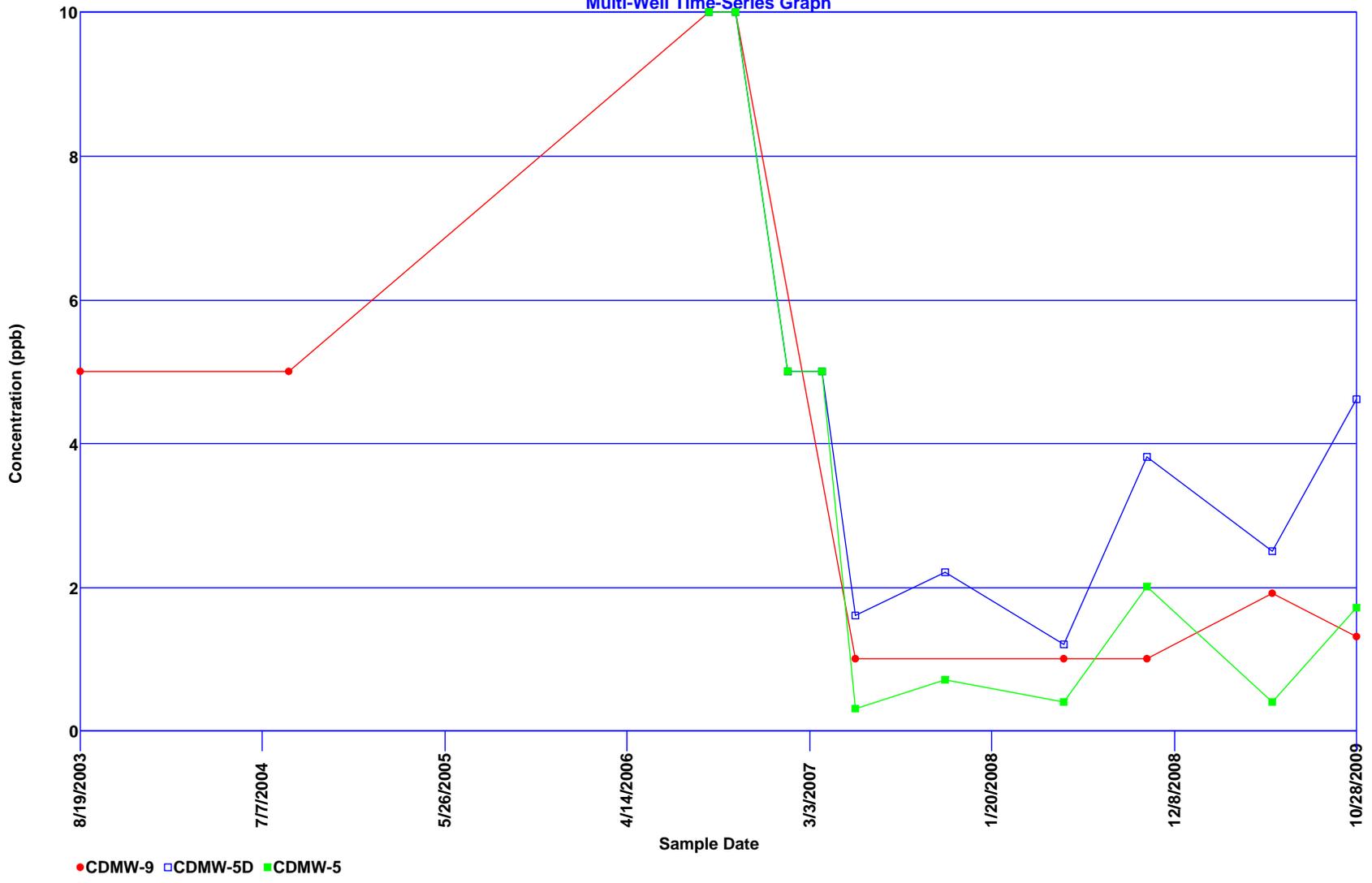
Copper Multi-Well Time-Series Graph



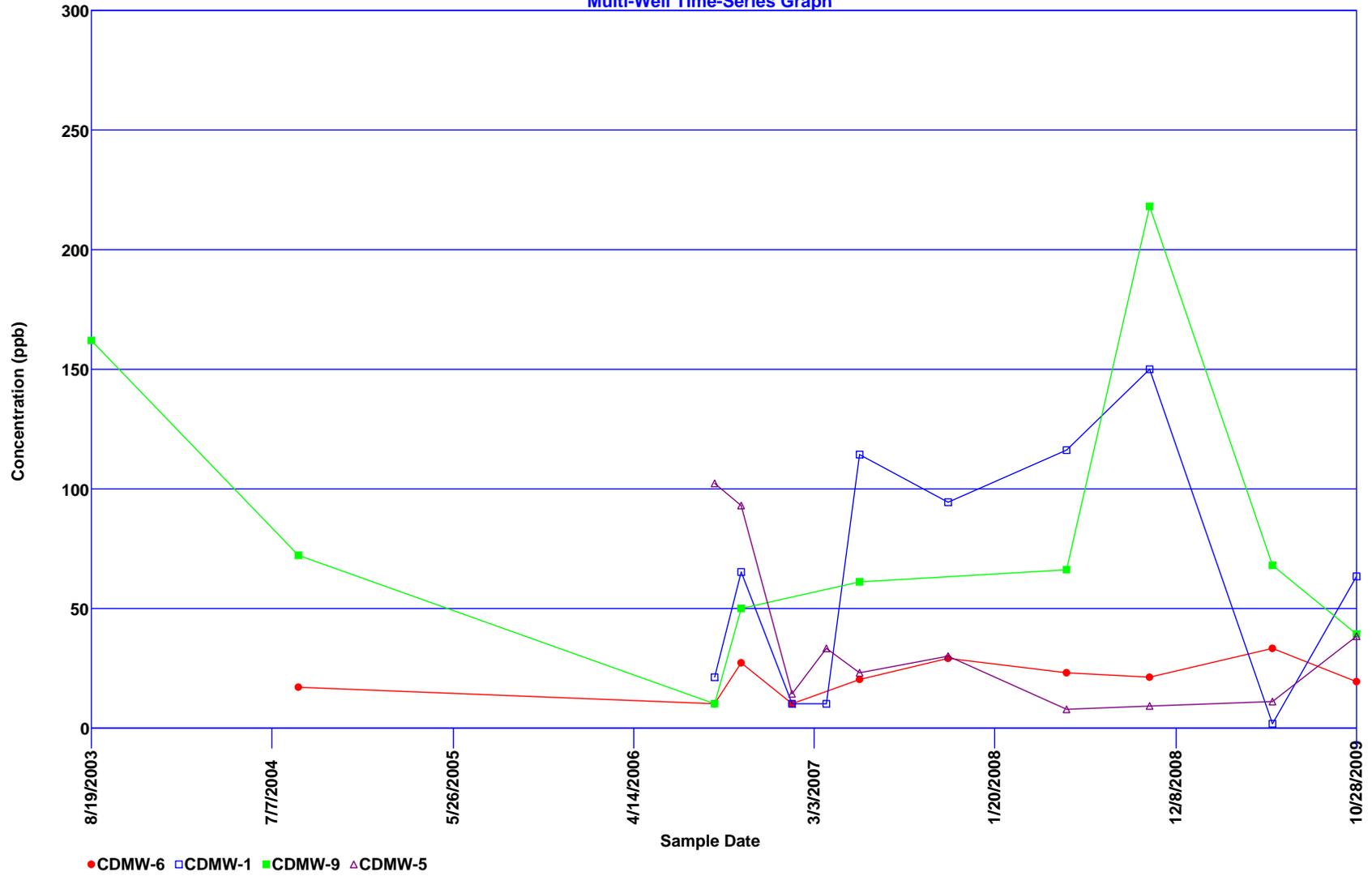
Chlorobenzene
Multi-Well Time-Series Graph



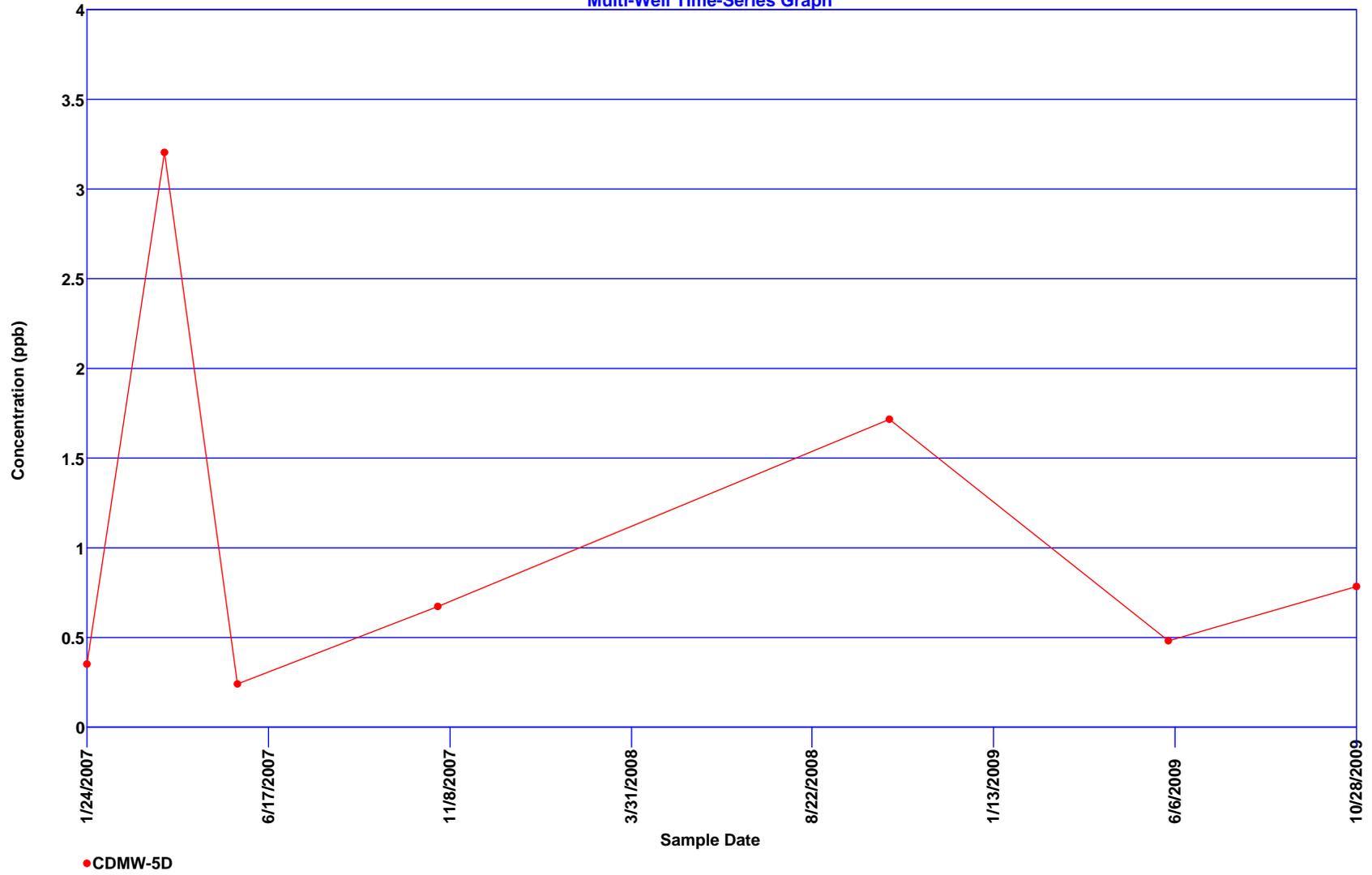
Methylene Chloride
Multi-Well Time-Series Graph



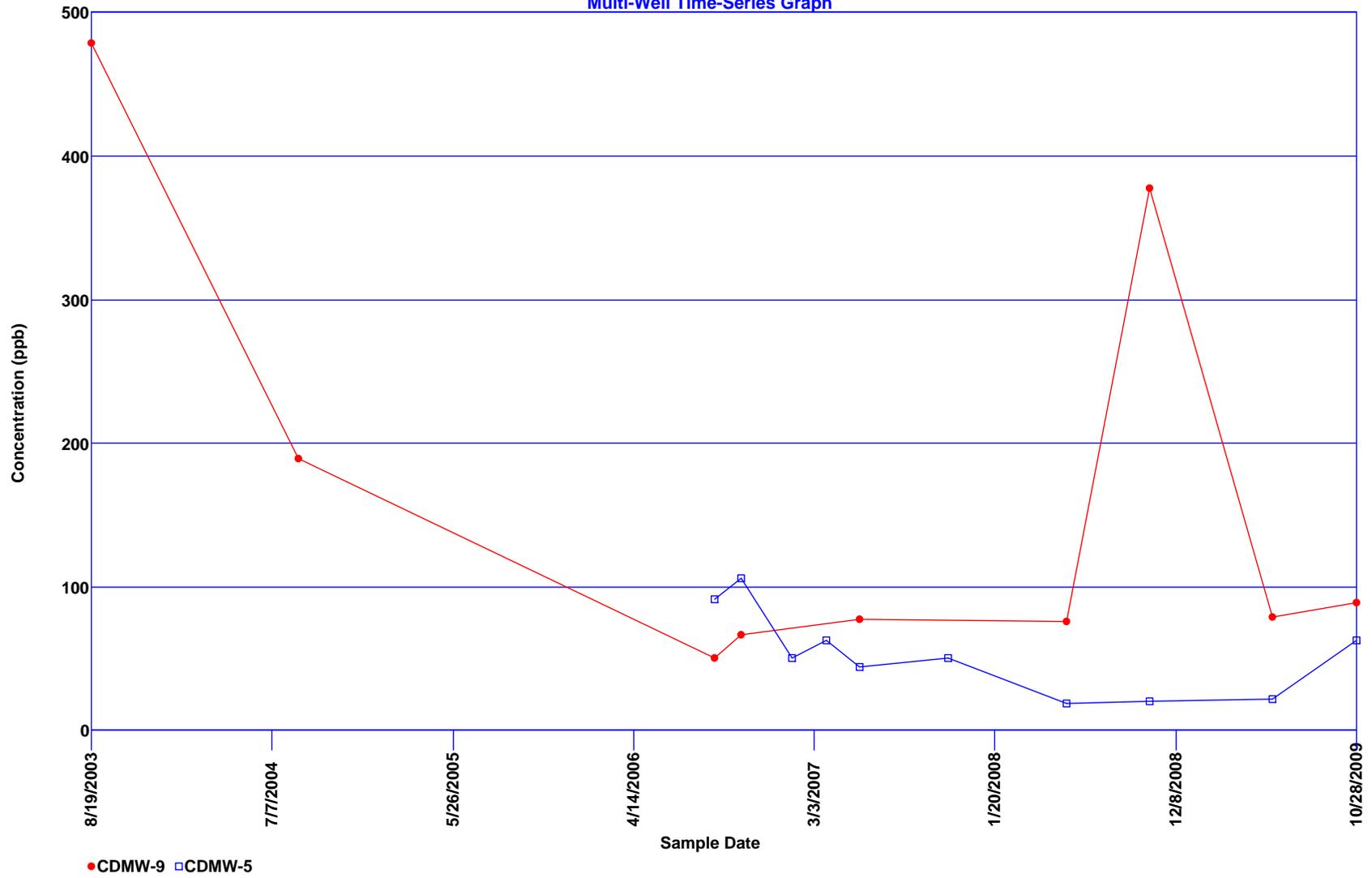
Lead
Multi-Well Time-Series Graph



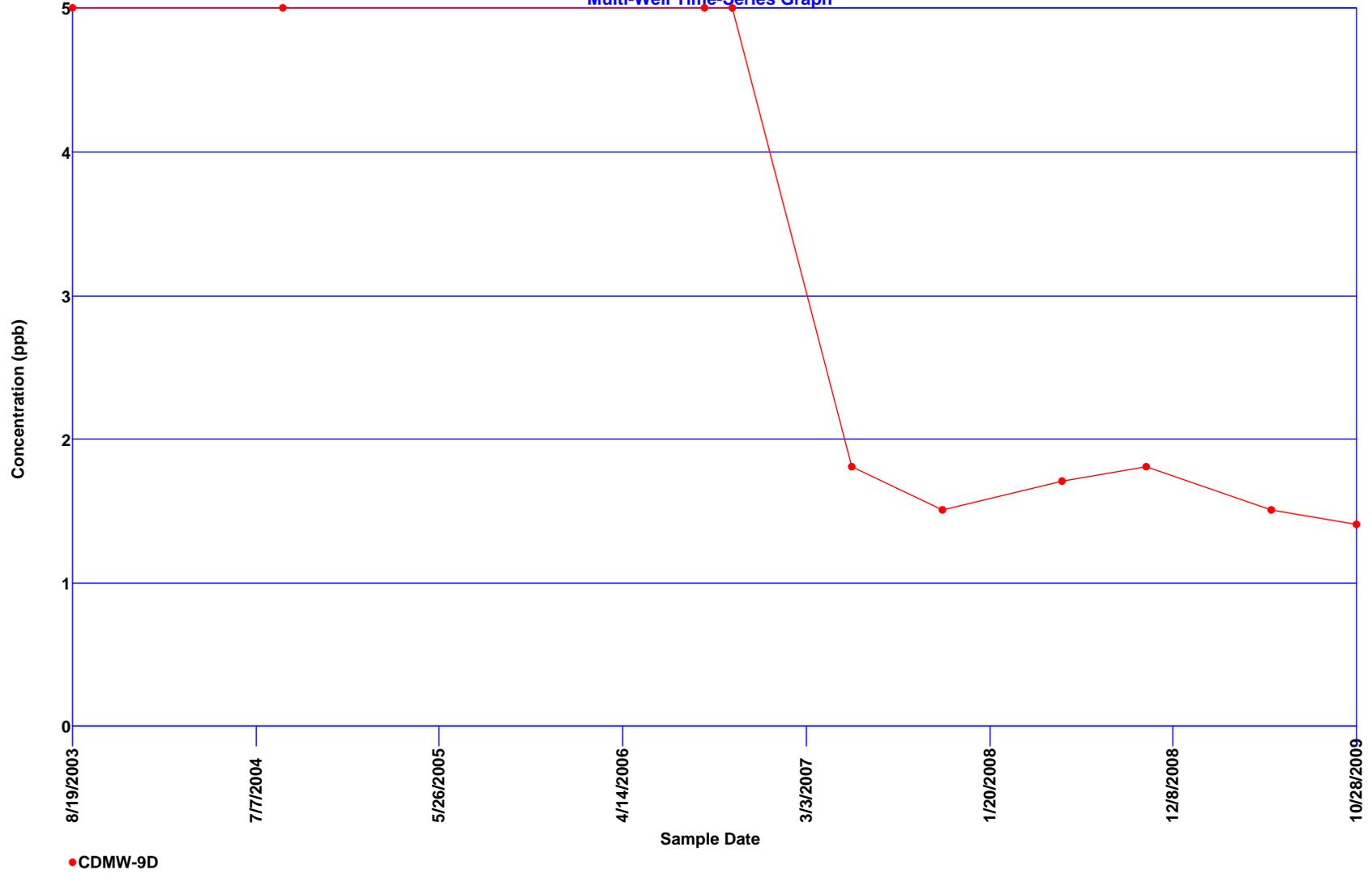
Mercury
Multi-Well Time-Series Graph



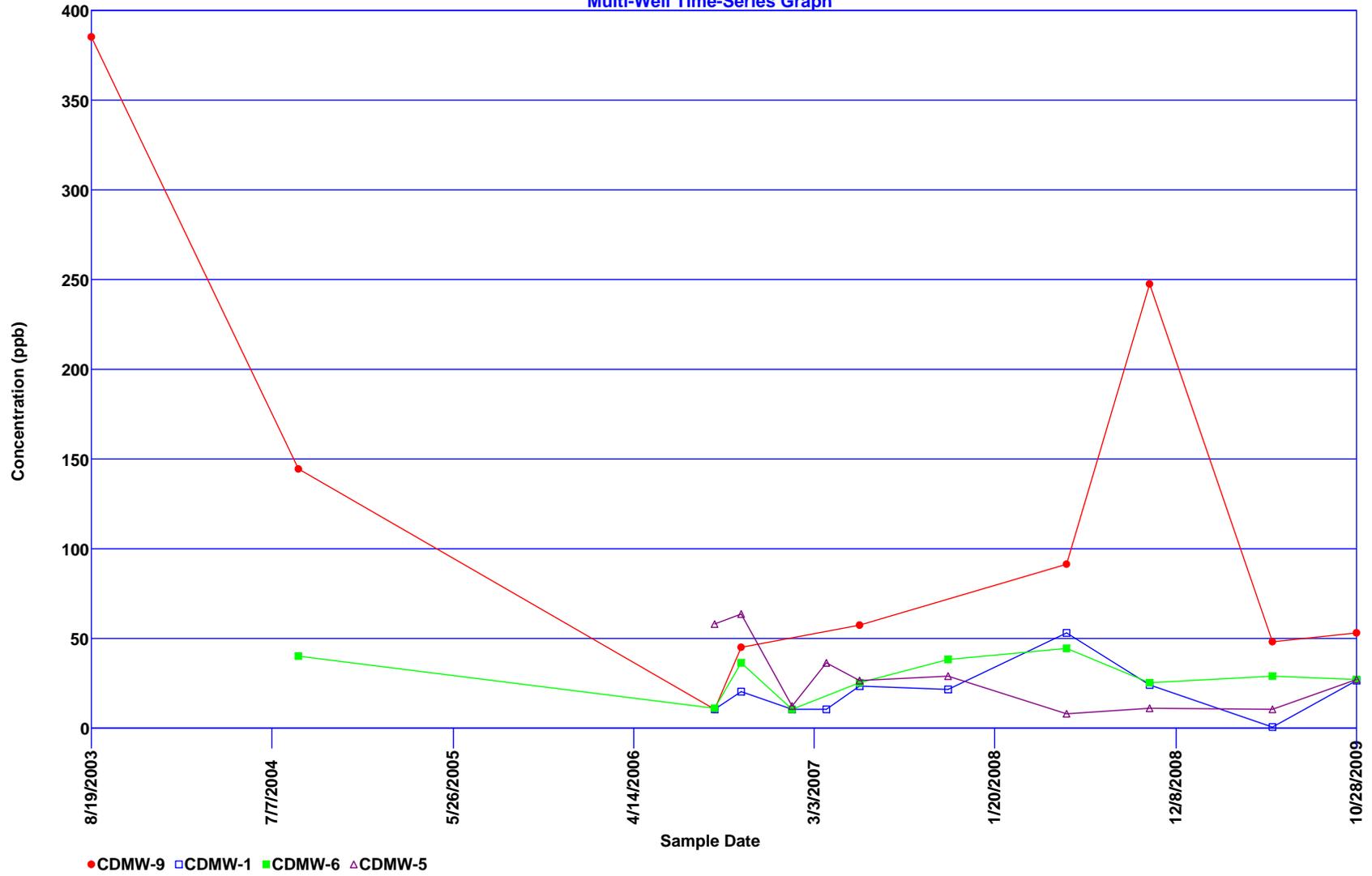
Nickel
Multi-Well Time-Series Graph



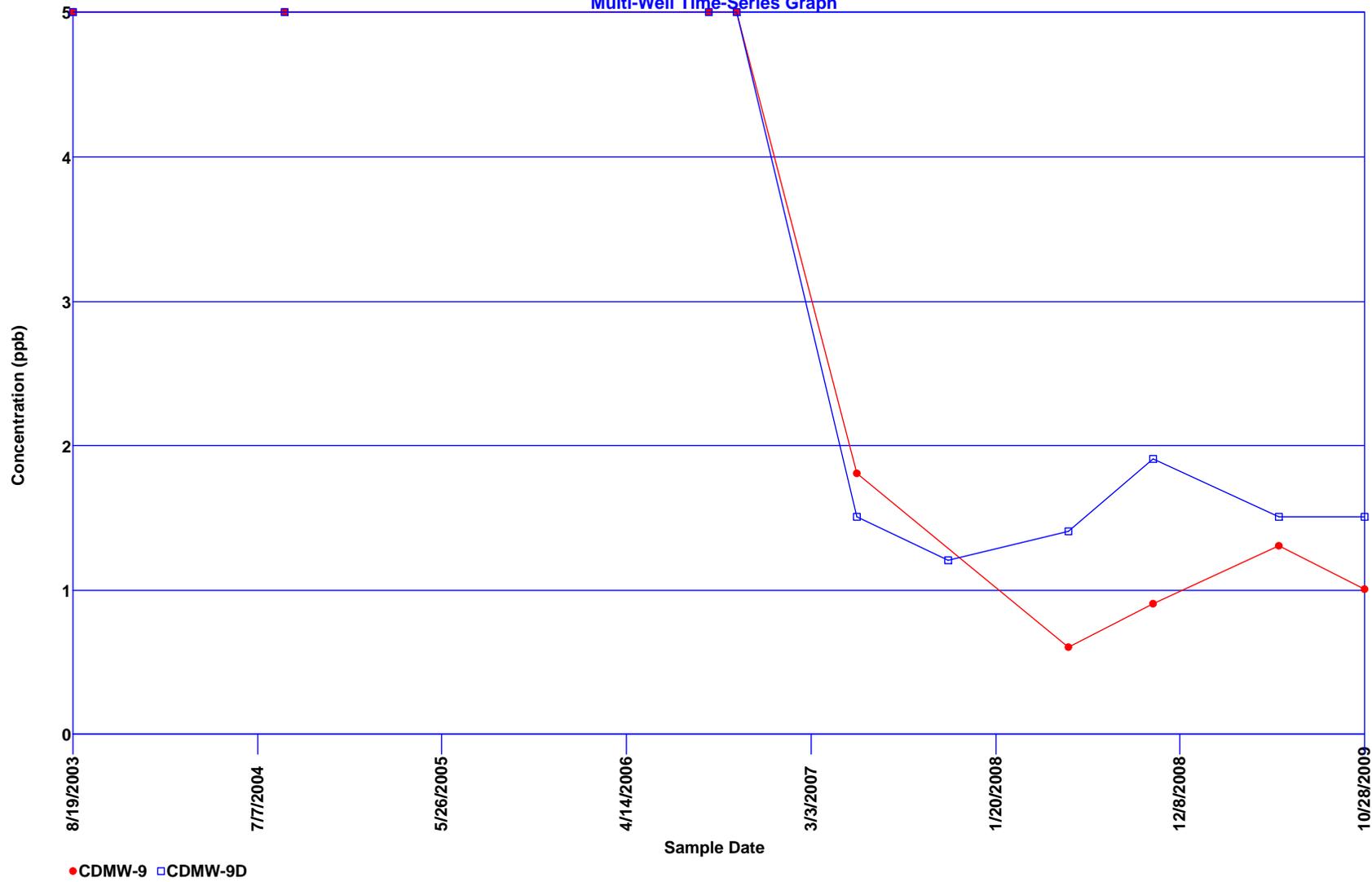
Tetrachloroethene
Multi-Well Time-Series Graph



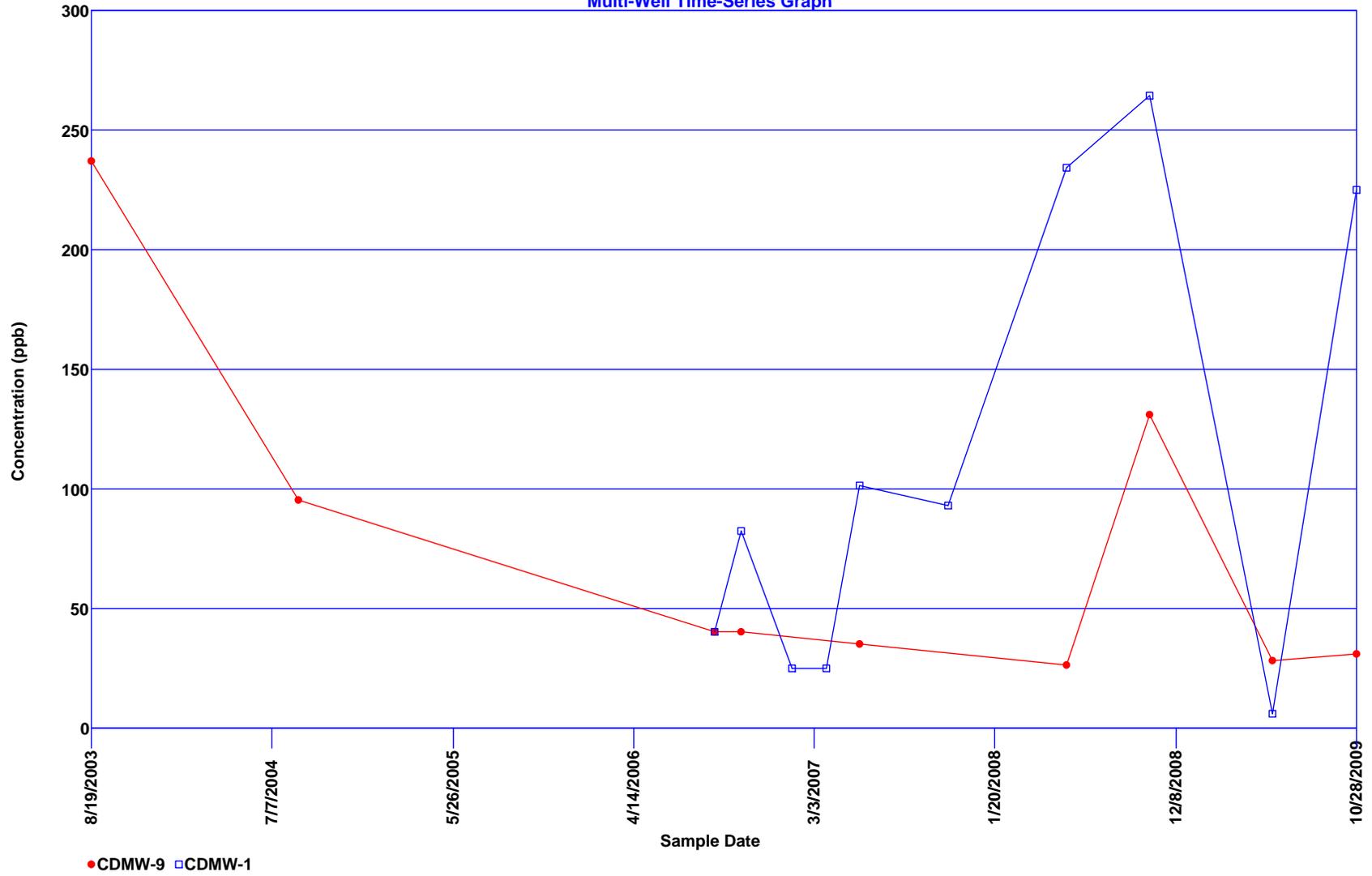
Total Chromium
Multi-Well Time-Series Graph



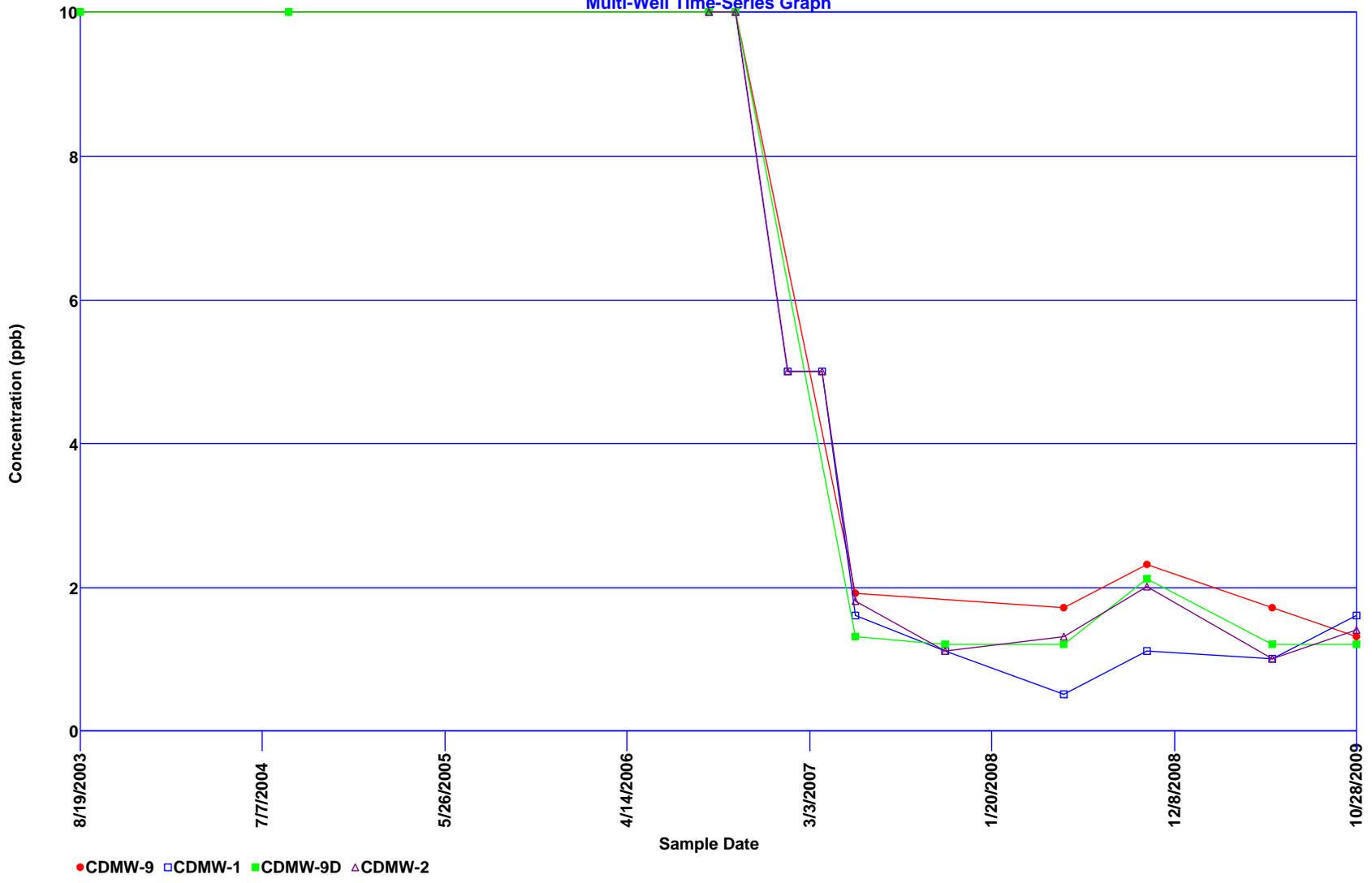
Trichloroethene
Multi-Well Time-Series Graph



Vanadium
Multi-Well Time-Series Graph



Vinyl Chloride
Multi-Well Time-Series Graph



Zinc Multi-Well Time-Series Graph

