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):

Municipal Engineering Services Co., P.A.

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

Name: Jonathan Pfohl Phone: (919) 772-5393

E-mail: jpfohl@mesco.com

Facility name:	Facility Address:	Facility Permit #	NC Landfill Rule: (.0500 or .1600)	Actual sampling dates (e.g., October 20-24, 2006)
Wayne County Closed MSWLF and Active C&D Landfill	460 B South Landfill Rd. Dudley, NC 28333	96-01	.0500	August 13, 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)

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.

Jonathan Pfohl	Environmental Specialist	(919) 772-5393
Facility Representative Name (Print)	Title	(Area Code) Telephone Number
Signature	10/16/07 Date	Affix NC Licensed/ Professional Geologist/Engineer Seal here:

Revised 01/2007

Groundwater Sampling Report and Statistical Analysis

Prepared for

Wayne County Closed MSWLF and Active C&D Landfill
Dudley, North Carolina

August, 2007

Permit Number: 96-01
MESCO Project Number: G07016.0

Completed on October 22, 2007

Municipal Services Garner, NC
Engineering Company, P.A. Boone, NC

Municipal Engineering Services Company, P.A.
Garner, Boone and Morehead City, North Carolina

OPERATION/CONSTRUCTION MANAGERS

Municipal Services

CIVIL/SANITARY ENGINEERS

Engineering Company, P.A.

October 15, 2007

Ms. Jaclynne Drummond
Solid Waste Section
Division of Waste Management
North Carolina Department of Environment and Natural Resources
401 Oberlin Road, Suite 150
Raleigh, NC 27605

Re: Groundwater Sampling and Statistical Analysis
Wayne County Closed MSW and active C&D Landfill, Dudley
Permit # : 96-01
MESCO Project No. G07016.0

Dear Ms. Drummond:

Municipal Engineering Services Company, P.A. (MESCO) completed the sampling report and statistical analyses for the Wayne County Closed MSWLF and active C&D Landfills, located in Dudley, NC. Environment I of Greenville NC, sampled and analyzed the landfill on August 13, 2007 as part of the assessment monitoring program. Downgradient wells MW-2, MW-8, and background well MW-1 were analyzed for the Appendix II list of constituents and all of the other wells contained in the approved sampling & analysis plan were sampled for the Appendix I list of VOCs and metals. All three surface water sites SW-1, SW-2, and SW-3 were reported to be dry therefore not sampled during this event. The report for the active lined Subtitle D Landfill which comprise a separate portion of the facility is contained in a previously submitted report. The laboratory results were reported to the Solid Waste Section Limits (SWSL) which were current as of the sampling event. The laboratory results are included herein.

All of the detected constituents were compared with NCGW2L Standards for regulatory exceedance. The results are shown in the enclosed table titled "Detection Scan". The following table illustrates all of the parameters that were found in concentrations above the Standard.

Table 1. Exceedance Summary

Monitoring Location	1,4-DCB
MW-2	x
MW-8	x

x=concentration greater than NCGW2L Standard

The chlorinated hydrocarbon 1,4-dichlorobenzene continues to be detected within MW-8 for the thirteenth consecutive event. Concentrations of 1,4-dichlorobenzene barely above the MCL was also detected within MW-2 after being absent in that location since 1995. The drastic reduction of the detection limit of 1,4-DCB from 75 ug/L to 1.4 ug/L is directly responsible for the exceedances.

MESCO also completed the statistical analysis for the closed MSWLF parameters as required by the Solid Waste Section. The purpose of these analyses is to determine, in comparison to background levels, statistical significance of constituents detected during the August 2007 event.

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PO Box 828, Morehead City, NC 28557 (252) 726-9481 PO Box 349, Boone, North Carolina 28607 (828) 262-1767

Statistical Analysis Methodology

Metals

MESCO conducted an interwell statistical analysis on all of the detected metals. Monitoring well MW-1 was defined as the background well, and an upper tolerance limit (UTL) with 95% coverage was computed for each detected constituent from the background data at a 95% level of confidence. For each tested constituent, an appropriate statistical analysis method was selected based on the percentages of non-detects (%ND) in the historical background data. The following table (Table 2) summarizes the methods used for four different %ND ranges.

Table 2. Statistical Analysis Methods for Various %ND Ranges

%ND	Analysis Method	ND Substitution
%ND<15%	Parametric tolerance limit	1/2 ND
15%<%ND<50%	Parametric tolerance limit	Cohen or 1/2 ND
50%<%ND<90%	Non-parametric tolerance limit	1/2 ND
90%<%ND	Poisson tolerance limit	-

NOTE: For parametric tolerance interval, normality of the background data was checked by the Shapiro-Wilks normality test, as the method requires that the data be normally distributed.

A preliminary data screening was conducted upon the metals detected in all monitoring locations. Detected parameters with concentrations found below that of the background wells MW-1 and those parameters found below quantifiable levels were eliminated and a statistical analysis was not conducted upon those wells. A total of 7 metals were tested for statistical significance. For arsenic, barium, and cadmium, and lead the Poisson tolerance limit was used on the original data or the log of the original data with no ND substitution since the constituents had never been detected within the background well. For chromium and zinc the non-parametric tolerance limit with ½ NDs was used on the original data as its %ND was not normally distributed.

VOCs

All historical VOC detections in the background well MW-1 were pooled in order to determine the total number of detections, from which the expected number of detections in a single down gradient monitoring point (y^*) was derived by utilizing the Poisson prediction interval. The parameter y^* is defined by the following equation:

$$y^* = cy + \frac{t^2 c}{2} + tc\sqrt{y\left(1+\frac{1}{c}\right)+\frac{t^2}{4}}$$

where

$c = 1/n$ (n =number of background samples)
t = one-sided value of students t -Statistic at 95% confidence [a]
y = number of events observed in n previous samples
y^* = expected number of events in a single future sample

[a] Gibbons, R.D., 1994, Statistical methods for groundwater monitoring: John Wiley & Sons, Inc., p.12.

For each monitoring location showing any VOC detections, the number of detected VOCs was counted with each detection being considered a "hit". The number was then compared with the expected number of detections derived from the background VOC data. The value of Student's t -Statistic was derived from tabulated values included in Gibbons (1994).

Intrawell Analyses

Intrawell Analyses were conducted only upon those constituents that were initially found to be statistically significant by interwell analysis. In general, intrawell analysis is conducted in order to differentiate true contamination from spatial variability. Baseline levels in this context are defined as the background level derived from the data in a given downgradient well. Intrawell analyses through Shewhart-CUSUM control charts require a minimum of eight independent historical sampling events and a detection rate greater than 25% (%ND≤75%).

Results

Historical data compiled for monitoring well MW-1 was used as the baseline. Data distributions were reviewed using time series and box and whiskers plots (enclosed charts). Table 3 summarizes those metals that were found statistically significant by interwell comparison analysis.

Table 3. Interwell Analyses Summary

Well	Arsenic	Chromium
MW-2	x	
MW-3		x
MW-7		x

x=level significantly higher than the background level

The numbers of metal detections continue to be consistent with historical results and all concentrations were found within the historically identified range. Concentrations of chromium within MW-3 and MW-7 as well as arsenic within MW-2 were found to have increased over the background levels according to interwell analyses. However, according to further intrawell analysis through formulation of Shewhart-CUSUM charts chromium has not increased over it's own backgound level.

The Poisson Tolerance Interval at a 95% confidance level was completed for all of the detected VOCs. The wells that were found to be impacted statistically by VOCs are summarized in the following table 4.

Table 4. Poisson Tolerance Interval Analyses Summary

Well	Chlorobenzene	1,4-Dichlorobenzene
MW-2	x	x
MW-8		x

x=detection exceeded those expected from the background

Low levels of the chlorinated solvent 1,4-dichlorobenzene continues to be detected within MW-8 but the concentrations have decreased each of the last 7 events and were found in the lowest detected concentration. Low levels of chlorobenzene have consistently been detected within MW-2 since groundwater monitoring was initiated in 1994 but current levels are within the historical range. After further analyses through both Mann-Kendall Trend Analysis and Sen's Slope Analysis the detected VOCs were found to not be exhibiting an upward trend. However due to the historical absence of VOCs detected within the background well both MW-2 and MW-8 are considered to be impacted according to the Poisson Prediction Interval Analysis at a 95% confidence level. All Appendix II parameters continue to be absent from MW-2, MW-8, and the background well MW-1.

Conclusion

The statistical analysis results conducted on metals indicate that no metals have increased within any of the compliance wells. The detected metals are likely naturally inherent in the groundwater as indicated by elevated concentrations found within the background wells for both the closed and adjacent Subtitle D Landfills. Metal concentrations have historically exhibited large fluctuations and none of the constituents are exhibiting an upward trend. Compliance wells MW-2 and MW-8 continue to be the only wells containing VOCs. The continued decrease in concentrations of the intermediate VOC 1,4-Dichlorobenzene within MW-8 may indicate that natural attenuation is progressing. Further it is very unlikely that any VOC would be detected along the compliance boundary in this region based upon the flow direction and the specific gravity of 1,4-dichlorobenzene. MW-2 also is installed in very close proximity to the waste boundary and it is also unlikely that VOCs have migrated to or beyond the compliance boundary in the western region of the facility.

MESCO submitted the required Assessment of Corrective Measures (ACM) report to the Section on August 30, 2007. The comprehensive report concludes that the VOCs detected within MW-2 and MW-8 are the only concerns. The impacted wells are isolated within the relevant point of compliance and there are no offsite groundwater receptors within 2,000 ft. of the facility. The report concedes that the most cost effective and efficient system for remediation at this facility is Monitored Natural Attenuation (MNA).

MESCO completed the groundwater report including a potentiometric map with groundwater flow rates and direction for the sampling event. The flow directions and gradients are very consistent with historical observations,

showing no changes that would result in a different interpretation of the groundwater system. The facility is scheduled to be sampled again in February 2008 and a report and statistical analysis will be forwarded upon completion. If you have any questions or comments regarding this report, please contact me by phone at (919) 772-5393 or by email at jpfohl@mesco.com.

Sincerely,
MUNICIPAL ENGINEERING SERVICES CO., P.A.

Jonathan Pfohl
Environmental Specialist

Enclosures

cc: Mr. Tim Rogers
Wayne County

Detection Scan All Detections above SWSL, GWP or NCGW2L
Wayne County Closed Landfill (Dudley)

Well ID	Parameter Name [1]	Sample Date	Result	Unit	MDL [4]	SWSL [2]	NCGW2L [3]	GWP[5]	Exceedance
MW-1	**Vanadium**	**08/13/2007**	**11.7**	**ug/l**	**0.42**	**25**		**3.5**	**8.2**
MW-2	**1,4-Dichlorobenzene**	**08/13/2007**	**2.5**	**ug/l**	**0.21**	1	**1.4**		**1.1**
MW-2	Arsenic	08/13/2007	17	ug/l	0.47	10	50		
MW-2	Barium	08/13/2007	192	ug/l	0.04	100	2000		
MW-2	Chlorobenzene	08/13/2007	10.9	ug/l	0.13	3	50		
MW-2	**Vanadium**	**08/13/2007**	**6.9**	**ug/l**	**0.42**	**25**		**3.5**	**3.4**
MW-3	Chromium	08/13/2007	16	ug/l	0.24	10	50		
MW-3	Vanadium	08/13/2007	40	ug/l	0.42	25			
MW-3	**Vanadium**	**08/13/2007**	**40**	**ug/l**	**0.42**	**25**		**3.5**	**36.5**
MW-3	Zinc	08/13/2007	10	ug/l	0.20	10	1050		
MW-4	Barium	08/13/2007	141	ug/l	0.04	100	2000		
MW-4	Chromium	08/13/2007	10	ug/l	0.24	10	50		
MW-4	**Vanadium**	**08/13/2007**	**11.9**	**ug/l**	**0.42**	**25**		**3.5**	**8.4**
MW-5	**Vanadium**	**08/13/2007**	**6.1**	**ug/l**	**0.42**	**25**		**3.5**	**2.6**
MW-5	Zinc	08/13/2007	11	ug/l	0.20	10	1050		
MW-6	Barium	08/13/2007	225	ug/l	0.04	100	2000		
MW-6	Cadmium	08/13/2007	1	ug/l	0.06	1	1.75		
MW-6	**Vanadium**	**08/13/2007**	**6.4**	**ug/l**	**0.42**	**25**		**3.5**	**2.9**
MW-7	Arsenic	08/13/2007	12	ug/l	0.47	10	50		
MW-7	Chromium	08/13/2007	16	ug/l	0.24	10	50		
MW-7	Lead	08/13/2007	13	ug/l	0.07	10	15		
MW-7	Vanadium	08/13/2007	66	ug/l	0.42	25			
MW-7	**Vanadium**	**08/13/2007**	**66**	**ug/l**	**0.42**	**25**		**3.5**	**62.5**
MW-8	**1,4-Dichlorobenzene**	**08/13/2007**	**7.6**	**ug/l**	**0.21**	1	**1.4**		**6.2**
MW-8	Barium	08/13/2007	128	ug/l	0.04	100	2000		
MW-8	**Vanadium**	**08/13/2007**	**10.5**	**ug/l**	**0.42**	**25**		**3.5**	**7**
TB	Methylene Chloride	08/13/2007	0.2	ug/l	0.14	0.14	4.6		
TB	Toluene	08/13/2007	2.1	ug/l	0.13	1	1000		
EB	Methylene Chloride	08/13/2007	0.2	ug/l	0.14	0.14	4.6		

[1] Table only contains detected constituents.
[2] SWSL = Solid Waste Section Reporting Limit (Current as of Sampling Event)
[3] NCGW2L = North Carolina Ground Water 2L Standard
[4] MDL = Method Detection Limit
[4] GWP = Groundwater Protection Standard (Current as of Sampling Event)

Detection Scan All Detections Reported by Laboratory
Wayne County Closed Landfill (Dudley)

Well ID	Parameter Name [1]	Sample Date	Result	Unit	MDL [4]	SWSL [2]	NCGW2L [3]	GWP[5]	Exceedance
MW-1	2-Butanone	08/13/2007	1.6	ug/l	0.85	100	4200		
MW-1	Antimony	08/13/2007	0.1	ug/l	0.05	6		1.4	
MW-1	Arsenic	08/13/2007	2	ug/l	0.47	10	50		
MW-1	Barium	08/13/2007	45.7	ug/l	0.04	100	2000		
MW-1	Beryllium	08/13/2007	0.2	ug/l	0.08	1		4	
MW-1	Cadmium	08/13/2007	0.1	ug/l	0.06	1	1.75		
MW-1	Chloroform	08/13/2007	1.8	ug/l	0.13	5	70		
MW-1	Chromium	08/13/2007	6.4	ug/l	0.24	10	50		
MW-1	Copper	08/13/2007	1.2	ug/l	0.20	10	1000		
MW-1	Lead	08/13/2007	4.7	ug/l	0.07	10	15		
MW-1	Thallium	08/13/2007	0.2	ug/l	0.07	5		0.28	
MW-1	**Vanadium**	**08/13/2007**	**11.7**	**ug/l**	**0.42**	**25**		**3.5**	**8.2**
MW-1	Zinc	08/13/2007	2	ug/l	0.20	10	1050		
MW-2	1,1-Dichloroethane	08/13/2007	0.4	ug/l	0.16	5	70		
MW-2	1,2-Dichlorobenzene	08/13/2007	0.4	ug/l	0.13	5	620		
MW-2	1,3-Dichlorobenzene	08/13/2007	0.2	ug/l	0.13	5	170		
MW-2	**1,4-Dichlorobenzene**	**08/13/2007**	**2.5**	**ug/l**	**0.21**	1	**1.4**		**1.1**
MW-2	2-Butanone	08/13/2007	1.6	ug/l	0.85	100	4200		
MW-2	Acetone	08/13/2007	1.6	ug/l	1.21	100	700		
MW-2	Antimony	08/13/2007	0.2	ug/l	0.05	6		1.4	
MW-2	Arsenic	08/13/2007	17	ug/l	0.47	10	50		
MW-2	Barium	08/13/2007	192	ug/l	0.04	100	2000		
MW-2	Cadmium	08/13/2007	0.1	ug/l	0.06	1	1.75		
MW-2	Chlorobenzene	08/13/2007	10.9	ug/l	0.13	3	50		
MW-2	Chromium	08/13/2007	1.8	ug/l	0.24	10	50		
MW-2	Cis-1,2-Dichloroethene	08/13/2007	0.2	ug/l	0.14	5	70		
MW-2	Cobalt	08/13/2007	0.6	ug/l	0.41	10		70	
MW-2	Copper	08/13/2007	0.6	ug/l	0.20	10	1000		
MW-2	Dichlorodifluoromethane	08/13/2007	0.2	ug/l	0.16	5	1400		
MW-2	Lead	08/13/2007	3.6	ug/l	0.07	10	15		
MW-2	Nickel	08/13/2007	2.4	ug/l	0.66	50	100		
MW-2	Selenium	08/13/2007	1.7	ug/l	0.35	10	50		
MW-2	Thallium	08/13/2007	0.1	ug/l	0.07	5		0.28	
MW-2	Toluene	08/13/2007	0.2	ug/l	0.13	1	1000		
MW-2	**Vanadium**	**08/13/2007**	**6.9**	**ug/l**	**0.42**	**25**		**3.5**	**3.4**
MW-2	Zinc	08/13/2007	0.2	ug/l	0.20	10	1050		
MW-3	2-Butanone	08/13/2007	1.3	ug/l	0.85	100	4200		
MW-3	Antimony	08/13/2007	0.1	ug/l	0.05	6		1.4	
MW-3	Arsenic	08/13/2007	7.6	ug/l	0.47	10	50		
MW-3	Barium	08/13/2007	71.6	ug/l	0.04	100	2000		
MW-3	Beryllium	08/13/2007	0.7	ug/l	0.08	1		4	
MW-3	Cadmium	08/13/2007	0.2	ug/l	0.06	1	1.75		
MW-3	Chromium	08/13/2007	16	ug/l	0.24	10	50		
MW-3	Cobalt	08/13/2007	2.4	ug/l	0.41	10		70	
MW-3	Copper	08/13/2007	4.2	ug/l	0.20	10	1000		
MW-3	Lead	08/13/2007	8.6	ug/l	0.07	10	15		
MW-3	Nickel	08/13/2007	4.1	ug/l	0.66	50	100		
MW-3	Selenium	08/13/2007	0.7	ug/l	0.35	10	50		
MW-3	Thallium	08/13/2007	0.2	ug/l	0.07	5		0.28	
MW-3	**Vanadium**	**08/13/2007**	**40**	**ug/l**	**0.42**	**25**		**3.5**	**36.5**
MW-3	Zinc	08/13/2007	10	ug/l	0.20	10	1050		

Well ID	Parameter Name [1]	Sample Date	Result	Unit	MDL [4]	SWSL [2]	NCGW2L [3]	GWP[5]	Exceedance
MW-4	2-Butanone	08/13/2007	1.5	ug/l	0.85	100	4200		
MW-4	Arsenic	08/13/2007	4	ug/l	0.47	10	50		
MW-4	Barium	08/13/2007	141	ug/l	0.04	100	2000		
MW-4	Beryllium	08/13/2007	0.2	ug/l	0.08	1		4	
MW-4	Cadmium	08/13/2007	0.1	ug/l	0.06	1	1.75		
MW-4	Chloroform	08/13/2007	0.3	ug/l	0.13	5	70		
MW-4	Chromium	08/13/2007	10	ug/l	0.24	10	50		
MW-4	Cobalt	08/13/2007	0.5	ug/l	0.41	10		70	
MW-4	Copper	08/13/2007	1	ug/l	0.20	10	1000		
MW-4	Lead	08/13/2007	8.1	ug/l	0.07	10	15		
MW-4	Selenium	08/13/2007	1.1	ug/l	0.35	10	50		
MW-4	**Vanadium**	**08/13/2007**	**11.9**	**ug/l**	**0.42**	**25**		**3.5**	**8.4**
MW-4	Zinc	08/13/2007	1.6	ug/l	0.20	10	1050		
MW-5	2-Butanone	08/13/2007	2.3	ug/l	0.85	100	4200		
MW-5	Arsenic	08/13/2007	1.1	ug/l	0.47	10	50		
MW-5	Barium	08/13/2007	43.5	ug/l	0.04	100	2000		
MW-5	Beryllium	08/13/2007	0.5	ug/l	0.08	1		4	
MW-5	Cadmium	08/13/2007	0.3	ug/l	0.06	1	1.75		
MW-5	Chromium	08/13/2007	1.3	ug/l	0.24	10	50		
MW-5	Cobalt	08/13/2007	0.9	ug/l	0.41	10		70	
MW-5	Lead	08/13/2007	1	ug/l	0.07	10	15		
MW-5	Nickel	08/13/2007	1.4	ug/l	0.66	50	100		
MW-5	**Vanadium**	**08/13/2007**	**6.1**	**ug/l**	**0.42**	**25**		**3.5**	**2.6**
MW-5	Zinc	08/13/2007	11	ug/l	0.20	10	1050		
MW-6	1,4-Dichlorobenzene	08/13/2007	0.5	ug/l	0.21	1	1.4		
MW-6	2-Butanone	08/13/2007	2	ug/l	0.85	100	4200		
MW-6	Antimony	08/13/2007	0.1	ug/l	0.05	6		1.4	
MW-6	Arsenic	08/13/2007	1.1	ug/l	0.47	10	50		
MW-6	Barium	08/13/2007	225	ug/l	0.04	100	2000		
MW-6	Beryllium	08/13/2007	0.4	ug/l	0.08	1		4	
MW-6	Cadmium	08/13/2007	1	ug/l	0.06	1	1.75		
MW-6	Chlorobenzene	08/13/2007	0.4	ug/l	0.13	3	50		
MW-6	Chromium	08/13/2007	4.6	ug/l	0.24	10	50		
MW-6	Copper	08/13/2007	0.6	ug/l	0.20	10	1000		
MW-6	Lead	08/13/2007	2.7	ug/l	0.07	10	15		
MW-6	Nickel	08/13/2007	2	ug/l	0.66	50	100		
MW-6	Thallium	08/13/2007	0.1	ug/l	0.07	5		0.28	
MW-6	**Vanadium**	**08/13/2007**	**6.4**	**ug/l**	**0.42**	**25**		**3.5**	**2.9**
MW-6	Zinc	08/13/2007	2.2	ug/l	0.20	10	1050		
MW-7	2-Butanone	08/13/2007	1.8	ug/l	0.85	100	4200		
MW-7	Acetone	08/13/2007	2.2	ug/l	1.21	100	700		
MW-7	Antimony	08/13/2007	0.1	ug/l	0.05	6		1.4	
MW-7	Arsenic	08/13/2007	12	ug/l	0.47	10	50		
MW-7	Barium	08/13/2007	94.4	ug/l	0.04	100	2000		
MW-7	Beryllium	08/13/2007	0.3	ug/l	0.08	1		4	
MW-7	Cadmium	08/13/2007	0.2	ug/l	0.06	1	1.75		
MW-7	Chromium	08/13/2007	16	ug/l	0.24	10	50		
MW-7	Cobalt	08/13/2007	0.6	ug/l	0.41	10		70	
MW-7	Copper	08/13/2007	1.6	ug/l	0.20	10	1000		
MW-7	Lead	08/13/2007	13	ug/l	0.07	10	15		
MW-7	Nickel	08/13/2007	0.7	ug/l	0.66	50	100		
MW-7	Selenium	08/13/2007	2.3	ug/l	0.35	10	50		

Well ID	Parameter Name [1]	Sample Date	Result	Unit	MDL [4]	SWSL [2]	NCGW2L [3]	GWP[5]	Exceedance
MW-7	Thallium	08/13/2007	0.2	ug/l	0.07	5		0.28	
MW-7	Toluene	08/13/2007	0.2	ug/l	0.13	1	1000		
MW-7	**Vanadium**	**08/13/2007**	**66**	**ug/l**	**0.42**	**25**		**3.5**	**62.5**
MW-7	Zinc	08/13/2007	3.3	ug/l	0.20	10	1050		
MW-8	1,1-Dichloroethane	08/13/2007	0.5	ug/l	0.16	5	70		
MW-8	**1,4-Dichlorobenzene**	**08/13/2007**	**7.6**	**ug/l**	**0.21**	1	**1.4**		**6.2**
MW-8	Acetone	08/13/2007	1.6	ug/l	1.21	100	700		
MW-8	Arsenic	08/13/2007	3.9	ug/l	0.47	10	50		
MW-8	Barium	08/13/2007	128	ug/l	0.04	100	2000		
MW-8	Benzene	08/13/2007	0.4	ug/l	0.16	1	1		
MW-8	Beryllium	08/13/2007	0.2	ug/l	0.08	1		4	
MW-8	Cadmium	08/13/2007	0.1	ug/l	0.06	1	1.75		
MW-8	Chlorobenzene	08/13/2007	2.5	ug/l	0.13	3	50		
MW-8	Chromium	08/13/2007	9.2	ug/l	0.24	10	50		
MW-8	Cobalt	08/13/2007	0.8	ug/l	0.41	10		70	
MW-8	Copper	08/13/2007	1.4	ug/l	0.20	10	1000		
MW-8	Lead	08/13/2007	7.1	ug/l	0.07	10	15		
MW-8	Mercury	08/13/2007	0.16	ug/l	0.04	0.2	1.1		
MW-8	Selenium	08/13/2007	0.7	ug/l	0.35	10	50		
MW-8	Thallium	08/13/2007	0.1	ug/l	0.07	5		0.28	
MW-8	**Vanadium**	**08/13/2007**	**10.5**	**ug/l**	**0.42**	**25**		**3.5**	**7**
MW-8	Zinc	08/13/2007	4.8	ug/l	0.20	10	1050		
EB	Acetone	08/13/2007	1.6	ug/l	1.21	100	700		
EB	Acetonitrile	08/13/2007	36.9	ug/l	5.96	50		42	
EB	Antimony	08/13/2007	0.1	ug/l	0.05	6		1.4	
EB	Barium	08/13/2007	4.9	ug/l	0.04	100	2000		
EB	Methylene Chloride	08/13/2007	0.2	ug/l	0.14	0.14	4.6		
EB	Toluene	08/13/2007	0.8	ug/l	0.13	1	1000		
TB	2-Butanone	08/13/2007	1	ug/l	0.85	100	4200		
TB	Acetone	08/13/2007	2.1	ug/l	1.21	100	700		
TB	Methylene Chloride	08/13/2007	0.2	ug/l	0.14	0.14	4.6		
TB	Toluene	08/13/2007	2.1	ug/l	0.13	1	1000		

[1] Table only contains detected constituents.

[2] SWSL = Solid Waste Section Reporting Limit (Current as of Sampling Event)

[3] NCGW2L = North Carolina Ground Water 2L Standard

[4] MDL = Method Detection Limit

[4] GWP = Groundwater Protection Standard (Current as of Sampling Event)

Hydrologic Properties at Monitoring Well Locations
Wayne County Closed Landfill (Dudley)

Monitoring Well	Hydraulic Conductivity (cm/sec)	Effective Porosity (%)	Hydraulic Gradient	Flow Rate (ft/yr)	Flow Direction	Water Table Depth (ft)	Water Table Elev. (ft)
MW-1	5.40E-04	20.0	0.00519	14.51	N67W	16.94	146.32
MW-2	3.00E-04	20.0	0.01834	28.47	N46W	5.60	128.92
MW-3	6.40E-03	20.0	0.00634	209.91	N61W	1.03	133.78
MW-4	9.90E-04	20.0	0.00559	28.64	N64W	7.28	142.92
MW-5	3.10E-05	20.0	0.01796	2.88	N45W	3.00	121.78
MW-6	1.60E-04	20.0	0.00596	4.93	N66W	6.54	138.99
MW-7	7.30E-05	20.0	0.00776	2.93	N64W	8.85	134.74
MW-8	3.40E-04	20.0	0.00513	9.02	N64W	19.90	141.98

NOTE: Data for conductivities and effective porosity obtained from GAI Consultants' Water Sampling Report (January, 1995).
Hydrologic Gradient taken from the August 13, 2007 sampling event from water levels reported by Environment I.
Flow rate (Q) is defined by the equation:

where

$$Q = -\frac{K}{n_e} \cdot \frac{dh}{dl}$$

K = hydraulic conductivity
ne = effective porosity
dh = head difference
dl = horizontal distance

Statistical Analysis Results Summary

Inter-Well Analyses Summary
Wayne County Closed MSWLF and C&D Landfill (Dudley)

Background Well: MW-1

Arsenic, total

%ND	Normality	Method	ND Adj.	Upper Limit (a = 95%)	Unit
100	-	Poisson tolerance interval	ND	16.0	ug/l

Well	Result	Significance
MW-2	17	yes
MW-7	12	No

Barium, total

%ND	Normality	Method	ND Adj.	Upper Limit (a = 95%)	Unit
100	log-normal	Poisson tolerance interval	ND	11.0	log[ug/l]

Well	Result	Significance
MW-2	5.26	No
MW-4	4.95	No
MW-6	5.42	No
MW-8	4.85	No

Cadmium, total

%ND	Normality	Method	ND Adj.	Upper Limit (a = 95%)	Unit
100	-	Poisson tolerance interval	ND	3.0	ug/l

Well	Result	Significance
MW-6	1	No

Chromium, total

%ND	Normality	Method	ND Adj.	Upper Limit (a = 95%)	Unit
85.71	-	Non-Parametric tolerance interval	1/2 ND	13	ug/l

Well	Result	Significance
MW-3	16	yes
MW-4	10	No
MW-7	16	yes

Lead, total

%ND	Normality	Method	ND Adj.	Upper Limit (a = 95%)	Unit
100	-	Poisson tolerance interval	ND	16.0	ug/l

Well	Result	Significance
MW-7	13	No

Vanadium, total

%ND	Normality	Method	ND Adj.	Upper Limit (a = 95%)	Unit
100	-	Poisson tolerance interval	ND	7.5	log[ug/l]

Well	Result	Significance
MW-3	3.69	No
MW-7	4.19	No

Zinc, total

%ND	Normality	Method	ND Adj.	Upper Limit (a = 95%)	Unit
89	-	Non-Parametric tolerance interval	1/2 ND	243.0	ug/l

Well	Result	Significance
MW-3	10	No
MW-5	11	No

NOTE: Bold-faced monitoring points indicate detected levels exceed North Carolina Groundwater Standard.

Poisson Prediction Interval Based upon Pooled Background VOCs
Wayne County Closed MSWLF and C&D Landfill (Dudley)

All detected VOCs (Background Well: MW-1)

Constituent	MW-2	MW-8
1,4-Dichlorobenzene	**x**	**x**
Chlorobenzene	x	
Detection(s) per Scan	2.00	1.00

Total number of sampling events [n] =	29.02
Total number of detections in background wells [y] =	0
Number of comparisons (downgradient wells) [k] =	7
One-sided value of Student's t-statistic (95% confidence) [t] =	2.584
Expected number of detections in a single future sample [y*] =	**0.2301**

Statistically significant VOC detections at 95% confidence level within MW-2 & MW-8

Summary of Pooled VOCs in Background Well (MW-1)
Wayne County Closed MSWLF and C&D Landfill (Dudley)

Constituent	Samples	NDs	% NDs
1,1,1,2-Tetrachloroethane	29	29	100.00
1,1,1-Trichloroethane	29	29	100.00
1,1,2,2-Tetrachloroethane	29	29	100.00
1,1,2-Trichloroethane	29	29	100.00
1,1-Dichloroethane	29	29	100.00
1,1-Dichloroethene	29	29	100.00
1,2,3-Trichloropropane	29	29	100.00
1,2-Dibromo-3-chloropropane	29	29	100.00
1,2-Dibromoethane	29	29	100.00
1,2-Dichlorobenzene	29	29	100.00
1,2-Dichloroethane	29	29	100.00
1,2-Dichloropropane	29	29	100.00
1,4-Dichlorobenzene	30	30	100.00
2-Butanone	29	29	100.00
2-Hexanone	29	29	100.00
4-Methyl-2-Pentanone	29	29	100.00
Acetone	29	29	100.00
Acrylonitrile	29	29	100.00
Benzene	29	29	100.00
Bromochloromethane	29	29	100.00
Bromodichloromethane	29	29	100.00
Bromoform	29	29	100.00
Bromomethane	29	29	100.00
Carbon disulfide	29	29	100.00
Carbon tetrachloride	29	29	100.00
Chlorobenzene	29	29	100.00
Chloroethane	29	29	100.00
Chloroform	29	29	100.00
Chloromethane	29	29	100.00
cis-1,2-Dichloroethene	29	29	100.00
cis-1,3-Dichloropropene	29	29	100.00
Chlorodibromomethane	29	29	100.00
Dibromomethane	29	29	100.00
Ethylbenzene	29	29	100.00
Iodomethane	29	29	100.00
Dichloromethane	29	29	100.00
Styrene	29	29	100.00
Tetrachloroethylene	29	29	100.00
Toluene	29	29	100.00
trans-1,2-Dichloroethene	29	29	100.00
trans-1,3-Dichloropropene	29	29	100.00
trans-1,4-Dichloro-2-butene	29	29	100.00
Trichloroethylene	29	29	100.00
Trichlorofluoromethane	29	29	100.00
Vinyl acetate	29	29	100.00
Vinyl chloride	29	29	100.00
Xylene	29	29	100.00
Total	**1364**	**1364**	**100.00**

Intra-Well Analysis Summary (Metals)
Wayne County Closed MSWLF and C&D Landfill (Dudley)

Well	Arsenic	Chromium
MW-2	no	
MW-3		no
MW-7		no

EXPLANATION

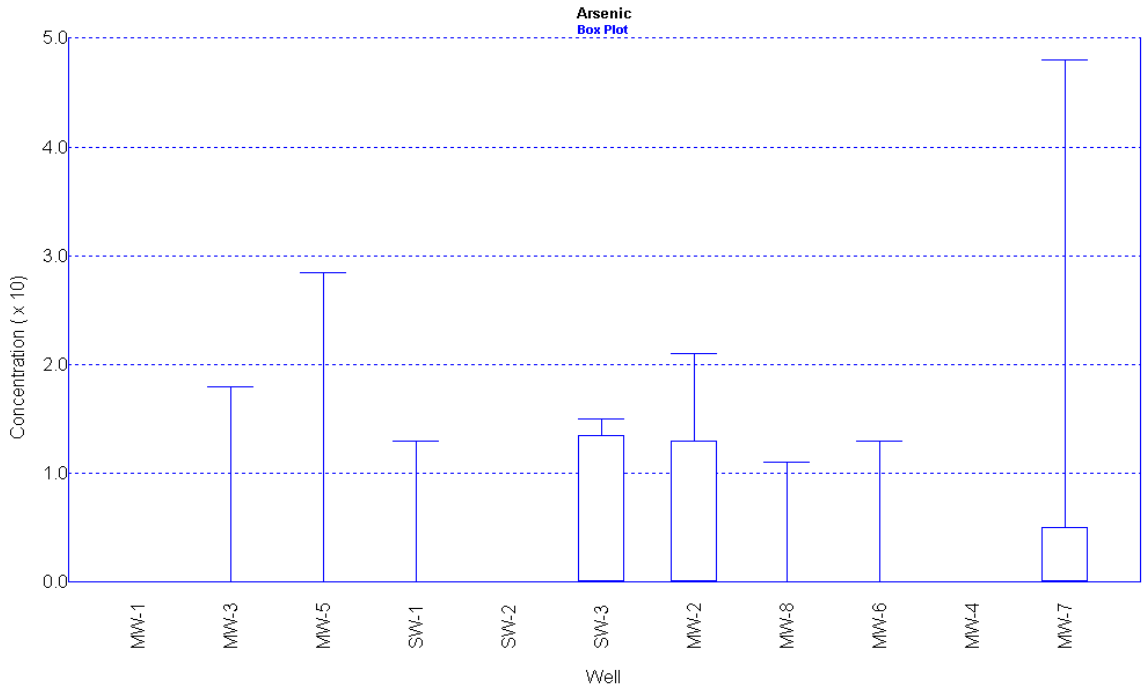
yes=detection statistically significant by intrawell analysis

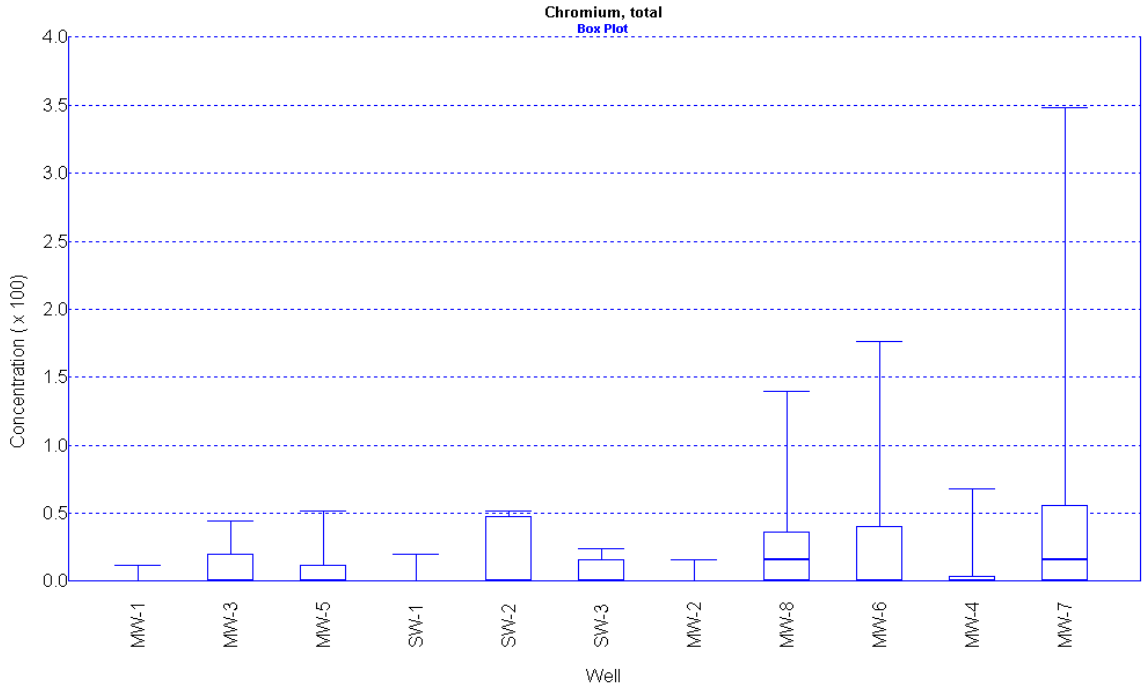
no=detection not statistically significant by intrawell analysis

n/a=not available, intrawell not possible via Shewhart CUSUM chart due to detection rate requirement

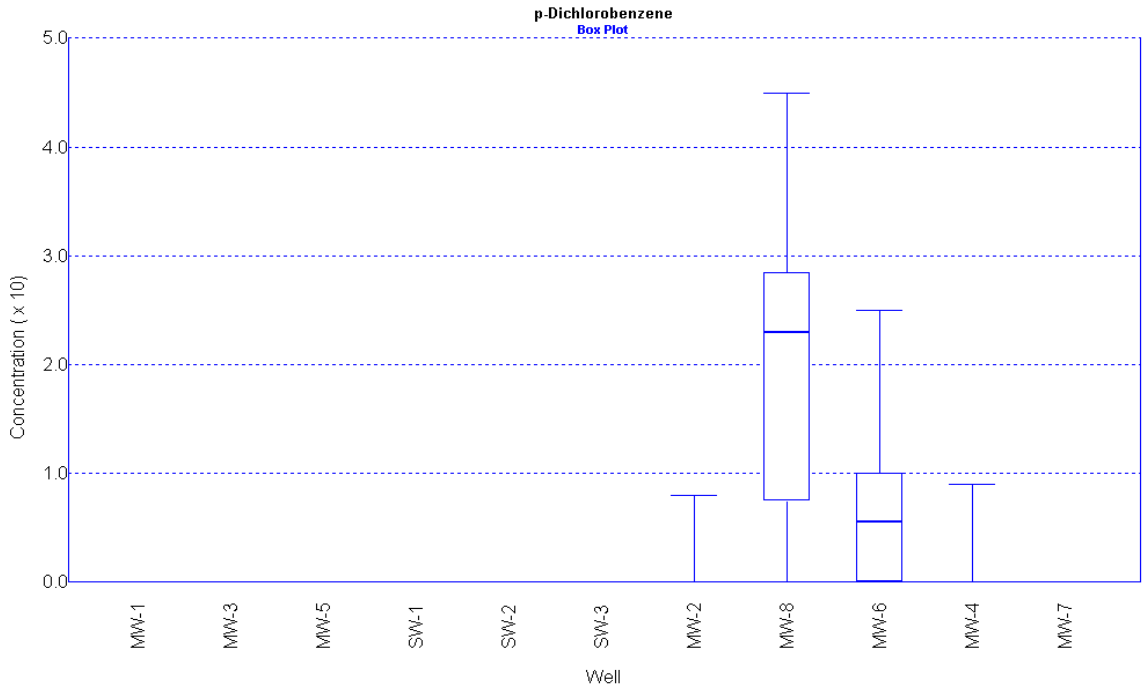
No Metals have increased according to Intrawell Analysis

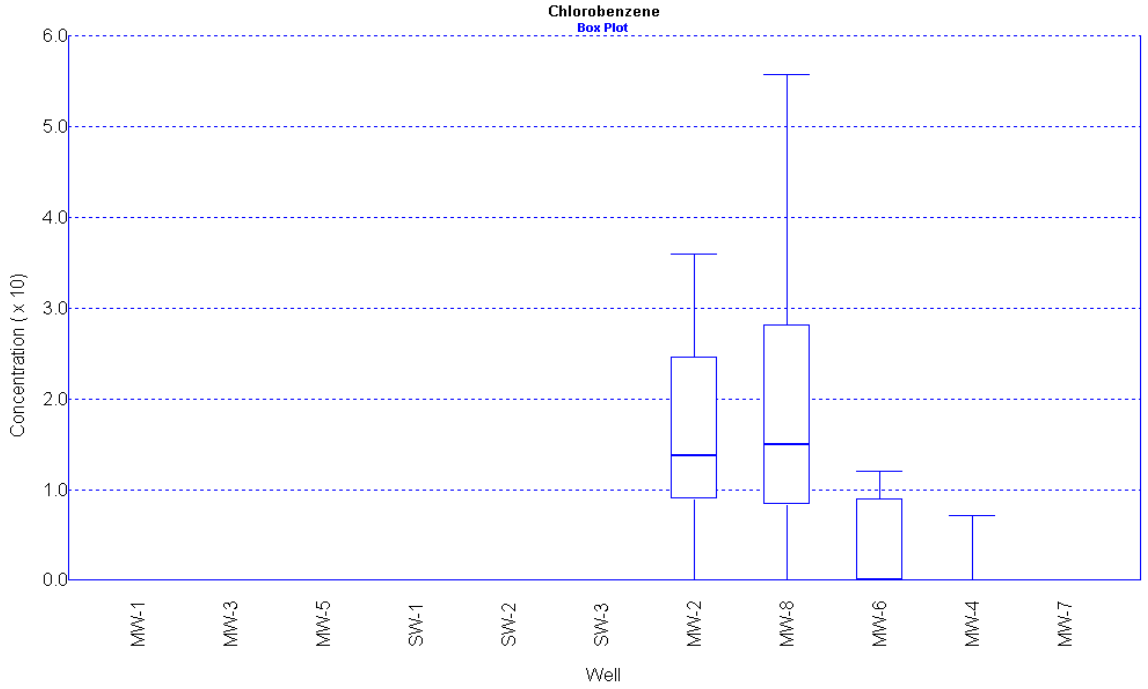
Box Plots for Select Constituents (Metals)
Wayne County Closed MSWLF and C&D Landfill (Dudley)



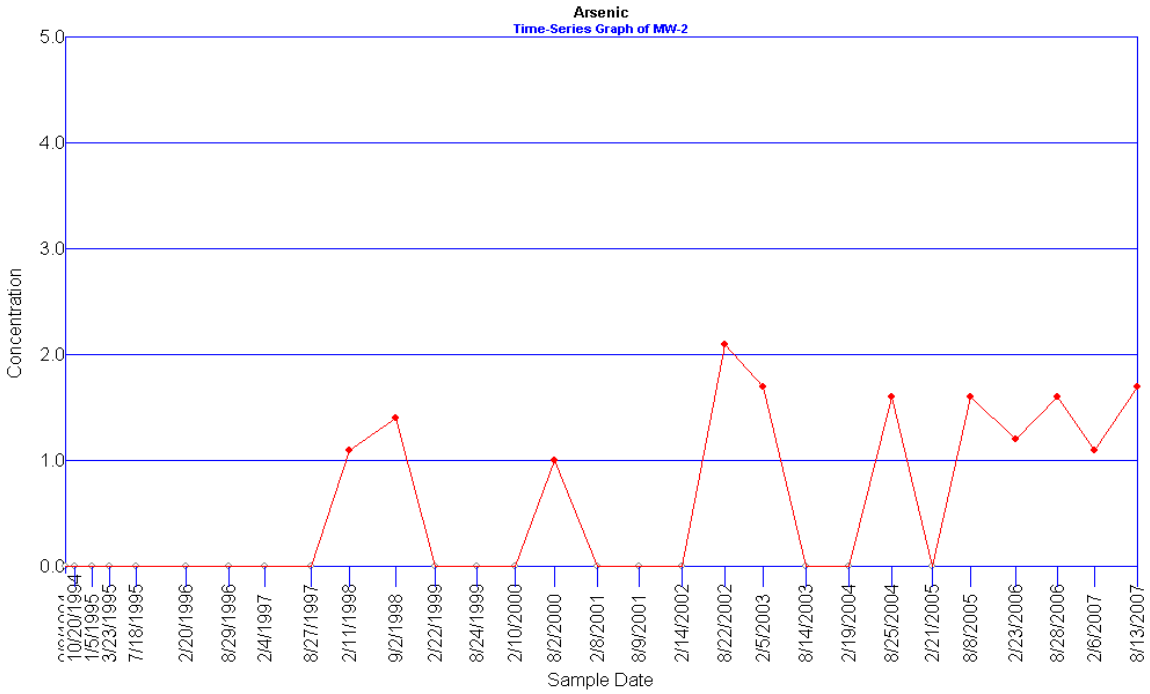


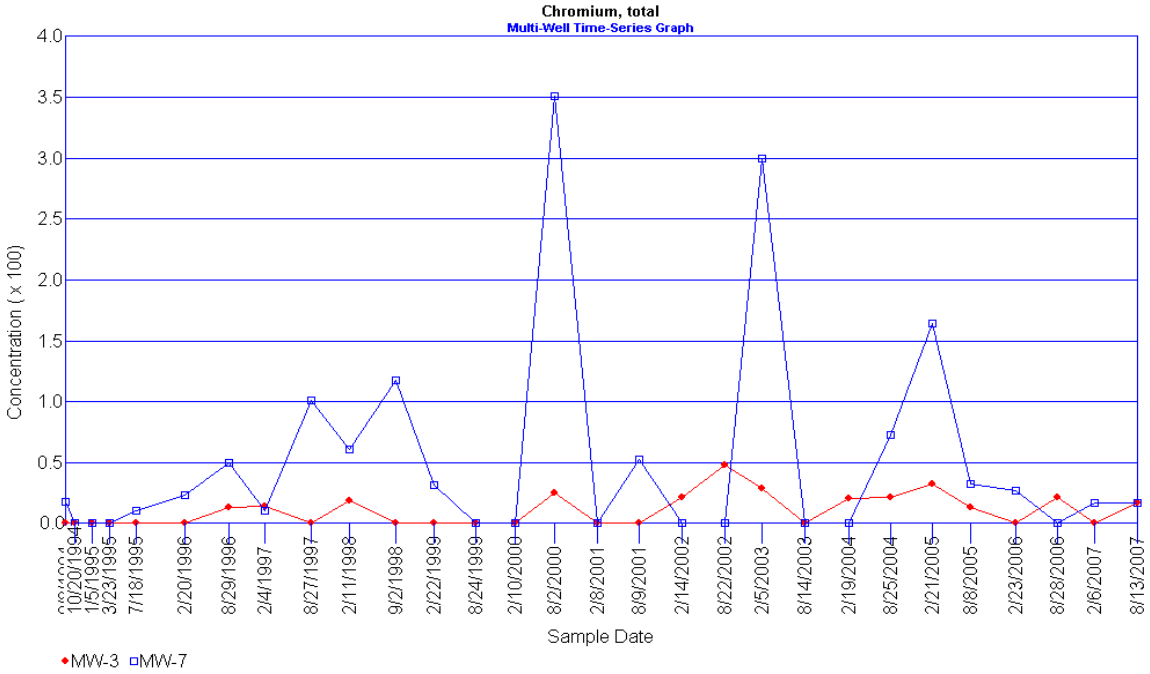
Box Plots for Select Constituents (VOCs)
Wayne County Closed MSWLF and C&D Landfill (Dudley)



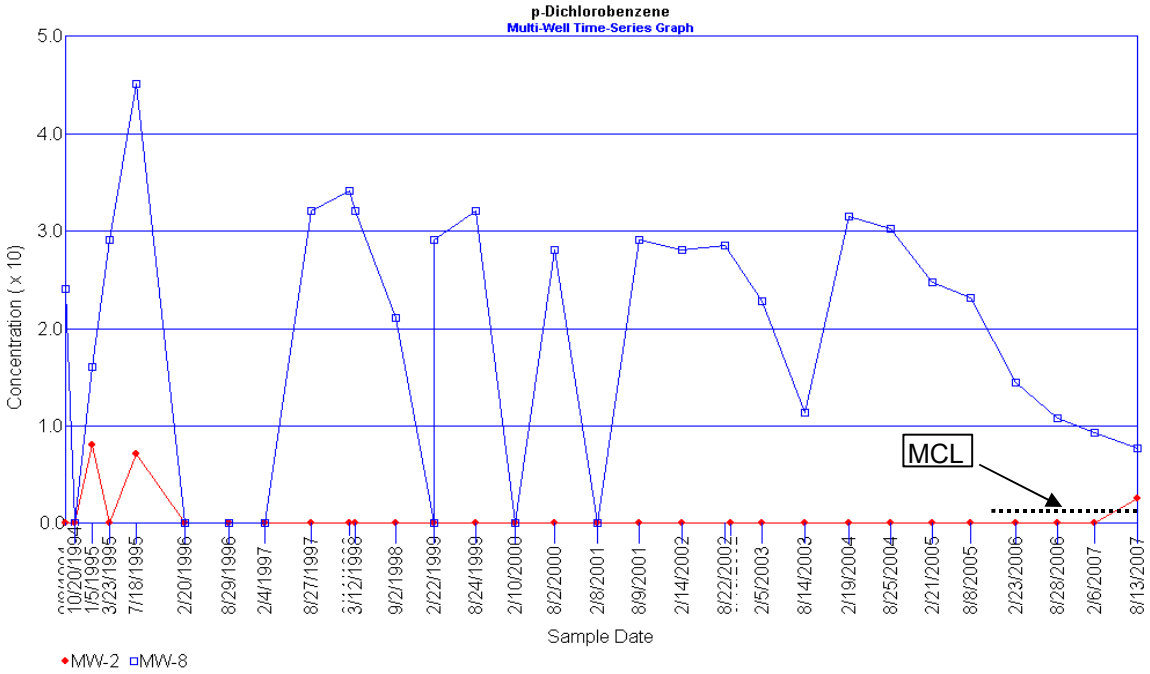


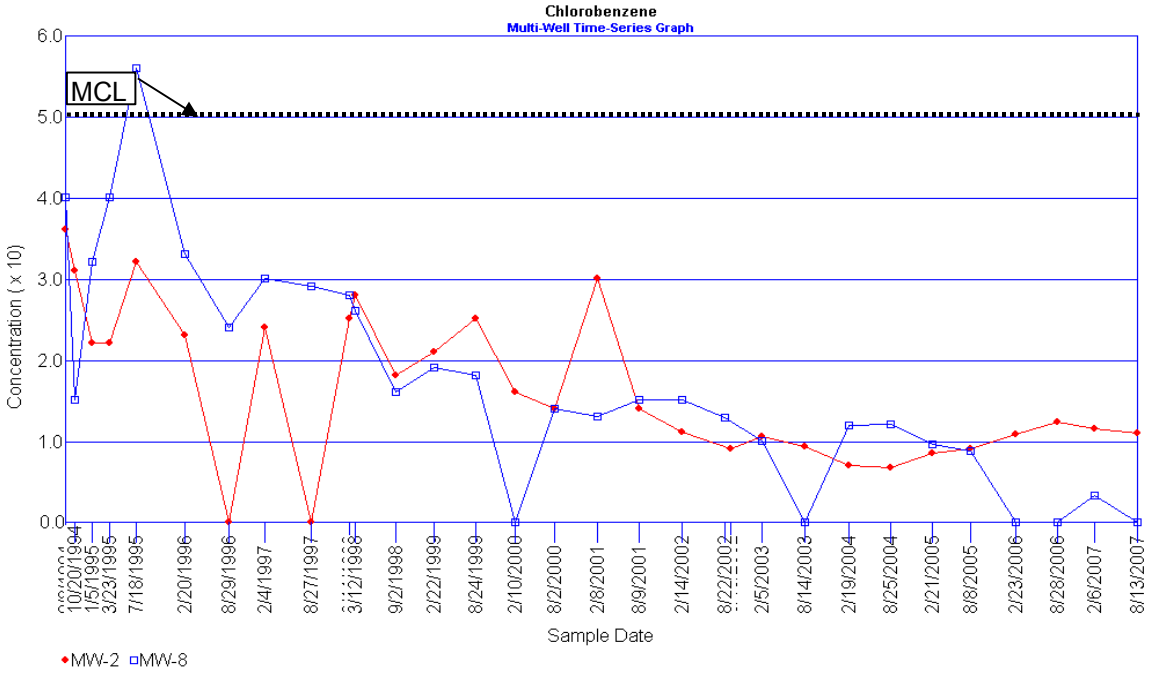
Time Series Plots for Select Constituents (Metals)
Wayne County Closed MSWLF and C&D Landfill (Dudley)



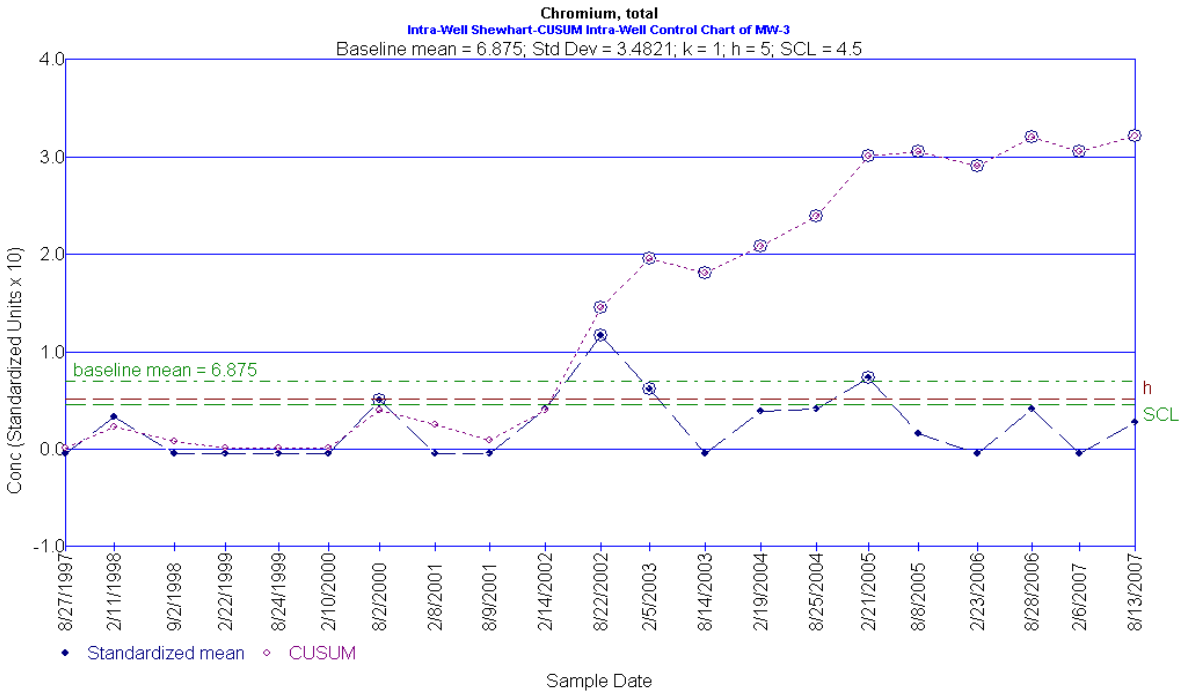


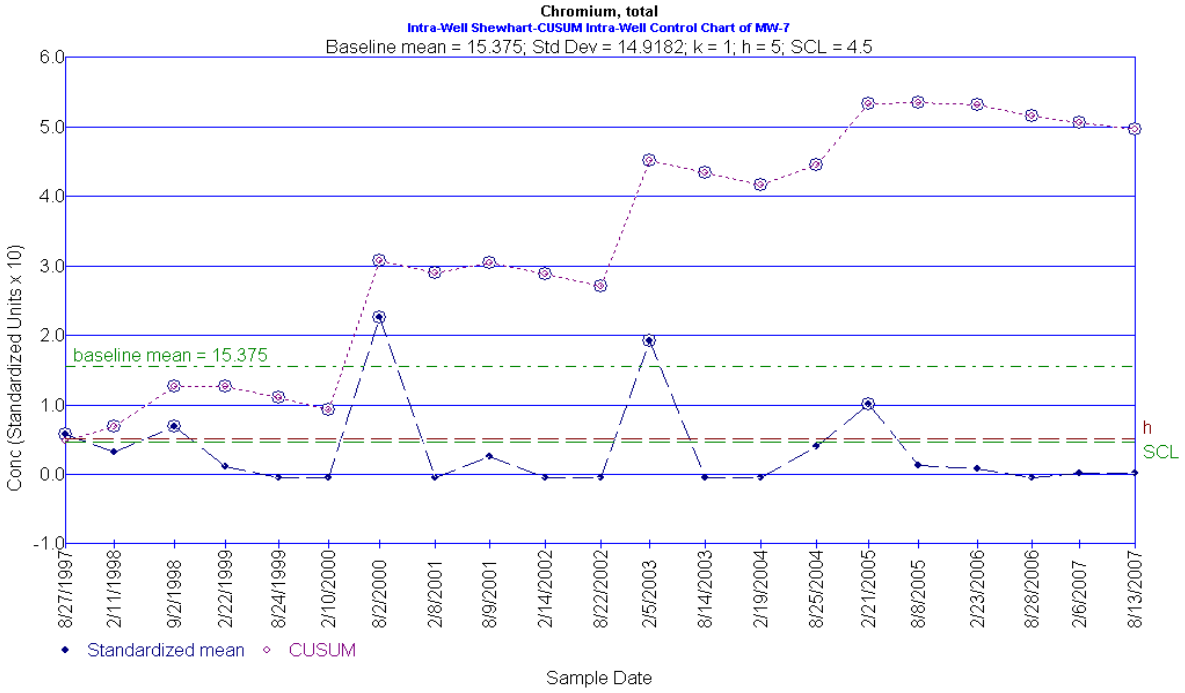
Time Series Plots for Select Constituents (VOCs)
Wayne County Closed MSWLF and C&D Landfill (Dudley)

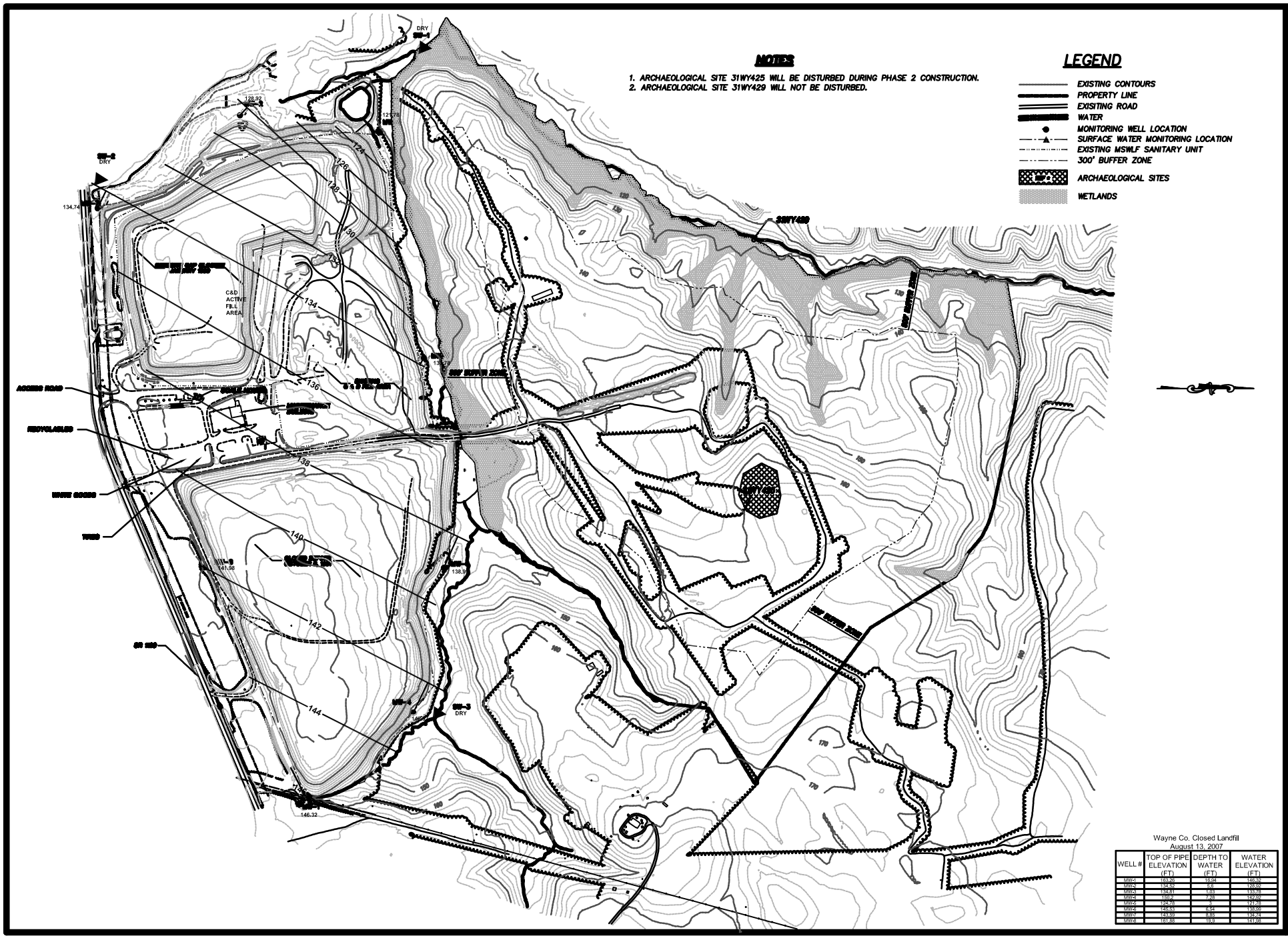




Shewhart-CUSUM charts for selected constituents
Wayne County Closed MSWLF and C&D Landfill (Dudley)







Wayne Co. Closed Landfill
August 13, 2007

WELL #	TOP OF PIPE ELEVATION (FT)	DEPTH TO WATER (FT)	WATER ELEVATION (FT)
MW-1	160.36	19.04	141.32
MW-2	134.92	6.0	128.92
MW-3	135.81	2.03	133.78
MW-4	139.42	7.20	132.22
MW-5	124.78	3	121.78
MW-6	145.53	6.54	138.99
MW-7	143.89	8.85	135.04
MW-8	161.86	19.3	141.98

Basic Statistics

Basic Statistics

Parameter: Arsenic

Original Data (Not Transformed)
Non-Detects Replaced with 1/2 DL

	Total Observations
231	
Total Non-Detects	205
Pooled Mean	6.19009
Pooled Std Dev	4.74631
Background Mean	4.74054
Background Std Dev	1.0013

Background Wells

There is 1 background well

Well	Samples	Non-Detects	% ND	Total
MW-1	28	28	100	132.735

Well	Mean	Std Dev	Std Err	Rank Sum	Rank Mean
MW-1	4.74054	1.0013	0	2884	103

Compliance Wells

There are 7 compliance wells

Well	Samples	Non-Detects	% ND	Total
MW-2	29	18	62.069	251
MW-3	29	27	93.1034	159.235
MW-4	29	29	100	140.235
MW-5	29	26	89.6552	200.235
MW-6	29	28	96.5517	148.235
MW-7	29	22	75.8621	247
MW-8	29	27	93.1034	151.235

Well	Mean	Std Dev	Dif From Bkg	Std Err	Rank Sum	Rank Mean
MW-2	8.65517	5.16358	3.91464	1.2093	4245	146.379
MW-3	5.49086	2.80763	0.750326	1.2093	3217	110.931
MW-4	4.83569	0.884838	0.0951539	1.2093	2987	103
MW-5	6.90466	6.52331	2.16412	1.2093	3363	115.966
MW-6	5.11155	1.75605	0.371016	1.2093	3100	106.897
MW-7	8.51724	9.00246	3.77671	1.2093	3798	130.966
MW-8	5.215	1.71511	0.474464	1.2093	3202	110.414

Analysis of Variance Statistics

SS Wells	535.601
SS Total	5181.31

Kruskal-Wallis Statistics

Non-Detect Rank	103
Background Rank Sum	2884
Background Rank Mean	103
H Statistic	10.5118
H Adjusted for Ties	34.9129

Basic Statistics

Parameter: Barium, total

Original Data (Not Transformed)
Non-Detects Replaced with 1/2 DL

	Total Observations
231	
Total Non-Detects	221
Pooled Mean	243.321
Pooled Std Dev	59.6764
Background Mean	233.929
Background Std Dev	59.3977

Background Wells

There is 1 background well

Well	Samples	Non-Detects	% ND	Total
MW-1	28	28	100	6550.02

Well	Mean	Std Dev	Std Err	Rank Sum	Rank Mean
MW-1	233.929	59.3977	0	3108	111

Compliance Wells

There are 7 compliance wells

Well	Samples	Non-Detects	% ND	Total
MW-2	29	27	93.1034	7089
MW-3	29	29	100	6800.02
MW-4	29	28	96.5517	6941
MW-5	29	29	100	6800.02
MW-6	29	25	86.2069	8127
MW-7	29	28	96.5517	6893.02
MW-8	29	27	93.1034	7007

Well	Mean	Std Dev	Dif From Bkg	Std Err	Rank Sum	Rank Mean
MW-2	244.448	21.6128	10.519	15.5795	3450	118.966
MW-3	234.483	58.4037	0.554163	15.5795	3219	111
MW-4	239.345	41.657	5.41554	15.5795	3332	114.897
MW-5	234.483	58.4037	0.554163	15.5795	3219	111
MW-6	280.241	107.917	46.3121	15.5795	3693	127.345
MW-7	237.69	49.8371	3.76106	15.5795	3333	114.931
MW-8	241.621	31.3328	7.6914	15.5795	3442	118.69

Analysis of Variance Statistics

SS Wells	48028.6
SS Total	819093

Kruskal-Wallis Statistics

Non-Detect Rank	111
Background Rank Sum	3108
Background Rank Mean	111
H Statistic	1.43657
H Adjusted for Ties	11.5544

Basic Statistics

Parameter: Cadmium, total

Original Data (Not Transformed)
Non-Detects Replaced with 1/2 DL

	Total Observations
231	
Total Non-Detects	205
Pooled Mean	0.762381
Pooled Std Dev	1.3129
Background Mean	0.483214
Background Std Dev	0.0888217

Background Wells

There is 1 background well

Well	Samples	Non-Detects	% ND	Total
MW-1	28	28	100	13.53

Well	Mean	Std Dev	Std Err	Rank Sum	Rank Mean
MW-1	0.483214	0.0888217	0	2884	103

Compliance Wells

There are 7 compliance wells

Well	Samples	Non-Detects	% ND	Total
MW-2	29	29	100	14.03
MW-3	29	26	89.6552	21.03
MW-4	29	28	96.5517	14.53
MW-5	29	14	48.2759	56.93
MW-6	29	23	79.3103	21.5
MW-7	29	28	96.5517	20.53
MW-8	29	29	100	14.03

Well	Mean	Std Dev	Dif From Bkg	Std Err	Rank Sum	Rank Mean
MW-2	0.483793	0.0872768	0.000578818	0.329947	2987	103
MW-3	0.725172	0.829167	0.241958	0.329947	3341	115.207
MW-4	0.501034	0.129679	0.0178202	0.329947	3090	106.552
MW-5	1.9631	3.10789	1.47989	0.329947	4722	162.828
MW-6	0.741379	0.702301	0.258165	0.329947	3671	126.586
MW-7	0.707931	1.21328	0.224717	0.329947	3114	107.379
MW-8	0.483793	0.0872768	0.000578818	0.329947	2987	103

Analysis of Variance Statistics

SS Wells	50.6136
SS Total	396.453

Kruskal-Wallis Statistics

Non-Detect Rank	103
Background Rank Sum	2884
Background Rank Mean	103
H Statistic	19.2875
H Adjusted for Ties	64.0597

Basic Statistics

Parameter: Chromium, total

Original Data (Not Transformed)
Non-Detects Replaced with 1/2 DL

	Total Observations
231	
Total Non-Detects	141
Pooled Mean	19.8987
Pooled Std Dev	39.5495
Background Mean	5.93286
Background Std Dev	2.98421

Background Wells

There is 1 background well

Well	Samples	Non-Detects	% ND	Total
MW-1	28	24	85.7143	166.12

Well	Mean	Std Dev	Std Err	Rank Sum	Rank Mean
MW-1	5.93286	2.98421	0	2330	83.2143

Compliance Wells

There are 7 compliance wells

Well	Samples	Non-Detects	% ND	Total
MW-2	29	23	79.3103	186.12
MW-3	29	16	55.1724	365
MW-4	29	22	75.8621	271
MW-5	29	20	68.9655	322.12
MW-6	29	15	51.7241	914.12
MW-7	29	11	37.931	1497
MW-8	29	10	34.4828	875.12

Well	Mean	Std Dev	Dif From Bkg	Std Err	Rank Sum	Rank Mean
MW-2	6.41793	3.60312	0.485074	9.81194	2564	88.4138
MW-3	12.5862	10.6218	6.65335	9.81194	3471	119.69
MW-4	9.34483	12.6781	3.41197	9.81194	2753	94.931
MW-5	11.1076	12.4212	5.17473	9.81194	3046	105.034
MW-6	31.5214	43.917	25.5885	9.81194	3896	134.345
MW-7	51.6207	85.1874	45.6878	9.81194	4352	150.069
MW-8	30.1766	35.8872	24.2437	9.81194	4384	151.172

Analysis of Variance Statistics

SS Wells	53916.7
SS Total	359758

Kruskal-Wallis Statistics

Non-Detect Rank	71
Background Rank Sum	2330
Background Rank Mean	83.2143
H Statistic	33.1878
H Adjusted for Ties	42.9565

Basic Statistics

Parameter: Lead, total

Original Data (Not Transformed)
Non-Detects Replaced with 1/2 DL

	Total Observations
231	
Total Non-Detects	172
Pooled Mean	11.1504
Pooled Std Dev	16.7901
Background Mean	4.73339
Background Std Dev	1.03478

Background Wells

There is 1 background well

Well	Samples	Non-Detects	% ND	Total
MW-1	28	28	100	132.535

Well	Mean	Std Dev	Std Err	Rank Sum	Rank Mean
MW-1	4.73339	1.03478	0	2422	86.5

Compliance Wells

There are 7 compliance wells

Well	Samples	Non-Detects	% ND	Total
MW-2	29	22	75.8621	266.035
MW-3	29	26	89.6552	168.035
MW-4	29	27	93.1034	161.035
MW-5	29	23	79.3103	267.035
MW-6	29	20	68.9655	389.035
MW-7	29	13	44.8276	702
MW-8	29	13	44.8276	490.035

Well	Mean	Std Dev	Dif From Bkg	Std Err	Rank Sum	Rank Mean
MW-2	9.17362	12.9387	4.44023	4.18625	3249	112.034
MW-3	5.79431	3.23129	1.06092	4.18625	2816	97.1034
MW-4	5.55293	3.25568	0.819538	4.18625	2711.5	93.5
MW-5	9.2081	13.5173	4.47471	4.18625	3169.5	109.293
MW-6	13.415	19.1648	8.68161	4.18625	3586	123.655
MW-7	24.2069	23.2631	19.4735	4.18625	4526.5	156.086
MW-8	16.8978	26.6012	12.1644	4.18625	4315.5	148.81

Analysis of Variance Statistics

SS Wells	9166.62
SS Total	64838.6

Kruskal-Wallis Statistics

Non-Detect Rank	86.5
Background Rank Sum	2422
Background Rank Mean	86.5
H Statistic	29.2617
H Adjusted for Ties	49.8329

Basic Statistics

Parameter: Vanadium

Original Data (Not Transformed)
Non-Detects Replaced with 1/2 DL

	Total Observations
231	
Total Non-Detects	177
Pooled Mean	50.6158
Pooled Std Dev	117.432
Background Mean	19.0254
Background Std Dev	3.95013

Background Wells

There is 1 background well

Well	Samples	Non-Detects	% ND	Total
MW-1	28	28	100	532.71

Well	Mean	Std Dev	Std Err	Rank Sum	Rank Mean
MW-1	19.0254	3.95013	0	2492	89

Compliance Wells

There are 7 compliance wells

Well	Samples	Non-Detects	% ND	Total
MW-2	29	28	96.5517	585.71
MW-3	29	19	65.5172	1313
MW-4	29	28	96.5517	600.71
MW-5	29	18	62.069	1351.71
MW-6	29	21	72.4138	1523.71
MW-7	29	13	44.8276	4653
MW-8	29	22	75.8621	1131.71

Well	Mean	Std Dev	Dif From Bkg	Std Err	Rank Sum	Rank Mean
MW-2	20.1969	7.40601	1.17154	29.3468	2681	92.4483
MW-3	45.2759	46.1867	26.2505	29.3468	3700	127.586
MW-4	20.7141	9.88705	1.68878	29.3468	2688	92.6897
MW-5	46.6107	55.7812	27.5853	29.3468	3783	130.448
MW-6	52.5417	84.7734	33.5164	29.3468	3532	121.793
MW-7	160.448	288.548	141.423	29.3468	4529	156.172
MW-8	39.0245	43.0527	19.9991	29.3468	3391	116.931

Analysis of Variance Statistics

SS Wells	435834
SS Total	3.17177e+006

Kruskal-Wallis Statistics

Non-Detect Rank	89
Background Rank Sum	2492
Background Rank Mean	89
H Statistic	24.6309
H Adjusted for Ties	44.7721

Basic Statistics

Parameter: Zinc

Original Data (Not Transformed)
Non-Detects Replaced with 1/2 DL

	Total Observations
231	
Total Non-Detects	212
Pooled Mean	28.1758
Pooled Std Dev	33.3217
Background Mean	32.7179
Background Std Dev	43.1711

Background Wells

There is 1 background well

Well	Samples	Non-Detects	% ND	Total
MW-1	28	25	89.2857	916.1

Well	Mean	Std Dev	Std Err	Rank Sum	Rank Mean
MW-1	32.7179	43.1711	0	3333.5	119.054

Compliance Wells

There are 7 compliance wells

Well	Samples	Non-Detects	% ND	Total
MW-2	29	29	100	660.1
MW-3	29	27	93.1034	679
MW-4	29	27	93.1034	1097.1
MW-5	29	25	86.2069	819
MW-6	29	26	89.6552	754.1
MW-7	29	25	86.2069	761.1
MW-8	29	28	96.5517	822.1

Well	Mean	Std Dev	Dif From Bkg	Std Err	Rank Sum	Rank Mean
MW-2	22.7621	6.7474	-9.95579	8.87717	3088.5	106.5
MW-3	23.4138	4.90275	-9.30406	8.87717	3304.5	113.948
MW-4	37.831	73.9282	5.11318	8.87717	3330.5	114.845
MW-5	28.2414	18.9975	-4.47648	8.87717	3549.5	122.397
MW-6	26.0034	13.1051	-6.71441	8.87717	3434	118.414
MW-7	26.2448	9.98226	-6.47303	8.87717	3544.5	122.224
MW-8	28.3483	31.2472	-4.36958	8.87717	3211	110.724

Analysis of Variance Statistics

SS Wells	5034.67
SS Total	255377

Kruskal-Wallis Statistics

Non-Detect Rank	106.5
Background Rank Sum	3333.5
Background Rank Mean	119.054
H Statistic	1.41632
H Adjusted for Ties	6.23885

Basic Statistics

Parameter: p-Dichlorobenzene

Original Data (Not Transformed)
Non-Detects Replaced with 1/2 DL

	Total Observations
247	
Total Non-Detects	202
Pooled Mean	5.24263
Pooled Std Dev	7.38555
Background Mean	2.47017
Background Std Dev	0.668486

Background Wells

There is 1 background well

Well	Samples	Non-Detects	% ND	Total
MW-1	30	30	100	74.105

Well	Mean	Std Dev	Std Err	Rank Sum	Rank Mean
MW-1	2.47017	0.668486	0	3045	101.5

Compliance Wells

There are 7 compliance wells

Well	Samples	Non-Detects	% ND	Total
MW-2	31	28	90.3226	89
MW-3	31	31	100	76.605
MW-4	31	30	96.7742	83.105
MW-5	31	31	100	76.605
MW-6	31	14	45.1613	206.305
MW-7	31	31	100	76.605
MW-8	31	7	22.5806	612.6

Well	Mean	Std Dev	Dif From Bkg	Std Err	Rank Sum	Rank Mean
MW-2	2.87097	1.33521	0.400801	1.2285	3463	111.71
MW-3	2.47113	0.657272	0.000962366	1.2285	3146.5	101.5
MW-4	2.68081	1.3444	0.21064	1.2285	3260	105.161
MW-5	2.47113	0.657272	0.000962366	1.2285	3146.5	101.5
MW-6	6.655	5.217	4.18483	1.2285	5098	164.452
MW-7	2.47113	0.657272	0.000962366	1.2285	3146.5	101.5
MW-8	19.7613	12.279	17.2911	1.2285	6322.5	203.952

Analysis of Variance Statistics

SS Wells	7919.14
SS Total	13418.4

Kruskal-Wallis Statistics

Non-Detect Rank	101.5
Background Rank Sum	3045
Background Rank Mean	101.5
H Statistic	64.0276
H Adjusted for Ties	141.33

Basic Statistics

Parameter: Chlorobenzene

Original Data (Not Transformed)
Non-Detects Replaced with 1/2 DL

	Total Observations
239	
Total Non-Detects	172
Pooled Mean	6.5086
Pooled Std Dev	8.64045
Background Mean	2.38155
Background Std Dev	0.48264

Background Wells

There is 1 background well

Well	Samples	Non-Detects	% ND	Total
MW-1	29	29	100	69.065

Well	Mean	Std Dev	Std Err	Rank Sum	Rank Mean
MW-1	2.38155	0.48264	0	2508.5	86.5

Compliance Wells

There are 7 compliance wells

Well	Samples	Non-Detects	% ND	Total
MW-2	30	2	6.66667	502.1
MW-3	30	30	100	71.565
MW-4	30	29	96.6667	76.365
MW-5	30	30	100	71.565
MW-6	30	17	56.6667	152.065
MW-7	30	30	100	71.565
MW-8	30	5	16.6667	541.265

Well	Mean	Std Dev	Dif From Bkg	Std Err	Rank Sum	Rank Mean
MW-2	16.7367	9.22465	14.3551	1.54036	6007	200.233
MW-3	2.3855	0.474738	0.00394828	1.54036	2595	86.5
MW-4	2.5455	1.01552	0.163948	1.54036	2688.5	89.6167
MW-5	2.3855	0.474738	0.00394828	1.54036	2595	86.5
MW-6	5.06883	3.54163	2.68728	1.54036	3897.5	129.917
MW-7	2.3855	0.474738	0.00394828	1.54036	2595	86.5
MW-8	18.0422	13.3836	15.6606	1.54036	5793.5	193.117

Analysis of Variance Statistics

SS Wells	9686.41
SS Total	17768.5

Kruskal-Wallis Statistics

Non-Detect Rank	86.5
Background Rank Sum	2508.5
Background Rank Mean	86.5
H Statistic	108.304
H Adjusted for Ties	172.658

Interwell Analyses for Metals

Poisson Tolerance Limit

Parameter: Arsenic

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit

Poisson Count of 28 background Samples = 265.47
Degrees of Freedom = 532

95% Confidence Values

Chi-Squared Value (95% Confidence) = 586.766
Lambda (from Zack's formula) = 10.478
Smallest Degrees of Freedom = 34
Upper Tolerance Limit (95%) = 16

99% Confidence Values

Chi-Squared Value (99% Confidence) = 610.811
Lambda (from Zack's formula) = 10.9073
Smallest Degrees of Freedom = 40
Upper Tolerance Limit (99%) = 19

	Date	Result	Impacted 95%	Impacted 99%
MW-2	9/8/1994	ND<10	FALSE	FALSE
	10/20/1994	ND<10	FALSE	FALSE
	1/5/1995	ND<10	FALSE	FALSE
	3/23/1995	ND<10	FALSE	FALSE
	7/18/1995	ND<10	FALSE	FALSE
	2/20/1996	ND<10	FALSE	FALSE
	8/29/1996	ND<10	FALSE	FALSE
	2/4/1997	ND<10	FALSE	FALSE
	8/27/1997	ND<10	FALSE	FALSE
	2/11/1998	11	FALSE	FALSE
	9/2/1998	14	FALSE	FALSE
	2/22/1999	ND<10	FALSE	FALSE
	8/24/1999	ND<10	FALSE	FALSE
	2/10/2000	ND<10	FALSE	FALSE
	8/2/2000	10	FALSE	FALSE
	2/8/2001	ND<10	FALSE	FALSE
	8/9/2001	ND<10	FALSE	FALSE
	2/14/2002	ND<10	FALSE	FALSE
	8/22/2002	21	TRUE	TRUE
	2/5/2003	17	TRUE	FALSE
	8/14/2003	ND<10	FALSE	FALSE
	2/19/2004	ND<10	FALSE	FALSE
	8/25/2004	16	FALSE	FALSE
	2/21/2005	ND<10	FALSE	FALSE
	8/8/2005	16	FALSE	FALSE
	2/23/2006	12	FALSE	FALSE
	8/28/2006	16	FALSE	FALSE
	2/6/2007	11	FALSE	FALSE
	8/13/2007	17	TRUE	FALSE
MW-7	9/8/1994	ND<10	FALSE	FALSE
	10/20/1994	ND<10	FALSE	FALSE
	1/5/1995	ND<10	FALSE	FALSE
	3/23/1995	ND<10	FALSE	FALSE
	7/18/1995	ND<10	FALSE	FALSE
	2/20/1996	ND<10	FALSE	FALSE
	8/29/1996	ND<10	FALSE	FALSE
	2/4/1997	ND<10	FALSE	FALSE
	8/27/1997	ND<10	FALSE	FALSE
	2/11/1998	10	FALSE	FALSE
	9/2/1998	11	FALSE	FALSE
	2/22/1999	ND<10	FALSE	FALSE
	8/24/1999	ND<10	FALSE	FALSE
	2/10/2000	ND<10	FALSE	FALSE
	8/2/2000	13	FALSE	FALSE
	2/8/2001	ND<10	FALSE	FALSE
	8/9/2001	ND<10	FALSE	FALSE
	2/14/2002	ND<10	FALSE	FALSE
	8/22/2002	ND<10	FALSE	FALSE
	2/5/2003	ND<10	FALSE	FALSE
	8/14/2003	ND<10	FALSE	FALSE
	2/19/2004	ND<10	FALSE	FALSE
	8/25/2004	ND<10	FALSE	FALSE
	2/21/2005	ND<10	FALSE	FALSE

8/8/2005	27	TRUE	TRUE
2/23/2006	48	TRUE	TRUE
8/28/2006	ND<10	FALSE	FALSE
2/6/2007	16	FALSE	FALSE
8/13/2007	12	FALSE	FALSE

Poisson Tolerance Limit

Parameter: Barium, total

Natural Logarithm Transformation
Non-Detects Replaced with Detection Limit

Poisson Count of 28 background Samples = 162.966
Degrees of Freedom = 327

95% Confidence Values

Chi-Squared Value (95% Confidence) = 370.171
Lambda (from Zack's formula) = 6.61019
Smallest Degrees of Freedom = 24
Upper Tolerance Limit (95%) = 11

99% Confidence Values

Chi-Squared Value (99% Confidence) = 389.417
Lambda (from Zack's formula) = 6.95387
Smallest Degrees of Freedom = 29
Upper Tolerance Limit (99%) = 13.5

	Date	Result	Impacted 95%	Impacted 99%
MW-2	9/8/1994	ND<6.21461	FALSE	FALSE
	10/20/1994	ND<6.21461	FALSE	FALSE
	1/5/1995	ND<6.21461	FALSE	FALSE
	3/23/1995	ND<6.21461	FALSE	FALSE
	7/18/1995	ND<6.21461	FALSE	FALSE
	2/20/1996	ND<6.21461	FALSE	FALSE
	8/29/1996	ND<6.21461	FALSE	FALSE
	2/4/1997	ND<6.21461	FALSE	FALSE
	8/27/1997	ND<6.21461	FALSE	FALSE
	2/11/1998	ND<6.21461	FALSE	FALSE
	9/2/1998	ND<6.21461	FALSE	FALSE
	2/22/1999	ND<6.21461	FALSE	FALSE
	8/24/1999	ND<6.21461	FALSE	FALSE
	2/10/2000	ND<6.21461	FALSE	FALSE
	8/2/2000	ND<6.21461	FALSE	FALSE
	2/8/2001	ND<6.21461	FALSE	FALSE
	8/9/2001	ND<6.21461	FALSE	FALSE
	2/14/2002	ND<6.21461	FALSE	FALSE
	8/22/2002	ND<6.21461	FALSE	FALSE
	2/5/2003	ND<6.21461	FALSE	FALSE
	8/14/2003	ND<6.21461	FALSE	FALSE
	2/19/2004	ND<6.21461	FALSE	FALSE
	8/25/2004	ND<6.21461	FALSE	FALSE
	2/21/2005	ND<6.21461	FALSE	FALSE
	8/8/2005	ND<6.21461	FALSE	FALSE
	2/23/2006	ND<6.21461	FALSE	FALSE
	8/28/2006	ND<6.21461	FALSE	FALSE
	2/6/2007	4.99043	FALSE	FALSE
	8/13/2007	5.2575	FALSE	FALSE
MW-4	9/8/1994	ND<6.21461	FALSE	FALSE
	10/20/1994	ND<6.21461	FALSE	FALSE
	1/5/1995	ND<6.21461	FALSE	FALSE
	3/23/1995	ND<6.21461	FALSE	FALSE
	7/18/1995	ND<6.21461	FALSE	FALSE
	2/20/1996	ND<6.21461	FALSE	FALSE
	8/29/1996	ND<6.21461	FALSE	FALSE
	2/4/1997	ND<6.21461	FALSE	FALSE
	8/27/1997	ND<6.21461	FALSE	FALSE
	2/11/1998	ND<6.21461	FALSE	FALSE
	9/2/1998	ND<6.21461	FALSE	FALSE
	2/22/1999	ND<6.21461	FALSE	FALSE
	8/24/1999	ND<6.21461	FALSE	FALSE
	2/10/2000	ND<6.21461	FALSE	FALSE
	8/2/2000	ND<6.21461	FALSE	FALSE
	2/8/2001	ND<6.21461	FALSE	FALSE
	8/9/2001	ND<6.21461	FALSE	FALSE
	2/14/2002	ND<6.21461	FALSE	FALSE
	8/22/2002	ND<6.21461	FALSE	FALSE
	2/5/2003	ND<6.21461	FALSE	FALSE
	8/14/2003	ND<6.21461	FALSE	FALSE
	2/19/2004	ND<6.21461	FALSE	FALSE
	8/25/2004	ND<6.21461	FALSE	FALSE
	2/21/2005	ND<6.21461	FALSE	FALSE

	8/8/2005	ND<6.21461	FALSE	FALSE
	2/23/2006	ND<6.21461	FALSE	FALSE
	8/28/2006	ND<6.21461	FALSE	FALSE
	2/6/2007	ND<4.60517	FALSE	FALSE
	8/13/2007	4.94876	FALSE	FALSE
MW-6	9/8/1994	ND<6.21461	FALSE	FALSE
	10/20/1994	ND<6.21461	FALSE	FALSE
	1/5/1995	ND<6.21461	FALSE	FALSE
	3/23/1995	ND<6.21461	FALSE	FALSE
	7/18/1995	ND<6.21461	FALSE	FALSE
	2/20/1996	ND<6.21461	FALSE	FALSE
	8/29/1996	ND<6.21461	FALSE	FALSE
	2/4/1997	ND<6.21461	FALSE	FALSE
	8/27/1997	ND<6.21461	FALSE	FALSE
	2/11/1998	ND<6.21461	FALSE	FALSE
	9/2/1998	ND<6.21461	FALSE	FALSE
	2/22/1999	ND<6.21461	FALSE	FALSE
	8/24/1999	ND<6.21461	FALSE	FALSE
	2/10/2000	ND<6.21461	FALSE	FALSE
	8/2/2000	ND<6.21461	FALSE	FALSE
	2/8/2001	ND<6.21461	FALSE	FALSE
	8/9/2001	ND<6.21461	FALSE	FALSE
	2/14/2002	ND<6.21461	FALSE	FALSE
	8/22/2002	ND<6.21461	FALSE	FALSE
	2/5/2003	ND<6.21461	FALSE	FALSE
	8/14/2003	6.37502	FALSE	FALSE
	2/19/2004	6.59441	FALSE	FALSE
	8/25/2004	ND<6.21461	FALSE	FALSE
	2/21/2005	ND<6.21461	FALSE	FALSE
	8/8/2005	ND<6.21461	FALSE	FALSE
	2/23/2006	ND<6.21461	FALSE	FALSE
	8/28/2006	ND<6.21461	FALSE	FALSE
	2/6/2007	5.81114	FALSE	FALSE
	8/13/2007	5.4161	FALSE	FALSE
MW-8	9/8/1994	ND<6.21461	FALSE	FALSE
	10/20/1994	ND<6.21461	FALSE	FALSE
	1/5/1995	ND<6.21461	FALSE	FALSE
	3/23/1995	ND<6.21461	FALSE	FALSE
	7/18/1995	ND<6.21461	FALSE	FALSE
	2/20/1996	ND<6.21461	FALSE	FALSE
	8/29/1996	ND<6.21461	FALSE	FALSE
	2/4/1997	ND<6.21461	FALSE	FALSE
	8/27/1997	ND<6.21461	FALSE	FALSE
	2/11/1998	ND<6.21461	FALSE	FALSE
	9/2/1998	ND<6.21461	FALSE	FALSE
	2/22/1999	ND<6.21461	FALSE	FALSE
	8/24/1999	ND<6.21461	FALSE	FALSE
	2/10/2000	ND<6.21461	FALSE	FALSE
	8/2/2000	ND<6.21461	FALSE	FALSE
	2/8/2001	ND<6.21461	FALSE	FALSE
	8/9/2001	ND<6.21461	FALSE	FALSE
	2/14/2002	ND<6.21461	FALSE	FALSE
	8/22/2002	ND<6.21461	FALSE	FALSE
	2/5/2003	ND<6.21461	FALSE	FALSE
	8/14/2003	ND<6.21461	FALSE	FALSE
	2/19/2004	ND<6.21461	FALSE	FALSE
	8/25/2004	ND<6.21461	FALSE	FALSE
	2/21/2005	ND<6.21461	FALSE	FALSE
	8/8/2005	ND<6.21461	FALSE	FALSE
	2/23/2006	ND<6.21461	FALSE	FALSE
	8/28/2006	ND<6.21461	FALSE	FALSE
	2/6/2007	4.85981	FALSE	FALSE
	8/13/2007	4.85203	FALSE	FALSE

Poisson Tolerance Limit

Parameter: Cadmium, total

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit

Poisson Count of 28 background Samples = 27.06
Degrees of Freedom = 56

95% Confidence Values

Chi-Squared Value (95% Confidence) = 74.4683
Lambda (from Zack's formula) = 1.32979
Smallest Degrees of Freedom = 8
Upper Tolerance Limit (95%) = 3

99% Confidence Values

Chi-Squared Value (99% Confidence) = 83.5136
Lambda (from Zack's formula) = 1.49131
Smallest Degrees of Freedom = 11
Upper Tolerance Limit (99%) = 4.5

	Date	Result	Impacted 95%	Impacted 99%
MW-6	9/8/1994	ND<1	FALSE	FALSE
	10/20/1994	ND<1	FALSE	FALSE
	1/5/1995	ND<1	FALSE	FALSE
	3/23/1995	ND<1	FALSE	FALSE
	7/18/1995	ND<1	FALSE	FALSE
	2/20/1996	ND<1	FALSE	FALSE
	8/29/1996	1	FALSE	FALSE
	2/4/1997	ND<1	FALSE	FALSE
	8/27/1997	ND<1	FALSE	FALSE
	2/11/1998	ND<1	FALSE	FALSE
	9/2/1998	ND<1	FALSE	FALSE
	2/22/1999	ND<1	FALSE	FALSE
	8/24/1999	ND<1	FALSE	FALSE
	2/10/2000	ND<1	FALSE	FALSE
	8/2/2000	ND<1	FALSE	FALSE
	2/8/2001	ND<1	FALSE	FALSE
	8/9/2001	ND<1	FALSE	FALSE
	2/14/2002	ND<1	FALSE	FALSE
	8/22/2002	ND<1	FALSE	FALSE
	2/5/2003	ND<1	FALSE	FALSE
	8/14/2003	ND<1	FALSE	FALSE
	2/19/2004	ND<1	FALSE	FALSE
	8/25/2004	1	FALSE	FALSE
	2/21/2005	4	TRUE	FALSE
	8/8/2005	ND<1	FALSE	FALSE
	2/23/2006	2	FALSE	FALSE
	8/28/2006	ND<1	FALSE	FALSE
	2/6/2007	1	FALSE	FALSE
	8/13/2007	1	FALSE	FALSE

Non-Parametric Tolerance Interval

Parameter: Chromium, total

Original Data (Not Transformed)
Non-Detects Replaced with 1/2 DL

Total Percent Non-Detects = 63.4783%
Background Samples (n) = 28
Maximum Background Concentration = 13
Minimum Coverage = 89.9%
Average Coverage = 96.5517%

Well	Sample	Result	Impacted
MW-3	9/8/1994	ND<5	FALSE
MW-3	10/20/1994	ND<5	FALSE
MW-3	1/5/1995	ND<5	FALSE
MW-3	3/23/1995	ND<5	FALSE
MW-3	7/18/1995	ND<5	FALSE
MW-3	2/20/1996	ND<5	FALSE
MW-3	8/29/1996	12	FALSE
MW-3	2/4/1997	13	FALSE
MW-3	8/27/1997	ND<5	FALSE
MW-3	2/11/1998	18	TRUE
MW-3	9/2/1998	ND<5	FALSE
MW-3	2/22/1999	ND<5	FALSE
MW-3	8/24/1999	ND<5	FALSE
MW-3	2/10/2000	ND<5	FALSE
MW-3	8/2/2000	24	TRUE
MW-3	2/8/2001	ND<5	FALSE
MW-3	8/9/2001	ND<5	FALSE
MW-3	2/14/2002	21	TRUE
MW-3	8/22/2002	47	TRUE
MW-3	2/5/2003	28	TRUE
MW-3	8/14/2003	ND<5	FALSE
MW-3	2/19/2004	20	TRUE
MW-3	8/25/2004	21	TRUE
MW-3	2/21/2005	32	TRUE
MW-3	8/8/2005	12	FALSE
MW-3	2/23/2006	ND<5	FALSE
MW-3	8/28/2006	21	TRUE
MW-3	2/6/2007	ND<5	FALSE
MW-3	8/13/2007	16	TRUE
MW-7	9/8/1994	17	TRUE
MW-7	10/20/1994	ND<5	FALSE
MW-7	1/5/1995	ND<5	FALSE
MW-7	3/23/1995	ND<5	FALSE
MW-7	7/18/1995	10	FALSE
MW-7	2/20/1996	22	TRUE
MW-7	8/29/1996	49	TRUE
MW-7	2/4/1997	10	FALSE
MW-7	8/27/1997	100	TRUE
MW-7	2/11/1998	60	TRUE
MW-7	9/2/1998	117	TRUE
MW-7	2/22/1999	31	TRUE
MW-7	8/24/1999	ND<5	FALSE
MW-7	2/10/2000	ND<5	FALSE
MW-7	8/2/2000	350	TRUE
MW-7	2/8/2001	ND<5	FALSE
MW-7	8/9/2001	52	TRUE
MW-7	2/14/2002	ND<5	FALSE
MW-7	8/22/2002	ND<5	FALSE
MW-7	2/5/2003	299	TRUE
MW-7	8/14/2003	ND<5	FALSE
MW-7	2/19/2004	ND<5	FALSE
MW-7	8/25/2004	72	TRUE
MW-7	2/21/2005	163	TRUE
MW-7	8/8/2005	32	TRUE
MW-7	2/23/2006	26	TRUE
MW-7	8/28/2006	ND<5	FALSE
MW-7	2/6/2007	16	TRUE
MW-7	8/13/2007	16	TRUE
MW-4	9/8/1994	ND<5	FALSE
MW-4	10/20/1994	ND<5	FALSE

MW-4	1/5/1995	ND<5	FALSE
MW-4	3/23/1995	ND<5	FALSE
MW-4	7/18/1995	ND<5	FALSE
MW-4	2/20/1996	ND<5	FALSE
MW-4	8/29/1996	ND<5	FALSE
MW-4	2/4/1997	ND<5	FALSE
MW-4	8/27/1997	ND<5	FALSE
MW-4	2/11/1998	ND<5	FALSE
MW-4	9/2/1998	11	FALSE
MW-4	2/22/1999	ND<5	FALSE
MW-4	8/24/1999	ND<5	FALSE
MW-4	2/10/2000	ND<5	FALSE
MW-4	8/2/2000	ND<5	FALSE
MW-4	2/8/2001	ND<5	FALSE
MW-4	8/9/2001	ND<5	FALSE
MW-4	2/14/2002	ND<5	FALSE
MW-4	8/22/2002	ND<5	FALSE
MW-4	2/5/2003	70	TRUE
MW-4	8/14/2003	ND<5	FALSE
MW-4	2/19/2004	27	TRUE
MW-4	8/25/2004	16	TRUE
MW-4	2/21/2005	16	TRUE
MW-4	8/8/2005	ND<5	FALSE
MW-4	2/23/2006	ND<5	FALSE
MW-4	8/28/2006	ND<5	FALSE
MW-4	2/6/2007	11	FALSE
MW-4	8/13/2007	10	FALSE

Poisson Tolerance Limit

Parameter: Lead, total

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit

Poisson Count of 28 background Samples = 265.07
Degrees of Freedom = 532

95% Confidence Values

Chi-Squared Value (95% Confidence) = 586.766
Lambda (from Zack's formula) = 10.478
Smallest Degrees of Freedom = 34
Upper Tolerance Limit (95%) = 16

99% Confidence Values

Chi-Squared Value (99% Confidence) = 610.811
Lambda (from Zack's formula) = 10.9073
Smallest Degrees of Freedom = 40
Upper Tolerance Limit (99%) = 19

	Date	Result	Impacted 95%	Impacted 99%
MW-7	9/8/1994	44	TRUE	TRUE
	10/20/1994	ND<10	FALSE	FALSE
	1/5/1995	ND<10	FALSE	FALSE
	3/23/1995	ND<10	FALSE	FALSE
	7/18/1995	ND<10	FALSE	FALSE
	2/20/1996	11	FALSE	FALSE
	8/29/1996	43	TRUE	TRUE
	2/4/1997	ND<10	FALSE	FALSE
	8/27/1997	79	TRUE	TRUE
	2/11/1998	31	TRUE	TRUE
	9/2/1998	48	TRUE	TRUE
	2/22/1999	31	TRUE	TRUE
	8/24/1999	ND<10	FALSE	FALSE
	2/10/2000	ND<10	FALSE	FALSE
	8/2/2000	66	TRUE	TRUE
	2/8/2001	ND<10	FALSE	FALSE
	8/9/2001	23	TRUE	TRUE
	2/14/2002	ND<10	FALSE	FALSE
	8/22/2002	ND<10	FALSE	FALSE
	2/5/2003	68	TRUE	TRUE
	8/14/2003	ND<10	FALSE	FALSE
	2/19/2004	ND<10	FALSE	FALSE
	8/25/2004	23	TRUE	TRUE
	2/21/2005	41	TRUE	TRUE
	8/8/2005	60	TRUE	TRUE
	2/23/2006	42	TRUE	TRUE
	8/28/2006	ND<10	FALSE	FALSE
	2/6/2007	14	FALSE	FALSE
	8/13/2007	13	FALSE	FALSE

Poisson Tolerance Limit

Parameter: Vanadium

Natural Logarithm Transformation
Non-Detects Replaced with Detection Limit

Poisson Count of 28 background Samples = 98.2622
Degrees of Freedom = 198

95% Confidence Values

Chi-Squared Value (95% Confidence) = 231.829
Lambda (from Zack's formula) = 4.13981
Smallest Degrees of Freedom = 17
Upper Tolerance Limit (95%) = 7.5

99% Confidence Values

Chi-Squared Value (99% Confidence) = 247.212
Lambda (from Zack's formula) = 4.41449
Smallest Degrees of Freedom = 21
Upper Tolerance Limit (99%) = 9.5

	Date	Result	Impacted 95%	Impacted 99%
MW-7	9/8/1994	4.04305	FALSE	FALSE
	10/20/1994	ND<3.68888	FALSE	FALSE
	1/5/1995	ND<3.68888	FALSE	FALSE
	3/23/1995	ND<3.68888	FALSE	FALSE
	7/18/1995	ND<3.68888	FALSE	FALSE
	2/20/1996	3.68888	FALSE	FALSE
	8/29/1996	5.05625	FALSE	FALSE
	2/4/1997	ND<3.68888	FALSE	FALSE
	8/27/1997	5.03695	FALSE	FALSE
	2/11/1998	5.0876	FALSE	FALSE
	9/2/1998	5.50533	FALSE	FALSE
	2/22/1999	3.73767	FALSE	FALSE
	8/24/1999	ND<3.68888	FALSE	FALSE
	2/10/2000	ND<3.68888	FALSE	FALSE
	8/2/2000	6.95368	FALSE	FALSE
	2/8/2001	ND<3.68888	FALSE	FALSE
	8/9/2001	4.64439	FALSE	FALSE
	2/14/2002	ND<3.68888	FALSE	FALSE
	8/22/2002	ND<3.68888	FALSE	FALSE
	2/5/2003	7.05962	FALSE	FALSE
	8/14/2003	ND<3.68888	FALSE	FALSE
	2/19/2004	ND<3.68888	FALSE	FALSE
	8/25/2004	5.55683	FALSE	FALSE
	2/21/2005	6.40688	FALSE	FALSE
	8/8/2005	4.72739	FALSE	FALSE
	2/23/2006	4.78749	FALSE	FALSE
	8/28/2006	ND<3.68888	FALSE	FALSE
	2/6/2007	4.02535	FALSE	FALSE
	8/13/2007	4.18965	FALSE	FALSE
MW-3	9/8/1994	ND<3.68888	FALSE	FALSE
	10/20/1994	ND<3.68888	FALSE	FALSE
	1/5/1995	ND<3.68888	FALSE	FALSE
	3/23/1995	ND<3.68888	FALSE	FALSE
	7/18/1995	ND<3.68888	FALSE	FALSE
	2/20/1996	ND<3.68888	FALSE	FALSE
	8/29/1996	ND<3.68888	FALSE	FALSE
	2/4/1997	ND<3.68888	FALSE	FALSE
	8/27/1997	ND<3.68888	FALSE	FALSE
	2/11/1998	ND<3.68888	FALSE	FALSE
	9/2/1998	ND<3.68888	FALSE	FALSE
	2/22/1999	ND<3.68888	FALSE	FALSE
	8/24/1999	ND<3.68888	FALSE	FALSE
	2/10/2000	ND<3.68888	FALSE	FALSE
	8/2/2000	4.17439	FALSE	FALSE
	2/8/2001	ND<3.68888	FALSE	FALSE
	8/9/2001	ND<3.68888	FALSE	FALSE
	2/14/2002	4.68213	FALSE	FALSE
	8/22/2002	5.34711	FALSE	FALSE
	2/5/2003	4.00733	FALSE	FALSE
	8/14/2003	ND<3.68888	FALSE	FALSE
	2/19/2004	4.47734	FALSE	FALSE
	8/25/2004	4.85203	FALSE	FALSE
	2/21/2005	4.74493	FALSE	FALSE

8/8/2005	ND<3.68888	FALSE	FALSE
2/23/2006	ND<3.68888	FALSE	FALSE
8/28/2006	4.5326	FALSE	FALSE
2/6/2007	3.43399	FALSE	FALSE
8/13/2007	3.68888	FALSE	FALSE

Non-Parametric Tolerance Interval

Parameter: Zinc

Original Data (Not Transformed)
Non-Detects Replaced with 1/2 DL

Total Percent Non-Detects = 89.5349%
Background Samples (n) = 28
Maximum Background Concentration = 243
Minimum Coverage = 89.9%
Average Coverage = 96.5517%

Well	Sample	Result	Impacted
MW-3	9/8/1994	ND<25	FALSE
MW-3	10/20/1994	ND<25	FALSE
MW-3	1/5/1995	ND<25	FALSE
MW-3	3/23/1995	ND<25	FALSE
MW-3	7/18/1995	ND<25	FALSE
MW-3	2/20/1996	ND<25	FALSE
MW-3	8/29/1996	ND<25	FALSE
MW-3	2/4/1997	ND<25	FALSE
MW-3	8/27/1997	ND<25	FALSE
MW-3	2/11/1998	ND<25	FALSE
MW-3	9/2/1998	ND<25	FALSE
MW-3	2/22/1999	ND<5	FALSE
MW-3	8/24/1999	ND<25	FALSE
MW-3	2/10/2000	ND<25	FALSE
MW-3	8/2/2000	ND<25	FALSE
MW-3	2/8/2001	ND<25	FALSE
MW-3	8/9/2001	ND<25	FALSE
MW-3	2/14/2002	ND<25	FALSE
MW-3	8/22/2002	ND<25	FALSE
MW-3	2/5/2003	ND<25	FALSE
MW-3	8/14/2003	ND<25	FALSE
MW-3	2/19/2004	ND<25	FALSE
MW-3	8/25/2004	ND<25	FALSE
MW-3	2/21/2005	ND<25	FALSE
MW-3	8/8/2005	ND<25	FALSE
MW-3	2/23/2006	ND<25	FALSE
MW-3	8/28/2006	ND<25	FALSE
MW-3	2/6/2007	14	FALSE
MW-3	8/13/2007	10	FALSE
MW-5	9/8/1994	72	FALSE
MW-5	10/20/1994	ND<25	FALSE
MW-5	1/5/1995	ND<25	FALSE
MW-5	3/23/1995	ND<25	FALSE
MW-5	7/18/1995	112	FALSE
MW-5	2/20/1996	ND<25	FALSE
MW-5	8/29/1996	ND<25	FALSE
MW-5	2/4/1997	ND<25	FALSE
MW-5	8/27/1997	ND<25	FALSE
MW-5	2/11/1998	ND<25	FALSE
MW-5	9/2/1998	ND<25	FALSE
MW-5	2/22/1999	ND<5	FALSE
MW-5	8/24/1999	ND<25	FALSE
MW-5	2/10/2000	ND<25	FALSE
MW-5	8/2/2000	ND<25	FALSE
MW-5	2/8/2001	ND<25	FALSE
MW-5	8/9/2001	ND<25	FALSE
MW-5	2/14/2002	ND<25	FALSE
MW-5	8/22/2002	ND<25	FALSE
MW-5	2/5/2003	ND<25	FALSE
MW-5	8/14/2003	ND<25	FALSE
MW-5	2/19/2004	ND<25	FALSE
MW-5	8/25/2004	ND<25	FALSE
MW-5	2/21/2005	ND<25	FALSE
MW-5	8/8/2005	ND<25	FALSE
MW-5	2/23/2006	ND<25	FALSE
MW-5	8/28/2006	ND<25	FALSE
MW-5	2/6/2007	19	FALSE
MW-5	8/13/2007	11	FALSE

Laboratory Results

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
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ID#: 6043

WAYNE CO. LANDFILL (DUDLEY)
MR. TIM ROGERS
460B LANDFILL ROAD
DUDLEY ,NC 28333

DATE COLLECTED: 08/13/07
DATE REPORTED : 09/04/07

REVIEWED BY:

PARAMETERS	MDL	SWSL	Well #1	Well #2	Well #3	Well #4	Well #5	Analysis Date	Analyst	Method Code
PH (field measurement), Units			5.0	4.4	4.7	4.7	4.7	08/13/07	RJH	SM4500HB
Antimony, ug/l	0.05	6.0	0.1 J	0.2 J	0.1 J	--- U	--- U	08/20/07	CMF	EPA200.8
Arsenic, ug/l	0.47	10.0	2.0 J	17	7.6 J	4.0 J	1.1 J	08/20/07	CMF	EPA200.8
Barium, ug/l	0.04	100.0	45.7 J	192	71.6 J	141	43.5 J	08/20/07	CMF	EPA200.8
Beryllium, ug/l	0.08	1.0	0.2 J	--- U	0.7 J	0.2 J	0.5 J	08/20/07	CMF	EPA200.8
Cadmium, ug/l	0.06	1.0	0.1 J	0.1 J	0.2 J	0.1 J	0.3 J	08/20/07	CMF	EPA200.8
Cobalt, ug/l	0.41	10.0	--- U	0.6 J	2.4 J	0.5 J	0.9 J	08/20/07	CMF	EPA200.8
Copper, ug/l	0.20	10.0	1.2 J	0.6 J	4.2 J	1.0 J	--- U	08/20/07	CMF	EPA200.8
Total Chromium, ug/l	0.24	10.0	6.4 J	1.8 J	16	10	1.3 J	08/20/07	CMF	EPA200.8
Lead, ug/l	0.07	10.0	4.7 J	3.6 J	8.6 J	8.1 J	1.0 J	08/20/07	CMF	EPA200.8
Mercury, ug/l	0.04	0.20		--- U				08/20/07	CMF	EPA200.8
Nickel, ug/l	0.66	50.0	--- U	2.4 J	4.1 J	--- U	1.4 J	08/20/07	CMF	EPA200.8
Selenium, ug/l	0.35	10.0	--- U	1.7 J	0.7 J	1.1 J	--- U	08/20/07	CMF	EPA200.8
Silver, ug/l	0.52	10.0	--- U	--- U	--- U	--- U	--- U	08/20/07	CMF	EPA200.8
Thallium, ug/l	0.07	5.0	0.2 J	0.1 J	0.2 J	--- U	--- U	08/20/07	CMF	EPA200.8
Vanadium, ug/l	0.42	25.0	11.7 J	6.9 J	40	11.9 J	6.1 J	08/20/07	CMF	EPA200.8
Zinc, ug/l	0.20	10.0	2.0 J	0.2 J	10	1.6 J	11	08/20/07	CMF	EPA200.8
Conductivity (at 25c), uMhos	1.0	1.0	19	1323	40	65	68	08/13/07	RJH	SM2510B
Temperature, °C			18	19	18	18	19	08/13/07	RJH	SM2550B
Static Water Level, feet			16.94	5.60	1.03	7.28	3.00	08/13/07	RJH	
Well Depth, feet			26.61	16.65	19.46	19.85	18.84	08/13/07	RJH	

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
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ID#: 6043

WAYNE CO. LANDFILL (DUDLEY)
MR. TIM ROGERS
460B LANDFILL ROAD
DUDLEY ,NC 28333

DATE COLLECTED: 08/13/07
DATE REPORTED : 09/04/07

REVIEWED BY:

PARAMETERS	MDL	SWSL	Well #6	Well #7	Well #8	Equipment Blank	Trip Blank	Analysis Date	Analyst	Method Code
PH (field measurement), Units			4.5	4.5	4.8			08/13/07	RJH	SM4500HB
Antimony, ug/l	0.05	6.0	0.1 J	0.1 J	--- U	0.1 J		08/20/07	CMF	EPA200.8
Arsenic, ug/l	0.47	10.0	1.1 J	12	3.9 J	--- U		08/20/07	CMF	EPA200.8
Barium, ug/l	0.04	100.0	225	94.4 J	128	4.9 J		08/20/07	CMF	EPA200.8
Beryllium, ug/l	0.08	1.0	0.4 J	0.3 J	0.2 J	--- U		08/20/07	CMF	EPA200.8
Cadmium, ug/l	0.06	1.0	1	0.2 J	0.1 J	--- U		08/20/07	CMF	EPA200.8
Cobalt, ug/l	0.41	10.0	--- U	0.6 J	0.8 J	--- U		08/20/07	CMF	EPA200.8
Copper, ug/l	0.20	10.0	0.6 J	1.6 J	1.4 J	--- U		08/20/07	CMF	EPA200.8
Total Chromium, ug/l	0.24	10.0	4.6 J	16	9.2 J	--- U		08/20/07	CMF	EPA200.8
Lead, ug/l	0.07	10.0	2.7 J	13	7.1 J	--- U		08/20/07	CMF	EPA200.8
Mercury, ug/l	0.04	0.20			0.16 J	--- U		08/20/07	CMF	EPA200.8
Nickel, ug/l	0.66	50.0	2.0 J	0.7 J	--- U	--- U		08/20/07	CMF	EPA200.8
Selenium, ug/l	0.35	10.0	--- U	2.3 J	0.7 J	--- U		08/20/07	CMF	EPA200.8
Silver, ug/l	0.52	10.0	--- U	--- U	--- U	--- U		08/20/07	CMF	EPA200.8
Thallium, ug/l	0.07	5.0	0.1 J	0.2 J	0.1 J	--- U		08/20/07	CMF	EPA200.8
Vanadium, ug/l	0.42	25.0	6.4 J	66	10.5 J	--- U		08/20/07	CMF	EPA200.8
Zinc, ug/l	0.20	10.0	2.2 J	3.3 J	4.8 J	--- U		08/20/07	CMF	EPA200.8
Conductivity (at 25c), uMhos	1.0	1.0	171	478	93			08/13/07	RJH	SM2510B
Temperature, °C			20	21	16			08/13/07	RJH	SM2550B
Static Water Level, feet			6.54	8.85	19.90			08/13/07	RJH	
Well Depth, feet			17.21	19.89	30.01			08/13/07	RJH	

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: WAYNE CO. LANDFILL (DUDLEY)
MR. TIM ROGERS
460B LANDFILL ROAD
DUDLEY, NC 28333

CLIENT ID: 6043

ANALYST: MAO
DATE COLLECTED: 08/13/07
DATE REPORTED: 09/04/07

Page: 1

REVIEWED BY:

VOLATILE ORGANICS
EPA METHOD 8260B

PARAMETERS, ug/l	MDL	SWSL	08/16/07 Well #1	08/16/07 Well #3	08/16/07 Well #4	08/17/07 Well #5	08/17/07 Well #6
Date Analyzed:							
1. Chloromethane	0.18	1.0	--- U	--- U	--- U	--- U	--- U
2. Vinyl Chloride	0.34	1.0	--- U	--- U	--- U	--- U	--- U
3. Bromomethane	0.26	10.0	--- U	--- U	--- U	--- U	--- U
4. Chloroethane	0.29	10.0	--- U	--- U	--- U	--- U	--- U
5. Trichlorofluoromethane	0.13	1.0	--- U	--- U	--- U	--- U	--- U
6. 1,1-Dichloroethene	0.14	5.0	--- U	--- U	--- U	--- U	--- U
7. Acetone	1.21	100.0	--- U	--- U	--- U	--- U	--- U
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	--- U	--- U	--- U	--- U
11. trans-1,2-Dichloroethene	0.13	5.0	--- U	--- U	--- U	--- U	--- U
12. 1,1-Dichloroethane	0.16	5.0	--- U	--- U	--- U	--- U	--- U
13. Vinyl Acetate	0.20	5.0	--- U	--- U	--- U	--- U	--- U
14. Cis-1,2-Dichloroethene	0.14	5.0	--- U	--- U	--- U	--- U	--- U
15. 2-Butanone	0.85	100.0	1.60 J	1.30 J	1.50 J	2.30 J	2.00 J
16. Bromochloromethane	0.11	3.0	--- U	--- U	--- U	--- U	--- U
17. Chloroform	0.13	5.0	1.80 J	--- U	0.30 J	--- 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	--- U	--- U	--- U	--- U
21. 1,2-Dichloroethane	0.12	1.0	--- U	--- U	--- U	--- U	--- U
22. Trichloroethene	0.13	1.0	--- U	--- U	--- U	--- U	--- U
23. 1,2-Dichloropropane	0.17	1.0	--- U	--- U	--- U	--- 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	--- 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	5.0	--- U	--- U	--- U	--- U	--- U
30. Tetrachloroethene	0.16	1.0	--- U	--- U	--- 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	--- U	--- U	--- U	--- U	0.40 J
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	--- U	0.50 J
44. 1,2-Dichlorobenzene	0.13	5.0	--- U	--- U	--- U	--- 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

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: WAYNE CO. LANDFILL (DUDLEY)
MR. TIM ROGERS
460B LANDFILL ROAD
DUDLEY, NC 28333

CLIENT ID: 6043

ANALYST: MAO
DATE COLLECTED: 08/13/07
DATE REPORTED: 09/04/07

REVIEWED BY:

VOLATILE ORGANICS
EPA METHOD 8260B

PARAMETERS, ug/l	Date Analyzed: MDL	SWSL	08/23/07 Well #7
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	2.20 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	5.0	--- U
14. Cis-1,2-Dichloroethene	0.14	5.0	--- U
15. 2-Butanone	0.85	100.0	1.80 J
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	0.20 J
28. trans-1,3-Dichloropropene	0.14	1.0	--- U
29. 1,1,2-Trichloroethane	0.20	5.0	--- U
30. Tetrachloroethene	0.16	1.0	--- U
31. 2-Hexanone	1.00	50.0	--- U
32. Dibromochloromethane	0.14	1.0	--- 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	4.0	--- 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	1.0	--- 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	1.0	--- 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 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: WAYNE CO. LANDFILL (DUDLEY)
MR. TIM ROGERS
460B LANDFILL ROAD
DUDLEY, NC 28333

CLIENT ID: 6043

ANALYST: CHS
DATE COLLECTED: 08/13/07
DATE EXTRACTED: 08/15/07
DATE ANALYZED: 08/23/07
DATE REPORTED: 09/04/07

REVIEWED BY:

BASE/NEUTRAL COMPOUNDS
EPA METHOD 8270C

PARAMETERS, ug/l	MDL	SWSL	Well #2	Well #8	Equipment Blank
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	5.19	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	--- U	--- U	--- U
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. Ethyl Methanesulfonate	5.26	10.0	--- U	--- U	--- U
38. Methyl Methanesulfonate	4.92	10.0	--- U	--- U	--- U
39. Acetophenone	2.89	10.0	--- U	--- U	--- U
40. 2-Acetylaminofluorene	3.98	20.0	--- U	--- U	--- U
41. 4-Aminobiphenyl	4.12	15.0	--- U	--- U	--- U
42. Benzyl Alcohol	4.47	20.0	--- U	--- U	--- U
43. 4-Chloroaniline	3.36	20.0	--- U	--- U	--- U
44. Chlorobenzilate	5.12	10.0	--- U	--- U	--- U
45. Diallate	2.98	10.0	--- U	--- U	--- U
46. Dibenzofuran	4.28	10.0	--- U	--- U	--- U
47. 3,3-Dichlorobenzidine	4.22	20.0	--- U	--- U	--- U
48. Dimethoate	3.98	20.0	--- 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

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

CLIENT: WAYNE CO. LANDFILL (DUDLEY)
MR. TIM ROGERS
460B LANDFILL ROAD
DUDLEY, NC 28333

CLIENT ID: 6043

ANALYST: CHS
DATE COLLECTED: 08/13/07
DATE EXTRACTED: 08/15/07
DATE ANALYZED: 08/23/07
DATE REPORTED: 09/04/07

REVIEWED BY:

BASE/NEUTRAL COMPOUNDS
EPA METHOD 8270C

PARAMETERS, ug/l	MDL	SWSL	Well #2	Well #8	Equipment Blank
49. P-Dimethylaminoazobenzene	2.89	10.0	--- U	--- U	--- U
50. 7,12-Dimethylbenz[a]anthracene	5.26	10.0	--- U	--- U	--- U
51. 3,3-Dimethylbenzadine	3.21	10.0	--- U	--- U	--- U
52. 1,3-Dinitrobenzene	2.89	20.0	--- U	--- U	--- U
53. Diphenylamine	5.10	10.0	--- U	--- U	--- U
54. Disulfoton	4.28	10.0	--- U	--- U	--- U
55. Famphur	3.98	20.0	--- U	--- U	--- U
56. Hexachloropropene	4.31	10.0	--- U	--- U	--- U
57. Isosafrole	2.88	10.0	--- U	--- U	--- U
58. Kepone	2.78	20.0	--- U	--- U	--- U
59. Methapyrilene	3.54	100.0	--- U	--- U	--- U
60. 3-Methylchloroanthrene	4.21	10.0	--- U	--- U	--- U
61. 2-Methylnaphthalene	3.79	10.0	--- U	--- U	--- U
62. Methyl Parathion	4.32	10.0	--- U	--- U	--- U
63. 1,4-Naphthoquinone	4.00	10.0	--- U	--- U	--- U
64. 1-Naphthylamine	5.61	10.0	--- U	--- U	--- U
65. 2-Naphthylamine	4.62	10.0	--- U	--- U	--- U
66. 2-Nitroaniline	3.61	50.0	--- U	--- U	--- U
67. 3-Nitroaniline	4.81	50.0	--- U	--- U	--- U
68. 4-Nitroaniline	4.22	20.0	--- U	--- U	--- U
69. 5-Nitro-O-Toluidine	4.01	10.0	--- U	--- U	--- U
70. N-Nitroso-n-butlyamine	3.63	10.0	--- U	--- U	--- U
71. N-Nitrosodiethylamine	3.83	20.0	--- U	--- U	--- U
72. N-Nitrosomethylethylamine	3.95	10.0	--- U	--- U	--- U
73. N-Nitrosopiperidine	5.19	20.0	--- U	--- U	--- U
74. N-Nitrosopyrrolidine	2.89	10.0	--- U	--- U	--- U
75. Parathion	3.12	10.0	--- U	--- U	--- U
76. Pentachlorobenzene	3.92	10.0	--- U	--- U	--- U
77. Pentachloronitrobenzene	3.71	20.0	--- U	--- U	--- U
78. Phenacetin	4.41	20.0	--- U	--- U	--- U
79. 1,4-Phenylenediamine	2.42	10.0	--- U	--- U	--- U
80. Phorate	2.89	10.0	--- U	--- U	--- U
81. Pronamide	3.69	10.0	--- U	--- U	--- U
82. Safrole	4.12	10.0	--- U	--- U	--- U
83. 1,2,4,5-Tetrachlorobenzene	5.01	10.0	--- U	--- U	--- U
84. Thionazin	4.62	20.0	--- U	--- U	--- U
85. O-Toluidine	4.11	10.0	--- U	--- U	--- U
86. 1,3,5-Trinitrobenzene	3.98	10.0	--- U	--- U	--- U
87. 0,0,0-Triethyl Phosphorothioate	3.61	10.0	--- U	--- U	--- U
88. Hexachloroethane	1.49	10.0	--- U	--- U	--- U
89. Isodrin	2.42	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

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

CLIENT: WAYNE CO. LANDFILL (DUDLEY)
MR. TIM ROGERS
460B LANDFILL ROAD
DUDLEY, NC 28333

CLIENT ID: 6043

ANALYST: MAO
DATE COLLECTED: 08/13/07
DATE REPORTED: 09/04/07

REVIEWED BY:

LANDFILL APPENDIX II
EPA METHOD 8260B

PARAMETERS, ug/l	Date Analyzed: MDL	SWSL	08/16/07 Well #2	08/23/07 Well #8	08/23/07 Equipment Blank	08/23/07 Trip Blank
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	1.60 J	1.60 J	1.60 J	2.10 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	0.20 J	0.20 J
11. trans-1,2-Dichloroethene	0.13	5.0	--- U	--- U	--- U	--- U
12. 1,1-Dichloroethane	0.16	5.0	0.40 J	0.50 J	--- U	--- U
13. Vinyl Acetate	0.20	5.0	--- U	--- U	--- U	--- U
14. Cis-1,2-Dichloroethene	0.14	5.0	0.20 J	--- U	--- U	--- U
15. 2-Butanone	0.85	100.0	1.60 J	--- U	--- U	1.00 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	0.40 J	--- 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	0.20 J	--- U	0.80 J	2.10
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	10.90	2.50 J	--- 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	2.50	7.60	--- U	--- U
44. 1,2-Dichlorobenzene	0.13	5.0	0.40 J	--- 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

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: WAYNE CO. LANDFILL (DUDLEY)
MR. TIM ROGERS
460B LANDFILL ROAD
DUDLEY, NC 28333

CLIENT ID: 6043

ANALYST: MAO
DATE COLLECTED: 08/13/07
DATE REPORTED: 09/04/07

REVIEWED BY:

LANDFILL APPENDIX II
EPA METHOD 8260B

PARAMETERS, ug/l	Date Analyzed: MDL	SWSL	08/16/07 Well #2	08/23/07 Well #8	08/23/07 Equipment Blank	08/23/07 Trip Blank
48. Acrolein	5.46	50.0	--- U	--- U	--- U	--- U
49. Allyl Chloride	0.17	10.0	--- U	--- U	--- U	--- U
50. Chloroprene	0.16	20.0	--- U	--- U	--- U	--- U
51. 1,3-Dichlorobenzene	0.13	5.0	0.20 J	--- U	--- U	--- U
52. Dichlorodifluoromethane	0.16	5.0	0.20 J	--- U	--- U	--- U
53. 1,3-Dichloropropane	0.12	1.0	--- U	--- U	--- U	--- U
54. 2,2-Dichloropropane	0.18	15.0	--- U	--- U	--- U	--- U
55. 1,1-Dichloropropene	0.13	5.0	--- U	--- U	--- U	--- U
56. Ethyl Methacrylate	0.14	10.0	--- U	--- U	--- U	--- U
57. Hexachlorobutadiene	0.22	10.0	--- U	--- U	--- U	--- U
58. Isobutyl Alcohol	5.23	100.0	--- U	--- U	--- U	--- U
59. Methacrylonitrile	1.64	100.0	--- U	--- U	--- U	--- U
60. Methyl Methacrylate	0.10	30.0	--- U	--- U	--- U	--- U
61. Naphthalene	0.13	10.0	--- U	--- U	--- U	--- U
62. Propionitrile	1.60	150.0	--- U	--- U	--- U	--- U
63. 1,2,4-Trichlorobenzene	0.11	10.0	--- U	--- U	--- U	--- U
64. Acetonitrile	5.96	50.0	--- U	--- U	36.90 J	--- 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: 6043 **Week:** 33

WAYNE CO. LANDFILL (DUDLEY)
MR. LLOYD COOK
460B LANDFILL ROAD
DUDLEY NC 28333

(919) 689-2994

DISINFECTION: ☐ CHLORINE ☐ UV ☐ NONE ☐ _____

CHLORINE NEUTRALIZED AT COLLECTION																						
pH CHECK (LAB)							12	12	12			12	12	12								
CONTAINER TYPE, P/G							P	P	P	P		G	G	G	G	G	G	G	G			
CHEMICAL PRESERVATION							A	B	A	A		E	E	E	A	A	E	E	E			
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	8260 Dup. 2	8270C B\N	8270C Dup. 1	8260B App. II	8260 App. II 1	8260 App. II 2				
Well #1	08 13 07	1200		18	4	G	G	G	G	G	G	G										
Well #2	08 13 07	1000		19	7	G	G	G	G	G				G	G	G	G	G				
Well #3	08 13 07	1045		18	4	G	G	G	G	G	G	G										
Well #4	08 13 07	1120		18	4	G	G	G	G	G	G	G										
Well #5	08 13 07	1015		19	4	G	G	G	G	G	G	G										
Well #6	08 13 07	1100		20	4	G	G	G	G	G	G		G									
Well #7	08 13 07	0930		21	4	G	G	G	G	G	G	G										
Well #8	08 13 07	1140		16	6	G	G	G	G	G				G	G	G	G					
Equipment Blank	08 13 07				5		G							G	G	G	G					
Trip Blank					2																	

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) Nigel Fox

SAMPLES RECEIVED IN LAB AT 1.0 °C

RELINQUISHED BY (SIG.) (SAMPLER)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME
Bob N. Nigel 08	1307	[signature]	8/13/07 2:30
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

№ 147287