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Groundwater Sampling Report and Statistical Analysis

Prepared for

Wayne County Subtitle D Landfill, Phase 1
 Dudley, North Carolina

February, 2005



MESCO Project Number: G05016.0

Completed on August 5, 2005



Municipal Services
 Garner, NC

Engineering Company, P.A.
 Boone, NC

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

**Municipal
Services**



**Engineering
Company, P.A.**

August 5, 2005

Mr. Matt Gamble
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 Subtitle D Lined Landfill, phase 1
MESCO Project No. G5016.0

Dear Mr. Gamble:

Municipal Engineering Services Company, P.A. (MESCO) completed the sampling report and statistical analyses for the Wayne County Subtitle D Lined Landfill, Phase 1 located in Dudley, NC. Environment 1 Inc. of Greenville, NC, sampled and analyzed the Subtitle D Landfill for the Appendix I list of metals and volatile organic constituents (VOCs) on February 22, 2005 as part of the detection monitoring program. The laboratory results and statistical analysis are included herein.

The detection monitoring program for the Subtitle D Landfill consists of compliance wells (MW-2, MW-3, MW-4, MW-5, MW-6, MW-7, MW-8, MW-9, MW-10, MW-11, MW-12, MW-13), surface waters (SW-2, SW-3, SW-4, SW-5), background well (MW-1), the leachate lagoon (LE-1) and the forcemain from the phase 2 landfill sump (LE-2). However, due to the lack of historical data since this is the fourth and final baseline event for the phase 2 landfill the results for compliance wells MW-11, MW-12, and MW-13 were not included in this statistical analyses. The leachate lagoon (LE-1) was reported to be dry during the sampling event therefore was not sampled. All of the other monitoring locations were sampled during this event.

All detected constituents were compared with North Carolina Groundwater Standards for regulatory exceedance. The results are shown in the enclosed table titled "Exceedance Scan". The following table (Table 1) summarizes those constituents that exceed the Standard.

Table 1. Exceedance Summary

Monitoring Location	Chromium	Lead
MW-1	x	x
MW-2	x	x
MW-12	x	x
SW-2		x

x = concentration greater than groundwater standard

Chromium and lead were detected in concentrations above the Standard within compliance wells MW-2 and MW-12 as well as the background well MW-1. A water sample obtained from surface water SW-2 also contained levels of lead above the MCL. No VOCs, which are more indicative of leachate contamination, were found within any of the monitoring locations.

MESCO also completed the statistical analysis as required by the Solid Waste Section. The statistical analysis was conducted only upon the monitoring wells surrounding the phase 1 lined landfill since there is currently insufficient data for the phase 2 portion. The purpose of these analyses is to determine, in comparison to background levels, statistical significance of constituents detected during the February 2005 event.

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 1) summarizes the methods used for four different %ND ranges.

Table 1. 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 total of 5 metals were tested for statistical significance. For arsenic and cobalt the Poisson tolerance limit was used on the original data with no ND substitution since the constituents had never been detected within the background well. For chromium, lead and zinc the non-parametric tolerance limit with ½ NDs was used on the original data as its %ND was not normally distributed or the Poisson count exceeded the required value.

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 2 summarizes those metals that were found statistically significant by interwell comparison analysis.

Table 2. Interwell Analyses Summary

Well	Arsenic	Chromium
MW-2		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. Compliance wells MW-2 and MW-7 contained concentrations of chromium and arsenic respectively. Both constituents were found above the Standard and statistically increased compared to background levels. However, after further intrawell analysis formulated by Shewhart-CUSUM charts neither metal was found to have increased compared to their own background levels. Therefore the increases in metals within MW-2 and MW-7 are not considered to be statistically significant.

Conclusion

The statistical analysis results conducted on metals indicate no signs of inorganic contamination originating from the Wayne County Subtitle D Landfill phase 1. Although chromium and lead were found above the MCL within MW-2 and MW-7 respectively they were not found to have increased according to intrawell analyses. The metals are likely natural in origin as the background well also contained levels of chromium and lead above the NCGW2L. 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 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 August 2005 and following that event statistical analyses will be able to be conducted for the entire facility including phase 2. 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. Lloyd Cook
Wayne County

Exceedance Scan
Wayne Co. Subtitle D Landfill, Phases 1 & 2

Well ID	Parameter Name1	Sample Date	Result	Unit	PQL2	NCGW2L3	Exceedance
SW-2	Cadmium, total	2/22/2005	0.003	mg/l	0.001	0.005	
SW-2	Chromium, total	2/22/2005	0.013	mg/l	0.01	0.05	
SW-2	Lead, total	2/22/2005	0.026	mg/l	0.01	0.015	0.011
SW-2	Zinc, total	2/22/2005	0.061	mg/l	0.05	2.1	
MW-12	Arsenic, total	2/22/2005	0.014	mg/l	0.01	0.05	
MW-12	Barium, total	2/22/2005	0.967	mg/l	0.5	2	
MW-12	Cobalt, total	2/22/2005	0.014	mg/l	0.01		
MW-11	Chromium, total	2/22/2005	0.025	mg/l	0.01	0.05	
MW-12	Chromium, total	2/22/2005	0.079	mg/l	0.01	0.05	0.029
MW-11	Lead, total	2/22/2005	0.013	mg/l	0.01	0.015	
MW-12	Lead, total	2/22/2005	0.049	mg/l	0.01	0.015	0.034
MW-13	Lead, total	2/22/2005	0.011	mg/l	0.01	0.015	
MW-12	Vanadium	2/22/2005	0.104	mg/l	0.04		
MW-12	Zinc, total	2/22/2005	0.177	mg/l	0.05	2.1	
LE-2	Acetone	2/22/2005	106	ug/l	100	700	
LE-2	Dichloromethane	2/22/2005	42	ug/l	10	5	37
LE-2	2-Butanone	2/22/2005	170	ug/l	100	170	
LE-2	Toluene	2/22/2005	9.8	ug/l	5	1000	
MW-1	Chromium, total	2/22/2005	0.129	mg/l	0.01	0.05	0.079
MW-2	Chromium, total	2/22/2005	0.166	mg/l	0.01	0.05	0.116
MW-1	Lead, total	2/22/2005	0.018	mg/l	0.01	0.015	0.003
MW-2	Lead, total	2/22/2005	0.042	mg/l	0.01	0.015	0.027
MW-1	Vanadium	2/22/2005	0.258	mg/l	0.04		
MW-2	Vanadium	2/22/2005	0.254	mg/l	0.04		
MW-7	Arsenic, total	2/22/2005	0.026	mg/l	0.01	0.05	
MW-7	Cobalt, total	2/22/2005	0.011	mg/l	0.01		
MW-7	Chromium, total	2/22/2005	0.027	mg/l	0.01	0.05	
MW-8	Chromium, total	2/22/2005	0.014	mg/l	0.01	0.05	
MW-10	Chromium, total	2/22/2005	0.018	mg/l	0.01	0.05	

1 Table only contains detected constituents.

2 PQL = Practical Quantitation Limit

3 NCGW2L = North Carolina Ground Water 2L Standard

Indented Monitoring Location = Part of Phase 3 so not included in this Statistical Analysis

SW-2
Zinc
LE-2
2-Butanone
MW-7
Cobalt

Hydrologic Properties at Monitoring Well Locations
Wayne County Subtitle D Landfill

Monitoring Well	Hydraulic Conductivity (cm/sec)	Effective Porosity (%)	Hydraulic Gradient	Flow Rate (ft/yr)	Flow Direction
MW-1	3.21E-04	31%	0.011	11.84	S78W
MW-2	1.37E-03	31%	0.007	33.50	S84W
MW-3	9.72E-04	31%	0.006	20.49	N79W
MW-4	2.33E-04	9%	0.017	45.40	S67W
MW-5	1.45E-04	9%	0.016	26.33	N88W
MW-6	8.38E-05	31%	0.018	5.10	S83W
MW-7	6.84E-05	9%	0.004	3.04	N41W
MW-8	1.68E-04	9%	0.013	25.36	S71W
MW-9	6.37E-04	31%	0.010	21.14	S63W
MW-10	4.74E-04	31%	0.040	64.06	S41W

NOTE: Data for effective porosity obtained from Design Hydrogeologic Study for Wayne County.
Hydraulic Conductivity values were obtained from slug tests performed on each monitoring well.
Hydrologic Gradient taken from the February 22, 2005 sampling event.
Flow rate (\bar{Q}) is defined by the equation:

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

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



Statistical Analyses Summary

Inter-Well Analysis Summary
Wayne County Subtitle D Lined Landfill

Background Well: MW-1

Arsenic, total

%ND	Normality	Method	ND Adj.	Upper Limit (a = 95%)	Unit
100.00	-	Poisson tolerance interval	ND	17	ug/l

Well	Result	Significance
MW-7	15	yes

Cobalt, total

%ND	Normality	Method	ND Adj.	Upper Limit (a = 95%)	Unit
100.00	-	Poisson tolerance interval	ND	17	ug/l

Well	Result	Significance
MW-7	143	no

Chromium, total

%ND	Normality	Method	ND Adj.	Upper Limit (a = 95%)	Unit
35.29	-	Non-Parametric Tolerance interval	1/2ND	108	ug/l

Well	Result	Significance
MW-2	143	yes

Lead, total

%ND	Normality	Method	ND Adj.	Upper Limit (a = 95%)	Unit
58.82	-	Non-Parametric Tolerance interval	1/2ND	76	ug/l

Well	Result	Significance
MW-2	14	no

Zinc, total

%ND	Normality	Method	ND Adj.	Upper Limit (a = 95%)	Unit
94.12	-	Non-Parametric Tolerance interval	1/2ND	148	ug/l

Well	Result	Significance
MW-8	63	no

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

Intra-Well Analysis Summary (Metals)
Wayne County Subtitle D Lined Landfill

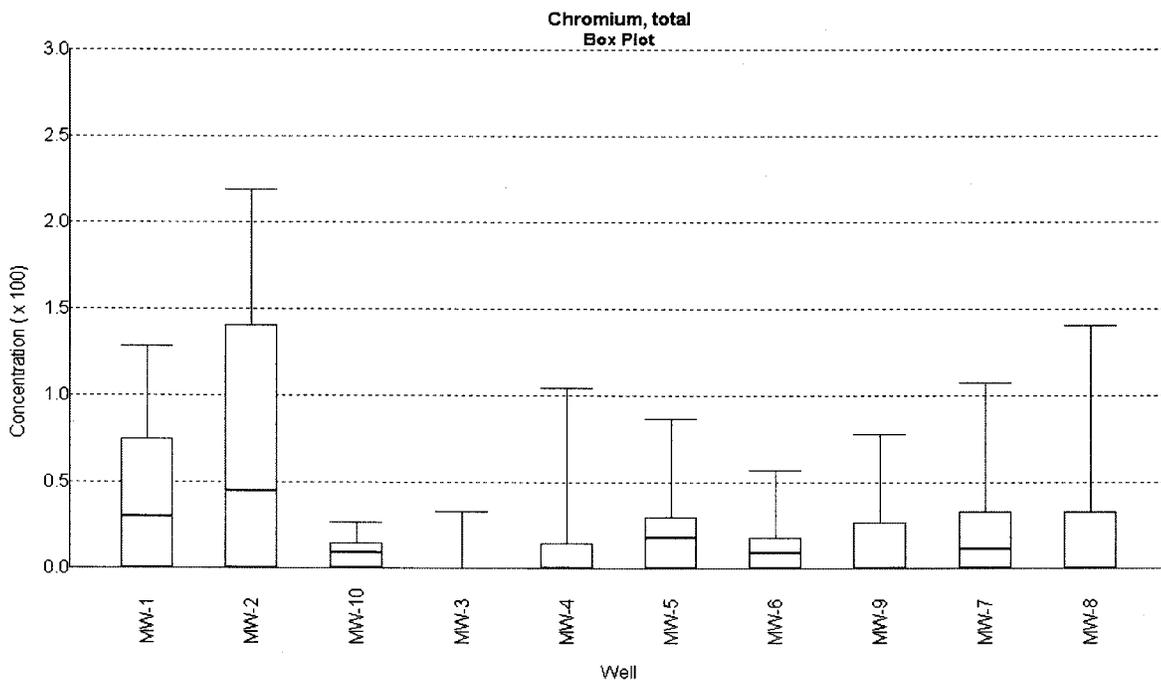
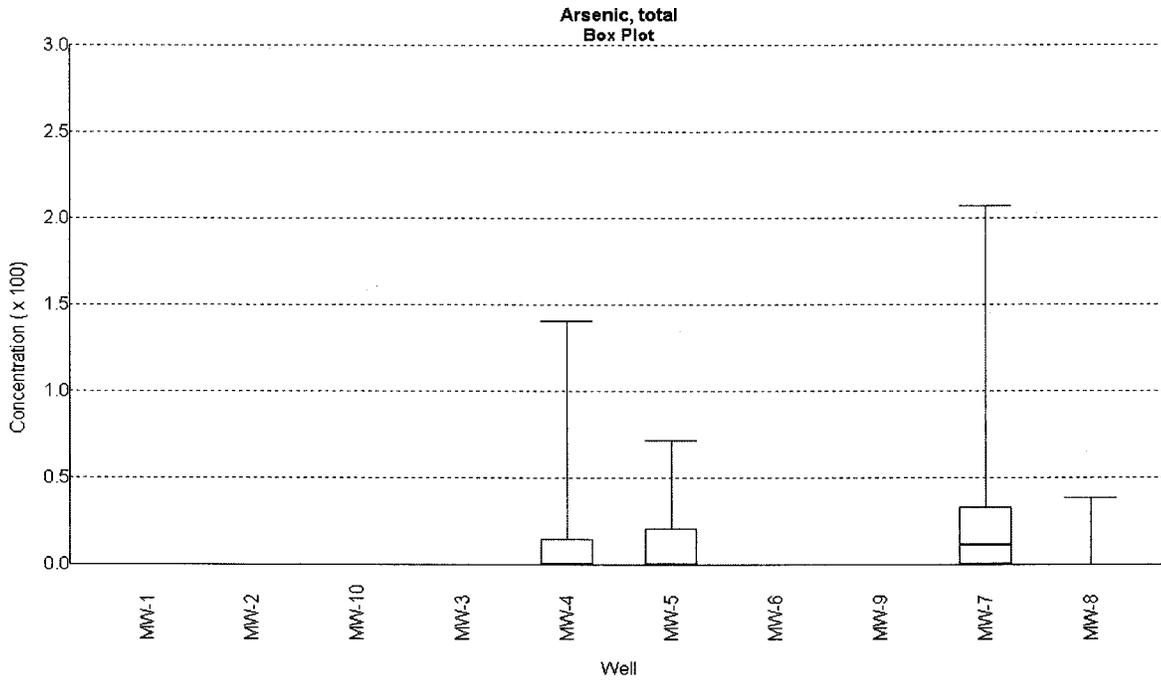
Well	Arsenic	Chromium
MW-2		no
MW-7	no	

EXPLANATION

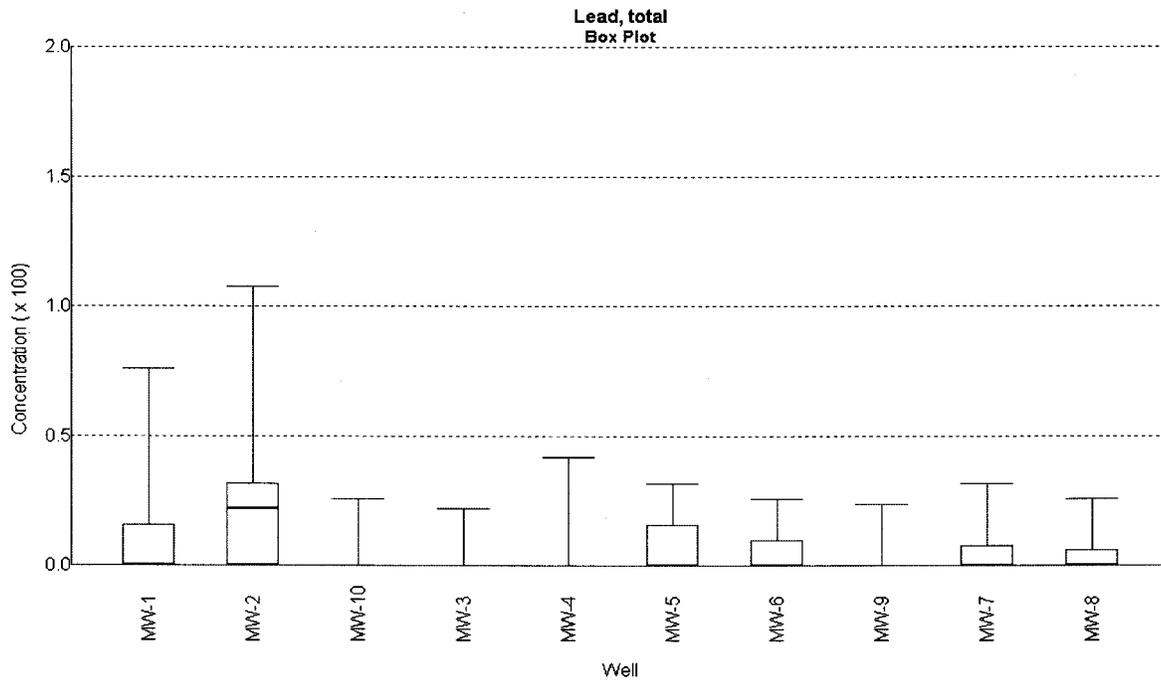
yes=detection statistically significant by intrawell analysis
no=detection not statistically significant by intrawell analysis

NO metals have increased according to Intrawell Analysis

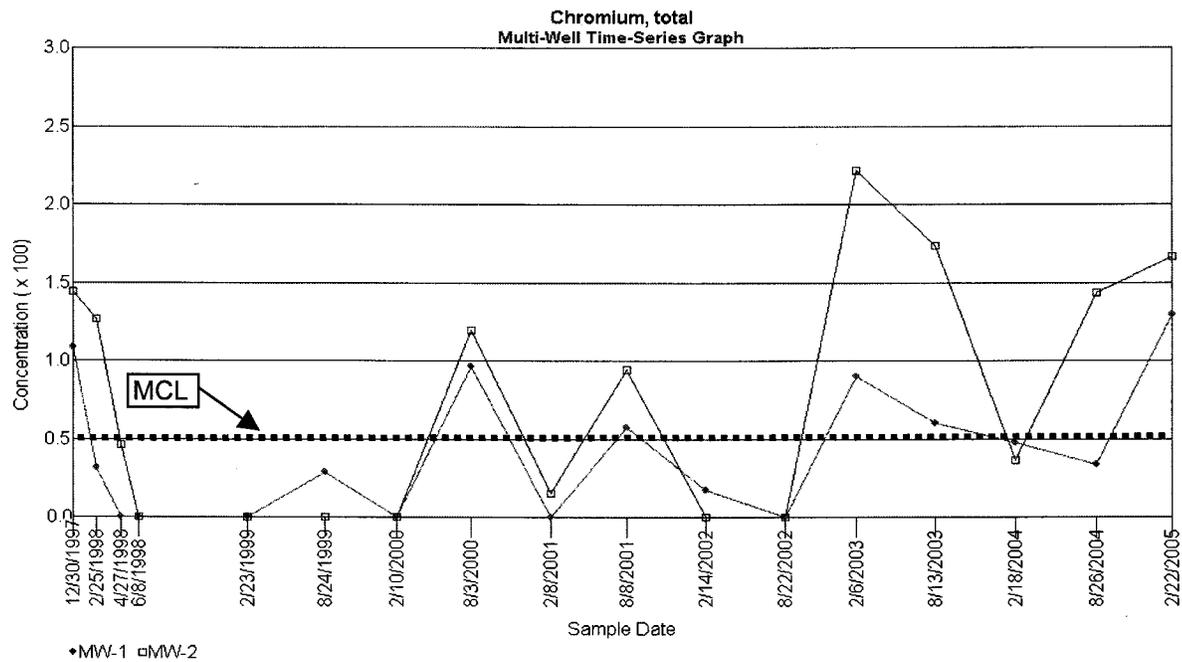
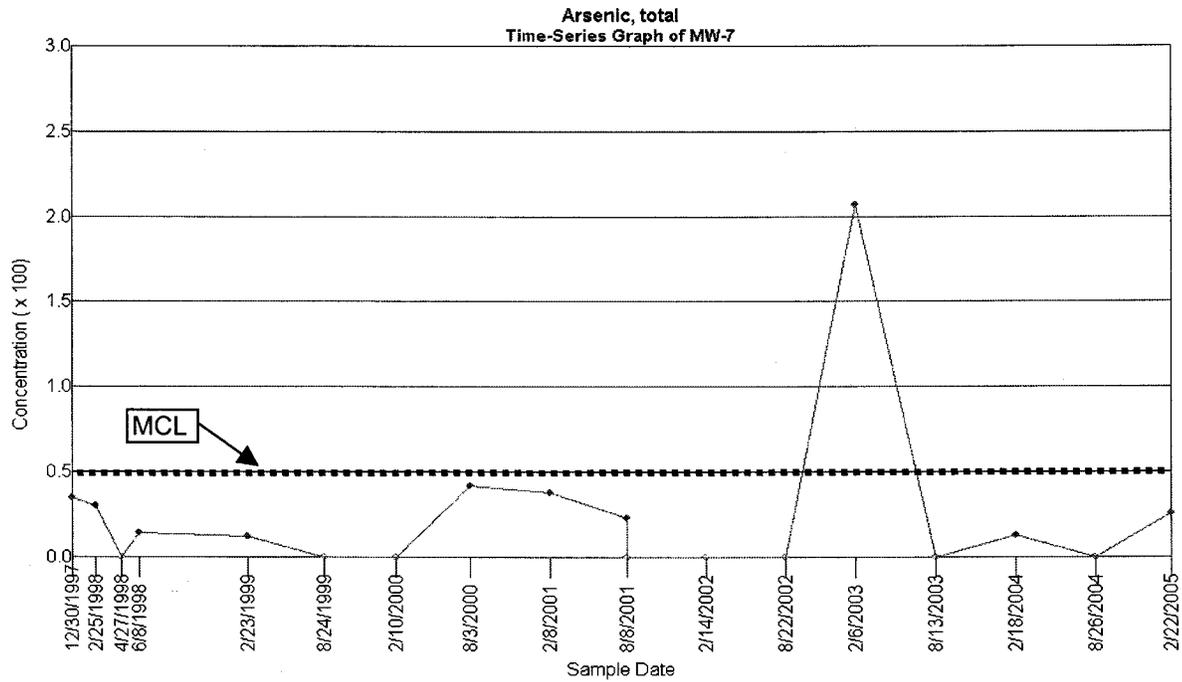
Box Plots for Select Constituents
Wayne County Subtitle D Lined Landfill



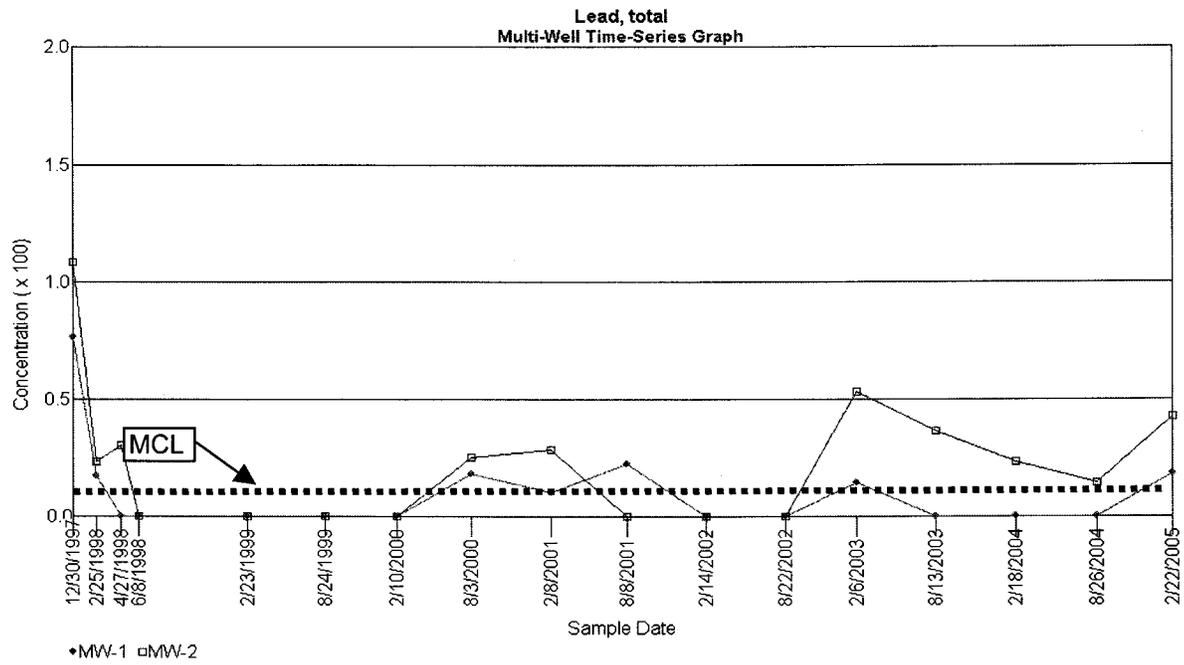
Box Plots for Select Constituents
Wayne County Subtitle D Lined Landfill



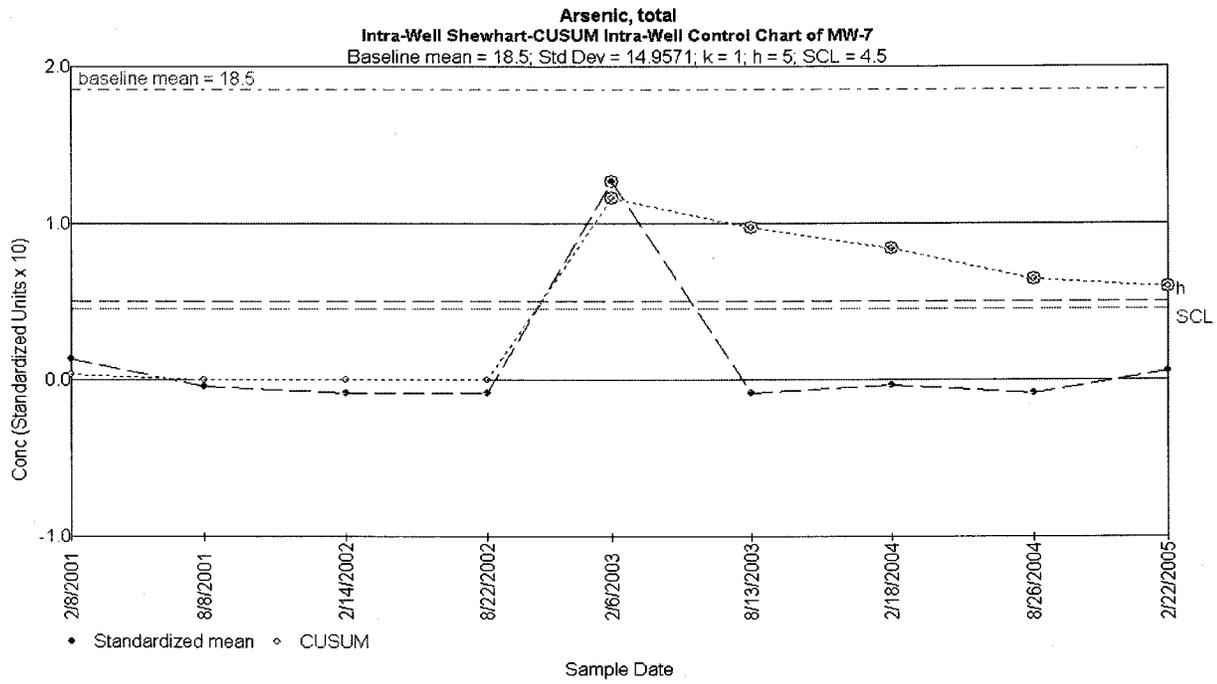
Time Series Plots for Select Constituents
Wayne County Subtitle D Lined Landfill



Time Series Plots for Select Constituents
Wayne County Subtitle D Lined Landfill



Shewhart-CUSUM charts for selected constituents
Wayne County Subtitle D Lined Landfill





Basic Statistics

Basic Statistics**Parameter: Arsenic, total**

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

	Total Observations
172	
Total Non-Detects	148
Pooled Mean	9.82558
Pooled Std Dev	20.3431
Background Mean	5
Background Std Dev	0

Background Wells

There is 1 background well

Well	Samples	Non-Detects	% ND	Total		
MW-1	17	17	100	85		

Well	Mean	Std Dev	Std Err	Rank Sum	Rank Mean
MW-1	5	0	0	1266.5	74.5

Compliance Wells

There are 9 compliance wells

Well	Samples	Non-Detects	% ND	Total		
MW-10	18	18	100	90		
MW-2	17	17	100	85		
MW-3	17	17	100	85		
MW-4	17	12	70.5882	297		
MW-5	17	11	64.7059	236		
MW-6	17	17	100	85		
MW-7	18	8	44.4444	480		
MW-8	17	14	82.3529	162		
MW-9	17	17	100	85		

Well	Mean	Std Dev	Dif From Bk	Std Err	Rank Sum	Rank Mean
MW-10	5	0	0	6.61562	1341	74.5
MW-2	5	0	0	6.70946	1266.5	74.5
MW-3	5	0	0	6.70946	1266.5	74.5
MW-4	17.4706	33.6621	12.4706	6.70946	1697	99.8235
MW-5	13.8824	17.1715	8.88235	6.70946	1775.5	104.441
MW-6	5	0	0	6.70946	1266.5	74.5
MW-7	26.6667	46.8389	21.6667	6.61562	2202	122.333
MW-8	9.52941	10.7361	4.52941	6.70946	1530	90
MW-9	5	0	0	6.70946	1266.5	74.5

Analysis of Variance Statistics

SS Wells	8778.53
SS Total	70766.8

Kruskal-Wallis Statistics

Non-Detect Rank	74.5
Background Rank Sum	1266.5
Background Rank Mean	74.5
H Statistic	18.81
H Adjusted for Ties	51.8298

Basic Statistics**Parameter: Chromium, total**

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

	Total Observations
172	
Total Non-Detects	83
Pooled Mean	26.5058
Pooled Std Dev	38.1863
Background Mean	42.7059
Background Std Dev	41.0393

Background Wells

There is 1 background well

Well	Samples	Non-Detects	% ND	Total		
MW-1	17	6	35.2941	726		

Well	Mean	Std Dev	Std Err	Rank Sum	Rank Mean
MW-1	42.7059	41.0393	0	1843	108.412

Compliance Wells

There are 9 compliance wells

Well	Samples	Non-Detects	% ND	Total		
MW-10	18	7	38.8889	208		
MW-2	17	6	35.2941	1313		
MW-3	17	15	88.2353	126		
MW-4	17	10	58.8235	387		
MW-5	17	6	35.2941	427		
MW-6	17	8	47.0588	263		
MW-7	18	7	38.8889	399		
MW-8	17	9	52.9412	400		
MW-9	17	9	52.9412	310		

Well	Mean	Std Dev	Dif From Bk	Std Err	Rank Sum	Rank Mean
MW-10	11.5556	7.08953	-31.1503	11.4882	1398	77.6667
MW-2	77.2353	74.482	34.5294	11.6511	1975	116.176
MW-3	7.41176	7.5916	-35.2941	11.6511	872	51.2941
MW-4	22.7647	33.9918	-19.9412	11.6511	1301	76.5294
MW-5	25.1176	25.639	-17.5882	11.6511	1639	96.4118
MW-6	15.4706	14.5263	-27.2353	11.6511	1402	82.4706
MW-7	22.1667	25.6108	-20.5392	11.4882	1638	91
MW-8	23.5294	34.5636	-19.1765	11.6511	1422	83.6471
MW-9	18.2353	20.608	-24.4706	11.6511	1388	81.6471

Analysis of Variance Statistics

SS Wells	62425
SS Total	249351

Kruskal-Wallis Statistics

Non-Detect Rank	42
Background Rank Sum	1843
Background Rank Mean	108.412
H Statistic	20.2239
H Adjusted for Ties	22.7838

Basic Statistics**Parameter: Cobalt, total**

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

	Total Observations
172	
Total Non-Detects	163
Pooled Mean	5.79651
Pooled Std Dev	4.23151
Background Mean	5
Background Std Dev	0

Background Wells

There is 1 background well

Well	Samples	Non-Detects	% ND	Total
MW-1	17	17	100	85

Well	Mean	Std Dev	Std Err	Rank Sum	Rank Mean
MW-1	5	0	0	1394	82

Compliance Wells

There are 9 compliance wells

Well	Samples	Non-Detects	% ND	Total
MW-10	18	18	100	90
MW-2	17	17	100	85
MW-3	17	17	100	85
MW-4	17	16	94.1176	122
MW-5	17	15	88.2353	113
MW-6	17	17	100	85
MW-7	18	16	88.8889	101
MW-8	17	13	76.4706	146
MW-9	17	17	100	85

Well	Mean	Std Dev	Dif From Bk	Std Err	Rank Sum	Rank Mean
MW-10	5	0	0	1.41073	1476	82
MW-2	5	0	0	1.43074	1394	82
MW-3	5	0	0	1.43074	1394	82
MW-4	7.17647	8.97382	2.17647	1.43074	1484	87.2941
MW-5	6.64706	5.26713	1.64706	1.43074	1567	92.1765
MW-6	5	0	0	1.43074	1394	82
MW-7	5.61111	1.78684	0.611111	1.41073	1642	91.2222
MW-8	8.58824	8.03165	3.58824	1.43074	1739	102.294
MW-9	5	0	0	1.43074	1394	82

Analysis of Variance Statistics

SS Wells	243.13
SS Total	3061.88

Kruskal-Wallis Statistics

Non-Detect Rank	82
Background Rank Sum	1394
Background Rank Mean	82
H Statistic	2.93844
H Adjusted for Ties	19.7331

Basic Statistics**Parameter: Lead, total**

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

	Total Observations
172	
Total Non-Detects	125
Pooled Mean	10.2791
Pooled Std Dev	12.4962
Background Mean	13.2353
Background Std Dev	17.2574

Background Wells

There is 1 background well

Well	Samples	Non-Detects	% ND	Total
MW-1	17	10	58.8235	225

Well	Mean	Std Dev	Std Err	Rank Sum	Rank Mean
MW-1	13.2353	17.2574	0	1647	96.8824

Compliance Wells

There are 9 compliance wells

Well	Samples	Non-Detects	% ND	Total
MW-10	18	16	88.8889	121
MW-2	17	7	41.1765	417
MW-3	17	15	88.2353	115
MW-4	17	14	82.3529	147
MW-5	17	11	64.7059	174
MW-6	17	11	64.7059	143
MW-7	18	14	77.7778	153
MW-8	17	13	76.4706	144
MW-9	17	14	82.3529	129

Well	Mean	Std Dev	Dif From Bk	Std Err	Rank Sum	Rank Mean
MW-10	6.72222	5.35565	-6.51307	3.97009	1306	72.5556
MW-2	24.5294	26.2705	11.2941	4.02641	2049	120.529
MW-3	6.76471	5.03152	-6.47059	4.02641	1241	73
MW-4	8.64706	9.93064	-4.58824	4.02641	1335	78.5294
MW-5	10.2353	8.18939	-3	4.02641	1570	92.3529
MW-6	8.41176	5.9167	-4.82353	4.02641	1514	89.0588
MW-7	8.5	7.71744	-4.73529	3.97009	1478	82.1111
MW-8	8.47059	6.96525	-4.76471	4.02641	1412	83.0588
MW-9	7.58824	6.24559	-5.64706	4.02641	1326	78

Analysis of Variance Statistics

SS Wells	4378.73
SS Total	26702.6

Kruskal-Wallis Statistics

Non-Detect Rank	63
Background Rank Sum	1647
Background Rank Mean	96.8824
H Statistic	12.7706
H Adjusted for Ties	20.7255

Basic Statistics**Parameter: Zinc, total**

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

	Total Observations
172	
Total Non-Detects	150
Pooled Mean	39.6221
Pooled Std Dev	61.5024
Background Mean	32.2353
Background Std Dev	29.8319

Background Wells

There is 1 background well

Well	Samples	Non-Detects	% ND	Total		
MW-1	17	16	94.1176	548		

Well	Mean	Std Dev	Std Err	Rank Sum	Rank Mean
MW-1	32.2353	29.8319	0	1374	80.8235

Compliance Wells

There are 9 compliance wells

Well	Samples	Non-Detects	% ND	Total		
MW-10	18	17	94.4444	500		
MW-2	17	15	88.2353	523		
MW-3	17	17	100	425		
MW-4	17	16	94.1176	545		
MW-5	17	15	88.2353	520		
MW-6	17	17	100	425		
MW-7	18	13	72.2222	951		
MW-8	17	7	41.1765	1953		
MW-9	17	17	100	425		

Well	Mean	Std Dev	Dif From Bk	Std Err	Rank Sum	Rank Mean
MW-10	27.7778	11.7851	-4.45752	19.3321	1442.5	80.1389
MW-2	30.7647	17.2284	-1.47059	19.6064	1447.5	85.1471
MW-3	25	0	-7.23529	19.6064	1283.5	75.5
MW-4	32.0588	29.1043	-0.176471	19.6064	1373	80.7647
MW-5	30.5882	17.5109	-1.64706	19.6064	1446.5	85.0882
MW-6	25	0	-7.23529	19.6064	1283.5	75.5
MW-7	52.8333	51.719	20.598	19.3321	1800.5	100.028
MW-8	114.882	166.593	82.6471	19.6064	2143.5	126.088
MW-9	25	0	-7.23529	19.6064	1283.5	75.5

Analysis of Variance Statistics

SS Wells	117482
SS Total	646814

Kruskal-Wallis Statistics

Non-Detect Rank	75.5
Background Rank Sum	1374
Background Rank Mean	80.8235
H Statistic	15.328
H Adjusted for Ties	45.5187



Interwell Analyses for Metals

Poisson Tolerance Limit**Parameter: Arsenic, total**

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Poisson Count of 17 background Samples = 170

Degrees of Freedom = 342

95% Confidence Values

Chi-Squared Value (95% Confidence) = 386.125

Lambda (from Zack's formula) = 11.3566

Smallest Degrees of Freedom = 36

Upper Tolerance Limit (95%) = 17

99% Confidence Values

Chi-Squared Value (99% Confidence) = 405.766

Lambda (from Zack's formula) = 11.9343

Smallest Degrees of Freedom = 43

Upper Tolerance Limit (99%) = 20.5

	Date	Result	Impacted 95%	Impacted 99%
MW-7	12/30/1997	35	TRUE	TRUE
	2/25/1998	30	TRUE	TRUE
	4/27/1998	ND<10	FALSE	FALSE
	6/8/1998	14	FALSE	FALSE
	2/23/1999	12	FALSE	FALSE
	8/24/1999	ND<10	FALSE	FALSE
	2/10/2000	ND<10	FALSE	FALSE
	8/3/2000	42	TRUE	TRUE
	2/8/2001	38	TRUE	TRUE
	8/8/2001	23	TRUE	TRUE
	8/8/2001	ND<10	FALSE	FALSE
	2/14/2002	ND<10	FALSE	FALSE
	8/22/2002	ND<10	FALSE	FALSE
	2/6/2003	207	TRUE	TRUE
	8/13/2003	ND<10	FALSE	FALSE
	2/18/2004	13	FALSE	FALSE
	8/26/2004	ND<10	FALSE	FALSE
	2/22/2005	26	TRUE	TRUE

Poisson Tolerance Limit**Parameter: Cobalt, total**

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Poisson Count of 17 background Samples = 170

Degrees of Freedom = 342

95% Confidence Values

Chi-Squared Value (95% Confidence) = 386.125

Lambda (from Zack's formula) = 11.3566

Smallest Degrees of Freedom = 36

Upper Tolerance Limit (95%) = 17

99% Confidence Values

Chi-Squared Value (99% Confidence) = 405.766

Lambda (from Zack's formula) = 11.9343

Smallest Degrees of Freedom = 43

Upper Tolerance Limit (99%) = 20.5

	Date	Result	Impacted 95%	Impacted 99%
MW-7	12/30/1997	10	FALSE	FALSE
	2/25/1998	ND<10	FALSE	FALSE
	4/27/1998	ND<10	FALSE	FALSE
	6/8/1998	ND<10	FALSE	FALSE
	2/23/1999	ND<10	FALSE	FALSE
	8/24/1999	ND<10	FALSE	FALSE
	2/10/2000	ND<10	FALSE	FALSE
	8/3/2000	ND<10	FALSE	FALSE
	2/8/2001	ND<10	FALSE	FALSE
	8/8/2001	ND<10	FALSE	FALSE
	8/8/2001	ND<10	FALSE	FALSE
	2/14/2002	ND<10	FALSE	FALSE
	8/22/2002	ND<10	FALSE	FALSE
	2/6/2003	ND<10	FALSE	FALSE
	8/13/2003	ND<10	FALSE	FALSE
	2/18/2004	ND<10	FALSE	FALSE
	8/26/2004	ND<10	FALSE	FALSE
	2/22/2005	11	FALSE	FALSE

Shapiro-Wilks Test of Normality**Parameter: Chromium, total****Background Wells****Normality Test of Parameter Concentrations**

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

K = 8; Samples = 17

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	5	129	124	0.4968	61.6032
2	5	108	103	0.3273	33.7119
3	5	96	91	0.254	23.114
4	5	90	85	0.1988	16.898
5	5	60	55	0.1524	8.382
6	5	57	52	0.1109	5.7668
7	17	47	30	0.0725	2.175
8	28	33	5	0.0359	0.1795
9	31	31	0		
10	33	28	-5		
11	47	17	-30		
12	57	5	-52		
13	60	5	-55		
14	90	5	-85		
15	96	5	-91		
16	108	5	-103		
17	129	5	-124		

Sum of b values = 151.83

Sample Standard Deviation = 41.0393

W Statistic = 0.855458

5% Critical value of 0.892 exceeds 0.855458

Evidence of non-normality at 95% level of significance

1% Critical value of 0.851 is less than 0.855458

Data is normally distributed at 99% level of significance

Non-Parametric Tolerance Interval**Parameter: Chromium, total**

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Total Percent Non-Detects = 35.2941%

Background Samples (n) = 17

Maximum Background Concentration = 129

Minimum Coverage = 83.8%

Average Coverage = 94.4444%

Well	Sample	Result	Impacted
MW-2	12/30/1997	144	TRUE
MW-2	2/25/1998	126	FALSE
MW-2	4/27/1998	46	FALSE
MW-2	6/8/1998	ND<5	FALSE
MW-2	2/23/1999	ND<5	FALSE
MW-2	8/24/1999	ND<5	FALSE
MW-2	2/10/2000	ND<5	FALSE
MW-2	8/3/2000	119	FALSE
MW-2	2/8/2001	15	FALSE
MW-2	8/8/2001	94	FALSE
MW-2	2/14/2002	ND<5	FALSE
MW-2	8/22/2002	ND<5	FALSE
MW-2	2/6/2003	221	TRUE
MW-2	8/13/2003	173	TRUE
MW-2	2/18/2004	36	FALSE
MW-2	8/26/2004	143	TRUE
MW-2	2/22/2005	166	TRUE

Non-Parametric Tolerance Interval**Parameter: Lead, total**

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Total Percent Non-Detects = 50%

Background Samples (n) = 17

Maximum Background Concentration = 76

Minimum Coverage = 83.8%

Average Coverage = 94.4444%

Well	Sample	Result	Impacted
MW-2	12/30/1997	108	TRUE
MW-2	2/25/1998	23	FALSE
MW-2	4/27/1998	30	FALSE
MW-2	6/8/1998	ND<5	FALSE
MW-2	2/23/1999	ND<5	FALSE
MW-2	8/24/1999	ND<5	FALSE
MW-2	2/10/2000	ND<5	FALSE
MW-2	8/3/2000	25	FALSE
MW-2	2/8/2001	28	FALSE
MW-2	8/8/2001	ND<5	FALSE
MW-2	2/14/2002	ND<5	FALSE
MW-2	8/22/2002	ND<5	FALSE
MW-2	2/6/2003	53	FALSE
MW-2	8/13/2003	36	FALSE
MW-2	2/18/2004	23	FALSE
MW-2	8/26/2004	14	FALSE
MW-2	2/22/2005	42	FALSE

Non-Parametric Tolerance Interval**Parameter: Zinc, total**

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Total Percent Non-Detects = 67.6471%

Background Samples (n) = 17

Maximum Background Concentration = 148

Minimum Coverage = 83.8%

Average Coverage = 94.4444%

Well	Sample	Result	Impacted
MW-8	12/30/1997	481	TRUE
MW-8	2/25/1998	599	TRUE
MW-8	4/27/1998	70	FALSE
MW-8	6/8/1998	ND<25	FALSE
MW-8	2/23/1999	ND<25	FALSE
MW-8	8/24/1999	ND<25	FALSE
MW-8	2/10/2000	ND<25	FALSE
MW-8	8/3/2000	75	FALSE
MW-8	2/8/2001	52	FALSE
MW-8	8/8/2001	85	FALSE
MW-8	2/14/2002	ND<25	FALSE
MW-8	8/22/2002	ND<25	FALSE
MW-8	2/6/2003	189	TRUE
MW-8	8/13/2003	94	FALSE
MW-8	2/18/2004	ND<25	FALSE
MW-8	8/26/2004	63	FALSE
MW-8	2/22/2005	70	FALSE



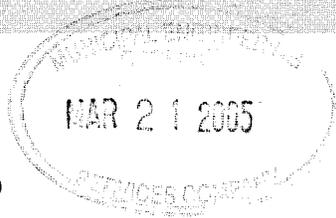
Laboratory Results

Environment 1, Incorporated

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

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

Drinking Water ID: 37715
Wastewater ID: 10



ID#: 6029

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

DATE COLLECTED: 02/22/05
DATE REPORTED: 03/16/05

REVIEWED BY: 

PARAMETERS	MW-1	MW-2	MW-3	MW-4	MW-5	Analysis		Method Code
						Date	Analyst	
PH (field measurement), Units	4.7	5.0	5.0	4.8	4.7	02/22/05	RJH	EPA150.1
Antimony, mg/l	<0.030	<0.030	<0.030	<0.030	<0.030	02/28/05	CMF	EPA204.2
Arsenic, mg/l	<0.010	<0.010	<0.010	<0.010	<0.010	03/10/05	CMF	EPA206.2
Barium, mg/l	<0.500	<0.500	<0.500	<0.500	<0.500	03/07/05	LFJ	EPA200.7
Beryllium, mg/l	<0.002	<0.002	<0.002	<0.002	<0.002	02/24/05	LFJ	EPA200.7
Cadmium, mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	03/02/05	CMF	EPA213.2
Cobalt, mg/l	<0.010	<0.010	<0.010	<0.010	<0.010	03/07/05	LFJ	EPA200.7
Copper, mg/l	<0.200	<0.200	<0.200	<0.200	<0.200	02/24/05	ADD	EPA220.7
Total Chromium, mg/l	0.129	0.166	<0.010	<0.010	<0.010	03/07/05	LFJ	EPA220.7
Lead, mg/l	0.018	0.042	<0.010	<0.010	<0.010	02/24/05	LFJ	EPA220.7
Nickel, mg/l	<0.050	<0.050	<0.050	<0.050	<0.050	03/03/05	CMF	EPA220.7
Selenium, mg/l	<0.020	<0.020	<0.020	<0.020	<0.020	03/07/05	LFJ	EPA200.7
Silver, mg/l	<0.010	<0.010	<0.010	<0.010	<0.010	02/24/05	LFJ	EPA200.7
Thallium, mg/l	<0.010	<0.010	<0.010	<0.010	<0.010	02/25/05	CMF	EPA270.2
Vanadium, mg/l	0.258	0.254	<0.040	<0.040	<0.040	03/03/05	LFJ	EPA200.7
Zinc, mg/l	<0.050	<0.050	<0.050	<0.050	<0.050	02/24/05	LFJ	EPA200.7
Conductivity (at 25c), uMhos	20	173	91	29	32	02/28/05	ADD	EPA289.1
Temperature, °C	17	16	15	17	17	02/22/05	RJH	SM2510B
Static Water Level, Feet	13.91	9.50	5.10	16.12	16.35	02/22/05	RJH	SM2550B
Well Depth, feet	25.03	21.98	22.58	27.35	26.15	02/22/05	RJH	

Environment 1, Incorporated

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

PHONE (252) 756-6208
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Drinking Water ID: 37715
Wastewater ID: 10

ID#: 6029

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

DATE COLLECTED: 02/22/05
DATE REPORTED : 03/16/05

REVIEWED BY: 

PARAMETERS	MW-6	MW-7	MW-8	MW-9	MW-10	Analysis		Method Code
						Date	Analyst	
PH (field measurement), Units	4.7	5.4	.0	4.7	4.6	02/22/05	RJH	EPA150.1
Antimony, mg/l	<0.030	<0.030	<0.030	<0.030	<0.030	02/28/05	CMF	EPA204.2
Arsenic, mg/l	<0.010	0.026	<0.010	<0.010	<0.010	03/10/05	CMF	EPA206.2
Barium, mg/l	<0.500	<0.500	<0.500	<0.500	<0.500	02/24/05	LFJ	EPA200.7
Beryllium, mg/l	<0.002	<0.002	<0.002	<0.002	<0.002	02/24/05	LFJ	EPA200.7
Cadmium, mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	03/02/05	CMF	EPA213.2
Cobalt, mg/l	<0.010	0.011	<0.010	<0.010	<0.010	02/24/05	LFJ	EPA200.7
Copper, mg/l	<0.200	<0.200	<0.200	<0.200	<0.200	02/24/05	ADD	EPA220.1
Total Chromium, mg/l	<0.010	0.027	0.014	<0.010	0.018	02/24/05	LFJ	EPA200.7
Lead, mg/l	<0.010	<0.010	<0.010	<0.010	<0.010	03/03/05	CMF	EPA239.2
Nickel, mg/l	<0.050	<0.050	<0.050	<0.050	<0.050	02/24/05	LFJ	EPA200.7
Selenium, mg/l	<0.020	<0.020	<0.020	<0.020	<0.020	02/25/05	CMF	EPA270.2
Silver, mg/l	<0.010	<0.010	<0.010	<0.010	<0.010	02/24/05	LFJ	EPA200.7
Thallium, mg/l	<0.010	<0.010	<0.010	<0.010	<0.010	03/01/05	CMF	EPA279.2
Vanadium, mg/l	<0.040	0.045	<0.040	<0.040	<0.040	02/24/05	LFJ	EPA200.7
Zinc, mg/l	<0.050	<0.050	0.070	<0.050	<0.050	02/28/05	ADD	EPA289.1
Conductivity (at 25c), uMhos	26	91	42	31	34	02/22/05	RJH	SM2510B
Temperature, °C	18	15	16	17	17	02/22/05	RJH	SM2550B
Static Water Level, Feet	15.30	5.93	7.74	11.31	12.77	02/22/05	RJH	
Well Depth, feet	27.19	22.63	22.69	24.03	25.19	02/22/05	RJH	

Environment 1, Incorporated

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

PHONE (252) 756-6208
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Drinking Water ID: 37715
Wastewater ID: 10

ID#: 6029

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

DATE COLLECTED: 02/22/05
DATE REPORTED : 03/16/05

REVIEWED BY: 

PARAMETERS	Leachate Canal	Duplicate (M/LO)	Equipment Blank	Trip Blank	Analysis Date	Analyst	Method Code
PH (field measurement), Units	Missing				/ /		
BOD, mg/l	Missing				/ /		
COD, mg/l	Missing				/ /		
Nitrate-Nitrite, mg/l	Missing				/ /		
Total Phosphorus, mg/l	Missing				/ /		
Antimony, mg/l	Missing	<0.030	<0.030		02/28/05	CMF	EPA204.2
Arsenic, mg/l	Missing	<0.010	<0.010		03/10/05	CMF	EPA206.2
Barium, mg/l	Missing	<0.500	<0.500		02/24/05	LFJ	EPA200.7
Beryllium, mg/l	Missing	<0.002	<0.002		02/24/05	LFJ	EPA200.7
Cadmium, mg/l	Missing	<0.001	<0.001		03/02/05	CMF	EPA213.2
Cobalt, mg/l	Missing	<0.010	<0.010		02/24/05	LFJ	EPA200.7
Copper, mg/l	Missing	<0.200	<0.200		02/24/05	ADD	EPA220.1
Total Chromium, mg/l	Missing	0.012	<0.010		02/24/05	LFJ	EPA200.7
Lead, mg/l	Missing	<0.010	<0.010		03/03/05	CMF	EPA239.2
Nickel, mg/l	Missing	<0.050	<0.050		02/24/05	LFJ	EPA200.7
Selenium, mg/l	Missing	<0.020	<0.020		02/25/05	CMF	EPA270.2
Silver, mg/l	Missing	<0.010	<0.010		02/24/05	LFJ	EPA200.7
Thallium, mg/l	Missing	<0.010	<0.010		03/01/05	CMF	EPA279.2
Vanadium, mg/l	Missing	<0.040	<0.040		02/24/05	LFJ	EPA200.7
Zinc, mg/l	Missing	<0.050	<0.050		02/28/05	ADD	EPA289.1
Sulfate, mg/l	Missing				/ /		
EPA Method 8260B Volatiles	Missing				02/28/05		

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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CLIENT: WAYNE CO. LANDFILL (LINED)
MR. LLOYD COOK
460B LANDFILL ROAD
DUDLEY, NC 28333

CLIENT ID: 6029

ANALYST: MAO
DATE COLLECTED: 02/22/05
DATE ANALYZED: 02/23/05
DATE REPORTED: 03/16/05

Page: 1

REVIEWED BY: 

VOLATILE ORGANICS EPA METHOD 8260B

PARAMETERS, ug/l	MW-1	MW-2	MW-3	MW-4	MW-5
1. Chloromethane	<10.00	<10.00	<10.00	<10.00	<10.00
2. Vinyl Chloride	<10.00	<10.00	<10.00	<10.00	<10.00
3. Bromomethane	<10.00	<10.00	<10.00	<10.00	<10.00
4. Chloroethane	<10.00	<10.00	<10.00	<10.00	<10.00
5. Trichlorofluoromethane	<5.00	<5.00	<5.00	<5.00	<5.00
6. 1,1-Dichloroethene	<5.00	<5.00	<5.00	<5.00	<5.00
7. Acetone	<100.00	<100.00	<100.00	<100.00	<100.00
8. Iodomethane	<10.00	<10.00	<10.00	<10.00	<10.00
9. Carbon Disulfide	<100.00	<100.00	<100.00	<100.00	<100.00
10. Methylene Chloride	<10.00	<10.00	<10.00	<10.00	<10.00
11. trans-1,2-Dichloroethene	<5.00	<5.00	<5.00	<5.00	<5.00
12. 1,1-Dichloroethane	<5.00	<5.00	<5.00	<5.00	<5.00
13. Vinyl Acetate	<50.00	<50.00	<50.00	<50.00	<50.00
14. Cis-1,2-Dichloroethene	<5.00	<5.00	<5.00	<5.00	<5.00
15. 2-Butanone	<100.00	<100.00	<100.00	<100.00	<100.00
16. Bromochloromethane	<5.00	<5.00	<5.00	<5.00	<5.00
17. Chloroform	<5.00	<5.00	<5.00	<5.00	<5.00
18. 1,1,1-Trichloroethane	<5.00	<5.00	<5.00	<5.00	<5.00
19. Carbon Tetrachloride	<10.00	<10.00	<10.00	<10.00	<10.00
20. Benzene	<5.00	<5.00	<5.00	<5.00	<5.00
21. 1,2-Dichloroethane	<5.00	<5.00	<5.00	<5.00	<5.00
22. Trichloroethene	<5.00	<5.00	<5.00	<5.00	<5.00
23. 1,2-Dichloropropane	<5.00	<5.00	<5.00	<5.00	<5.00
24. Bromodichloromethane	<5.00	<5.00	<5.00	<5.00	<5.00
25. Cis-1,3-Dichloropropene	<10.00	<10.00	<10.00	<10.00	<10.00
26. 4-Methyl-2-Pentanone	<100.00	<100.00	<100.00	<100.00	<100.00
27. Toluene	<5.00	<5.00	<5.00	<5.00	<5.00
28. trans-1,3-Dichloropropene	<10.00	<10.00	<10.00	<10.00	<10.00
29. 1,1,2-Trichloroethane	<5.00	<5.00	<5.00	<5.00	<5.00
30. Tetrachloroethene	<5.00	<5.00	<5.00	<5.00	<5.00
31. 2-Hexanone	<50.00	<50.00	<50.00	<50.00	<50.00
32. Dibromochloromethane	<5.00	<5.00	<5.00	<5.00	<5.00
33. 1,2-Dibromoethane	<5.00	<5.00	<5.00	<5.00	<5.00
34. Chlorobenzene	<5.00	<5.00	<5.00	<5.00	<5.00
35. 1,1,1,2-Tetrachloroethane	<5.00	<5.00	<5.00	<5.00	<5.00
36. Ethylbenzene	<5.00	<5.00	<5.00	<5.00	<5.00
37. Xylenes	<5.00	<5.00	<5.00	<5.00	<5.00
38. Dibromomethane	<10.00	<10.00	<10.00	<10.00	<10.00
39. Styrene	<10.00	<10.00	<10.00	<10.00	<10.00
40. Bromoform	<5.00	<5.00	<5.00	<5.00	<5.00
41. 1,1,2,2-Tetrachloroethane	<5.00	<5.00	<5.00	<5.00	<5.00
42. 1,2,3-Trichloropropane	<15.00	<15.00	<15.00	<15.00	<15.00
43. 1,4-Dichlorobenzene	<5.00	<5.00	<5.00	<5.00	<5.00
44. 1,2-Dichlorobenzene	<5.00	<5.00	<5.00	<5.00	<5.00
45. 1,2-Dibromo-3-Chloropropane	<25.00	<25.00	<25.00	<25.00	<25.00
46. Acrylonitrile	<200.00	<200.00	<200.00	<200.00	<200.00
47. trans-1,4-Dichloro-2-Butene	<100.00	<100.00	<100.00	<100.00	<100.00

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

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

CLIENT: WAYNE CO. LANDFILL (LINED)
MR. LLOYD COOK
460B LANDFILL ROAD
DUDLEY, NC 28333

CLIENT ID: 6029

ANALYST: MAO
DATE COLLECTED: 02/22/05
DATE ANALYZED: 02/23/05
DATE REPORTED: 03/16/05

Page: 2

REVIEWED BY: 

VOLATILE ORGANICS
EPA METHOD 8260B

PARAMETERS, ug/l	MW-6	MW-7	MW-8	MW-9	MW-10
1. Chloromethane	<10.00	<10.00	<10.00	<10.00	<10.00
2. Vinyl Chloride	<10.00	<10.00	<10.00	<10.00	<10.00
3. Bromomethane	<10.00	<10.00	<10.00	<10.00	<10.00
4. Chloroethane	<10.00	<10.00	<10.00	<10.00	<10.00
5. Trichlorofluoromethane	<5.00	<5.00	<5.00	<5.00	<5.00
6. 1,1-Dichloroethene	<5.00	<5.00	<5.00	<5.00	<5.00
7. Acetone	<100.00	<100.00	<100.00	<100.00	<100.00
8. Iodomethane	<10.00	<10.00	<10.00	<10.00	<10.00
9. Carbon Disulfide	<100.00	<100.00	<100.00	<100.00	<100.00
10. Methylene Chloride	<10.00	<10.00	<10.00	<10.00	<10.00
11. trans-1,2-Dichloroethene	<5.00	<5.00	<5.00	<5.00	<5.00
12. 1,1-Dichloroethane	<5.00	<5.00	<5.00	<5.00	<5.00
13. Vinyl Acetate	<50.00	<50.00	<50.00	<50.00	<50.00
14. Cis-1,2-Dichloroethene	<5.00	<5.00	<5.00	<5.00	<5.00
15. 2-Butanone	<100.00	<100.00	<100.00	<100.00	<100.00
16. Bromochloromethane	<5.00	<5.00	<5.00	<5.00	<5.00
17. Chloroform	<5.00	<5.00	<5.00	<5.00	<5.00
18. 1,1,1-Trichloroethane	<5.00	<5.00	<5.00	<5.00	<5.00
19. Carbon Tetrachloride	<10.00	<10.00	<10.00	<10.00	<10.00
20. Benzene	<5.00	<5.00	<5.00	<5.00	<5.00
21. 1,2-Dichloroethane	<5.00	<5.00	<5.00	<5.00	<5.00
22. Trichloroethene	<5.00	<5.00	<5.00	<5.00	<5.00
23. 1,2-Dichloropropane	<5.00	<5.00	<5.00	<5.00	<5.00
24. Bromodichloromethane	<5.00	<5.00	<5.00	<5.00	<5.00
25. Cis-1,3-Dichloropropene	<10.00	<10.00	<10.00	<10.00	<10.00
26. 4-Methyl-2-Pentanone	<100.00	<100.00	<100.00	<100.00	<100.00
27. Toluene	<5.00	<5.00	<5.00	<5.00	<5.00
28. trans-1,3-Dichloropropene	<10.00	<10.00	<10.00	<10.00	<10.00
29. 1,1,2-Trichloroethane	<5.00	<5.00	<5.00	<5.00	<5.00
30. Tetrachloroethene	<5.00	<5.00	<5.00	<5.00	<5.00
31. 2-Hexanone	<50.00	<50.00	<50.00	<50.00	<50.00
32. Dibromochloromethane	<5.00	<5.00	<5.00	<5.00	<5.00
33. 1,2-Dibromoethane	<5.00	<5.00	<5.00	<5.00	<5.00
34. Chlorobenzene	<5.00	<5.00	<5.00	<5.00	<5.00
35. 1,1,1,2-Tetrachloroethane	<5.00	<5.00	<5.00	<5.00	<5.00
36. Ethylbenzene	<5.00	<5.00	<5.00	<5.00	<5.00
37. Xylenes	<5.00	<5.00	<5.00	<5.00	<5.00
38. Dibromomethane	<10.00	<10.00	<10.00	<10.00	<10.00
39. Styrene	<10.00	<10.00	<10.00	<10.00	<10.00
40. Bromoform	<5.00	<5.00	<5.00	<5.00	<5.00
41. 1,1,2,2-Tetrachloroethane	<5.00	<5.00	<5.00	<5.00	<5.00
42. 1,2,3-Trichloropropane	<15.00	<15.00	<15.00	<15.00	<15.00
43. 1,4-Dichlorobenzene	<5.00	<5.00	<5.00	<5.00	<5.00
44. 1,2-Dichlorobenzene	<5.00	<5.00	<5.00	<5.00	<5.00
45. 1,2-Dibromo-3-Chloropropane	<25.00	<25.00	<25.00	<25.00	<25.00
46. Acrylonitrile	<200.00	<200.00	<200.00	<200.00	<200.00
47. trans-1,4-Dichloro-2-Butene	<100.00	<100.00	<100.00	<100.00	<100.00

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

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

CLIENT: WAYNE CO. LANDFILL (LINED)
MR. LLOYD COOK
460B LANDFILL ROAD
DUDLEY, NC 28333

CLIENT ID: 6029
ANALYST: MAO
DATE COLLECTED: 02/22/05
DATE ANALYZED: 02/23/05
DATE REPORTED: 03/16/05

Page: 3

REVIEWED BY: 

VOLATILE ORGANICS
EPA METHOD 8260B

PARAMETERS, ug/l	Duplicate ()	Equipment Blank	Trip Blank
1. Chloromethane	<10.00	<10.00	<10.00
2. Vinyl Chloride	<10.00	<10.00	<10.00
3. Bromomethane	<10.00	<10.00	<10.00
4. Chloroethane	<10.00	<10.00	<10.00
5. Trichlorofluoromethane	<5.00	<5.00	<5.00
6. 1,1-Dichloroethene	<5.00	<5.00	<5.00
7. Acetone	<100.00	<100.00	<100.00
8. Iodomethane	<10.00	<10.00	<10.00
9. Carbon Disulfide	<100.00	<100.00	<100.00
10. Methylene Chloride	<10.00	<10.00	<10.00
11. trans-1,2-Dichloroethene	<5.00	<5.00	<5.00
12. 1,1-Dichloroethane	<5.00	<5.00	<5.00
13. Vinyl Acetate	<50.00	<50.00	<50.00
14. Cis-1,2-Dichloroethene	<5.00	<5.00	<5.00
15. 2-Butanone	<100.00	<100.00	<100.00
16. Bromochloromethane	<5.00	<5.00	<5.00
17. Chloroform	<5.00	<5.00	<5.00
18. 1,1,1-Trichloroethane	<5.00	<5.00	<5.00
19. Carbon Tetrachloride	<10.00	<10.00	<10.00
20. Benzene	<5.00	<5.00	<5.00
21. 1,2-Dichloroethane	<5.00	<5.00	<5.00
22. Trichloroethene	<5.00	<5.00	<5.00
23. 1,2-Dichloropropane	<5.00	<5.00	<5.00
24. Bromodichloromethane	<5.00	<5.00	<5.00
25. Cis-1,3-Dichloropropene	<10.00	<10.00	<10.00
26. 4-Methyl-2-Pentanone	<100.00	<100.00	<100.00
27. Toluene	<5.00	<5.00	<5.00
28. trans-1,3-Dichloropropene	<10.00	<10.00	<10.00
29. 1,1,2-Trichloroethane	<5.00	<5.00	<5.00
30. Tetrachloroethene	<5.00	<5.00	<5.00
31. 2-Hexanone	<50.00	<50.00	<50.00
32. Dibromochloromethane	<5.00	<5.00	<5.00
33. 1,2-Dibromoethane	<5.00	<5.00	<5.00
34. Chlorobenzene	<5.00	<5.00	<5.00
35. 1,1,1,2-Tetrachloroethane	<5.00	<5.00	<5.00
36. Ethylbenzene	<5.00	<5.00	<5.00
37. Xylenes	<5.00	<5.00	<5.00
38. Dibromomethane	<10.00	<10.00	<10.00
39. Styrene	<10.00	<10.00	<10.00
40. Bromoform	<5.00	<5.00	<5.00
41. 1,1,2,2-Tetrachloroethane	<5.00	<5.00	<5.00
42. 1,2,3-Trichloropropane	<15.00	<15.00	<15.00
43. 1,4-Dichlorobenzene	<5.00	<5.00	<5.00
44. 1,2-Dichlorobenzene	<5.00	<5.00	<5.00
45. 1,2-Dibromo-3-Chloropropane	<25.00	<25.00	<25.00
46. Acrylonitrile	<200.00	<200.00	<200.00
47. trans-1,4-Dichloro-2-Butene	<100.00	<100.00	<100.00

Environment 1, Incorporated

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

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

Drinking Water ID: 37715
Wastewater ID: 10

ID#: 6029 C

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

DATE COLLECTED: 02/22/05
DATE REPORTED : 03/11/05

REVIEWED BY: 

PARAMETERS	MW-11	MW-12	MW-13	Leachate Phase 2	Analysis Date	Method Analyst	Code
PH (field measurement), Units	4.8	5.3	4.7	5.8	02/22/05	RJH	EPA150.1
BOD, mg/l				20	02/22/05	TRB	SM5210B
COD, mg/l				33	02/23/05	TRB	HACH8000
Nitrate-Nitrite, mg/l				<0.04	02/23/05	CAI	EPA353.2
Total Phosphorus, mg/l				0.10	03/02/05	TWA	EPA365.4
Antimony, mg/l	<0.030	<0.030	<0.030	<0.030	02/28/05	CMF	EPA204.2
Arsenic, mg/l	<0.010	0.014	<0.010	<0.010	03/10/05	CMF	EPA206.2
Barium, mg/l	<0.500	0.967	<0.500	<0.500	02/25/05	LFJ	EPA200.7
Beryllium, mg/l	<0.002	<0.002	<0.002	<0.002	02/25/05	LFJ	EPA200.7
Cadmium, mg/l	<0.001	<0.001	<0.001	<0.001	03/02/05	CMF	EPA213.2
Cobalt, mg/l	<0.010	0.014	<0.010	<0.010	02/25/05	LFJ	EPA200.7
Copper, mg/l	<0.200	<0.200	<0.200	<0.200	03/08/05	ADD	EPA220.1
Total Chromium, mg/l	0.025	0.079	<0.010	<0.010	02/25/05	LFJ	EPA200.7
Lead, mg/l	0.013	0.049	0.011	<0.010	03/03/05	CMF	EPA239.2
Nickel, mg/l	<0.050	<0.050	<0.050	<0.050	02/25/05	LFJ	EPA200.7
Selenium, mg/l	<0.020	<0.020	<0.020	<0.020	02/25/05	CMF	EPA270.2
Silver, mg/l	<0.010	<0.010	<0.010	<0.010	02/25/05	LFJ	EPA200.7
Thallium, mg/l	<0.010	<0.010	<0.010	<0.010	03/01/05	CMF	EPA279.2
Vanadium, mg/l	<0.040	0.104	<0.040	<0.040	02/25/05	LFJ	EPA200.7
Zinc, mg/l	<0.050	0.177	<0.050	<0.050	02/28/05	ADD	EPA289.1
Sulfate, mg/l				<5.0	02/25/05	TRB	EPA375.4
Conductivity (at 25c), uMhos	47	39	36	389	02/22/05	RJH	SM2510B
Temperature, °C	15	14	14	12	02/22/05	RJH	SM2550B
Static Water Level, Feet	4.50	4.71	8.10		02/22/05	RJH	
Well Depth, feet	18.40	19.35	19.22		02/22/05	RJH	

Environment 1, Incorporated

Drinking Water ID: 37715
Wastewater ID: 10

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

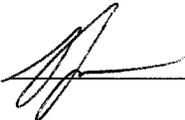
PHONE (252) 756-6208
FAX (252) 756-0633

CLIENT: WAYNE CO. LANDFILL (LINED)
MR. LLOYD COOK
460B LANDFILL ROAD
DUDLEY, NC 28333

CLIENT ID: 6029 C

ANALYST: MAO
DATE COLLECTED: 02/22/05
DATE ANALYZED: 02/25/05
DATE REPORTED: 03/11/05

Page: 1

REVIEWED BY: 

VOLATILE ORGANICS
EPA METHOD 8260B

PARAMETERS, ug/l	MW-11	MW-12	MW-13	Leachate Phase 2
1. Chloromethane	<10.00	<10.00	<10.00	<10.00
2. Vinyl Chloride	<10.00	<10.00	<10.00	<10.00
3. Bromomethane	<10.00	<10.00	<10.00	<10.00
4. Chloroethane	<10.00	<10.00	<10.00	<10.00
5. Trichlorofluoromethane	<5.00	<5.00	<5.00	<5.00
6. 1,1-Dichloroethene	<5.00	<5.00	<5.00	<5.00
7. Acetone	<100.00	<100.00	<100.00	106.00
8. Iodomethane	<10.00	<10.00	<10.00	<10.00
9. Carbon Disulfide	<100.00	<100.00	<100.00	<100.00
10. Methylene Chloride	<10.00	<10.00	<10.00	42.00
11. trans-1,2-Dichloroethene	<5.00	<5.00	<5.00	<5.00
12. 1,1-Dichloroethane	<5.00	<5.00	<5.00	<5.00
13. Vinyl Acetate	<50.00	<50.00	<50.00	<50.00
14. Cis-1,2-Dichloroethene	<5.00	<5.00	<5.00	<5.00
15. 2-Butanone	<100.00	<100.00	<100.00	170.00
16. Bromochloromethane	<5.00	<5.00	<5.00	<5.00
17. Chloroform	<5.00	<5.00	<5.00	<5.00
18. 1,1,1-Trichloroethane	<5.00	<5.00	<5.00	<5.00
19. Carbon Tetrachloride	<10.00	<10.00	<10.00	<10.00
20. Benzene	<5.00	<5.00	<5.00	<5.00
21. 1,2-Dichloroethane	<5.00	<5.00	<5.00	<5.00
22. Trichloroethene	<5.00	<5.00	<5.00	<5.00
23. 1,2-Dichloropropane	<5.00	<5.00	<5.00	<5.00
24. Bromodichloromethane	<5.00	<5.00	<5.00	<5.00
25. Cis-1,3-Dichloropropene	<10.00	<10.00	<10.00	<10.00
26. 4-Methyl-2-Pentanone	<100.00	<100.00	<100.00	<100.00
27. Toluene	<5.00	<5.00	<5.00	9.80
28. trans-1,3-Dichloropropene	<10.00	<10.00	<10.00	<10.00
29. 1,1,2-Trichloroethane	<5.00	<5.00	<5.00	<5.00
30. Tetrachloroethene	<5.00	<5.00	<5.00	<5.00
31. 2-Hexanone	<50.00	<50.00	<50.00	<50.00
32. Dibromochloromethane	<5.00	<5.00	<5.00	<5.00
33. 1,2-Dibromoethane	<5.00	<5.00	<5.00	<5.00
34. Chlorobenzene	<5.00	<5.00	<5.00	<5.00
35. 1,1,1,2-Tetrachloroethane	<5.00	<5.00	<5.00	<5.00
36. Ethylbenzene	<5.00	<5.00	<5.00	<5.00
37. Xylenes	<5.00	<5.00	<5.00	<5.00
38. Dibromomethane	<10.00	<10.00	<10.00	<10.00
39. Styrene	<10.00	<10.00	<10.00	<10.00
40. Bromoform	<5.00	<5.00	<5.00	<5.00
41. 1,1,2,2-Tetrachloroethane	<5.00	<5.00	<5.00	<5.00
42. 1,2,3-Trichloropropane	<15.00	<15.00	<15.00	<15.00
43. 1,4-Dichlorobenzene	<5.00	<5.00	<5.00	<5.00
44. 1,2-Dichlorobenzene	<5.00	<5.00	<5.00	<5.00
45. 1,2-Dibromo-3-Chloropropane	<25.00	<25.00	<25.00	<25.00
46. Acrylonitrile	<200.00	<200.00	<200.00	<200.00
47. trans-1,4-Dichloro-2-Butene	<100.00	<100.00	<100.00	<100.00

Environment 1, Incorporated

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

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

Drinking Water ID: 37715
Wastewater ID: 10

ID#: 6029 A

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

DATE COLLECTED: 02/22/05
DATE REPORTED : 03/11/05

REVIEWED BY: 

PARAMETERS	Surface Water #2	Surface Water #3	Surface Water #4	Surface Water #5	Analysis Date	Method Analyst	Code
PH (field measurement), Units	4.6	6.5	5.5	5.9	02/22/05	RJH	EPA150.1
Antimony, mg/l	<0.030	<0.030	<0.030	<0.030	02/28/05	CMF	EPA204.2
Arsenic, mg/l	<0.010	<0.010	<0.010	<0.010	03/10/05	CMF	EPA206.2
Barium, mg/l	<0.500	<0.500	<0.500	<0.500	02/25/05	LFJ	EPA200.7
Beryllium, mg/l	<0.002	<0.002	<0.002	<0.002	02/25/05	LFJ	EPA200.7
Cadmium, mg/l	0.003	<0.001	<0.001	<0.001	03/02/05	CMF	EPA213.2
Cobalt, mg/l	<0.010	<0.010	<0.010	<0.010	02/25/05	LFJ	EPA200.7
Copper, mg/l	<0.200	<0.200	<0.200	<0.200	03/08/05	ADD	EPA220.1
Total Chromium, mg/l	0.013	<0.010	<0.010	<0.010	02/25/05	LFJ	EPA200.7
Lead, mg/l	0.026	<0.010	<0.010	<0.010	03/03/05	CMF	EPA239.2
Nickel, mg/l	<0.050	<0.050	<0.050	<0.050	02/25/05	LFJ	EPA200.7
Selenium, mg/l	<0.020	<0.020	<0.020	<0.020	02/25/05	CMF	EPA270.2
Silver, mg/l	<0.010	<0.010	<0.010	<0.010	02/25/05	LFJ	EPA200.7
Thallium, mg/l	<0.010	<0.010	<0.010	<0.010	03/01/05	CMF	EPA279.2
Vanadium, mg/l	<0.040	<0.040	<0.040	<0.040	02/25/05	LFJ	EPA200.7
Zinc, mg/l	0.061	<0.050	<0.050	<0.050	02/28/05	ADD	EPA289.1
Conductivity (at 25c), uMhos	39	401	109	155	02/22/05	RJH	SM2510B
Temperature, °C	14	12	13	15	02/22/05	RJH	SM2550B

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

PHONE (252) 756-6203
FAX (252) 756-0633

CLIENT: WAYNE CO. LANDFILL (LINED)
MR. LLOYD COOK
460B LANDFILL ROAD
DUDLEY, NC 28333

CLIENT ID: 6029 A
ANALYST: MAO
DATE COLLECTED: 02/22/05
DATE ANALYZED: 02/23/05
DATE REPORTED: 03/11/05

Page: 1

REVIEWED BY: 

VOLATILE ORGANICS
EPA METHOD 8260B

PARAMETERS, ug/l	Surface Water #2	Surface Water #3	Surface Water #4	Surface Water #5
1. Chloromethane	<10.00	<10.00	<10.00	<10.00
2. Vinyl Chloride	<10.00	<10.00	<10.00	<10.00
3. Bromomethane	<10.00	<10.00	<10.00	<10.00
4. Chloroethane	<10.00	<10.00	<10.00	<10.00
5. Trichlorofluoromethane	<5.00	<5.00	<5.00	<5.00
6. 1,1-Dichloroethene	<5.00	<5.00	<5.00	<5.00
7. Acetone	<100.00	<100.00	<100.00	<100.00
8. Iodomethane	<10.00	<10.00	<10.00	<10.00
9. Carbon Disulfide	<100.00	<100.00	<100.00	<100.00
10. Methylene Chloride	<10.00	<10.00	<10.00	<10.00
11. trans-1,2-Dichloroethene	<5.00	<5.00	<5.00	<5.00
12. 1,1-Dichloroethane	<5.00	<5.00	<5.00	<5.00
13. Vinyl Acetate	<50.00	<50.00	<50.00	<50.00
14. Cis-1,2-Dichloroethene	<5.00	<5.00	<5.00	<5.00
15. 2-Butanone	<100.00	<100.00	<100.00	<100.00
16. Bromochloromethane	<5.00	<5.00	<5.00	<5.00
17. Chloroform	<5.00	<5.00	<5.00	<5.00
18. 1,1,1-Trichloroethane	<5.00	<5.00	<5.00	<5.00
19. Carbon Tetrachloride	<10.00	<10.00	<10.00	<10.00
20. Benzene	<5.00	<5.00	<5.00	<5.00
21. 1,2-Dichloroethane	<5.00	<5.00	<5.00	<5.00
22. Trichloroethene	<5.00	<5.00	<5.00	<5.00
23. 1,2-Dichloropropane	<5.00	<5.00	<5.00	<5.00
24. Bromodichloromethane	<5.00	<5.00	<5.00	<5.00
25. Cis-1,3-Dichloropropene	<10.00	<10.00	<10.00	<10.00
26. 4-Methyl-2-Pentanone	<100.00	<100.00	<100.00	<100.00
27. Toluene	<5.00	<5.00	<5.00	<5.00
28. trans-1,3-Dichloropropene	<10.00	<10.00	<10.00	<10.00
29. 1,1,2-Trichloroethane	<5.00	<5.00	<5.00	<5.00
30. Tetrachloroethene	<5.00	<5.00	<5.00	<5.00
31. 2-Hexanone	<50.00	<50.00	<50.00	<50.00
32. Dibromochloromethane	<5.00	<5.00	<5.00	<5.00
33. 1,2-Dibromoethane	<5.00	<5.00	<5.00	<5.00
34. Chlorobenzene	<5.00	<5.00	<5.00	<5.00
35. 1,1,1,2-Tetrachloroethane	<5.00	<5.00	<5.00	<5.00
36. Ethylbenzene	<5.00	<5.00	<5.00	<5.00
37. Xylenes	<5.00	<5.00	<5.00	<5.00
38. Dibromomethane	<10.00	<10.00	<10.00	<10.00
39. Styrene	<10.00	<10.00	<10.00	<10.00
40. Bromoform	<5.00	<5.00	<5.00	<5.00
41. 1,1,2,2-Tetrachloroethane	<5.00	<5.00	<5.00	<5.00
42. 1,2,3-Trichloropropane	<15.00	<15.00	<15.00	<15.00
43. 1,4-Dichlorobenzene	<5.00	<5.00	<5.00	<5.00
44. 1,2-Dichlorobenzene	<5.00	<5.00	<5.00	<5.00
45. 1,2-Dibromo-3-Chloropropane	<25.00	<25.00	<25.00	<25.00
46. Acrylonitrile	<200.00	<200.00	<200.00	<200.00
47. trans-1,4-Dichloro-2-Butene	<100.00	<100.00	<100.00	<100.00

Environment 1, Inc.

Sampled By <input checked="" type="checkbox"/> Bob Hilgoe <input checked="" type="checkbox"/> Bobby Fox Other: _____	Facility <u>WAYNE Ca</u>	Site ID <u>6029</u>
Project No. _____		Date (m/d/y) <u>02 21 05</u>

Site Description Monitoring Well Extraction Well Irrigation Well Spring Borehole Probe Other: _____

Air Temp: °C °F Weather: _____

Well Locked? yes no Damaged/Repairs Needed: _____

x TOC Description: _____

TOC Stickup: _____ ft. above/below ground Well Inside Diameter (ID): 2-inch 4-inch Other: _____

Site Remarks (nearby wells pumping, tide, stream stage, etc.) _____

Water Level Data Measurement Units: ft. Well or Borehole Total Depth (TD) from TOC: _____

<input checked="" type="checkbox"/> E-Tape, # 2 <input type="checkbox"/> Steel Tape <input type="checkbox"/> Other	Pre-Purge Initial	Pre-Purge Confirmation	Purging Start	During Purging	Purging End	After Sampling	Remarks
Time (hh:mm; 24-hr clock)							
Depth to Water							
Tape Correction							
Water Level (WL)							
Product Thickness							
Product Recovery							
<input type="checkbox"/> gallons <input type="checkbox"/> liters							

Measure water level from fixed measuring point (MP) or top of well casing (TOC). Record water depth to nearest 0.01 ft or 0.002 m, with minus (-) sign if level is above MP or TOC. If no mark on MP or TOC, measure water level from north side of casing. Measure static or pre-purging water level twice; record initial and confirmation measurements and measurement times (in 24-hour clock format). MP/TOC Stickup measurement is from ground surface to nearest 0.1 ft or 0.01 m. Depth to Water codes: N - not measured; D - dry; O - obstructed; P - pumping; F - flowing (artesian well); R - recently pumped; C - cascading. Water Level (WL) = Depth to Water - Tape Correction factor. Record free product presence at time of water level measurement; use "S" for free product thickness if seen observed. If free product removed from well, record volume removed in gallons or liters, list product type in "Remarks" column.

Field WQ Data Purge Depth: _____ Grab Bailor Pump Description: _____

Casing Volume: [_____(TD) - _____(WL)] • [_____(Well ID)]² • [_____(Conversion Factor)] = _____ gals
 Conversion Factor = 0.0408 for feet and gallons; 0.1544 for feet and liters; 0.5066 for meters and liters; Well ID in inches

<input type="checkbox"/> Cum. Vol. Purged	<input type="checkbox"/> Pumping Rate					(Final)	Meter Type	Remarks
Time (hh:mm; 24-hr clock)								
pH (Temperature Corrected? <input type="checkbox"/>)	<u>4.7</u>	<u>4.7</u>					OAKTON	4.0/7.0/10.0 Buffers
Temperature, °C								
Dissolved Oxygen mg/L								
S Conductivity μS/cm							OAKTON	<u>1413</u> <u>498</u>
Turbidity <input type="checkbox"/> NTU								
Color/Tint								
Odor								

Record time purging starts and ends in "Purging Start" and "Purging End" columns in Water Level Data section. Cum. Vol. Purged: cumulative volume removed before sampling, in gallons or liters. Pumping Rate is gpm or Lpm, depending on box checked in casing volume calculation. Use "Final" column above for recording sample field measurements, total volume purged before sampling or average pumping rate during purging. Record equipment calibration methods, decontamination procedures, equipment failures, purge water disposal method, etc. in daily field notes. SC: Specific Conductance corrected for temperature (μS/cm at 25°C); EC: Electrical Conductivity not corrected for temperature (μS/cm). μS/cm = μmho/cm. 1 gallon (US) = 3.785 L = 0.833 imperial gallon

Sample Data Sample Depth: _____ Grab Bailor Pump Description: _____

Field Sample ID (unique ID on bottles)	Result Code	Date (m/d/y)	Time (hh:mm)	Bottles (total to lab)	Filtered (0.45 μm)	Lab ID	Case ID	SDG ID	Remarks
<u>WELL 1</u>									

Sample ID may be up to 15 characters. Sample Result Code, Date, and Time must be entered. Result Codes: P0, Primary Sample; D#, Duplicate Sample; S#, Split Sample (sent to second lab); BF#, Field Blank; BR#, Equipment Rinsate; BT#, Trip Blank; SF#, Field Spike (# = 1 to 9). Lab ID (up to 5 characters) is name of laboratory that will analyze the sample. Case ID (up to 5 characters) and SDG ID (sample delivery group, up to 15 characters) are required for blanks. Case ID may be the lab service request number or yy-mm. SDG may be lab's SDG, a cooler ID number, or mmdydy. Enter sample preservation and handling data on chain-of-custody form. Also record detailed information about duplicate, split, rinsate, spike, and/or blank sample collection/handling in daily field notes.

Sampler's Name (print) _____	Signature _____
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Environment 1, Inc.

Sampled By <input checked="" type="checkbox"/> Bob Hilgoe <input checked="" type="checkbox"/> Bobby Fox	Facility WAYNE CO.	Site ID 6029
Other:	Project No.	Date (m/d/y) 02/22/05

Site Description Monitoring Well Extraction Well Irrigation Well Spring Borehole Probe Other:

Air Temp: °C °F Weather:

Well Locked? yes no Damaged/Repairs Needed:

x TOC Description:

TOC Stickup: _____ ft. above/below ground Well Inside Diameter (ID): 2-inch 4-inch Other:

Site Remarks (nearby wells pumping, tide, stream stage, etc.):

Water Level Data Measurement Units: ft. Well or Borehole Total Depth (TD) from TOC:

x E-Tape, # 2 <input type="checkbox"/> Steel Tape <input type="checkbox"/> Other	Pre-Purge Initial	Pre-Purge Confirmation	Purging Start	During Purging	Purging End	After Sampling	Remarks
Time (hh:mm; 24-hr clock)							
Depth to Water							
Tape Correction							
Water Level (WL)							
Product Thickness							
Product Recovery <input type="checkbox"/> gallons <input type="checkbox"/> liters							

Measure water level from fixed measuring point (MP) or top of well casing (TOC). Record water depth to nearest 0.01 ft or 0.002 m, with minus (-) sign if level is above MP or TOC. If no mark on MP or TOC, measure water level from north side of casing. Measure static or pre-purging water level twice; record initial and confirmation measurements and measurement times (in 24-hour clock format). MP/TOC Stickup measurement is from ground surface to nearest 0.1 ft or 0.01 m. Depth to Water codes: N - not measured; D - dry; O - obstructed; P - pumping; F - flowing (artesian well); R - recently pumped; C - cascading. Water Level (WL) = Depth to Water - Tape Correction factor. Record free product presence at time of water level measurement; use "S" for free product thickness if sheen observed. If free product removed from well, record volume removed in gallons or liters, list product type in "Remarks" column.

Field WQ Data Purge Depth: Grab Bailer Pump Description:

Casing Volume: [_____(TD) - _____(WL)] • [_____(Well ID)]² • [_____(Conversion Factor)] = _____ gals
 Conversion Factor = 0.0408 for feet and gallons; 0.1544 for feet and liters; 0.5066 for meters and liters; Well ID in inches

<input type="checkbox"/> Cum. Vol. Purged <input type="checkbox"/> Pumping Rate					(Final)	Meter Type	Remarks
Time (hh:mm; 24-hr clock)							
pH (Temperature Corrected? <input type="checkbox"/>)	5.0	5.0	5.0			OAKTON	4.0/7.0/10.0 Buffers
Temperature, °C							
Dissolved Oxygen mg/L							
S Conductivity μS/cm						OAKTON	1473 498
Turbidity <input type="checkbox"/> NTU							
Color/Tint							
Odor							

Record time purging starts and ends in "Purging Start" and "Purging End" columns in Water Level Data section. Cum. Vol. Purged: cumulative volume removed before sampling, in gallons or liters. Pumping Rate is gpm or Lpm, depending on box checked in casing volume calculation. Use "Final" column above for recording sample field measurements, total volume purged before sampling or average pumping rate during purging. Record equipment calibration methods, decontamination procedures, equipment failures, purge water disposal method, etc. in daily field notes. SC: Specific Conductance corrected for temperature (μS/cm at 25°C); EC: Electrical Conductivity not corrected for temperature (μS/cm). μS/cm = μmho/cm. 1 gallon (US) = 3.785 L = 0.833 Imperial gallon

Sample Data Sample Depth: Grab Bailer Pump Description:

Field Sample ID (unique ID on bottles)	Result Code	Date (m/d/y)	Time (hh:mm)	Bottles (total to lab)	Filtered (0.45 μm)	Lab ID	Case ID	SDG ID	Remarks
WELL 2									

Sample ID may be up to 15 characters. Sample Result Code, Date, and Time must be entered. Result Codes: P0, Primary Sample; D#, Duplicate Sample; S#, Split Sample (sent to second lab); BF#, Field Blank; BR#, Equipment Rinsate; BT#, Trip Blank; SF#, Field Spike (# = 1 to 9). Lab ID (up to 5 characters) is name of laboratory that will analyze the sample. Case ID (up to 5 characters) and SDG ID (sample delivery group, up to 15 characters) are required for blanks. Case ID may be the lab service request number or yy-mm. SDG may be lab's SDG, a cooler ID number, or mmdyyy. Enter sample preservation and handling data on chain-of-custody form. Also record detailed information about duplicate, split, rinsate, spike, and/or blank sample collection/handling in daily field notes.

Sampler's Name (print)	Signature
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Environment 1, Inc.

Sampled By <input type="checkbox"/> Bob Hilgoe <input checked="" type="checkbox"/> Bobby Fox Other: _____	Facility WAYNE Co. Project No. _____	Site ID 6029 Date (m/d/y) 02 02 05
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Site Description Monitoring Well Extraction Well Irrigation Well Spring Borehole Probe Other:

Air Temp: <input type="checkbox"/> °C <input type="checkbox"/> °F	Weather: _____
Well Locked? <input type="checkbox"/> yes <input type="checkbox"/> no	Damaged/Repairs Needed: _____
x TOC Description: _____	
TOC Stickup: _____ ft. above/below ground	Well Inside Diameter (ID): <input checked="" type="checkbox"/> 2-inch <input type="checkbox"/> 4-inch <input type="checkbox"/> Other: _____
Site Remarks (nearby wells pumping, tide, stream stage, etc.): _____	

Water Level Data Measurement Units: ft. Well or Borehole Total Depth (TD) from TOC:

<input checked="" type="checkbox"/> E-Tape, # 2 <input type="checkbox"/> Steel Tape <input type="checkbox"/> Other	Pre-Purge Initial	Pre-Purge Confirmation	Purging Start	During Purging	Purging End	After Sampling	Remarks
Time (hh:mm; 24-hr clock)							
Depth to Water							
Tape Correction							
Water Level (WL)							
Product Thickness							
Product Recovery <input type="checkbox"/> gallons <input type="checkbox"/> liters							

Measure water level from fixed measuring point (MP) or top of well casing (TOC). Record water depth to nearest 0.01 ft or 0.002 m, with minus (-) sign if level is above MP or TOC. If no mark on MP or TOC, measure water level from north side of casing. Measure static or pre-purging water level twice; record initial and confirmation measurements and measurement times (in 24-hour clock format). MP/TOC Stickup measurement is from ground surface to nearest 0.1 ft or 0.01 m. Depth to Water codes: N - not measured; D - dry; O - obstructed; P - pumping; F - flowing (artesian well); R - recently pumped; C - cascading. Water Level (WL) = Depth to Water - Tape Correction factor. Record free product presence at time of water level measurement; use "S" for free product thickness if sheen observed. If free product removed from well, record volume removed in gallons or liters, list product type in "Remarks" column.

Field WQ Data Purge Depth: Grab Bailer Pump Description: _____

Casing Volume: [_____(TD) - _____(WL)] • [_____(Well ID)] ² • [_____(Conversion Factor)] = _____ gals Conversion Factor = 0.0408 for feet and gallons; 0.1544 for feet and liters; 0.5066 for meters and liters; Well ID in inches							Well Goes Dry <input type="checkbox"/> While Purging <input type="checkbox"/>				
<input type="checkbox"/> Cum. Vol. Purged <input type="checkbox"/> Pumping Rate	Time (hh:mm; 24-hr clock)	pH (Temperature Corrected? <input type="checkbox"/>)	Temperature, °C	Dissolved Oxygen mg/L	S Conductivity μS/cm	Turbidity <input type="checkbox"/> NTU	Color/Tint	Odor	(Final)	Meter Type	Remarks
	0823	5.2								OAKTON	4.0/7.0/10.0 Buffers
		4.8									
		5.0								OAKTON	1413 498

Record time purging starts and ends in "Purging Start" and "Purging End" columns in Water Level Data section. Cum. Vol. Purged: cumulative volume removed before sampling, in gallons or liters. Pumping Rate is gpm or Lpm, depending on box checked in casing volume calculation. Use "Final" column above for recording sample field measurements, total volume purged before sampling or average pumping rate during purging. Record equipment calibration methods, decontamination procedures, equipment failures, purge water disposal method, etc. in daily field notes. SC: Specific Conductance corrected for temperature (μS/cm at 25°C); EC: Electrical Conductivity not corrected for temperature (μS/cm). μS/cm = μmho/cm. 1 gallon (US) = 3.785 L = 0.833 Imperial gallon

Sample Data Sample Depth: Grab Bailer Pump Description: _____

Field Sample ID (unique ID on bottles)	Result Code	Date (m/d/y)	Time (hh:mm)	Bottles (total to lab)	Filtered (0.45 μm)	Lab ID	Case ID	SDG ID	Remarks
WELL 3									

Sample ID may be up to 15 characters. Sample Result Code, Date, and Time must be entered. Result Codes: P0, Primary Sample; D#, Duplicate Sample; S#, Split Sample (sent to second lab); BF#, Field Blank; BR#, Equipment Rinsate; BT#, Trip Blank; SF#, Field Spike (# = 1 to 9). Lab ID (up to 5 characters) is name of laboratory that will analyze the sample. Case ID (up to 5 characters) and SDG ID (sample delivery group, up to 15 characters) are required for blanks. Case ID may be the lab service request number or yy-mm. SDG may be lab's SDG, a cooler ID number, or mmdyyy. Enter sample preservation and handling data on chain-of-custody form. Also record detailed information about duplicate, split, rinsate, spike, and/or blank sample collection/handling in daily field notes.

Sampler's Name (print) _____	Signature _____
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Environment 1, Inc.

Sampled By <input type="checkbox"/> Bob Hilgoe <input checked="" type="checkbox"/> Bobby Fox Other: _____	Facility <u>WAYNE CO.</u> Project No. _____	Site ID <u>6029</u> Date (m/d/y) <u>02 21 05</u>
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Site Description Monitoring Well Extraction Well Irrigation Well Spring Borehole Probe Other: _____

Air Temp: °C °F Weather: _____

Well Locked? yes no Damaged/Repairs Needed: _____

x TOC Description: _____

TOC Stickup: _____ ft. above/below ground Well Inside Diameter (ID): 2-inch 4-inch Other: _____

Site Remarks (nearby wells pumping, tide, stream stage, etc.) _____

Water Level Data Measurement Units: ft. Well or Borehole Total Depth (TD) from TOC: _____

x E-Tape, # 2 <input type="checkbox"/> Steel Tape <input type="checkbox"/> Other	Pre-Purge Initial	Pre-Purge Confirmation	Purging Start	During Purging	Purging End	After Sampling	Remarks
Time (hh:mm; 24-hr clock)							
Depth to Water							
Tape Correction							
Water Level (WL)							
Product Thickness							
Product Recovery <input type="checkbox"/> gallons <input type="checkbox"/> liters							

Measure water level from fixed measuring point (MP) or top of well casing (TOC). Record water depth to nearest 0.01 ft or 0.002 m, with minus (-) sign if level is above MP or TOC. If no mark on MP or TOC, measure water level from north side of casing. Measure static or pre-purging water level twice; record initial and confirmation measurements and measurement times (in 24-hour clock format). MP/TOC Stickup measurement is from ground surface to nearest 0.1 ft or 0.01 m. Depth to Water codes: N - not measured; D - dry; O - obstructed; P - pumping; F - flowing (artesian well); R - recently pumped; C - cascading. Water Level (WL) = Depth to Water - Tape Correction factor. Record free product presence at time of water level measurement; use "S" for free product thickness if sheen observed. If free product removed from well, record volume removed in gallons or liters, list product type in "Remarks" column.

Field WQ Data Purge Depth: Grab Bailer Pump Description: _____

Casing Volume: [_____(TD) - _____(WL)] • [_____(Well ID)]² • [_____(Conversion Factor)] = _____ gals
 Conversion Factor = 0.0408 for feet and gallons; 0.1544 for feet and liters; 0.5066 for meters and liters; Well ID in inches

Cum. Vol. Purged Pumping Rate

Time (hh:mm; 24-hr clock)	pH (Temperature Corrected? <input type="checkbox"/>)	Temperature, °C	Dissolved Oxygen mg/L	S Conductivity μS/cm	Turbidity <input type="checkbox"/> NTU	Color/Tint	Odor	(Final)	Meter Type	Remarks
	4.8	4.7	4.7						OAKTON	4.0/7.0/10.0 Buffers
									OAKTON	1413 498

Record time purging starts and ends in "Purging Start" and "Purging End" columns in Water Level Data section. Cum. Vol. Purged: cumulative volume removed before sampling, in gallons or liters. Pumping Rate is gpm or Lpm, depending on box checked in casing volume calculation. Use "Final" column above for recording sample field measurements, total volume purged before sampling or average pumping rate during purging. Record equipment calibration methods, decontamination procedures, equipment failures, purge water disposal method, etc. in daily field notes. SC: Specific Conductance corrected for temperature (μS/cm at 25°C); EC: Electrical Conductivity not corrected for temperature (μS/cm). μS/cm = μmho/cm. 1 gallon (US) = 3.785 L = 0.833 Imperial gallon

Sample Data Sample Depth: Grab Bailer Pump Description: _____

Field Sample ID (unique ID on bottles)	Result Code	Date (m/d/y)	Time (hh:mm)	Bottles (total to lab)	Filtered (0.45 μm)	Lab ID	Case ID	SDG ID	Remarks
WELL 9									

Sample ID may be up to 15 characters. Sample Result Code, Date, and Time must be entered. Result Codes: P0, Primary Sample; D#, Duplicate Sample; S#, Split Sample (sent to second lab); BF#, Field Blank; BR#, Equipment Rinsate; BT#, Trip Blank; SF#, Field Spike (# = 1 to 9). Lab ID (up to 5 characters) is name of laboratory that will analyze the sample. Case ID (up to 5 characters) and SDG ID (sample delivery group, up to 15 characters) are required for blanks. Case ID may be the lab service request number or yy-mm. SDG may be lab's SDG, a cooler ID number, or mmdyyy. Enter sample preservation and handling data on chain-of-custody form. Also record detailed information about duplicate, split, rinsate, spike, and/or blank sample collection/handling in daily field notes.

Sampler's Name (print) _____	Signature _____
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Environment 1, Inc.

Sampled By <input type="checkbox"/> Bob Hilgoe <input checked="" type="checkbox"/> Bobby Fox Other: _____	Facility <u>WAYNE CO.</u> Project No. _____	Site ID <u>6029</u> Date (m/d/y) <u>02/22/05</u>
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Site Description Monitoring Well Extraction Well Irrigation Well Spring Borehole Probe Other: _____

Air Temp: <input type="checkbox"/> °C <input type="checkbox"/> °F	Weather: _____
Well Locked? <input type="checkbox"/> yes <input type="checkbox"/> no	Damaged/Repairs Needed: _____
x TOC Description: _____	
TOC Stickup: _____ ft. above/below ground	Well Inside Diameter (ID): <input checked="" type="checkbox"/> 2-inch <input type="checkbox"/> 4-inch Other: _____
Site Remarks (nearby wells pumping, tide, stream stage, etc.): _____	

Water Level Data Measurement Units: ft. Well or Borehole Total Depth (TD) from TOC: _____

<input checked="" type="checkbox"/> E-Tape, # 2 <input type="checkbox"/> Steel Tape <input type="checkbox"/> Other	Pre-Purge Initial	Pre-Purge Confirmation	Purging Start	During Purging	Purging End	After Sampling	Remarks
Time (hh:mm; 24-hr clock)							
Depth to Water							
Tape Correction							
Water Level (WL)							
Product Thickness							
Product Recovery <input type="checkbox"/> gallons <input type="checkbox"/> liters							

Measure water level from fixed measuring point (MP) or top of well casing (TOC). Record water depth to nearest 0.01 ft or 0.002 m, with minus (-) sign if level is above MP or TOC. If no mark on MP or TOC, measure water level from north side of casing. Measure static or pre-purging water level twice; record initial and confirmation measurements and measurement times (in 24-hour clock format). MP/TOC Stickup measurement is from ground surface to nearest 0.1 ft or 0.01 m. Depth to Water codes: N - not measured; D - dry; O - obstructed; P - pumping; F - flowing (artesian well); R - recently pumped; C - cascading. Water Level (WL) = Depth to Water - Tape Correction factor. Record free product presence at time of water level measurement; use "S" for free product thickness if sheen observed. If free product removed from well, record volume removed in gallons or liters, list product type in "Remarks" column.

Field WQ Data Purge Depth: _____ Grab Bailer Pump Description: _____

Casing Volume: [_____ (TD) - _____ (WL)] • [_____ (Well ID)] ² • [_____ (Conversion Factor)] = _____ gals Conversion Factor = 0.0408 for feet and gallons; 0.1544 for feet and liters; 0.5066 for meters and liters; Well ID in inches							Well Goes Dry While Purging <input type="checkbox"/>				
<input type="checkbox"/> Cum. Vol. Purged <input type="checkbox"/> Pumping Rate	Time (hh:mm; 24-hr clock)	pH (Temperature Corrected? <input type="checkbox"/>)	Temperature, °C	Dissolved Oxygen mg/L	S Conductivity μS/cm	Turbidity <input type="checkbox"/> NTU	Color/Tint	Odor	(Final)	Meter Type	Remarks
		4.6	4.6							OAKTON	4.0/7.0/10.0 Buffers
										OAKTON	1413 498

Record time purging starts and ends in "Purging Start" and "Purging End" columns in Water Level Data section. Cum. Vol. Purged: cumulative volume removed before sampling, in gallons or liters. Pumping Rate is gpm or Lpm, depending on box checked in casing volume calculation. Use "Final" column above for recording sample field measurements, total volume purged before sampling or average pumping rate during purging. Record equipment calibration methods, decontamination procedures, equipment failures, purge water disposal method, etc. in daily field notes. SC: Specific Conductance corrected for temperature (μS/cm at 25°C); EC: Electrical Conductivity not corrected for temperature (μS/cm). μS/cm = μmho/cm. 1 gallon (US) = 3.785 L = 0.833 Imperial gallon

Sample Data Sample Depth: _____ Grab Bailer Pump Description: _____

Field Sample ID (unique ID on bottles)	Result Code	Date (m/d/y)	Time (hh:mm)	Bottles (total to lab)	Filtered (0.45 μm)	Lab ID	Case ID	SDG ID	Remarks
WELL 10									

Sample ID may be up to 15 characters. Sample Result Code, Date, and Time must be entered. Result Codes: P0, Primary Sample; D#, Duplicate Sample; S#, Split Sample (sent to second lab); BF#, Field Blank; BR#, Equipment Rinsate; BT#, Trip Blank; SF#, Field Spike (# = 1 to 9). Lab ID (up to 5 characters) is name of laboratory that will analyze the sample. Case ID (up to 5 characters) and SDG ID (sample delivery group, up to 15 characters) are required for blanks. Case ID may be the lab service request number or yy-mm. SDG may be lab's SDG, a cooler ID number, or mmdyyy. Enter sample preservation and handling data on chain-of-custody form. Also record detailed information about duplicate, split, rinsate, spike, and/or blank sample collection/handling in daily field notes.

Sampler's Name (print) _____	Signature _____
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Environment 1, Inc.

Sampled By <input type="checkbox"/> Bob Hilgoe <input checked="" type="checkbox"/> Bobby Fox Other: _____	Facility <u>WAYNE Co.</u> Project No. _____	Site ID <u>6029</u> Date (m/d/y) <u>02 22 05</u>
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Site Description Monitoring Well Extraction Well Irrigation Well Spring Borehole Probe Other: _____

Air Temp: <input type="checkbox"/> °C <input type="checkbox"/> °F Weather: _____
Well Locked? <input type="checkbox"/> yes <input type="checkbox"/> no Damaged/Repairs Needed: _____
x TOC Description: _____
TOC Stickup: _____ ft. above/below ground Well Inside Diameter (ID): <input checked="" type="checkbox"/> 2-inch <input type="checkbox"/> 4-inch Other: _____
Site Remarks (nearby wells pumping, tide, stream stage, etc.) _____

Water Level Data Measurement Units: ft. Well or Borehole Total Depth (TD) from TOC: _____

<input checked="" type="checkbox"/> E-Tape, # 2 <input type="checkbox"/> Steel Tape <input type="checkbox"/> Other	Pre-Purge Initial	Pre-Purge Confirmation	Purging Start	During Purging	Purging End	After Sampling	Remarks
Time (hh:mm; 24-hr clock)							
Depth to Water							
Tape Correction							
Water Level (WL)							
Product Thickness							
Product Recovery <input type="checkbox"/> gallons <input type="checkbox"/> liters							

Measure water level from fixed measuring point (MP) or top of well casing (TOC). Record water depth to nearest 0.01 ft or 0.002 m, with minus (-) sign if level is above MP or TOC. If no mark on MP or TOC, measure water level from north side of casing. Measure static or pre-purging water level twice; record initial and confirmation measurements and measurement times (in 24-hour clock format). MP/TOC Stickup measurement is from ground surface to nearest 0.1 ft or 0.01 m. Depth to Water codes: N - not measured; D - dry; O - obstructed; P - pumping; F - flowing (artesian well); R - recently pumped; C - cascading. Water Level (WL) = Depth to Water - Tape Correction factor. Record free product presence at time of water level measurement; use "S" for free product thickness if sheen observed. If free product removed from well, record volume removed in gallons or liters, list product type in "Remarks" column.

Field WQ Data Purge Depth: Grab Bailer Pump Description: _____

Casing Volume: [_____ (TD) - _____ (WL)] • [_____ (Well ID)] ² • [_____ (Conversion Factor)] = _____ gals Conversion Factor = 0.0408 for feet and gallons; 0.1544 for feet and liters; 0.5066 for meters and liters; Well ID in inches							Well Goes Dry While Purging <input type="checkbox"/>				
<input type="checkbox"/> Cum. Vol. Purged <input type="checkbox"/> Pumping Rate	Time (hh:mm; 24-hr clock)	pH (Temperature Corrected? <input type="checkbox"/>)	Temperature, °C	Dissolved Oxygen mg/L	S Conductivity μS/cm	Turbidity <input type="checkbox"/> NTU	Color/Tint	Odor	(Final)	Meter Type	Remarks
		5.2								OAKTON	4.0/7.0/10.0 Buffers
										OAKTON	14.13 4.98

Record time purging starts and ends in "Purging Start" and "Purging End" columns in Water Level Data section. Cum. Vol. Purged: cumulative volume removed before sampling, in gallons or liters. Pumping Rate is gpm or Lpm, depending on box checked in casing volume calculation. Use "Final" column above for recording sample field measurements, total volume purged before sampling or average pumping rate during purging. Record equipment calibration methods, decontamination procedures, equipment failures, purge water disposal method, etc. in daily field notes. SC: Specific Conductance corrected for temperature (μS/cm at 25°C); EC: Electrical Conductivity not corrected for temperature (μS/cm). μS/cm = μmho/cm. 1 gallon (US) = 3.785 L = 0.833 Imperial gallon

Sample Data Sample Depth: Grab Bailer Pump Description: _____

Field Sample ID (unique ID on bottles)	Result Code	Date (m/d/y)	Time (hh:mm)	Bottles (total to lab)	Filtered (0.45 μm)	Lab ID	Case ID	SDG ID	Remarks
WELL V									

Sample ID may be up to 15 characters. Sample Result Code, Date, and Time must be entered. Result Codes: P0, Primary Sample; D#, Duplicate Sample; S#, Split Sample (sent to second lab); BF#, Field Blank; BR#, Equipment Rinsate; BT#, Trip Blank; SF#, Field Spike (# = 1 to 9). Lab ID (up to 5 characters) is name of laboratory that will analyze the sample. Case ID (up to 5 characters) and SDG ID (sample delivery group, up to 15 characters) are required for blanks. Case ID may be the lab service request number or yy-mm. SDG may be lab's SDG, a cooler ID number, or mmdyyy. Enter sample preservation and handling data on chain-of-custody form. Also record detailed information about duplicate, split, rinsate, spike, and/or blank sample collection/handling in daily field notes.

Sampler's Name (print) _____	Signature _____
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Environment 1, Inc.

Sampled By <input checked="" type="checkbox"/> Bob Hilgoe <input checked="" type="checkbox"/> Bobby Fox	Facility WAYNE Co.	Site ID 6029
Other:	Project No.	Date (m/d/y) 02 21 05

Site Description Monitoring Well Extraction Well Irrigation Well Spring Borehole Probe Other:

Air Temp: <input type="checkbox"/> °C <input type="checkbox"/> °F	Weather:
Well Locked? <input type="checkbox"/> yes <input type="checkbox"/> no	Damaged/Repairs Needed:
x TOC Description:	
TOC Stickup: _____ ft. above/below ground	Well Inside Diameter (ID): <input checked="" type="checkbox"/> 2-inch <input type="checkbox"/> 4-inch <input type="checkbox"/> Other:
Site Remarks (nearby wells pumping, tide, stream stage, etc.):	

Water Level Data Measurement Units: ft. Well or Borehole Total Depth (TD) from TOC:

<input checked="" type="checkbox"/> E-Tape, #2 <input type="checkbox"/> Steel Tape <input type="checkbox"/> Other	Pre-Purge Initial	Pre-Purge Confirmation	Purging Start	During Purging	Purging End	After Sampling	Remarks
Time (hh:mm; 24-hr clock)							
Depth to Water							
Tape Correction							
Water Level (WL)							
Product Thickness							
Product Recovery <input type="checkbox"/> gallons <input type="checkbox"/> liters							

Measure water level from fixed measuring point (MP) or top of well casing (TOC). Record water depth to nearest 0.01 ft or 0.002 m, with minus (-) sign if level is above MP or TOC. If no mark on MP or TOC, measure water level from north side of casing. Measure static or pre-purging water level twice; record initial and confirmation measurements and measurement times (in 24-hour clock format). MP/TOC Stickup measurement is from ground surface to nearest 0.1 ft or 0.01 m. Depth to Water codes: N - not measured; D - dry; O - obstructed; P - pumping; F - flowing (artesian well); R - recently pumped; C - cascading. Water Level (WL) = Depth to Water - Tape Correction factor. Record free product presence at time of water level measurement; use "S" for free product thickness if sheen observed. If free product removed from well, record volume removed in gallons or liters, list product type in "Remarks" column.

Field WQ Data Purge Depth: Grab Bailor Pump Description:

Casing Volume: [_____(TD) - _____(WL)] • [_____(Well ID)] ² • [_____(Conversion Factor)] = _____ gals Conversion Factor = 0.0408 for feet and gallons; 0.1544 for feet and liters; 0.5066 for meters and liters; Well ID in inches							Well Goes Dry While Purging <input type="checkbox"/>				
<input type="checkbox"/> Cum. Vol. Purged <input type="checkbox"/> Pumping Rate	Time (hh:mm; 24-hr clock)	pH (Temperature Corrected? <input type="checkbox"/>)	Temperature, °C	Dissolved Oxygen mg/L	S Conductivity μS/cm	Turbidity <input type="checkbox"/> NTU	Color/Tint	Odor	(Final)	Meter Type	Remarks
		4.7	4.7	4.7						OAKTON	4.0/7.0/10.0 Buffers
										OAKTON	1413 498

Record time purging starts and ends in "Purging Start" and "Purging End" columns in Water Level Data section. Cum. Vol. Purged: cumulative volume removed before sampling, in gallons or liters. Pumping Rate is gpm or Lpm, depending on box checked in casing volume calculation. Use "Final" column above for recording sample field measurements, total volume purged before sampling or average pumping rate during purging. Record equipment calibration methods, decontamination procedures, equipment failures, purge water disposal method, etc. in daily field notes. SC: Specific Conductance corrected for temperature (μS/cm at 25°C); EC: Electrical Conductivity not corrected for temperature (μS/cm). μS/cm = μmho/cm. 1 gallon (US) = 3.785 L = 0.833 Imperial gallon

Sample Data Sample Depth: Grab Bailor Pump Description:

Field Sample ID (unique ID on bottles)	Result Code	Date (m/d/y)	Time (hh:mm)	Bottles (total to lab)	Filtered (0.45 μm)	Lab ID	Case ID	SDG ID	Remarks
WELLS									

Sample ID may be up to 15 characters. Sample Result Code, Date, and Time must be entered. Result Codes: P0, Primary Sample; D#, Duplicate Sample; S#, Split Sample (sent to second lab); BF#, Field Blank; BR#, Equipment Rinsate; BT#, Trip Blank; SF#, Field Spike (# = 1 to 9). Lab ID (up to 5 characters) is name of laboratory that will analyze the sample. Case ID (up to 5 characters) and SDG ID (sample delivery group, up to 15 characters) are required for blanks. Case ID may be the lab service request number or yy-mm. SDG may be lab's SDG, a cooler ID number, or mmdyyy. Enter sample preservation and handling data on chain-of-custody form. Also record detailed information about duplicate, split, rinsate, spike, and/or blank sample collection/handling in daily field notes.

Sampler's Name (print)	Signature
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Environment 1, Inc.

Sampled By <input checked="" type="checkbox"/> Bob Hilgoe <input checked="" type="checkbox"/> Bobby Fox	Facility WAYNE CO.	Site ID 6029
Other:	Project No.	Date (m/d/y) 02 ²¹ 22 05

Site Description Monitoring Well Extraction Well Irrigation Well Spring Borehole Probe Other:

Air Temp: <input type="checkbox"/> °C <input type="checkbox"/> °F	Weather:
Well Locked? <input type="checkbox"/> yes <input type="checkbox"/> no	Damaged/Repairs Needed:
x TOC Description:	
TOC Stickup: _____ ft. above/below ground	Well Inside Diameter (ID): <input checked="" type="checkbox"/> 2-inch <input type="checkbox"/> 4-inch <input type="checkbox"/> Other:
Site Remarks (nearby wells pumping, tide, stream stage, etc.):	

Water Level Data Measurement Units: ft. Well or Borehole Total Depth (TD) from TOC:

x E-Tape, # 2 <input type="checkbox"/> Steel Tape <input type="checkbox"/> Other	Pre-Purge Initial	Pre-Purge Confirmation	Purging Start	During Purging	Purging End	After Sampling	Remarks
Time (hh:mm; 24-hr clock)							
Depth to Water							
Tape Correction							
Water Level (WL)							
Product Thickness							
Product Recovery <input type="checkbox"/> gallons <input type="checkbox"/> liters							

Measure water level from fixed measuring point (MP) or top of well casing (TOC). Record water depth to nearest 0.01 ft or 0.002 m, with minus (-) sign if level is above MP or TOC. If no mark on MP or TOC, measure water level from north side of casing. Measure static or pre-purging water level twice; record initial and confirmation measurements and measurement times (in 24-hour clock format). MP/TOC Stickup measurement is from ground surface to nearest 0.1 ft or 0.01 m. Depth to Water codes: N - not measured; D - dry; O - obstructed; P - pumping; F - flowing (artesian well); R - recently pumped; C - cascading. Water Level (WL) = Depth to Water - Tape Correction factor. Record free product presence at time of water level measurement; use "S" for free product thickness if sheen observed. If free product removed from well, record volume removed in gallons or liters, list product type in "Remarks" column.

Field WQ Data Purge Depth: Grab Bailer Pump Description:

Casing Volume: [_____ (TD) - _____ (WL)] • [_____ (Well ID)] ² • [_____ (Conversion Factor)] = _____ gals Conversion Factor = 0.0408 for feet and gallons; 0.1544 for feet and liters; 0.5066 for meters and liters; Well ID in inches							Well Goes Dry <input type="checkbox"/> While Purging				
Cum. Vol. Purged <input type="checkbox"/> Pumping Rate	Time (hh:mm; 24-hr clock)	pH (Temperature Corrected? <input type="checkbox"/>)	Temperature, °C	Dissolved Oxygen mg/L	S Conductivity μS/cm	Turbidity <input type="checkbox"/> NTU	Color/Tint	Odor	(Final)	Meter Type	Remarks
		5.4	5.5	5.4						OAKTON	4.0/7.0/10.0 Buffers
										OAKTON	1473 498

Record time purging starts and ends in "Purging Start" and "Purging End" columns in Water Level Data section. Cum. Vol. Purged: cumulative volume removed before sampling, in gallons or liters. Pumping Rate is gpm or Lpm, depending on box checked in casing volume calculation. Use "Final" column above for recording sample field measurements, total volume purged before sampling or average pumping rate during purging. Record equipment calibration methods, decontamination procedures, equipment failures, purge water disposal method, etc. in daily field notes. SC: Specific Conductance corrected for temperature (μS/cm at 25°C); EC: Electrical Conductivity not corrected for temperature (μS/cm). μS/cm = μmho/cm. 1 gallon (US) = 3.785 L = 0.833 imperial gallon

Sample Data Sample Depth: Grab Bailer Pump Description:

Field Sample ID (unique ID on bottles)	Result Code	Date (m/d/y)	Time (hh:mm)	Bottles (total to lab)	Filtered (0.45 μm)	Lab ID	Case ID	SDG ID	Remarks
WELL 7									

Sample ID may be up to 15 characters. Sample Result Code, Date, and Time must be entered. Result Codes: P0, Primary Sample; D#, Duplicate Sample; S#, Split Sample (sent to second lab); BF#, Field Blank; BR#, Equipment Rinsate; BT#, Trip Blank; SF#, Field Spike (# = 1 to 9). Lab ID (up to 5 characters) is name of laboratory that will analyze the sample. Case ID (up to 5 characters) and SDG ID (sample delivery group, up to 15 characters) are required for blanks. Case ID may be the lab service request number or yy-mm. SDG may be lab's SDG, a cooler ID number, or mmdydy. Enter sample preservation and handling data on chain-of-custody form. Also record detailed information about duplicate, split, rinsate, spike, and/or blank sample collection/handling in daily field notes.

Sampler's Name (print)	Signature
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Environment 1, Inc.

Sampled By <input checked="" type="checkbox"/> Bob Hilgoe <input type="checkbox"/> Bobby Fox	Facility WAYNE CO.	Site ID 6029
Other:	Project No.	Date (m/d/y) 02 nd 22 05

Site Description Monitoring Well Extraction Well Irrigation Well Spring Borehole Probe Other:

Air Temp: <input type="checkbox"/> °C <input type="checkbox"/> °F	Weather:
Well Locked? <input type="checkbox"/> yes <input type="checkbox"/> no	Damaged/Repairs Needed:
x TOC Description:	
TOC Stickup: _____ ft. above/below ground	Well Inside Diameter (ID): <input checked="" type="checkbox"/> 2-inch <input type="checkbox"/> 4-inch <input type="checkbox"/> Other:
Site Remarks (nearby wells pumping, tide, stream stage, etc.):	

Water Level Data Measurement Units: ft. Well or Borehole Total Depth (TD) from TOC:

x E-Tape, # 2 <input type="checkbox"/> Steel Tape <input type="checkbox"/> Other	Pre-Purge Initial	Pre-Purge Confirmation	Purging Start	During Purging	Purging End	After Sampling	Remarks
Time (hh:mm; 24-hr clock)							
Depth to Water							
Tape Correction							
Water Level (WL)							
Product Thickness							
Product Recovery <input type="checkbox"/> gallons <input type="checkbox"/> liters							

Measure water level from fixed measuring point (MP) or top of well casing (TOC). Record water depth to nearest 0.01 ft or 0.002 m, with minus (-) sign if level is above MP or TOC. If no mark on MP or TOC, measure water level from north side of casing. Measure static or pre-purging water level twice; record initial and confirmation measurements and measurement times (in 24-hour clock format). MP/TOC Stickup measurement is from ground surface to nearest 0.1 ft or 0.01 m. Depth to Water codes: N - not measured; D - dry; O - obstructed; P - pumping; F - flowing (artesian well); R - recently pumped; C - cascading. Water Level (WL) = Depth to Water - Tape Correction factor. Record free product presence at time of water level measurement; use "S" for free product thickness if sheen observed. If free product removed from well, record volume removed in gallons or liters, list product type in "Remarks" column.

Field WQ Data Purge Depth: Grab Bailer Pump Description:

Casing Volume: [_____(TD) - _____(WL)] • [_____(Well ID)] ² • [_____(Conversion Factor)] = _____ gals Conversion Factor = 0.0408 for feet and gallons; 0.1544 for feet and liters; 0.5066 for meters and liters; Well ID in inches							Well Goes Dry While Purging <input type="checkbox"/>					
Cum. Vol. Purged	Pumping Rate	Time (hh:mm; 24-hr clock)	pH (Temperature Corrected? <input type="checkbox"/>)	Temperature, °C	Dissolved Oxygen mg/L	S Conductivity μS/cm	Turbidity <input type="checkbox"/> NTU	Color/Tint	Odor	(Final)	Meter Type	Remarks
			4.9	5.0	5.0						OAKTON	4.0/7.0/10.0 Buffers
											OAKTON	1413 498

Record time purging starts and ends in "Purging Start" and "Purging End" columns in Water Level Data section. Cum. Vol. Purged: cumulative volume removed before sampling, in gallons or liters. Pumping Rate is gpm or Lpm, depending on box checked in casing volume calculation. Use "Final" column above for recording sample field measurements, total volume purged before sampling or average pumping rate during purging. Record equipment calibration methods, decontamination procedures, equipment failures, purge water disposal method, etc. in daily field notes. SC: Specific Conductance corrected for temperature (μS/cm at 25°C); EC: Electrical Conductivity not corrected for temperature (μS/cm). μS/cm = μmho/cm. 1 gallon (US) = 3.785 L = 0.833 Imperial gallon

Sample Data Sample Depth: Grab Bailer Pump Description:

Field Sample ID (unique ID on bottles)	Result Code	Date (m/d/y)	Time (hh:mm)	Bottles (total to lab)	Filtered (0.45 μm)	Lab ID	Case ID	SDG ID	Remarks
WELL 8									

Sample ID may be up to 15 characters. Sample Result Code, Date, and Time must be entered. Result Codes: P0, Primary Sample; D#, Duplicate Sample; S#, Split Sample (sent to second lab); BF#, Field Blank; BR#, Equipment Rinsate; BT#, Trip Blank; SF#, Field Spike (# = 1 to 9). Lab ID (up to 5 characters) is name of laboratory that will analyze the sample. Case ID (up to 5 characters) and SDG ID (sample delivery group, up to 15 characters) are required for blanks. Case ID may be the lab service request number or yy-mm. SDG may be lab's SDG, a cooler ID number, or mmdyyy. Enter sample preservation and handling data on chain-of-custody form. Also record detailed information about duplicate, split, rinsate, spike, and/or blank sample collection/handling in daily field notes.

Sampler's Name (print)	Signature
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Environment 1, Inc.

Sampled By <input checked="" type="checkbox"/> Bob Hilgoe <input checked="" type="checkbox"/> Bobby Fox	Facility WAYNE Co.	Site ID 6029
Other:	Project No.	Date (m/d/y) 02 21 05

Site Description Monitoring Well Extraction Well Irrigation Well Spring Borehole Probe Other:

Air Temp: <input type="checkbox"/> °C <input type="checkbox"/> °F	Weather:
Well Locked? <input type="checkbox"/> yes <input type="checkbox"/> no	Damaged/Repairs Needed:
x TOC Description:	
TOC Stickup: _____ ft. above/below ground	Well Inside Diameter (ID): <input checked="" type="checkbox"/> 2-inch <input type="checkbox"/> 4-inch <input type="checkbox"/> Other:
Site Remarks (nearby wells pumping, tide, stream stage, etc.):	

Water Level Data Measurement Units: ft. Well or Borehole Total Depth (TD) from TOC:

x E-Tape, # 2 <input type="checkbox"/> Steel Tape <input type="checkbox"/> Other	Pre-Purge Initial	Pre-Purge Confirmation	Purging Start	During Purging	Purging End	After Sampling	Remarks
Time (hh:mm; 24-hr clock)							
Depth to Water							
Tape Correction							
Water Level (WL)							
Product Thickness							
Product Recovery <input type="checkbox"/> gallons <input type="checkbox"/> liters							

Measure water level from fixed measuring point (MP) or top of well casing (TOC). Record water depth to nearest 0.01 ft or 0.002 m, with minus (-) sign if level is above MP or TOC. If no mark on MP or TOC, measure water level from north side of casing. Measure static or pre-purging water level twice; record initial and confirmation measurements and measurement times (in 24-hour clock format). MP/TOC Stickup measurement is from ground surface to nearest 0.1 ft or 0.01 m. Depth to Water codes: N - not measured; D - dry; O - obstructed; P - pumping; F - flowing (artesian well); R - recently pumped; C - cascading. Water Level (WL) = Depth to Water - Tape Correction factor. Record free product presence at time of water level measurement; use "S" for free product thickness if sheen observed. If free product removed from well, record volume removed in gallons or liters, list product type in "Remarks" column.

Field WQ Data Purge Depth: Grab Bailer Pump Description:

Casing Volume: [_____(TD) - _____(WL)] • [_____(Well ID)] ² • [_____(Conversion Factor)] = _____ gals							Well Goes Dry While Purging <input type="checkbox"/>		
Conversion Factor = 0.0408 for feet and gallons; 0.1544 for feet and liters; 0.5066 for meters and liters; Well ID in inches									
Cum. Vol. Purged <input type="checkbox"/> Pumping Rate	Time (hh:mm; 24-hr clock)	pH (Temperature Corrected? <input type="checkbox"/>)	Temperature, °C	Dissolved Oxygen mg/L	S Conductivity μS/cm	Turbidity <input type="checkbox"/> NTU	Color/Tint	Odor	Remarks
		4.9							OAKTON 4.0/7.0/10.0 Buffers
									OAKTON 1413 498

Record time purging starts and ends in "Purging Start" and "Purging End" columns in Water Level Data section. Cum. Vol. Purged: cumulative volume removed before sampling, in gallons or liters. Pumping Rate is gpm or Lpm, depending on box checked in casing volume calculation. Use "Final" column above for recording sample field measurements, total volume purged before sampling or average pumping rate during purging. Record equipment calibration methods, decontamination procedures, equipment failures, purge water disposal method, etc. in daily field notes. SC: Specific Conductance corrected for temperature (μS/cm at 25°C); EC: Electrical Conductivity not corrected for temperature (μS/cm). μS/cm = μmho/cm. 1 gallon (US) = 3.785 L = 0.833 Imperial gallon

Sample Data Sample Depth: Grab Bailer Pump Description:

Field Sample ID (unique ID on bottles)	Result Code	Date (m/d/y)	Time (hh:mm)	Bottles (total to lab)	Filtered (0.45 μm)	Lab ID	Case ID	SDG ID	Remarks
WELL C									

Sample ID may be up to 15 characters. Sample Result Code, Date, and Time must be entered. Result Codes: P0, Primary Sample; D#, Duplicate Sample; S#, Split Sample (sent to second lab); BF#, Field Blank; BR#, Equipment Rinsate; BT#, Trip Blank; SF#, Field Spike (# = 1 to 9). Lab ID (up to 5 characters) is name of laboratory that will analyze the sample. Case ID (up to 5 characters) and SDG ID (sample delivery group, up to 15 characters) are required for blanks. Case ID may be the lab service request number or yy-mm. SDG may be lab's SDG, a cooler ID number, or mmdyy. Enter sample preservation and handling data on chain-of-custody form. Also record detailed information about duplicate, split, rinsate, spike, and/or blank sample collection/handling in daily field notes.

Sampler's Name (print)	Signature
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Environment 1, Inc.

Sampled By <input type="checkbox"/> Bob Hilgoe <input checked="" type="checkbox"/> Bobby Fox Other: _____	Facility WAYNE Co. Project No. _____	Site ID 6029 Date (m/d/y) 02/22/05
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Site Description Monitoring Well Extraction Well Irrigation Well Spring Borehole Probe Other:

Air Temp: <input type="checkbox"/> °C <input type="checkbox"/> °F	Weather: _____
Well Locked? <input type="checkbox"/> yes <input type="checkbox"/> no	Damaged/Repairs Needed: _____
x TOC Description: _____	
TOC Stickup: _____ ft. above/below ground	Well Inside Diameter (ID): <input checked="" type="checkbox"/> 2-inch <input type="checkbox"/> 4-inch <input type="checkbox"/> Other: _____
Site Remarks (nearby wells pumping, tide, stream stage, etc.): _____	

Water Level Data Measurement Units: ft. Well or Borehole Total Depth (TD) from TOC:

<input checked="" type="checkbox"/> E-Tape, # 2 <input type="checkbox"/> Steel Tape <input type="checkbox"/> Other	Pre-Purge Initial	Pre-Purge Confirmation	Purging Start	During Purging	Purging End	After Sampling	Remarks
Time (hh:mm; 24-hr clock)							
Depth to Water							
Tape Correction							
Water Level (WL)							
Product Thickness							
Product Recovery <input type="checkbox"/> gallons <input type="checkbox"/> liters							

Measure water level from fixed measuring point (MP) or top of well casing (TOC). Record water depth to nearest 0.01 ft or 0.002 m, with minus (-) sign if level is above MP or TOC. If no mark on MP or TOC, measure water level from north side of casing. Measure static or pre-purging water level twice; record initial and confirmation measurements and measurement times (in 24-hour clock format). MP/TOC Stickup measurement is from ground surface to nearest 0.1 ft or 0.01 m. Depth to Water codes: N - not measured; D - dry; O - obstructed; P - pumping; F - flowing (artesian well); R - recently pumped; C - cascading. Water Level (WL) = Depth to Water - Tape Correction factor. Record free product presence at time of water level measurement; use "S" for free product thickness if sheen observed. If free product removed from well, record volume removed in gallons or liters, list product type in "Remarks" column.

Field WQ Data Purge Depth: Grab Bailer Pump Description: _____

Casing Volume: [_____ (TD) - _____ (WL)] • [_____ (Well ID)] ² • [_____ (Conversion Factor)] = _____ gals Conversion Factor = 0.0408 for feet and gallons; 0.1544 for feet and liters; 0.5066 for meters and liters; Well ID in inches							Well Goes Dry While Purging <input checked="" type="checkbox"/>				
<input type="checkbox"/> Cum. Vol. Purged <input type="checkbox"/> Pumping Rate	Time (hh:mm; 24-hr clock)	pH (Temperature Corrected? <input type="checkbox"/>)	Temperature, °C	Dissolved Oxygen mg/L	S Conductivity μS/cm	Turbidity <input type="checkbox"/> NTU	Color/Tint	Odor	(Final)	Meter Type	Remarks
		4.8								OAKTON	4.0/7.0/10.0 Buffers
										OAKTON	1413 498

Record time purging starts and ends in "Purging Start" and "Purging End" columns in Water Level Data section. Cum. Vol. Purged: cumulative volume removed before sampling, in gallons or liters. Pumping Rate is gpm or Lpm, depending on box checked in casing volume calculation. Use "Final" column above for recording sample field measurements, total volume purged before sampling or average pumping rate during purging. Record equipment calibration methods, decontamination procedures, equipment failures, purge water disposal method, etc. in daily field notes. SC: Specific Conductance corrected for temperature (μS/cm at 25°C); EC: Electrical Conductivity not corrected for temperature (μS/cm). μS/cm = μmho/cm. 1 gallon (US) = 3.785 L = 0.833 Imperial gallon

Sample Data Sample Depth: Grab Bailer Pump Description: _____

Field Sample ID (unique ID on bottles)	Result Code	Date (m/d/y)	Time (hh:mm)	Bottles (total to lab)	Filtered (0.45 μm)	Lab ID	Case ID	SDG ID	Remarks
WELL 11									

Sample ID may be up to 15 characters. Sample Result Code, Date, and Time must be entered. Result Codes: P0, Primary Sample; D#, Duplicate Sample; S#, Split Sample (sent to second lab); BF#, Field Blank; BR#, Equipment Rinsate; BT#, Trip Blank; SF#, Field Spike (# = 1 to 9). Lab ID (up to 5 characters) is name of laboratory that will analyze the sample. Case ID (up to 5 characters) and SDG ID (sample delivery group, up to 15 characters) are required for blanks. Case ID may be the lab service request number or yy-mm. SDG may be lab's SDG, a cooler ID number, or mmdyyy. Enter sample preservation and handling data on chain-of-custody form. Also record detailed information about duplicate, split, rinsate, spike, and/or blank sample collection/handling in daily field notes.

Sampler's Name (print)	Signature
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Environment 1, Inc.

Sampled By <input checked="" type="checkbox"/> Bob Hilgoe <input checked="" type="checkbox"/> Bobby Fox Other: _____	Facility <u>WAYNE CO.</u> Project No. _____	Site ID <u>6029</u> Date (m/d/y) <u>02/22/05</u>
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Site Description Monitoring Well Extraction Well Irrigation Well Spring Borehole Probe Other: _____

Air Temp: <input type="checkbox"/> °C <input type="checkbox"/> °F Weather: _____
Well Locked? <input type="checkbox"/> yes <input type="checkbox"/> no Damaged/Repairs Needed: _____
x TOC Description: _____
TOC Stickup: _____ ft. above/below ground Well Inside Diameter (ID): <input checked="" type="checkbox"/> 2-inch <input type="checkbox"/> 4-inch Other: _____
Site Remarks (nearby wells pumping, tide, stream stage, etc.) _____

Water Level Data Measurement Units: ft. Well or Borehole Total Depth (TD) from TOC:

<input checked="" type="checkbox"/> E-Tape, #2 <input type="checkbox"/> Steel Tape <input type="checkbox"/> Other	Pre-Purge Initial	Pre-Purge Confirmation	Purging Start	During Purging	Purging End	After Sampling	Remarks
Time (hh:mm; 24-hr clock)							
Depth to Water							
Tape Correction							
Water Level (WL)							
Product Thickness							
Product Recovery							
<input type="checkbox"/> gallons <input type="checkbox"/> liters							

Measure water level from fixed measuring point (MP) or top of well casing (TOC). Record water depth to nearest 0.01 ft or 0.002 m, with minus (-) sign if level is above MP or TOC. If no mark on MP or TOC, measure water level from north side of casing. Measure static or pre-purging water level twice; record initial and confirmation measurements and measurement times (in 24-hour clock format). MPT/OC Stickup measurement is from ground surface to nearest 0.1 ft or 0.01 m. Depth to Water codes: N - not measured; D - dry; O - obstructed; P - pumping; F - flowing (artesian well); R - recently pumped; C - cascading. Water Level (WL) = Depth to Water - Tape Correction factor. Record free product presence at time of water level measurement; use "S" for free product thickness if sheen observed. If free product removed from well, record volume removed in gallons or liters, list product type in "Remarks" column.

Field WQ Data Purge Depth: Grab Bailer Pump Description: _____

Casing Volume: [_____ (TD) - _____ (WL)] • [_____ (Well ID)] ² • [_____ (Conversion Factor)] = _____ gals Conversion Factor = 0.0408 for feet and gallons; 0.1544 for feet and liters; 0.5066 for meters and liters; Well ID in inches							Well Goes Dry While Purging <input checked="" type="checkbox"/>				
<input type="checkbox"/> Cum. Vol. Purged <input type="checkbox"/> Pumping Rate	Time (hh:mm; 24-hr clock)	pH (Temperature Corrected? <input type="checkbox"/>)	Temperature, °C	Dissolved Oxygen mg/L	S Conductivity μS/cm	Turbidity <input type="checkbox"/> NTU	Color/Tint	Odor	(Final)	Meter Type	Remarks
		<u>5.3</u>	<u>5.3</u>							OAKTON	4.0/7.0/10.0 Buffers
										OAKTON	<u>1413</u> <u>498</u>

Record time purging starts and ends in "Purging Start" and "Purging End" columns in Water Level Data section. Cum. Vol. Purged: cumulative volume removed before sampling, in gallons or liters. Pumping Rate is gpm or Lpm, depending on box checked in casing volume calculation. Use "Final" column above for recording sample field measurements, total volume purged before sampling or average pumping rate during purging. Record equipment calibration methods, decontamination procedures, equipment failures, purge water disposal method, etc. in daily field notes. SC: Specific Conductance corrected for temperature (μS/cm at 25°C); EC: Electrical Conductivity not corrected for temperature (μS/cm). μS/cm = μmho/cm. 1 gallon (US) = 3.785 L = 0.833 imperial gallon

Sample Data Sample Depth: Grab Bailer Pump Description: _____

Field Sample ID (unique ID on bottles)	Result Code	Date (m/d/y)	Time (hh:mm)	Bottles (total to lab)	Filtered (0.45 μm)	Lab ID	Case ID	SDG ID	Remarks
<u>WELL 12</u>									

Sample ID may be up to 15 characters. Sample Result Code, Date, and Time must be entered. Result Codes: P0, Primary Sample; D#, Duplicate Sample; S#, Split Sample (sent to second lab); BF#, Field Blank; BR#, Equipment Rinsate; BT#, Trip Blank; SF#, Field Spike (# = 1 to 9). Lab ID (up to 5 characters) is name of laboratory that will analyze the sample. Case ID (up to 5 characters) and SDG ID (sample delivery group, up to 15 characters) are required for blanks. Case ID may be the lab service request number or yy-mm. SDG may be lab's SDG, a cooler ID number, or mmdyyy. Enter sample preservation and handling data on chain-of-custody form. Also record detailed information about duplicate, split, rinsate, spike, and/or blank sample collection/handling in daily field notes.

Sampler's Name (print) _____	Signature _____
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Environment 1, Inc.

Sampled By <input checked="" type="checkbox"/> Bob Hilgoe <input checked="" type="checkbox"/> Bobby Fox	Facility WAYNE CO.	Site ID 6029
Other:	Project No.	Date (m/d/y) 02/22/05

Site Description Monitoring Well Extraction Well Irrigation Well Spring Borehole Probe Other:

Air Temp: <input type="checkbox"/> °C <input type="checkbox"/> °F	Weather:
Well Locked? <input type="checkbox"/> yes <input type="checkbox"/> no	Damaged/Repairs Needed:
x TOC Description:	
TOC Stickup: _____ ft. above/below ground	Well Inside Diameter (ID): <input checked="" type="checkbox"/> 2-inch <input type="checkbox"/> 4-inch <input type="checkbox"/> Other:
Site Remarks (nearby wells pumping, tide, stream stage, etc.)	

Water Level Data Measurement Units: ft. Well or Borehole Total Depth (TD) from TOC:

x E-Tape, # 2 <input type="checkbox"/> Steel Tape <input type="checkbox"/> Other	Pre-Purge Initial	Pre-Purge Confirmation	Purging Start	During Purging	Purging End	After Sampling	Remarks
Time (hh:mm; 24-hr clock)							
Depth to Water							
Tape Correction							
Water Level (WL)							
Product Thickness							
Product Recovery <input type="checkbox"/> gallons <input type="checkbox"/> liters							

Measure water level from fixed measuring point (MP) or top of well casing (TOC). Record water depth to nearest 0.01 ft or 0.002 m, with minus (-) sign if level is above MP or TOC. If no mark on MP or TOC, measure water level from north side of casing. Measure static or pre-purging water level twice; record initial and confirmation measurements and measurement times (in 24-hour clock format). MP/TOC Stickup measurement is from ground surface to nearest 0.1 ft or 0.01 m. Depth to Water codes: N - not measured; D - dry; O - obstructed; P - pumping; F - flowing (artesian well); R - recently pumped; C - cascading. Water Level (WL) = Depth to Water - Tape Correction factor. Record free product presence at time of water level measurement; use "S" for free product thickness if sheen observed. If free product removed from well, record volume removed in gallons or liters, list product type in "Remarks" column.

Field WQ Data Purge Depth: Grab Bailer Pump Description:

Casing Volume: [_____(TD) - _____(WL)] • [_____(Well ID)] ² • [_____(Conversion Factor)] = _____ gals Conversion Factor = 0.0408 for feet and gallons; 0.1544 for feet and liters; 0.5066 for meters and liters; Well ID in inches							Well Goes Dry While Purging <input type="checkbox"/>	
<input type="checkbox"/> Cum. Vol. Purged <input type="checkbox"/> Pumping Rate	(Final)	Meter Type					Remarks	
Time (hh:mm; 24-hr clock)								
pH (Temperature Corrected? <input type="checkbox"/>)	4.7	4.7	4.7			OAKTON	4.0/7.0/10.0 Buffers	
Temperature, °C								
Dissolved Oxygen mg/L								
S Conductivity μS/cm						OAKTON	1413 498	
Turbidity <input type="checkbox"/> NTU								
Color/Tint								
Odor								

Record time purging starts and ends in "Purging Start" and "Purging End" columns in Water Level Data section. Cum. Vol. Purged: cumulative volume removed before sampling, in gallons or liters. Pumping Rate is gpm or Lpm, depending on box checked in casing volume calculation. Use "Final" column above for recording sample field measurements, total volume purged before sampling or average pumping rate during purging. Record equipment calibration methods, decontamination procedures, equipment failures, purge water disposal method, etc. in daily field notes. SC: Specific Conductance corrected for temperature (μS/cm at 25°C); EC: Electrical Conductivity not corrected for temperature (μS/cm). μS/cm = μmho/cm. 1 gallon (US) = 3.785 L = 0.833 Imperial gallon

Sample Data Sample Depth: Grab Bailer Pump Description:

Field Sample ID (unique ID on bottles)	Result Code	Date (m/d/y)	Time (hh:mm)	Bottles (total to lab)	Filtered (0.45 μm)	Lab ID	Case ID	SDG ID	Remarks
WELL 13									

Sample ID may be up to 15 characters. Sample Result Code, Date, and Time must be entered. Result Codes: P0, Primary Sample; D#, Duplicate Sample; S#, Split Sample (sent to second lab); BF#, Field Blank; BR#, Equipment Rinsate; BT#, Trip Blank; SF#, Field Spike (# = 1 to 9). Lab ID (up to 5 characters) is name of laboratory that will analyze the sample. Case ID (up to 5 characters) and SDG ID (sample delivery group, up to 15 characters) are required for blanks. Case ID may be the lab service request number or yy-mm. SDG may be lab's SDG, a cooler ID number, or mmdyy. Enter sample preservation and handling data on chain-of-custody form. Also record detailed information about duplicate, split, rinsate, spike, and/or blank sample collection/handling in daily field notes.

Sampler's Name (print)	Signature
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