GROUND WATER DATA STATISTICAL ANALYSIS REPORT

Prepared For:

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TABLES

FIGURES

APPENDICES

1.0 INTRODUCTION

This report presents the results of a statistical analysis of ground water data collected from monitor wells at the El Dorado Chemical Company (EDCC) facility in El Dorado, Arkansas. These analyses compared downgradient (compliance) well ground water data to background (upgradient) data to determine if the site constituents of concern are present at statistically significant levels.

2.0 PROCEDURE

Inter-well statistical analyses were performed to compare the data from the three upgradient wells (ECMW-1, ECMW-2 and ECMW-3) to the downgradient wells (ECMW-4 through ECMW-18). Wells ECMW-19 through ECMW-22 were installed in 2004; however, there is not enough data from these wells yet to perform the analyses. The constituents of concern for the site are ammonia-N, nitrate-N, lead and chromium.

ChemStat 4.0 by Starpoint Software, Inc. was used to perform the statistical analyses. The following sequence was used:

1. Determine the distribution (normality) of the data
2. Evaluate if outliers are present
3. Perform various statistical analyses on each well based on the distribution of the data from the well

2.1 TEST FOR NORMALITY

Shapiro-Wilks Analysis

EPA guidance (USEPA 1989, 1991) recommends the Shapiro-Wilks analysis as the preferred test for normality in data sets with fewer than 50 samples. The Shapiro-Wilks tests were performed on the original and natural log transformed data to determine the distribution of the data. The normality test was performed on the background wells as a whole as well as each individual well. The results indicate that the background data for all constituents is neither normally nor lognormally distributed. Because of the non-normal distribution of the background and the majority of individual compliance well data, non-parametric methods were used to analyze the data.

2.2 OUTLIER TESTING

Outlier tests assume that the data values, except for the suspect observation(s), are normally distributed. Outlier tests were run on data sets for all wells. If outliers were present, the outliers were removed and normality re-tested to determine if removal of the outliers resulted in a normal or lognormal distribution. If the distribution was normal or lognormal, outliers were removed for statistical testing. If all normality tests resulted in a data distribution that was neither normal nor lognormal, the outliers were left in the data set.

Lognormally distributed measurements often contain one or more values that appear high relative to the rest. Therefore, the outlier tests were run on the logarithms of the data instead of the original observations to avoid classifying a high measurement as an outlier only because the test assumptions were violated.

Few outliers were detected because most of the data are non-normally distributed. An outlier was detected in the ammonia data set for ECMW-12. Removal of the outlier had no effect on the outcome of the statistical tests which indicated statistically elevated concentrations of ammonia. Outliers were also detected in the nitrate data for ECMW-9. The data set for ECMW-9 became normally/lognormally distributed after removal of the outliers. However, statistical results were the same on ECMW-9 data sets with and excluding the outliers.

Dixon's Test

Dixon's test (Gibbons, 1994) is an iterative method of screening for outlier concentrations for data sets with 25 or fewer samples. In each iteration of the test, the highest or lowest outlier value is revealed. The next iteration is performed on the remaining values. Iterations continue until no data are shown to be outliers.

In each iteration, the highest and lowest critical values are calculated using a formula selected based on the number of samples in the data set not yet shown to be outliers. The critical value is then compared to tabulated comparison values based on the number of samples not yet shown to be outliers, and the level of significance. Dixon's test was performed at the 5% level of significance.

The lower end outlier values were ignored (not removed from data sets to perform statistical tests). Statistical analyses were performed on the data sets with and without outlier values to determine if removal of outliers affects the results. The results are discussed in Section 3.0.

2.3 NON-PARAMETRIC ANALYSES

As discussed in Section 2.1, evaluation of the upgradient and most downgradient compliance well data do not indicate a normal or lognormal distribution; therefore, non-parametric methods were selected for the data analyses. Three methods were used depending on the number of non-detects in the data sets:

- Inter-well Non-Parametric Prediction Limit (USEPA, 1992)
- Inter-well Wilcoxon Non-Parametric Analysis (USEPA, 1992)
- Inter-well Poisson Prediction Limit (USEPA, 1992)

The amount of nondetects in the background combined with each individual well was calculated to determine which well data would be appropriate for Wilcoxon Analysis (USEPA, 1992). The percentage of non-detects of the background data was used to determine when the Poisson Prediction limit (USEPA, 1992) was appropriate.

Non-Parametric Prediction Limit

The Non-Parametric Prediction Limit can be used as an inter-well comparison, where the prediction limit is calculated from samples from background wells.

The inter-well non-parametric prediction limit is recommended in the EPA guidance [Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities (USEPA, 1989, 1992)] for data where the assumptions of normality or transformed-normality can not be justified, or when a significant portion of the samples are non-detects. A very basic test, the non-parametric prediction limit simply compares each individual down-gradient concentration for the selected dates, to the maximum concentration in background samples. The prediction limit does not produce an actual limit, but simply a maximum value of the parameter concentration above which contamination is assumed.

The method uses a mathematical calculation to determine the coverage or level of significance of the test. The level of coverage is dependent on the number of background samples and the selected number of recent dates used to compare to the limit.

The inter-well non-parametric prediction limit compares samples from background wells to a selected number of recent sampling dates from compliance wells. If there are duplicate samples collected on one date, the samples for that date are averaged.

As an inter-well comparison, the non parametric prediction limit is useful for comparison of individual compliance well samples to pooled background data where data do not follow a normal or transformed-normal distribution, and/or there is an abundance of non-detects.

Wilcoxon Non-Parametric Analysis

The Wilcoxon Rank-Sum method (USEPA, 1992) is a non-parametric analysis of variance for comparison of a single downgradient well to upgradient wells when data do not follow a normal distribution, or there are 15% to 90% non-detects for the individual well plus the combined background data. At least four samples are recommended for each well. The Wilcoxon Rank-Sum method can determine that the specified well has statistically elevated levels of the parameter.

Poisson Prediction Limit

Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities (USEPA, 1989, 1992) recommends the Poisson Prediction limit for greater than 90% non-detects in the background data. The sum of results from all background well samples for the specified parameter are used to determine the Poisson prediction limit. The number of recent sampling dates to compare to the prediction limit is specified. Sampling results from that number of dates are summed, and the total compared to the prediction limit. The procedure is repeated for each downgradient well.

The test was performed replacing non-detects with the detection and ½ the detection limit with equal results. The Poisson Prediction limit was calculated at both the 99% and 95% levels of significance.

3.0 RESULTS

The analytical data used for this evaluation are summarized on Table A-1 in Appendix A. The results of the statistical evaluations are provided on Tables 1 through 4. The table below summarizes the results, indicating which wells were determined statistically to be impacted. The well locations are shown on Figure 1.

Summary of Statistical Analyses Results

	AMMONIA	NITRATE	CHROMIUM	LEAD
NOT IMPACTED	ECMW-4, ECMW-5, ECMW-9, ECMW-10, ECMW-13, ECMW-14, ECMW-15, ECMW-18	ECMW-4, ECMW-5, ECMW-12, ECMW-13, ECMW-18	ECMW-4, ECMW-5, ECMW-6, ECMW-7, ECMW-8, ECMW-9, ECMW-10, ECMW-11, ECMW-12, ECMW-13, ECMW-14, ECMW-15, ECMW-16, ECMW-17	ECMW-4, ECMW-5, ECMW-6, ECMW-8, ECMW-9, ECMW-10, ECMW-11, ECMW-12, ECMW-13, ECMW-14, ECMW-15, ECMW-16, ECMW-17
POSSIBLY IMPACTED			ECMW-18	ECMW-7, ECMW-18
IMPACTED	ECMW-6, ECMW-7, ECMW-8, ECMW-11, ECMW-12, ECMW-16, ECMW-17	ECMW-6, ECMW-7, ECMW-8, ECMW-9, ECMW-10, ECMW-11, ECMW-14, ECMW-15, ECMW-16, ECMW-17		

3.1 AMMONIA-N

The Shapiro-Wilkes Normality tests indicate the pooled background data as well as the majority of compliance well data are not normally or lognormally distributed. The few exceptions include normally distributed data for wells ECMW-7, ECMW-11 and ECMW-16 and one lognormally distributed data set (ECMW-12). However, given that the background data are not normally distributed and have a high number of non-detects, nonparametric methods were used to evaluate the data. Outliers were evaluated and those data are indicated on Table A-1 in Appendix A.

An outlier was identified in the data set for ECMW-12 and statistical tests run both with and without the outliers yielding similar results.

An outlier with a value of 5.79 mg/L, well above the next highest value of 0.59 mg/L, was identified in the data set for ECMW-18. However, because the outlier test assumes a normal or lognormal distribution, this value was not removed from the data set.

Table 1 summarizes the results of the statistical tests with supporting calculations provided in Appendix B. The inter-well non-parametric prediction limit compared the samples from background wells to eight (8) recent sampling dates from compliance wells. As shown on the calculations in Appendix B, it is clear which wells are impacted, having the majority or all of the eight recent dates indicating "impacted." Combining the number of non-detects in the background data with individual compliance wells yielded percentages of non-detects between 70.3 and 93.7%. Wells with non-detects below 90% (10 of 15 compliance wells) were evaluated using the Wilcoxon Inter-well method. Because the background data had 93.7% non-detects, the Poisson Prediction Limit was used on all compliance wells for this constituent.

As shown on Table 1, the methods yielded the same results for each well, with ECMW- 6, 7, 8, 11, 12, 16 and 17 considered impacted with ammonia-N.

3.2 NITRATE-N

The Shapiro-Wilkes Normality tests indicate the pooled background data are not normally or lognormally distributed. More of the individual compliance well nitrate-N concentrations are either normal (ECMW-6, ECMW-10, ECMW-16) or lognormal (ECMW-6, ECMW- ECMW-7, ECMW-8, ECMW-11, ECMW-14, ECMW-15, ECMW-16, ECMW-17) compared to the ammonia-N data. However, given that the background data are not normally distributed and have a high number of non-detects, nonparametric methods were used to evaluate the data. Outliers were evaluated and those data are indicated on Table A-1 in Appendix A. Outliers were identified in the data set for ECMW-9 and the statistical tests were run both with and without the outliers yielding similar results.

Table 2 summarizes the results of the statistical tests with the supporting calculations provided in Appendix B. The inter-well non-parametric prediction limit compared the samples from background wells to eight (8) recent sampling dates from compliance wells. As shown on the calculations in Appendix B, it is clear which wells are impacted, having the majority or all of the eight recent dates indicating "impacted." Combining the number of non-detects in the background data with individual compliance wells yielded percentages of non-detects between 50 and 73.2%. All wells were evaluated using the Wilcoxon Inter-well method. Because the background data had 66.7% non-detects, the Poisson Prediction Limit was not used for this constituent.

As shown on Table 2, both methods yielded the same results for each well, with ECMW- 6, 7, 8, 9, 10, 11, 14, 15, 16 and 17 considered impacted with nitrate-N.

3.3 CHROMIUM

The Shapiro-Wilkes Normality tests indicate the pooled background data are not normally or lognormally distributed with 97.9% non-detects. Only four wells (ECMW-4, ECMW-10, ECMW-14, ECMW-18) had at least one detection of chromium. No outliers were identified in the chromium data sets.

Table 3 summarizes the results of the statistical tests with the supporting calculations provided in Appendix B. The inter-well non-parametric prediction limit compared the samples from background wells to eight (8) recent sampling dates from compliance wells. As shown on the calculations in Appendix B, only ECMW-18 showed evidence of contamination with five of eight recent dates indicating "impacted." Only ECMW-18 had enough detections to be evaluated using the Wilcoxon Inter-well method. Because the background data had 97.9% non-detects, the Poisson Prediction Limit was used for this constituent. As shown on Table 3, it is unclear from the statistical analysis whether this well can be considered impacted with chromium. EDCC will continue to sample and evaluate the data from this well.

3.4 LEAD

The background data for this constituent showed 100% non-detects. Only five wells (ECMW-4, ECMW-7, ECMW-8, ECMW-14, ECMW-18) had at least one detection of lead. No outliers were identified in the lead data sets.

Table 4 summarizes the results of the statistical tests with the supporting calculations provided in Appendix B. The inter-well non-parametric prediction limit compared the samples from background wells to eight (8) recent sampling dates from compliance wells. As shown on the calculations in Appendix B, only ECMW-18 showed slight evidence of possible contamination with three of eight recent dates indicating "impacted." ECMW-7 and ECMW-18 had enough lead detections to be evaluated using the Wilcoxon Inter-well method. The Wilcoxon method indicated *possible* impact of these wells. However, the Poisson Prediction Limit method indicated no impacts in any of the wells. EDCC will continue to sample and evaluate the data from these wells.

4.0 REFERENCES

ChemStat Users Guide, Version 4.0, Starpoint Software

Gibbons, R.D., Statistical Methods for Ground Water Monitoring, Wiley, 1994.

USEPA, Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Final Guidance, PB89-151047, April, 1989.

USEPA, Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities Addendum to Interim Final Guidance, July, 1992

TABLES

TABLE 1
AMMONIA-N STATISTICALS RESULTS SUMMARY
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

Ammonia-N

Well	Gradient (U=upgradient, D=Down gradient)	Percent Non Detects Individual Well	Percent Non Detects - Background and Individual Compliance Well	Shapiro-Wilkes Normality		*Non-Parametric* Prediction Interval	*Non-Parametric* Wilcoxon Interwell	*Non-Parametric* Poisson Prediction Limit
				Untransformed	Ln Transformed		15-90% Non Detects Combined Data	> 90% Non Detects Background Data
ECMW-1	U	81	93.7	N	N			
ECMW-2	U	100						
ECMW-3	U	100						
ECMW-8	D	0.0	70.3	1%	N	Y	Y	Y
ECMW-12	D	0.0	70.3	N	Y	Y *	Y *	Y *
ECMW-16	D	6.3	71.8	Y	N	Y	Y	Y
ECMW-7	D	6.3	71.8	Y	N	Y	Y	Y
ECMW-11	D	6.7	71.9	Y	N	Y	Y	Y
ECMW-6	D	18.8	74.9	N	N	Y	Y	Y
ECMW-17	D	37.5	79.6	N	N	Y	Y	Y
ECMW-18	D	71.4	88.1	N	N	N	N	Possible **
ECMW-15	D	75.0	89.0	N	N	N	N	N
ECMW-9	D	75.0	89.0	N	N	N	N	N
ECMW-13	D	81.3	90.6	N	N	N	not applicable	N
ECMW-4	D	81.3	90.6	N	N	N	not applicable	N
ECMW-10	D	87.5	92.1	N	N	N	not applicable	N
ECMW-14	D	93.8	93.7	N	N	N	not applicable	N
ECMW-5	D	93.8	93.7	N	N	N	not applicable	N
IMPACTED				Y-Normal		Y-Impacted	Y-Impacted	Y-Impacted
				N-Not Normal		N-Not Impacted	N-Not Impacted	N-Not Impacted
				1% - Data is normally distributed at 99% level of significance				

*Outcome of statistical tests were the same with and without outliers included in data set.

** Possible evidence of contamination, but unlikely due to presence of one elevated concentration.

TABLE 2
NITRATE-N STATISTICALS RESULTS SUMMARY
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

Nitrate-N

Well	Gradient (U=upgradient, D=Downgradient)	Percent Non Detects Individual Well	Percent Non Detects - Background and Individual Compliance Well	Untransformed Shapiro-Wilkes Normality		*Non-Parametric* Prediction Interval	*Non-Parametric* Wilcoxon Interwell
				Untransformed	Ln Transformed		15-90% Non Detects Combined Data
ECMW-1	U	0	66.7	N	N		
ECMW-2	U	100					
ECMW-3	U	100					
ECMW-14	D	0.0	50.0	1%	Y	Y	Y
ECMW-15	D	0.0	50.0	1%	Y	Y	Y
ECMW-8	D	0.0	50.0	1%	Y	Y	Y
ECMW-11	D	0.0	50.0	N	Y	Y	Y
ECMW-17	D	0.0	50.0	N	Y	Y	Y
ECMW-7	D	0.0	50.0	N	Y	Y	Y
ECMW-9	D	0.0	50.0	N / Y *	N / Y *	Y *	Y *
ECMW-10	D	0.0	50.0	Y	1%	Y	Y
ECMW-16	D	0.0	50.0	Y	Y	Y	Y
ECMW-6	D	0.0	50.0	Y	Y	Y	Y
ECMW-5	D	0.0	50.0	N	N	N	N
ECMW-4	D	56.3	64.1	N	N	N	N
ECMW-13	D	87.5	71.9	N	N	N	N
ECMW-18	D	92.9	73.2	N	N	N	N
ECMW-12	D	ALL RESULTS NON-DETECT					

IMPACTED

Y-Normal — Y-Impacted — Y-Impacted

N-Not Normal — N-Not Impacted — N-Not Impacted

1% - Data is normally distributed at 99% level of significance

* Data becomes normally distributed after removal of outliers. Outcome of statistical tests were the same with and without outliers included in data set.

TABLE 3
CHROMIUM STATISTICALS RESULTS SUMMARY
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

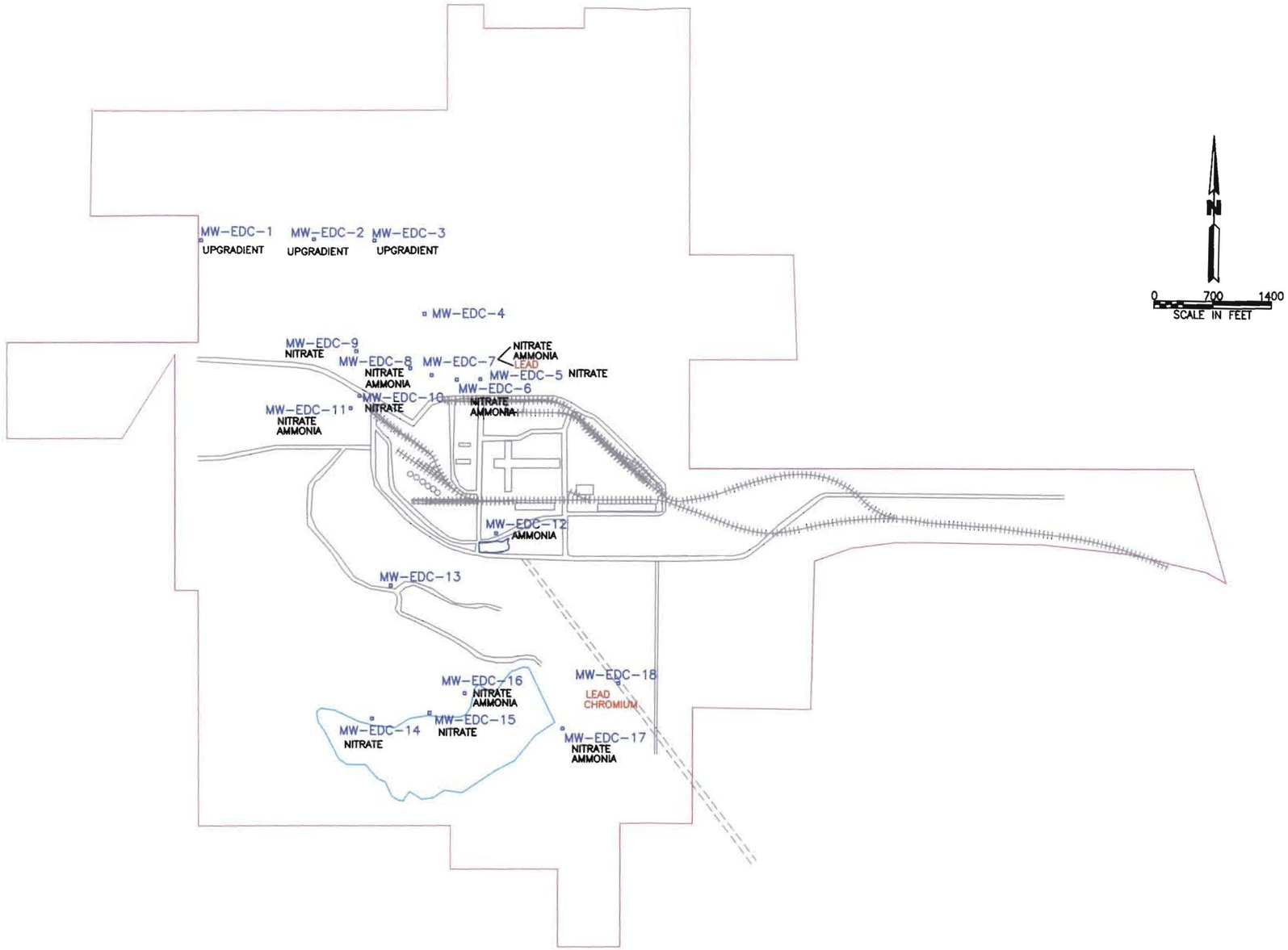
Chromium (Total)

Well	Gradient (U=upgradient, D=Downgradient)	Percent Non Detects Individual Well	Percent Non Detects - Background and Individual Compliance Well	Transformed and Untransformed Shapiro-Wilkes Normality	*Non-Parametric* Prediction Interval	*Non-Parametric* Wilcoxon Interwell	*Non-Parametric* Poisson Prediction Limit
						15-90% Non Detects Combined Data	> 90% Non Detects Background Data
ECMW-1	U	100	97.9	N			
ECMW-2	U	93.8					
ECMW-3	U	100					
ECMW-18	D	14.3	77.0	N	**Possible**	**Possible**	N
ECMW-10	D	87.5	95.3	N	N	Not Applicable	N
ECMW-4	D	93.8	96.9	N	N	Not Applicable	N
ECMW-14	D	93.8	96.9	Y	N	Not Applicable	N
ECMW-5	D	ALL RESULTS NON-DETECT					
ECMW-6	D	ALL RESULTS NON-DETECT					
ECMW-7	D	ALL RESULTS NON-DETECT					
ECMW-8	D	ALL RESULTS NON-DETECT					
ECMW-9	D	ALL RESULTS NON-DETECT					
ECMW-11	D	ALL RESULTS NON-DETECT					
ECMW-12	D	ALL RESULTS NON-DETECT					
ECMW-13	D	ALL RESULTS NON-DETECT					
ECMW-15	D	ALL RESULTS NON-DETECT					
ECMW-16	D	ALL RESULTS NON-DETECT					
ECMW-17	D	ALL RESULTS NON-DETECT					
POSSIBLE IMPACT				Y-Normal N-Not Normal	N-Not Impacted		N-Not Impacted

TABLE 4
LEAD STATISTICALS RESULTS SUMMARY
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

Lead (Total)

Well	Gradient (U=upgradient, D=Down gradient)	Percent Non Detects Individual Well	Percent Non Detects - Background and Individual Compliance Well	Transformed and Untransformed Shapiro Wilkes Normality	*Non-Parametric* Prediction Interval	*Non-Parametric* Wilcoxon Interwell	*Non-Parametric* Poisson Prediction Limit
						15-90% Non Detects Combined Data	> 90% Non Detects Background Data
ECMW-1	U	100	100.0				
ECMW-2	U	100					
ECMW-3	U	100					
ECMW-18	D	21.4	80.4	N	**Possible**	**Possible**	N
ECMW-7	D	56.3	89.1	N	N	**Possible**	N
ECMW-8	D	86.7	96.7	N	N	Not Applicable	N
ECMW-4	D	87.5	96.9	N	N	Not Applicable	N
ECMW-14	D	93.8	98.4	N	N	Not Applicable	N
ECMW-10	D	ALL RESULTS NON-DETECT					
ECMW-11	D	ALL RESULTS NON-DETECT					
ECMW-12	D	ALL RESULTS NON-DETECT					
ECMW-13	D	ALL RESULTS NON-DETECT					
ECMW-15	D	ALL RESULTS NON-DETECT					
ECMW-16	D	ALL RESULTS NON-DETECT					
ECMW-17	D	ALL RESULTS NON-DETECT					
ECMW-5	D	ALL RESULTS NON-DETECT					
ECMW-6	D	ALL RESULTS NON-DETECT					
ECMW-9	D	ALL RESULTS NON-DETECT					
POSSIBLE IMPACT				Y-Normal N-Not Normal	N-Not Impacted		N-Not Impacted



NITRATE - statistical analysis shows this well IS impacted with listed consituent

NITRATE - statistical analysis shows this well MAY BE impacted with listed consituent

SITE MAP

WELL DATA STATISTICAL ANALYSIS REPORT

EL DORADO CHEMICAL
EL DORADO, ARKANSAS

DATE: 9-7-05	APPROVED: BY: _____ DATE: _____	DRAWN BY: LMM	
SCALE: as shown		CAD NO. 02EC0100	
ENVIRONMENTAL MANAGEMENT SERVICES, INC.			FIGURE 1

APPENDIX A

DATA SUMMARY

TABLE A-1
ANALYTICAL DATA SUMMARY
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

WELL	U-UPGRADIENT D-DOWNGRADIENT	DATE	CONSITUENT	CONCENTRATION (mg/L)
ECMW-1	U	5/29/2001	Ammonia-N	<0.5
ECMW-1	U	11/1/2001	Ammonia-N	<0.5
ECMW-1	U	6/3/2002	Ammonia-N	<0.5
ECMW-1	U	10/30/2002	Ammonia-N	0.66
ECMW-1	U	12/10/2002	Ammonia-N	<0.5
ECMW-1	U	5/20/2003	Ammonia-N	<0.5
ECMW-1	U	7/24/2003	Ammonia-N	<0.5
ECMW-1	U	9/24/2003	Ammonia-N	<0.5
ECMW-1	U	11/19/2003	Ammonia-N	<0.5
ECMW-1	U	1/28/2004	Ammonia-N	0.56
ECMW-1	U	3/16/2004	Ammonia-N	<0.5
ECMW-1	U	5/18/2004	Ammonia-N	<0.5
ECMW-1	U	7/13/2004	Ammonia-N	<0.5
ECMW-1	U	9/14/2004	Ammonia-N	0.76
ECMW-1	U	11/16/2004	Ammonia-N	<0.5
ECMW-1	U	1/25/2005	Ammonia-N	<0.5
ECMW-2	U	5/29/2001	Ammonia-N	<0.5
ECMW-2	U	11/1/2001	Ammonia-N	<0.5
ECMW-2	U	6/3/2002	Ammonia-N	<0.5
ECMW-2	U	10/30/2002	Ammonia-N	<0.5
ECMW-2	U	12/10/2002	Ammonia-N	<0.5
ECMW-2	U	5/20/2003	Ammonia-N	<0.5
ECMW-2	U	7/24/2003	Ammonia-N	<0.5
ECMW-2	U	9/24/2003	Ammonia-N	<0.5
ECMW-2	U	11/19/2003	Ammonia-N	<0.5
ECMW-2	U	1/28/2004	Ammonia-N	<0.5
ECMW-2	U	3/16/2004	Ammonia-N	<0.5
ECMW-2	U	5/18/2004	Ammonia-N	<0.5
ECMW-2	U	7/13/2004	Ammonia-N	<0.5
ECMW-2	U	9/14/2004	Ammonia-N	<0.5
ECMW-2	U	11/16/2004	Ammonia-N	<0.5
ECMW-2	U	1/25/2005	Ammonia-N	<0.5
ECMW-2	U	1/25/2005	Ammonia-N	<0.5
ECMW-3	U	5/29/2001	Ammonia-N	<0.5
ECMW-3	U	11/1/2001	Ammonia-N	<0.5
ECMW-3	U	6/3/2002	Ammonia-N	<0.5
ECMW-3	U	10/30/2002	Ammonia-N	<0.5
ECMW-3	U	12/10/2002	Ammonia-N	<0.5
ECMW-3	U	5/20/2003	Ammonia-N	<0.5
ECMW-3	U	7/24/2003	Ammonia-N	<0.5
ECMW-3	U	9/24/2003	Ammonia-N	<0.5
ECMW-3	U	11/19/2003	Ammonia-N	<0.5
ECMW-3	U	1/28/2004	Ammonia-N	<0.5
ECMW-3	U	3/16/2004	Ammonia-N	<0.5
ECMW-3	U	5/18/2004	Ammonia-N	<0.5
ECMW-3	U	7/13/2004	Ammonia-N	<0.5
ECMW-3	U	9/14/2004	Ammonia-N	<0.5
ECMW-3	U	11/16/2004	Ammonia-N	<0.5
ECMW-3	U	1/25/2005	Ammonia-N	<0.5

* Indicates outlier

TABLE A-1
ANALYTICAL DATA SUMMARY
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

WELL	U-UPGRADIENT D-DOWNGRADIENT	DATE	CONSITUENT	CONCENTRATION (mg/L)
ECMW-10	D	6/27/2001	Ammonia-N	<0.5
ECMW-10	D	10/30/2001	Ammonia-N	<0.5
ECMW-10	D	6/3/2002	Ammonia-N	<0.5
ECMW-10	D	10/30/2002	Ammonia-N	1.84
ECMW-10	D	12/10/2002	Ammonia-N	<0.5
ECMW-10	D	5/21/2003	Ammonia-N	<0.5
ECMW-10	D	7/24/2003	Ammonia-N	<0.5
ECMW-10	D	9/23/2003	Ammonia-N	<0.5
ECMW-10	D	11/19/2003	Ammonia-N	<0.5
ECMW-10	D	1/28/2004	Ammonia-N	<0.5
ECMW-10	D	3/16/2004	Ammonia-N	<0.5
ECMW-10	D	5/18/2004	Ammonia-N	<0.5
ECMW-10	D	7/13/2004	Ammonia-N	<0.5
ECMW-10	D	9/14/2004	Ammonia-N	0.77
ECMW-10	D	11/16/2004	Ammonia-N	<0.5
ECMW-10	D	1/25/2005	Ammonia-N	<0.5
ECMW-11	D	8/8/2001	Ammonia-N	4.21
ECMW-11	D	10/30/2001	Ammonia-N	<0.5
ECMW-11	D	6/3/2002	Ammonia-N	3.9
ECMW-11	D	6/3/2002	Ammonia-N	<0.5
ECMW-11	D	10/30/2002	Ammonia-N	18
ECMW-11	D	12/10/2002	Ammonia-N	10.73
ECMW-11	D	5/21/2003	Ammonia-N	7.84
ECMW-11	D	7/24/2003	Ammonia-N	25.6
ECMW-11	D	9/23/2003	Ammonia-N	5.25
ECMW-11	D	11/19/2003	Ammonia-N	14.3
ECMW-11	D	11/19/2003	Ammonia-N	12
ECMW-11	D	1/28/2004	Ammonia-N	19.6
ECMW-11	D	3/16/2004	Ammonia-N	15
ECMW-11	D	3/16/2004	Ammonia-N	18
ECMW-11	D	5/18/2004	Ammonia-N	19.9
ECMW-11	D	7/13/2004	Ammonia-N	17.4
ECMW-11	D	9/14/2004	Ammonia-N	14.5
ECMW-11	D	11/17/2004	Ammonia-N	19.1
ECMW-12	D	6/27/2001	Ammonia-N	2.2
ECMW-12	D	6/4/2002	Ammonia-N	0.9
ECMW-12	D	6/4/2002	Ammonia-N	1.4
ECMW-12	D	10/30/2002	Ammonia-N	4.2 *
ECMW-12	D	12/10/2002	Ammonia-N	2.3
ECMW-12	D	5/21/2003	Ammonia-N	1.89
ECMW-12	D	7/24/2003	Ammonia-N	1.74
ECMW-12	D	9/24/2003	Ammonia-N	1.43
ECMW-12	D	11/19/2003	Ammonia-N	1.83
ECMW-12	D	1/28/2004	Ammonia-N	1.87
ECMW-12	D	3/16/2004	Ammonia-N	2.2
ECMW-12	D	5/19/2004	Ammonia-N	1.94
ECMW-12	D	7/13/2004	Ammonia-N	1.2
ECMW-12	D	9/15/2004	Ammonia-N	2.38
ECMW-12	D	11/16/2004	Ammonia-N	1.55

* Indicates outlier

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ANALYTICAL DATA SUMMARY
EL DORADO CHEMICAL COMPANY
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WELL	U-UPGRADIENT D-DOWNGRADIENT	DATE	CONSITUENT	CONCENTRATION (mg/L)
ECMW-12	D	1/26/2005	Ammonia-N	1.98
ECMW-13	D	6/5/2001	Ammonia-N	<0.5
ECMW-13	D	10/30/2001	Ammonia-N	<0.5
ECMW-13	D	6/4/2002	Ammonia-N	<0.5
ECMW-13	D	10/30/2002	Ammonia-N	1.28
ECMW-13	D	12/10/2002	Ammonia-N	<0.5
ECMW-13	D	5/20/2003	Ammonia-N	<0.5
ECMW-13	D	7/23/2003	Ammonia-N	<0.5
ECMW-13	D	9/24/2003	Ammonia-N	0.71
ECMW-13	D	11/19/2003	Ammonia-N	<0.5
ECMW-13	D	1/28/2004	Ammonia-N	<0.5
ECMW-13	D	3/16/2004	Ammonia-N	<0.5
ECMW-13	D	5/18/2004	Ammonia-N	<0.5
ECMW-13	D	7/13/2004	Ammonia-N	<0.5
ECMW-13	D	9/14/2004	Ammonia-N	0.51
ECMW-13	D	9/14/2004	Ammonia-N	0.5
ECMW-13	D	11/16/2004	Ammonia-N	<0.5
ECMW-13	D	1/26/2005	Ammonia-N	<0.5
ECMW-14	D	8/8/2001	Ammonia-N	<0.5
ECMW-14	D	10/30/2001	Ammonia-N	<0.5
ECMW-14	D	6/4/2002	Ammonia-N	<0.5
ECMW-14	D	10/30/2002	Ammonia-N	5.32
ECMW-14	D	12/10/2002	Ammonia-N	<0.5
ECMW-14	D	5/20/2003	Ammonia-N	<0.5
ECMW-14	D	7/23/2003	Ammonia-N	<0.5
ECMW-14	D	9/23/2003	Ammonia-N	<0.5
ECMW-14	D	11/19/2003	Ammonia-N	<0.5
ECMW-14	D	1/28/2004	Ammonia-N	<0.5
ECMW-14	D	1/28/2004	Ammonia-N	<0.5
ECMW-14	D	3/16/2004	Ammonia-N	<0.5
ECMW-14	D	5/18/2004	Ammonia-N	<0.5
ECMW-14	D	7/13/2004	Ammonia-N	<0.5
ECMW-14	D	7/13/2004	Ammonia-N	<0.5
ECMW-14	D	9/14/2004	Ammonia-N	<0.5
ECMW-14	D	11/16/2004	Ammonia-N	<0.5
ECMW-14	D	1/26/2005	Ammonia-N	<0.5
ECMW-15	D	8/8/2001	Ammonia-N	<0.5
ECMW-15	D	10/30/2001	Ammonia-N	<0.5
ECMW-15	D	6/4/2002	Ammonia-N	<0.5
ECMW-15	D	10/30/2002	Ammonia-N	1.16
ECMW-15	D	12/10/2002	Ammonia-N	0.5
ECMW-15	D	5/20/2003	Ammonia-N	<0.5
ECMW-15	D	7/23/2003	Ammonia-N	<0.5
ECMW-15	D	9/23/2003	Ammonia-N	<0.5
ECMW-15	D	11/19/2003	Ammonia-N	<0.5
ECMW-15	D	1/28/2004	Ammonia-N	3.96
ECMW-15	D	3/16/2004	Ammonia-N	<0.5
ECMW-15	D	5/18/2004	Ammonia-N	<0.5
ECMW-15	D	7/13/2004	Ammonia-N	<0.5

* Indicates outlier

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ANALYTICAL DATA SUMMARY
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WELL	U-UPGRADIENT D-DOWNGRADIENT	DATE	CONSITUENT	CONCENTRATION (mg/L)
ECMW-15	D	9/14/2004	Ammonia-N	0.61
ECMW-15	D	11/16/2004	Ammonia-N	<0.5
ECMW-15	D	1/25/2005	Ammonia-N	<0.5
ECMW-16	D	6/5/2001	Ammonia-N	4.61
ECMW-16	D	10/30/2001	Ammonia-N	<0.5
ECMW-16	D	6/4/2002	Ammonia-N	6.2
ECMW-16	D	6/4/2002	Ammonia-N	5
ECMW-16	D	10/30/2002	Ammonia-N	11.6
ECMW-16	D	12/10/2002	Ammonia-N	2.99
ECMW-16	D	5/20/2003	Ammonia-N	3.69
ECMW-16	D	7/23/2003	Ammonia-N	6.45
ECMW-16	D	9/23/2003	Ammonia-N	5.97
ECMW-16	D	11/19/2003	Ammonia-N	8.61
ECMW-16	D	1/28/2004	Ammonia-N	5.66
ECMW-16	D	3/16/2004	Ammonia-N	8.39
ECMW-16	D	5/18/2004	Ammonia-N	11.5
ECMW-16	D	5/18/2004	Ammonia-N	10.4
ECMW-16	D	7/13/2004	Ammonia-N	9.35
ECMW-16	D	9/14/2004	Ammonia-N	8.57
ECMW-16	D	11/16/2004	Ammonia-N	6.87
ECMW-16	D	11/16/2004	Ammonia-N	6.49
ECMW-16	D	1/25/2005	Ammonia-N	4.15
ECMW-17	D	6/5/2001	Ammonia-N	1.16
ECMW-17	D	10/30/2001	Ammonia-N	<0.5
ECMW-17	D	6/4/2002	Ammonia-N	<0.5
ECMW-17	D	10/30/2002	Ammonia-N	2.36
ECMW-17	D	12/10/2002	Ammonia-N	1.22
ECMW-17	D	5/20/2003	Ammonia-N	<0.5
ECMW-17	D	7/23/2003	Ammonia-N	0.58
ECMW-17	D	9/23/2003	Ammonia-N	<0.5
ECMW-17	D	11/19/2003	Ammonia-N	0.55
ECMW-17	D	1/28/2004	Ammonia-N	<0.5
ECMW-17	D	3/16/2004	Ammonia-N	8.14
ECMW-17	D	5/18/2004	Ammonia-N	8.05
ECMW-17	D	7/13/2004	Ammonia-N	<0.5
ECMW-17	D	9/14/2004	Ammonia-N	1.42
ECMW-17	D	11/16/2004	Ammonia-N	9.55
ECMW-17	D	1/26/2005	Ammonia-N	1.79
ECMW-18	D	10/30/2001	Ammonia-N	<0.5
ECMW-18	D	6/4/2002	Ammonia-N	<0.5
ECMW-18	D	10/30/2002	Ammonia-N	0.43
ECMW-18	D	12/10/2002	Ammonia-N	<0.5
ECMW-18	D	5/21/2003	Ammonia-N	0.59
ECMW-18	D	7/23/2003	Ammonia-N	<0.5
ECMW-18	D	9/24/2003	Ammonia-N	5.79
ECMW-18	D	11/19/2003	Ammonia-N	<0.5
ECMW-18	D	3/16/2004	Ammonia-N	<0.5
ECMW-18	D	5/19/2004	Ammonia-N	<0.5
ECMW-18	D	7/13/2004	Ammonia-N	<0.5

* Indicates outlier

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ANALYTICAL DATA SUMMARY
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WELL	U-UPGRADIENT D-DOWNGRADIENT	DATE	CONSITUENT	CONCENTRATION (mg/L)
ECMW-18	D	9/15/2004	Ammonia-N	0.56
ECMW-18	D	11/17/2004	Ammonia-N	<0.5
ECMW-18	D	11/17/2004	Ammonia-N	<0.5
ECMW-18	D	1/26/2005	Ammonia-N	<0.5
ECMW-4	D	8/8/2001	Ammonia-N	0.66
ECMW-4	D	10/30/2001	Ammonia-N	<0.5
ECMW-4	D	6/3/2002	Ammonia-N	<0.5
ECMW-4	D	10/30/2002	Ammonia-N	<0.5
ECMW-4	D	12/10/2002	Ammonia-N	<0.5
ECMW-4	D	5/20/2003	Ammonia-N	<0.5
ECMW-4	D	5/20/2003	Ammonia-N	<0.5
ECMW-4	D	7/24/2003	Ammonia-N	<0.5
ECMW-4	D	7/24/2003	Ammonia-N	<0.5
ECMW-4	D	9/24/2003	Ammonia-N	<0.5
ECMW-4	D	9/24/2003	Ammonia-N	<0.5
ECMW-4	D	11/19/2003	Ammonia-N	<0.5
ECMW-4	D	1/28/2004	Ammonia-N	<0.5
ECMW-4	D	3/16/2004	Ammonia-N	<0.5
ECMW-4	D	5/19/2004	Ammonia-N	<0.5
ECMW-4	D	7/13/2004	Ammonia-N	<0.5
ECMW-4	D	9/14/2004	Ammonia-N	0.68
ECMW-4	D	11/16/2004	Ammonia-N	<0.5
ECMW-4	D	1/25/2005	Ammonia-N	0.64
ECMW-5	D	8/8/2001	Ammonia-N	<0.5
ECMW-5	D	10/30/2001	Ammonia-N	<0.5
ECMW-5	D	6/3/2002	Ammonia-N	<0.5
ECMW-5	D	10/30/2002	Ammonia-N	<0.5
ECMW-5	D	12/10/2002	Ammonia-N	<0.5
ECMW-5	D	5/20/2003	Ammonia-N	<0.5
ECMW-5	D	7/24/2003	Ammonia-N	<0.5
ECMW-5	D	9/24/2003	Ammonia-N	<0.5
ECMW-5	D	11/19/2003	Ammonia-N	<0.5
ECMW-5	D	1/28/2004	Ammonia-N	<0.5
ECMW-5	D	1/28/2004	Ammonia-N	<0.5
ECMW-5	D	3/16/2004	Ammonia-N	<0.5
ECMW-5	D	5/19/2004	Ammonia-N	<0.5
ECMW-5	D	5/19/2004	Ammonia-N	<0.5
ECMW-5	D	7/13/2004	Ammonia-N	<0.5
ECMW-5	D	9/14/2004	Ammonia-N	0.59
ECMW-5	D	11/16/2004	Ammonia-N	<0.5
ECMW-5	D	1/25/2005	Ammonia-N	<0.5
ECMW-6	D	8/8/2001	Ammonia-N	0.5
ECMW-6	D	10/30/2001	Ammonia-N	<0.5
ECMW-6	D	6/3/2002	Ammonia-N	<0.5
ECMW-6	D	10/30/2002	Ammonia-N	0.51
ECMW-6	D	12/10/2002	Ammonia-N	<0.5
ECMW-6	D	12/10/2002	Ammonia-N	<0.5
ECMW-6	D	5/21/2003	Ammonia-N	0.5
ECMW-6	D	7/24/2003	Ammonia-N	1.09

* Indicates outlier

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WELL	U-UPGRADIENT D-DOWNGRADIENT	DATE	CONSITUENT	CONCENTRATION (mg/L)
ECMW-6	D	9/24/2003	Ammonia-N	4.88
ECMW-6	D	11/19/2003	Ammonia-N	5.72
ECMW-6	D	11/19/2003	Ammonia-N	5.6
ECMW-6	D	1/28/2004	Ammonia-N	12.3
ECMW-6	D	3/16/2004	Ammonia-N	13
ECMW-6	D	5/19/2004	Ammonia-N	21.4
ECMW-6	D	7/13/2004	Ammonia-N	17.5
ECMW-6	D	7/13/2004	Ammonia-N	17.9
ECMW-6	D	9/14/2004	Ammonia-N	20
ECMW-6	D	11/16/2004	Ammonia-N	37.6
ECMW-6	D	1/25/2005	Ammonia-N	43.1
ECMW-7	D	8/8/2001	Ammonia-N	184
ECMW-7	D	10/30/2001	Ammonia-N	<0.5
ECMW-7	D	10/30/2001	Ammonia-N	<0.5
ECMW-7	D	6/3/2002	Ammonia-N	190
ECMW-7	D	6/3/2002	Ammonia-N	205
ECMW-7	D	10/30/2002	Ammonia-N	167
ECMW-7	D	12/10/2002	Ammonia-N	149
ECMW-7	D	12/10/2002	Ammonia-N	180
ECMW-7	D	5/21/2003	Ammonia-N	244
ECMW-7	D	7/24/2003	Ammonia-N	95.1
ECMW-7	D	9/24/2003	Ammonia-N	116
ECMW-7	D	11/19/2003	Ammonia-N	124
ECMW-7	D	1/28/2004	Ammonia-N	147
ECMW-7	D	3/16/2004	Ammonia-N	190
ECMW-7	D	5/19/2004	Ammonia-N	204
ECMW-7	D	7/13/2004	Ammonia-N	73.4
ECMW-7	D	9/14/2004	Ammonia-N	25.9
ECMW-7	D	9/14/2004	Ammonia-N	26.5
ECMW-7	D	11/16/2004	Ammonia-N	219
ECMW-7	D	1/25/2005	Ammonia-N	281
ECMW-8	D	10/30/2001	Ammonia-N	0.94
ECMW-8	D	6/3/2002	Ammonia-N	551
ECMW-8	D	6/3/2002	Ammonia-N	551
ECMW-8	D	10/30/2002	Ammonia-N	406
ECMW-8	D	12/10/2002	Ammonia-N	220
ECMW-8	D	12/10/2002	Ammonia-N	261
ECMW-8	D	5/21/2003	Ammonia-N	214
ECMW-8	D	5/21/2003	Ammonia-N	167
ECMW-8	D	7/24/2003	Ammonia-N	179
ECMW-8	D	7/24/2003	Ammonia-N	177
ECMW-8	D	9/23/2003	Ammonia-N	157.5
ECMW-8	D	9/23/2003	Ammonia-N	153
ECMW-8	D	11/19/2003	Ammonia-N	206
ECMW-8	D	1/28/2004	Ammonia-N	45.7
ECMW-8	D	3/16/2004	Ammonia-N	88
ECMW-8	D	5/19/2004	Ammonia-N	120
ECMW-8	D	7/13/2004	Ammonia-N	120
ECMW-8	D	9/14/2004	Ammonia-N	107

* Indicates outlier

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ANALYTICAL DATA SUMMARY
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EL DORADO, ARKANSAS

WELL	U-UPGRADIENT D-DOWNGRADIENT	DATE	CONSITUENT	CONCENTRATION (mg/L)
ECMW-8	D	11/16/2004	Ammonia-N	82.1
ECMW-8	D	1/25/2005	Ammonia-N	48.9
ECMW-9	D	6/27/2001	Ammonia-N	<0.5
ECMW-9	D	10/30/2001	Ammonia-N	<0.5
ECMW-9	D	6/3/2002	Ammonia-N	<0.5
ECMW-9	D	10/30/2002	Ammonia-N	18.8
ECMW-9	D	12/10/2002	Ammonia-N	<0.5
ECMW-9	D	12/10/2002	Ammonia-N	0.7
ECMW-9	D	5/21/2003	Ammonia-N	<0.5
ECMW-9	D	7/24/2003	Ammonia-N	<0.5
ECMW-9	D	9/23/2003	Ammonia-N	<0.5
ECMW-9	D	11/19/2003	Ammonia-N	<0.5
ECMW-9	D	1/28/2004	Ammonia-N	<0.5
ECMW-9	D	3/16/2004	Ammonia-N	<0.5
ECMW-9	D	5/19/2004	Ammonia-N	<0.5
ECMW-9	D	7/13/2004	Ammonia-N	<0.5
ECMW-9	D	9/14/2004	Ammonia-N	1.14
ECMW-9	D	11/16/2004	Ammonia-N	0.7
ECMW-9	D	1/25/2005	Ammonia-N	<0.5
ECMW-1	U	5/29/2001	Chromium (Total)	<0.02
ECMW-1	U	11/1/2001	Chromium (Total)	<0.02
ECMW-1	U	6/3/2002	Chromium (Total)	<0.02
ECMW-1	U	10/30/2002	Chromium (Total)	<0.02
ECMW-1	U	12/10/2002	Chromium (Total)	<0.02
ECMW-1	U	5/20/2003	Chromium (Total)	<0.02
ECMW-1	U	7/24/2003	Chromium (Total)	<0.02
ECMW-1	U	9/24/2003	Chromium (Total)	<0.02
ECMW-1	U	11/19/2003	Chromium (Total)	<0.02
ECMW-1	U	1/28/2004	Chromium (Total)	<0.02
ECMW-1	U	3/16/2004	Chromium (Total)	<0.02
ECMW-1	U	5/18/2004	Chromium (Total)	<0.02
ECMW-1	U	7/13/2004	Chromium (Total)	<0.02
ECMW-1	U	9/14/2004	Chromium (Total)	<0.02
ECMW-1	U	11/16/2004	Chromium (Total)	<0.02
ECMW-1	U	1/25/2005	Chromium (Total)	<0.02
ECMW-2	U	5/29/2001	Chromium (Total)	0.032
ECMW-2	U	11/1/2001	Chromium (Total)	<0.02
ECMW-2	U	6/3/2002	Chromium (Total)	<0.02
ECMW-2	U	10/30/2002	Chromium (Total)	<0.02
ECMW-2	U	12/10/2002	Chromium (Total)	<0.02
ECMW-2	U	5/20/2003	Chromium (Total)	<0.02
ECMW-2	U	7/24/2003	Chromium (Total)	<0.02
ECMW-2	U	9/24/2003	Chromium (Total)	<0.02
ECMW-2	U	11/19/2003	Chromium (Total)	<0.02
ECMW-2	U	1/28/2004	Chromium (Total)	<0.02
ECMW-2	U	3/16/2004	Chromium (Total)	<0.02
ECMW-2	U	5/18/2004	Chromium (Total)	<0.02
ECMW-2	U	7/13/2004	Chromium (Total)	<0.02
ECMW-2	U	9/14/2004	Chromium (Total)	<0.02

* Indicates outlier

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ANALYTICAL DATA SUMMARY
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WELL	U-UPGRADIENT D-DOWNGRADIENT	DATE	CONSITUENT	CONCENTRATION (mg/L)
ECMW-2	U	11/16/2004	Chromium (Total)	<0.02
ECMW-2	U	1/25/2005	Chromium (Total)	<0.02
ECMW-2	U	1/25/2005	Chromium (Total)	<0.02
ECMW-3	U	5/29/2001	Chromium (Total)	<0.02
ECMW-3	U	11/1/2001	Chromium (Total)	<0.02
ECMW-3	U	6/3/2002	Chromium (Total)	<0.02
ECMW-3	U	10/30/2002	Chromium (Total)	<0.02
ECMW-3	U	12/10/2002	Chromium (Total)	<0.02
ECMW-3	U	5/20/2003	Chromium (Total)	<0.02
ECMW-3	U	7/24/2003	Chromium (Total)	<0.02
ECMW-3	U	9/24/2003	Chromium (Total)	<0.02
ECMW-3	U	11/19/2003	Chromium (Total)	<0.02
ECMW-3	U	1/28/2004	Chromium (Total)	<0.02
ECMW-3	U	3/16/2004	Chromium (Total)	<0.02
ECMW-3	U	5/18/2004	Chromium (Total)	<0.02
ECMW-3	U	7/13/2004	Chromium (Total)	<0.02
ECMW-3	U	9/14/2004	Chromium (Total)	<0.02
ECMW-3	U	11/16/2004	Chromium (Total)	<0.02
ECMW-3	U	1/25/2005	Chromium (Total)	<0.02
ECMW-10	D	6/27/2001	Chromium (Total)	0.025
ECMW-10	D	10/30/2001	Chromium (Total)	0.04
ECMW-10	D	6/3/2002	Chromium (Total)	<0.02
ECMW-10	D	10/30/2002	Chromium (Total)	<0.02
ECMW-10	D	12/10/2002	Chromium (Total)	<0.02
ECMW-10	D	5/21/2003	Chromium (Total)	<0.02
ECMW-10	D	7/24/2003	Chromium (Total)	<0.02
ECMW-10	D	9/23/2003	Chromium (Total)	<0.02
ECMW-10	D	11/19/2003	Chromium (Total)	<0.02
ECMW-10	D	1/28/2004	Chromium (Total)	<0.02
ECMW-10	D	3/16/2004	Chromium (Total)	<0.02
ECMW-10	D	5/18/2004	Chromium (Total)	<0.02
ECMW-10	D	7/13/2004	Chromium (Total)	<0.02
ECMW-10	D	9/14/2004	Chromium (Total)	<0.02
ECMW-10	D	11/16/2004	Chromium (Total)	<0.02
ECMW-10	D	1/25/2005	Chromium (Total)	<0.02
ECMW-11	D	8/8/2001	Chromium (Total)	<0.02
ECMW-11	D	10/30/2001	Chromium (Total)	<0.02
ECMW-11	D	6/3/2002	Chromium (Total)	<0.02
ECMW-11	D	6/3/2002	Chromium (Total)	<0.02
ECMW-11	D	10/30/2002	Chromium (Total)	<0.02
ECMW-11	D	12/10/2002	Chromium (Total)	<0.02
ECMW-11	D	5/21/2003	Chromium (Total)	<0.02
ECMW-11	D	7/24/2003	Chromium (Total)	<0.02
ECMW-11	D	9/23/2003	Chromium (Total)	<0.02
ECMW-11	D	11/19/2003	Chromium (Total)	<0.02
ECMW-11	D	11/19/2003	Chromium (Total)	<0.02
ECMW-11	D	1/28/2004	Chromium (Total)	<0.02
ECMW-11	D	3/16/2004	Chromium (Total)	<0.02
ECMW-11	D	3/16/2004	Chromium (Total)	<0.02

* Indicates outlier

TABLE A-1
ANALYTICAL DATA SUMMARY
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

WELL	U-UPGRADIENT D-DOWNGRADIENT	DATE	CONSITUENT	CONCENTRATION (mg/L)
ECMW-11	D	5/18/2004	Chromium (Total)	<0.02
ECMW-11	D	7/13/2004	Chromium (Total)	<0.02
ECMW-11	D	9/14/2004	Chromium (Total)	<0.02
ECMW-11	D	11/17/2004	Chromium (Total)	<0.02
ECMW-12	D	6/27/2001	Chromium (Total)	<0.02
ECMW-12	D	6/4/2002	Chromium (Total)	<0.02
ECMW-12	D	6/4/2002	Chromium (Total)	<0.02
ECMW-12	D	10/30/2002	Chromium (Total)	<0.02
ECMW-12	D	12/10/2002	Chromium (Total)	<0.02
ECMW-12	D	5/21/2003	Chromium (Total)	<0.02
ECMW-12	D	7/24/2003	Chromium (Total)	<0.02
ECMW-12	D	9/24/2003	Chromium (Total)	<0.02
ECMW-12	D	11/19/2003	Chromium (Total)	<0.02
ECMW-12	D	1/28/2004	Chromium (Total)	<0.02
ECMW-12	D	3/16/2004	Chromium (Total)	<0.02
ECMW-12	D	5/19/2004	Chromium (Total)	<0.02
ECMW-12	D	7/13/2004	Chromium (Total)	<0.02
ECMW-12	D	9/15/2004	Chromium (Total)	<0.02
ECMW-12	D	11/16/2004	Chromium (Total)	<0.02
ECMW-12	D	1/26/2005	Chromium (Total)	<0.02
ECMW-13	D	6/5/2001	Chromium (Total)	<0.02
ECMW-13	D	10/30/2001	Chromium (Total)	<0.02
ECMW-13	D	6/4/2002	Chromium (Total)	<0.02
ECMW-13	D	10/30/2002	Chromium (Total)	<0.02
ECMW-13	D	12/10/2002	Chromium (Total)	<0.02
ECMW-13	D	5/20/2003	Chromium (Total)	<0.02
ECMW-13	D	7/23/2003	Chromium (Total)	<0.02
ECMW-13	D	9/24/2003	Chromium (Total)	<0.02
ECMW-13	D	11/19/2003	Chromium (Total)	<0.02
ECMW-13	D	1/28/2004	Chromium (Total)	<0.02
ECMW-13	D	3/16/2004	Chromium (Total)	<0.02
ECMW-13	D	5/18/2004	Chromium (Total)	<0.02
ECMW-13	D	7/13/2004	Chromium (Total)	<0.02
ECMW-13	D	9/14/2004	Chromium (Total)	<0.02
ECMW-13	D	9/14/2004	Chromium (Total)	<0.02
ECMW-13	D	11/16/2004	Chromium (Total)	<0.02
ECMW-13	D	1/26/2005	Chromium (Total)	<0.02
ECMW-14	D	8/8/2001	Chromium (Total)	<0.02
ECMW-14	D	10/30/2001	Chromium (Total)	<0.02
ECMW-14	D	6/4/2002	Chromium (Total)	<0.02
ECMW-14	D	10/30/2002	Chromium (Total)	<0.02
ECMW-14	D	12/10/2002	Chromium (Total)	<0.02
ECMW-14	D	5/20/2003	Chromium (Total)	<0.02
ECMW-14	D	7/23/2003	Chromium (Total)	<0.02
ECMW-14	D	9/23/2003	Chromium (Total)	<0.02
ECMW-14	D	11/19/2003	Chromium (Total)	<0.02
ECMW-14	D	1/28/2004	Chromium (Total)	<0.02
ECMW-14	D	1/28/2004	Chromium (Total)	0.022
ECMW-14	D	3/16/2004	Chromium (Total)	<0.02

* Indicates outlier

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WELL	U-UPGRADIENT D-DOWNGRADIENT	DATE	CONSITUENT	CONCENTRATION (mg/L)
ECMW-14	D	5/18/2004	Chromium (Total)	<0.02
ECMW-14	D	7/13/2004	Chromium (Total)	<0.02
ECMW-14	D	7/13/2004	Chromium (Total)	<0.02
ECMW-14	D	9/14/2004	Chromium (Total)	<0.02
ECMW-14	D	11/16/2004	Chromium (Total)	<0.02
ECMW-14	D	1/26/2005	Chromium (Total)	<0.02
ECMW-15	D	8/8/2001	Chromium (Total)	<0.02
ECMW-15	D	10/30/2001	Chromium (Total)	<0.02
ECMW-15	D	6/4/2002	Chromium (Total)	<0.02
ECMW-15	D	10/30/2002	Chromium (Total)	<0.02
ECMW-15	D	12/10/2002	Chromium (Total)	<0.02
ECMW-15	D	5/20/2003	Chromium (Total)	<0.02
ECMW-15	D	7/23/2003	Chromium (Total)	<0.02
ECMW-15	D	9/23/2003	Chromium (Total)	<0.02
ECMW-15	D	11/19/2003	Chromium (Total)	<0.02
ECMW-15	D	1/28/2004	Chromium (Total)	<0.02
ECMW-15	D	3/16/2004	Chromium (Total)	<0.02
ECMW-15	D	5/18/2004	Chromium (Total)	<0.02
ECMW-15	D	7/13/2004	Chromium (Total)	<0.02
ECMW-15	D	9/14/2004	Chromium (Total)	<0.02
ECMW-15	D	11/16/2004	Chromium (Total)	<0.02
ECMW-15	D	1/25/2005	Chromium (Total)	<0.02
ECMW-16	D	6/5/2001	Chromium (Total)	<0.02
ECMW-16	D	10/30/2001	Chromium (Total)	<0.02
ECMW-16	D	6/4/2002	Chromium (Total)	<0.02
ECMW-16	D	6/4/2002	Chromium (Total)	<0.02
ECMW-16	D	10/30/2002	Chromium (Total)	<0.02
ECMW-16	D	12/10/2002	Chromium (Total)	<0.02
ECMW-16	D	5/20/2003	Chromium (Total)	<0.02
ECMW-16	D	7/23/2003	Chromium (Total)	<0.02
ECMW-16	D	9/23/2003	Chromium (Total)	<0.02
ECMW-16	D	11/19/2003	Chromium (Total)	<0.02
ECMW-16	D	1/28/2004	Chromium (Total)	<0.02
ECMW-16	D	3/16/2004	Chromium (Total)	<0.02
ECMW-16	D	5/18/2004	Chromium (Total)	<0.02
ECMW-16	D	5/18/2004	Chromium (Total)	<0.02
ECMW-16	D	7/13/2004	Chromium (Total)	<0.02
ECMW-16	D	9/14/2004	Chromium (Total)	<0.02
ECMW-16	D	11/16/2004	Chromium (Total)	<0.02
ECMW-16	D	11/16/2004	Chromium (Total)	<0.02
ECMW-16	D	1/25/2005	Chromium (Total)	<0.02
ECMW-17	D	6/5/2001	Chromium (Total)	<0.02
ECMW-17	D	10/30/2001	Chromium (Total)	<0.02
ECMW-17	D	6/4/2002	Chromium (Total)	<0.02
ECMW-17	D	10/30/2002	Chromium (Total)	<0.02
ECMW-17	D	12/10/2002	Chromium (Total)	<0.02
ECMW-17	D	5/20/2003	Chromium (Total)	<0.02
ECMW-17	D	7/23/2003	Chromium (Total)	<0.02
ECMW-17	D	9/23/2003	Chromium (Total)	<0.02

* Indicates outlier

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EL DORADO CHEMICAL COMPANY
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WELL	U-UPGRADIENT D-DOWNGRADIENT	DATE	CONSITUENT	CONCENTRATION (mg/L)
ECMW-17	D	11/19/2003	Chromium (Total)	<0.02
ECMW-17	D	1/28/2004	Chromium (Total)	<0.02
ECMW-17	D	3/16/2004	Chromium (Total)	<0.02
ECMW-17	D	5/18/2004	Chromium (Total)	<0.02
ECMW-17	D	7/13/2004	Chromium (Total)	<0.02
ECMW-17	D	9/14/2004	Chromium (Total)	<0.02
ECMW-17	D	11/16/2004	Chromium (Total)	<0.02
ECMW-17	D	1/26/2005	Chromium (Total)	<0.02
ECMW-18	D	10/30/2001	Chromium (Total)	0.05
ECMW-18	D	6/4/2002	Chromium (Total)	0.147
ECMW-18	D	10/30/2002	Chromium (Total)	<0.02
ECMW-18	D	12/10/2002	Chromium (Total)	0.02
ECMW-18	D	5/21/2003	Chromium (Total)	0.02
ECMW-18	D	7/23/2003	Chromium (Total)	0.047
ECMW-18	D	9/24/2003	Chromium (Total)	0.036
ECMW-18	D	11/19/2003	Chromium (Total)	<0.02
ECMW-18	D	3/16/2004	Chromium (Total)	0.027
ECMW-18	D	5/19/2004	Chromium (Total)	0.088
ECMW-18	D	7/13/2004	Chromium (Total)	0.043
ECMW-18	D	9/15/2004	Chromium (Total)	0.12
ECMW-18	D	11/17/2004	Chromium (Total)	0.027
ECMW-18	D	11/17/2004	Chromium (Total)	0.043
ECMW-18	D	1/26/2005	Chromium (Total)	0.055
ECMW-4	D	8/8/2001	Chromium (Total)	<0.02
ECMW-4	D	10/30/2001	Chromium (Total)	0.04
ECMW-4	D	6/3/2002	Chromium (Total)	<0.02
ECMW-4	D	10/30/2002	Chromium (Total)	<0.02
ECMW-4	D	12/10/2002	Chromium (Total)	<0.02
ECMW-4	D	5/20/2003	Chromium (Total)	<0.02
ECMW-4	D	5/20/2003	Chromium (Total)	<0.02
ECMW-4	D	7/24/2003	Chromium (Total)	<0.02
ECMW-4	D	7/24/2003	Chromium (Total)	<0.02
ECMW-4	D	9/24/2003	Chromium (Total)	<0.02
ECMW-4	D	9/24/2003	Chromium (Total)	<0.02
ECMW-4	D	11/19/2003	Chromium (Total)	<0.02
ECMW-4	D	1/28/2004	Chromium (Total)	<0.02
ECMW-4	D	3/16/2004	Chromium (Total)	<0.02
ECMW-4	D	5/19/2004	Chromium (Total)	<0.02
ECMW-4	D	7/13/2004	Chromium (Total)	<0.02
ECMW-4	D	9/14/2004	Chromium (Total)	<0.02
ECMW-4	D	11/16/2004	Chromium (Total)	<0.02
ECMW-4	D	1/25/2005	Chromium (Total)	<0.02
ECMW-5	D	8/8/2001	Chromium (Total)	<0.02
ECMW-5	D	10/30/2001	Chromium (Total)	<0.02
ECMW-5	D	6/3/2002	Chromium (Total)	<0.02
ECMW-5	D	10/30/2002	Chromium (Total)	<0.02
ECMW-5	D	12/10/2002	Chromium (Total)	<0.02
ECMW-5	D	5/20/2003	Chromium (Total)	<0.02
ECMW-5	D	7/24/2003	Chromium (Total)	<0.02

* Indicates outlier

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ANALYTICAL DATA SUMMARY
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

WELL	U-UPGRADIENT D-DOWNGRADIENT	DATE	CONSITUENT	CONCENTRATION (mg/L)
ECMW-5	D	9/24/2003	Chromium (Total)	<0.02
ECMW-5	D	11/19/2003	Chromium (Total)	<0.02
ECMW-5	D	1/28/2004	Chromium (Total)	<0.02
ECMW-5	D	1/28/2004	Chromium (Total)	<0.02
ECMW-5	D	3/16/2004	Chromium (Total)	<0.02
ECMW-5	D	5/19/2004	Chromium (Total)	<0.02
ECMW-5	D	5/19/2004	Chromium (Total)	<0.02
ECMW-5	D	7/13/2004	Chromium (Total)	<0.02
ECMW-5	D	9/14/2004	Chromium (Total)	<0.02
ECMW-5	D	11/16/2004	Chromium (Total)	<0.02
ECMW-5	D	1/25/2005	Chromium (Total)	<0.02
ECMW-6	D	8/8/2001	Chromium (Total)	<0.02
ECMW-6	D	10/30/2001	Chromium (Total)	<0.02
ECMW-6	D	6/3/2002	Chromium (Total)	<0.02
ECMW-6	D	10/30/2002	Chromium (Total)	<0.02
ECMW-6	D	12/10/2002	Chromium (Total)	<0.02
ECMW-6	D	12/10/2002	Chromium (Total)	<0.02
ECMW-6	D	5/21/2003	Chromium (Total)	<0.02
ECMW-6	D	7/24/2003	Chromium (Total)	<0.02
ECMW-6	D	9/24/2003	Chromium (Total)	<0.02
ECMW-6	D	11/19/2003	Chromium (Total)	<0.02
ECMW-6	D	11/19/2003	Chromium (Total)	<0.02
ECMW-6	D	1/28/2004	Chromium (Total)	<0.02
ECMW-6	D	3/16/2004	Chromium (Total)	<0.02
ECMW-6	D	5/19/2004	Chromium (Total)	<0.02
ECMW-6	D	7/13/2004	Chromium (Total)	<0.02
ECMW-6	D	7/13/2004	Chromium (Total)	<0.02
ECMW-6	D	9/14/2004	Chromium (Total)	<0.02
ECMW-6	D	11/16/2004	Chromium (Total)	<0.02
ECMW-6	D	1/25/2005	Chromium (Total)	<0.02
ECMW-7	D	8/8/2001	Chromium (Total)	<0.02
ECMW-7	D	10/30/2001	Chromium (Total)	<0.02
ECMW-7	D	10/30/2001	Chromium (Total)	<0.02
ECMW-7	D	6/3/2002	Chromium (Total)	<0.02
ECMW-7	D	6/3/2002	Chromium (Total)	<0.02
ECMW-7	D	10/30/2002	Chromium (Total)	<0.02
ECMW-7	D	12/10/2002	Chromium (Total)	<0.02
ECMW-7	D	12/10/2002	Chromium (Total)	<0.02
ECMW-7	D	5/21/2003	Chromium (Total)	<0.02
ECMW-7	D	7/24/2003	Chromium (Total)	<0.02
ECMW-7	D	9/24/2003	Chromium (Total)	<0.02
ECMW-7	D	11/19/2003	Chromium (Total)	<0.02
ECMW-7	D	1/28/2004	Chromium (Total)	<0.02
ECMW-7	D	3/16/2004	Chromium (Total)	<0.02
ECMW-7	D	5/19/2004	Chromium (Total)	<0.02
ECMW-7	D	7/13/2004	Chromium (Total)	<0.02
ECMW-7	D	9/14/2004	Chromium (Total)	<0.02
ECMW-7	D	9/14/2004	Chromium (Total)	<0.02
ECMW-7	D	11/16/2004	Chromium (Total)	<0.02

* Indicates outlier

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ANALYTICAL DATA SUMMARY
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

WELL	U-UPGRADIENT D-DOWNGRADIENT	DATE	CONSITUENT	CONCENTRATION (mg/L)
ECMW-7	D	1/25/2005	Chromium (Total)	<0.02
ECMW-8	D	10/30/2001	Chromium (Total)	<0.02
ECMW-8	D	6/3/2002	Chromium (Total)	<0.02
ECMW-8	D	6/3/2002	Chromium (Total)	<0.02
ECMW-8	D	10/30/2002	Chromium (Total)	<0.02
ECMW-8	D	12/10/2002	Chromium (Total)	<0.02
ECMW-8	D	12/10/2002	Chromium (Total)	<0.02
ECMW-8	D	5/21/2003	Chromium (Total)	<0.02
ECMW-8	D	5/21/2003	Chromium (Total)	<0.02
ECMW-8	D	7/24/2003	Chromium (Total)	<0.02
ECMW-8	D	7/24/2003	Chromium (Total)	<0.02
ECMW-8	D	9/23/2003	Chromium (Total)	<0.02
ECMW-8	D	9/23/2003	Chromium (Total)	<0.02
ECMW-8	D	11/19/2003	Chromium (Total)	<0.02
ECMW-8	D	1/28/2004	Chromium (Total)	<0.02
ECMW-8	D	3/16/2004	Chromium (Total)	<0.02
ECMW-8	D	5/19/2004	Chromium (Total)	<0.02
ECMW-8	D	7/13/2004	Chromium (Total)	<0.02
ECMW-8	D	9/14/2004	Chromium (Total)	<0.02
ECMW-8	D	11/16/2004	Chromium (Total)	<0.02
ECMW-8	D	1/25/2005	Chromium (Total)	<0.02
ECMW-9	D	6/27/2001	Chromium (Total)	<0.02
ECMW-9	D	10/30/2001	Chromium (Total)	<0.02
ECMW-9	D	6/3/2002	Chromium (Total)	<0.02
ECMW-9	D	10/30/2002	Chromium (Total)	<0.02
ECMW-9	D	12/10/2002	Chromium (Total)	<0.02
ECMW-9	D	12/10/2002	Chromium (Total)	<0.02
ECMW-9	D	5/21/2003	Chromium (Total)	<0.02
ECMW-9	D	7/24/2003	Chromium (Total)	<0.02
ECMW-9	D	9/23/2003	Chromium (Total)	<0.02
ECMW-9	D	11/19/2003	Chromium (Total)	<0.02
ECMW-9	D	1/28/2004	Chromium (Total)	<0.02
ECMW-9	D	3/16/2004	Chromium (Total)	<0.02
ECMW-9	D	5/19/2004	Chromium (Total)	<0.02
ECMW-9	D	7/13/2004	Chromium (Total)	<0.02
ECMW-9	D	9/14/2004	Chromium (Total)	<0.02
ECMW-9	D	11/16/2004	Chromium (Total)	<0.02
ECMW-9	D	1/25/2005	Chromium (Total)	<0.02
ECMW-1	U	5/29/2001	Lead (Total)	<0.04
ECMW-1	U	11/1/2001	Lead (Total)	<0.04
ECMW-1	U	6/3/2002	Lead (Total)	<0.02
ECMW-1	U	10/30/2002	Lead (Total)	<0.015
ECMW-1	U	12/10/2002	Lead (Total)	<0.015
ECMW-1	U	5/20/2003	Lead (Total)	<0.015
ECMW-1	U	7/24/2003	Lead (Total)	<0.015
ECMW-1	U	9/24/2003	Lead (Total)	<0.015
ECMW-1	U	11/19/2003	Lead (Total)	<0.015
ECMW-1	U	1/28/2004	Lead (Total)	<0.015
ECMW-1	U	3/16/2004	Lead (Total)	<0.015

* Indicates outlier

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ANALYTICAL DATA SUMMARY
EL DORADO CHEMICAL COMPANY
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WELL	U-UPGRADIENT D-DOWNGRADIENT	DATE	CONSITUENT	CONCENTRATION (mg/L)
ECMW-1	U	5/18/2004	Lead (Total)	<0.015
ECMW-1	U	7/13/2004	Lead (Total)	<0.015
ECMW-1	U	9/14/2004	Lead (Total)	<0.015
ECMW-1	U	11/16/2004	Lead (Total)	<0.015
ECMW-1	U	1/25/2005	Lead (Total)	<0.015
ECMW-2	U	5/29/2001	Lead (Total)	<0.04
ECMW-2	U	11/1/2001	Lead (Total)	<0.04
ECMW-2	U	6/3/2002	Lead (Total)	<0.02
ECMW-2	U	10/30/2002	Lead (Total)	<0.015
ECMW-2	U	12/10/2002	Lead (Total)	<0.015
ECMW-2	U	5/20/2003	Lead (Total)	<0.015
ECMW-2	U	7/24/2003	Lead (Total)	<0.015
ECMW-2	U	9/24/2003	Lead (Total)	<0.015
ECMW-2	U	11/19/2003	Lead (Total)	<0.015
ECMW-2	U	1/28/2004	Lead (Total)	<0.015
ECMW-2	U	3/16/2004	Lead (Total)	<0.015
ECMW-2	U	5/18/2004	Lead (Total)	<0.015
ECMW-2	U	7/13/2004	Lead (Total)	<0.015
ECMW-2	U	9/14/2004	Lead (Total)	<0.015
ECMW-2	U	11/16/2004	Lead (Total)	<0.015
ECMW-2	U	1/25/2005	Lead (Total)	<0.015
ECMW-2	U	1/25/2005	Lead (Total)	<0.015
ECMW-3	U	5/29/2001	Lead (Total)	<0.04
ECMW-3	U	11/1/2001	Lead (Total)	<0.04
ECMW-3	U	6/3/2002	Lead (Total)	<0.02
ECMW-3	U	10/30/2002	Lead (Total)	<0.015
ECMW-3	U	12/10/2002	Lead (Total)	<0.015
ECMW-3	U	5/20/2003	Lead (Total)	<0.015
ECMW-3	U	7/24/2003	Lead (Total)	<0.015
ECMW-3	U	9/24/2003	Lead (Total)	<0.015
ECMW-3	U	11/19/2003	Lead (Total)	<0.015
ECMW-3	U	1/28/2004	Lead (Total)	<0.015
ECMW-3	U	3/16/2004	Lead (Total)	<0.015
ECMW-3	U	5/18/2004	Lead (Total)	<0.015
ECMW-3	U	7/13/2004	Lead (Total)	<0.015
ECMW-3	U	9/14/2004	Lead (Total)	<0.015
ECMW-3	U	11/16/2004	Lead (Total)	<0.015
ECMW-3	U	1/25/2005	Lead (Total)	<0.015
ECMW-10	D	6/27/2001	Lead (Total)	<0.04
ECMW-10	D	10/30/2001	Lead (Total)	<0.04
ECMW-10	D	6/3/2002	Lead (Total)	<0.02
ECMW-10	D	10/30/2002	Lead (Total)	<0.015
ECMW-10	D	12/10/2002	Lead (Total)	<0.015
ECMW-10	D	5/21/2003	Lead (Total)	<0.015
ECMW-10	D	7/24/2003	Lead (Total)	<0.015
ECMW-10	D	9/23/2003	Lead (Total)	<0.015
ECMW-10	D	11/19/2003	Lead (Total)	<0.015
ECMW-10	D	1/28/2004	Lead (Total)	<0.015
ECMW-10	D	3/16/2004	Lead (Total)	<0.015

* Indicates outlier

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ANALYTICAL DATA SUMMARY
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

WELL	U-UPGRADIENT D-DOWNGRADIENT	DATE	CONSITUENT	CONCENTRATION (mg/L)
ECMW-10	D	5/18/2004	Lead (Total)	<0.015
ECMW-10	D	7/13/2004	Lead (Total)	<0.015
ECMW-10	D	9/14/2004	Lead (Total)	<0.015
ECMW-10	D	11/16/2004	Lead (Total)	<0.015
ECMW-10	D	1/25/2005	Lead (Total)	<0.015
ECMW-11	D	8/8/2001	Lead (Total)	<0.04
ECMW-11	D	10/30/2001	Lead (Total)	<0.04
ECMW-11	D	6/3/2002	Lead (Total)	<0.02
ECMW-11	D	6/3/2002	Lead (Total)	<0.02
ECMW-11	D	10/30/2002	Lead (Total)	<0.015
ECMW-11	D	12/10/2002	Lead (Total)	<0.015
ECMW-11	D	5/21/2003	Lead (Total)	<0.015
ECMW-11	D	7/24/2003	Lead (Total)	<0.015
ECMW-11	D	9/23/2003	Lead (Total)	<0.015
ECMW-11	D	11/19/2003	Lead (Total)	<0.015
ECMW-11	D	11/19/2003	Lead (Total)	<0.015
ECMW-11	D	1/28/2004	Lead (Total)	<0.015
ECMW-11	D	3/16/2004	Lead (Total)	<0.015
ECMW-11	D	3/16/2004	Lead (Total)	<0.015
ECMW-11	D	5/18/2004	Lead (Total)	<0.015
ECMW-11	D	7/13/2004	Lead (Total)	<0.015
ECMW-11	D	9/14/2004	Lead (Total)	<0.015
ECMW-11	D	11/17/2004	Lead (Total)	<0.015
ECMW-12	D	6/27/2001	Lead (Total)	<0.04
ECMW-12	D	6/4/2002	Lead (Total)	<0.02
ECMW-12	D	6/4/2002	Lead (Total)	<0.02
ECMW-12	D	10/30/2002	Lead (Total)	<0.015
ECMW-12	D	12/10/2002	Lead (Total)	<0.015
ECMW-12	D	5/21/2003	Lead (Total)	<0.015
ECMW-12	D	7/24/2003	Lead (Total)	<0.015
ECMW-12	D	9/24/2003	Lead (Total)	<0.015
ECMW-12	D	11/19/2003	Lead (Total)	<0.015
ECMW-12	D	1/28/2004	Lead (Total)	<0.015
ECMW-12	D	3/16/2004	Lead (Total)	<0.015
ECMW-12	D	5/19/2004	Lead (Total)	<0.015
ECMW-12	D	7/13/2004	Lead (Total)	<0.015
ECMW-12	D	9/15/2004	Lead (Total)	<0.015
ECMW-12	D	11/16/2004	Lead (Total)	<0.015
ECMW-12	D	1/26/2005	Lead (Total)	<0.015
ECMW-13	D	6/5/2001	Lead (Total)	<0.04
ECMW-13	D	10/30/2001	Lead (Total)	<0.04
ECMW-13	D	6/4/2002	Lead (Total)	<0.02
ECMW-13	D	10/30/2002	Lead (Total)	<0.015
ECMW-13	D	12/10/2002	Lead (Total)	<0.015
ECMW-13	D	5/20/2003	Lead (Total)	<0.015
ECMW-13	D	7/23/2003	Lead (Total)	<0.015
ECMW-13	D	9/24/2003	Lead (Total)	<0.015
ECMW-13	D	11/19/2003	Lead (Total)	<0.015
ECMW-13	D	1/28/2004	Lead (Total)	<0.015

* Indicates outlier

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EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

WELL	U-UPGRADIENT D-DOWNGRADIENT	DATE	CONSITUENT	CONCENTRATION (mg/L)
ECMW-13	D	3/16/2004	Lead (Total)	<0.015
ECMW-13	D	5/18/2004	Lead (Total)	<0.015
ECMW-13	D	7/13/2004	Lead (Total)	<0.015
ECMW-13	D	9/14/2004	Lead (Total)	<0.015
ECMW-13	D	9/14/2004	Lead (Total)	<0.015
ECMW-13	D	11/16/2004	Lead (Total)	<0.015
ECMW-13	D	1/26/2005	Lead (Total)	<0.015
ECMW-14	D	8/8/2001	Lead (Total)	<0.04
ECMW-14	D	10/30/2001	Lead (Total)	<0.04
ECMW-14	D	6/4/2002	Lead (Total)	<0.02
ECMW-14	D	10/30/2002	Lead (Total)	<0.015
ECMW-14	D	12/10/2002	Lead (Total)	<0.015
ECMW-14	D	5/20/2003	Lead (Total)	<0.015
ECMW-14	D	7/23/2003	Lead (Total)	<0.015
ECMW-14	D	9/23/2003	Lead (Total)	<0.015
ECMW-14	D	11/19/2003	Lead (Total)	<0.015
ECMW-14	D	1/28/2004	Lead (Total)	0.028
ECMW-14	D	1/28/2004	Lead (Total)	<0.015
ECMW-14	D	3/16/2004	Lead (Total)	<0.015
ECMW-14	D	5/18/2004	Lead (Total)	<0.015
ECMW-14	D	7/13/2004	Lead (Total)	<0.015
ECMW-14	D	7/13/2004	Lead (Total)	<0.015
ECMW-14	D	9/14/2004	Lead (Total)	<0.015
ECMW-14	D	11/16/2004	Lead (Total)	<0.015
ECMW-14	D	1/26/2005	Lead (Total)	<0.015
ECMW-15	D	8/8/2001	Lead (Total)	<0.04
ECMW-15	D	10/30/2001	Lead (Total)	<0.04
ECMW-15	D	6/4/2002	Lead (Total)	<0.02
ECMW-15	D	10/30/2002	Lead (Total)	<0.015
ECMW-15	D	12/10/2002	Lead (Total)	<0.015
ECMW-15	D	5/20/2003	Lead (Total)	<0.015
ECMW-15	D	7/23/2003	Lead (Total)	<0.015
ECMW-15	D	9/23/2003	Lead (Total)	<0.015
ECMW-15	D	11/19/2003	Lead (Total)	<0.015
ECMW-15	D	1/28/2004	Lead (Total)	<0.015
ECMW-15	D	3/16/2004	Lead (Total)	<0.015
ECMW-15	D	5/18/2004	Lead (Total)	<0.015
ECMW-15	D	7/13/2004	Lead (Total)	<0.015
ECMW-15	D	9/14/2004	Lead (Total)	<0.015
ECMW-15	D	11/16/2004	Lead (Total)	<0.015
ECMW-15	D	1/25/2005	Lead (Total)	<0.015
ECMW-16	D	6/5/2001	Lead (Total)	<0.04
ECMW-16	D	10/30/2001	Lead (Total)	<0.04
ECMW-16	D	6/4/2002	Lead (Total)	<0.02
ECMW-16	D	6/4/2002	Lead (Total)	<0.02
ECMW-16	D	10/30/2002	Lead (Total)	<0.015
ECMW-16	D	12/10/2002	Lead (Total)	<0.015
ECMW-16	D	5/20/2003	Lead (Total)	<0.015
ECMW-16	D	7/23/2003	Lead (Total)	<0.015

* Indicates outlier

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ANALYTICAL DATA SUMMARY
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

WELL	U-UPGRADIENT D-DOWNGRADIENT	DATE	CONSITUENT	CONCENTRATION (mg/L)
ECMW-16	D	9/23/2003	Lead (Total)	<0.015
ECMW-16	D	11/19/2003	Lead (Total)	<0.015
ECMW-16	D	1/28/2004	Lead (Total)	<0.015
ECMW-16	D	3/16/2004	Lead (Total)	<0.015
ECMW-16	D	5/18/2004	Lead (Total)	<0.015
ECMW-16	D	5/18/2004	Lead (Total)	<0.015
ECMW-16	D	7/13/2004	Lead (Total)	<0.015
ECMW-16	D	9/14/2004	Lead (Total)	<0.015
ECMW-16	D	11/16/2004	Lead (Total)	<0.015
ECMW-16	D	11/16/2004	Lead (Total)	<0.015
ECMW-16	D	1/25/2005	Lead (Total)	<0.015
ECMW-17	D	6/5/2001	Lead (Total)	<0.04
ECMW-17	D	10/30/2001	Lead (Total)	<0.04
ECMW-17	D	6/4/2002	Lead (Total)	<0.02
ECMW-17	D	10/30/2002	Lead (Total)	<0.015
ECMW-17	D	12/10/2002	Lead (Total)	<0.015
ECMW-17	D	5/20/2003	Lead (Total)	<0.015
ECMW-17	D	7/23/2003	Lead (Total)	<0.015
ECMW-17	D	9/23/2003	Lead (Total)	<0.015
ECMW-17	D	11/19/2003	Lead (Total)	<0.015
ECMW-17	D	1/28/2004	Lead (Total)	<0.015
ECMW-17	D	3/16/2004	Lead (Total)	<0.015
ECMW-17	D	5/18/2004	Lead (Total)	<0.015
ECMW-17	D	7/13/2004	Lead (Total)	<0.015
ECMW-17	D	9/14/2004	Lead (Total)	<0.015
ECMW-17	D	11/16/2004	Lead (Total)	<0.015
ECMW-17	D	1/26/2005	Lead (Total)	<0.015
ECMW-18	D	10/30/2001	Lead (Total)	<0.04
ECMW-18	D	6/4/2002	Lead (Total)	0.115
ECMW-18	D	10/30/2002	Lead (Total)	0.018
ECMW-18	D	12/10/2002	Lead (Total)	<0.015
ECMW-18	D	5/21/2003	Lead (Total)	0.029
ECMW-18	D	7/23/2003	Lead (Total)	0.029
ECMW-18	D	9/24/2003	Lead (Total)	0.025
ECMW-18	D	11/19/2003	Lead (Total)	<0.015
ECMW-18	D	3/16/2004	Lead (Total)	0.021
ECMW-18	D	5/19/2004	Lead (Total)	0.063
ECMW-18	D	7/13/2004	Lead (Total)	0.033
ECMW-18	D	9/15/2004	Lead (Total)	0.109
ECMW-18	D	11/17/2004	Lead (Total)	0.03
ECMW-18	D	11/17/2004	Lead (Total)	<0.015
ECMW-18	D	1/26/2005	Lead (Total)	0.056
ECMW-4	D	8/8/2001	Lead (Total)	<0.04
ECMW-4	D	10/30/2001	Lead (Total)	0.06
ECMW-4	D	6/3/2002	Lead (Total)	<0.02
ECMW-4	D	10/30/2002	Lead (Total)	0.02
ECMW-4	D	12/10/2002	Lead (Total)	<0.015
ECMW-4	D	5/20/2003	Lead (Total)	<0.015
ECMW-4	D	5/20/2003	Lead (Total)	<0.015

* Indicates outlier

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ANALYTICAL DATA SUMMARY
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

WELL	U-UPGRADIENT D-DOWNGRADIENT	DATE	CONSITUENT	CONCENTRATION (mg/L)
ECMW-4	D	7/24/2003	Lead (Total)	<0.015
ECMW-4	D	7/24/2003	Lead (Total)	<0.015
ECMW-4	D	9/24/2003	Lead (Total)	<0.015
ECMW-4	D	9/24/2003	Lead (Total)	<0.015
ECMW-4	D	11/19/2003	Lead (Total)	<0.015
ECMW-4	D	1/28/2004	Lead (Total)	<0.015
ECMW-4	D	3/16/2004	Lead (Total)	<0.015
ECMW-4	D	5/19/2004	Lead (Total)	<0.015
ECMW-4	D	7/13/2004	Lead (Total)	<0.015
ECMW-4	D	9/14/2004	Lead (Total)	<0.015
ECMW-4	D	11/16/2004	Lead (Total)	<0.015
ECMW-4	D	1/25/2005	Lead (Total)	<0.015
ECMW-5	D	8/8/2001	Lead (Total)	<0.04
ECMW-5	D	10/30/2001	Lead (Total)	<0.04
ECMW-5	D	6/3/2002	Lead (Total)	<0.02
ECMW-5	D	10/30/2002	Lead (Total)	<0.015
ECMW-5	D	12/10/2002	Lead (Total)	<0.015
ECMW-5	D	5/20/2003	Lead (Total)	<0.015
ECMW-5	D	7/24/2003	Lead (Total)	<0.015
ECMW-5	D	9/24/2003	Lead (Total)	<0.015
ECMW-5	D	11/19/2003	Lead (Total)	<0.015
ECMW-5	D	1/28/2004	Lead (Total)	<0.015
ECMW-5	D	1/28/2004	Lead (Total)	<0.015
ECMW-5	D	3/16/2004	Lead (Total)	<0.015
ECMW-5	D	5/19/2004	Lead (Total)	<0.015
ECMW-5	D	5/19/2004	Lead (Total)	<0.015
ECMW-5	D	7/13/2004	Lead (Total)	<0.015
ECMW-5	D	9/14/2004	Lead (Total)	<0.015
ECMW-5	D	11/16/2004	Lead (Total)	<0.015
ECMW-5	D	1/25/2005	Lead (Total)	<0.015
ECMW-6	D	8/8/2001	Lead (Total)	<0.04
ECMW-6	D	10/30/2001	Lead (Total)	<0.04
ECMW-6	D	6/3/2002	Lead (Total)	<0.02
ECMW-6	D	10/30/2002	Lead (Total)	<0.015
ECMW-6	D	12/10/2002	Lead (Total)	<0.015
ECMW-6	D	12/10/2002	Lead (Total)	<0.015
ECMW-6	D	5/21/2003	Lead (Total)	<0.015
ECMW-6	D	7/24/2003	Lead (Total)	<0.015
ECMW-6	D	9/24/2003	Lead (Total)	<0.015
ECMW-6	D	11/19/2003	Lead (Total)	<0.015
ECMW-6	D	11/19/2003	Lead (Total)	<0.015
ECMW-6	D	1/28/2004	Lead (Total)	<0.015
ECMW-6	D	3/16/2004	Lead (Total)	<0.015
ECMW-6	D	5/19/2004	Lead (Total)	<0.015
ECMW-6	D	7/13/2004	Lead (Total)	<0.015
ECMW-6	D	7/13/2004	Lead (Total)	<0.015
ECMW-6	D	9/14/2004	Lead (Total)	<0.015
ECMW-6	D	11/16/2004	Lead (Total)	<0.015
ECMW-6	D	1/25/2005	Lead (Total)	<0.015

* Indicates outlier

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ANALYTICAL DATA SUMMARY
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

WELL	U-UPGRADIENT D-DOWNGRADIENT	DATE	CONSITUENT	CONCENTRATION (mg/L)
ECMW-7	D	8/8/2001	Lead (Total)	<0.04
ECMW-7	D	10/30/2001	Lead (Total)	<0.04
ECMW-7	D	10/30/2001	Lead (Total)	<0.04
ECMW-7	D	6/3/2002	Lead (Total)	0.031
ECMW-7	D	6/3/2002	Lead (Total)	0.027
ECMW-7	D	10/30/2002	Lead (Total)	0.017
ECMW-7	D	12/10/2002	Lead (Total)	<0.015
ECMW-7	D	12/10/2002	Lead (Total)	<0.015
ECMW-7	D	5/21/2003	Lead (Total)	0.02
ECMW-7	D	7/24/2003	Lead (Total)	<0.015
ECMW-7	D	9/24/2003	Lead (Total)	0.02
ECMW-7	D	11/19/2003	Lead (Total)	<0.015
ECMW-7	D	1/28/2004	Lead (Total)	0.018
ECMW-7	D	3/16/2004	Lead (Total)	0.018
ECMW-7	D	5/19/2004	Lead (Total)	<0.015
ECMW-7	D	7/13/2004	Lead (Total)	<0.015
ECMW-7	D	9/14/2004	Lead (Total)	<0.015
ECMW-7	D	9/14/2004	Lead (Total)	<0.015
ECMW-7	D	11/16/2004	Lead (Total)	<0.015
ECMW-7	D	1/25/2005	Lead (Total)	0.016
ECMW-8	D	10/30/2001	Lead (Total)	<0.04
ECMW-8	D	6/3/2002	Lead (Total)	<0.02
ECMW-8	D	6/3/2002	Lead (Total)	0.031
ECMW-8	D	10/30/2002	Lead (Total)	<0.015
ECMW-8	D	12/10/2002	Lead (Total)	<0.015
ECMW-8	D	12/10/2002	Lead (Total)	<0.015
ECMW-8	D	5/21/2003	Lead (Total)	0.019
ECMW-8	D	5/21/2003	Lead (Total)	0.019
ECMW-8	D	7/24/2003	Lead (Total)	<0.015
ECMW-8	D	7/24/2003	Lead (Total)	<0.015
ECMW-8	D	9/23/2003	Lead (Total)	<0.015
ECMW-8	D	9/23/2003	Lead (Total)	<0.015
ECMW-8	D	11/19/2003	Lead (Total)	<0.015
ECMW-8	D	1/28/2004	Lead (Total)	<0.015
ECMW-8	D	3/16/2004	Lead (Total)	<0.015
ECMW-8	D	5/19/2004	Lead (Total)	<0.015
ECMW-8	D	7/13/2004	Lead (Total)	<0.015
ECMW-8	D	9/14/2004	Lead (Total)	<0.015
ECMW-8	D	11/16/2004	Lead (Total)	<0.015
ECMW-8	D	1/25/2005	Lead (Total)	<0.015
ECMW-9	D	6/27/2001	Lead (Total)	<0.04
ECMW-9	D	10/30/2001	Lead (Total)	<0.04
ECMW-9	D	6/3/2002	Lead (Total)	<0.02
ECMW-9	D	10/30/2002	Lead (Total)	<0.015
ECMW-9	D	12/10/2002	Lead (Total)	<0.015
ECMW-9	D	12/10/2002	Lead (Total)	<0.015
ECMW-9	D	5/21/2003	Lead (Total)	<0.015
ECMW-9	D	7/24/2003	Lead (Total)	<0.015
ECMW-9	D	9/23/2003	Lead (Total)	<0.015

* Indicates outlier

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ANALYTICAL DATA SUMMARY
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

WELL	U-UPGRADIENT D-DOWNGRADIENT	DATE	CONSITUENT	CONCENTRATION (mg/L)
ECMW-9	D	11/19/2003	Lead (Total)	<0.015
ECMW-9	D	1/28/2004	Lead (Total)	<0.015
ECMW-9	D	3/16/2004	Lead (Total)	<0.015
ECMW-9	D	5/19/2004	Lead (Total)	<0.015
ECMW-9	D	7/13/2004	Lead (Total)	<0.015
ECMW-9	D	9/14/2004	Lead (Total)	<0.015
ECMW-9	D	11/16/2004	Lead (Total)	<0.015
ECMW-9	D	1/25/2005	Lead (Total)	<0.015
ECMW-1	U	5/29/2001	Nitrate-N	1.83
ECMW-1	U	11/1/2001	Nitrate-N	2.74
ECMW-1	U	6/3/2002	Nitrate-N	2.01
ECMW-1	U	10/30/2002	Nitrate-N	1.56
ECMW-1	U	12/10/2002	Nitrate-N	1.8
ECMW-1	U	5/20/2003	Nitrate-N	2.4
ECMW-1	U	7/24/2003	Nitrate-N	2.55
ECMW-1	U	9/24/2003	Nitrate-N	3.18
ECMW-1	U	11/19/2003	Nitrate-N	1.47
ECMW-1	U	1/28/2004	Nitrate-N	1.6
ECMW-1	U	3/16/2004	Nitrate-N	2.73
ECMW-1	U	5/18/2004	Nitrate-N	4.79
ECMW-1	U	7/13/2004	Nitrate-N	3.68
ECMW-1	U	9/14/2004	Nitrate-N	4.26
ECMW-1	U	11/16/2004	Nitrate-N	3.81
ECMW-1	U	1/25/2005	Nitrate-N	2.88
ECMW-2	U	5/29/2001	Nitrate-N	<0.5
ECMW-2	U	11/1/2001	Nitrate-N	<0.5
ECMW-2	U	6/3/2002	Nitrate-N	<0.5
ECMW-2	U	10/30/2002	Nitrate-N	<0.5
ECMW-2	U	12/10/2002	Nitrate-N	<0.5
ECMW-2	U	5/20/2003	Nitrate-N	<0.5
ECMW-2	U	7/24/2003	Nitrate-N	<0.5
ECMW-2	U	9/24/2003	Nitrate-N	<0.5
ECMW-2	U	11/19/2003	Nitrate-N	<0.5
ECMW-2	U	1/28/2004	Nitrate-N	<0.5
ECMW-2	U	3/16/2004	Nitrate-N	<0.5
ECMW-2	U	5/18/2004	Nitrate-N	<0.5
ECMW-2	U	7/13/2004	Nitrate-N	<0.5
ECMW-2	U	9/14/2004	Nitrate-N	<0.5
ECMW-2	U	11/16/2004	Nitrate-N	<0.5
ECMW-2	U	1/25/2005	Nitrate-N	<0.5
ECMW-2	U	1/25/2005	Nitrate-N	<0.5
ECMW-3	U	5/29/2001	Nitrate-N	<0.5
ECMW-3	U	11/1/2001	Nitrate-N	<0.5
ECMW-3	U	6/3/2002	Nitrate-N	<0.5
ECMW-3	U	10/30/2002	Nitrate-N	<0.5
ECMW-3	U	12/10/2002	Nitrate-N	<0.5
ECMW-3	U	5/20/2003	Nitrate-N	<0.5
ECMW-3	U	7/24/2003	Nitrate-N	<0.5
ECMW-3	U	9/24/2003	Nitrate-N	<0.5

* Indicates outlier

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ANALYTICAL DATA SUMMARY
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

WELL	U-UPGRADIENT D-DOWNGRADIENT	DATE	CONSITUENT	CONCENTRATION (mg/L)
ECMW-3	U	11/19/2003	Nitrate-N	<0.5
ECMW-3	U	1/28/2004	Nitrate-N	<0.5
ECMW-3	U	3/16/2004	Nitrate-N	<0.5
ECMW-3	U	5/18/2004	Nitrate-N	<0.5
ECMW-3	U	7/13/2004	Nitrate-N	<0.5
ECMW-3	U	9/14/2004	Nitrate-N	<0.5
ECMW-3	U	11/16/2004	Nitrate-N	<0.5
ECMW-3	U	1/25/2005	Nitrate-N	<0.5
ECMW-10	D	6/27/2001	Nitrate-N	156
ECMW-10	D	10/30/2001	Nitrate-N	153
ECMW-10	D	6/3/2002	Nitrate-N	138
ECMW-10	D	10/30/2002	Nitrate-N	137
ECMW-10	D	12/10/2002	Nitrate-N	70.4
ECMW-10	D	5/21/2003	Nitrate-N	148
ECMW-10	D	7/24/2003	Nitrate-N	118
ECMW-10	D	9/23/2003	Nitrate-N	147
ECMW-10	D	11/19/2003	Nitrate-N	119
ECMW-10	D	1/28/2004	Nitrate-N	126
ECMW-10	D	3/16/2004	Nitrate-N	135
ECMW-10	D	5/18/2004	Nitrate-N	123
ECMW-10	D	7/13/2004	Nitrate-N	114
ECMW-10	D	9/14/2004	Nitrate-N	123
ECMW-10	D	11/16/2004	Nitrate-N	94.4
ECMW-10	D	1/25/2005	Nitrate-N	115
ECMW-11	D	8/8/2001	Nitrate-N	7.99
ECMW-11	D	10/30/2001	Nitrate-N	21.9
ECMW-11	D	6/3/2002	Nitrate-N	6.46
ECMW-11	D	6/3/2002	Nitrate-N	5.81
ECMW-11	D	10/30/2002	Nitrate-N	9.22
ECMW-11	D	12/10/2002	Nitrate-N	6.12
ECMW-11	D	5/21/2003	Nitrate-N	6.02
ECMW-11	D	7/24/2003	Nitrate-N	6.68
ECMW-11	D	9/23/2003	Nitrate-N	4.24
ECMW-11	D	11/19/2003	Nitrate-N	6.26
ECMW-11	D	11/19/2003	Nitrate-N	6.85
ECMW-11	D	1/28/2004	Nitrate-N	6.72
ECMW-11	D	3/16/2004	Nitrate-N	8.79
ECMW-11	D	3/16/2004	Nitrate-N	9.63
ECMW-11	D	5/18/2004	Nitrate-N	13.5
ECMW-11	D	7/13/2004	Nitrate-N	13.6
ECMW-11	D	9/14/2004	Nitrate-N	9.85
ECMW-11	D	11/17/2004	Nitrate-N	11.1
ECMW-12	D	6/27/2001	Nitrate-N	<0.5
ECMW-12	D	6/4/2002	Nitrate-N	<0.5
ECMW-12	D	6/4/2002	Nitrate-N	<0.5
ECMW-12	D	10/30/2002	Nitrate-N	<0.5
ECMW-12	D	12/10/2002	Nitrate-N	<0.5
ECMW-12	D	5/21/2003	Nitrate-N	<0.5
ECMW-12	D	7/24/2003	Nitrate-N	<0.5

* Indicates outlier

TABLE A-1
ANALYTICAL DATA SUMMARY
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

WELL	U-UPGRADIENT D-DOWNGRADIENT	DATE	CONSITUENT	CONCENTRATION (mg/L)
ECMW-12	D	9/24/2003	Nitrate-N	<0.5
ECMW-12	D	11/19/2003	Nitrate-N	<0.5
ECMW-12	D	1/28/2004	Nitrate-N	<0.5
ECMW-12	D	3/16/2004	Nitrate-N	<0.5
ECMW-12	D	5/19/2004	Nitrate-N	<0.5
ECMW-12	D	7/13/2004	Nitrate-N	<0.5
ECMW-12	D	9/15/2004	Nitrate-N	<0.5
ECMW-12	D	11/16/2004	Nitrate-N	<0.5
ECMW-12	D	1/26/2005	Nitrate-N	<0.5
ECMW-13	D	6/5/2001	Nitrate-N	<0.5
ECMW-13	D	10/30/2001	Nitrate-N	<0.5
ECMW-13	D	6/4/2002	Nitrate-N	<0.5
ECMW-13	D	10/30/2002	Nitrate-N	<0.5
ECMW-13	D	12/10/2002	Nitrate-N	<0.5
ECMW-13	D	5/20/2003	Nitrate-N	<0.5
ECMW-13	D	7/23/2003	Nitrate-N	<0.5
ECMW-13	D	9/24/2003	Nitrate-N	<0.5
ECMW-13	D	11/19/2003	Nitrate-N	0.62
ECMW-13	D	1/28/2004	Nitrate-N	<0.5
ECMW-13	D	3/16/2004	Nitrate-N	<0.5
ECMW-13	D	5/18/2004	Nitrate-N	<0.5
ECMW-13	D	7/13/2004	Nitrate-N	<0.5
ECMW-13	D	9/14/2004	Nitrate-N	<0.5
ECMW-13	D	9/14/2004	Nitrate-N	<0.5
ECMW-13	D	11/16/2004	Nitrate-N	<0.5
ECMW-13	D	1/26/2005	Nitrate-N	0.72
ECMW-14	D	8/8/2001	Nitrate-N	75
ECMW-14	D	10/30/2001	Nitrate-N	25.2
ECMW-14	D	6/4/2002	Nitrate-N	26.5
ECMW-14	D	10/30/2002	Nitrate-N	17
ECMW-14	D	12/10/2002	Nitrate-N	23.4
ECMW-14	D	5/20/2003	Nitrate-N	44.9
ECMW-14	D	7/23/2003	Nitrate-N	23.1
ECMW-14	D	9/23/2003	Nitrate-N	20.3
ECMW-14	D	11/19/2003	Nitrate-N	16.1
ECMW-14	D	1/28/2004	Nitrate-N	24.5
ECMW-14	D	1/28/2004	Nitrate-N	<0.5
ECMW-14	D	3/16/2004	Nitrate-N	33.4
ECMW-14	D	5/18/2004	Nitrate-N	32.6
ECMW-14	D	7/13/2004	Nitrate-N	47.3
ECMW-14	D	7/13/2004	Nitrate-N	45.7
ECMW-14	D	9/14/2004	Nitrate-N	57.7
ECMW-14	D	11/16/2004	Nitrate-N	21.7
ECMW-14	D	1/26/2005	Nitrate-N	62.4
ECMW-15	D	8/8/2001	Nitrate-N	19.1
ECMW-15	D	10/30/2001	Nitrate-N	12.6
ECMW-15	D	6/4/2002	Nitrate-N	10.7
ECMW-15	D	10/30/2002	Nitrate-N	18.2
ECMW-15	D	12/10/2002	Nitrate-N	12.2

* Indicates outlier

TABLE A-1
ANALYTICAL DATA SUMMARY
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

WELL	U-UPGRADIENT D-DOWNGRADIENT	DATE	CONSITUENT	CONCENTRATION (mg/L)
ECMW-15	D	5/20/2003	Nitrate-N	9.45
ECMW-15	D	7/23/2003	Nitrate-N	7.63
ECMW-15	D	9/23/2003	Nitrate-N	9.62
ECMW-15	D	11/19/2003	Nitrate-N	9.81
ECMW-15	D	1/28/2004	Nitrate-N	4.52
ECMW-15	D	3/16/2004	Nitrate-N	7.66
ECMW-15	D	5/18/2004	Nitrate-N	6.82
ECMW-15	D	7/13/2004	Nitrate-N	9.52
ECMW-15	D	9/14/2004	Nitrate-N	8.22
ECMW-15	D	11/16/2004	Nitrate-N	7.42
ECMW-15	D	1/25/2005	Nitrate-N	7.62
ECMW-16	D	6/5/2001	Nitrate-N	134
ECMW-16	D	10/30/2001	Nitrate-N	58.4
ECMW-16	D	6/4/2002	Nitrate-N	72.5
ECMW-16	D	6/4/2002	Nitrate-N	72.6
ECMW-16	D	10/30/2002	Nitrate-N	72
ECMW-16	D	12/10/2002	Nitrate-N	89.4
ECMW-16	D	5/20/2003	Nitrate-N	90.8
ECMW-16	D	7/23/2003	Nitrate-N	72.3
ECMW-16	D	9/23/2003	Nitrate-N	72.8
ECMW-16	D	11/19/2003	Nitrate-N	44.3
ECMW-16	D	1/28/2004	Nitrate-N	59
ECMW-16	D	3/16/2004	Nitrate-N	34.8
ECMW-16	D	5/18/2004	Nitrate-N	31.9
ECMW-16	D	5/18/2004	Nitrate-N	31.5
ECMW-16	D	7/13/2004	Nitrate-N	40.2
ECMW-16	D	9/14/2004	Nitrate-N	47.1
ECMW-16	D	11/16/2004	Nitrate-N	38.2
ECMW-16	D	11/16/2004	Nitrate-N	38.3
ECMW-16	D	1/25/2005	Nitrate-N	43.1
ECMW-17	D	6/5/2001	Nitrate-N	54.2
ECMW-17	D	10/30/2001	Nitrate-N	106
ECMW-17	D	6/4/2002	Nitrate-N	83.4
ECMW-17	D	10/30/2002	Nitrate-N	92
ECMW-17	D	12/10/2002	Nitrate-N	101
ECMW-17	D	5/20/2003	Nitrate-N	83.6
ECMW-17	D	7/23/2003	Nitrate-N	74.7
ECMW-17	D	9/23/2003	Nitrate-N	64.3
ECMW-17	D	11/19/2003	Nitrate-N	77.3
ECMW-17	D	1/28/2004	Nitrate-N	81.3
ECMW-17	D	3/16/2004	Nitrate-N	129
ECMW-17	D	5/18/2004	Nitrate-N	134
ECMW-17	D	7/13/2004	Nitrate-N	67.6
ECMW-17	D	9/14/2004	Nitrate-N	78.4
ECMW-17	D	11/16/2004	Nitrate-N	219
ECMW-17	D	1/26/2005	Nitrate-N	53.3
ECMW-18	D	10/30/2001	Nitrate-N	<0.5
ECMW-18	D	6/4/2002	Nitrate-N	<0.5
ECMW-18	D	10/30/2002	Nitrate-N	<0.5

* Indicates outlier

TABLE A-1
ANALYTICAL DATA SUMMARY
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

WELL	U-UPGRADIENT D-DOWNGRADIENT	DATE	CONSITUENT	CONCENTRATION (mg/L)
ECMW-18	D	12/10/2002	Nitrate-N	<0.5
ECMW-18	D	5/21/2003	Nitrate-N	<0.5
ECMW-18	D	7/23/2003	Nitrate-N	113
ECMW-18	D	9/24/2003	Nitrate-N	<0.5
ECMW-18	D	11/19/2003	Nitrate-N	<0.5
ECMW-18	D	3/16/2004	Nitrate-N	<0.5
ECMW-18	D	5/19/2004	Nitrate-N	<0.5
ECMW-18	D	7/13/2004	Nitrate-N	<0.5
ECMW-18	D	9/15/2004	Nitrate-N	<0.5
ECMW-18	D	11/17/2004	Nitrate-N	<0.5
ECMW-18	D	11/17/2004	Nitrate-N	<0.5
ECMW-18	D	1/26/2005	Nitrate-N	<0.5
ECMW-4	D	8/8/2001	Nitrate-N	<0.5
ECMW-4	D	10/30/2001	Nitrate-N	<0.5
ECMW-4	D	6/3/2002	Nitrate-N	<0.5
ECMW-4	D	10/30/2002	Nitrate-N	0.62
ECMW-4	D	12/10/2002	Nitrate-N	2.4
ECMW-4	D	5/20/2003	Nitrate-N	<0.5
ECMW-4	D	5/20/2003	Nitrate-N	<0.5
ECMW-4	D	7/24/2003	Nitrate-N	<0.5
ECMW-4	D	7/24/2003	Nitrate-N	<0.5
ECMW-4	D	9/24/2003	Nitrate-N	2.31
ECMW-4	D	9/24/2003	Nitrate-N	2.42
ECMW-4	D	11/19/2003	Nitrate-N	2.05
ECMW-4	D	1/28/2004	Nitrate-N	6.39
ECMW-4	D	3/16/2004	Nitrate-N	<0.5
ECMW-4	D	5/19/2004	Nitrate-N	1.45
ECMW-4	D	7/13/2004	Nitrate-N	<0.5
ECMW-4	D	9/14/2004	Nitrate-N	<0.5
ECMW-4	D	11/16/2004	Nitrate-N	<0.5
ECMW-4	D	1/25/2005	Nitrate-N	8.5
ECMW-5	D	8/8/2001	Nitrate-N	3.54
ECMW-5	D	10/30/2001	Nitrate-N	3.27
ECMW-5	D	6/3/2002	Nitrate-N	3.35
ECMW-5	D	10/30/2002	Nitrate-N	3.66
ECMW-5	D	12/10/2002	Nitrate-N	3.26
ECMW-5	D	5/20/2003	Nitrate-N	3.6
ECMW-5	D	7/24/2003	Nitrate-N	3.47
ECMW-5	D	9/24/2003	Nitrate-N	3.53
ECMW-5	D	11/19/2003	Nitrate-N	2.4
ECMW-5	D	1/28/2004	Nitrate-N	3.19
ECMW-5	D	1/28/2004	Nitrate-N	3.07
ECMW-5	D	3/16/2004	Nitrate-N	3.6
ECMW-5	D	5/19/2004	Nitrate-N	3.41
ECMW-5	D	5/19/2004	Nitrate-N	3.3
ECMW-5	D	7/13/2004	Nitrate-N	3.75
ECMW-5	D	9/14/2004	Nitrate-N	3.75
ECMW-5	D	11/16/2004	Nitrate-N	3.33
ECMW-5	D	1/25/2005	Nitrate-N	3.18

* Indicates outlier

TABLE A-1
ANALYTICAL DATA SUMMARY
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

WELL	U-UPGRADIENT D-DOWNGRADIENT	DATE	CONSITUENT	CONCENTRATION (mg/L)
ECMW-6	D	8/8/2001	Nitrate-N	298
ECMW-6	D	10/30/2001	Nitrate-N	326
ECMW-6	D	6/3/2002	Nitrate-N	459
ECMW-6	D	10/30/2002	Nitrate-N	661
ECMW-6	D	12/10/2002	Nitrate-N	588
ECMW-6	D	12/10/2002	Nitrate-N	580
ECMW-6	D	5/21/2003	Nitrate-N	608
ECMW-6	D	7/24/2003	Nitrate-N	681
ECMW-6	D	9/24/2003	Nitrate-N	857
ECMW-6	D	11/19/2003	Nitrate-N	865
ECMW-6	D	11/19/2003	Nitrate-N	866
ECMW-6	D	1/28/2004	Nitrate-N	835
ECMW-6	D	3/16/2004	Nitrate-N	826
ECMW-6	D	5/19/2004	Nitrate-N	915
ECMW-6	D	7/13/2004	Nitrate-N	868
ECMW-6	D	7/13/2004	Nitrate-N	995
ECMW-6	D	9/14/2004	Nitrate-N	1130
ECMW-6	D	11/16/2004	Nitrate-N	1140
ECMW-6	D	1/25/2005	Nitrate-N	1130
ECMW-7	D	8/8/2001	Nitrate-N	336
ECMW-7	D	10/30/2001	Nitrate-N	186
ECMW-7	D	10/30/2001	Nitrate-N	189
ECMW-7	D	6/3/2002	Nitrate-N	358
ECMW-7	D	6/3/2002	Nitrate-N	361
ECMW-7	D	10/30/2002	Nitrate-N	294
ECMW-7	D	12/10/2002	Nitrate-N	344
ECMW-7	D	12/10/2002	Nitrate-N	349
ECMW-7	D	5/21/2003	Nitrate-N	563
ECMW-7	D	7/24/2003	Nitrate-N	141
ECMW-7	D	9/24/2003	Nitrate-N	953
ECMW-7	D	11/19/2003	Nitrate-N	152
ECMW-7	D	1/28/2004	Nitrate-N	300
ECMW-7	D	3/16/2004	Nitrate-N	310
ECMW-7	D	5/19/2004	Nitrate-N	337
ECMW-7	D	7/13/2004	Nitrate-N	150
ECMW-7	D	9/14/2004	Nitrate-N	76
ECMW-7	D	9/14/2004	Nitrate-N	75.5
ECMW-7	D	11/16/2004	Nitrate-N	370
ECMW-7	D	1/25/2005	Nitrate-N	480
ECMW-8	D	10/30/2001	Nitrate-N	1030
ECMW-8	D	6/3/2002	Nitrate-N	1200
ECMW-8	D	6/3/2002	Nitrate-N	1070
ECMW-8	D	10/30/2002	Nitrate-N	1330
ECMW-8	D	12/10/2002	Nitrate-N	1080
ECMW-8	D	12/10/2002	Nitrate-N	1030
ECMW-8	D	5/21/2003	Nitrate-N	1250
ECMW-8	D	5/21/2003	Nitrate-N	1270
ECMW-8	D	7/24/2003	Nitrate-N	472
ECMW-8	D	7/24/2003	Nitrate-N	478

* Indicates outlier

TABLE A-1
ANALYTICAL DATA SUMMARY
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

WELL	U-UPGRADIENT D-DOWNGRADIENT	DATE	CONSITUENT	CONCENTRATION (mg/L)
ECMW-8	D	9/23/2003	Nitrate-N	524
ECMW-8	D	9/23/2003	Nitrate-N	539
ECMW-8	D	11/19/2003	Nitrate-N	464
ECMW-8	D	1/28/2004	Nitrate-N	142
ECMW-8	D	3/16/2004	Nitrate-N	203
ECMW-8	D	5/19/2004	Nitrate-N	298
ECMW-8	D	7/13/2004	Nitrate-N	354
ECMW-8	D	9/14/2004	Nitrate-N	392
ECMW-8	D	11/16/2004	Nitrate-N	304
ECMW-8	D	1/25/2005	Nitrate-N	126
ECMW-9	D	6/27/2001	Nitrate-N	28.8
ECMW-9	D	10/30/2001	Nitrate-N	26.7
ECMW-9	D	6/3/2002	Nitrate-N	24.4
ECMW-9	D	10/30/2002	Nitrate-N	59 *
ECMW-9	D	12/10/2002	Nitrate-N	31.5
ECMW-9	D	12/10/2002	Nitrate-N	28.1
ECMW-9	D	5/21/2003	Nitrate-N	26.3
ECMW-9	D	7/24/2003	Nitrate-N	28.4
ECMW-9	D	9/23/2003	Nitrate-N	146 *
ECMW-9	D	11/19/2003	Nitrate-N	28
ECMW-9	D	1/28/2004	Nitrate-N	29.2
ECMW-9	D	3/16/2004	Nitrate-N	30.6
ECMW-9	D	5/19/2004	Nitrate-N	27.4
ECMW-9	D	7/13/2004	Nitrate-N	24.6
ECMW-9	D	9/14/2004	Nitrate-N	25.3
ECMW-9	D	11/16/2004	Nitrate-N	24
ECMW-9	D	1/25/2005	Nitrate-N	26.3

* Indicates outlier

APPENDIX B

STATISTICAL DATA

AMMONIA-N

UNTRANSFORMED SHAPIRO-WILKES NORMALITY

Shapiro-Wilks Test of Normality
Parameter: Ammonia-N
Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit

Background Wells (ECMW-1, ECMW-2 AND ECMW-3)

K = 24; Samples = 48

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	0.5	0.76	0.26	0.3789	0.098514
2	0.5	0.66	0.16	0.2604	0.041664
3	0.5	0.56	0.06	0.2281	0.013686
4	0.5	0.5	0	0.2045	0
5	0.5	0.5	0	0.1855	0
6	0.5	0.5	0	0.1693	0
7	0.5	0.5	0	0.1551	0
8	0.5	0.5	0	0.1423	0
9	0.5	0.5	0	0.1306	0
10	0.5	0.5	0	0.1197	0
11	0.5	0.5	0	0.1095	0
12	0.5	0.5	0	0.0998	0
13	0.5	0.5	0	0.0906	0
14	0.5	0.5	0	0.0817	0
15	0.5	0.5	0	0.0731	0
16	0.5	0.5	0	0.0648	0
17	0.5	0.5	0	0.0568	0
18	0.5	0.5	0	0.0489	0
19	0.5	0.5	0	0.0411	0
20	0.5	0.5	0	0.0335	0
21	0.5	0.5	0	0.0259	0
22	0.5	0.5	0	0.0185	0
23	0.5	0.5	0	0.0111	0
24	0.5	0.5	0	0.0037	0
25	0.5	0.5	0		
26	0.5	0.5	0		
27	0.5	0.5	0		
28	0.5	0.5	0		
29	0.5	0.5	0		
30	0.5	0.5	0		
31	0.5	0.5	0		
32	0.5	0.5	0		
33	0.5	0.5	0		
34	0.5	0.5	0		
35	0.5	0.5	0		
36	0.5	0.5	0		
37	0.5	0.5	0		
38	0.5	0.5	0		
39	0.5	0.5	0		
40	0.5	0.5	0		
41	0.5	0.5	0		
42	0.5	0.5	0		
43	0.5	0.5	0		
44	0.5	0.5	0		
45	0.5	0.5	0		
46	0.56	0.5	-0.06		
47	0.66	0.5	-0.16		
48	0.76	0.5	-0.26		

Sum of b values = 0.153864
Sample Standard Deviation = 0.044243
W Statistic = 0.257328
5% Critical value of 0.947 exceeds 0.257328

Evidence of non-normality at 95% level of significance
1% Critical value of 0.929 exceeds 0.257328
Evidence of non-normality at 99% level of significance

Well: ECMW-1

K = 8; Samples = 16

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	0.5	0.76	0.26	0.5056	0.131456
2	0.5	0.66	0.16	0.329	0.05264
3	0.5	0.56	0.06	0.2521	0.015126
4	0.5	0.5	0	0.1939	0
5	0.5	0.5	0	0.1447	0
6	0.5	0.5	0	0.1005	0
7	0.5	0.5	0	0.0593	0
8	0.5	0.5	0	0.0196	0
9	0.5	0.5	0		
10	0.5	0.5	0		
11	0.5	0.5	0		
12	0.5	0.5	0		
13	0.5	0.5	0		
14	0.56	0.5	-0.06		
15	0.66	0.5	-0.16		
16	0.76	0.5	-0.26		

Sum of b values = 0.199222
Sample Standard Deviation = 0.074117
W Statistic = 0.481668
5% Critical value of 0.887 exceeds 0.481668
Evidence of non-normality at 95% level of significance
1% Critical value of 0.844 exceeds 0.481668
Evidence of non-normality at 99% level of significance

Well: ECMW-2

100 % Non-detects

Well: ECMW-3

100 % Non-detects

Well: ECMW-4

K = 8; Samples = 16

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	0.5	0.68	0.18	0.5056	0.091008
2	0.5	0.66	0.16	0.329	0.05264
3	0.5	0.64	0.14	0.2521	0.035294
4	0.5	0.5	0	0.1939	0
5	0.5	0.5	0	0.1447	0
6	0.5	0.5	0	0.1005	0
7	0.5	0.5	0	0.0593	0
8	0.5	0.5	0	0.0196	0
9	0.5	0.5	0		
10	0.5	0.5	0		
11	0.5	0.5	0		
12	0.5	0.5	0		
13	0.5	0.5	0		
14	0.64	0.5	-0.14		
15	0.66	0.5	-0.16		
16	0.68	0.5	-0.18		

Sum of b values = 0.178942
Sample Standard Deviation = 0.0649102

W Statistic = 0.506649
5% Critical value of 0.887 exceeds 0.506649
Evidence of non-normality at 95% level of significance
1% Critical value of 0.844 exceeds 0.506649
Evidence of non-normality at 99% level of significance

Well: ECMW-5

K = 8; Samples = 16

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	0.5	0.59	0.09	0.5056	0.045504
2	0.5	0.5	0	0.329	0
3	0.5	0.5	0	0.2521	0
4	0.5	0.5	0	0.1939	0
5	0.5	0.5	0	0.1447	0
6	0.5	0.5	0	0.1005	0
7	0.5	0.5	0	0.0593	0
8	0.5	0.5	0	0.0196	0
9	0.5	0.5	0		
10	0.5	0.5	0		
11	0.5	0.5	0		
12	0.5	0.5	0		
13	0.5	0.5	0		
14	0.5	0.5	0		
15	0.5	0.5	0		
16	0.59	0.5	-0.09		

Sum of b values = 0.045504
Sample Standard Deviation = 0.0225
W Statistic = 0.272673
5% Critical value of 0.887 exceeds 0.272673
Evidence of non-normality at 95% level of significance
1% Critical value of 0.844 exceeds 0.272673
Evidence of non-normality at 99% level of significance

Well: ECMW-6

K = 8; Samples = 16

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	0.5	43.1	42.6	0.5056	21.5386
2	0.5	37.6	37.1	0.329	12.2059
3	0.5	21.4	20.9	0.2521	5.26889
4	0.5	20	19.5	0.1939	3.78105
5	0.5	17.5	17	0.1447	2.4599
6	0.51	13	12.49	0.1005	1.25525
7	1.09	12.3	11.21	0.0593	0.664753
8	4.88	5.72	0.84	0.0196	0.016464
9	5.72	4.88	-0.84		
10	12.3	1.09	-11.21		
11	13	0.51	-12.49		
12	17.5	0.5	-17		
13	20	0.5	-19.5		
14	21.4	0.5	-20.9		
15	37.6	0.5	-37.1		
16	43.1	0.5	-42.6		

Sum of b values = 47.1908
Sample Standard Deviation = 13.6604
W Statistic = 0.795604
5% Critical value of 0.887 exceeds 0.795604
Evidence of non-normality at 95% level of significance
1% Critical value of 0.844 exceeds 0.795604
Evidence of non-normality at 99% level of significance

Well: ECMW-7

K = 8; Samples = 16

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	0.5	281	280.5	0.5056	141.821
2	25.9	244	218.1	0.329	71.7549
3	73.4	219	145.6	0.2521	36.7058
4	95.1	204	108.9	0.1939	21.1157
5	116	190	74	0.1447	10.7078
6	124	190	66	0.1005	6.633
7	147	184	37	0.0593	2.1941
8	149	167	18	0.0196	0.3528
9	167	149	-18		
10	184	147	-37		
11	190	124	-66		
12	190	116	-74		
13	204	95.1	-108.9		
14	219	73.4	-145.6		
15	244	25.9	-218.1		
16	281	0.5	-280.5		

Sum of b values = 291.285
Sample Standard Deviation = 76.0647
W Statistic = 0.977639
5% Critical value of 0.887 is less than 0.977639
Data is normally distributed at 95% level of significance
1% Critical value of 0.844 is less than 0.977639
Data is normally distributed at 99% level of significance

Well: ECMW-8

K = 7; Samples = 15

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	0.94	551	550.06	0.515	283.281
2	45.7	406	360.3	0.3306	119.115
3	48.9	220	171.1	0.2495	42.6895
4	82.1	214	131.9	0.1878	24.7708
5	88	206	118	0.1353	15.9654
6	107	179	72	0.088	6.336
7	120	157.5	37.5	0.0433	1.62375
8	120	120	0		
9	157.5	120	-37.5		
10	179	107	-72		
11	206	88	-118		
12	214	82.1	-131.9		
13	220	48.9	-171.1		
14	406	45.7	-360.3		
15	551	0.94	-550.06		

Sum of b values = 493.781
Sample Standard Deviation = 143.662
W Statistic = 0.843839
5% Critical value of 0.881 exceeds 0.843839
Evidence of non-normality at 95% level of significance
1% Critical value of 0.835 is less than 0.843839
Data is normally distributed at 99% level of significance

Well: ECMW-9

K = 8; Samples = 16

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	0.5	18.8	18.3	0.5056	9.25248
2	0.5	1.14	0.64	0.329	0.21056
3	0.5	0.7	0.2	0.2521	0.05042
4	0.5	0.5	0	0.1939	0
5	0.5	0.5	0	0.1447	0
6	0.5	0.5	0	0.1005	0
7	0.5	0.5	0	0.0593	0
8	0.5	0.5	0	0.0196	0
9	0.5	0.5	0		
10	0.5	0.5	0		
11	0.5	0.5	0		
12	0.5	0.5	0		
13	0.5	0.5	0		
14	0.7	0.5	-0.2		
15	1.14	0.5	-0.64		
16	18.8	0.5	-18.3		

Sum of b values = 9.51346
Sample Standard Deviation = 4.56394
W Statistic = 0.289671
5% Critical value of 0.887 exceeds 0.289671
Evidence of non-normality at 95% level of significance
1% Critical value of 0.844 exceeds 0.289671
Evidence of non-normality at 99% level of significance

Well: ECMW-10

K = 8; Samples = 16

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	0.5	1.84	1.34	0.5056	0.677504
2	0.5	0.77	0.27	0.329	0.08883
3	0.5	0.5	0	0.2521	0
4	0.5	0.5	0	0.1939	0
5	0.5	0.5	0	0.1447	0
6	0.5	0.5	0	0.1005	0
7	0.5	0.5	0	0.0593	0
8	0.5	0.5	0	0.0196	0
9	0.5	0.5	0		
10	0.5	0.5	0		
11	0.5	0.5	0		
12	0.5	0.5	0		
13	0.5	0.5	0		
14	0.5	0.5	0		
15	0.77	0.5	-0.27		
16	1.84	0.5	-1.34		

Sum of b values = 0.766334
Sample Standard Deviation = 0.337293
W Statistic = 0.344137
5% Critical value of 0.887 exceeds 0.344137
Evidence of non-normality at 95% level of significance
1% Critical value of 0.844 exceeds 0.344137
Evidence of non-normality at 99% level of significance

Well: ECMW-11

K = 7; Samples = 15

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	0.5	25.6	25.1	0.515	12.9265
2	3.9	19.9	16	0.3306	5.2896
3	4.21	19.6	15.39	0.2495	3.83981
4	5.25	19.1	13.85	0.1878	2.60103
5	7.84	18	10.16	0.1353	1.37465
6	10.73	17.4	6.67	0.088	0.58696
7	14.3	15	0.7	0.0433	0.03031
8	14.5	14.5	0		
9	15	14.3	-0.7		
10	17.4	10.73	-6.67		
11	18	7.84	-10.16		
12	19.1	5.25	-13.85		
13	19.6	4.21	-15.39		
14	19.9	3.9	-16		
15	25.6	0.5	-25.1		

Sum of b values = 26.6489
Sample Standard Deviation = 7.30733
W Statistic = 0.949973
5% Critical value of 0.881 is less than 0.949973
Data is normally distributed at 95% level of significance
1% Critical value of 0.835 is less than 0.949973
Data is normally distributed at 99% level of significance

Well: ECMW-12

K = 7; Samples = 15

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	0.9	4.2	3.3	0.515	1.6995
2	1.2	2.38	1.18	0.3306	0.390108
3	1.43	2.3	0.87	0.2495	0.217065
4	1.55	2.2	0.65	0.1878	0.12207
5	1.74	2.2	0.46	0.1353	0.062238
6	1.83	1.98	0.15	0.088	0.0132
7	1.87	1.94	0.07	0.0433	0.003031
8	1.89	1.89	0		
9	1.94	1.87	-0.07		
10	1.98	1.83	-0.15		
11	2.2	1.74	-0.46		
12	2.2	1.55	-0.65		
13	2.3	1.43	-0.87		
14	2.38	1.2	-1.18		
15	4.2	0.9	-3.3		

Sum of b values = 2.50721
Sample Standard Deviation = 0.739264
W Statistic = 0.821589
5% Critical value of 0.881 exceeds 0.821589
Evidence of non-normality at 95% level of significance
1% Critical value of 0.835 exceeds 0.821589
Evidence of non-normality at 99% level of significance

Well: ECMW-13

K = 8; Samples = 16

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	0.5	1.28	0.78	0.5056	0.394368
2	0.5	0.71	0.21	0.329	0.06909
3	0.5	0.51	0.01	0.2521	0.002521
4	0.5	0.5	0	0.1939	0
5	0.5	0.5	0	0.1447	0
6	0.5	0.5	0	0.1005	0
7	0.5	0.5	0	0.0593	0
8	0.5	0.5	0	0.0196	0
9	0.5	0.5	0		
10	0.5	0.5	0		
11	0.5	0.5	0		
12	0.5	0.5	0		
13	0.5	0.5	0		
14	0.51	0.5	-0.01		
15	0.71	0.5	-0.21		
16	1.28	0.5	-0.78		

Sum of b values = 0.465979
Sample Standard Deviation = 0.198343
W Statistic = 0.367965
5% Critical value of 0.887 exceeds 0.367965
Evidence of non-normality at 95% level of significance
1% Critical value of 0.844 exceeds 0.367965
Evidence of non-normality at 99% level of significance

Well: ECMW-14

K = 8; Samples = 16

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	0.5	5.32	4.82	0.5056	2.43699
2	0.5	0.5	0	0.329	0
3	0.5	0.5	0	0.2521	0
4	0.5	0.5	0	0.1939	0
5	0.5	0.5	0	0.1447	0
6	0.5	0.5	0	0.1005	0
7	0.5	0.5	0	0.0593	0
8	0.5	0.5	0	0.0196	0
9	0.5	0.5	0		
10	0.5	0.5	0		
11	0.5	0.5	0		
12	0.5	0.5	0		
13	0.5	0.5	0		
14	0.5	0.5	0		
15	0.5	0.5	0		
16	5.32	0.5	-4.82		

Sum of b values = 2.43699
Sample Standard Deviation = 1.205
W Statistic = 0.272673
5% Critical value of 0.887 exceeds 0.272673
Evidence of non-normality at 95% level of significance
1% Critical value of 0.844 exceeds 0.272673
Evidence of non-normality at 99% level of significance

Well: ECMW-15

K = 8; Samples = 16

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	0.5	3.96	3.46	0.5056	1.74938
2	0.5	1.16	0.66	0.329	0.21714
3	0.5	0.61	0.11	0.2521	0.027731
4	0.5	0.5	0	0.1939	0
5	0.5	0.5	0	0.1447	0
6	0.5	0.5	0	0.1005	0
7	0.5	0.5	0	0.0593	0
8	0.5	0.5	0	0.0196	0
9	0.5	0.5	0		
10	0.5	0.5	0		
11	0.5	0.5	0		
12	0.5	0.5	0		
13	0.5	0.5	0		
14	0.61	0.5	-0.11		
15	1.16	0.5	-0.66		
16	3.96	0.5	-3.46		

Sum of b values = 1.99425
Sample Standard Deviation = 0.867986
W Statistic = 0.351918
5% Critical value of 0.887 exceeds 0.351918
Evidence of non-normality at 95% level of significance
1% Critical value of 0.844 exceeds 0.351918
Evidence of non-normality at 99% level of significance

Well: ECMW-16

K = 8; Samples = 16

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	0.5	11.6	11.1	0.5056	5.61216
2	2.99	11.5	8.51	0.329	2.79979
3	3.69	9.35	5.66	0.2521	1.42689
4	4.15	8.61	4.46	0.1939	0.864794
5	4.61	8.57	3.96	0.1447	0.573012
6	5.66	8.39	2.73	0.1005	0.274365
7	5.97	6.87	0.9	0.0593	0.05337
8	6.2	6.45	0.25	0.0196	0.0049
9	6.45	6.2	-0.25		
10	6.87	5.97	-0.9		
11	8.39	5.66	-2.73		
12	8.57	4.61	-3.96		
13	8.61	4.15	-4.46		
14	9.35	3.69	-5.66		
15	11.5	2.99	-8.51		
16	11.6	0.5	-11.1		

Sum of b values = 11.6093
Sample Standard Deviation = 3.03196
W Statistic = 0.977403
5% Critical value of 0.887 is less than 0.977403
Data is normally distributed at 95% level of significance
1% Critical value of 0.844 is less than 0.977403
Data is normally distributed at 99% level of significance

Well: ECMW-17

K = 8; Samples = 16

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	0.5	9.55	9.05	0.5056	4.57568
2	0.5	8.14	7.64	0.329	2.51356
3	0.5	8.05	7.55	0.2521	1.90336
4	0.5	2.36	1.86	0.1939	0.360654
5	0.5	1.79	1.29	0.1447	0.186663
6	0.5	1.42	0.92	0.1005	0.09246
7	0.55	1.22	0.67	0.0593	0.039731
8	0.58	1.16	0.58	0.0196	0.011368
9	1.16	0.58	-0.58		
10	1.22	0.55	-0.67		
11	1.42	0.5	-0.92		
12	1.79	0.5	-1.29		
13	2.36	0.5	-1.86		
14	8.05	0.5	-7.55		
15	8.14	0.5	-7.64		
16	9.55	0.5	-9.05		

Sum of b values = 9.68347
Sample Standard Deviation = 3.14781
W Statistic = 0.63089
5% Critical value of 0.887 exceeds 0.63089
Evidence of non-normality at 95% level of significance
1% Critical value of 0.844 exceeds 0.63089
Evidence of non-normality at 99% level of significance

Well: ECMW-18

K = 7; Samples = 14

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	0.43	5.79	5.36	0.5251	2.81454
2	0.5	0.59	0.09	0.3318	0.029862
3	0.5	0.56	0.06	0.246	0.01476
4	0.5	0.5	0	0.1802	0
5	0.5	0.5	0	0.124	0
6	0.5	0.5	0	0.0727	0
7	0.5	0.5	0	0.024	0
8	0.5	0.5	0		
9	0.5	0.5	0		
10	0.5	0.5	0		
11	0.5	0.5	0		
12	0.56	0.5	-0.06		
13	0.59	0.5	-0.09		
14	5.79	0.43	-5.36		

Sum of b values = 2.85916
Sample Standard Deviation = 1.41261
W Statistic = 0.315131
5% Critical value of 0.874 exceeds 0.315131
Evidence of non-normality at 95% level of significance
1% Critical value of 0.825 exceeds 0.315131
Evidence of non-normality at 99% level of significance

LN TRANSFORMED SHAPIRO-WILKES NORMALITY

Shapiro-Wilks Test of Normality
Parameter: Ammonia-N
Natural Logarithm Transformation
Non-Detects Replaced with Detection Limit

Background Wells (ECMW-1, ECMW-2 AND ECMW-3)

K = 24; Samples = 48

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	-0.693147	-0.274437	0.41871	0.3789	0.158649
2	-0.693147	-0.415515	0.277632	0.2604	0.0722953
3	-0.693147	-0.579818	0.113329	0.2281	0.0258503
4	-0.693147	-0.693147	0	0.2045	0
5	-0.693147	-0.693147	0	0.1855	0
6	-0.693147	-0.693147	0	0.1693	0
7	-0.693147	-0.693147	0	0.1551	0
8	-0.693147	-0.693147	0	0.1423	0
9	-0.693147	-0.693147	0	0.1306	0
10	-0.693147	-0.693147	0	0.1197	0
11	-0.693147	-0.693147	0	0.1095	0
12	-0.693147	-0.693147	0	0.0998	0
13	-0.693147	-0.693147	0	0.0906	0
14	-0.693147	-0.693147	0	0.0817	0
15	-0.693147	-0.693147	0	0.0731	0
16	-0.693147	-0.693147	0	0.0648	0
17	-0.693147	-0.693147	0	0.0568	0
18	-0.693147	-0.693147	0	0.0489	0
19	-0.693147	-0.693147	0	0.0411	0
20	-0.693147	-0.693147	0	0.0335	0
21	-0.693147	-0.693147	0	0.0259	0
22	-0.693147	-0.693147	0	0.0185	0
23	-0.693147	-0.693147	0	0.0111	0
24	-0.693147	-0.693147	0	0.0037	0
25	-0.693147	-0.693147	0		
26	-0.693147	-0.693147	0		
27	-0.693147	-0.693147	0		
28	-0.693147	-0.693147	0		
29	-0.693147	-0.693147	0		
30	-0.693147	-0.693147	0		
31	-0.693147	-0.693147	0		
32	-0.693147	-0.693147	0		
33	-0.693147	-0.693147	0		
34	-0.693147	-0.693147	0		
35	-0.693147	-0.693147	0		
36	-0.693147	-0.693147	0		
37	-0.693147	-0.693147	0		
38	-0.693147	-0.693147	0		
39	-0.693147	-0.693147	0		
40	-0.693147	-0.693147	0		
41	-0.693147	-0.693147	0		
42	-0.693147	-0.693147	0		
43	-0.693147	-0.693147	0		
44	-0.693147	-0.693147	0		
45	-0.693147	-0.693147	0		
46	-0.579818	-0.693147	-0.113329		
47	-0.415515	-0.693147	-0.277632		
48	-0.274437	-0.693147	-0.41871		

Sum of b values = 0.256795
Sample Standard Deviation = 0.0731631

W Statistic = 0.262114
5% Critical value of 0.947 exceeds 0.262114
Evidence of non-normality at 95% level of significance
1% Critical value of 0.929 exceeds 0.262114
Evidence of non-normality at 99% level of significance

Well: ECMW-1

K = 8; Samples = 16

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	-0.693147	-0.274437	0.41871	0.5056	0.2117
2	-0.693147	-0.415515	0.277632	0.329	0.0913408
3	-0.693147	-0.579818	0.113329	0.2521	0.0285702
4	-0.693147	-0.693147	0	0.1939	0
5	-0.693147	-0.693147	0	0.1447	0
6	-0.693147	-0.693147	0	0.1005	0
7	-0.693147	-0.693147	0	0.0593	0
8	-0.693147	-0.693147	0	0.0196	0
9	-0.693147	-0.693147	0		
10	-0.693147	-0.693147	0		
11	-0.693147	-0.693147	0		
12	-0.693147	-0.693147	0		
13	-0.693147	-0.693147	0		
14	-0.579818	-0.693147	-0.113329		
15	-0.415515	-0.693147	-0.277632		
16	-0.274437	-0.693147	-0.41871		

Sum of b values = 0.331611
Sample Standard Deviation = 0.122275
W Statistic = 0.490332
5% Critical value of 0.887 exceeds 0.490332
Evidence of non-normality at 95% level of significance
1% Critical value of 0.844 exceeds 0.490332
Evidence of non-normality at 99% level of significance

Well: ECMW-2

100 % Non-detects

Well: ECMW-3

100 % Non-detects

Well: ECMW-4

K = 8; Samples = 16

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	-0.693147	-0.385662	0.307485	0.5056	0.155464
2	-0.693147	-0.415515	0.277632	0.329	0.0913408
3	-0.693147	-0.446287	0.24686	0.2521	0.0622334
4	-0.693147	-0.693147	0	0.1939	0
5	-0.693147	-0.693147	0	0.1447	0
6	-0.693147	-0.693147	0	0.1005	0
7	-0.693147	-0.693147	0	0.0593	0
8	-0.693147	-0.693147	0	0.0196	0
9	-0.693147	-0.693147	0		
10	-0.693147	-0.693147	0		
11	-0.693147	-0.693147	0		
12	-0.693147	-0.693147	0		
13	-0.693147	-0.693147	0		
14	-0.446287	-0.693147	-0.24686		

15	-0.415515	-0.693147	-0.277632
16	-0.385662	-0.693147	-0.307485

Sum of b values = 0.309039
Sample Standard Deviation = 0.11234
W Statistic = 0.504503
5% Critical value of 0.887 exceeds 0.504503
Evidence of non-normality at 95% level of significance
1% Critical value of 0.844 exceeds 0.504503
Evidence of non-normality at 99% level of significance

Well: ECMW-5

K = 8; Samples = 16

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	-0.693147	-0.527633	0.165514	0.5056	0.0836841
2	-0.693147	-0.693147	0	0.329	0
3	-0.693147	-0.693147	0	0.2521	0
4	-0.693147	-0.693147	0	0.1939	0
5	-0.693147	-0.693147	0	0.1447	0
6	-0.693147	-0.693147	0	0.1005	0
7	-0.693147	-0.693147	0	0.0593	0
8	-0.693147	-0.693147	0	0.0196	0
9	-0.693147	-0.693147	0		
10	-0.693147	-0.693147	0		
11	-0.693147	-0.693147	0		
12	-0.693147	-0.693147	0		
13	-0.693147	-0.693147	0		
14	-0.693147	-0.693147	0		
15	-0.693147	-0.693147	0		
16	-0.527633	-0.693147	-0.165514		

Sum of b values = 0.0836841
Sample Standard Deviation = 0.0413786
W Statistic = 0.272673
5% Critical value of 0.887 exceeds 0.272673
Evidence of non-normality at 95% level of significance
1% Critical value of 0.844 exceeds 0.272673
Evidence of non-normality at 99% level of significance

Well: ECMW-6

K = 8; Samples = 16

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	-0.693147	3.76352	4.45667	0.5056	2.25329
2	-0.693147	3.627	4.32015	0.329	1.42133
3	-0.693147	3.06339	3.75654	0.2521	0.947023
4	-0.693147	2.99573	3.68888	0.1939	0.715274
5	-0.693147	2.8622	3.55535	0.1447	0.514459
6	-0.673345	2.56495	3.23829	0.1005	0.325449
7	0.0861777	2.5096	2.42342	0.0593	0.143709
8	1.58515	1.74397	0.158824	0.0196	0.00311294
9	1.74397	1.58515	-0.158824		
10	2.5096	0.0861777	-2.42342		
11	2.56495	-0.673345	-3.23829		
12	2.8622	-0.693147	-3.55535		
13	2.99573	-0.693147	-3.68888		
14	3.06339	-0.693147	-3.75654		
15	3.627	-0.693147	-4.32015		
16	3.76352	-0.693147	-4.45667		

Sum of b values = 6.32365
Sample Standard Deviation = 1.79779
W Statistic = 0.824837
5% Critical value of 0.887 exceeds 0.824837
Evidence of non-normality at 95% level of significance
1% Critical value of 0.844 exceeds 0.824837
Evidence of non-normality at 99% level of significance

Well: ECMW-7

K = 8; Samples = 16

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	-0.693147	5.63835	6.3315	0.5056	3.20121
2	3.25424	5.49717	2.24293	0.329	0.737922
3	4.29592	5.38907	1.09315	0.2521	0.275583
4	4.55493	5.31812	0.763191	0.1939	0.147983
5	4.75359	5.24702	0.493434	0.1447	0.0713999
6	4.82028	5.24702	0.426743	0.1005	0.0428876
7	4.99043	5.21494	0.224503	0.0593	0.013313
8	5.00395	5.11799	0.114048	0.0196	0.00223533
9	5.11799	5.00395	-0.114048		
10	5.21494	4.99043	-0.224503		
11	5.24702	4.82028	-0.426743		
12	5.24702	4.75359	-0.493434		
13	5.31812	4.55493	-0.763191		
14	5.38907	4.29592	-1.09315		
15	5.49717	3.25424	-2.24293		
16	5.63835	-0.693147	-6.3315		

Sum of b values = 4.49253
Sample Standard Deviation = 1.5235
W Statistic = 0.579705
5% Critical value of 0.887 exceeds 0.579705
Evidence of non-normality at 95% level of significance
1% Critical value of 0.844 exceeds 0.579705
Evidence of non-normality at 99% level of significance

Well: ECMW-8

K = 7; Samples = 15

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	-0.0618754	6.31173	6.37361	0.515	3.28241
2	3.8221	6.00635	2.18425	0.3306	0.722115
3	3.88978	5.39363	1.50385	0.2495	0.375211
4	4.40794	5.36598	0.958038	0.1878	0.17992
5	4.47734	5.32788	0.850539	0.1353	0.115078
6	4.67283	5.18739	0.514557	0.088	0.045281
7	4.78749	5.05943	0.271934	0.0433	0.0117747
8	4.78749	4.78749	0		
9	5.05943	4.78749	-0.271934		
10	5.18739	4.67283	-0.514557		
11	5.32788	4.47734	-0.850539		
12	5.36598	4.40794	-0.958038		
13	5.39363	3.88978	-1.50385		
14	6.00635	3.8221	-2.18425		
15	6.31173	-0.0618754	-6.37361		

Sum of b values = 4.73179
Sample Standard Deviation = 1.46794

W Statistic = 0.742175
5% Critical value of 0.881 exceeds 0.742175
Evidence of non-normality at 95% level of significance
1% Critical value of 0.835 exceeds 0.742175
Evidence of non-normality at 99% level of significance

Well: ECMW-9

K = 8; Samples = 16

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	-0.693147	2.93386	3.627	0.5056	1.83381
2	-0.693147	0.131028	0.824175	0.329	0.271154
3	-0.693147	-0.356675	0.336472	0.2521	0.0848247
4	-0.693147	-0.693147	0	0.1939	0
5	-0.693147	-0.693147	0	0.1447	0
6	-0.693147	-0.693147	0	0.1005	0
7	-0.693147	-0.693147	0	0.0593	0
8	-0.693147	-0.693147	0	0.0196	0
9	-0.693147	-0.693147	0		
10	-0.693147	-0.693147	0		
11	-0.693147	-0.693147	0		
12	-0.693147	-0.693147	0		
13	-0.693147	-0.693147	0		
14	-0.356675	-0.693147	-0.336472		
15	0.131028	-0.693147	-0.824175		
16	2.93386	-0.693147	-3.627		

Sum of b values = 2.18979
Sample Standard Deviation = 0.91342
W Statistic = 0.383154
5% Critical value of 0.887 exceeds 0.383154
Evidence of non-normality at 95% level of significance
1% Critical value of 0.844 exceeds 0.383154
Evidence of non-normality at 99% level of significance

Well: ECMW-10

K = 8; Samples = 16

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	-0.693147	0.609766	1.30291	0.5056	0.658753
2	-0.693147	-0.261365	0.431782	0.329	0.142056
3	-0.693147	-0.693147	0	0.2521	0
4	-0.693147	-0.693147	0	0.1939	0
5	-0.693147	-0.693147	0	0.1447	0
6	-0.693147	-0.693147	0	0.1005	0
7	-0.693147	-0.693147	0	0.0593	0
8	-0.693147	-0.693147	0	0.0196	0
9	-0.693147	-0.693147	0		
10	-0.693147	-0.693147	0		
11	-0.693147	-0.693147	0		
12	-0.693147	-0.693147	0		
13	-0.693147	-0.693147	0		
14	-0.693147	-0.693147	0		
15	-0.261365	-0.693147	-0.431782		
16	0.609766	-0.693147	-1.30291		

Sum of b values = 0.800809
Sample Standard Deviation = 0.336248
W Statistic = 0.378135
5% Critical value of 0.887 exceeds 0.378135

Evidence of non-normality at 95% level of significance
1% Critical value of 0.844 exceeds 0.378135
Evidence of non-normality at 99% level of significance

Well: ECMW-11

K = 7; Samples = 15

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	-0.693147	3.24259	3.93574	0.515	2.02691
2	1.36098	2.99072	1.62974	0.3306	0.538793
3	1.43746	2.97553	1.53807	0.2495	0.383748
4	1.65823	2.94969	1.29146	0.1878	0.242536
5	2.05924	2.89037	0.831133	0.1353	0.112452
6	2.37304	2.85647	0.483427	0.088	0.0425415
7	2.66026	2.70805	0.0477907	0.0433	0.00206934
8	2.67415	2.67415	0		
9	2.70805	2.66026	-0.0477907		
10	2.85647	2.37304	-0.483427		
11	2.89037	2.05924	-0.831133		
12	2.94969	1.65823	-1.29146		
13	2.97553	1.43746	-1.53807		
14	2.99072	1.36098	-1.62974		
15	3.24259	-0.693147	-3.93574		

Sum of b values = 3.34905
Sample Standard Deviation = 1.01383
W Statistic = 0.779445
5% Critical value of 0.881 exceeds 0.779445
Evidence of non-normality at 95% level of significance
1% Critical value of 0.835 exceeds 0.779445
Evidence of non-normality at 99% level of significance

Well: ECMW-12

K = 7; Samples = 15

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	-0.105361	1.43508	1.54045	0.515	0.793329
2	0.182322	0.8671	0.684779	0.3306	0.226388
3	0.357674	0.832909	0.475235	0.2495	0.118571
4	0.438255	0.788457	0.350202	0.1878	0.065768
5	0.553885	0.788457	0.234572	0.1353	0.0317376
6	0.604316	0.683097	0.0787809	0.088	0.00693272
7	0.625938	0.662688	0.0367495	0.0433	0.00159126
8	0.636577	0.636577	0		
9	0.662688	0.625938	-0.0367495		
10	0.683097	0.604316	-0.0787809		
11	0.788457	0.553885	-0.234572		
12	0.788457	0.438255	-0.350202		
13	0.832909	0.357674	-0.475235		
14	0.8671	0.182322	-0.684779		
15	1.43508	-0.105361	-1.54045		

Sum of b values = 1.24432
Sample Standard Deviation = 0.344095
W Statistic = 0.934067
5% Critical value of 0.881 is less than 0.934067
Data is normally distributed at 95% level of significance
1% Critical value of 0.835 is less than 0.934067
Data is normally distributed at 99% level of significance

Well: ECMW-13

K = 8; Samples = 16

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	-0.693147	0.24686	0.940007	0.5056	0.475268
2	-0.693147	-0.34249	0.350657	0.329	0.115366
3	-0.693147	-0.673345	0.0198026	0.2521	0.00499224
4	-0.693147	-0.693147	0	0.1939	0
5	-0.693147	-0.693147	0	0.1447	0
6	-0.693147	-0.693147	0	0.1005	0
7	-0.693147	-0.693147	0	0.0593	0
8	-0.693147	-0.693147	0	0.0196	0
9	-0.693147	-0.693147	0		
10	-0.693147	-0.693147	0		
11	-0.693147	-0.693147	0		
12	-0.693147	-0.693147	0		
13	-0.693147	-0.693147	0		
14	-0.673345	-0.693147	-0.0198026		
15	-0.34249	-0.693147	-0.350657		
16	0.24686	-0.693147	-0.940007		

Sum of b values = 0.595626
Sample Standard Deviation = 0.244899
W Statistic = 0.39435
5% Critical value of 0.887 exceeds 0.39435
Evidence of non-normality at 95% level of significance
1% Critical value of 0.844 exceeds 0.39435
Evidence of non-normality at 99% level of significance

Well: ECMW-14

K = 8; Samples = 16

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	-0.693147	1.67147	2.36462	0.5056	1.19555
2	-0.693147	-0.693147	0	0.329	0
3	-0.693147	-0.693147	0	0.2521	0
4	-0.693147	-0.693147	0	0.1939	0
5	-0.693147	-0.693147	0	0.1447	0
6	-0.693147	-0.693147	0	0.1005	0
7	-0.693147	-0.693147	0	0.0593	0
8	-0.693147	-0.693147	0	0.0196	0
9	-0.693147	-0.693147	0		
10	-0.693147	-0.693147	0		
11	-0.693147	-0.693147	0		
12	-0.693147	-0.693147	0		
13	-0.693147	-0.693147	0		
14	-0.693147	-0.693147	0		
15	-0.693147	-0.693147	0		
16	1.67147	-0.693147	-2.36462		

Sum of b values = 1.19555
Sample Standard Deviation = 0.591155
W Statistic = 0.272673
5% Critical value of 0.887 exceeds 0.272673
Evidence of non-normality at 95% level of significance
1% Critical value of 0.844 exceeds 0.272673
Evidence of non-normality at 99% level of significance

Well: ECMW-15

K = 8; Samples = 16

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	-0.693147	1.37624	2.06939	0.5056	1.04628
2	-0.693147	0.14842	0.841567	0.329	0.276876
3	-0.693147	-0.494296	0.198851	0.2521	0.0501303
4	-0.693147	-0.693147	0	0.1939	0
5	-0.693147	-0.693147	0	0.1447	0
6	-0.693147	-0.693147	0	0.1005	0
7	-0.693147	-0.693147	0	0.0593	0
8	-0.693147	-0.693147	0	0.0196	0
9	-0.693147	-0.693147	0		
10	-0.693147	-0.693147	0		
11	-0.693147	-0.693147	0		
12	-0.693147	-0.693147	0		
13	-0.693147	-0.693147	0		
14	-0.494296	-0.693147	-0.198851		
15	0.14842	-0.693147	-0.841567		
16	1.37624	-0.693147	-2.06939		

Sum of b values = 1.37329
Sample Standard Deviation = 0.543184
W Statistic = 0.426128
5% Critical value of 0.887 exceeds 0.426128
Evidence of non-normality at 95% level of significance
1% Critical value of 0.844 exceeds 0.426128
Evidence of non-normality at 99% level of significance

Well: ECMW-16

K = 8; Samples = 16

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	-0.693147	2.45101	3.14415	0.5056	1.58968
2	1.09527	2.44235	1.34707	0.329	0.443187
3	1.30563	2.23538	0.92975	0.2521	0.23439
4	1.42311	2.15292	0.729816	0.1939	0.141511
5	1.52823	2.14827	0.62004	0.1447	0.0897198
6	1.73342	2.12704	0.393617	0.1005	0.0395585
7	1.78675	1.92716	0.140417	0.0593	0.00832674
8	1.82455	1.86408	0.0395308	0.0196	0.000774804
9	1.86408	1.82455	-0.0395308		
10	1.92716	1.78675	-0.140417		
11	2.12704	1.73342	-0.393617		
12	2.14827	1.52823	-0.62004		
13	2.15292	1.42311	-0.729816		
14	2.23538	1.30563	-0.92975		
15	2.44235	1.09527	-1.34707		
16	2.45101	-0.693147	-3.14415		

Sum of b values = 2.54715
Sample Standard Deviation = 0.750376
W Statistic = 0.768176
5% Critical value of 0.887 exceeds 0.768176
Evidence of non-normality at 95% level of significance
1% Critical value of 0.844 exceeds 0.768176
Evidence of non-normality at 99% level of significance

Well: ECMW-17

K = 8; Samples = 16

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	-0.693147	2.25654	2.94969	0.5056	1.49136
2	-0.693147	2.09679	2.78994	0.329	0.917889
3	-0.693147	2.08567	2.77882	0.2521	0.70054
4	-0.693147	0.858662	1.55181	0.1939	0.300896
5	-0.693147	0.582216	1.27536	0.1447	0.184545
6	-0.693147	0.350657	1.0438	0.1005	0.104902
7	-0.597837	0.198851	0.796688	0.0593	0.0472436
8	-0.544727	0.14842	0.693147	0.0196	0.0135857
9	0.14842	-0.544727	-0.693147		
10	0.198851	-0.597837	-0.796688		
11	0.350657	-0.693147	-1.0438		
12	0.582216	-0.693147	-1.27536		
13	0.858662	-0.693147	-1.55181		
14	2.08567	-0.693147	-2.77882		
15	2.09679	-0.693147	-2.78994		
16	2.25654	-0.693147	-2.94969		

Sum of b values = 3.76096
Sample Standard Deviation = 1.09439
W Statistic = 0.787344
5% Critical value of 0.887 exceeds 0.787344
Evidence of non-normality at 95% level of significance
1% Critical value of 0.844 exceeds 0.787344
Evidence of non-normality at 99% level of significance

Well: ECMW-18

K = 7; Samples = 14

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	-0.84397	1.75613	2.6001	0.5251	1.36531
2	-0.693147	-0.527633	0.165514	0.3318	0.0549177
3	-0.693147	-0.579818	0.113329	0.246	0.0278789
4	-0.693147	-0.693147	0	0.1802	0
5	-0.693147	-0.693147	0	0.124	0
6	-0.693147	-0.693147	0	0.0727	0
7	-0.693147	-0.693147	0	0.024	0
8	-0.693147	-0.693147	0		
9	-0.693147	-0.693147	0		
10	-0.693147	-0.693147	0		
11	-0.693147	-0.693147	0		
12	-0.579818	-0.693147	-0.113329		
13	-0.527633	-0.693147	-0.165514		
14	1.75613	-0.84397	-2.6001		

Sum of b values = 1.44811
Sample Standard Deviation = 0.655597
W Statistic = 0.375307
5% Critical value of 0.874 exceeds 0.375307
Evidence of non-normality at 95% level of significance
1% Critical value of 0.825 exceeds 0.375307
Evidence of non-normality at 99% level of significance

NON-PARAMETRIC PREDICTION LIMIT

Non-Parametric Prediction Interval

Inter-Well Comparison

Parameter: Ammonia-N

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

Total Percent Non-Detects = 56.8905%
Number of comparisons = 120
Future Samples (k) = 8
Recent Dates = 8
Background Samples (n) = 48
Maximum Background Concentration = 0.76
Confidence Level = 85.7%
False Positive Rate = 14.3%

Well	Date	Samples	Mean	Impacted
ECMW-10	1/25/2005	1	0.5	FALSE
ECMW-10	11/16/2004	1	0.5	FALSE
ECMW-10	9/14/2004	1	0.77	TRUE
ECMW-10	7/13/2004	1	0.5	FALSE
ECMW-10	5/18/2004	1	0.5	FALSE
ECMW-10	3/16/2004	1	0.5	FALSE
ECMW-10	1/28/2004	1	0.5	FALSE
ECMW-10	11/19/2003	1	0.5	FALSE
ECMW-11	11/17/2004	1	19.1	TRUE
ECMW-11	9/14/2004	1	14.5	TRUE
ECMW-11	7/13/2004	1	17.4	TRUE
ECMW-11	5/18/2004	1	19.9	TRUE
ECMW-11	3/16/2004	1	15	TRUE
ECMW-11	1/28/2004	1	19.6	TRUE
ECMW-11	11/19/2003	1	14.3	TRUE
ECMW-11	9/23/2003	1	5.25	TRUE
ECMW-12	1/26/2005	1	1.98	TRUE
ECMW-12	11/16/2004	1	1.55	TRUE
ECMW-12	9/15/2004	1	2.38	TRUE
ECMW-12	7/13/2004	1	1.2	TRUE
ECMW-12	5/19/2004	1	1.94	TRUE
ECMW-12	3/16/2004	1	2.2	TRUE
ECMW-12	1/28/2004	1	1.87	TRUE
ECMW-12	11/19/2003	1	1.83	TRUE
ECMW-13	1/26/2005	1	0.5	FALSE
ECMW-13	11/16/2004	1	0.5	FALSE
ECMW-13	9/14/2004	1	0.51	FALSE
ECMW-13	7/13/2004	1	0.5	FALSE
ECMW-13	5/18/2004	1	0.5	FALSE
ECMW-13	3/16/2004	1	0.5	FALSE
ECMW-13	1/28/2004	1	0.5	FALSE
ECMW-13	11/19/2003	1	0.5	FALSE
ECMW-14	1/26/2005	1	0.5	FALSE
ECMW-14	11/16/2004	1	0.5	FALSE
ECMW-14	9/14/2004	1	0.5	FALSE
ECMW-14	7/13/2004	1	0.5	FALSE
ECMW-14	5/18/2004	1	0.5	FALSE
ECMW-14	3/16/2004	1	0.5	FALSE
ECMW-14	1/28/2004	1	0.5	FALSE
ECMW-14	11/19/2003	1	0.5	FALSE

Well	Date	Samples	Mean	Impacted	Outlier
ECMW-15	1/25/2005	1	0.5	FALSE	
ECMW-15	11/16/2004	1	0.5	FALSE	
ECMW-15	9/14/2004	1	0.61	FALSE	
ECMW-15	7/13/2004	1	0.5	FALSE	
ECMW-15	5/18/2004	1	0.5	FALSE	
ECMW-15	3/16/2004	1	0.5	FALSE	
ECMW-15	1/28/2004	1	3.96	TRUE	
ECMW-15	11/19/2003	1	0.5	FALSE	
ECMW-16	1/25/2005	1	4.15	TRUE	
ECMW-16	11/16/2004	1	6.87	TRUE	
ECMW-16	9/14/2004	1	8.57	TRUE	
ECMW-16	7/13/2004	1	9.35	TRUE	
ECMW-16	5/18/2004	1	11.5	TRUE	
ECMW-16	3/16/2004	1	8.39	TRUE	
ECMW-16	1/28/2004	1	5.66	TRUE	
ECMW-16	11/19/2003	1	8.61	TRUE	
ECMW-17	1/26/2005	1	1.79	TRUE	
ECMW-17	11/16/2004	1	9.55	TRUE	
ECMW-17	9/14/2004	1	1.42	TRUE	
ECMW-17	7/13/2004	1	0.5	FALSE	
ECMW-17	5/18/2004	1	8.05	TRUE	
ECMW-17	3/16/2004	1	8.14	TRUE	
ECMW-17	1/28/2004	1	0.5	FALSE	
ECMW-17	11/19/2003	1	0.55	FALSE	
ECMW-18	1/26/2005	1	0.5	FALSE	
ECMW-18	11/17/2004	1	0.5	FALSE	
ECMW-18	9/15/2004	1	0.56	FALSE	
ECMW-18	7/13/2004	1	0.5	FALSE	
ECMW-18	5/19/2004	1	0.5	FALSE	
ECMW-18	3/16/2004	1	0.5	FALSE	
ECMW-18	11/19/2003	1	0.5	FALSE	
ECMW-18	9/24/2003	1	5.79	TRUE	
ECMW-4	1/25/2005	1	0.64	FALSE	
ECMW-4	11/16/2004	1	0.5	FALSE	
ECMW-4	9/14/2004	1	0.68	FALSE	
ECMW-4	7/13/2004	1	0.5	FALSE	
ECMW-4	5/19/2004	1	0.5	FALSE	
ECMW-4	3/16/2004	1	0.5	FALSE	
ECMW-4	1/28/2004	1	0.5	FALSE	
ECMW-4	11/19/2003	1	0.5	FALSE	
ECMW-5	1/25/2005	1	0.5	FALSE	
ECMW-5	11/16/2004	1	0.5	FALSE	
ECMW-5	9/14/2004	1	0.59	FALSE	
ECMW-5	7/13/2004	1	0.5	FALSE	
ECMW-5	5/19/2004	1	0.5	FALSE	
ECMW-5	3/16/2004	1	0.5	FALSE	
ECMW-5	1/28/2004	1	0.5	FALSE	
ECMW-5	11/19/2003	1	0.5	FALSE	
ECMW-6	1/25/2005	1	43.1	TRUE	
ECMW-6	11/16/2004	1	37.6	TRUE	
ECMW-6	9/14/2004	1	20	TRUE	
ECMW-6	7/13/2004	1	17.5	TRUE	
ECMW-6	5/19/2004	1	21.4	TRUE	
ECMW-6	3/16/2004	1	13	TRUE	
ECMW-6	1/28/2004	1	12.3	TRUE	
ECMW-6	11/19/2003	1	5.72	TRUE	

Well	Date	Samples	Mean	Impacted
ECMW-7	1/25/2005	1	281	TRUE
ECMW-7	11/16/2004	1	219	TRUE
ECMW-7	9/14/2004	1	25.9	TRUE
ECMW-7	7/13/2004	1	73.4	TRUE
ECMW-7	5/19/2004	1	204	TRUE
ECMW-7	3/16/2004	1	190	TRUE
ECMW-7	1/28/2004	1	147	TRUE
ECMW-7	11/19/2003	1	124	TRUE
ECMW-8	1/25/2005	1	48.9	TRUE
ECMW-8	11/16/2004	1	82.1	TRUE
ECMW-8	9/14/2004	1	107	TRUE
ECMW-8	7/13/2004	1	120	TRUE
ECMW-8	5/19/2004	1	120	TRUE
ECMW-8	3/16/2004	1	88	TRUE
ECMW-8	1/28/2004	1	45.7	TRUE
ECMW-8	11/19/2003	1	206	TRUE
ECMW-9	1/25/2005	1	0.5	FALSE
ECMW-9	11/16/2004	1	0.7	FALSE
ECMW-9	9/14/2004	1	1.14	TRUE
ECMW-9	7/13/2004	1	0.5	FALSE
ECMW-9	5/19/2004	1	0.5	FALSE
ECMW-9	3/16/2004	1	0.5	FALSE
ECMW-9	1/28/2004	1	0.5	FALSE
ECMW-9	11/19/2003	1	0.5	FALSE

WILCOXON INTER-WELL

Wilcoxon Non-Parametric Analysis (Inter-Well)

Parameter: Ammonia-N

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Well: ECMW-6

Total non detects is 48
Non detect rank is 24.5

Wilcoxon Ranks

Well	Date	Result	Rank
ECMW-1			
	5/29/2001	ND<0.5	24.5
	11/1/2001	ND<0.5	24.5
	6/3/2002	ND<0.5	24.5
	10/30/2002	0.66	53
	12/10/2002	ND<0.5	24.5
	5/20/2003	ND<0.5	24.5
	7/24/2003	ND<0.5	24.5
	9/24/2003	ND<0.5	24.5
	11/19/2003	ND<0.5	24.5
	1/28/2004	0.56	52
	3/16/2004	ND<0.5	24.5
	5/18/2004	ND<0.5	24.5
	7/13/2004	ND<0.5	24.5
	9/14/2004	0.76	54
	11/16/2004	ND<0.5	24.5
	1/25/2005	ND<0.5	24.5
ECMW-2			
	5/29/2001	ND<0.5	24.5
	11/1/2001	ND<0.5	24.5
	6/3/2002	ND<0.5	24.5
	10/30/2002	ND<0.5	24.5
	12/10/2002	ND<0.5	24.5
	5/20/2003	ND<0.5	24.5
	7/24/2003	ND<0.5	24.5
	9/24/2003	ND<0.5	24.5
	11/19/2003	ND<0.5	24.5
	1/28/2004	ND<0.5	24.5
	3/16/2004	ND<0.5	24.5
	5/18/2004	ND<0.5	24.5
	7/13/2004	ND<0.5	24.5
	9/14/2004	ND<0.5	24.5
	11/16/2004	ND<0.5	24.5
	1/25/2005 ~	ND<0.5	24.5
ECMW-3			
	5/29/2001	ND<0.5	24.5
	11/1/2001	ND<0.5	24.5
	6/3/2002	ND<0.5	24.5
	10/30/2002	ND<0.5	24.5
	12/10/2002	ND<0.5	24.5
	5/20/2003	ND<0.5	24.5
	7/24/2003	ND<0.5	24.5
	9/24/2003	ND<0.5	24.5
	11/19/2003	ND<0.5	24.5
	1/28/2004	ND<0.5	24.5

3/16/2004	ND<0.5	24.5
5/18/2004	ND<0.5	24.5
7/13/2004	ND<0.5	24.5
9/14/2004	ND<0.5	24.5
11/16/2004	ND<0.5	24.5
1/25/2005	ND<0.5	24.5

ECMW-6

8/8/2001 0.5	49	
10/30/2001	ND<0.5	24.5
6/3/2002	ND<0.5	24.5
10/30/2002	0.51	51
12/10/2002 ~	ND<0.5	24.5
5/21/2003	0.5	50
7/24/2003	1.09	55
9/24/2003	4.88	56
11/19/2003 ~	5.72	57
1/28/2004	12.3	58
3/16/2004	13	59
5/19/2004	21.4	62
7/13/2004 ~	17.5	60
9/14/2004	20	61
11/16/2004	37.6	63
1/25/2005	43.1	64

The Wilcoxon Statistic is 682.5
The Expected value is is 384
The Standard Deviation is 64.4981
The Z Score is 4.62029
The Standard Deviation adjusted for ties is 49.0442
The Z Score adjusted for ties is 49.0442
4.62029 > 2.326 indicating possible contamination at 1% significance level
6.07615 > 2.326 indicating possible contamination at 1% significance level when adjusted for ties

Well: ECMW-7

Total non detects is 46
Non detect rank is 23.5

Wilcoxon Ranks

Well	Date	Result	Rank
ECMW-1			
	5/29/2001	ND<0.5	23.5
	11/1/2001	ND<0.5	23.5
	6/3/2002	ND<0.5	23.5
	10/30/2002	0.66	48
	12/10/2002	ND<0.5	23.5
	5/20/2003	ND<0.5	23.5
	7/24/2003	ND<0.5	23.5
	9/24/2003	ND<0.5	23.5
	11/19/2003	ND<0.5	23.5
	1/28/2004	0.56	47
	3/16/2004	ND<0.5	23.5
	5/18/2004	ND<0.5	23.5
	7/13/2004	ND<0.5	23.5
	9/14/2004	0.76	49
	11/16/2004	ND<0.5	23.5
	1/25/2005	ND<0.5	23.5

ECMW-2

5/29/2001	ND<0.5	23.5
11/1/2001	ND<0.5	23.5
6/3/2002	ND<0.5	23.5
10/30/2002	ND<0.5	23.5
12/10/2002	ND<0.5	23.5
5/20/2003	ND<0.5	23.5
7/24/2003	ND<0.5	23.5
9/24/2003	ND<0.5	23.5
11/19/2003	ND<0.5	23.5
1/28/2004	ND<0.5	23.5
3/16/2004	ND<0.5	23.5
5/18/2004	ND<0.5	23.5
7/13/2004	ND<0.5	23.5
9/14/2004	ND<0.5	23.5
11/16/2004	ND<0.5	23.5
1/25/2005 ~	ND<0.5	23.5

ECMW-3

5/29/2001	ND<0.5	23.5
11/1/2001	ND<0.5	23.5
6/3/2002	ND<0.5	23.5
10/30/2002	ND<0.5	23.5
12/10/2002	ND<0.5	23.5
5/20/2003	ND<0.5	23.5
7/24/2003	ND<0.5	23.5
9/24/2003	ND<0.5	23.5
11/19/2003	ND<0.5	23.5
1/28/2004	ND<0.5	23.5
3/16/2004	ND<0.5	23.5
5/18/2004	ND<0.5	23.5
7/13/2004	ND<0.5	23.5
9/14/2004	ND<0.5	23.5
11/16/2004	ND<0.5	23.5
1/25/2005	ND<0.5	23.5

ECMW-7

8/8/2001	184	58
10/30/2001 ~	ND<0.5	23.5
6/3/2002 ~	190	59
10/30/2002	167	57
12/10/2002 ~	149	56
5/21/2003	244	63
7/24/2003	95.1	52
9/24/2003	116	53
11/19/2003	124	54
1/28/2004	147	55
3/16/2004	190	60
5/19/2004	204	61
7/13/2004	73.4	51
9/14/2004 ~	25.9	50
11/16/2004	219	62
1/25/2005	281	64

The Wilcoxon Statistic is 742.5
The Expected value is is 384
The Standard Deviation is 64.4981
The Z Score is 5.55055
The Standard Deviation adjusted for ties is 51.1441
The Z Score adjusted for ties is 51.1441
5.55055 > 2.326 indicating possible contamination at 1% significance level
6.99984 > 2.326 indicating possible contamination at 1% significance level when adjusted for ties

Well: ECMW-8

Total non detects is 45
Non detect rank is 23

Wilcoxon Ranks

Well	Date	Result	Rank
ECMW-1			
	5/29/2001	ND<0.5	23
	11/1/2001	ND<0.5	23
	6/3/2002	ND<0.5	23
	10/30/2002	0.66	47
	12/10/2002	ND<0.5	23
	5/20/2003	ND<0.5	23
	7/24/2003	ND<0.5	23
	9/24/2003	ND<0.5	23
	11/19/2003	ND<0.5	23
	1/28/2004	0.56	46
	3/16/2004	ND<0.5	23
	5/18/2004	ND<0.5	23
	7/13/2004	ND<0.5	23
	9/14/2004	0.76	48
	11/16/2004	ND<0.5	23
	1/25/2005	ND<0.5	23
ECMW-2			
	5/29/2001	ND<0.5	23
	11/1/2001	ND<0.5	23
	6/3/2002	ND<0.5	23
	10/30/2002	ND<0.5	23
	12/10/2002	ND<0.5	23
	5/20/2003	ND<0.5	23
	7/24/2003	ND<0.5	23
	9/24/2003	ND<0.5	23
	11/19/2003	ND<0.5	23
	1/28/2004	ND<0.5	23
	3/16/2004	ND<0.5	23
	5/18/2004	ND<0.5	23
	7/13/2004	ND<0.5	23
	9/14/2004	ND<0.5	23
	11/16/2004	ND<0.5	23
	1/25/2005 ~	ND<0.5	23
ECMW-3			
	5/29/2001	ND<0.5	23
	11/1/2001	ND<0.5	23
	6/3/2002	ND<0.5	23
	10/30/2002	ND<0.5	23
	12/10/2002	ND<0.5	23
	5/20/2003	ND<0.5	23
	7/24/2003	ND<0.5	23
	9/24/2003	ND<0.5	23
	11/19/2003	ND<0.5	23
	1/28/2004	ND<0.5	23
	3/16/2004	ND<0.5	23
	5/18/2004	ND<0.5	23
	7/13/2004	ND<0.5	23
	9/14/2004	ND<0.5	23
	11/16/2004	ND<0.5	23
	1/25/2005	ND<0.5	23

ECMW-8

10/30/2001	0.94	49
6/3/2002 ~	551	63
10/30/2002	406	62
12/10/2002 ~	220	61
5/21/2003 ~	214	60
7/24/2003 ~	179	58
9/23/2003 ~	157.5	57
11/19/2003	206	59
1/28/2004	45.7	50
3/16/2004	88	53
5/19/2004	120	55
7/13/2004	120	56
9/14/2004	107	54
11/16/2004	82.1	52
1/25/2005	48.9	51

The Wilcoxon Statistic is 720
The Expected value is is 360
The Standard Deviation is 61.9677
The Z Score is 5.80141
The Standard Deviation adjusted for ties is 49.4057
The Z Score adjusted for ties is 49.4057
5.80141 > 2.326 indicating possible contamination at 1% significance level
7.27649 > 2.326 indicating possible contamination at 1% significance level when adjusted for ties

Well: ECMW-9

Total non detects is 57
Non detect rank is 29

Wilcoxon Ranks

Well	Date	Result	Rank
ECMW-1			
	5/29/2001	ND<0.5	29
	11/1/2001	ND<0.5	29
	6/3/2002	ND<0.5	29
	10/30/2002	0.66	60
	12/10/2002	ND<0.5	29
	5/20/2003	ND<0.5	29
	7/24/2003	ND<0.5	29
	9/24/2003	ND<0.5	29
	11/19/2003	ND<0.5	29
	1/28/2004	0.56	59
	3/16/2004	ND<0.5	29
	5/18/2004	ND<0.5	29
	7/13/2004	ND<0.5	29
	9/14/2004	0.76	62
	11/16/2004	ND<0.5	29
	1/25/2005	ND<0.5	29
ECMW-2			
	5/29/2001	ND<0.5	29
	11/1/2001	ND<0.5	29
	6/3/2002	ND<0.5	29
	10/30/2002	ND<0.5	29
	12/10/2002	ND<0.5	29
	5/20/2003	ND<0.5	29
	7/24/2003	ND<0.5	29
	9/24/2003	ND<0.5	29

11/19/2003	ND<0.5	29
1/28/2004	ND<0.5	29
3/16/2004	ND<0.5	29
5/18/2004	ND<0.5	29
7/13/2004	ND<0.5	29
9/14/2004	ND<0.5	29
11/16/2004	ND<0.5	29
1/25/2005 ~	ND<0.5	29

ECMW-3

5/29/2001	ND<0.5	29
11/1/2001	ND<0.5	29
6/3/2002	ND<0.5	29
10/30/2002	ND<0.5	29
12/10/2002	ND<0.5	29
5/20/2003	ND<0.5	29
7/24/2003	ND<0.5	29
9/24/2003	ND<0.5	29
11/19/2003	ND<0.5	29
1/28/2004	ND<0.5	29
3/16/2004	ND<0.5	29
5/18/2004	ND<0.5	29
7/13/2004	ND<0.5	29
9/14/2004	ND<0.5	29
11/16/2004	ND<0.5	29
1/25/2005	ND<0.5	29

ECMW-9

6/27/2001	ND<0.5	29
10/30/2001	ND<0.5	29
6/3/2002	ND<0.5	29
10/30/2002	18.8	64
12/10/2002 ~	0.5	58
5/21/2003	ND<0.5	29
7/24/2003	ND<0.5	29
9/23/2003	ND<0.5	29
11/19/2003	ND<0.5	29
1/28/2004	ND<0.5	29
3/16/2004	ND<0.5	29
5/19/2004	ND<0.5	29
7/13/2004	ND<0.5	29
9/14/2004	1.14	63
11/16/2004	0.7	61
1/25/2005	ND<0.5	29

The Wilcoxon Statistic is 458
The Expected value is is 384
The Standard Deviation is 64.4981
The Z Score is 1.13957
The Standard Deviation adjusted for ties is 34.9476
The Z Score adjusted for ties is 34.9476
1.13957 < 2.326 indicating no contamination at 1% significance level
2.10315 < 2.326 indicating no contamination at 1% significance level when adjusted for ties

Well: ECMW-11

Total non detects is 46
Non detect rank is 23.5

Wilcoxon Ranks

Well	Date	Result	Rank
ECMW-1			
	5/29/2001	ND<0.5	23.5
	11/1/2001	ND<0.5	23.5
	6/3/2002	ND<0.5	23.5
	10/30/2002	0.66	48
	12/10/2002	ND<0.5	23.5
	5/20/2003	ND<0.5	23.5
	7/24/2003	ND<0.5	23.5
	9/24/2003	ND<0.5	23.5
	11/19/2003	ND<0.5	23.5
	1/28/2004	0.56	47
	3/16/2004	ND<0.5	23.5
	5/18/2004	ND<0.5	23.5
	7/13/2004	ND<0.5	23.5
	9/14/2004	0.76	49
	11/16/2004	ND<0.5	23.5
	1/25/2005	ND<0.5	23.5
ECMW-2			
	5/29/2001	ND<0.5	23.5
	11/1/2001	ND<0.5	23.5
	6/3/2002	ND<0.5	23.5
	10/30/2002	ND<0.5	23.5
	12/10/2002	ND<0.5	23.5
	5/20/2003	ND<0.5	23.5
	7/24/2003	ND<0.5	23.5
	9/24/2003	ND<0.5	23.5
	11/19/2003	ND<0.5	23.5
	1/28/2004	ND<0.5	23.5
	3/16/2004	ND<0.5	23.5
	5/18/2004	ND<0.5	23.5
	7/13/2004	ND<0.5	23.5
	9/14/2004	ND<0.5	23.5
	11/16/2004	ND<0.5	23.5
	1/25/2005 ~	ND<0.5	23.5
ECMW-3			
	5/29/2001	ND<0.5	23.5
	11/1/2001	ND<0.5	23.5
	6/3/2002	ND<0.5	23.5
	10/30/2002	ND<0.5	23.5
	12/10/2002	ND<0.5	23.5
	5/20/2003	ND<0.5	23.5
	7/24/2003	ND<0.5	23.5
	9/24/2003	ND<0.5	23.5
	11/19/2003	ND<0.5	23.5
	1/28/2004	ND<0.5	23.5
	3/16/2004	ND<0.5	23.5
	5/18/2004	ND<0.5	23.5
	7/13/2004	ND<0.5	23.5
	9/14/2004	ND<0.5	23.5
	11/16/2004	ND<0.5	23.5
	1/25/2005	ND<0.5	23.5

ECMW-11

8/8/2001	4.21	51
10/30/2001	ND<0.5	23.5
6/3/2002 ~	3.9	50
10/30/2002	18	59
12/10/2002	10.73	54
5/21/2003	7.84	53
7/24/2003	25.6	63
9/23/2003	5.25	52
11/19/2003 ~	14.3	55
1/28/2004	19.6	61
3/16/2004 ~	15	57
5/18/2004	19.9	62
7/13/2004	17.4	58
9/14/2004	14.5	56
11/17/2004	19.1	60

The Wilcoxon Statistic is 694.5
The Expected value is is 360
The Standard Deviation is 61.9677
The Z Score is 5.3899
The Standard Deviation adjusted for ties is 48.4307
The Z Score adjusted for ties is 48.4307
5.3899 > 2.326 indicating possible contamination at 1% significance level
6.89646 > 2.326 indicating possible contamination at 1% significance level when adjusted for ties

Well: ECMW-12

Total non detects is 45
Non detect rank is 23

Wilcoxon Ranks

Well	Date	Result	Rank
ECMW-1			
	5/29/2001	ND<0.5	23
	11/1/2001	ND<0.5	23
	6/3/2002	ND<0.5	23
	10/30/2002	0.66	47
	12/10/2002	ND<0.5	23
	5/20/2003	ND<0.5	23
	7/24/2003	ND<0.5	23
	9/24/2003	ND<0.5	23
	11/19/2003	ND<0.5	23
	1/28/2004	0.56	46
	3/16/2004	ND<0.5	23
	5/18/2004	ND<0.5	23
	7/13/2004	ND<0.5	23
	9/14/2004	0.76	48
	11/16/2004	ND<0.5	23
	1/25/2005	ND<0.5	23
ECMW-2			
	5/29/2001	ND<0.5	23
	11/1/2001	ND<0.5	23
	6/3/2002	ND<0.5	23
	10/30/2002	ND<0.5	23
	12/10/2002	ND<0.5	23
	5/20/2003	ND<0.5	23
	7/24/2003	ND<0.5	23

9/24/2003	ND<0.5	23
11/19/2003	ND<0.5	23
1/28/2004	ND<0.5	23
3/16/2004	ND<0.5	23
5/18/2004	ND<0.5	23
7/13/2004	ND<0.5	23
9/14/2004	ND<0.5	23
11/16/2004	ND<0.5	23
1/25/2005 ~	ND<0.5	23

ECMW-3

5/29/2001	ND<0.5	23
11/1/2001	ND<0.5	23
6/3/2002	ND<0.5	23
10/30/2002	ND<0.5	23
12/10/2002	ND<0.5	23
5/20/2003	ND<0.5	23
7/24/2003	ND<0.5	23
9/24/2003	ND<0.5	23
11/19/2003	ND<0.5	23
1/28/2004	ND<0.5	23
3/16/2004	ND<0.5	23
5/18/2004	ND<0.5	23
7/13/2004	ND<0.5	23
9/14/2004	ND<0.5	23
11/16/2004	ND<0.5	23
1/25/2005	ND<0.5	23

ECMW-12 WITH OUTLIERS

6/27/2001	2.2	59
6/4/2002 ~	0.9	49
10/30/2002	4.2	63
12/10/2002	2.3	61
5/21/2003	1.89	56
7/24/2003	1.74	53
9/24/2003	1.43	51
11/19/2003	1.83	54
1/28/2004	1.87	55
3/16/2004	2.2	60
5/19/2004	1.94	57
7/13/2004	1.2	50
9/15/2004	2.38	62
11/16/2004	1.55	52
1/26/2005	1.98	58

The Wilcoxon Statistic is 720
The Expected value is is 360
The Standard Deviation is 61.9677
The Z Score is 5.80141
The Standard Deviation adjusted for ties is 49.4057
The Z Score adjusted for ties is 49.4057
5.80141 > 2.326 indicating possible contamination at 1% significance level
7.27649 > 2.326 indicating possible contamination at 1% significance level when adjusted for ties

ECMW-12 WITHOUT OUTLIERS

6/27/2001	0.788457	59
6/4/2002 ~	-0.105361	49
12/10/2002	0.832909	61
5/21/2003	0.636577	56
7/24/2003	0.553885	53
9/24/2003	0.357674	51

11/19/2003	0.604316	54
1/28/2004	0.625938	55
3/16/2004	0.788457	60
5/19/2004	0.662688	57
7/13/2004	0.182322	50
9/15/2004	0.8671	62
11/16/2004	0.438255	52
1/26/2005	0.683097	58

The Wilcoxon Statistic is 672
The Expected value is is 336
The Standard Deviation is 59.397
The Z Score is 5.64844
The Standard Deviation adjusted for ties is 46.6838
The Z Score adjusted for ties is 46.6838
5.64844 > 2.326 indicating possible contamination at 1% significance level
7.18664 > 2.326 indicating possible contamination at 1% significance level when adjusted for ties

Well: ECMW-15

Total non detects is 57
Non detect rank is 29

Wilcoxon Ranks

Well	Date	Result	Rank
ECMW-1			
	5/29/2001	ND<0.5	29
	11/1/2001	ND<0.5	29
	6/3/2002	ND<0.5	29
	10/30/2002	0.66	61
	12/10/2002	ND<0.5	29
	5/20/2003	ND<0.5	29
	7/24/2003	ND<0.5	29
	9/24/2003	ND<0.5	29
	11/19/2003	ND<0.5	29
	1/28/2004	0.56	59
	3/16/2004	ND<0.5	29
	5/18/2004	ND<0.5	29
	7/13/2004	ND<0.5	29
	9/14/2004	0.76	62
	11/16/2004	ND<0.5	29
	1/25/2005	ND<0.5	29
ECMW-2			
	5/29/2001	ND<0.5	29
	11/1/2001	ND<0.5	29
	6/3/2002	ND<0.5	29
	10/30/2002	ND<0.5	29
	12/10/2002	ND<0.5	29
	5/20/2003	ND<0.5	29
	7/24/2003	ND<0.5	29
	9/24/2003	ND<0.5	29
	11/19/2003	ND<0.5	29
	1/28/2004	ND<0.5	29
	3/16/2004	ND<0.5	29
	5/18/2004	ND<0.5	29
	7/13/2004	ND<0.5	29
	9/14/2004	ND<0.5	29
	11/16/2004	ND<0.5	29

	1/25/2005 ~	ND<0.5	29
ECMW-3			
	5/29/2001	ND<0.5	29
	11/1/2001	ND<0.5	29
	6/3/2002	ND<0.5	29
	10/30/2002	ND<0.5	29
	12/10/2002	ND<0.5	29
	5/20/2003	ND<0.5	29
	7/24/2003	ND<0.5	29
	9/24/2003	ND<0.5	29
	11/19/2003	ND<0.5	29
	1/28/2004	ND<0.5	29
	3/16/2004	ND<0.5	29
	5/18/2004	ND<0.5	29
	7/13/2004	ND<0.5	29
	9/14/2004	ND<0.5	29
	11/16/2004	ND<0.5	29
	1/25/2005	ND<0.5	29
ECMW-15			
	8/8/2001	ND<0.5	29
	10/30/2001	ND<0.5	29
	6/4/2002	ND<0.5	29
	10/30/2002	1.16	63
	12/10/2002	0.5	58
	5/20/2003	ND<0.5	29
	7/23/2003	ND<0.5	29
	9/23/2003	ND<0.5	29
	11/19/2003	ND<0.5	29
	1/28/2004	3.96	64
	3/16/2004	ND<0.5	29
	5/18/2004	ND<0.5	29
	7/13/2004	ND<0.5	29
	9/14/2004	0.61	60
	11/16/2004	ND<0.5	29
	1/25/2005	ND<0.5	29

The Wilcoxon Statistic is 457
The Expected value is is 384
The Standard Deviation is 64.4981
The Z Score is 1.12406
The Standard Deviation adjusted for ties is 34.9476
The Z Score adjusted for ties is 34.9476
1.12406 < 2.326 indicating no contamination at 1% significance level
2.07454 < 2.326 indicating no contamination at 1% significance level when adjusted for ties

Well: ECMW-16

Total non detects is 46
Non detect rank is 23.5

Wilcoxon Ranks

Well	Date	Result	Rank
ECMW-1			
	5/29/2001	ND<0.5	23.5
	11/1/2001	ND<0.5	23.5
	6/3/2002	ND<0.5	23.5
	10/30/2002	0.66	48

12/10/2002	ND<0.5	23.5
5/20/2003	ND<0.5	23.5
7/24/2003	ND<0.5	23.5
9/24/2003	ND<0.5	23.5
11/19/2003	ND<0.5	23.5
1/28/2004	0.56	47
3/16/2004	ND<0.5	23.5
5/18/2004	ND<0.5	23.5
7/13/2004	ND<0.5	23.5
9/14/2004	0.76	49
11/16/2004	ND<0.5	23.5
1/25/2005	ND<0.5	23.5

ECMW-2

5/29/2001	ND<0.5	23.5
11/1/2001	ND<0.5	23.5
6/3/2002	ND<0.5	23.5
10/30/2002	ND<0.5	23.5
12/10/2002	ND<0.5	23.5
5/20/2003	ND<0.5	23.5
7/24/2003	ND<0.5	23.5
9/24/2003	ND<0.5	23.5
11/19/2003	ND<0.5	23.5
1/28/2004	ND<0.5	23.5
3/16/2004	ND<0.5	23.5
5/18/2004	ND<0.5	23.5
7/13/2004	ND<0.5	23.5
9/14/2004	ND<0.5	23.5
11/16/2004	ND<0.5	23.5
1/25/2005 ~	ND<0.5	23.5

ECMW-3

5/29/2001	ND<0.5	23.5
11/1/2001	ND<0.5	23.5
6/3/2002	ND<0.5	23.5
10/30/2002	ND<0.5	23.5
12/10/2002	ND<0.5	23.5
5/20/2003	ND<0.5	23.5
7/24/2003	ND<0.5	23.5
9/24/2003	ND<0.5	23.5
11/19/2003	ND<0.5	23.5
1/28/2004	ND<0.5	23.5
3/16/2004	ND<0.5	23.5
5/18/2004	ND<0.5	23.5
7/13/2004	ND<0.5	23.5
9/14/2004	ND<0.5	23.5
11/16/2004	ND<0.5	23.5
1/25/2005	ND<0.5	23.5

ECMW-16

6/5/2001	4.61	53
10/30/2001	ND<0.5	23.5
6/4/2002 ~	6.2	56
10/30/2002	11.6	64
12/10/2002	2.99	50
5/20/2003	3.69	51
7/23/2003	6.45	57
9/23/2003	5.97	55
11/19/2003	8.61	61
1/28/2004	5.66	54
3/16/2004	8.39	59
5/18/2004 ~	11.5	63

5/29/2001	ND<0.5	26
11/1/2001	ND<0.5	26
6/3/2002	ND<0.5	26
10/30/2002	ND<0.5	26
12/10/2002	ND<0.5	26
5/20/2003	ND<0.5	26
7/24/2003	ND<0.5	26
9/24/2003	ND<0.5	26
11/19/2003	ND<0.5	26
1/28/2004	ND<0.5	26
3/16/2004	ND<0.5	26
5/18/2004	ND<0.5	26
7/13/2004	ND<0.5	26
9/14/2004	ND<0.5	26
11/16/2004	ND<0.5	26
1/25/2005	ND<0.5	26

ECMW-17

6/5/2001	1.16	57
10/30/2001	ND<0.5	26
6/4/2002	ND<0.5	26
10/30/2002	2.36	61
12/10/2002	1.22	58
5/20/2003	ND<0.5	26
7/23/2003	0.58	54
9/23/2003	ND<0.5	26
11/19/2003	0.55	52
1/28/2004	ND<0.5	26
3/16/2004	8.14	63
5/18/2004	8.05	62
7/13/2004	ND<0.5	26
9/14/2004	1.42	59
11/16/2004	9.55	64
1/26/2005	1.79	60

The Wilcoxon Statistic is 610
The Expected value is is 384
The Standard Deviation is 64.4981
The Z Score is 3.49623
The Standard Deviation adjusted for ties is 45.3347
The Z Score adjusted for ties is 45.3347
3.49623 > 2.326 indicating possible contamination at 1% significance level
4.97411 > 2.326 indicating possible contamination at 1% significance level when adjusted for ties

Well: ECMW-18

Total non detects is 55
Non detect rank is 28

Wilcoxon Ranks

Well	Date	Result	Rank
ECMW-1			
	5/29/2001	ND<0.5	28
	11/1/2001	ND<0.5	28
	6/3/2002	ND<0.5	28
	10/30/2002	0.66	60
	12/10/2002	ND<0.5	28
	5/20/2003	ND<0.5	28
	7/24/2003	ND<0.5	28
	9/24/2003	ND<0.5	28

7/13/2004	9.35	62
9/14/2004	8.57	60
11/16/2004 ~	6.87	58
1/25/2005	4.15	52

The Wilcoxon Statistic is 742.5
The Expected value is is 384
The Standard Deviation is 64.4981
The Z Score is 5.55055
The Standard Deviation adjusted for ties is 51.1441
The Z Score adjusted for ties is 51.1441
5.55055 > 2.326 indicating possible contamination at 1% significance level
6.99984 > 2.326 indicating possible contamination at 1% significance level when adjusted for ties

Well: ECMW-17

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

Total non detects is 51
Non detect rank is 26

Wilcoxon Ranks

Well	Date	Result	Rank
ECMW-1			
	5/29/2001	ND<0.5	26
	11/1/2001	ND<0.5	26
	6/3/2002	ND<0.5	26
	10/30/2002	0.66	55
	12/10/2002	ND<0.5	26
	5/20/2003	ND<0.5	26
	7/24/2003	ND<0.5	26
	9/24/2003	ND<0.5	26
	11/19/2003	ND<0.5	26
	1/28/2004	0.56	53
	3/16/2004	ND<0.5	26
	5/18/2004	ND<0.5	26
	7/13/2004	ND<0.5	26
	9/14/2004	0.76	56
	11/16/2004	ND<0.5	26
	1/25/2005	ND<0.5	26
ECMW-2			
	5/29/2001	ND<0.5	26
	11/1/2001	ND<0.5	26
	6/3/2002	ND<0.5	26
	10/30/2002	ND<0.5	26
	12/10/2002	ND<0.5	26
	5/20/2003	ND<0.5	26
	7/24/2003	ND<0.5	26
	9/24/2003	ND<0.5	26
	11/19/2003	ND<0.5	26
	1/28/2004	ND<0.5	26
	3/16/2004	ND<0.5	26
	5/18/2004	ND<0.5	26
	7/13/2004	ND<0.5	26
	9/14/2004	ND<0.5	26
	11/16/2004	ND<0.5	26
	1/25/2005 ~	ND<0.5	26
ECMW-3			

11/19/2003	ND<0.5	28
1/28/2004	0.56	57
3/16/2004	ND<0.5	28
5/18/2004	ND<0.5	28
7/13/2004	ND<0.5	28
9/14/2004	0.76	61
11/16/2004	ND<0.5	28
1/25/2005	ND<0.5	28

ECMW-2

5/29/2001	ND<0.5	28
11/1/2001	ND<0.5	28
6/3/2002	ND<0.5	28
10/30/2002	ND<0.5	28
12/10/2002	ND<0.5	28
5/20/2003	ND<0.5	28
7/24/2003	ND<0.5	28
9/24/2003	ND<0.5	28
11/19/2003	ND<0.5	28
1/28/2004	ND<0.5	28
3/16/2004	ND<0.5	28
5/18/2004	ND<0.5	28
7/13/2004	ND<0.5	28
9/14/2004	ND<0.5	28
11/16/2004	ND<0.5	28
1/25/2005 ~	ND<0.5	28

ECMW-3

5/29/2001	ND<0.5	28
11/1/2001	ND<0.5	28
6/3/2002	ND<0.5	28
10/30/2002	ND<0.5	28
12/10/2002	ND<0.5	28
5/20/2003	ND<0.5	28
7/24/2003	ND<0.5	28
9/24/2003	ND<0.5	28
11/19/2003	ND<0.5	28
1/28/2004	ND<0.5	28
3/16/2004	ND<0.5	28
5/18/2004	ND<0.5	28
7/13/2004	ND<0.5	28
9/14/2004	ND<0.5	28
11/16/2004	ND<0.5	28
1/25/2005	ND<0.5	28

ECMW-18

10/30/2001	ND<0.5	28
6/4/2002	ND<0.5	28
10/30/2002	0.43	56
12/10/2002	ND<0.5	28
5/21/2003	0.59	59
7/23/2003	ND<0.5	28
9/24/2003	5.79	62
11/19/2003	ND<0.5	28
3/16/2004	ND<0.5	28
5/19/2004	ND<0.5	28
7/13/2004	ND<0.5	28
9/15/2004	0.56	58
11/17/2004 ~	ND<0.5	28
1/26/2005	ND<0.5	28

The Wilcoxon Statistic is 410

The Expected value is is 336
The Standard Deviation is 59.397
The Z Score is 1.23744
The Standard Deviation adjusted for ties is 32.639
The Z Score adjusted for ties is 32.639
1.23744 < 2.326 indicating no contamination at 1% significance level
2.25191 < 2.326 indicating no contamination at 1% significance level when adjusted for ties

POISSON PREDICTION LIMIT

Poisson Prediction Limit

Parameter: Ammonia-N

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Recent Dates = 8
Poisson Count of 48 background Samples = 24.48
99% t-test = 2.40834
95% t-test = 1.67793

Well: ECMW-10

Number of comparisons = 8
Future Samples (k) = 8
c = 0.166667
99% Prediction Limit (Tk) = 9.83991
95% Prediction Limit (Tk) = 7.98293

Samples	Sum	95 %tile	99 %tile
8	4.27	FALSE	FALSE

Well: ECMW-11

Number of comparisons = 8
Future Samples (k) = 8
c = 0.166667
99% Prediction Limit (Tk) = 9.83991
95% Prediction Limit (Tk) = 7.98293

Samples	Sum	95 %tile	99 %tile
8	125.05	TRUE	TRUE

Well: ECMW-12

Number of comparisons = 8
Future Samples (k) = 8
c = 0.166667
99% Prediction Limit (Tk) = 9.83991
95% Prediction Limit (Tk) = 7.98293

Samples	Sum	95 %tile	99 %tile
8	14.95	TRUE	TRUE

Well: ECMW-13

Number of comparisons = 8
Future Samples (k) = 8
c = 0.166667
99% Prediction Limit (Tk) = 9.83991
95% Prediction Limit (Tk) = 7.98293

Samples	Sum	95 %tile	99 %tile
8	4.01	FALSE	FALSE

Well: ECMW-14

Number of comparisons = 8
Future Samples (k) = 8
c = 0.166667
99% Prediction Limit (Tk) = 9.83991
95% Prediction Limit (Tk) = 7.98293

Samples	Sum	95 %tile	99 %tile
8	4	FALSE	FALSE

Well: ECMW-15

Number of comparisons = 8
Future Samples (k) = 8
c = 0.166667
99% Prediction Limit (Tk) = 9.83991
95% Prediction Limit (Tk) = 7.98293

Samples	Sum	95 %tile	99 %tile
8	7.57	FALSE	FALSE

Well: ECMW-16

Number of comparisons = 8
Future Samples (k) = 8
c = 0.166667
99% Prediction Limit (Tk) = 9.83991
95% Prediction Limit (Tk) = 7.98293

Samples	Sum	95 %tile	99 %tile
8	63.1	TRUE	TRUE

Well: ECMW-17

Number of comparisons = 8
Future Samples (k) = 8
c = 0.166667
99% Prediction Limit (Tk) = 9.83991
95% Prediction Limit (Tk) = 7.98293

Samples	Sum	95 %tile	99 %tile
8	30.5	TRUE	TRUE

Well: ECMW-18

Number of comparisons = 8
Future Samples (k) = 8
c = 0.166667
99% Prediction Limit (Tk) = 9.83991
95% Prediction Limit (Tk) = 7.98293

Samples	Sum	95 %tile	99 %tile
8	9.35	TRUE	FALSE

Well: ECMW-4

Number of comparisons = 8
Future Samples (k) = 8
c = 0.166667
99% Prediction Limit (Tk) = 9.83991
95% Prediction Limit (Tk) = 7.98293

Samples	Sum	95 %tile	99 %tile
8	4.32	FALSE	FALSE

Well: ECMW-5

Number of comparisons = 8
Future Samples (k) = 8
c = 0.166667
99% Prediction Limit (Tk) = 9.83991
95% Prediction Limit (Tk) = 7.98293

Samples	Sum	95 %tile	99 %tile
8	4.09	FALSE	FALSE

Well: ECMW-6

Number of comparisons = 8
Future Samples (k) = 8
c = 0.166667
99% Prediction Limit (Tk) = 9.83991
95% Prediction Limit (Tk) = 7.98293

Samples	Sum	95 %tile	99 %tile
8	170.62	TRUE	TRUE

Well: ECMW-7

Number of comparisons = 8
Future Samples (k) = 8
c = 0.166667
99% Prediction Limit (Tk) = 9.83991
95% Prediction Limit (Tk) = 7.98293

Samples	Sum	95 %tile	99 %tile
8	1264.3	TRUE	TRUE

Well: ECMW-8

Number of comparisons = 8
Future Samples (k) = 8
c = 0.166667
99% Prediction Limit (Tk) = 9.83991
95% Prediction Limit (Tk) = 7.98293

Samples	Sum	95 %tile	99 %tile
8	817.7	TRUE	TRUE

Well: ECMW-9

Number of comparisons = 8
Future Samples (k) = 8
c = 0.166667
99% Prediction Limit (Tk) = 9.83991
95% Prediction Limit (Tk) = 7.98293

Samples	Sum	95 %tile	99 %tile
8	4.84	FALSE	FALSE

NITRATE-N

UNTRANSFORMED SHAPIRO-WILKES NORMALITY

Shapiro-Wilks Test of Normality

Parameter: Nitrate-N

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Background Wells (ECMW-1, ECMW-2, ECMW-3)

K = 24; Samples = 48

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	0.5	4.79	4.29	0.3789	1.62548
2	0.5	4.26	3.76	0.2604	0.979104
3	0.5	3.81	3.31	0.2281	0.755011
4	0.5	3.68	3.18	0.2045	0.65031
5	0.5	3.18	2.68	0.1855	0.49714
6	0.5	2.88	2.38	0.1693	0.402934
7	0.5	2.74	2.24	0.1551	0.347424
8	0.5	2.73	2.23	0.1423	0.317329
9	0.5	2.55	2.05	0.1306	0.26773
10	0.5	2.4	1.9	0.1197	0.22743
11	0.5	2.01	1.51	0.1095	0.165345
12	0.5	1.83	1.33	0.0998	0.132734
13	0.5	1.8	1.3	0.0906	0.11778
14	0.5	1.6	1.1	0.0817	0.08987
15	0.5	1.56	1.06	0.0731	0.077486
16	0.5	1.47	0.97	0.0648	0.062856
17	0.5	0.5	0	0.0568	0
18	0.5	0.5	0	0.0489	0
19	0.5	0.5	0	0.0411	0
20	0.5	0.5	0	0.0335	0
21	0.5	0.5	0	0.0259	0
22	0.5	0.5	0	0.0185	0
23	0.5	0.5	0	0.0111	0
24	0.5	0.5	0	0.0037	0
25	0.5	0.5	0		
26	0.5	0.5	0		
27	0.5	0.5	0		
28	0.5	0.5	0		
29	0.5	0.5	0		
30	0.5	0.5	0		
31	0.5	0.5	0		
32	0.5	0.5	0		
33	1.47	0.5	-0.97		
34	1.56	0.5	-1.06		
35	1.6	0.5	-1.1		
36	1.8	0.5	-1.3		
37	1.83	0.5	-1.33		
38	2.01	0.5	-1.51		
39	2.4	0.5	-1.9		
40	2.55	0.5	-2.05		
41	2.73	0.5	-2.23		
42	2.74	0.5	-2.24		
43	2.88	0.5	-2.38		
44	3.18	0.5	-2.68		
45	3.68	0.5	-3.18		
46	3.81	0.5	-3.31		
47	4.26	0.5	-3.76		
48	4.79	0.5	-4.29		

Sum of b values = 6.71596

Sample Standard Deviation = 1.19688
W Statistic = 0.669917
5% Critical value of 0.947 exceeds 0.669917
Evidence of non-normality at 95% level of significance
1% Critical value of 0.929 exceeds 0.669917
Evidence of non-normality at 99% level of significance

Well: ECMW-1

K = 8; Samples = 16

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	1.47	4.79	3.32	0.5056	1.67859
2	1.56	4.26	2.7	0.329	0.8883
3	1.6	3.81	2.21	0.2521	0.557141
4	1.8	3.68	1.88	0.1939	0.364532
5	1.83	3.18	1.35	0.1447	0.195345
6	2.01	2.88	0.87	0.1005	0.087435
7	2.4	2.74	0.34	0.0593	0.020162
8	2.55	2.73	0.18	0.0196	0.003528
9	2.73	2.55	-0.18		
10	2.74	2.4	-0.34		
11	2.88	2.01	-0.87		
12	3.18	1.83	-1.35		
13	3.68	1.8	-1.88		
14	3.81	1.6	-2.21		
15	4.26	1.56	-2.7		
16	4.79	1.47	-3.32		

Sum of b values = 3.79504
Sample Standard Deviation = 1.01446
W Statistic = 0.932972
5% Critical value of 0.887 is less than 0.932972
Data is normally distributed at 95% level of significance
1% Critical value of 0.844 is less than 0.932972
Data is normally distributed at 99% level of significance

Well: ECMW-2

100 % Non-detects

Well: ECMW-3

100 % Non-detects

Well: ECMW-4

K = 8; Samples = 16

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	0.5	8.5	8	0.5056	4.0448
2	0.5	6.39	5.89	0.329	1.93781
3	0.5	2.4	1.9	0.2521	0.47899
4	0.5	2.31	1.81	0.1939	0.350959
5	0.5	2.05	1.55	0.1447	0.224285
6	0.5	1.45	0.95	0.1005	0.095475
7	0.5	0.62	0.12	0.0593	0.007116
8	0.5	0.5	0	0.0196	0
9	0.5	0.5	0		
10	0.62	0.5	-0.12		
11	1.45	0.5	-0.95		
12	2.05	0.5	-1.55		
13	2.31	0.5	-1.81		
14	2.4	0.5	-1.9		
15	6.39	0.5	-5.89		
16	8.5	0.5	-8		

Sum of b values = 7.13943
Sample Standard Deviation = 2.35718
W Statistic = 0.611576
5% Critical value of 0.887 exceeds 0.611576
Evidence of non-normality at 95% level of significance
1% Critical value of 0.844 exceeds 0.611576
Evidence of non-normality at 99% level of significance

Well: ECMW-5

K = 8; Samples = 16

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	2.4	3.75	1.35	0.5056	0.68256
2	3.18	3.75	0.57	0.329	0.18753
3	3.19	3.66	0.47	0.2521	0.118487
4	3.26	3.6	0.34	0.1939	0.065926
5	3.27	3.6	0.33	0.1447	0.047751
6	3.33	3.54	0.21	0.1005	0.021105
7	3.35	3.53	0.18	0.0593	0.010674
8	3.41	3.47	0.06	0.0196	0.001176
9	3.47	3.41	-0.06		
10	3.53	3.35	-0.18		
11	3.54	3.33	-0.21		
12	3.6	3.27	-0.33		
13	3.6	3.26	-0.34		
14	3.66	3.19	-0.47		
15	3.75	3.18	-0.57		
16	3.75	2.4	-1.35		

Sum of b values = 1.13521
Sample Standard Deviation = 0.323496
W Statistic = 0.820962
5% Critical value of 0.887 exceeds 0.820962
Evidence of non-normality at 95% level of significance
1% Critical value of 0.844 exceeds 0.820962
Evidence of non-normality at 99% level of significance

Well: ECMW-6

K = 8; Samples = 16

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	298	1140	842	0.5056	425.715
2	326	1130	804	0.329	264.516
3	459	1130	671	0.2521	169.159
4	588	915	327	0.1939	63.4053
5	608	868	260	0.1447	37.622
6	661	865	204	0.1005	20.502
7	681	857	176	0.0593	10.4368
8	826	835	9	0.0196	0.1764
9	835	826	-9		
10	857	681	-176		
11	865	661	-204		
12	868	608	-260		
13	915	588	-327		
14	1130	459	-671		
15	1130	326	-804		
16	1140	298	-842		

Sum of b values = 991.533
Sample Standard Deviation = 263.994
W Statistic = 0.940451
5% Critical value of 0.887 is less than 0.940451
Data is normally distributed at 95% level of significance
1% Critical value of 0.844 is less than 0.940451
Data is normally distributed at 99% level of significance

Well: ECMW-7

K = 8; Samples = 16

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	76	953	877	0.5056	443.411
2	141	563	422	0.329	138.838
3	150	480	330	0.2521	83.193
4	152	370	218	0.1939	42.2702
5	186	358	172	0.1447	24.8884
6	294	344	50	0.1005	5.025
7	300	337	37	0.0593	2.1941
8	310	336	26	0.0196	0.5096
9	336	310	-26		
10	337	300	-37		
11	344	294	-50		
12	358	186	-172		
13	370	152	-218		
14	480	150	-330		
15	563	141	-422		
16	953	76	-877		

Sum of b values = 740.33
Sample Standard Deviation = 208.955
W Statistic = 0.836865
5% Critical value of 0.887 exceeds 0.836865
Evidence of non-normality at 95% level of significance
1% Critical value of 0.844 exceeds 0.836865
Evidence of non-normality at 99% level of significance

Well: ECMW-8

K = 7; Samples = 15

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	126	1330	1204	0.515	620.06
2	142	1250	1108	0.3306	366.305
3	203	1200	997	0.2495	248.751
4	298	1080	782	0.1878	146.86
5	304	1030	726	0.1353	98.2278
6	354	524	170	0.088	14.96
7	392	472	80	0.0433	3.464
8	464	464	0		
9	472	392	-80		
10	524	354	-170		
11	1030	304	-726		
12	1080	298	-782		
13	1200	203	-997		
14	1250	142	-1108		
15	1330	126	-1204		

Sum of b values = 1498.63
Sample Standard Deviation = 434.585
W Statistic = 0.849395
5% Critical value of 0.881 exceeds 0.849395
Evidence of non-normality at 95% level of significance
1% Critical value of 0.835 is less than 0.849395
Data is normally distributed at 99% level of significance

Well: ECMW-9 WITH OUTLIERS

K = 8; Samples = 16

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	24	146	122	0.5056	61.6832
2	24.4	59	34.6	0.329	11.3834
3	24.6	31.5	6.9	0.2521	1.73949
4	25.3	30.6	5.3	0.1939	1.02767
5	26.3	29.2	2.9	0.1447	0.41963
6	26.3	28.8	2.5	0.1005	0.25125
7	26.7	28.4	1.7	0.0593	0.10081
8	27.4	28	0.6	0.0196	0.01176
9	28	27.4	-0.6		
10	28.4	26.7	-1.7		
11	28.8	26.3	-2.5		
12	29.2	26.3	-2.9		
13	30.6	25.3	-5.3		
14	31.5	24.6	-6.9		
15	59	24.4	-34.6		
16	146	24	-122		

Sum of b values = 76.6172
Sample Standard Deviation = 30.2908
W Statistic = 0.42652
5% Critical value of 0.887 exceeds 0.42652
Evidence of non-normality at 95% level of significance
1% Critical value of 0.844 exceeds 0.42652
Evidence of non-normality at 99% level of significance

Well: ECMW-9 WITHOUT OUTLIERS

K = 7; Samples = 14

i	x(i)	x(n-i+1)		x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	24	31.5	7.5	0.5251	3.93825	
2	24.4	30.6	6.2	0.3318	2.05716	
3	24.6	29.2	4.6	0.246	1.1316	
4	25.3	28.8	3.5	0.1802	0.6307	
5	26.3	28.4	2.1	0.124	0.2604	
6	26.3	28	1.7	0.0727	0.12359	
7	26.7	27.4	0.7	0.024	0.0168	
8	27.4	26.7	-0.7			
9	28	26.3	-1.7			
10	28.4	26.3	-2.1			
11	28.8	25.3	-3.5			
12	29.2	24.6	-4.6			
13	30.6	24.4	-6.2			
14	31.5	24	-7.5			

Sum of b values = 8.1585
Sample Standard Deviation = 2.30409
W Statistic = 0.964444
5% Critical value of 0.874 is less than 0.964444
Data is normally distributed at 95% level of significance
1% Critical value of 0.825 is less than 0.964444
Data is normally distributed at 99% level of significance

Well: ECMW-10

K = 8; Samples = 16

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	70.4	156	85.6	0.5056	43.2794
2	94.4	153	58.6	0.329	19.2794
3	114	148	34	0.2521	8.5714
4	115	147	32	0.1939	6.2048
5	118	138	20	0.1447	2.894
6	119	137	18	0.1005	1.809
7	123	135	12	0.0593	0.7116
8	123	126	3	0.0196	0.0588
9	126	123	-3		
10	135	123	-12		
11	137	119	-18		
12	138	118	-20		
13	147	115	-32		
14	148	114	-34		
15	153	94.4	-58.6		
16	156	70.4	-85.6		

Sum of b values = 82.8084
Sample Standard Deviation = 22.1899
W Statistic = 0.928423
5% Critical value of 0.887 is less than 0.928423
Data is normally distributed at 95% level of significance
1% Critical value of 0.844 is less than 0.928423
Data is normally distributed at 99% level of significance

Well: ECMW-11

K = 7; Samples = 15

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	4.24	21.9	17.66	0.515	9.0949
2	6.02	13.6	7.58	0.3306	2.50595
3	6.12	13.5	7.38	0.2495	1.84131
4	6.26	11.1	4.84	0.1878	0.908952
5	6.46	9.85	3.39	0.1353	0.458667
6	6.68	9.22	2.54	0.088	0.22352
7	6.72	8.79	2.07	0.0433	0.089631
8	7.99	7.99	0		
9	8.79	6.72	-2.07		
10	9.22	6.68	-2.54		
11	9.85	6.46	-3.39		
12	11.1	6.26	-4.84		
13	13.5	6.12	-7.38		
14	13.6	6.02	-7.58		
15	21.9	4.24	-17.66		

Sum of b values = 15.1229
Sample Standard Deviation = 4.45328
W Statistic = 0.823727
5% Critical value of 0.881 exceeds 0.823727
Evidence of non-normality at 95% level of significance
1% Critical value of 0.835 exceeds 0.823727
Evidence of non-normality at 99% level of significance

Well: ECMW-12

100 % Non-detects

Well: ECMW-13

K = 8; Samples = 16

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	0.5	0.72	0.22	0.5056	0.111232
2	0.5	0.62	0.12	0.329	0.03948
3	0.5	0.5	0	0.2521	0
4	0.5	0.5	0	0.1939	0
5	0.5	0.5	0	0.1447	0
6	0.5	0.5	0	0.1005	0
7	0.5	0.5	0	0.0593	0
8	0.5	0.5	0	0.0196	0
9	0.5	0.5	0		
10	0.5	0.5	0		
11	0.5	0.5	0		
12	0.5	0.5	0		
13	0.5	0.5	0		
14	0.5	0.5	0		
15	0.62	0.5	-0.12		
16	0.72	0.5	-0.22		

Sum of b values = 0.150712
Sample Standard Deviation = 0.0608687
W Statistic = 0.408711
5% Critical value of 0.887 exceeds 0.408711
Evidence of non-normality at 95% level of significance
1% Critical value of 0.844 exceeds 0.408711
Evidence of non-normality at 99% level of significance

Well: ECMW-14

K = 8; Samples = 16

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	16.1	75	58.9	0.5056	29.7798
2	17	62.4	45.4	0.329	14.9366
3	20.3	57.7	37.4	0.2521	9.42854
4	21.7	47.3	25.6	0.1939	4.96384
5	23.1	44.9	21.8	0.1447	3.15446
6	23.4	33.4	10	0.1005	1.005
7	24.5	32.6	8.1	0.0593	0.48033
8	25.2	26.5	1.3	0.0196	0.02548
9	26.5	25.2	-1.3		
10	32.6	24.5	-8.1		
11	33.4	23.4	-10		
12	44.9	23.1	-21.8		
13	47.3	21.7	-25.6		
14	57.7	20.3	-37.4		
15	62.4	17	-45.4		
16	75	16.1	-58.9		

Sum of b values = 63.7741
Sample Standard Deviation = 17.7907
W Statistic = 0.856668
5% Critical value of 0.887 exceeds 0.856668
Evidence of non-normality at 95% level of significance
1% Critical value of 0.844 is less than 0.856668
Data is normally distributed at 99% level of significance

Well: ECMW-15

K = 8; Samples = 16

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	4.52	19.1	14.58	0.5056	7.37165
2	6.82	18.2	11.38	0.329	3.74402
3	7.42	12.6	5.18	0.2521	1.30588
4	7.62	12.2	4.58	0.1939	0.888062
5	7.63	10.7	3.07	0.1447	0.444229
6	7.66	9.81	2.15	0.1005	0.216075
7	8.22	9.62	1.4	0.0593	0.08302
8	9.45	9.52	0.07	0.0196	0.001372
9	9.52	9.45	-0.07		
10	9.62	8.22	-1.4		
11	9.81	7.66	-2.15		
12	10.7	7.63	-3.07		
13	12.2	7.62	-4.58		
14	12.6	7.42	-5.18		
15	18.2	6.82	-11.38		
16	19.1	4.52	-14.58		

Sum of b values = 14.0543
Sample Standard Deviation = 3.91155
W Statistic = 0.860655
5% Critical value of 0.887 exceeds 0.860655
Evidence of non-normality at 95% level of significance
1% Critical value of 0.844 is less than 0.860655
Data is normally distributed at 99% level of significance

Well: ECMW-16

K = 8; Samples = 16

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	31.9	134	102.1	0.5056	51.6218
2	34.8	90.8	56	0.329	18.424
3	38.2	89.4	51.2	0.2521	12.9075
4	40.2	72.8	32.6	0.1939	6.32114
5	43.1	72.5	29.4	0.1447	4.25418
6	44.3	72.3	28	0.1005	2.814
7	47.1	72	24.9	0.0593	1.47657
8	58.4	59	0.6	0.0196	0.01176
9	59	58.4	-0.6		
10	72	47.1	-24.9		
11	72.3	44.3	-28		
12	72.5	43.1	-29.4		
13	72.8	40.2	-32.6		
14	89.4	38.2	-51.2		
15	90.8	34.8	-56		
16	134	31.9	-102.1		

Sum of b values = 97.8309
Sample Standard Deviation = 26.8258
W Statistic = 0.886658
5% Critical value of 0.887 exceeds 0.886658
Evidence of non-normality at 95% level of significance
1% Critical value of 0.844 is less than 0.886658
Data is normally distributed at 99% level of significance

Well: ECMW-17

K = 8; Samples = 16

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	53.3	219	165.7	0.5056	83.7779
2	54.2	134	79.8	0.329	26.2542
3	64.3	129	64.7	0.2521	16.3109
4	67.6	106	38.4	0.1939	7.44576
5	74.7	101	26.3	0.1447	3.80561
6	77.3	92	14.7	0.1005	1.47735
7	78.4	83.6	5.2	0.0593	0.30836
8	81.3	83.4	2.1	0.0196	0.04116
9	83.4	81.3	-2.1		
10	83.6	78.4	-5.2		
11	92	77.3	-14.7		
12	101	74.7	-26.3		
13	106	67.6	-38.4		
14	129	64.3	-64.7		
15	134	54.2	-79.8		
16	219	53.3	-165.7		

Sum of b values = 139.421
Sample Standard Deviation = 40.6133
W Statistic = 0.785651
5% Critical value of 0.887 exceeds 0.785651
Evidence of non-normality at 95% level of significance
1% Critical value of 0.844 exceeds 0.785651
Evidence of non-normality at 99% level of significance

Well: ECMW-18

K = 7; Samples = 14

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	0.5	113	112.5	0.5251	59.0738
2	0.5	0.5	0	0.3318	0
3	0.5	0.5	0	0.246	0
4	0.5	0.5	0	0.1802	0
5	0.5	0.5	0	0.124	0
6	0.5	0.5	0	0.0727	0
7	0.5	0.5	0	0.024	0
8	0.5	0.5	0		
9	0.5	0.5	0		
10	0.5	0.5	0		
11	0.5	0.5	0		
12	0.5	0.5	0		
13	0.5	0.5	0		
14	113	0.5	-112.5		

Sum of b values = 59.0738
Sample Standard Deviation = 30.0669
W Statistic = 0.29694
5% Critical value of 0.874 exceeds 0.29694
Evidence of non-normality at 95% level of significance
1% Critical value of 0.825 exceeds 0.29694
Evidence of non-normality at 99% level of significance

LN TRANSFORMED SHAPIRO-WILKES NORMALITY

Shapiro-Wilks Test of Normality

Parameter: Nitrate-N

Natural Logarithm Transformation

Non-Detects Replaced with Detection Limit

Background Wells (ECMW-1, ECMW-2, ECMW-3)

K = 24; Samples = 48

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	-0.693147	1.56653	2.25968	0.3789	0.856192
2	-0.693147	1.44927	2.14242	0.2604	0.557885
3	-0.693147	1.33763	2.03078	0.2281	0.46322
4	-0.693147	1.30291	1.99606	0.2045	0.408194
5	-0.693147	1.15688	1.85003	0.1855	0.34318
6	-0.693147	1.05779	1.75094	0.1693	0.296434
7	-0.693147	1.00796	1.70111	0.1551	0.263841
8	-0.693147	1.0043	1.69745	0.1423	0.241547
9	-0.693147	0.936093	1.62924	0.1306	0.212779
10	-0.693147	0.875469	1.56862	0.1197	0.187763
11	-0.693147	0.698135	1.39128	0.1095	0.152345
12	-0.693147	0.604316	1.29746	0.0998	0.129487
13	-0.693147	0.587787	1.28093	0.0906	0.116053
14	-0.693147	0.470004	1.16315	0.0817	0.0950294
15	-0.693147	0.444686	1.13783	0.0731	0.0831756
16	-0.693147	0.385262	1.07841	0.0648	0.0698809
17	-0.693147	-0.693147	0	0.0568	0
18	-0.693147	-0.693147	0	0.0489	0
19	-0.693147	-0.693147	0	0.0411	0
20	-0.693147	-0.693147	0	0.0335	0
21	-0.693147	-0.693147	0	0.0259	0
22	-0.693147	-0.693147	0	0.0185	0
23	-0.693147	-0.693147	0	0.0111	0
24	-0.693147	-0.693147	0	0.0037	0
25	-0.693147	-0.693147	0		
26	-0.693147	-0.693147	0		
27	-0.693147	-0.693147	0		
28	-0.693147	-0.693147	0		
29	-0.693147	-0.693147	0		
30	-0.693147	-0.693147	0		
31	-0.693147	-0.693147	0		
32	-0.693147	-0.693147	0		
33	0.385262	-0.693147	-1.07841		
34	0.444686	-0.693147	-1.13783		
35	0.470004	-0.693147	-1.16315		
36	0.587787	-0.693147	-1.28093		
37	0.604316	-0.693147	-1.29746		
38	0.698135	-0.693147	-1.39128		
39	0.875469	-0.693147	-1.56862		
40	0.936093	-0.693147	-1.62924		
41	1.0043	-0.693147	-1.69745		
42	1.00796	-0.693147	-1.70111		
43	1.05779	-0.693147	-1.75094		
44	1.15688	-0.693147	-1.85003		
45	1.30291	-0.693147	-1.99606		
46	1.33763	-0.693147	-2.03078		
47	1.44927	-0.693147	-2.14242		
48	1.56653	-0.693147	-2.25968		

Sum of b values = 4.47701
Sample Standard Deviation = 0.801549
W Statistic = 0.66377

5% Critical value of 0.947 exceeds 0.66377
Evidence of non-normality at 95% level of significance
1% Critical value of 0.929 exceeds 0.66377
Evidence of non-normality at 99% level of significance

Well: ECMW-1

K = 8; Samples = 16

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	0.385262	1.56653	1.18127	0.5056	0.597249
2	0.444686	1.44927	1.00458	0.329	0.330508
3	0.470004	1.33763	0.867626	0.2521	0.218728
4	0.587787	1.30291	0.715126	0.1939	0.138663
5	0.604316	1.15688	0.552565	0.1447	0.0799562
6	0.698135	1.05779	0.359656	0.1005	0.0361454
7	0.875469	1.00796	0.132489	0.0593	0.00785661
8	0.936093	1.0043	0.0682083	0.0196	0.00133688
9	1.0043	0.936093	-0.0682083		
10	1.00796	0.875469	-0.132489		
11	1.05779	0.698135	-0.359656		
12	1.15688	0.604316	-0.552565		
13	1.30291	0.587787	-0.715126		
14	1.33763	0.470004	-0.867626		
15	1.44927	0.444686	-1.00458		
16	1.56653	0.385262	-1.18127		

Sum of b values = 1.41044
Sample Standard Deviation = 0.372671
W Statistic = 0.954923
5% Critical value of 0.887 is less than 0.954923
Data is normally distributed at 95% level of significance
1% Critical value of 0.844 is less than 0.954923
Data is normally distributed at 99% level of significance

Well: ECMW-2

100 % Non-detects

Well: ECMW-3

100 % Non-detects

Well: ECMW-4

K = 8; Samples = 16

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	-0.693147	2.14007	2.83321	0.5056	1.43247
2	-0.693147	1.85473	2.54788	0.329	0.838253
3	-0.693147	0.875469	1.56862	0.2521	0.395448
4	-0.693147	0.837248	1.53039	0.1939	0.296744
5	-0.693147	0.71784	1.41099	0.1447	0.20417
6	-0.693147	0.371564	1.06471	0.1005	0.107003
7	-0.693147	-0.478036	0.215111	0.0593	0.0127561
8	-0.693147	-0.693147	0	0.0196	0
9	-0.693147	-0.693147	0		
10	-0.478036	-0.693147	-0.215111		
11	0.371564	-0.693147	-1.06471		
12	0.71784	-0.693147	-1.41099		
13	0.837248	-0.693147	-1.53039		
14	0.875469	-0.693147	-1.56862		
15	1.85473	-0.693147	-2.54788		
16	2.14007	-0.693147	-2.83321		

Sum of b values = 3.28685
Sample Standard Deviation = 0.98971
W Statistic = 0.735278
5% Critical value of 0.887 exceeds 0.735278
Evidence of non-normality at 95% level of significance
1% Critical value of 0.844 exceeds 0.735278
Evidence of non-normality at 99% level of significance

Well: ECMW-5

K = 8; Samples = 16

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	0.875469	1.32176	0.446287	0.5056	0.225643
2	1.15688	1.32176	0.164875	0.329	0.0542438
3	1.16002	1.29746	0.137442	0.2521	0.0346492
4	1.18173	1.28093	0.0992067	0.1939	0.0192362
5	1.18479	1.28093	0.0961439	0.1447	0.013912
6	1.20297	1.26413	0.0611544	0.1005	0.00614602
7	1.20896	1.2613	0.0523375	0.0593	0.00310362
8	1.22671	1.24415	0.0174423	0.0196	0.000341869
9	1.24415	1.22671	-0.0174423		
10	1.2613	1.20896	-0.0523375		
11	1.26413	1.20297	-0.0611544		
12	1.28093	1.18479	-0.0961439		
13	1.28093	1.18173	-0.0992067		
14	1.29746	1.16002	-0.137442		
15	1.32176	1.15688	-0.164875		
16	1.32176	0.875469	-0.446287		

Sum of b values = 0.357275
Sample Standard Deviation = 0.105723
W Statistic = 0.76134
5% Critical value of 0.887 exceeds 0.76134
Evidence of non-normality at 95% level of significance
1% Critical value of 0.844 exceeds 0.76134
Evidence of non-normality at 99% level of significance

Well: ECMW-6

K = 8; Samples = 16

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	5.69709	7.03878	1.34169	0.5056	0.678358
2	5.7869	7.02997	1.24308	0.329	0.408972
3	6.12905	7.02997	0.900923	0.2521	0.227123
4	6.37673	6.81892	0.442197	0.1939	0.085742
5	6.41017	6.76619	0.356017	0.1447	0.0515156
6	6.49375	6.76273	0.268976	0.1005	0.0270321
7	6.52356	6.75344	0.229876	0.0593	0.0136316
8	6.71659	6.72743	0.010837	0.0196	0.000212404
9	6.72743	6.71659	-0.010837		
10	6.75344	6.52356	-0.229876		
11	6.76273	6.49375	-0.268976		
12	6.76619	6.41017	-0.356017		
13	6.81892	6.37673	-0.442197		
14	7.02997	6.12905	-0.900923		
15	7.02997	5.7869	-1.24308		
16	7.03878	5.69709	-1.34169		

Sum of b values = 1.49259
Sample Standard Deviation = 0.408308
W Statistic = 0.890863
5% Critical value of 0.887 is less than 0.890863

Data is normally distributed at 95% level of significance
1% Critical value of 0.844 is less than 0.890863
Data is normally distributed at 99% level of significance

Well: ECMW-7

K = 8; Samples = 16

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	4.33073	6.85961	2.52888	0.5056	1.2786
2	4.94876	6.33328	1.38452	0.329	0.455507
3	5.01064	6.17379	1.16315	0.2521	0.29323
4	5.02388	5.9135	0.889622	0.1939	0.172498
5	5.22575	5.88053	0.654786	0.1447	0.0947476
6	5.68358	5.84064	0.157062	0.1005	0.0157847
7	5.70378	5.82008	0.1163	0.0593	0.00689662
8	5.73657	5.81711	0.0805389	0.0196	0.00157856
9	5.81711	5.73657	-0.0805389		
10	5.82008	5.70378	-0.1163		
11	5.84064	5.68358	-0.157062		
12	5.88053	5.22575	-0.654786		
13	5.9135	5.02388	-0.889622		
14	6.17379	5.01064	-1.16315		
15	6.33328	4.94876	-1.38452		
16	6.85961	4.33073	-2.52888		

Sum of b values = 2.31885
Sample Standard Deviation = 0.613411
W Statistic = 0.952685
5% Critical value of 0.887 is less than 0.952685
Data is normally distributed at 95% level of significance
1% Critical value of 0.844 is less than 0.952685
Data is normally distributed at 99% level of significance

Well: ECMW-8

K = 7; Samples = 15

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	4.83628	7.19293	2.35665	0.515	1.21368
2	4.95583	7.1309	2.17507	0.3306	0.719079
3	5.31321	7.09008	1.77687	0.2495	0.443329
4	5.69709	6.98472	1.28762	0.1878	0.241816
5	5.71703	6.93731	1.22029	0.1353	0.165105
6	5.8693	6.26149	0.392195	0.088	0.0345131
7	5.97126	6.15698	0.185717	0.0433	0.00804155
8	6.13988	6.13988	0		
9	6.15698	5.97126	-0.185717		
10	6.26149	5.8693	-0.392195		
11	6.93731	5.71703	-1.22029		
12	6.98472	5.69709	-1.28762		
13	7.09008	5.31321	-1.77687		
14	7.1309	4.95583	-2.17507		
15	7.19293	4.83628	-2.35665		

Sum of b values = 2.82556
Sample Standard Deviation = 0.784596
W Statistic = 0.926379
5% Critical value of 0.881 is less than 0.926379
Data is normally distributed at 95% level of significance
1% Critical value of 0.835 is less than 0.926379
Data is normally distributed at 99% level of significance

Well: ECMW-9 WITH OUTLIERS

K = 8; Samples = 16

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	3.17805	4.98361	1.80555	0.5056	0.912887
2	3.19458	4.07754	0.882954	0.329	0.290492
3	3.20275	3.44999	0.247241	0.2521	0.0623295
4	3.2308	3.421	0.190196	0.1939	0.0368789
5	3.26957	3.37417	0.1046	0.1447	0.0151356
6	3.26957	3.36038	0.0908064	0.1005	0.00912605
7	3.28466	3.34639	0.0617256	0.0593	0.00366033
8	3.31054	3.3322	0.0216615	0.0196	0.000424565
9	3.3322	3.31054	-0.0216615		
10	3.34639	3.28466	-0.0617256		
11	3.36038	3.26957	-0.0908064		
12	3.37417	3.26957	-0.1046		
13	3.421	3.2308	-0.190196		
14	3.44999	3.20275	-0.247241		
15	4.07754	3.19458	-0.882954		
16	4.98361	3.17805	-1.80555		

Sum of b values = 1.33093
Sample Standard Deviation = 0.457879
W Statistic = 0.563275
5% Critical value of 0.887 exceeds 0.563275
Evidence of non-normality at 95% level of significance
1% Critical value of 0.844 exceeds 0.563275
Evidence of non-normality at 99% level of significance

Well: ECMW-9 WITHOUT OUTLIERS

K = 7; Samples = 14

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	3.17805	3.44999	0.271934	0.5251	0.142792
2	3.19458	3.421	0.226417	0.3318	0.0751251
3	3.20275	3.37417	0.171422	0.246	0.0421699
4	3.2308	3.36038	0.129571	0.1802	0.0233487
5	3.26957	3.34639	0.0768202	0.124	0.00952571
6	3.26957	3.3322	0.0626356	0.0727	0.00455361
7	3.28466	3.31054	0.0258794	0.024	0.000621107
8	3.31054	3.28466	-0.0258794		
9	3.3322	3.26957	-0.0626356		
10	3.34639	3.26957	-0.0768202		
11	3.36038	3.2308	-0.129571		
12	3.37417	3.20275	-0.171422		
13	3.421	3.19458	-0.226417		
14	3.44999	3.17805	-0.271934		

Sum of b values = 0.298137
Sample Standard Deviation = 0.0840592
W Statistic = 0.967645
5% Critical value of 0.874 is less than 0.967645
Data is normally distributed at 95% level of significance
1% Critical value of 0.825 is less than 0.967645
Data is normally distributed at 99% level of significance

Well: ECMW-10

K = 8; Samples = 16

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	4.25419	5.04986	0.795663	0.5056	0.402287
2	4.54754	5.03044	0.482897	0.329	0.158873
3	4.7362	4.99721	0.261014	0.2521	0.0658016
4	4.74493	4.99043	0.2455	0.1939	0.0476025
5	4.77068	4.92725	0.156569	0.1447	0.0226555
6	4.77912	4.91998	0.140857	0.1005	0.0141562
7	4.81218	4.90527	0.0930904	0.0593	0.00552026
8	4.81218	4.83628	0.0240976	0.0196	0.000472312
9	4.83628	4.81218	-0.0240976		
10	4.90527	4.81218	-0.0930904		
11	4.91998	4.77912	-0.140857		
12	4.92725	4.77068	-0.156569		
13	4.99043	4.74493	-0.2455		
14	4.99721	4.7362	-0.261014		
15	5.03044	4.54754	-0.482897		
16	5.04986	4.25419	-0.795663		

Sum of b values = 0.717369
Sample Standard Deviation = 0.199643
W Statistic = 0.86077
5% Critical value of 0.887 exceeds 0.86077
Evidence of non-normality at 95% level of significance
1% Critical value of 0.844 is less than 0.86077
Data is normally distributed at 99% level of significance

Well: ECMW-11

K = 7; Samples = 15

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	1.44456	3.08649	1.64192	0.515	0.845591
2	1.79509	2.61007	0.814983	0.3306	0.269433
3	1.81156	2.60269	0.791128	0.2495	0.197386
4	1.83418	2.40695	0.572765	0.1878	0.107565
5	1.86563	2.28747	0.421842	0.1353	0.0570752
6	1.89912	2.22138	0.322257	0.088	0.0283586
7	1.90509	2.17361	0.268527	0.0433	0.0116272
8	2.07819	2.07819	0		
9	2.17361	1.90509	-0.268527		
10	2.22138	1.89912	-0.322257		
11	2.28747	1.86563	-0.421842		
12	2.40695	1.83418	-0.572765		
13	2.60269	1.81156	-0.791128		
14	2.61007	1.79509	-0.814983		
15	3.08649	1.44456	-1.64192		

Sum of b values = 1.51704
Sample Standard Deviation = 0.416408
W Statistic = 0.948038
5% Critical value of 0.881 is less than 0.948038
Data is normally distributed at 95% level of significance
1% Critical value of 0.835 is less than 0.948038
Data is normally distributed at 99% level of significance

Well: ECMW-12

100 % Non-detects

Well: ECMW-13

K = 8; Samples = 16

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	-0.693147	-0.328504	0.364643	0.5056	0.184364
2	-0.693147	-0.478036	0.215111	0.329	0.0707716
3	-0.693147	-0.693147	0	0.2521	0
4	-0.693147	-0.693147	0	0.1939	0
5	-0.693147	-0.693147	0	0.1447	0
6	-0.693147	-0.693147	0	0.1005	0
7	-0.693147	-0.693147	0	0.0593	0
8	-0.693147	-0.693147	0	0.0196	0
9	-0.693147	-0.693147	0		
10	-0.693147	-0.693147	0		
11	-0.693147	-0.693147	0		
12	-0.693147	-0.693147	0		
13	-0.693147	-0.693147	0		
14	-0.693147	-0.693147	0		
15	-0.478036	-0.693147	-0.215111		
16	-0.328504	-0.693147	-0.364643		

Sum of b values = 0.255135
Sample Standard Deviation = 0.102707
W Statistic = 0.411388
5% Critical value of 0.887 exceeds 0.411388
Evidence of non-normality at 95% level of significance
1% Critical value of 0.844 exceeds 0.411388
Evidence of non-normality at 99% level of significance

Well: ECMW-14

K = 8; Samples = 16

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	2.77882	4.31749	1.53867	0.5056	0.777951
2	2.83321	4.13357	1.30035	0.329	0.427816
3	3.01062	4.05526	1.04464	0.2521	0.263353
4	3.07731	3.85651	0.779198	0.1939	0.151086
5	3.13983	3.80444	0.664605	0.1447	0.0961684
6	3.15274	3.50856	0.35582	0.1005	0.0357599
7	3.19867	3.48431	0.285639	0.0593	0.0169384
8	3.22684	3.27714	0.0503007	0.0196	0.000985894
9	3.27714	3.22684	-0.0503007		
10	3.48431	3.19867	-0.285639		
11	3.50856	3.15274	-0.35582		
12	3.80444	3.13983	-0.664605		
13	3.85651	3.07731	-0.779198		
14	4.05526	3.01062	-1.04464		
15	4.13357	2.83321	-1.30035		
16	4.31749	2.77882	-1.53867		

Sum of b values = 1.77006
Sample Standard Deviation = 0.473601
W Statistic = 0.931236
5% Critical value of 0.887 is less than 0.931236
Data is normally distributed at 95% level of significance
1% Critical value of 0.844 is less than 0.931236
Data is normally distributed at 99% level of significance

Well: ECMW-15

K = 8; Samples = 16

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	1.50851	2.94969	1.44118	0.5056	0.728659
2	1.91986	2.90142	0.981562	0.329	0.322934
3	2.00418	2.5337	0.529518	0.2521	0.133491
4	2.03078	2.50144	0.47066	0.1939	0.0912609
5	2.03209	2.37024	0.338156	0.1447	0.0489312
6	2.03601	2.2834	0.24739	0.1005	0.0248627
7	2.10657	2.26384	0.157274	0.0593	0.00932635
8	2.24601	2.25339	0.00738011	0.0196	0.00014465
9	2.25339	2.24601	-0.00738011		
10	2.26384	2.10657	-0.157274		
11	2.2834	2.03601	-0.24739		
12	2.37024	2.03209	-0.338156		
13	2.50144	2.03078	-0.47066		
14	2.5337	2.00418	-0.529518		
15	2.90142	1.91986	-0.981562		
16	2.94969	1.50851	-1.44118		

Sum of b values = 1.35961
Sample Standard Deviation = 0.360955
W Statistic = 0.94587
5% Critical value of 0.887 is less than 0.94587
Data is normally distributed at 95% level of significance
1% Critical value of 0.844 is less than 0.94587
Data is normally distributed at 99% level of significance

Well: ECMW-16

K = 8; Samples = 16

i	x(i)	(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	3.46261	4.89784	1.43523	0.5056	0.725654
2	3.54962	4.50866	0.959042	0.329	0.315525
3	3.64284	4.49312	0.850285	0.2521	0.214357
4	3.69387	4.28772	0.593849	0.1939	0.115147
5	3.76352	4.28359	0.520064	0.1447	0.0752532
6	3.79098	4.28082	0.489839	0.1005	0.0492289
7	3.85227	4.27667	0.424393	0.0593	0.0251665
8	4.06732	4.07754	0.0102216	0.0196	0.000200342
9	4.07754	4.06732	-0.0102216		
10	4.27667	3.85227	-0.424393		
11	4.28082	3.79098	-0.489839		
12	4.28359	3.76352	-0.520064		
13	4.28772	3.69387	-0.593849		
14	4.49312	3.64284	-0.850285		
15	4.50866	3.54962	-0.959042		
16	4.89784	3.46261	-1.43523		

Sum of b values = 1.52053
Sample Standard Deviation = 0.401463
W Statistic = 0.956333
5% Critical value of 0.887 is less than 0.956333
Data is normally distributed at 95% level of significance
1% Critical value of 0.844 is less than 0.956333
Data is normally distributed at 99% level of significance

Well: ECMW-17

K = 8; Samples = 16

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	3.97594	5.38907	1.41314	0.5056	0.714481
2	3.99268	4.89784	0.905159	0.329	0.297797
3	4.16356	4.85981	0.696253	0.2521	0.175525
4	4.21361	4.66344	0.449831	0.1939	0.0872223
5	4.31348	4.61512	0.30164	0.1447	0.0436474
6	4.34769	4.52179	0.174095	0.1005	0.0174965
7	4.36182	4.42604	0.0642196	0.0593	0.00380822
8	4.39815	4.42365	0.0255023	0.0196	0.000499845
9	4.42365	4.39815	-0.0255023		
10	4.42604	4.36182	-0.0642196		
11	4.52179	4.34769	-0.174095		
12	4.61512	4.31348	-0.30164		
13	4.66344	4.21361	-0.449831		
14	4.85981	4.16356	-0.696253		
15	4.89784	3.99268	-0.905159		
16	5.38907	3.97594	-1.41314		

Sum of b values = 1.34048
Sample Standard Deviation = 0.358953
W Statistic = 0.92972
5% Critical value of 0.887 is less than 0.92972
Data is normally distributed at 95% level of significance
1% Critical value of 0.844 is less than 0.92972
Data is normally distributed at 99% level of significance

Well: ECMW-18

K = 7; Samples = 14

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	-0.693147	4.72739	5.42053	0.5251	2.84632
2	-0.693147	-0.693147	0	0.3318	0
3	-0.693147	-0.693147	0	0.246	0
4	-0.693147	-0.693147	0	0.1802	0
5	-0.693147	-0.693147	0	0.124	0
6	-0.693147	-0.693147	0	0.0727	0
7	-0.693147	-0.693147	0	0.024	0
8	-0.693147	-0.693147	0		
9	-0.693147	-0.693147	0		
10	-0.693147	-0.693147	0		
11	-0.693147	-0.693147	0		
12	-0.693147	-0.693147	0		
13	-0.693147	-0.693147	0		
14	4.72739	-0.693147	-5.42053		

Sum of b values = 2.84632
Sample Standard Deviation = 1.4487
W Statistic = 0.29694
5% Critical value of 0.874 exceeds 0.29694
Evidence of non-normality at 95% level of significance
1% Critical value of 0.825 exceeds 0.29694
Evidence of non-normality at 99% level of significance

NON-PARAMETRIC PREDICTION LIMIT

Non-Parametric Prediction Interval

Inter-Well Comparison

Parameter: Nitrate-N

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total Percent Non-Detects = 29.3286%
Number of comparisons = 120
Future Samples (k) = 8
Recent Dates = 8
Background Samples (n) = 48
Maximum Background Concentration = 4.79
Confidence Level = 85.7%
False Positive Rate = 14.3%

Well	Date	Samples	Mean	Impacted
ECMW-10	1/25/2005	1	115	TRUE
ECMW-10	11/16/2004	1	94.4	TRUE
ECMW-10	9/14/2004	1	123	TRUE
ECMW-10	7/13/2004	1	114	TRUE
ECMW-10	5/18/2004	1	123	TRUE
ECMW-10	3/16/2004	1	135	TRUE
ECMW-10	1/28/2004	1	126	TRUE
ECMW-10	11/19/2003	1	119	TRUE
ECMW-11	11/17/2004	1	11.1	TRUE
ECMW-11	9/14/2004	1	9.85	TRUE
ECMW-11	7/13/2004	1	13.6	TRUE
ECMW-11	5/18/2004	1	13.5	TRUE
ECMW-11	3/16/2004	1	8.79	TRUE
ECMW-11	1/28/2004	1	6.72	TRUE
ECMW-11	11/19/2003	1	6.26	TRUE
ECMW-11	9/23/2003	1	4.24	FALSE
ECMW-12	1/26/2005	1	0.5	FALSE
ECMW-12	11/16/2004	1	0.5	FALSE
ECMW-12	9/15/2004	1	0.5	FALSE
ECMW-12	7/13/2004	1	0.5	FALSE
ECMW-12	5/19/2004	1	0.5	FALSE
ECMW-12	3/16/2004	1	0.5	FALSE
ECMW-12	1/28/2004	1	0.5	FALSE
ECMW-12	11/19/2003	1	0.5	FALSE
ECMW-13	1/26/2005	1	0.72	FALSE
ECMW-13	11/16/2004	1	0.5	FALSE
ECMW-13	9/14/2004	1	0.5	FALSE
ECMW-13	7/13/2004	1	0.5	FALSE
ECMW-13	5/18/2004	1	0.5	FALSE
ECMW-13	3/16/2004	1	0.5	FALSE
ECMW-13	1/28/2004	1	0.5	FALSE
ECMW-13	11/19/2003	1	0.62	FALSE
ECMW-14	1/26/2005	1	62.4	TRUE
ECMW-14	11/16/2004	1	21.7	TRUE
ECMW-14	9/14/2004	1	57.7	TRUE
ECMW-14	7/13/2004	1	47.3	TRUE
ECMW-14	5/18/2004	1	32.6	TRUE
ECMW-14	3/16/2004	1	33.4	TRUE
ECMW-14	1/28/2004	1	24.5	TRUE
ECMW-14	11/19/2003	1	16.1	TRUE

Well	Date	Samples	Mean	Impacted
ECMW-15	1/25/2005	1	7.62	TRUE
ECMW-15	11/16/2004	1	7.42	TRUE
ECMW-15	9/14/2004	1	8.22	TRUE
ECMW-15	7/13/2004	1	9.52	TRUE
ECMW-15	5/18/2004	1	6.82	TRUE
ECMW-15	3/16/2004	1	7.66	TRUE
ECMW-15	1/28/2004	1	4.52	FALSE
ECMW-15	11/19/2003	1	9.81	TRUE
ECMW-16	1/25/2005	1	43.1	TRUE
ECMW-16	11/16/2004	1	38.2	TRUE
ECMW-16	9/14/2004	1	47.1	TRUE
ECMW-16	7/13/2004	1	40.2	TRUE
ECMW-16	5/18/2004	1	31.9	TRUE
ECMW-16	3/16/2004	1	34.8	TRUE
ECMW-16	1/28/2004	1	59	TRUE
ECMW-16	11/19/2003	1	44.3	TRUE
ECMW-17	1/26/2005	1	53.3	TRUE
ECMW-17	11/16/2004	1	219	TRUE
ECMW-17	9/14/2004	1	78.4	TRUE
ECMW-17	7/13/2004	1	67.6	TRUE
ECMW-17	5/18/2004	1	134	TRUE
ECMW-17	3/16/2004	1	129	TRUE
ECMW-17	1/28/2004	1	81.3	TRUE
ECMW-17	11/19/2003	1	77.3	TRUE
ECMW-18	1/26/2005	1	0.5	FALSE
ECMW-18	11/17/2004	1	0.5	FALSE
ECMW-18	9/15/2004	1	0.5	FALSE
ECMW-18	7/13/2004	1	0.5	FALSE
ECMW-18	5/19/2004	1	0.5	FALSE
ECMW-18	3/16/2004	1	0.5	FALSE
ECMW-18	11/19/2003	1	0.5	FALSE
ECMW-18	9/24/2003	1	0.5	FALSE
ECMW-4	1/25/2005	1	8.5	TRUE
ECMW-4	11/16/2004	1	0.5	FALSE
ECMW-4	9/14/2004	1	0.5	FALSE
ECMW-4	7/13/2004	1	0.5	FALSE
ECMW-4	5/19/2004	1	1.45	FALSE
ECMW-4	3/16/2004	1	0.5	FALSE
ECMW-4	1/28/2004	1	6.39	TRUE
ECMW-4	11/19/2003	1	2.05	FALSE
ECMW-5	1/25/2005	1	3.18	FALSE
ECMW-5	11/16/2004	1	3.33	FALSE
ECMW-5	9/14/2004	1	3.75	FALSE
ECMW-5	7/13/2004	1	3.75	FALSE
ECMW-5	5/19/2004	1	3.41	FALSE
ECMW-5	3/16/2004	1	3.6	FALSE
ECMW-5	1/28/2004	1	3.19	FALSE
ECMW-5	11/19/2003	1	2.4	FALSE
ECMW-6	1/25/2005	1	1130	TRUE
ECMW-6	11/16/2004	1	1140	TRUE
ECMW-6	9/14/2004	1	1130	TRUE
ECMW-6	7/13/2004	1	868	TRUE
ECMW-6	5/19/2004	1	915	TRUE
ECMW-6	3/16/2004	1	826	TRUE
ECMW-6	1/28/2004	1	835	TRUE
ECMW-6	11/19/2003	1	865	TRUE

Well	Date	Samples	Mean	Impacted
ECMW-7	1/25/2005	1	480	TRUE
ECMW-7	11/16/2004	1	370	TRUE
ECMW-7	9/14/2004	1	76	TRUE
ECMW-7	7/13/2004	1	150	TRUE
ECMW-7	5/19/2004	1	337	TRUE
ECMW-7	3/16/2004	1	310	TRUE
ECMW-7	1/28/2004	1	300	TRUE
ECMW-7	11/19/2003	1	152	TRUE
ECMW-8	1/25/2005	1	126	TRUE
ECMW-8	11/16/2004	1	304	TRUE
ECMW-8	9/14/2004	1	392	TRUE
ECMW-8	7/13/2004	1	354	TRUE
ECMW-8	5/19/2004	1	298	TRUE
ECMW-8	3/16/2004	1	203	TRUE
ECMW-8	1/28/2004	1	142	TRUE
ECMW-8	11/19/2003	1	464	TRUE
ECMW-9	1/25/2005	1	26.3	TRUE
ECMW-9	11/16/2004	1	24	TRUE
ECMW-9	9/14/2004	1	25.3	TRUE
ECMW-9	7/13/2004	1	24.6	TRUE
ECMW-9	5/19/2004	1	27.4	TRUE
ECMW-9	3/16/2004	1	30.6	TRUE
ECMW-9	1/28/2004	1	29.2	TRUE
ECMW-9	11/19/2003	1	28	TRUE

WILCOXON INTER-WELL

Wilcoxon Non-Parametric Analysis (Inter-Well)

Parameter: Nitrate-N

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Well: ECMW-4

Total non detects is 41
Non detect rank is 21

Wilcoxon Ranks

Well	Date	Result	Rank
ECMW-1			
	5/29/2001	1.83	48
	11/1/2001	2.74	56
	6/3/2002	2.01	49
	10/30/2002	1.56	45
	12/10/2002	1.8	47
	5/20/2003	2.4	52
	7/24/2003	2.55	54
	9/24/2003	3.18	58
	11/19/2003	1.47	44
	1/28/2004	1.6	46
	3/16/2004	2.73	55
	5/18/2004	4.79	62
	7/13/2004	3.68	59
	9/14/2004	4.26	61
	11/16/2004	3.81	60
	1/25/2005	2.88	57
ECMW-2			
	5/29/2001	ND<0.5	21
	11/1/2001	ND<0.5	21
	6/3/2002	ND<0.5	21
	10/30/2002	ND<0.5	21
	12/10/2002	ND<0.5	21
	5/20/2003	ND<0.5	21
	7/24/2003	ND<0.5	21
	9/24/2003	ND<0.5	21
	11/19/2003	ND<0.5	21
	1/28/2004	ND<0.5	21
	3/16/2004	ND<0.5	21
	5/18/2004	ND<0.5	21
	7/13/2004	ND<0.5	21
	9/14/2004	ND<0.5	21
	11/16/2004	ND<0.5	21
	1/25/2005 ~	ND<0.5	21
ECMW-3			
	5/29/2001	ND<0.5	21
	11/1/2001	ND<0.5	21
	6/3/2002	ND<0.5	21
	10/30/2002	ND<0.5	21
	12/10/2002	ND<0.5	21
	5/20/2003	ND<0.5	21
	7/24/2003	ND<0.5	21
	9/24/2003	ND<0.5	21
	11/19/2003	ND<0.5	21
	1/28/2004	ND<0.5	21
	3/16/2004	ND<0.5	21

5/18/2004	ND<0.5	21
7/13/2004	ND<0.5	21
9/14/2004	ND<0.5	21
11/16/2004	ND<0.5	21
1/25/2005	ND<0.5	21

ECMW-4

8/8/2001	ND<0.5	21
10/30/2001	ND<0.5	21
6/3/2002	ND<0.5	21
10/30/2002	0.62	42
12/10/2002	2.4	53
5/20/2003 ~	ND<0.5	21
7/24/2003 ~	ND<0.5	21
9/24/2003 ~	2.31	51
11/19/2003	2.05	50
1/28/2004	6.39	63
3/16/2004	ND<0.5	21
5/19/2004	1.45	43
7/13/2004	ND<0.5	21
9/14/2004	ND<0.5	21
11/16/2004	ND<0.5	21
1/25/2005	8.5	64

The Wilcoxon Statistic is 419
The Expected value is is 384
The Standard Deviation is 64.4981
The Z Score is 0.5349
The Standard Deviation adjusted for ties is 55.3775
The Z Score adjusted for ties is 55.3775
0.5349 < 2.326 indicating no contamination at 1% significance level
0.622997 < 2.326 indicating no contamination at 1% significance level when adjusted for ties

Well: ECMW-5

Total non detects is 32
Non detect rank is 16.5

Wilcoxon Ranks

Well	Date	Result	Rank
ECMW-1			
	5/29/2001	1.83	37
	11/1/2001	2.74	43
	6/3/2002	2.01	38
	10/30/2002	1.56	34
	12/10/2002	1.8	36
	5/20/2003	2.4	39
	7/24/2003	2.55	41
	9/24/2003	3.18	45
	11/19/2003	1.47	33
	1/28/2004	1.6	35
	3/16/2004	2.73	42
	5/18/2004	4.79	64
	7/13/2004	3.68	59
	9/14/2004	4.26	63
	11/16/2004	3.81	62
	1/25/2005	2.88	44
ECMW-2			
	5/29/2001	ND<0.5	16.5
	11/1/2001	ND<0.5	16.5

6/3/2002	ND<0.5	16.5
10/30/2002	ND<0.5	16.5
12/10/2002	ND<0.5	16.5
5/20/2003	ND<0.5	16.5
7/24/2003	ND<0.5	16.5
9/24/2003	ND<0.5	16.5
11/19/2003	ND<0.5	16.5
1/28/2004	ND<0.5	16.5
3/16/2004	ND<0.5	16.5
5/18/2004	ND<0.5	16.5
7/13/2004	ND<0.5	16.5
9/14/2004	ND<0.5	16.5
11/16/2004	ND<0.5	16.5
1/25/2005 ~	ND<0.5	16.5

ECMW-3

5/29/2001	ND<0.5	16.5
11/1/2001	ND<0.5	16.5
6/3/2002	ND<0.5	16.5
10/30/2002	ND<0.5	16.5
12/10/2002	ND<0.5	16.5
5/20/2003	ND<0.5	16.5
7/24/2003	ND<0.5	16.5
9/24/2003	ND<0.5	16.5
11/19/2003	ND<0.5	16.5
1/28/2004	ND<0.5	16.5
3/16/2004	ND<0.5	16.5
5/18/2004	ND<0.5	16.5
7/13/2004	ND<0.5	16.5
9/14/2004	ND<0.5	16.5
11/16/2004	ND<0.5	16.5
1/25/2005	ND<0.5	16.5

ECMW-5

8/8/2001	3.54	55
10/30/2001	3.27	49
6/3/2002	3.35	51
10/30/2002	3.66	58
12/10/2002	3.26	48
5/20/2003	3.6	56
7/24/2003	3.47	53
9/24/2003	3.53	54
11/19/2003	2.4	40
1/28/2004 ~	3.19	47
3/16/2004	3.6	57
5/19/2004 ~	3.41	52
7/13/2004	3.75	60
9/14/2004	3.75	61
11/16/2004	3.33	50
1/25/2005	3.18	46

The Wilcoxon Statistic is 701
The Expected value is is 384
The Standard Deviation is 64.4981
The Z Score is 4.90712
The Standard Deviation adjusted for ties is 60.3356
The Z Score adjusted for ties is 60.3356
4.90712 > 2.326 indicating possible contamination at 1% significance level
5.24566 > 2.326 indicating possible contamination at 1% significance level when adjusted for ties

Well: ECMW-6

Total non detects is 32
Non detect rank is 16.5

Wilcoxon Ranks

Well	Date	Result	Rank
ECMW-1			
	5/29/2001	1.83	37
	11/1/2001	2.74	42
	6/3/2002	2.01	38
	10/30/2002	1.56	34
	12/10/2002	1.8	36
	5/20/2003	2.4	39
	7/24/2003	2.55	40
	9/24/2003	3.18	44
	11/19/2003	1.47	33
	1/28/2004	1.6	35
	3/16/2004	2.73	41
	5/18/2004	4.79	48
	7/13/2004	3.68	45
	9/14/2004	4.26	47
	11/16/2004	3.81	46
	1/25/2005	2.88	43
ECMW-2			
	5/29/2001	ND<0.5	16.5
	11/1/2001	ND<0.5	16.5
	6/3/2002	ND<0.5	16.5
	10/30/2002	ND<0.5	16.5
	12/10/2002	ND<0.5	16.5
	5/20/2003	ND<0.5	16.5
	7/24/2003	ND<0.5	16.5
	9/24/2003	ND<0.5	16.5
	11/19/2003	ND<0.5	16.5
	1/28/2004	ND<0.5	16.5
	3/16/2004	ND<0.5	16.5
	5/18/2004	ND<0.5	16.5
	7/13/2004	ND<0.5	16.5
	9/14/2004	ND<0.5	16.5
	11/16/2004	ND<0.5	16.5
	1/25/2005 ~	ND<0.5	16.5
ECMW-3			
	5/29/2001	ND<0.5	16.5
	11/1/2001	ND<0.5	16.5
	6/3/2002	ND<0.5	16.5
	10/30/2002	ND<0.5	16.5
	12/10/2002	ND<0.5	16.5
	5/20/2003	ND<0.5	16.5
	7/24/2003	ND<0.5	16.5
	9/24/2003	ND<0.5	16.5
	11/19/2003	ND<0.5	16.5
	1/28/2004	ND<0.5	16.5
	3/16/2004	ND<0.5	16.5
	5/18/2004	ND<0.5	16.5
	7/13/2004	ND<0.5	16.5
	9/14/2004	ND<0.5	16.5
	11/16/2004	ND<0.5	16.5
	1/25/2005	ND<0.5	16.5

ECMW-6

8/8/2001	298	49
10/30/2001	326	50
6/3/2002	459	51
10/30/2002	661	54
12/10/2002 ~	588	52
5/21/2003	608	53
7/24/2003	681	55
9/24/2003	857	58
11/19/2003 ~	865	59
1/28/2004	835	57
3/16/2004	826	56
5/19/2004	915	61
7/13/2004 ~	868	60
9/14/2004	1130	62
11/16/2004	1140	64
1/25/2005	1130	63

The Wilcoxon Statistic is 768
The Expected value is is 384
The Standard Deviation is 64.4981
The Z Score is 5.94592
The Standard Deviation adjusted for ties is 60.3356
The Z Score adjusted for ties is 60.3356
5.94592 > 2.326 indicating possible contamination at 1% significance level
6.35612 > 2.326 indicating possible contamination at 1% significance level when adjusted for ties

Well: ECMW-7

Total non detects is 32
Non detect rank is 16.5

Wilcoxon Ranks

Well	Date	Result	Rank
ECMW-1			
	5/29/2001	1.83	37
	11/1/2001	2.74	42
	6/3/2002	2.01	38
	10/30/2002	1.56	34
	12/10/2002	1.8	36
	5/20/2003	2.4	39
	7/24/2003	2.55	40
	9/24/2003	3.18	44
	11/19/2003	1.47	33
	1/28/2004	1.6	35
	3/16/2004	2.73	41
	5/18/2004	4.79	48
	7/13/2004	3.68	45
	9/14/2004	4.26	47
	11/16/2004	3.81	46
	1/25/2005	2.88	43
ECMW-2			
	5/29/2001	ND<0.5	16.5
	11/1/2001	ND<0.5	16.5
	6/3/2002	ND<0.5	16.5
	10/30/2002	ND<0.5	16.5
	12/10/2002	ND<0.5	16.5
	5/20/2003	ND<0.5	16.5
	7/24/2003	ND<0.5	16.5
	9/24/2003	ND<0.5	16.5
	11/19/2003	ND<0.5	16.5

1/28/2004	ND<0.5	16.5
3/16/2004	ND<0.5	16.5
5/18/2004	ND<0.5	16.5
7/13/2004	ND<0.5	16.5
9/14/2004	ND<0.5	16.5
11/16/2004	ND<0.5	16.5
1/25/2005 ~	ND<0.5	16.5

ECMW-3

5/29/2001	ND<0.5	16.5
11/1/2001	ND<0.5	16.5
6/3/2002	ND<0.5	16.5
10/30/2002	ND<0.5	16.5
12/10/2002	ND<0.5	16.5
5/20/2003	ND<0.5	16.5
7/24/2003	ND<0.5	16.5
9/24/2003	ND<0.5	16.5
11/19/2003	ND<0.5	16.5
1/28/2004	ND<0.5	16.5
3/16/2004	ND<0.5	16.5
5/18/2004	ND<0.5	16.5
7/13/2004	ND<0.5	16.5
9/14/2004	ND<0.5	16.5
11/16/2004	ND<0.5	16.5
1/25/2005	ND<0.5	16.5

ECMW-7

8/8/2001	336	57
10/30/2001 ~	186	53
6/3/2002 ~	358	60
10/30/2002	294	54
12/10/2002 ~	344	59
5/21/2003	563	63
7/24/2003	141	50
9/24/2003	953	64
11/19/2003	152	52
1/28/2004	300	55
3/16/2004	310	56
5/19/2004	337	58
7/13/2004	150	51
9/14/2004 ~	76	49
11/16/2004	370	61
1/25/2005	480	62

The Wilcoxon Statistic is 768
The Expected value is is 384
The Standard Deviation is 64.4981
The Z Score is 5.94592
The Standard Deviation adjusted for ties is 60.3356
The Z Score adjusted for ties is 60.3356
5.94592 > 2.326 indicating possible contamination at 1% significance level
6.35612 > 2.326 indicating possible contamination at 1% significance level when adjusted for ties

Well: ECMW-8

Total non detects is 32
Non detect rank is 16.5

Wilcoxon Ranks

Well	Date	Result	Rank
ECMW-1			
	5/29/2001	1.83	37
	11/1/2001	2.74	42
	6/3/2002	2.01	38
	10/30/2002	1.56	34
	12/10/2002	1.8	36
	5/20/2003	2.4	39
	7/24/2003	2.55	40
	9/24/2003	3.18	44
	11/19/2003	1.47	33
	1/28/2004	1.6	35
	3/16/2004	2.73	41
	5/18/2004	4.79	48
	7/13/2004	3.68	45
	9/14/2004	4.26	47
	11/16/2004	3.81	46
	1/25/2005	2.88	43
ECMW-2			
	5/29/2001	ND<0.5	16.5
	11/1/2001	ND<0.5	16.5
	6/3/2002	ND<0.5	16.5
	10/30/2002	ND<0.5	16.5
	12/10/2002	ND<0.5	16.5
	5/20/2003	ND<0.5	16.5
	7/24/2003	ND<0.5	16.5
	9/24/2003	ND<0.5	16.5
	11/19/2003	ND<0.5	16.5
	1/28/2004	ND<0.5	16.5
	3/16/2004	ND<0.5	16.5
	5/18/2004	ND<0.5	16.5
	7/13/2004	ND<0.5	16.5
	9/14/2004	ND<0.5	16.5
	11/16/2004	ND<0.5	16.5
	1/25/2005 ~	ND<0.5	16.5
ECMW-3			
	5/29/2001	ND<0.5	16.5
	11/1/2001	ND<0.5	16.5
	6/3/2002	ND<0.5	16.5
	10/30/2002	ND<0.5	16.5
	12/10/2002	ND<0.5	16.5
	5/20/2003	ND<0.5	16.5
	7/24/2003	ND<0.5	16.5
	9/24/2003	ND<0.5	16.5
	11/19/2003	ND<0.5	16.5
	1/28/2004	ND<0.5	16.5
	3/16/2004	ND<0.5	16.5
	5/18/2004	ND<0.5	16.5
	7/13/2004	ND<0.5	16.5
	9/14/2004	ND<0.5	16.5
	11/16/2004	ND<0.5	16.5
	1/25/2005	ND<0.5	16.5

ECMW-8

10/30/2001	1030	59
6/3/2002 ~	1200	61
10/30/2002	1330	63
12/10/2002 ~	1080	60
5/21/2003 ~	1250	62
7/24/2003 ~	472	57
9/23/2003 ~	524	58
11/19/2003	464	56
1/28/2004	142	50
3/16/2004	203	51
5/19/2004	298	52
7/13/2004	354	54
9/14/2004	392	55
11/16/2004	304	53
1/25/2005	126	49

The Wilcoxon Statistic is 720
The Expected value is is 360
The Standard Deviation is 61.9677
The Z Score is 5.80141
The Standard Deviation adjusted for ties is 57.768
The Z Score adjusted for ties is 57.768
5.80141 > 2.326 indicating possible contamination at 1% significance level
6.22317 > 2.326 indicating possible contamination at 1% significance level when adjusted for ties

Well: ECMW-9

Total non detects is 32
Non detect rank is 16.5

Wilcoxon Ranks

Well	Date	Result	Rank
ECMW-1			
	5/29/2001	1.83	37
	11/1/2001	2.74	42
	6/3/2002	2.01	38
	10/30/2002	1.56	34
	12/10/2002	1.8	36
	5/20/2003	2.4	39
	7/24/2003	2.55	40
	9/24/2003	3.18	44
	11/19/2003	1.47	33
	1/28/2004	1.6	35
	3/16/2004	2.73	41
	5/18/2004	4.79	48
	7/13/2004	3.68	45
	9/14/2004	4.26	47
	11/16/2004	3.81	46
	1/25/2005	2.88	43
ECMW-2			
	5/29/2001	ND<0.5	16.5
	11/1/2001	ND<0.5	16.5
	6/3/2002	ND<0.5	16.5
	10/30/2002	ND<0.5	16.5
	12/10/2002	ND<0.5	16.5
	5/20/2003	ND<0.5	16.5
	7/24/2003	ND<0.5	16.5
	9/24/2003	ND<0.5	16.5
	11/19/2003	ND<0.5	16.5
	1/28/2004	ND<0.5	16.5

3/16/2004	ND<0.5	16.5
5/18/2004	ND<0.5	16.5
7/13/2004	ND<0.5	16.5
9/14/2004	ND<0.5	16.5
11/16/2004	ND<0.5	16.5
1/25/2005 ~	ND<0.5	16.5

ECMW-3

5/29/2001	ND<0.5	16.5
11/1/2001	ND<0.5	16.5
6/3/2002	ND<0.5	16.5
10/30/2002	ND<0.5	16.5
12/10/2002	ND<0.5	16.5
5/20/2003	ND<0.5	16.5
7/24/2003	ND<0.5	16.5
9/24/2003	ND<0.5	16.5
11/19/2003	ND<0.5	16.5
1/28/2004	ND<0.5	16.5
3/16/2004	ND<0.5	16.5
5/18/2004	ND<0.5	16.5
7/13/2004	ND<0.5	16.5
9/14/2004	ND<0.5	16.5
11/16/2004	ND<0.5	16.5
1/25/2005	ND<0.5	16.5

ECMW-9 WITH OUTLIERS

6/27/2001	28.8	59
10/30/2001	26.7	55
6/3/2002	24.4	50
10/30/2002	59	63
12/10/2002 ~	31.5	62
5/21/2003	26.3	53
7/24/2003	28.4	58
9/23/2003	146	64
11/19/2003	28	57
1/28/2004	29.2	60
3/16/2004	30.6	61
5/19/2004	27.4	56
7/13/2004	24.6	51
9/14/2004	25.3	52
11/16/2004	24	49
1/25/2005	26.3	54

The Wilcoxon Statistic is 768
The Expected value is is 384
The Standard Deviation is 64.4981
The Z Score is 5.94592
The Standard Deviation adjusted for ties is 60.3356
The Z Score adjusted for ties is 60.3356
5.94592 > 2.326 indicating possible contamination at 1% significance level
6.35612 > 2.326 indicating possible contamination at 1% significance level when adjusted for ties

ECMW-9 WITHOUT OUTLIERS

6/27/2001	28.8	59
10/30/2001	26.7	55
6/3/2002	24.4	50
12/10/2002 ~	31.5	62
5/21/2003	26.3	53
7/24/2003	28.4	58
11/19/2003	28	57
1/28/2004	29.2	60
3/16/2004	30.6	61
5/19/2004	27.4	56

7/13/2004	24.6	51
9/14/2004	25.3	52
11/16/2004	24	49
1/25/2005	26.3	54

The Wilcoxon Statistic is 672
The Expected value is is 336
The Standard Deviation is 59.397
The Z Score is 5.64844
The Standard Deviation adjusted for ties is 55.1659
The Z Score adjusted for ties is 55.1659
5.64844 > 2.326 indicating possible contamination at 1% significance level
6.08165 > 2.326 indicating possible contamination at 1% significance level when adjusted for ties

Well: ECMW-10

Total non detects is 32
Non detect rank is 16.5

Wilcoxon Ranks

Well	Date	Result	Rank
ECMW-1			
	5/29/2001	1.83	37
	11/1/2001	2.74	42
	6/3/2002	2.01	38
	10/30/2002	1.56	34
	12/10/2002	1.8	36
	5/20/2003	2.4	39
	7/24/2003	2.55	40
	9/24/2003	3.18	44
	11/19/2003	1.47	33
	1/28/2004	1.6	35
	3/16/2004	2.73	41
	5/18/2004	4.79	48
	7/13/2004	3.68	45
	9/14/2004	4.26	47
	11/16/2004	3.81	46
	1/25/2005	2.88	43
ECMW-2			
	5/29/2001	ND<0.5	16.5
	11/1/2001	ND<0.5	16.5
	6/3/2002	ND<0.5	16.5
	10/30/2002	ND<0.5	16.5
	12/10/2002	ND<0.5	16.5
	5/20/2003	ND<0.5	16.5
	7/24/2003	ND<0.5	16.5
	9/24/2003	ND<0.5	16.5
	11/19/2003	ND<0.5	16.5
	1/28/2004	ND<0.5	16.5
	3/16/2004	ND<0.5	16.5
	5/18/2004	ND<0.5	16.5
	7/13/2004	ND<0.5	16.5
	9/14/2004	ND<0.5	16.5
	11/16/2004	ND<0.5	16.5
	1/25/2005 ~	ND<0.5	16.5
ECMW-3			
	5/29/2001	ND<0.5	16.5
	11/1/2001	ND<0.5	16.5

6/3/2002	ND<0.5	16.5
10/30/2002	ND<0.5	16.5
12/10/2002	ND<0.5	16.5
5/20/2003	ND<0.5	16.5
7/24/2003	ND<0.5	16.5
9/24/2003	ND<0.5	16.5
11/19/2003	ND<0.5	16.5
1/28/2004	ND<0.5	16.5
3/16/2004	ND<0.5	16.5
5/18/2004	ND<0.5	16.5
7/13/2004	ND<0.5	16.5
9/14/2004	ND<0.5	16.5
11/16/2004	ND<0.5	16.5
1/25/2005	ND<0.5	16.5

ECMW-10

6/27/2001	156	64
10/30/2001	153	63
6/3/2002	138	60
10/30/2002	137	59
12/10/2002	70.4	49
5/21/2003	148	62
7/24/2003	118	53
9/23/2003	147	61
11/19/2003	119	54
1/28/2004	126	57
3/16/2004	135	58
5/18/2004	123	55
7/13/2004	114	51
9/14/2004	123	56
11/16/2004	94.4	50
1/25/2005	115	52

The Wilcoxon Statistic is 768
The Expected value is is 384
The Standard Deviation is 64.4981
The Z Score is 5.94592
The Standard Deviation adjusted for ties is 60.3356
The Z Score adjusted for ties is 60.3356
5.94592 > 2.326 indicating possible contamination at 1% significance level
6.35612 > 2.326 indicating possible contamination at 1% significance level when adjusted for ties

Well: ECMW-11

Total non detects is 32
Non detect rank is 16.5

Wilcoxon Ranks

Well	Date	Result	Rank
ECMW-1			
	5/29/2001	1.83	37
	11/1/2001	2.74	42
	6/3/2002	2.01	38
	10/30/2002	1.56	34
	12/10/2002	1.8	36
	5/20/2003	2.4	39
	7/24/2003	2.55	40
	9/24/2003	3.18	44
	11/19/2003	1.47	33
	1/28/2004	1.6	35
	3/16/2004	2.73	41

5/18/2004	4.79	49
7/13/2004	3.68	45
9/14/2004	4.26	48
11/16/2004	3.81	46
1/25/2005	2.88	43

ECMW-2

5/29/2001	ND<0.5	16.5
11/1/2001	ND<0.5	16.5
6/3/2002	ND<0.5	16.5
10/30/2002	ND<0.5	16.5
12/10/2002	ND<0.5	16.5
5/20/2003	ND<0.5	16.5
7/24/2003	ND<0.5	16.5
9/24/2003	ND<0.5	16.5
11/19/2003	ND<0.5	16.5
1/28/2004	ND<0.5	16.5
3/16/2004	ND<0.5	16.5
5/18/2004	ND<0.5	16.5
7/13/2004	ND<0.5	16.5
9/14/2004	ND<0.5	16.5
11/16/2004	ND<0.5	16.5
1/25/2005 ~	ND<0.5	16.5

ECMW-3

5/29/2001	ND<0.5	16.5
11/1/2001	ND<0.5	16.5
6/3/2002	ND<0.5	16.5
10/30/2002	ND<0.5	16.5
12/10/2002	ND<0.5	16.5
5/20/2003	ND<0.5	16.5
7/24/2003	ND<0.5	16.5
9/24/2003	ND<0.5	16.5
11/19/2003	ND<0.5	16.5
1/28/2004	ND<0.5	16.5
3/16/2004	ND<0.5	16.5
5/18/2004	ND<0.5	16.5
7/13/2004	ND<0.5	16.5
9/14/2004	ND<0.5	16.5
11/16/2004	ND<0.5	16.5
1/25/2005	ND<0.5	16.5

ECMW-11

8/8/2001	7.99	56
10/30/2001	21.9	63
6/3/2002 ~	6.46	53
10/30/2002	9.22	58
12/10/2002	6.12	51
5/21/2003	6.02	50
7/24/2003	6.68	54
9/23/2003	4.24	47
11/19/2003 ~	6.26	52
1/28/2004	6.72	55
3/16/2004 ~	8.79	57
5/18/2004	13.5	61
7/13/2004	13.6	62
9/14/2004	9.85	59
11/17/2004	11.1	60

The Wilcoxon Statistic is 718
The Expected value is is 360
The Standard Deviation is 61.9677

The Z Score is 5.76913
The Standard Deviation adjusted for ties is 57.768
The Z Score adjusted for ties is 57.768
5.76913 > 2.326 indicating possible contamination at 1% significance level
6.18855 > 2.326 indicating possible contamination at 1% significance level when adjusted for ties

Well: ECMW-13

Total non detects is 46
Non detect rank is 23.5

Wilcoxon Ranks

Well	Date	Result	Rank
ECMW-1			
	5/29/2001	1.83	53
	11/1/2001	2.74	58
	6/3/2002	2.01	54
	10/30/2002	1.56	50
	12/10/2002	1.8	52
	5/20/2003	2.4	55
	7/24/2003	2.55	56
	9/24/2003	3.18	60
	11/19/2003	1.47	49
	1/28/2004	1.6	51
	3/16/2004	2.73	57
	5/18/2004	4.79	64
	7/13/2004	3.68	61
	9/14/2004	4.26	63
	11/16/2004	3.81	62
	1/25/2005	2.88	59
ECMW-2			
	5/29/2001	ND<0.5	23.5
	11/1/2001	ND<0.5	23.5
	6/3/2002	ND<0.5	23.5
	10/30/2002	ND<0.5	23.5
	12/10/2002	ND<0.5	23.5
	5/20/2003	ND<0.5	23.5
	7/24/2003	ND<0.5	23.5
	9/24/2003	ND<0.5	23.5
	11/19/2003	ND<0.5	23.5
	1/28/2004	ND<0.5	23.5
	3/16/2004	ND<0.5	23.5
	5/18/2004	ND<0.5	23.5
	7/13/2004	ND<0.5	23.5
	9/14/2004	ND<0.5	23.5
	11/16/2004	ND<0.5	23.5
	1/25/2005 ~	ND<0.5	23.5
ECMW-3			
	5/29/2001	ND<0.5	23.5
	11/1/2001	ND<0.5	23.5
	6/3/2002	ND<0.5	23.5
	10/30/2002	ND<0.5	23.5
	12/10/2002	ND<0.5	23.5
	5/20/2003	ND<0.5	23.5
	7/24/2003	ND<0.5	23.5
	9/24/2003	ND<0.5	23.5
	11/19/2003	ND<0.5	23.5
	1/28/2004	ND<0.5	23.5
	3/16/2004	ND<0.5	23.5
	5/18/2004	ND<0.5	23.5

7/13/2004	ND<0.5	23.5
9/14/2004	ND<0.5	23.5
11/16/2004	ND<0.5	23.5
1/25/2005	ND<0.5	23.5

ECMW-13

6/5/2001	ND<0.5	23.5
10/30/2001	ND<0.5	23.5
6/4/2002	ND<0.5	23.5
10/30/2002	ND<0.5	23.5
12/10/2002	ND<0.5	23.5
5/20/2003	ND<0.5	23.5
7/23/2003	ND<0.5	23.5
9/24/2003	ND<0.5	23.5
11/19/2003	0.62	47
1/28/2004	ND<0.5	23.5
3/16/2004	ND<0.5	23.5
5/18/2004	ND<0.5	23.5
7/13/2004	ND<0.5	23.5
9/14/2004 ~	ND<0.5	23.5
11/16/2004	ND<0.5	23.5
1/26/2005	0.72	48

The Wilcoxon Statistic is 288
The Expected value is is 384
The Standard Deviation is 64.4981
The Z Score is -1.49617
The Standard Deviation adjusted for ties is 51.1441
The Z Score adjusted for ties is 51.1441
-1.49617 < 2.326 indicating no contamination at 1% significance level
-1.88683 < 2.326 indicating no contamination at 1% significance level when adjusted for ties

Well: ECMW-14

Total non detects is 32
Non detect rank is 16.5

Wilcoxon Ranks

Well	Date	Result	Rank
ECMW-1			
	5/29/2001	1.83	37
	11/1/2001	2.74	42
	6/3/2002	2.01	38
	10/30/2002	1.56	34
	12/10/2002	1.8	36
	5/20/2003	2.4	39
	7/24/2003	2.55	40
	9/24/2003	3.18	44
	11/19/2003	1.47	33
	1/28/2004	1.6	35
	3/16/2004	2.73	41
	5/18/2004	4.79	48
	7/13/2004	3.68	45
	9/14/2004	4.26	47
	11/16/2004	3.81	46
	1/25/2005	2.88	43
ECMW-2			
	5/29/2001	ND<0.5	16.5
	11/1/2001	ND<0.5	16.5
	6/3/2002	ND<0.5	16.5

10/30/2002	ND<0.5	16.5
12/10/2002	ND<0.5	16.5
5/20/2003	ND<0.5	16.5
7/24/2003	ND<0.5	16.5
9/24/2003	ND<0.5	16.5
11/19/2003	ND<0.5	16.5
1/28/2004	ND<0.5	16.5
3/16/2004	ND<0.5	16.5
5/18/2004	ND<0.5	16.5
7/13/2004	ND<0.5	16.5
9/14/2004	ND<0.5	16.5
11/16/2004	ND<0.5	16.5
1/25/2005 ~	ND<0.5	16.5

ECMW-3

5/29/2001	ND<0.5	16.5
11/1/2001	ND<0.5	16.5
6/3/2002	ND<0.5	16.5
10/30/2002	ND<0.5	16.5
12/10/2002	ND<0.5	16.5
5/20/2003	ND<0.5	16.5
7/24/2003	ND<0.5	16.5
9/24/2003	ND<0.5	16.5
11/19/2003	ND<0.5	16.5
1/28/2004	ND<0.5	16.5
3/16/2004	ND<0.5	16.5
5/18/2004	ND<0.5	16.5
7/13/2004	ND<0.5	16.5
9/14/2004	ND<0.5	16.5
11/16/2004	ND<0.5	16.5
1/25/2005	ND<0.5	16.5

ECMW-14

8/8/2001	75	64
10/30/2001	25.2	56
6/4/2002	26.5	57
10/30/2002	17	50
12/10/2002	23.4	54
5/20/2003	44.9	60
7/23/2003	23.1	53
9/23/2003	20.3	51
11/19/2003	16.1	49
1/28/2004 ~	24.5	55
3/16/2004	33.4	59
5/18/2004	32.6	58
7/13/2004 ~	47.3	61
9/14/2004	57.7	62
11/16/2004	21.7	52
1/26/2005	62.4	63

The Wilcoxon Statistic is 768
The Expected value is is 384
The Standard Deviation is 64.4981
The Z Score is 5.94592
The Standard Deviation adjusted for ties is 60.3356
The Z Score adjusted for ties is 60.3356
5.94592 > 2.326 indicating possible contamination at 1% significance level
6.35612 > 2.326 indicating possible contamination at 1% significance level when adjusted for ties

Well: ECMW-15

Total non detects is 32
Non detect rank is 16.5

Wilcoxon Ranks

Well	Date	Result	Rank
ECMW-1			
	5/29/2001	1.83	37
	11/1/2001	2.74	42
	6/3/2002	2.01	38
	10/30/2002	1.56	34
	12/10/2002	1.8	36
	5/20/2003	2.4	39
	7/24/2003	2.55	40
	9/24/2003	3.18	44
	11/19/2003	1.47	33
	1/28/2004	1.6	35
	3/16/2004	2.73	41
	5/18/2004	4.79	49
	7/13/2004	3.68	45
	9/14/2004	4.26	47
	11/16/2004	3.81	46
	1/25/2005	2.88	43
ECMW-2			
	5/29/2001	ND<0.5	16.5
	11/1/2001	ND<0.5	16.5
	6/3/2002	ND<0.5	16.5
	10/30/2002	ND<0.5	16.5
	12/10/2002	ND<0.5	16.5
	5/20/2003	ND<0.5	16.5
	7/24/2003	ND<0.5	16.5
	9/24/2003	ND<0.5	16.5
	11/19/2003	ND<0.5	16.5
	1/28/2004	ND<0.5	16.5
	3/16/2004	ND<0.5	16.5
	5/18/2004	ND<0.5	16.5
	7/13/2004	ND<0.5	16.5
	9/14/2004	ND<0.5	16.5
	11/16/2004	ND<0.5	16.5
	1/25/2005 ~	ND<0.5	16.5
ECMW-3			
	5/29/2001	ND<0.5	16.5
	11/1/2001	ND<0.5	16.5
	6/3/2002	ND<0.5	16.5
	10/30/2002	ND<0.5	16.5
	12/10/2002	ND<0.5	16.5
	5/20/2003	ND<0.5	16.5
	7/24/2003	ND<0.5	16.5
	9/24/2003	ND<0.5	16.5
	11/19/2003	ND<0.5	16.5
	1/28/2004	ND<0.5	16.5
	3/16/2004	ND<0.5	16.5
	5/18/2004	ND<0.5	16.5
	7/13/2004	ND<0.5	16.5
	9/14/2004	ND<0.5	16.5
	11/16/2004	ND<0.5	16.5
	1/25/2005	ND<0.5	16.5

ECMW-15

8/8/2001	19.1	64
10/30/2001	12.6	62
6/4/2002	10.7	60
10/30/2002	18.2	63
12/10/2002	12.2	61
5/20/2003	9.45	56
7/23/2003	7.63	53
9/23/2003	9.62	58
11/19/2003	9.81	59
1/28/2004	4.52	48
3/16/2004	7.66	54
5/18/2004	6.82	50
7/13/2004	9.52	57
9/14/2004	8.22	55
11/16/2004	7.42	51
1/25/2005	7.62	52

The Wilcoxon Statistic is 767
The Expected value is is 384
The Standard Deviation is 64.4981
The Z Score is 5.93041
The Standard Deviation adjusted for ties is 60.3356
The Z Score adjusted for ties is 60.3356
5.93041 > 2.326 indicating possible contamination at 1% significance level
6.33954 > 2.326 indicating possible contamination at 1% significance level when adjusted for ties

Well: ECMW-16

Total non detects is 32
Non detect rank is 16.5

Wilcoxon Ranks

Well	Date	Result	Rank
ECMW-1			
	5/29/2001	1.83	37
	11/1/2001	2.74	42
	6/3/2002	2.01	38
	10/30/2002	1.56	34
	12/10/2002	1.8	36
	5/20/2003	2.4	39
	7/24/2003	2.55	40
	9/24/2003	3.18	44
	11/19/2003	1.47	33
	1/28/2004	1.6	35
	3/16/2004	2.73	41
	5/18/2004	4.79	48
	7/13/2004	3.68	45
	9/14/2004	4.26	47
	11/16/2004	3.81	46
	1/25/2005	2.88	43
ECMW-2			
	5/29/2001	ND<0.5	16.5
	11/1/2001	ND<0.5	16.5
	6/3/2002	ND<0.5	16.5
	10/30/2002	ND<0.5	16.5
	12/10/2002	ND<0.5	16.5
	5/20/2003	ND<0.5	16.5
	7/24/2003	ND<0.5	16.5
	9/24/2003	ND<0.5	16.5
	11/19/2003	ND<0.5	16.5

1/28/2004	ND<0.5	16.5
3/16/2004	ND<0.5	16.5
5/18/2004	ND<0.5	16.5
7/13/2004	ND<0.5	16.5
9/14/2004	ND<0.5	16.5
11/16/2004	ND<0.5	16.5
1/25/2005 ~	ND<0.5	16.5

ECMW-3

5/29/2001	ND<0.5	16.5
11/1/2001	ND<0.5	16.5
6/3/2002	ND<0.5	16.5
10/30/2002	ND<0.5	16.5
12/10/2002	ND<0.5	16.5
5/20/2003	ND<0.5	16.5
7/24/2003	ND<0.5	16.5
9/24/2003	ND<0.5	16.5
11/19/2003	ND<0.5	16.5
1/28/2004	ND<0.5	16.5
3/16/2004	ND<0.5	16.5
5/18/2004	ND<0.5	16.5
7/13/2004	ND<0.5	16.5
9/14/2004	ND<0.5	16.5
11/16/2004	ND<0.5	16.5
1/25/2005	ND<0.5	16.5

ECMW-16

6/5/2001	134	64
10/30/2001	58.4	56
6/4/2002 ~	72.5	60
10/30/2002	72	58
12/10/2002	89.4	62
5/20/2003	90.8	63
7/23/2003	72.3	59
9/23/2003	72.8	61
11/19/2003	44.3	54
1/28/2004	59	57
3/16/2004	34.8	50
5/18/2004 ~	31.9	49
7/13/2004	40.2	52
9/14/2004	47.1	55
11/16/2004 ~	38.2	51
1/25/2005	43.1	53

The Wilcoxon Statistic is 768
The Expected value is is 384
The Standard Deviation is 64.4981
The Z Score is 5.94592
The Standard Deviation adjusted for ties is 60.3356
The Z Score adjusted for ties is 60.3356
5.94592 > 2.326 indicating possible contamination at 1% significance level
6.35612 > 2.326 indicating possible contamination at 1% significance level when adjusted for ties

Well: ECMW-17

Total non detects is 32
Non detect rank is 16.5

Wilcoxon Ranks

Well	Date	Result	Rank
ECMW-1			
	5/29/2001	1.83	37
	11/1/2001	2.74	42
	6/3/2002	2.01	38
	10/30/2002	1.56	34
	12/10/2002	1.8	36
	5/20/2003	2.4	39
	7/24/2003	2.55	40
	9/24/2003	3.18	44
	11/19/2003	1.47	33
	1/28/2004	1.6	35
	3/16/2004	2.73	41
	5/18/2004	4.79	48
	7/13/2004	3.68	45
	9/14/2004	4.26	47
	11/16/2004	3.81	46
	1/25/2005	2.88	43
ECMW-2			
	5/29/2001	ND<0.5	16.5
	11/1/2001	ND<0.5	16.5
	6/3/2002	ND<0.5	16.5
	10/30/2002	ND<0.5	16.5
	12/10/2002	ND<0.5	16.5
	5/20/2003	ND<0.5	16.5
	7/24/2003	ND<0.5	16.5
	9/24/2003	ND<0.5	16.5
	11/19/2003	ND<0.5	16.5
	1/28/2004	ND<0.5	16.5
	3/16/2004	ND<0.5	16.5
	5/18/2004	ND<0.5	16.5
	7/13/2004	ND<0.5	16.5
	9/14/2004	ND<0.5	16.5
	11/16/2004	ND<0.5	16.5
	1/25/2005 ~	ND<0.5	16.5
ECMW-3			
	5/29/2001	ND<0.5	16.5
	11/1/2001	ND<0.5	16.5
	6/3/2002	ND<0.5	16.5
	10/30/2002	ND<0.5	16.5
	12/10/2002	ND<0.5	16.5
	5/20/2003	ND<0.5	16.5
	7/24/2003	ND<0.5	16.5
	9/24/2003	ND<0.5	16.5
	11/19/2003	ND<0.5	16.5
	1/28/2004	ND<0.5	16.5
	3/16/2004	ND<0.5	16.5
	5/18/2004	ND<0.5	16.5
	7/13/2004	ND<0.5	16.5
	9/14/2004	ND<0.5	16.5
	11/16/2004	ND<0.5	16.5
	1/25/2005	ND<0.5	16.5

ECMW-17

6/5/2001	54.2	50
10/30/2001	106	61
6/4/2002	83.4	57
10/30/2002	92	59
12/10/2002	101	60
5/20/2003	83.6	58
7/23/2003	74.7	53
9/23/2003	64.3	51
11/19/2003	77.3	54
1/28/2004	81.3	56
3/16/2004	129	62
5/18/2004	134	63
7/13/2004	67.6	52
9/14/2004	78.4	55
11/16/2004	219	64
1/26/2005	53.3	49

The Wilcoxon Statistic is 768
The Expected value is is 384
The Standard Deviation is 64.4981
The Z Score is 5.94592
The Standard Deviation adjusted for ties is 60.3356
The Z Score adjusted for ties is 60.3356
5.94592 > 2.326 indicating possible contamination at 1% significance level
6.35612 > 2.326 indicating possible contamination at 1% significance level when adjusted for ties

Well: ECMW-18

Total non detects is 45
Non detect rank is 23

Wilcoxon Ranks

Well	Date	Result	Rank
ECMW-1			
	5/29/2001	1.83	50
	11/1/2001	2.74	55
	6/3/2002	2.01	51
	10/30/2002	1.56	47
	12/10/2002	1.8	49
	5/20/2003	2.4	52
	7/24/2003	2.55	53
	9/24/2003	3.18	57
	11/19/2003	1.47	46
	1/28/2004	1.6	48
	3/16/2004	2.73	54
	5/18/2004	4.79	61
	7/13/2004	3.68	58
	9/14/2004	4.26	60
	11/16/2004	3.81	59
	1/25/2005	2.88	56
ECMW-2			
	5/29/2001	ND<0.5	23
	11/1/2001	ND<0.5	23
	6/3/2002	ND<0.5	23
	10/30/2002	ND<0.5	23
	12/10/2002	ND<0.5	23
	5/20/2003	ND<0.5	23
	7/24/2003	ND<0.5	23
	9/24/2003	ND<0.5	23

11/19/2003	ND<0.5	23
1/28/2004	ND<0.5	23
3/16/2004	ND<0.5	23
5/18/2004	ND<0.5	23
7/13/2004	ND<0.5	23
9/14/2004	ND<0.5	23
11/16/2004	ND<0.5	23
1/25/2005 ~	ND<0.5	23

ECMW-3

5/29/2001	ND<0.5	23
11/1/2001	ND<0.5	23
6/3/2002	ND<0.5	23
10/30/2002	ND<0.5	23
12/10/2002	ND<0.5	23
5/20/2003	ND<0.5	23
7/24/2003	ND<0.5	23
9/24/2003	ND<0.5	23
11/19/2003	ND<0.5	23
1/28/2004	ND<0.5	23
3/16/2004	ND<0.5	23
5/18/2004	ND<0.5	23
7/13/2004	ND<0.5	23
9/14/2004	ND<0.5	23
11/16/2004	ND<0.5	23
1/25/2005	ND<0.5	23

ECMW-18

10/30/2001	ND<0.5	23
6/4/2002	ND<0.5	23
10/30/2002	ND<0.5	23
12/10/2002	ND<0.5	23
5/21/2003	ND<0.5	23
7/23/2003	113	62
9/24/2003	ND<0.5	23
11/19/2003	ND<0.5	23
3/16/2004	ND<0.5	23
5/19/2004	ND<0.5	23
7/13/2004	ND<0.5	23
9/15/2004	ND<0.5	23
11/17/2004 ~	ND<0.5	23
1/26/2005	ND<0.5	23

The Wilcoxon Statistic is 256
The Expected value is is 336
The Standard Deviation is 59.397
The Z Score is -1.35529
The Standard Deviation adjusted for ties is 46.6838
The Z Score adjusted for ties is 46.6838
-1.35529 < 2.326 indicating no contamination at 1% significance level
-1.72437 < 2.326 indicating no contamination at 1% significance level when adjusted for ties

CHROMIUM

UNTRANSFORMED SHAPIRO-WILKES NORMALITY

Shapiro-Wilks Test of Normality

Parameter: Lead (Total)

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Background Wells

K = 24; Samples = 48

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	0.02	0.032	0.012	0.3789	0.0045468
2	0.02	0.02	0	0.2604	0
3	0.02	0.02	0	0.2281	0
4	0.02	0.02	0	0.2045	0
5	0.02	0.02	0	0.1855	0
6	0.02	0.02	0	0.1693	0
7	0.02	0.02	0	0.1551	0
8	0.02	0.02	0	0.1423	0
9	0.02	0.02	0	0.1306	0
10	0.02	0.02	0	0.1197	0
11	0.02	0.02	0	0.1095	0
12	0.02	0.02	0	0.0998	0
13	0.02	0.02	0	0.0906	0
14	0.02	0.02	0	0.0817	0
15	0.02	0.02	0	0.0731	0
16	0.02	0.02	0	0.0648	0
17	0.02	0.02	0	0.0568	0
18	0.02	0.02	0	0.0489	0
19	0.02	0.02	0	0.0411	0
20	0.02	0.02	0	0.0335	0
21	0.02	0.02	0	0.0259	0
22	0.02	0.02	0	0.0185	0
23	0.02	0.02	0	0.0111	0
24	0.02	0.02	0	0.0037	0
25	0.02	0.02	0		
26	0.02	0.02	0		
27	0.02	0.02	0		
28	0.02	0.02	0		
29	0.02	0.02	0		
30	0.02	0.02	0		
31	0.02	0.02	0		
32	0.02	0.02	0		
33	0.02	0.02	0		
34	0.02	0.02	0		
35	0.02	0.02	0		
36	0.02	0.02	0		
37	0.02	0.02	0		
38	0.02	0.02	0		
39	0.02	0.02	0		
40	0.02	0.02	0		
41	0.02	0.02	0		
42	0.02	0.02	0		
43	0.02	0.02	0		
44	0.02	0.02	0		
45	0.02	0.02	0		
46	0.02	0.02	0		
47	0.02	0.02	0		
48	0.032	0.02	-0.012		

Sum of b values = 0.0045468
Sample Standard Deviation = 0.00173205

W Statistic = 0.14662
5% Critical value of 0.947 exceeds 0.14662
Evidence of non-normality at 95% level of significance
1% Critical value of 0.929 exceeds 0.14662
Evidence of non-normality at 99% level of significance

Compliance Wells

Well: ECMW-4

1 detection just above detection limit

Well: ECMW-5

100 % Non-detects

Well: ECMW-6

100 % Non-detects

Well: ECMW-7

100 % Non-detects

Well: ECMW-8

100 % Non-detects

Well: ECMW-9

100 % Non-detects

Well: ECMW-10

K = 8; Samples = 16

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	0.02	0.04	0.02	0.5056	0.010112
2	0.02	0.025	0.005	0.329	0.001645
3	0.02	0.02	0	0.2521	0
4	0.02	0.02	0	0.1939	0
5	0.02	0.02	0	0.1447	0
6	0.02	0.02	0	0.1005	0
7	0.02	0.02	0	0.0593	0
8	0.02	0.02	0	0.0196	0
9	0.02	0.02	0		
10	0.02	0.02	0		
11	0.02	0.02	0		
12	0.02	0.02	0		
13	0.02	0.02	0		
14	0.02	0.02	0		
15	0.025	0.02	-0.005		
16	0.04	0.02	-0.02		

Sum of b values = 0.011757
Sample Standard Deviation = 0.00507239
W Statistic = 0.358159
5% Critical value of 0.887 exceeds 0.358159
Evidence of non-normality at 95% level of significance
1% Critical value of 0.844 exceeds 0.358159
Evidence of non-normality at 99% level of significance

Well: ECMW-11
100 % Non-detects

Well: ECMW-12
100 % Non-detects

Well: ECMW-13
100 % Non-detects

Well: ECMW-14
1 detection just above detection limit

Well: ECMW-15
100 % Non-detects

Well: ECMW-16
100 % Non-detects

Well: ECMW-17
100 % Non-detects

Well: ECMW-18
K = 7; Samples = 14

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	0.02	0.147	0.127	0.5251	0.0666877
2	0.02	0.12	0.1	0.3318	0.03318
3	0.02	0.088	0.068	0.246	0.016728
4	0.02	0.055	0.035	0.1802	0.006307
5	0.027	0.05	0.023	0.124	0.002852
6	0.027	0.047	0.02	0.0727	0.001454
7	0.036	0.043	0.007	0.024	0.000168
8	0.043	0.036	-0.007		
9	0.047	0.027	-0.02		
10	0.05	0.027	-0.023		
11	0.055	0.02	-0.035		
12	0.088	0.02	-0.068		
13	0.12	0.02	-0.1		
14	0.147	0.02	-0.127		

Sum of b values = 0.127377
Sample Standard Deviation = 0.0398665
W Statistic = 0.785271
5% Critical value of 0.874 exceeds 0.785271
Evidence of non-normality at 95% level of significance
1% Critical value of 0.825 exceeds 0.785271
Evidence of non-normality at 99% level of significance

LN TRANSFORMED SHAPIRO-WILKES NORMALITY

Shapiro-Wilks Test of Normality

Parameter: Lead (Total)

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Background Wells

K = 24; Samples = 48

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	0.02	0.032	0.012	0.3789	0.0045468
2	0.02	0.02	0	0.2604	0
3	0.02	0.02	0	0.2281	0
4	0.02	0.02	0	0.2045	0
5	0.02	0.02	0	0.1855	0
6	0.02	0.02	0	0.1693	0
7	0.02	0.02	0	0.1551	0
8	0.02	0.02	0	0.1423	0
9	0.02	0.02	0	0.1306	0
10	0.02	0.02	0	0.1197	0
11	0.02	0.02	0	0.1095	0
12	0.02	0.02	0	0.0998	0
13	0.02	0.02	0	0.0906	0
14	0.02	0.02	0	0.0817	0
15	0.02	0.02	0	0.0731	0
16	0.02	0.02	0	0.0648	0
17	0.02	0.02	0	0.0568	0
18	0.02	0.02	0	0.0489	0
19	0.02	0.02	0	0.0411	0
20	0.02	0.02	0	0.0335	0
21	0.02	0.02	0	0.0259	0
22	0.02	0.02	0	0.0185	0
23	0.02	0.02	0	0.0111	0
24	0.02	0.02	0	0.0037	0
25	0.02	0.02	0		
26	0.02	0.02	0		
27	0.02	0.02	0		
28	0.02	0.02	0		
29	0.02	0.02	0		
30	0.02	0.02	0		
31	0.02	0.02	0		
32	0.02	0.02	0		
33	0.02	0.02	0		
34	0.02	0.02	0		
35	0.02	0.02	0		
36	0.02	0.02	0		
37	0.02	0.02	0		
38	0.02	0.02	0		
39	0.02	0.02	0		
40	0.02	0.02	0		
41	0.02	0.02	0		
42	0.02	0.02	0		
43	0.02	0.02	0		
44	0.02	0.02	0		
45	0.02	0.02	0		
46	0.02	0.02	0		
47	0.02	0.02	0		
48	0.032	0.02	-0.012		

Sum of b values = 0.0045468
Sample Standard Deviation = 0.00173205
W Statistic = 0.14662

5% Critical value of 0.947 exceeds 0.14662
Evidence of non-normality at 95% level of significance
1% Critical value of 0.929 exceeds 0.14662
Evidence of non-normality at 99% level of significance

Compliance Wells

Well: ECMW-4
1 detection just above detection limit

Well: ECMW-5
100 % Non-detects

Well: ECMW-6
100 % Non-detects

Well: ECMW-7
100 % Non-detects

Well: ECMW-8
100 % Non-detects

Well: ECMW-9
100 % Non-detects

Well: ECMW-10
K = 8; Samples = 16

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	-3.91202	-3.21888	0.693147	0.5056	0.350455
2	-3.91202	-3.68888	0.223144	0.329	0.0734142
3	-3.91202	-3.912020	0.2521	0	
4	-3.91202	-3.912020	0.1939	0	
5	-3.91202	-3.912020	0.1447	0	
6	-3.91202	-3.912020	0.1005	0	
7	-3.91202	-3.912020	0.0593	0	
8	-3.91202	-3.912020	0.0196	0	
9	-3.91202	-3.912020			
10	-3.91202	-3.912020			
11	-3.91202	-3.912020			
12	-3.91202	-3.912020			
13	-3.91202	-3.912020			
14	-3.91202	-3.912020			
15	-3.68888	-3.91202	-0.223144		
16	-3.21888	-3.91202	-0.693147		

Sum of b values = 0.423869
Sample Standard Deviation = 0.17847
W Statistic = 0.376048
5% Critical value of 0.887 exceeds 0.376048
Evidence of non-normality at 95% level of significance
1% Critical value of 0.844 exceeds 0.376048
Evidence of non-normality at 99% level of significance

Well: ECMW-11
100 % Non-detects

Well: ECMW-12
100 % Non-detects

Well: ECMW-13
100 % Non-detects

Well: ECMW-14
1 hit at detection limit

Well: ECMW-15
100 % Non-detects

Well: ECMW-16
100 % Non-detects

Well: ECMW-17
100 % Non-detects

Well: ECMW-18
K = 7; Samples = 14

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	-3.91202	-1.91732	1.9947	0.5251	1.04742
2	-3.91202	-2.12026	1.79176	0.3318	0.594506
3	-3.91202	-2.43042	1.4816	0.246	0.364475
4	-3.91202	-2.90042	1.0116	0.1802	0.18229
5	-3.61192	-2.99573	0.616186	0.124	0.0764071
6	-3.61192	-3.05761	0.554311	0.0727	0.0402984
7	-3.32424	-3.14656	0.177681	0.024	0.00426435
8	-3.14656	-3.32424	-0.177681		
9	-3.05761	-3.61192	-0.554311		
10	-2.99573	-3.61192	-0.616186		
11	-2.90042	-3.91202	-1.0116		
12	-2.43042	-3.91202	-1.4816		
13	-2.12026	-3.91202	-1.79176		
14	-1.91732	-3.91202	-1.9947		

Sum of b values = 2.30966
Sample Standard Deviation = 0.675993
W Statistic = 0.897983
5% Critical value of 0.874 is less than 0.897983
Data is normally distributed at 95% level of significance
1% Critical value of 0.825 is less than 0.897983
Data is normally distributed at 99% level of significance

NON-PARAMETRIC PREDICTION LIMIT

Well	Date	Samples	Mean	Impacted
ECMW-15	1/25/2005	1	0.02	FALSE
ECMW-15	11/16/2004	1	0.02	FALSE
ECMW-15	9/14/2004	1	0.02	FALSE
ECMW-15	7/13/2004	1	0.02	FALSE
ECMW-15	5/18/2004	1	0.02	FALSE
ECMW-15	3/16/2004	1	0.02	FALSE
ECMW-15	1/28/2004	1	0.02	FALSE
ECMW-15	11/19/2003	1	0.02	FALSE
ECMW-16	1/25/2005	1	0.02	FALSE
ECMW-16	11/16/2004	1	0.02	FALSE
ECMW-16	9/14/2004	1	0.02	FALSE
ECMW-16	7/13/2004	1	0.02	FALSE
ECMW-16	5/18/2004	1	0.02	FALSE
ECMW-16	3/16/2004	1	0.02	FALSE
ECMW-16	1/28/2004	1	0.02	FALSE
ECMW-16	11/19/2003	1	0.02	FALSE
ECMW-17	1/26/2005	1	0.02	FALSE
ECMW-17	11/16/2004	1	0.02	FALSE
ECMW-17	9/14/2004	1	0.02	FALSE
ECMW-17	7/13/2004	1	0.02	FALSE
ECMW-17	5/18/2004	1	0.02	FALSE
ECMW-17	3/16/2004	1	0.02	FALSE
ECMW-17	1/28/2004	1	0.02	FALSE
ECMW-17	11/19/2003	1	0.02	FALSE
ECMW-18	1/26/2005	1	0.055	TRUE
ECMW-18	11/17/2004	1	0.027	FALSE
ECMW-18	9/15/2004	1	0.12	TRUE
ECMW-18	7/13/2004	1	0.043	TRUE
ECMW-18	5/19/2004	1	0.088	TRUE
ECMW-18	3/16/2004	1	0.027	FALSE
ECMW-18	11/19/2003	1	0.02	FALSE
ECMW-18	9/24/2003	1	0.036	TRUE
ECMW-4	1/25/2005	1	0.02	FALSE
ECMW-4	11/16/2004	1	0.02	FALSE
ECMW-4	9/14/2004	1	0.02	FALSE
ECMW-4	7/13/2004	1	0.02	FALSE
ECMW-4	5/19/2004	1	0.02	FALSE
ECMW-4	3/16/2004	1	0.02	FALSE
ECMW-4	1/28/2004	1	0.02	FALSE
ECMW-4	11/19/2003	1	0.02	FALSE
ECMW-5	1/25/2005	1	0.02	FALSE
ECMW-5	11/16/2004	1	0.02	FALSE
ECMW-5	9/14/2004	1	0.02	FALSE
ECMW-5	7/13/2004	1	0.02	FALSE
ECMW-5	5/19/2004	1	0.02	FALSE
ECMW-5	3/16/2004	1	0.02	FALSE
ECMW-5	1/28/2004	1	0.02	FALSE
ECMW-5	11/19/2003	1	0.02	FALSE
ECMW-6	1/25/2005	1	0.02	FALSE
ECMW-6	11/16/2004	1	0.02	FALSE
ECMW-6	9/14/2004	1	0.02	FALSE
ECMW-6	7/13/2004	1	0.02	FALSE
ECMW-6	5/19/2004	1	0.02	FALSE
ECMW-6	3/16/2004	1	0.02	FALSE
ECMW-6	1/28/2004	1	0.02	FALSE
ECMW-6	11/19/2003	1	0.02	FALSE

Well	Date	Samples	Mean	Impacted
ECMW-7	1/25/2005	1	0.02	FALSE
ECMW-7	11/16/2004	1	0.02	FALSE
ECMW-7	9/14/2004	1	0.02	FALSE
ECMW-7	7/13/2004	1	0.02	FALSE
ECMW-7	5/19/2004	1	0.02	FALSE
ECMW-7	3/16/2004	1	0.02	FALSE
ECMW-7	1/28/2004	1	0.02	FALSE
ECMW-7	11/19/2003	1	0.02	FALSE
ECMW-8	1/25/2005	1	0.02	FALSE
ECMW-8	11/16/2004	1	0.02	FALSE
ECMW-8	9/14/2004	1	0.02	FALSE
ECMW-8	7/13/2004	1	0.02	FALSE
ECMW-8	5/19/2004	1	0.02	FALSE
ECMW-8	3/16/2004	1	0.02	FALSE
ECMW-8	1/28/2004	1	0.02	FALSE
ECMW-8	11/19/2003	1	0.02	FALSE
ECMW-9	1/25/2005	1	0.02	FALSE
ECMW-9	11/16/2004	1	0.02	FALSE
ECMW-9	9/14/2004	1	0.02	FALSE
ECMW-9	7/13/2004	1	0.02	FALSE
ECMW-9	5/19/2004	1	0.02	FALSE
ECMW-9	3/16/2004	1	0.02	FALSE
ECMW-9	1/28/2004	1	0.02	FALSE
ECMW-9	11/19/2003	1	0.02	FALSE

WILCOXON INTER-WELL

Wilcoxon Non-Parametric Analysis (Inter-Well)

Parameter: Chromium (Total)

Well: ECMW-18

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total non detects is 49
Non detect rank is 25

Wilcoxon Ranks

Well	Date	Result	Rank
ECMW-1			
	5/29/2001	ND<0.02	25
	11/1/2001	ND<0.02	25
	6/3/2002	ND<0.02	25
	10/30/2002	ND<0.02	25
	12/10/2002	ND<0.02	25
	5/20/2003	ND<0.02	25
	7/24/2003	ND<0.02	25
	9/24/2003	ND<0.02	25
	11/19/2003	ND<0.02	25
	1/28/2004	ND<0.02	25
	3/16/2004	ND<0.02	25
	5/18/2004	ND<0.02	25
	7/13/2004	ND<0.02	25
	9/14/2004	ND<0.02	25
	11/16/2004	ND<0.02	25
	1/25/2005	ND<0.02	25
ECMW-2			
	5/29/2001	0.032	54
	11/1/2001	ND<0.02	25
	6/3/2002	ND<0.02	25
	10/30/2002	ND<0.02	25
	12/10/2002	ND<0.02	25
	5/20/2003	ND<0.02	25
	7/24/2003	ND<0.02	25
	9/24/2003	ND<0.02	25
	11/19/2003	ND<0.02	25
	1/28/2004	ND<0.02	25
	3/16/2004	ND<0.02	25
	5/18/2004	ND<0.02	25
	7/13/2004	ND<0.02	25
	9/14/2004	ND<0.02	25
	11/16/2004	ND<0.02	25
	1/25/2005 ~	ND<0.02	25
ECMW-3			
	5/29/2001	ND<0.02	25
	11/1/2001	ND<0.02	25
	6/3/2002	ND<0.02	25
	10/30/2002	ND<0.02	25
	12/10/2002	ND<0.02	25
	5/20/2003	ND<0.02	25
	7/24/2003	ND<0.02	25
	9/24/2003	ND<0.02	25
	11/19/2003	ND<0.02	25
	1/28/2004	ND<0.02	25
	3/16/2004	ND<0.02	25

5/18/2004	ND<0.02	25
7/13/2004	ND<0.02	25
9/14/2004	ND<0.02	25
11/16/2004	ND<0.02	25
1/25/2005	ND<0.02	25

ECMW-18

10/30/2001	0.05	58
6/4/2002	0.147	62
10/30/2002	ND<0.02	25
12/10/2002	0.02	50
5/21/2003	0.02	51
7/23/2003	0.047	57
9/24/2003	0.036	55
11/19/2003	ND<0.02	25
3/16/2004	0.027	52
5/19/2004	0.088	60
7/13/2004	0.043	56
9/15/2004	0.12	61
11/17/2004 ~	0.027	53
1/26/2005	0.055	59

The Wilcoxon Statistic is 619
The Expected value is is 336
The Standard Deviation is 59.397
The Z Score is 4.75613
The Standard Deviation adjusted for ties is 42.2694
The Z Score adjusted for ties is 42.2694
4.75613 > 2.326 indicating possible contamination at 1% significance level
6.68333 > 2.326 indicating possible contamination at 1% significance level when adjusted for ties

POISSON PREDICTION LIMIT

Poisson Prediction Limit

Parameter: Chromium (Total)

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Recent Dates = 8
Poisson Count of 48 background Samples = 0.972
99% t-test = 2.40834
95% t-test = 1.67793

Well: ECMW-10

Number of comparisons = 8
Future Samples (k) = 8
c = 0.166667
99% Prediction Limit (Tk) = 1.79853
95% Prediction Limit (Tk) = 1.16289

Samples	Sum	95 %tile	99 %tile
8	0.16	FALSE	FALSE

Well: ECMW-14

Number of comparisons = 8
Future Samples (k) = 8
c = 0.166667
99% Prediction Limit (Tk) = 1.79853
95% Prediction Limit (Tk) = 1.16289

Samples	Sum	95 %tile	99 %tile
8	0.16	FALSE	FALSE

Well: ECMW-18

Number of comparisons = 8
Future Samples (k) = 8
c = 0.166667
99% Prediction Limit (Tk) = 1.79853
95% Prediction Limit (Tk) = 1.16289

Samples	Sum	95 %tile	99 %tile
8	0.416	FALSE	FALSE

Well: ECMW-4

Number of comparisons = 8
Future Samples (k) = 8
c = 0.166667
99% Prediction Limit (Tk) = 1.79853
95% Prediction Limit (Tk) = 1.16289

Samples	Sum	95 %tile	99 %tile
8	0.16	FALSE	FALSE

LEAD

UNTRANSFORMED SHAPIRO-WILKES NORMALITY

Shapiro-Wilks Test of Normality

Parameter: Lead (Total)

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Well: ECMW-1

100 % Non-detects

Well: ECMW-2

100 % Non-detects

Well: ECMW-3

100 % Non-detects

Well: ECMW-4

K = 8; Samples = 16

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	0.015	0.06	0.045	0.5056	0.022752
2	0.015	0.04	0.025	0.329	0.008225
3	0.015	0.02	0.005	0.2521	0.0012605
4	0.015	0.02	0.005	0.1939	0.0009695
5	0.015	0.015	0	0.1447	0
6	0.015	0.015	0	0.1005	0
7	0.015	0.015	0	0.0593	0
8	0.015	0.015	0	0.0196	0
9	0.015	0.015	0		
10	0.015	0.015	0		
11	0.015	0.015	0		
12	0.015	0.015	0		
13	0.02	0.015	-0.005		
14	0.02	0.015	-0.005		
15	0.04	0.015	-0.025		
16	0.06	0.015	-0.045		

Sum of b values = 0.033207
Sample Standard Deviation = 0.0123828
W Statistic = 0.479437
5% Critical value of 0.887 exceeds 0.479437
Evidence of non-normality at 95% level of significance
1% Critical value of 0.844 exceeds 0.479437
Evidence of non-normality at 99% level of significance

Well: ECMW-5

100 % Non-detects

Well: ECMW-6

100 % Non-detects

Well: ECMW-7

Normality Test of Parameter Concentrations

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
K = 8; Samples = 16

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	0.015	0.04	0.025	0.5056	0.01264
2	0.015	0.04	0.025	0.329	0.008225
3	0.015	0.031	0.016	0.2521	0.0040336
4	0.015	0.02	0.005	0.1939	0.0009695
5	0.015	0.02	0.005	0.1447	0.0007235
6	0.015	0.018	0.003	0.1005	0.0003015
7	0.015	0.018	0.003	0.0593	0.0001779
8	0.016	0.017	0.001	0.0196	1.96e-005
9	0.017	0.016	-0.001		
10	0.018	0.015	-0.003		
11	0.018	0.015	-0.003		
12	0.02	0.015	-0.005		
13	0.02	0.015	-0.005		
14	0.031	0.015	-0.016		
15	0.04	0.015	-0.025		
16	0.04	0.015	-0.025		

Sum of b values = 0.0270906
Sample Standard Deviation = 0.00866963
W Statistic = 0.650946
5% Critical value of 0.887 exceeds 0.650946
Evidence of non-normality at 95% level of significance
1% Critical value of 0.844 exceeds 0.650946
Evidence of non-normality at 99% level of significance

Well: ECMW-8

Normality Test of Parameter Concentrations

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
K = 7; Samples = 15

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	0.015	0.04	0.025	0.515	0.012875
2	0.015	0.02	0.005	0.3306	0.001653
3	0.015	0.019	0.004	0.2495	0.000998
4	0.015	0.015	0	0.1878	0
5	0.015	0.015	0	0.1353	0
6	0.015	0.015	0	0.088	0
7	0.015	0.015	0	0.0433	0
8	0.015	0.015	0		
9	0.015	0.015	0		
10	0.015	0.015	0		
11	0.015	0.015	0		
12	0.015	0.015	0		
13	0.019	0.015	-0.004		
14	0.02	0.015	-0.005		
15	0.04	0.015	-0.025		

Sum of b values = 0.015526
Sample Standard Deviation = 0.00648588
W Statistic = 0.409311
5% Critical value of 0.881 exceeds 0.409311
Evidence of non-normality at 95% level of significance
1% Critical value of 0.835 exceeds 0.409311
Evidence of non-normality at 99% level of significance

Well: ECMW-9
100 % Non-detects

Well: ECMW-10
100 % Non-detects

Well: ECMW-11
100 % Non-detects

Well: ECMW-12
100 % Non-detects

Well: ECMW-13
100 % Non-detects

Well: ECMW-14
Normality Test of Parameter Concentrations
Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
K = 8; Samples = 16

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	0.015	0.04	0.025	0.5056	0.01264
2	0.015	0.04	0.025	0.329	0.008225
3	0.015	0.028	0.013	0.2521	0.0032773
4	0.015	0.02	0.005	0.1939	0.0009695
5	0.015	0.015	0	0.1447	0
6	0.015	0.015	0	0.1005	0
7	0.015	0.015	0	0.0593	0
8	0.015	0.015	0	0.0196	0
9	0.015	0.015	0		
10	0.015	0.015	0		
11	0.015	0.015	0		
12	0.015	0.015	0		
13	0.02	0.015	-0.005		
14	0.028	0.015	-0.013		
15	0.04	0.015	-0.025		
16	0.04	0.015	-0.025		

Sum of b values = 0.0251118
Sample Standard Deviation = 0.00877496
W Statistic = 0.545976
5% Critical value of 0.887 exceeds 0.545976
Evidence of non-normality at 95% level of significance
1% Critical value of 0.844 exceeds 0.545976
Evidence of non-normality at 99% level of significance

Well: ECMW-15
100 % Non-detects

Well: ECMW-16
100 % Non-detects

Well: ECMW-17
100 % Non-detects

Well: ECMW-18

Normality Test of Parameter Concentrations

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
K = 7; Samples = 14

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	0.015	0.115	0.1	0.5251	0.05251
2	0.015	0.109	0.094	0.3318	0.0311892
3	0.018	0.063	0.045	0.246	0.01107
4	0.021	0.056	0.035	0.1802	0.006307
5	0.025	0.04	0.015	0.124	0.00186
6	0.029	0.033	0.004	0.0727	0.0002908
7	0.029	0.03	0.001	0.024	2.4e-005
8	0.03	0.029	-0.001		
9	0.033	0.029	-0.004		
10	0.04	0.025	-0.015		
11	0.056	0.021	-0.035		
12	0.063	0.018	-0.045		
13	0.109	0.015	-0.094		
14	0.115	0.015	-0.1		

Sum of b values = 0.103251
Sample Standard Deviation = 0.0325563
W Statistic = 0.773705
5% Critical value of 0.874 exceeds 0.773705
Evidence of non-normality at 95% level of significance
1% Critical value of 0.825 exceeds 0.773705
Evidence of non-normality at 99% level of significance

LN TRANSFORMED SHAPIRO-WILKES NORMALITY

Shapiro-Wilks Test of Normality

Parameter: Lead (Total)

Natural Logarithm Transformation
Non-Detects Replaced with Detection Limit

Well: ECMW-1

100 % Non-detects

Well: ECMW-2

100 % Non-detects

Well: ECMW-3

100 % Non-detects

Well: ECMW-4

K = 8; Samples = 16

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	-4.19971	-2.81341	1.38629	0.5056	0.70091
2	-4.19971	-3.21888	0.980829	0.329	0.322693
3	-4.19971	-3.91202	0.287682	0.2521	0.0725247
4	-4.19971	-3.91202	0.287682	0.1939	0.0557816
5	-4.19971	-4.19971	0	0.1447	0
6	-4.19971	-4.19971	0	0.1005	0
7	-4.19971	-4.19971	0	0.0593	0
8	-4.19971	-4.19971	0	0.0196	0
9	-4.19971	-4.19971	0		
10	-4.19971	-4.19971	0		
11	-4.19971	-4.19971	0		
12	-4.19971	-4.19971	0		
13	-3.91202	-4.19971	-0.287682		
14	-3.91202	-4.19971	-0.287682		
15	-3.21888	-4.19971	-0.980829		
16	-2.81341	-4.19971	-1.38629		

Sum of b values = 1.15191
Sample Standard Deviation = 0.408919
W Statistic = 0.529019
5% Critical value of 0.887 exceeds 0.529019
Evidence of non-normality at 95% level of significance
1% Critical value of 0.844 exceeds 0.529019
Evidence of non-normality at 99% level of significance

Well: ECMW-5

100 % Non-detects

Well: ECMW-6

100 % Non-detects

Well: ECMW-7

K = 8; Samples = 16

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	-4.19971	-3.21888	0.980829	0.5056	0.495907
2	-4.19971	-3.21888	0.980829	0.329	0.322693
3	-4.19971	-3.47377	0.725937	0.2521	0.183009
4	-4.19971	-3.91202	0.287682	0.1939	0.0557816
5	-4.19971	-3.91202	0.287682	0.1447	0.0416276
6	-4.19971	-4.01738	0.182322	0.1005	0.0183233
7	-4.19971	-4.01738	0.182322	0.0593	0.0108117
8	-4.13517	-4.07454	0.0606246	0.0196	0.00118824
9	-4.07454	-4.13517	-0.0606246		
10	-4.01738	-4.19971	-0.182322		
11	-4.01738	-4.19971	-0.182322		
12	-3.91202	-4.19971	-0.287682		
13	-3.91202	-4.19971	-0.287682		
14	-3.47377	-4.19971	-0.725937		
15	-3.21888	-4.19971	-0.980829		
16	-3.21888	-4.19971	-0.980829		

Sum of b values = 1.12934
Sample Standard Deviation = 0.345652
W Statistic = 0.711672
5% Critical value of 0.887 exceeds 0.711672
Evidence of non-normality at 95% level of significance
1% Critical value of 0.844 exceeds 0.711672
Evidence of non-normality at 99% level of significance

Well: ECMW-8

Normality Test of Parameter Concentrations

Natural Logarithm Transformation
Non-Detects Replaced with Detection Limit
K = 7; Samples = 15

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	-4.19971	-3.21888	0.980829	0.515	0.505127
2	-4.19971	-3.91202	0.287682	0.3306	0.0951077
3	-4.19971	-3.96332	0.236389	0.2495	0.058979
4	-4.19971	-4.19971	0	0.1878	0
5	-4.19971	-4.19971	0	0.1353	0
6	-4.19971	-4.19971	0	0.088	0
7	-4.19971	-4.19971	0	0.0433	0
8	-4.19971	-4.19971	0		
9	-4.19971	-4.19971	0		
10	-4.19971	-4.19971	0		
11	-4.19971	-4.19971	0		
12	-4.19971	-4.19971	0		
13	-3.96332	-4.19971	-0.236389		
14	-3.91202	-4.19971	-0.287682		
15	-3.21888	-4.19971	-0.980829		

Sum of b values = 0.659214
Sample Standard Deviation = 0.260451
W Statistic = 0.457586
5% Critical value of 0.881 exceeds 0.457586
Evidence of non-normality at 95% level of significance
1% Critical value of 0.835 exceeds 0.457586
Evidence of non-normality at 99% level of significance

Well: ECMW-9
100 % Non-detects

Well: ECMW-10
100 % Non-detects

Well: ECMW-11
100 % Non-detects

Well: ECMW-12
100 % Non-detects

Well: ECMW-13
100 % Non-detects

Well: ECMW-14
K = 8; Samples = 16

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	-4.19971	-3.21888	0.980829	0.5056	0.495907
2	-4.19971	-3.21888	0.980829	0.329	0.322693
3	-4.19971	-3.57555	0.624154	0.2521	0.157349
4	-4.19971	-3.91202	0.287682	0.1939	0.0557816
5	-4.19971	-4.19971	0	0.1447	0
6	-4.19971	-4.19971	0	0.1005	0
7	-4.19971	-4.19971	0	0.0593	0
8	-4.19971	-4.19971	0	0.0196	0
9	-4.19971	-4.19971	0		
10	-4.19971	-4.19971	0		
11	-4.19971	-4.19971	0		
12	-4.19971	-4.19971	0		
13	-3.91202	-4.19971	-0.287682		
14	-3.57555	-4.19971	-0.624154		
15	-3.21888	-4.19971	-0.980829		
16	-3.21888	-4.19971	-0.980829		

Sum of b values = 1.03173
Sample Standard Deviation = 0.354055
W Statistic = 0.56611
5% Critical value of 0.887 exceeds 0.56611
Evidence of non-normality at 95% level of significance
1% Critical value of 0.844 exceeds 0.56611
Evidence of non-normality at 99% level of significance

Well: ECMW-15
100 % Non-detects

Well: ECMW-16
100 % Non-detects

Well: ECMW-17
100 % Non-detects

Well: ECMW-18

K = 7; Samples = 14

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	-4.19971	-2.16282	2.03688	0.5251	1.06957
2	-4.19971	-2.21641	1.9833	0.3318	0.658058
3	-4.01738	-2.76462	1.25276	0.246	0.30818
4	-3.86323	-2.8824	0.980829	0.1802	0.176745
5	-3.68888	-3.21888	0.470004	0.124	0.0582805
6	-3.54046	-3.41125	0.129212	0.0727	0.00939369
7	-3.54046	-3.50656	0.0339016	0.024	0.000813637
8	-3.50656	-3.54046	-0.0339016		
9	-3.41125	-3.54046	-0.129212		
10	-3.21888	-3.68888	-0.470004		
11	-2.8824	-3.86323	-0.980829		
12	-2.76462	-4.01738	-1.25276		
13	-2.21641	-4.19971	-1.9833		
14	-2.16282	-4.19971	-2.03688		

Sum of b values = 2.28104
Sample Standard Deviation = 0.658343
W Statistic = 0.923458
5% Critical value of 0.874 is less than 0.923458
Data is normally distributed at 95% level of significance
1% Critical value of 0.825 is less than 0.923458
Data is normally distributed at 99% level of significance

NON-PARAMETRIC PREDICTION LIMIT

Non-Parametric Prediction Interval

Inter-Well Comparison

Parameter: Lead (Total)

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total Percent Non-Detects = 91.8728%
Number of comparisons = 120
Future Samples (k) = 8
Recent Dates = 8
Background Samples (n) = 48
Maximum Background Concentration = 0.04
Confidence Level = 85.7%
False Positive Rate = 14.3%

Well	Date	Samples	Mean	Impacted
ECMW-10	1/25/2005	1	0.015	FALSE
ECMW-10	11/16/2004	1	0.015	FALSE
ECMW-10	9/14/2004	1	0.015	FALSE
ECMW-10	7/13/2004	1	0.015	FALSE
ECMW-10	5/18/2004	1	0.015	FALSE
ECMW-10	3/16/2004	1	0.015	FALSE
ECMW-10	1/28/2004	1	0.015	FALSE
ECMW-10	11/19/2003	1	0.015	FALSE
ECMW-11	11/17/2004	1	0.015	FALSE
ECMW-11	9/14/2004	1	0.015	FALSE
ECMW-11	7/13/2004	1	0.015	FALSE
ECMW-11	5/18/2004	1	0.015	FALSE
ECMW-11	3/16/2004	1	0.015	FALSE
ECMW-11	1/28/2004	1	0.015	FALSE
ECMW-11	11/19/2003	1	0.015	FALSE
ECMW-11	9/23/2003	1	0.015	FALSE
ECMW-12	1/26/2005	1	0.015	FALSE
ECMW-12	11/16/2004	1	0.015	FALSE
ECMW-12	9/15/2004	1	0.015	FALSE
ECMW-12	7/13/2004	1	0.015	FALSE
ECMW-12	5/19/2004	1	0.015	FALSE
ECMW-12	3/16/2004	1	0.015	FALSE
ECMW-12	1/28/2004	1	0.015	FALSE
ECMW-12	11/19/2003	1	0.015	FALSE
ECMW-13	1/26/2005	1	0.015	FALSE
ECMW-13	11/16/2004	1	0.015	FALSE
ECMW-13	9/14/2004	1	0.015	FALSE
ECMW-13	7/13/2004	1	0.015	FALSE
ECMW-13	5/18/2004	1	0.015	FALSE
ECMW-13	3/16/2004	1	0.015	FALSE
ECMW-13	1/28/2004	1	0.015	FALSE
ECMW-13	11/19/2003	1	0.015	FALSE
ECMW-14	1/26/2005	1	0.015	FALSE
ECMW-14	11/16/2004	1	0.015	FALSE
ECMW-14	9/14/2004	1	0.015	FALSE
ECMW-14	7/13/2004	1	0.015	FALSE
ECMW-14	5/18/2004	1	0.015	FALSE
ECMW-14	3/16/2004	1	0.015	FALSE
ECMW-14	1/28/2004	1	0.028	FALSE
ECMW-14	11/19/2003	1	0.015	FALSE

Well	Date	Samples	Mean	Impacted
ECMW-15	1/25/2005	1	0.015	FALSE
ECMW-15	11/16/2004	1	0.015	FALSE
ECMW-15	9/14/2004	1	0.015	FALSE
ECMW-15	7/13/2004	1	0.015	FALSE
ECMW-15	5/18/2004	1	0.015	FALSE
ECMW-15	3/16/2004	1	0.015	FALSE
ECMW-15	1/28/2004	1	0.015	FALSE
ECMW-15	11/19/2003	1	0.015	FALSE
ECMW-16	1/25/2005	1	0.015	FALSE
ECMW-16	11/16/2004	1	0.015	FALSE
ECMW-16	9/14/2004	1	0.015	FALSE
ECMW-16	7/13/2004	1	0.015	FALSE
ECMW-16	5/18/2004	1	0.015	FALSE
ECMW-16	3/16/2004	1	0.015	FALSE
ECMW-16	1/28/2004	1	0.015	FALSE
ECMW-16	11/19/2003	1	0.015	FALSE
ECMW-17	1/26/2005	1	0.015	FALSE
ECMW-17	11/16/2004	1	0.015	FALSE
ECMW-17	9/14/2004	1	0.015	FALSE
ECMW-17	7/13/2004	1	0.015	FALSE
ECMW-17	5/18/2004	1	0.015	FALSE
ECMW-17	3/16/2004	1	0.015	FALSE
ECMW-17	1/28/2004	1	0.015	FALSE
ECMW-17	11/19/2003	1	0.015	FALSE
ECMW-18	1/26/2005	1	0.056	TRUE
ECMW-18	11/17/2004	1	0.03	FALSE
ECMW-18	9/15/2004	1	0.109	TRUE
ECMW-18	7/13/2004	1	0.033	FALSE
ECMW-18	5/19/2004	1	0.063	TRUE
ECMW-18	3/16/2004	1	0.021	FALSE
ECMW-18	11/19/2003	1	0.015	FALSE
ECMW-18	9/24/2003	1	0.025	FALSE
ECMW-4	1/25/2005	1	0.015	FALSE
ECMW-4	11/16/2004	1	0.015	FALSE
ECMW-4	9/14/2004	1	0.015	FALSE
ECMW-4	7/13/2004	1	0.015	FALSE
ECMW-4	5/19/2004	1	0.015	FALSE
ECMW-4	3/16/2004	1	0.015	FALSE
ECMW-4	1/28/2004	1	0.015	FALSE
ECMW-4	11/19/2003	1	0.015	FALSE
ECMW-5	1/25/2005	1	0.015	FALSE
ECMW-5	11/16/2004	1	0.015	FALSE
ECMW-5	9/14/2004	1	0.015	FALSE
ECMW-5	7/13/2004	1	0.015	FALSE
ECMW-5	5/19/2004	1	0.015	FALSE
ECMW-5	3/16/2004	1	0.015	FALSE
ECMW-5	1/28/2004	1	0.015	FALSE
ECMW-5	11/19/2003	1	0.015	FALSE
ECMW-6	1/25/2005	1	0.015	FALSE
ECMW-6	11/16/2004	1	0.015	FALSE
ECMW-6	9/14/2004	1	0.015	FALSE
ECMW-6	7/13/2004	1	0.015	FALSE
ECMW-6	5/19/2004	1	0.015	FALSE
ECMW-6	3/16/2004	1	0.015	FALSE
ECMW-6	1/28/2004	1	0.015	FALSE
ECMW-6	11/19/2003	1	0.015	FALSE

Well	Date	Samples	Mean	Impacted
ECMW-7	1/25/2005	1	0.016	FALSE
ECMW-7	11/16/2004	1	0.015	FALSE
ECMW-7	9/14/2004	1	0.015	FALSE
ECMW-7	7/13/2004	1	0.015	FALSE
ECMW-7	5/19/2004	1	0.015	FALSE
ECMW-7	3/16/2004	1	0.018	FALSE
ECMW-7	1/28/2004	1	0.018	FALSE
ECMW-7	11/19/2003	1	0.015	FALSE
ECMW-8	1/25/2005	1	0.015	FALSE
ECMW-8	11/16/2004	1	0.015	FALSE
ECMW-8	9/14/2004	1	0.015	FALSE
ECMW-8	7/13/2004	1	0.015	FALSE
ECMW-8	5/19/2004	1	0.015	FALSE
ECMW-8	3/16/2004	1	0.015	FALSE
ECMW-8	1/28/2004	1	0.015	FALSE
ECMW-8	11/19/2003	1	0.015	FALSE
ECMW-9	1/25/2005	1	0.015	FALSE
ECMW-9	11/16/2004	1	0.015	FALSE
ECMW-9	9/14/2004	1	0.015	FALSE
ECMW-9	7/13/2004	1	0.015	FALSE
ECMW-9	5/19/2004	1	0.015	FALSE
ECMW-9	3/16/2004	1	0.015	FALSE
ECMW-9	1/28/2004	1	0.015	FALSE
ECMW-9	11/19/2003	1	0.015	FALSE

WILCOXON INTER-WELL

Wilcoxon Non-Parametric Analysis (Inter-Well)
Parameter: Lead (Total)
Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit

Well: ECMW-18

Total non detects is 51
Non detect rank is 26

Wilcoxon Ranks

Well	Date	Result	Rank
ECMW-1			
	5/29/2001	ND<0.04	26
	11/1/2001	ND<0.04	26
	6/3/2002	ND<0.02	26
	10/30/2002	ND<0.015	26
	12/10/2002	ND<0.015	26
	5/20/2003	ND<0.015	26
	7/24/2003	ND<0.015	26
	9/24/2003	ND<0.015	26
	11/19/2003	ND<0.015	26
	1/28/2004	ND<0.015	26
	3/16/2004	ND<0.015	26
	5/18/2004	ND<0.015	26
	7/13/2004	ND<0.015	26
	9/14/2004	ND<0.015	26
	11/16/2004	ND<0.015	26
	1/25/2005	ND<0.015	26
ECMW-2			
	5/29/2001	ND<0.04	26
	11/1/2001	ND<0.04	26
	6/3/2002	ND<0.02	26
	10/30/2002	ND<0.015	26
	12/10/2002	ND<0.015	26
	5/20/2003	ND<0.015	26
	7/24/2003	ND<0.015	26
	9/24/2003	ND<0.015	26
	11/19/2003	ND<0.015	26
	1/28/2004	ND<0.015	26
	3/16/2004	ND<0.015	26
	5/18/2004	ND<0.015	26
	7/13/2004	ND<0.015	26
	9/14/2004	ND<0.015	26
	11/16/2004	ND<0.015	26
	1/25/2005 ~	ND<0.015	26
ECMW-3			
	5/29/2001	ND<0.04	26
	11/1/2001	ND<0.04	26
	6/3/2002	ND<0.02	26
	10/30/2002	ND<0.015	26
	12/10/2002	ND<0.015	26
	5/20/2003	ND<0.015	26
	7/24/2003	ND<0.015	26
	9/24/2003	ND<0.015	26
	11/19/2003	ND<0.015	26
	1/28/2004	ND<0.015	26
	3/16/2004	ND<0.015	26

5/18/2004	ND<0.015	26
7/13/2004	ND<0.015	26
9/14/2004	ND<0.015	26
11/16/2004	ND<0.015	26
1/25/2005	ND<0.015	26

ECMW-18

10/30/2001	ND<0.04	26
6/4/2002	0.115	62
10/30/2002	0.018	52
12/10/2002	ND<0.015	26
5/21/2003	0.029	55
7/23/2003	0.029	56
9/24/2003	0.025	54
11/19/2003	ND<0.015	26
3/16/2004	0.021	53
5/19/2004	0.063	60
7/13/2004	0.033	58
9/15/2004	0.109	61
11/17/2004 ~	0.03	57
1/26/2005	0.056	59

The Wilcoxon Statistic is 600
The Expected value is is 336
The Standard Deviation is 59.397
The Z Score is 4.43625
The Standard Deviation adjusted for ties is 39.555
The Z Score adjusted for ties is 39.555
4.43625 > 2.326 indicating possible contamination at 1% significance level
6.66162 > 2.326 indicating possible contamination at 1% significance level when adjusted for ties

Well: ECMW-7

Total non detects is 57
Non detect rank is 29

Wilcoxon Ranks

Well	Date	Result	Rank
ECMW-1			
	5/29/2001	ND<0.04	29
	11/1/2001	ND<0.04	29
	6/3/2002	ND<0.02	29
	10/30/2002	ND<0.015	29
	12/10/2002	ND<0.015	29
	5/20/2003	ND<0.015	29
	7/24/2003	ND<0.015	29
	9/24/2003	ND<0.015	29
	11/19/2003	ND<0.015	29
	1/28/2004	ND<0.015	29
	3/16/2004	ND<0.015	29
	5/18/2004	ND<0.015	29
	7/13/2004	ND<0.015	29
	9/14/2004	ND<0.015	29
	11/16/2004	ND<0.015	29
	1/25/2005	ND<0.015	29
ECMW-2			
	5/29/2001	ND<0.04	29
	11/1/2001	ND<0.04	29
	6/3/2002	ND<0.02	29
	10/30/2002	ND<0.015	29

12/10/2002	ND<0.015	29
5/20/2003	ND<0.015	29
7/24/2003	ND<0.015	29
9/24/2003	ND<0.015	29
11/19/2003	ND<0.015	29
1/28/2004	ND<0.015	29
3/16/2004	ND<0.015	29
5/18/2004	ND<0.015	29
7/13/2004	ND<0.015	29
9/14/2004	ND<0.015	29
11/16/2004	ND<0.015	29
1/25/2005 ~	ND<0.015	29

ECMW-3

5/29/2001	ND<0.04	29
11/1/2001	ND<0.04	29
6/3/2002	ND<0.02	29
10/30/2002	ND<0.015	29
12/10/2002	ND<0.015	29
5/20/2003	ND<0.015	29
7/24/2003	ND<0.015	29
9/24/2003	ND<0.015	29
11/19/2003	ND<0.015	29
1/28/2004	ND<0.015	29
3/16/2004	ND<0.015	29
5/18/2004	ND<0.015	29
7/13/2004	ND<0.015	29
9/14/2004	ND<0.015	29
11/16/2004	ND<0.015	29
1/25/2005	ND<0.015	29

ECMW-7

8/8/2001	ND<0.04	29
10/30/2001 ~	ND<0.04	29
6/3/2002 ~	0.031	64
10/30/2002	0.017	59
12/10/2002 ~	ND<0.015	29
5/21/2003	0.02	62
7/24/2003	ND<0.015	29
9/24/2003	0.02	63
11/19/2003	ND<0.015	29
1/28/2004	0.018	60
3/16/2004	0.018	61
5/19/2004	ND<0.015	29
7/13/2004	ND<0.015	29
9/14/2004 ~	ND<0.015	29
11/16/2004	ND<0.015	29
1/25/2005	0.016	58

The Wilcoxon Statistic is 552
The Expected value is is 384
The Standard Deviation is 64.4981
The Z Score is 2.59698
The Standard Deviation adjusted for ties is 34.9476
The Z Score adjusted for ties is 34.9476
2.59698 > 2.326 indicating possible contamination at 1% significance level
4.79289 > 2.326 indicating possible contamination at 1% significance level when adjusted for ties

POISSON PREDICTION LIMIT

Poisson Prediction Limit

Parameter: Lead (Total)

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Recent Dates = 8
Poisson Count of 48 background Samples = 0.885
99% t-test = 2.40834
95% t-test = 1.67793

Well: ECMW-14

Number of comparisons = 8
Future Samples (k) = 8
c = 0.166667
99% Prediction Limit (Tk) = 1.74067
95% Prediction Limit (Tk) = 1.11665

Samples	Sum	95 %tile	99 %tile
8	0.133	FALSE	FALSE

Well: ECMW-18

Number of comparisons = 8
Future Samples (k) = 8
c = 0.166667
99% Prediction Limit (Tk) = 1.74067
95% Prediction Limit (Tk) = 1.11665

Samples	Sum	95 %tile	99 %tile
8	0.352	FALSE	FALSE

Well: ECMW-4

Number of comparisons = 8
Future Samples (k) = 8
c = 0.166667
99% Prediction Limit (Tk) = 1.74067
95% Prediction Limit (Tk) = 1.11665

Samples	Sum	95 %tile	99 %tile
8	0.12	FALSE	FALSE

Well: ECMW-7

Number of comparisons = 8
Future Samples (k) = 8
c = 0.166667
99% Prediction Limit (Tk) = 1.74067
95% Prediction Limit (Tk) = 1.11665

Samples	Sum	95 %tile	99 %tile
8	0.127	FALSE	FALSE

Well: ECMW-8

Number of comparisons = 8
Future Samples (k) = 8
c = 0.166667
99% Prediction Limit (Tk) = 1.74067
95% Prediction Limit (Tk) = 1.11665

Samples	Sum	95 %tile	99 %tile
8	0.12	FALSE	FALSE