4500 NORTH WEST AVE. • P. O. BOX 231 • EL DORADO, AR 71731 • (870) 863-1400

EL DORADO

CHEMICAL COMPANY

November 4, 2014

Mr. Ryan Benefield, P. E.
Arkansas Department of Environmental Quality
5301 Northshore Drive
North Little Rock, AR 72118-5317

RE: El Dorado Chemical Company – AFIN 70-00040
Groundwater Monitoring Statistical Report

Dear Mr. Benefield:

At the request of ADEQ Water Division, El Dorado Chemical Company (EDCC) has performed a statistical analysis of historical groundwater monitoring data from the El Dorado facility. The purpose of the statistical analyses was to determine whether or not the contaminants of concern in the site groundwater are indicating statistically significant trends. Transmitted herewith is the analysis summary report.

The statistical analysis of the EDCC groundwater monitoring well data was completed according to the guidelines presented in an Environmental Protection Agency (EPA) document titled "Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities – Unified Guidance" (Unified Guidance-March 2009). The data indicates that the elevated constituent concentrations in the production area are being contained within the production area. Only production area wells ECMW 5, ECMW 6, ECMW 7, ECMW 8, ECMW 10, and ECMW 11 showed statistically significant increasing trends for a monitored parameter. There are no statistically significant increasing trends for any monitored parameter in any other site monitoring wells.

Thus, we respectfully request that the monitoring frequency for up-gradient wells (ECMW 1, ECMW 2, ECMW 3), production area wells (ECMW 4, ECMW 9, ECMW 12, ECMW 13), mid-gradient wells (ECMW 14, ECMW 15, ECMW 16) and downgradient wells (ECMW 17-22) be reduced from the current semi-annual to biennial.

Thank you for your consideration of this request. If you have any questions, please contact me at 870-863-1400.

Sincerely,
El Dorado Chemical Company

Greg Withrow

Greg Withrow
General Manager

cc w/attach: Ellen Carpenter-ADEQ Water Division
Linda Hanson-ADEQ Water Division
Chuck Nestrud-CNJ
John Carver-LSB
Chuck Campbell-GBM[c]

El Dorado Chemical Company
Groundwater Statistical Analysis Report

October 23, 2014

GBMc & Associates
Strategic Environmental Services

Groundwater Statistical Analysis Report

Prepared for:

El Dorado Chemical Company
4500 North West Avenue
El Dorado, AR 71730

Prepared by:

GBM^c & Associates
219 Brown Lane
Bryant, AR 72022

October 23, 2014

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TABLES

APPENDICES

1.0 INTRODUCTION

El Dorado Chemical Company (EDCC) has performed groundwater sampling and analysis since 2006 in compliance with the Consent Administrative Order (CAO) LIS 06-153. Monitoring wells located up-gradient, within the production area, mid-gradient, and down-gradient from the facility are included in this analysis. Following their review of the 2013 Annual Groundwater Report, Arkansas Department of Environmental Quality (ADEQ) requested that EDCC perform statistical analyses for all required parameters sampled for the groundwater monitoring system implemented in accordance with the CAO LIS 06-153. The purpose of the statistical analyses is to determine whether or not the contaminants of concern in the site groundwater are indicating statistically significant trends.

A statistical analysis of the EDCC groundwater monitoring well data was completed according to the guidelines presented in Environmental Protection Agency (EPA) document titled "Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities – Unified Guidance" (Unified Guidance-March 2009). The Unified Guidance document provides multiple statistical approaches for analyzing groundwater data. A common approach for detection monitoring is establishment of mechanism for comparing intrawell parameter concentrations. The intrawell monitoring approach eliminates natural spatial variability that may be present between monitoring wells. However, if a monitoring well has been impacted prior to initial sampling, establishment of representative background concentrations is jeopardized and comparisons to later data from the same well may be skewed making it difficult to identify contaminated groundwater. The majority of the wells, particularly in the production area, have previously been impacted and intrawell background concentrations are likely not attainable. Another approach suggested by the Unified Guidance document is a statistical comparison of monitoring wells to established background wells that have not been impacted by any site activities.

The statistical analysis approach for the EDCC monitoring well system includes an analysis of variance (ANOVA) comparison of compliance monitoring wells to up-gradient/background wells located on the site. Several of the wells had parameter concentrations that were greater than the respective background concentrations but were not statistically significantly greater than the background concentrations. A second interwell analysis approach utilized includes comparison of data from the compliance monitoring wells to an established 95% upper confidence limit for each of the parameters from the background wells.

Trends in data were statistically analyzed for parameters having concentrations that were significantly different (significantly greater than, or significantly greater than or less than in the case of pH). A statistical analysis of trends was also evaluated for parameters that were greater than the 95% upper confidence limit (greater than the upper or less than the lower 95% confidence limits in the case of pH) established for the background well parameters

A Shapiro-Wilk test was conducted as a precursor to the ANOVA on each of the data sets to determine whether the distributions were normal. All of the data sets failed the normality tests as is the case when multiple non-detect values are reported. Non-normal data sets are generally analyzed using non parametric test such as Kruskal-Wallis which is an analysis of variance (ANOVA) test method based on ranks. An appropriate pairwise multiple comparison procedure (Dunn's Method) was used to isolate wells with median concentrations differing from the control wells.

The 95% upper confidence limit was calculated for each parameter from the data reported for the background monitoring wells (ECMW-1, ECMW-2, and ECMW-3). Additionally, the 95% lower confidence limit was calculated from the pH data for the background monitoring wells. For calculation of means as well as upper and lower confidence limits, the pH data was first converted to hydrogen ion concentrations prior to calculations, and was converted back to pH for presentation in the report and accompanying tables.

2.0 STATISTICAL ANALYSIS RESULTS AND DISCUSSION

Results of the statistical analysis are presented in the following sections. A statistical analysis results table is presented for each parameter. Monitoring wells located in the production area are identified with the well name presented in red for each of the tables. Mid-gradient well names are presented in yellow while down-gradient wells are presented in blue.

Graphs showing the parameter concentrations over time are presented in Appendix A. The graphs show the respective parameter concentration over time. A linear regression trend line is displayed on the graphs. Additionally, the upper (and lower in the case of pH) 95% confidence limit, calculated from the respective data from the background wells, is displayed on the graphs.

A map showing the well locations is located in Appendix B. The wells are color coded as presented in the tables. Wells colored red are production area wells, green represents upgradient or background wells, yellow represents midgradient wells, and blue represents downgradient wells.

2.1 Ammonia Results

Table 1 provides the statistical analyses summary for the ammonia data analyzed for the EDCC groundwater monitoring program.

Table 1. Summary of the EDCC Groundwater Monitoring Program Statistical Analyses for Ammonia.

Monitoring Well	Ammonia-N (mg/L)			
	Mean Concentration mg/L	Sign. Different From Background Wells[1]	Mean Conc. Greater than Background Well 95% UCL[2]	Significant trend, increasing/decreasing
ECMW-4	0.68	No	Yes	No
ECMW-5	0.62	No	Yes	No
ECMW-6	179.68	No	Yes	Y, increasing
ECMW-7	193.87	Yes	Yes	No
ECMW-8	185.07	Yes	Yes	No
ECMW-9	2.02	No	Yes	No
ECMW-10	1.10	No	Yes	No
ECMW-11	14.89	No	Yes	No
ECMW-12	2.01	No	Yes	No
ECMW-13	0.54	No	Yes	No
ECMW-14	0.87	No	Yes	No
ECMW-15	0.68	No	Yes	No
ECMW-16	4.35	No	Yes	Y, decreasing
ECMW-17	2.85	No	Yes	No
ECMW-18	1.10	No	Yes	No
ECMW-19	0.51	No	No	--
ECMW-20	0.69	No	Yes	No
ECMW-21	0.72	No	Yes	No
ECMW-22	0.52	No	No	--
Background	0.52			
95% UCL Background	0.54			

1. Significant difference based on Kruskal-Wallis One Way Analysis of Variance on Ranks.
2. The 95% upper confidence limit was calculated for each parameter for the combined background wells (ECMWs 1, 2, and 3).

Note: "—" indicates no trend evaluated as concentration is not statistically different than background concentration and is less than the upper 95% confidence limit.

Note: Red indicates production area wells; yellow indicates midgradient wells; blue indicates downgradient wells.

Statistically significant differences (alpha = 0.05) were detected for ammonia between the background wells (ECMW-1, ECMW-2, and ECMW-3) and monitoring wells ECMW-7 and ECMW-8. Ammonia concentrations were greater than the upper 95% confidence limit calculated for the background wells in ECMW-4 through ECMW-18, ECMW-20, and ECMW-21. A statistically significant increasing trend over time was observed for the ammonia concentration data in ECMW-6 while a statistically significant decreasing trend was observed for ammonia data in ECMW-16. The remainder of the monitoring wells did not display a statistically significant trend over time.

The concentrations for the midgradient and downgradient wells are generally within the same order of magnitude as the background wells. The elevated ammonia concentrations are observed in the three monitoring wells nearest the groundwater recovery wells. The elevated ammonia levels are contained within the production area with the highest groundwater concentrations near the recovery wells. It may be inferred that the production area groundwater is being arrested by the recovery wells and is not migrating.

2.2 Nitrate Results

Table 2 provides the statistical analyses summary for the nitrate data analyzed for the EDCC groundwater monitoring program.

Table 2. Summary of the EDCC Groundwater Monitoring Program Statistical Analyses for Nitrate.

Monitoring Well	Nitrate- N (mg/L)			
	Mean Concentration mg/L	Sign. Different From Background Wells[1]	Mean Conc. Greater than Background Well 95% UCL[2]	Significant trend, increasing/decreasing
ECMW-4	1.11	No	No	--
ECMW-5	9.11	No	Yes	Y, increasing
ECMW-6	1395.48	Yes	Yes	Y, increasing
ECMW-7	340.90	Yes	Yes	No
ECMW-8	519.52	Yes	Yes	No
ECMW-9	33.06	No	Yes	No
ECMW-10	95.32	Yes	Yes	Y, decreasing
ECMW-11	13.19	No	Yes	Y, increasing
ECMW-12	0.48	No	No	--
ECMW-13	0.49	No	No	--
ECMW-14	24.05	No	Yes	Y, decreasing
ECMW-15	8.00	No	Yes	Y, decreasing
ECMW-16	38.92	No	Yes	Y, decreasing
ECMW-17	58.88	No	Yes	Y, decreasing
ECMW-18	4.14	No	Yes	No
ECMW-19	0.49	No	No	--
ECMW-20	0.92	No	No	--
ECMW-21	2.32	No	Yes	No
ECMW-22	1.25	No	No	--
Background	1.08			
95% UCL Background	1.31			

1. Significant difference based on Kruskal-Wallis One Way Analysis of Variance on Ranks.
2. The 95% upper confidence limit was calculated for each parameter for the combined background wells (ECMWs 1, 2, and 3).

Note: "—" indicates no trend evaluated as concentration is not statistically different than background concentration and is less than the upper 95% confidence limit.

Note: Red indicates production area wells; yellow indicates midgradient wells; blue indicates downgradient wells.

Statistically significant differences (alpha = 0.05) were detected for nitrate between the background wells (ECMW-1, ECMW-2, and ECMW-3) and monitoring wells ECMW-6 through ECMW-8 and ECMW-10. Nitrate concentrations were greater than the upper 95% confidence limit calculated for the background wells in ECMW-5 through ECMW-11, ECMW-14 through ECMW-18, and ECMW-21. Statistically significant increasing trends with time were observed for ECMW-5, ECMW-6, and ECMW-11. Statistically significant decreasing trends were observed for ECMW-10, ECMW-14, ECMW-15, ECMW-16, and ECMW-17.

The downgradient wells are generally within the same order of magnitude as the background wells with the exception of ECMW-17. The average nitrate concentration in ECMW-17 and the intermediate wells (ECMW-14, ECMW-15, and ECMW-16) range from 8 mg/L to 59 mg/L compared to the upper 95% confidence limit for the background wells of 1.31 mg/L. Statistical analyses of the trends for ECMW-14 through ECMW-17 show a statistically significant decreasing trend in nitrate concentration over time. Evaluation of the data for these wells shows that the nitrate concentrations are currently within the same order of magnitude as the background wells ranging from 1.5 mg/L to approximately 10 mg/L. The lower concentrations in these wells have been consistent since 2007.

The highest nitrate concentrations are observed in the monitoring wells nearest the recovery wells. As with ammonia, elevated nitrate concentrations in the groundwater appear to be contained within the production area, at least since 2007.

2.3 Sulfate Results

Table 3 provides the statistical analyses summary for the sulfate data analyzed for the EDCC groundwater monitoring program.

Table 3. Summary of the EDCC Groundwater Monitoring Program Statistical Analyses for Sulfate.

Monitoring Well	Sulfate (mg/L)			
	Mean Concentration mg/L	Sign. Different From Background Wells[1]	Mean Conc. Greater Than Background Well 95% UCL[2]	Significant trend, increasing/decreasing
ECMW-4	852.98	Yes	Yes	No
ECMW-5	357.89	No	Yes	Y, decreasing
ECMW-6	46.10	No	Yes	Y, increasing
ECMW-7	625.94	No	Yes	Y, increasing
ECMW-8	668.23	No	Yes	No
ECMW-9	548.39	No	Yes	No
ECMW-10	125.55	No	Yes	Y, increasing
ECMW-11	251.71	No	Yes	Y, decreasing
ECMW-12	12.48	No	No	--
ECMW-13	480.52	No	Yes	No
ECMW-14	186.09	No	Yes	Y, decreasing
ECMW-15	12.13	No	No	--
ECMW-16	10.74	No	No	--
ECMW-17	34.51	No	Yes	No
ECMW-18	9.43	No	No	--
ECMW-19	4.41	No	No	--
ECMW-20	11.24	No	No	--
ECMW-21	4.44	No	No	--
ECMW-22	4.89	No	No	--
Background	13.99			
95% UCL Background	15.83			

1. Significant difference based on Kruskal-Wallis One Way Analysis of Variance on Ranks.
2. The 95% upper confidence limit was calculated for each parameter for the combined background wells (ECMWs 1, 2, and 3).

Note: "—" indicates no trend evaluated as concentration is not statistically different than background concentration and is less than the upper 95% confidence limit.

Note: Red indicates production area wells; yellow indicates midgradient wells; blue indicates downgradient wells.

Statistically significant differences (alpha = 0.05) were detected for sulfate between the background wells (ECMW-1, ECMW-2, and ECMW-3) and monitoring well ECMW-4. Sulfate concentrations were greater than the upper 95% confidence limit calculated for the background wells in ECMW-4 through ECMW-11, ECMW-13, ECMW-14, and ECMW-17. Statistically significant increasing trends with time were observed for ECMW-6, ECMW-7, and ECMW-10. Statistically significant decreasing trends were observed for ECMW-5, ECMW-11, and ECMW-14.

With the exception of monitoring well ECMW-17 and ECMW-14 all of the downgradient and midgradient wells are below the 95% confidence limit calculated from the background wells. The ECMW-14 sulfate data displays a statistically significant decreasing trend over time, while the ECMW-17 data does not display a statistically significant trend.

The highest concentrations for sulfate were observed in the production area. One of the production area perimeter wells, ECMW-11, shows a statistically significant decreasing trend over time. While not statistically significant, sulfate concentrations in ECMW-4 and ECMW-13 (perimeter wells in the production area) also show a decreasing trend with time. The elevated sulfate concentration in the groundwater appears to be contained in the production area. The highest sulfate concentrations are near the recovery wells.

2.4 pH Results

Table 4 provides the statistical analyses summary for the pH data analyzed for the EDCC groundwater monitoring program.

Table 4. Summary of the EDCC Groundwater Monitoring Program Statistical Analyses for pH.

Monitoring Well	pH (s.u.)				
	Mean Value[4] s.u.	Sign. Different From Background Wells[1]	Mean Conc. Less than Background Well 95% LCL[3]	Mean Conc. Greater than Background Well 95% UCL[3]	Significant trend, increasing/decreasing
ECMW-4	4.11	Yes	Yes	No	No
ECMW-5	5.35	No	No	No	--
ECMW-6	4.38	Yes	Yes	No	No
ECMW-7	3.80	Yes	Yes	No	No
ECMW-8	3.98	Yes	Yes	No	No
ECMW-9	5.38	No	No	No	--
ECMW-10	4.40	Yes	Yes	No	No
ECMW-11	4.46	Yes	Yes	No	No
ECMW-12	5.95	No	No	Yes	No
ECMW-13	4.96	No	No	No	--
ECMW-14	4.77	Yes	Yes	No	No
ECMW-15	4.70	Yes	Yes	No	No
ECMW-16	4.59	Yes	Yes	No	No
ECMW-17	4.32	Yes	Yes	No	No
ECMW-18	2.87	No	Yes	No	No
ECMW-19	5.93	No	No	Yes	No
ECMW-20	5.75	No	No	Yes	No
ECMW-21	4.37	No	Yes	No	No
ECMW-22	5.79	No	No	Yes	No
Background	5.2				
95% UCL Background	5.7				
95% LCL Background	4.9				

1. Significant difference based on Kruskal-Wallis One Way Analysis of Variance on Ranks.
2. The 95% upper confidence limit was calculated for each parameter for the combined background wells (ECMWs 1, 2, and 3).
3. The 95% upper and lower confidence limit was calculated for pH for the combined background wells (ECMWs 1, 2, and 3). The LCL is 4.9 and the UCL is 5.7.
4. Mean pH concentration was calculated by converting the pH value to hydrogen ion concentration, calculating the average, then converting the average hydrogen ion concentration back to pH.

Note: "—" indicates no trend evaluated as concentration is not statistically different than background concentration and is less than the upper 95% confidence limit.

Note: Red indicates production area wells; yellow indicates midgradient wells; blue indicates downgradient wells.

Statistically significant differences (alpha = 0.05) were detected for pH between the background wells (ECMW-1, ECMW-2, and ECMW-3) and monitoring wells ECMW-4, ECMW-6 through ECMW-8, ECMW-10, ECMW-11, and ECMW-14 through ECMW-17. The pH value was lower than the lower 95% confidence limit calculated for the background wells in ECMW-4, ECMW-6, ECMW-7, ECMW-8, ECMW-10, ECMW-11, ECMW-14 through ECMW-18, and ECMW-21. The pH value was greater than the upper 95% confidence limit calculated for the background wells in ECMW-12, ECMW-19, ECMW-20, and ECMW-22. There were no significant trends for pH data at any of the wells.

The pH values vary across the site with no detectible pattern. None of the wells display a statistically significant trend over time.

2.5 Specific Conductance Results

Table 5 provides the statistical analyses summary for the specific conductance data analyzed for the EDCC groundwater monitoring program.

Table 5. Summary of the EDCC Groundwater Monitoring Program Statistical Analyses for Specific Conductance.

Monitoring Well	Specific Conductance (uS)			
	Mean Concentration mg/L	Sign. Different From Background Wells[1]	Mean Conc. Greater than Background Well 95% UCL[2]	Significant trend, increasing/decreasing
ECMW-4	5419.54	Yes	Yes	No
ECMW-5	690.06	No	Yes	Y, decreasing
ECMW-6	7871.63	Yes	Yes	y, increasing
ECMW-7	8233.89	Yes	Yes	Y, increasing
ECMW-8	9526.88	Yes	Yes	Y, increasing
ECMW-9	2998.09	No	Yes	No
ECMW-10	947.14	No	Yes	Y, decreasing
ECMW-11	782.72	No	Yes	No
ECMW-12	605.52	No	Yes	No
ECMW-13	974.74	No	Yes	No
ECMW-14	693.12	No	Yes	No
ECMW-15	130.71	No	No	--
ECMW-16	409.04	No	Yes	Y, decreasing
ECMW-17	601.24	No	Yes	Y, decreasing
ECMW-18	201.35	No	No	--
ECMW-19	129.60	No	No	--
ECMW-20	174.73	No	No	--
ECMW-21	90.84	No	No	--
ECMW-22	172.23	No	No	--
Background	240.20			
95% UCL Background	**270.26**			

1. Significant difference based on Kruskal-Wallis One Way Analysis of Variance on Ranks.
2. The 95% upper confidence limit was calculated for each parameter for the combined background wells (ECMWs 1, 2, and 3).

Note: "—" indicates no trend evaluated as concentration is not statistically different than background concentration and is less than the upper 95% confidence limit.

Note: Red indicates production area wells; yellow indicates midgradient wells; blue indicates downgradient wells.

Statistically significant differences (alpha = 0.05) were detected for specific conductance between the background wells and monitoring wells ECMW-4, ECMW-6, ECMW-7, and ECMW-8. Specific conductance values were greater than the upper 95% confidence limit calculated for the background wells in ECMW-4 through ECMW-14, ECMW-16, and ECMW-17. Statistically significant decreasing trends over time were observed in wells ECMW-5, ECMW-10, ECMW-16, and ECMW-17. Statistically significant increasing trends over time were observed in wells ECMW-6, ECMW-7, and ECMW-8. The remainder of the wells did not display statistically significant trends over time.

Specific conductance is a measure of electrical conductivity and indirectly used to indicate the level of dissolved ions in solution. Therefore, the specific conductance measurements reflect the results for the dissolved ions of ammonia, nitrate, and sulfate as well as other parameters. As with ammonia, nitrate, and sulfate, the results show that the highest specific conductance values are found in the production area and indicate that the groundwater with statistically elevated specific conductance is contained within the production area.

2.6 Additional Parameter Results

In addition to the parameters discussed in Sections 2.1 through 2.5, statistical analyses were performed for dissolved and total chromium, dissolved and total lead, and temperature. There were no significant differences between the background wells and monitoring wells for any of these parameters.

Temperature values for sixteen of the nineteen monitoring wells were greater than the upper 95% confidence limit calculated for the background wells. The temperature values did not display a statistically significant trend over time for any of the wells.

Dissolved chromium for ECMW-18 and total chromium for ECMW-18 and ECMW-21 were greater than the upper 95% confidence limit calculated for the

background wells. Dissolved lead for ECMW-6 as well as total lead for ECMW-18 and ECMW-21 were greater than the 95% confidence limit calculated for the background wells. The majority of the samples for all of the wells, including those with average values greater than the 95% confidence limit, were reported as less than detect.

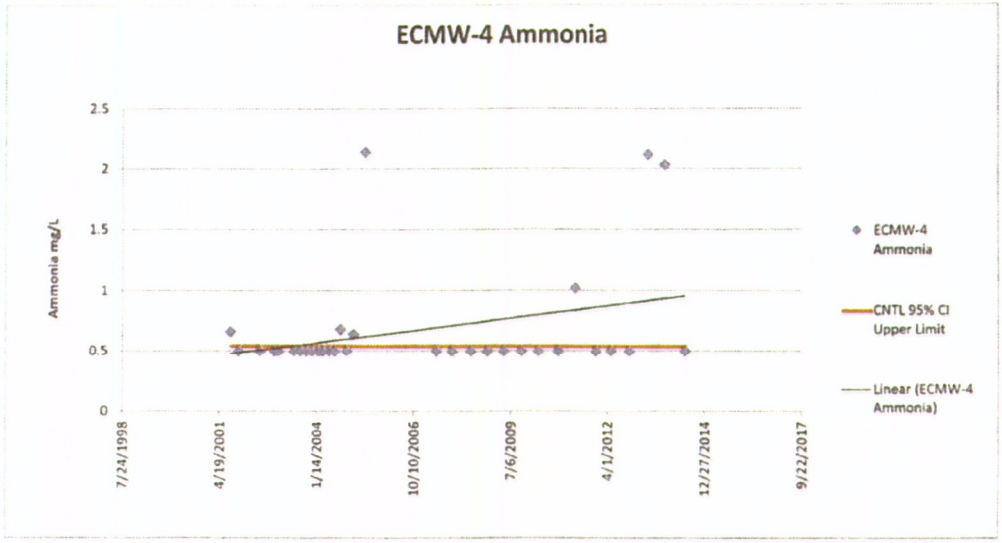
3.0 SUMMARY

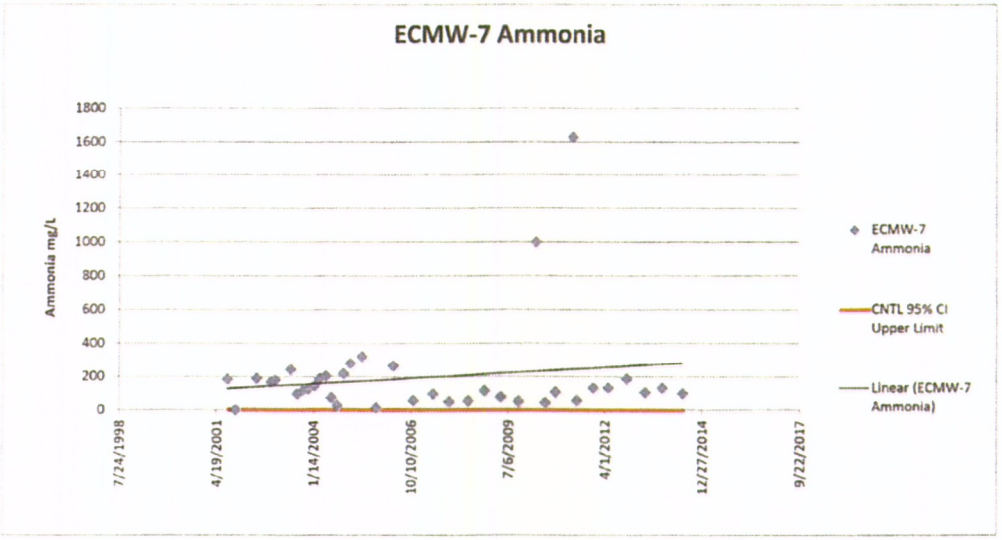
The data reported for the EDCC groundwater monitoring wells indicate that the elevated constituent concentrations in the production area are being contained within the production area. There are no statistically significant increasing trends for any monitored parameter in all midgradient and downgradient wells. The parameter concentrations for the midgradient and downgradient wells are generally statistically similar to the background wells or within the same order of magnitude. Where trends over time are observed in the midgradient and downgradient wells, they are decreasing.

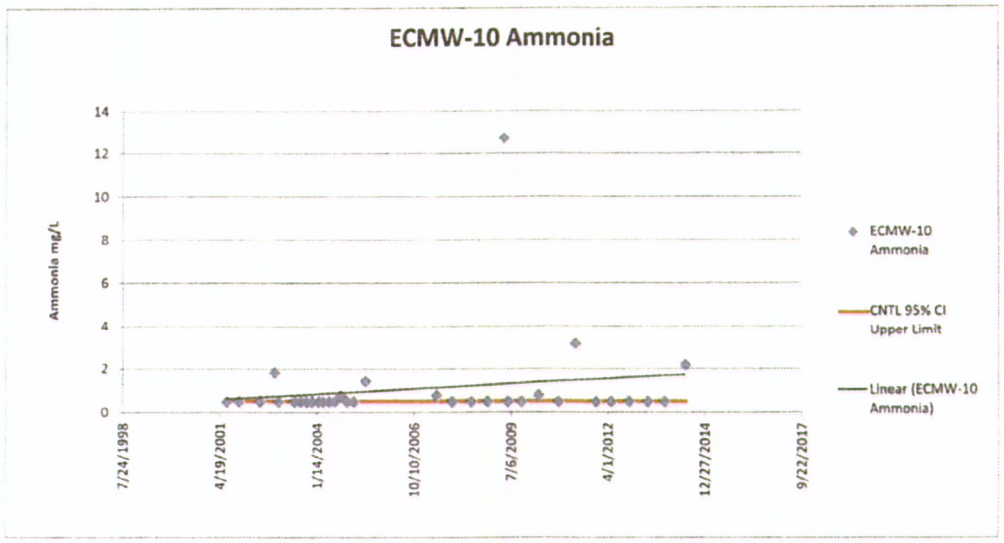
The highest parameter concentrations are observed within the monitoring wells nearest the recovery wells (ECMW-5 through ECMW-8) with constituent concentrations generally at least an order of magnitude greater than downgradient monitoring wells within the production area (ECMW-9 through ECMW13). The monitoring wells located nearest to the recovery wells often displayed statistically significant increasing trends over time. The statistical analyses indicate that the groundwater containing elevated parameter concentrations is being controlled by the recovery wells and is not migrating away from the production area.

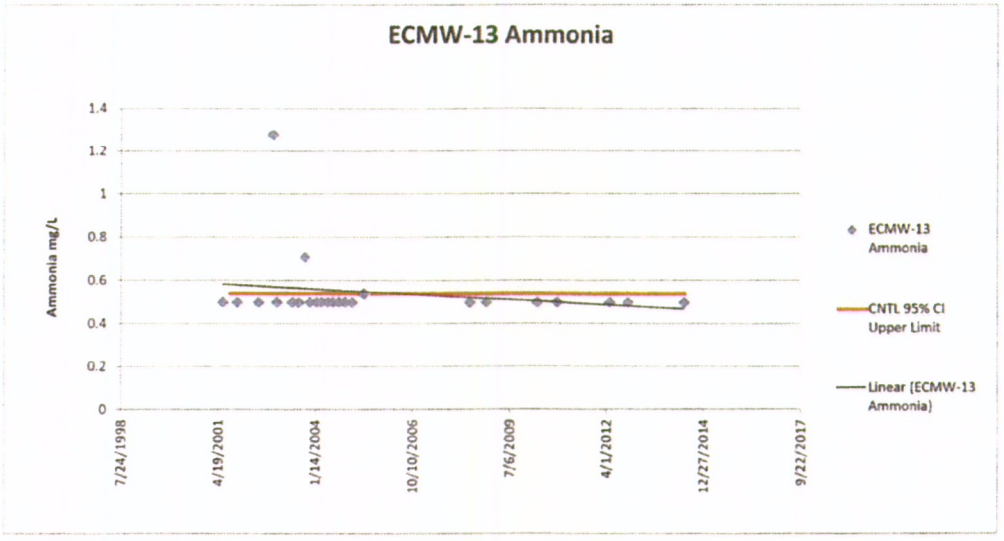
Appendix A

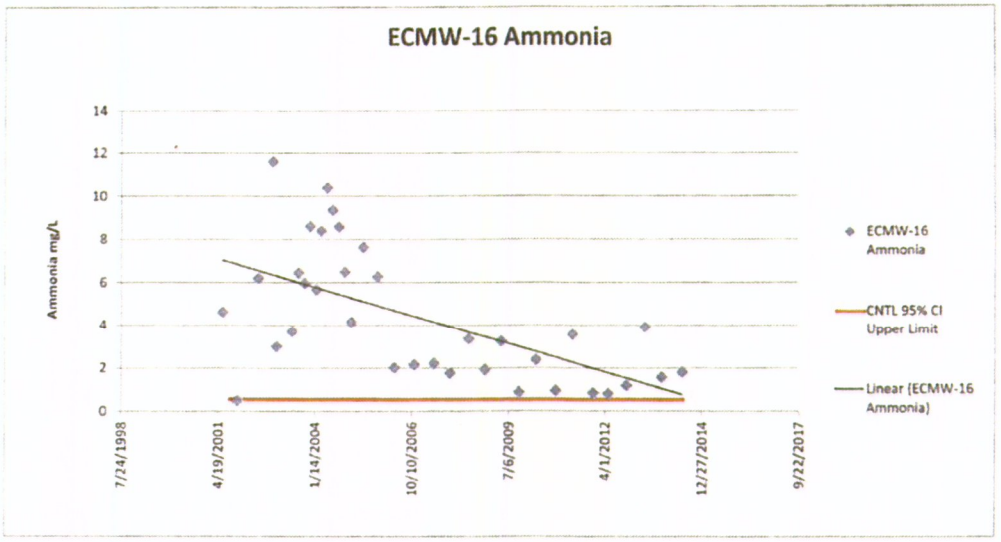
EDCC Groundwater Data Graphs

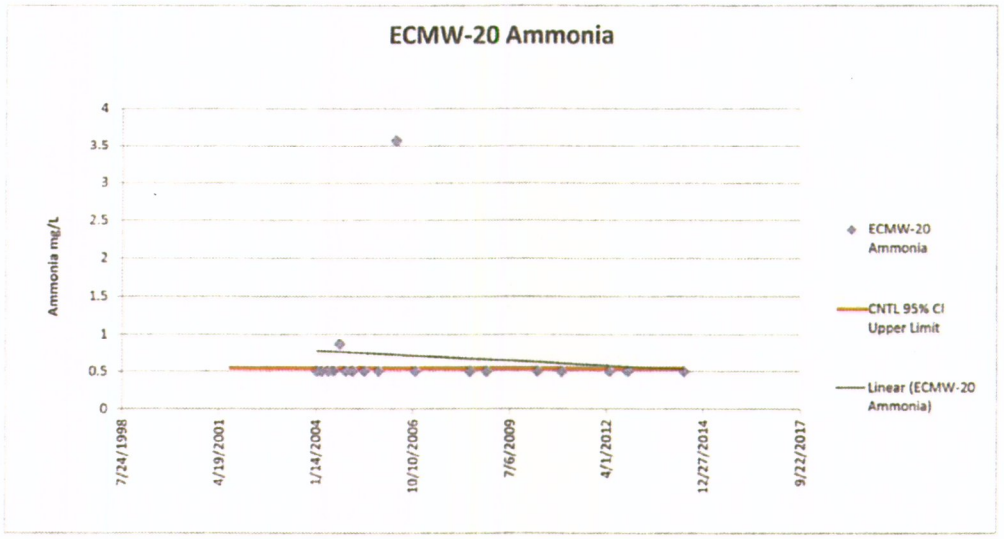

ECMW-4 Ammonia
Ammonia mg/L
2.5
2
1.5
1
0.5
0
7/24/1998
4/19/2001
1/14/2004
10/10/2006
7/6/2009
4/1/2012
12/27/2014
9/22/2017
ECMW-4 Ammonia
CNTL 95% CI Upper Limit
Linear (ECMW-4 Ammonia)

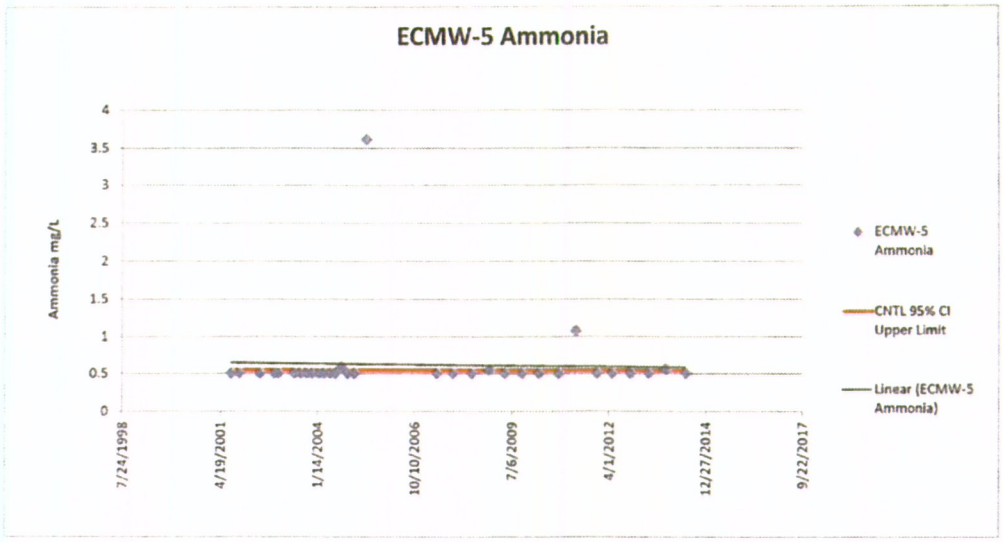

ECMW-7 Ammonia
Ammonia mg/L
1800
1600
1400
1200
1000
800
600
400
200
0
7/24/1998
4/19/2001
1/14/2004
10/10/2006
7/6/2009
4/1/2012
12/27/2014
9/22/2017
ECMW-7 Ammonia
CNTL 95% CI Upper Limit
Linear (ECMW-7 Ammonia)

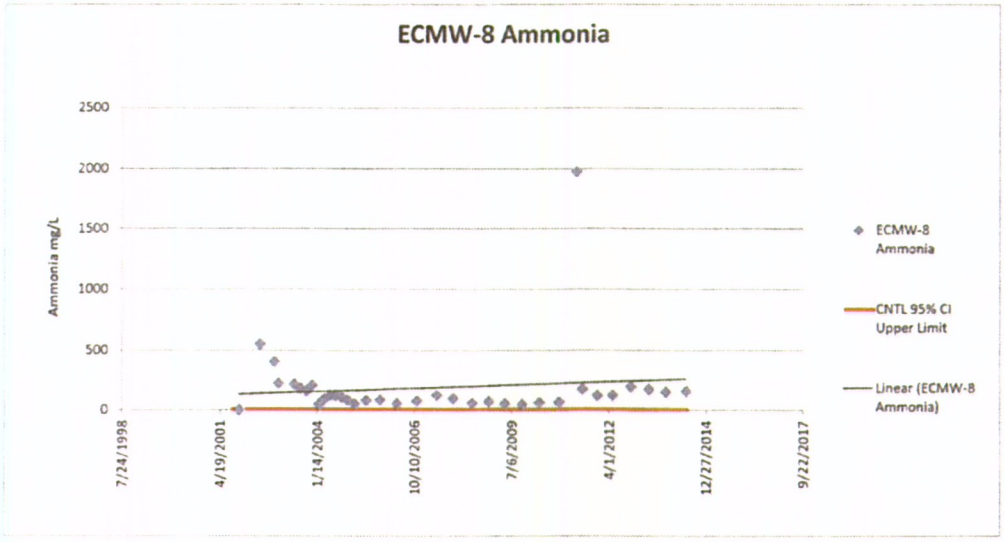

ECMW-10 Ammonia
Ammonia mg/L
14
12
10
8
6
4
2
0
7/24/1998
4/19/2001
1/14/2004
10/10/2006
7/6/2009
4/1/2012
12/27/2014
9/22/2017
ECMW-10 Ammonia
CNTL 95% CI Upper Limit
Linear (ECMW-10 Ammonia)

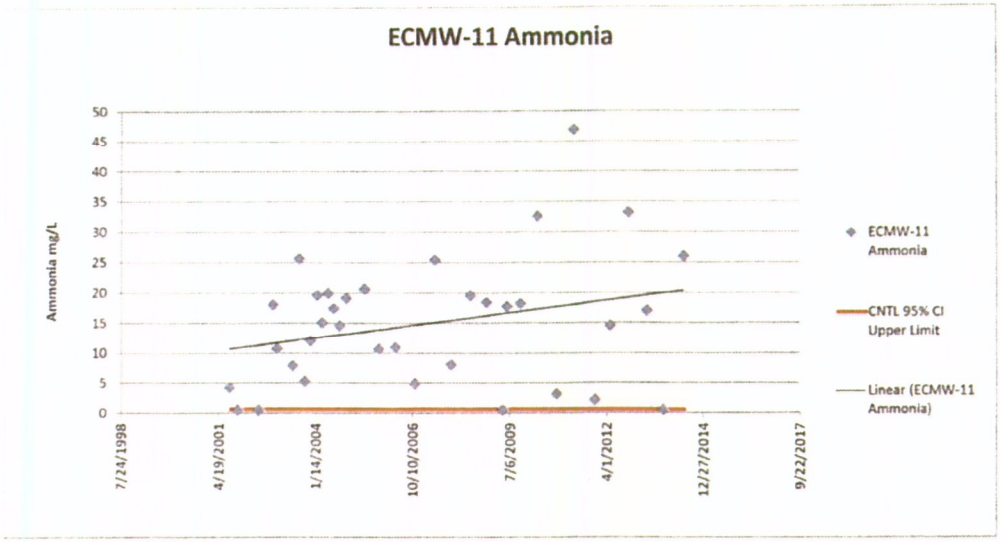

ECMW-13 Ammonia
Ammonia mg/L
1.4
1.2
1
0.8
0.6
0.4
0.2
0
7/24/1998
4/19/2001
1/14/2004
10/10/2006
7/6/2009
4/1/2012
12/27/2014
9/22/2017
ECMW-13 Ammonia
CNTL 95% CI Upper Limit
Linear (ECMW-13 Ammonia)

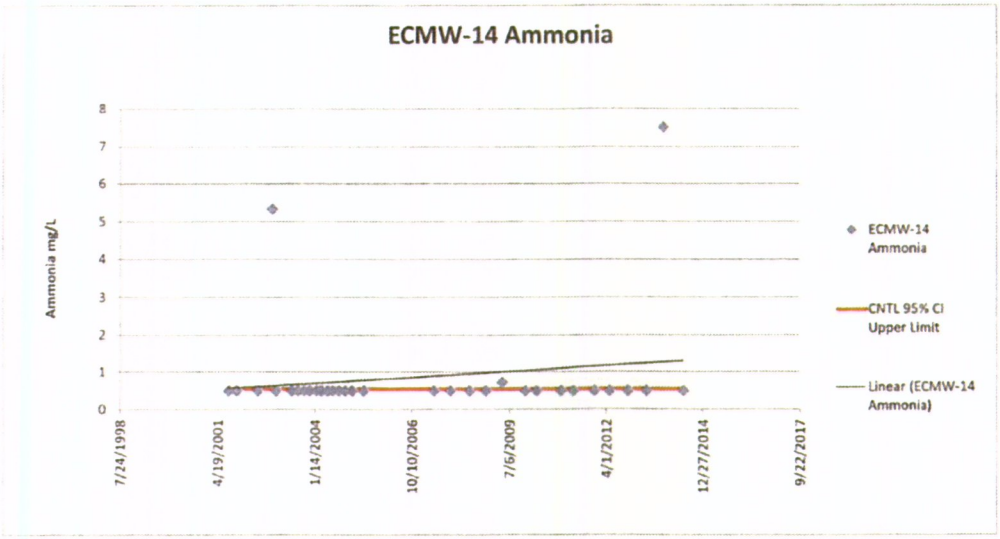

ECMW-16 Ammonia
Ammonia mg/L
14
12
10
8
6
4
2
0
7/24/1998
4/19/2001
1/14/2004
10/10/2006
7/6/2009
4/1/2012
12/27/2014
9/22/2017
ECMW-16 Ammonia
CNTL 95% CI Upper Limit
Linear (ECMW-16 Ammonia)

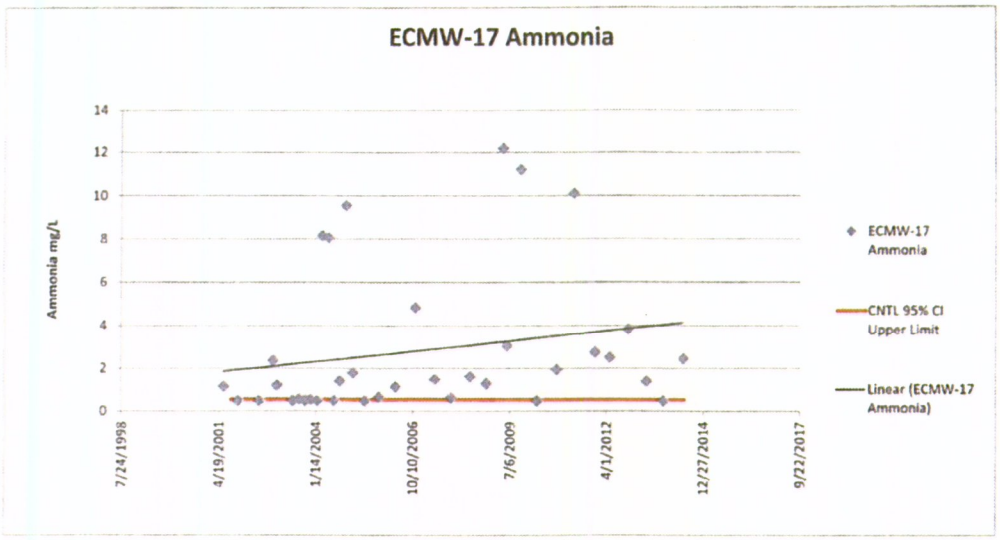

ECMW-20 Ammonia
Ammonia mg/L
4
3.5
3
2.5
2
1.5
1
0.5
0
7/24/1998
4/19/2001
1/14/2004
10/10/2006
7/6/2009
4/1/2012
12/27/2014
9/22/2017
ECMW-20 Ammonia
CNTL 95% CI Upper Limit
Linear (ECMW-20 Ammonia)

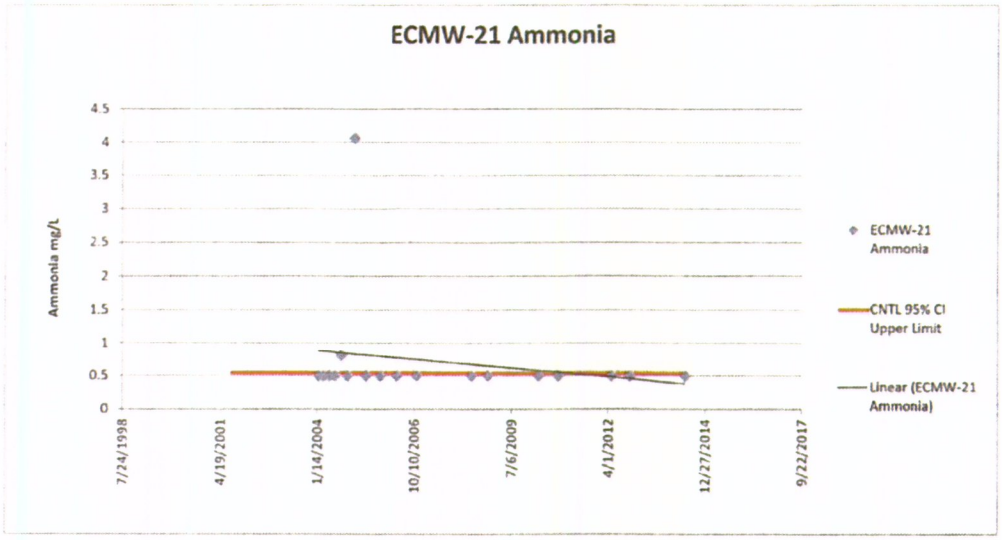

ECMW-5 Ammonia
Ammonia mg/L
4
3.5
3
2.5
2
1.5
1
0.5
0
7/24/1998
4/19/2001
1/14/2004
10/10/2006
7/6/2009
4/1/2012
12/27/2014
9/22/2017
ECMW-5 Ammonia
CNTL 95% CI Upper Limit
Linear (ECMW-5 Ammonia)

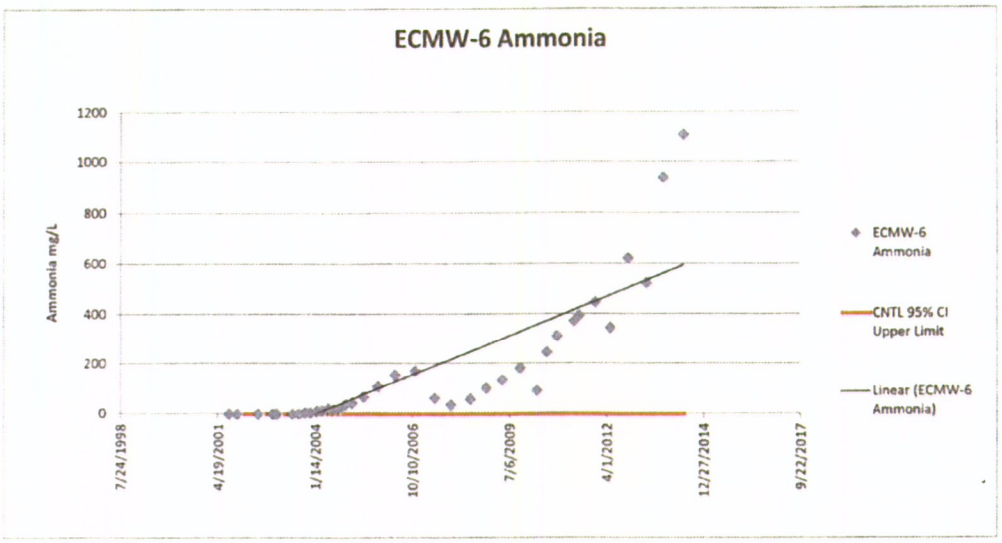

ECMW-8 Ammonia
Ammonia mg/L
2500
2000
1500
1000
500
0
7/24/1998
4/19/2001
1/14/2004
10/10/2006
7/6/2009
4/1/2012
12/27/2014
9/22/2017
ECMW-8 Ammonia
CNTL 95% CI Upper Limit
Linear (ECMW-8 Ammonia)

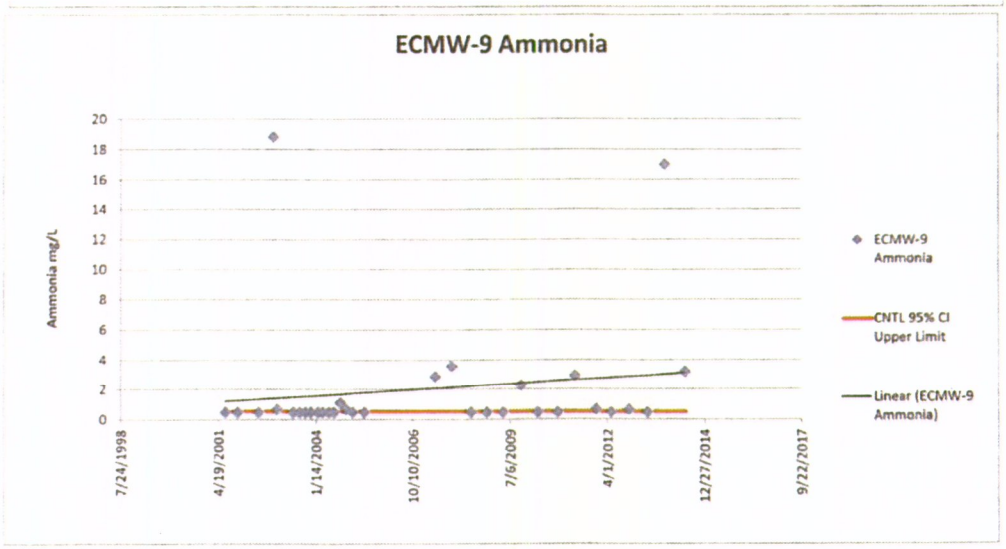

ECMW-11 Ammonia
Ammonia mg/L
50
45
40
35
30
25
20
15
10
5
0
7/24/1998
4/19/2001
1/14/2004
10/10/2006
7/6/2009
4/1/2012
12/27/2014
9/22/2017
ECMW-11 Ammonia
CNTL 95% CI Upper Limit
Linear (ECMW-11 Ammonia)

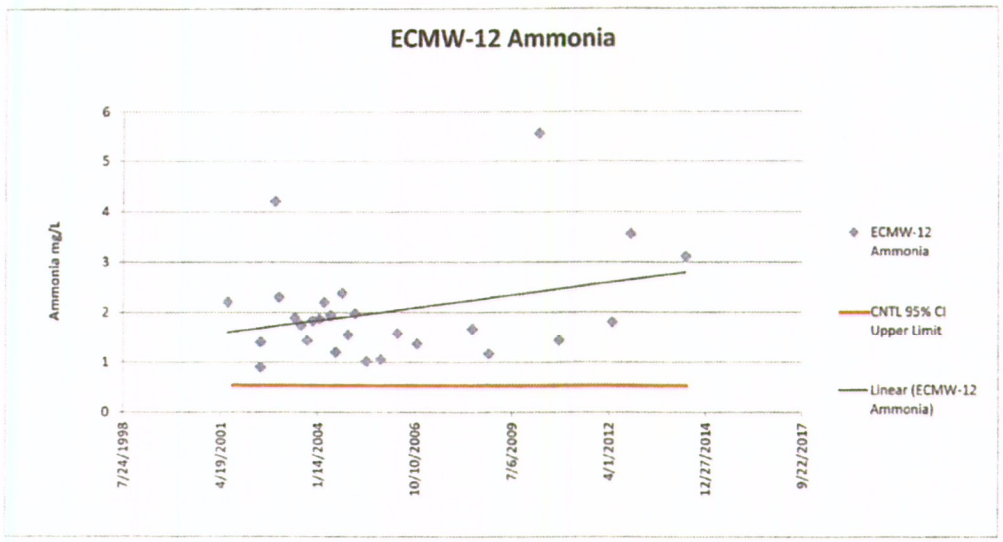

ECMW-14 Ammonia
Ammonia mg/L
8
7
6
5
4
3
2
1
0
7/24/1998
4/19/2001
1/14/2004
10/10/2006
7/6/2009
4/1/2012
12/27/2014
9/22/2017
ECMW-14 Ammonia
CNTL 95% CI Upper Limit
Linear (ECMW-14 Ammonia)

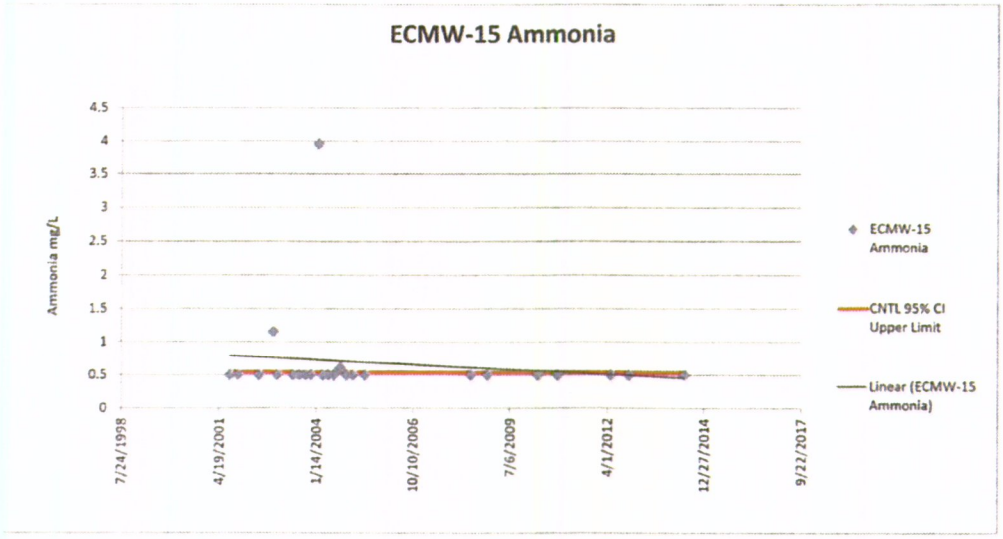

ECMW-17 Ammonia
Ammonia mg/L
14
12
10
8
6
4
2
0
7/24/1998
4/19/2001
1/14/2004
10/10/2006
7/6/2009
4/1/2012
12/27/2014
9/22/2017
ECMW-17 Ammonia
CNTL 95% CI Upper Limit
Linear (ECMW-17 Ammonia)

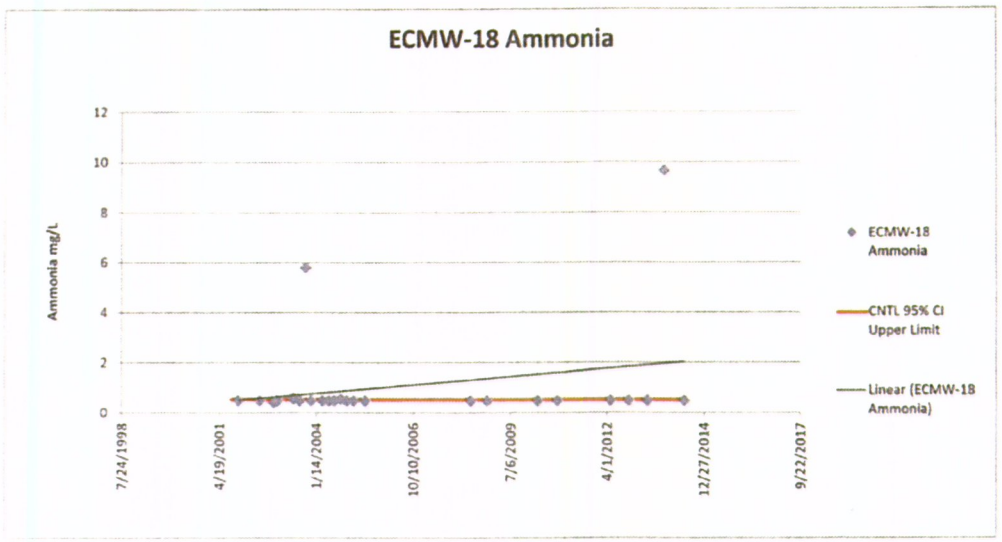

ECMW-21 Ammonia
Ammonia mg/L
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
7/24/1998
4/19/2001
1/14/2004
10/10/2006
7/6/2009
4/1/2012
12/27/2014
9/22/2017
ECMW-21 Ammonia
CNTL 95% CI Upper Limit
Linear (ECMW-21 Ammonia)

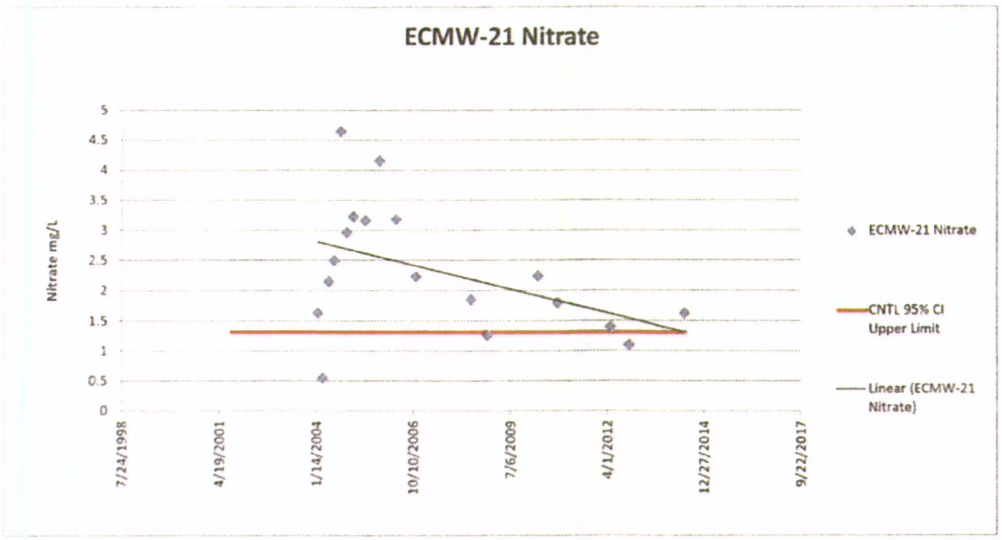

ECMW-6 Ammonia
Ammonia mg/L
1200
1000
800
600
400
200
0
7/24/1998
4/19/2001
1/14/2004
10/10/2006
7/6/2009
4/1/2012
12/27/2014
9/22/2017
ECMW-6 Ammonia
CNTL 95% CI Upper Limit
Linear (ECMW-6 Ammonia)

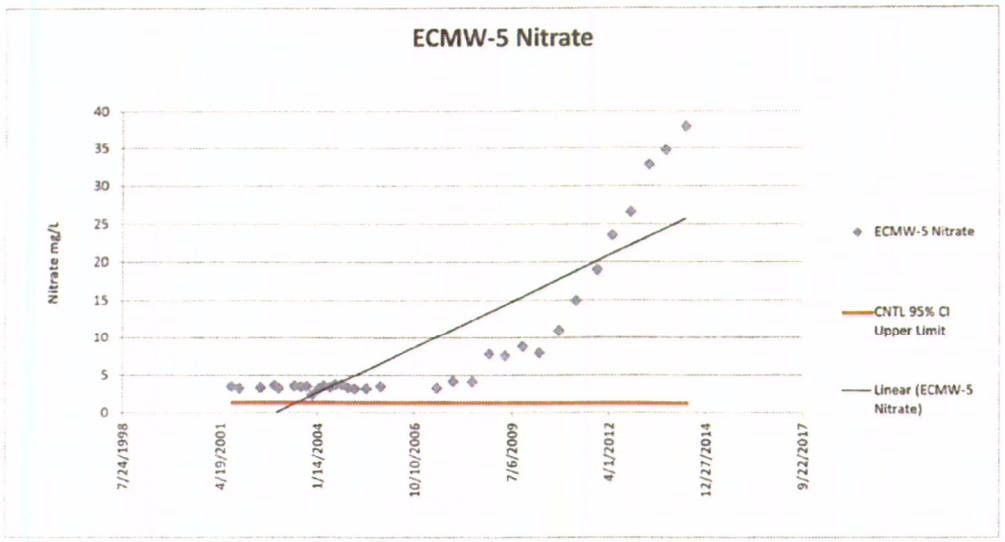

ECMW-9 Ammonia
Ammonia mg/L
20
18
16
14
12
10
8
6
4
2
0
7/24/1998
4/19/2001
1/14/2004
10/10/2006
7/6/2009
4/1/2012
12/27/2014
9/22/2017
ECMW-9 Ammonia
CNTL 95% CI Upper Limit
Linear (ECMW-9 Ammonia)

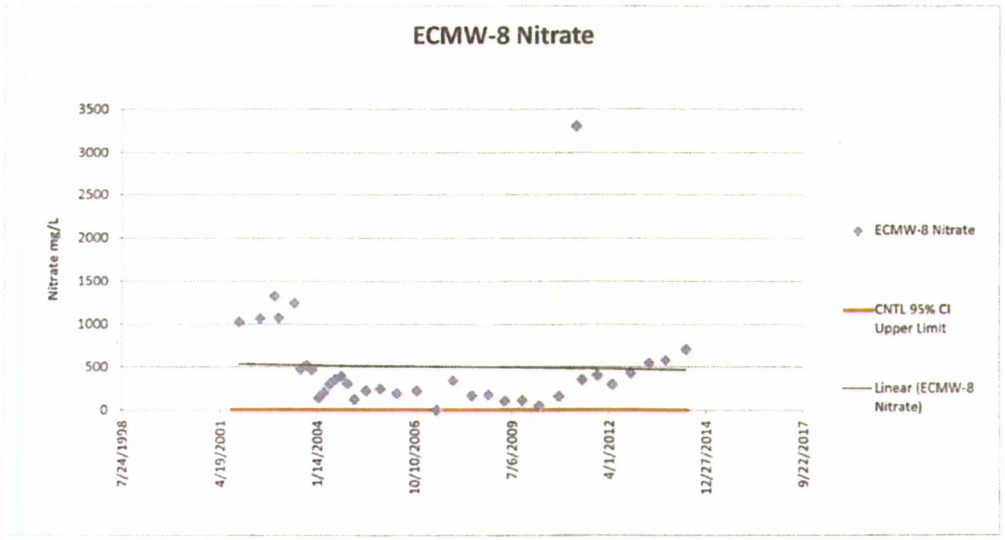

ECMW-12 Ammonia
Ammonia mg/L
6
5
4
3
2
1
0
7/24/1998
4/19/2001
1/14/2004
10/10/2006
7/6/2009
4/1/2012
12/27/2014
9/22/2017
ECMW-12 Ammonia
CNTL 95% CI Upper Limit
Linear (ECMW-12 Ammonia)

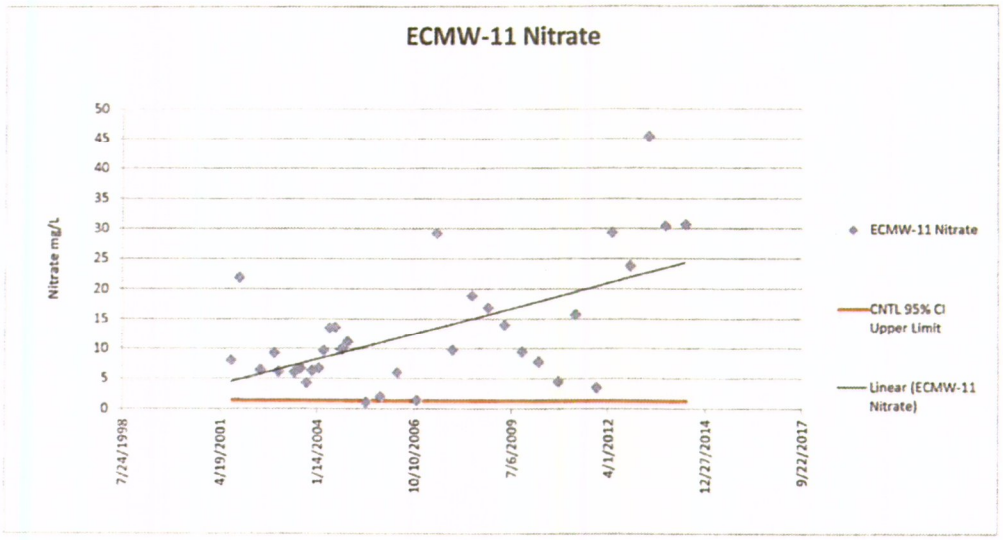

ECMW-15 Ammonia
Ammonia mg/L
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
7/24/1998
4/19/2001
1/14/2004
10/10/2006
7/6/2009
4/1/2012
12/27/2014
9/22/2017
ECMW-15 Ammonia
CNTL 95% CI Upper Limit
Linear (ECMW-15 Ammonia)

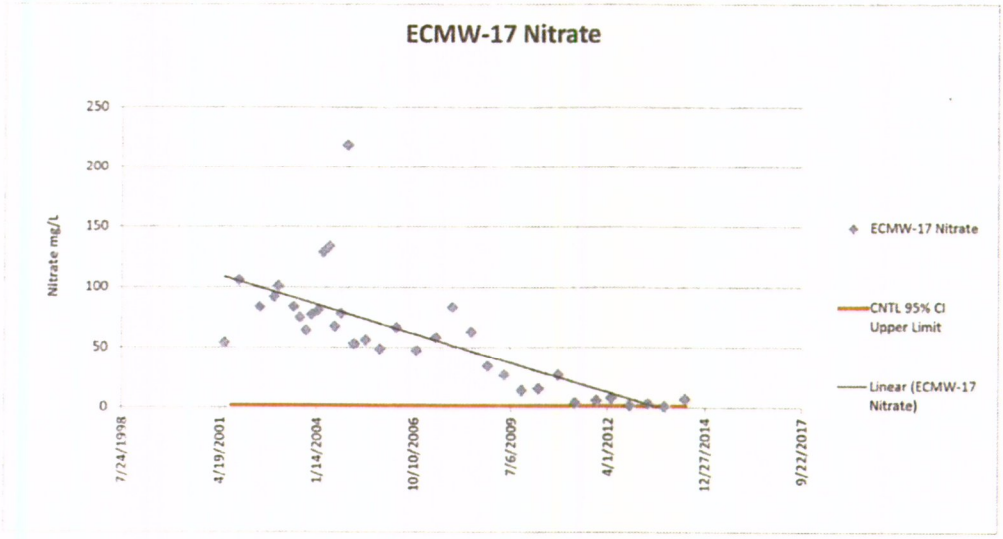

ECMW-18 Ammonia
Ammonia mg/L
12
10
8
6
4
2
0
7/24/1998
4/19/2001
1/14/2004
10/10/2006
7/6/2009
4/1/2012
12/27/2014
9/22/2017
ECMW-18 Ammonia
CNTL 95% CI Upper Limit
Linear (ECMW-18 Ammonia)

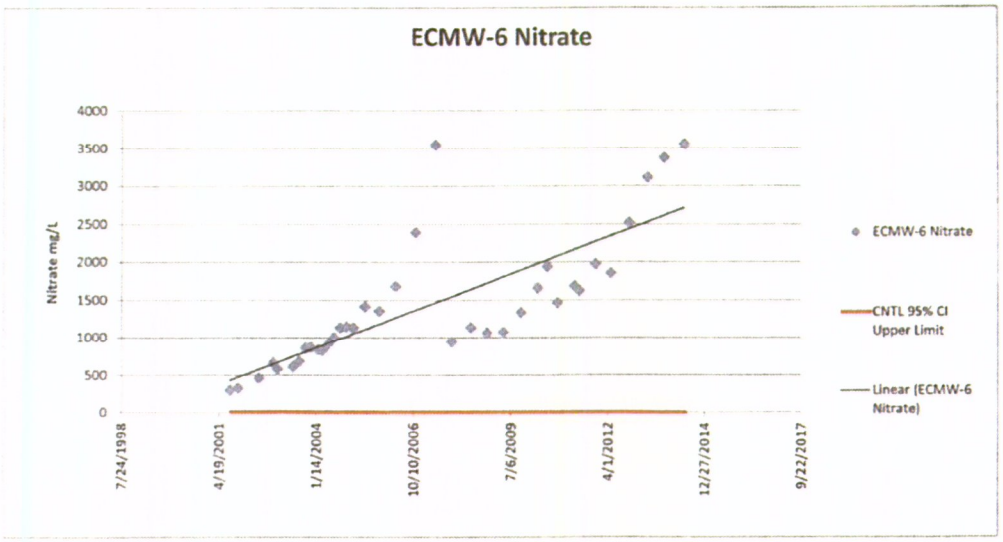

ECMW-21 Nitrate
Nitrate mg/L
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
7/24/1998
4/19/2001
1/14/2004
10/10/2006
7/6/2009
4/1/2012
12/27/2014
9/22/2017
ECMW-21 Nitrate
CNTL 95% CI Upper Limit
Linear (ECMW-21 Nitrate)

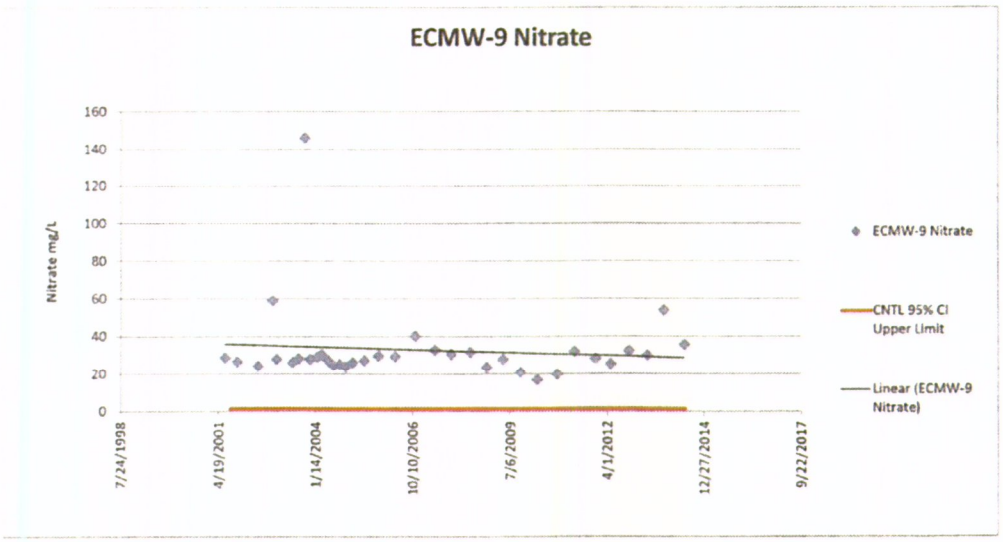

ECMW-5 Nitrate
Nitrate mg/L
40
35
30
25
20
15
10
5
0
7/24/1998
4/19/2001
1/14/2004
10/10/2006
7/6/2009
4/1/2012
12/27/2014
9/22/2017
ECMW-5 Nitrate
CNTL 95% CI Upper Limit
Linear (ECMW-5 Nitrate)

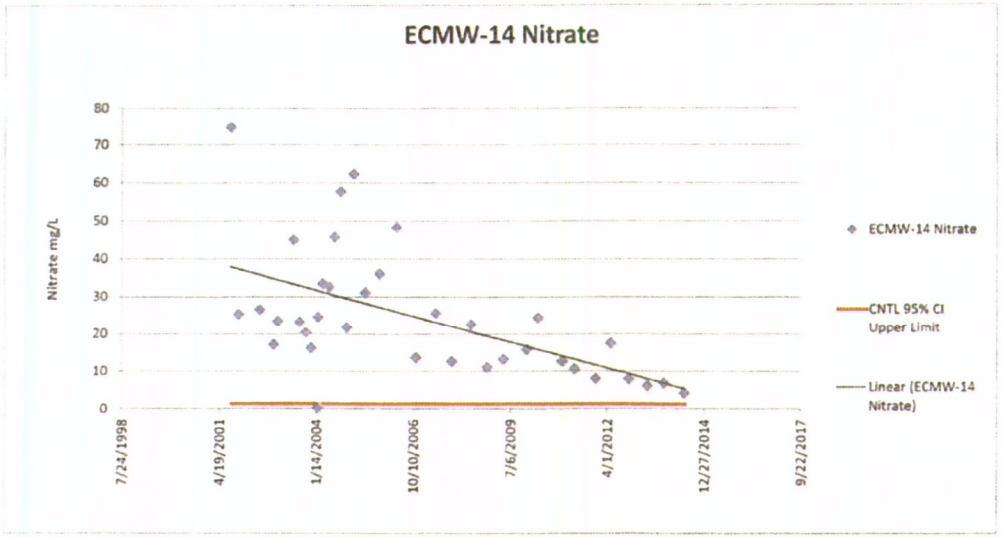

ECMW-8 Nitrate
Nitrate mg/L
3500
3000
2500
2000
1500
1000
500
0
7/24/1998
4/19/2001
1/14/2004
10/10/2006
7/6/2009
4/1/2012
12/27/2014
9/22/2017
ECMW-8 Nitrate
CNTL 95% CI Upper Limit
Linear (ECMW-8 Nitrate)

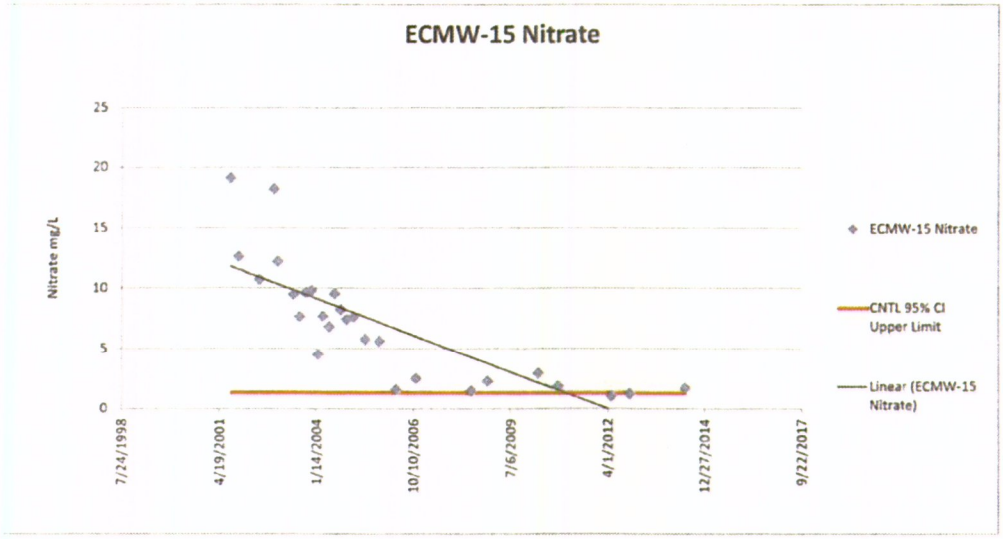

ECMW-11 Nitrate
Nitrate mg/L
50
45
40
35
30
25
20
15
10
5
0
7/24/1998
4/19/2001
1/14/2004
10/10/2006
7/6/2009
4/1/2012
12/27/2014
9/22/2017
ECMW-11 Nitrate
CNTL 95% CI Upper Limit
Linear (ECMW-11 Nitrate)

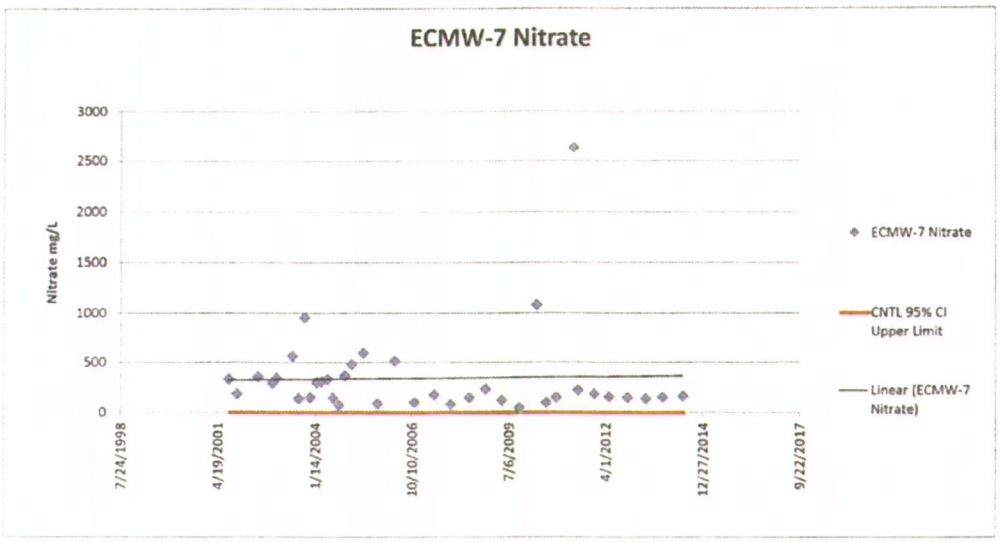

ECMW-17 Nitrate
Nitrate mg/L
250
200
150
100
50
0
7/24/1998
4/19/2001
1/14/2004
10/10/2006
7/6/2009
4/1/2012
12/27/2014
9/22/2017
ECMW-17 Nitrate
CNTL 95% CI Upper Limit
Linear (ECMW-17 Nitrate)

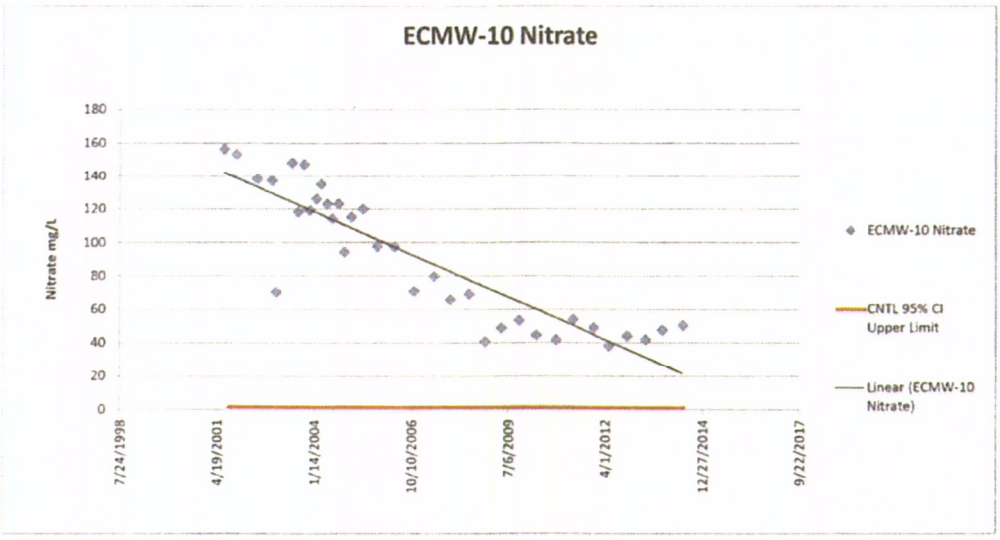

ECMW-6 Nitrate
Nitrate mg/L
4000
3500
3000
2500
2000
1500
1000
500
0
7/24/1998
4/19/2001
1/14/2004
10/10/2006
7/6/2009
4/1/2012
12/27/2014
9/22/2017
ECMW-6 Nitrate
CNTL 95% CI Upper Limit
Linear (ECMW-6 Nitrate)

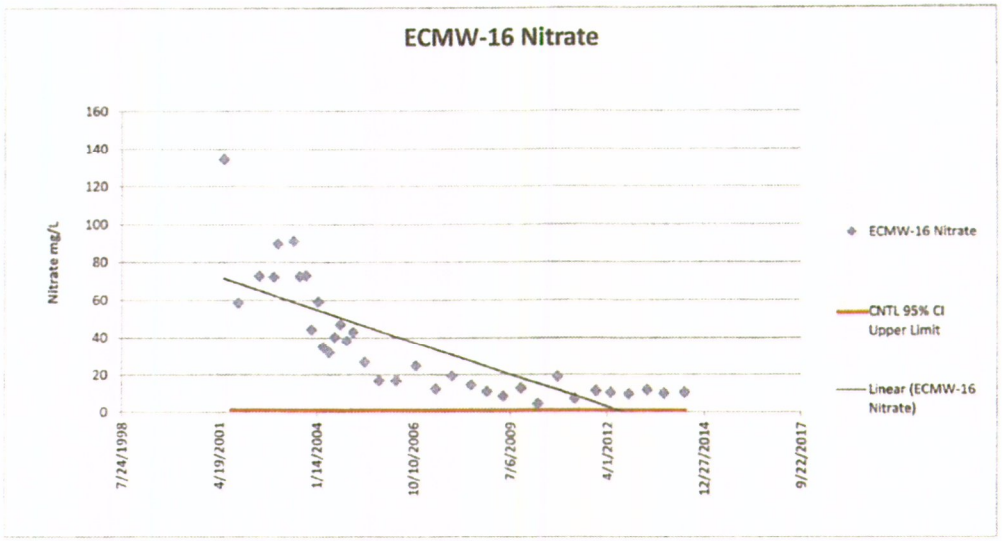

ECMW-9 Nitrate
Nitrate mg/L
160
140
120
100
80
60
40
20
0
7/24/1998
4/19/2001
1/14/2004
10/10/2006
7/6/2009
4/1/2012
12/27/2014
9/22/2017
ECMW-9 Nitrate
CNTL 95% CI Upper Limit
Linear (ECMW-9 Nitrate)

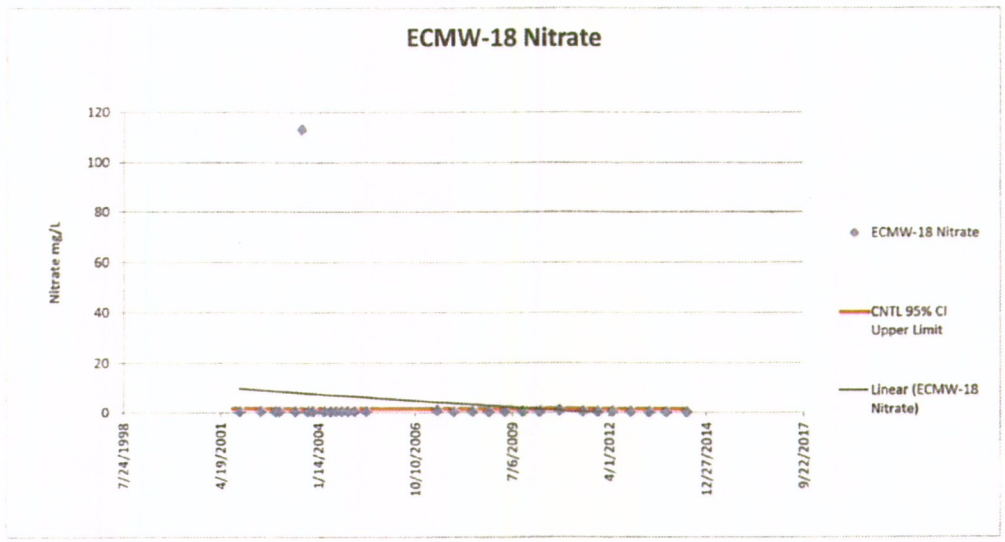

ECMW-14 Nitrate
Nitrate mg/L
80
70
60
50
40
30
20
10
0
7/24/1998
4/19/2001
1/14/2004
10/10/2006
7/6/2009
4/1/2012
12/27/2014
9/22/2017
ECMW-14 Nitrate
CNTL 95% CI Upper Limit
Linear (ECMW-14 Nitrate)

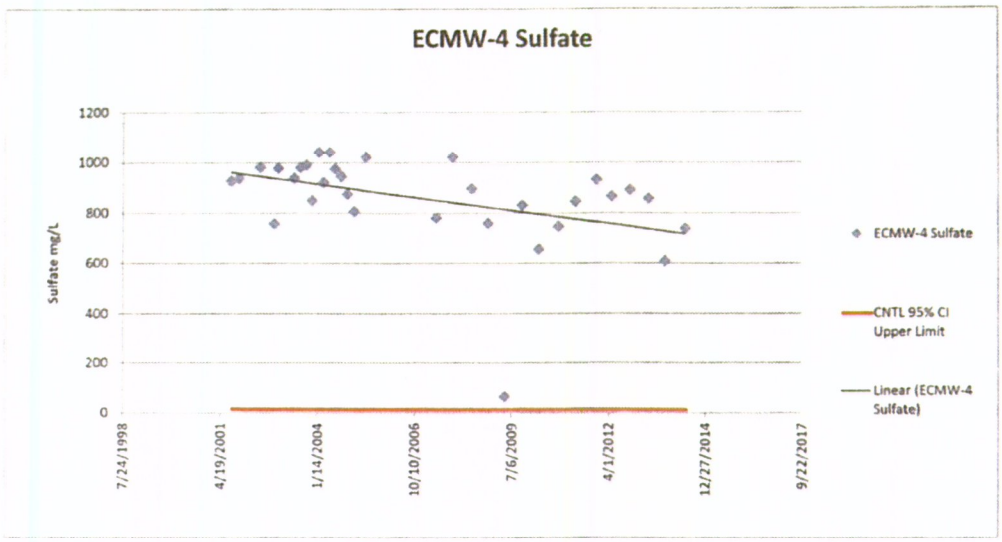

ECMW-15 Nitrate
Nitrate mg/L
25
20
15
10
5
0
7/24/1998
4/19/2001
1/14/2004
10/10/2006
7/6/2009
4/1/2012
12/27/2014
9/22/2017
ECMW-15 Nitrate
CNTL 95% CI Upper Limit
Linear (ECMW-15 Nitrate)

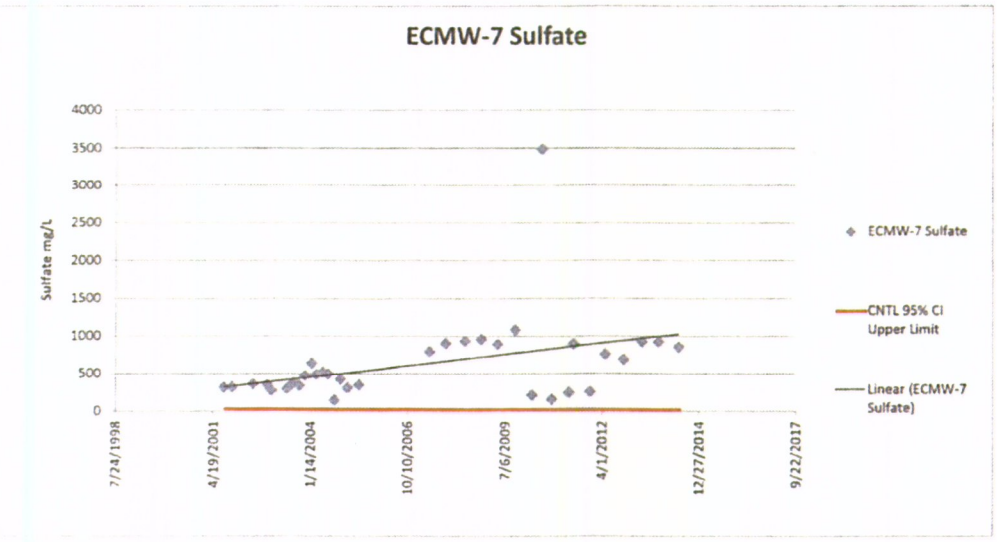

ECMW-7 Nitrate
Nitrate mg/L
3000
2500
2000
1500
1000
500
0
7/24/1998
4/19/2001
1/14/2004
10/10/2006
7/6/2009
4/1/2012
12/27/2014
9/22/2017
ECMW-7 Nitrate
CNTL 95% CI Upper Limit
Linear (ECMW-7 Nitrate)

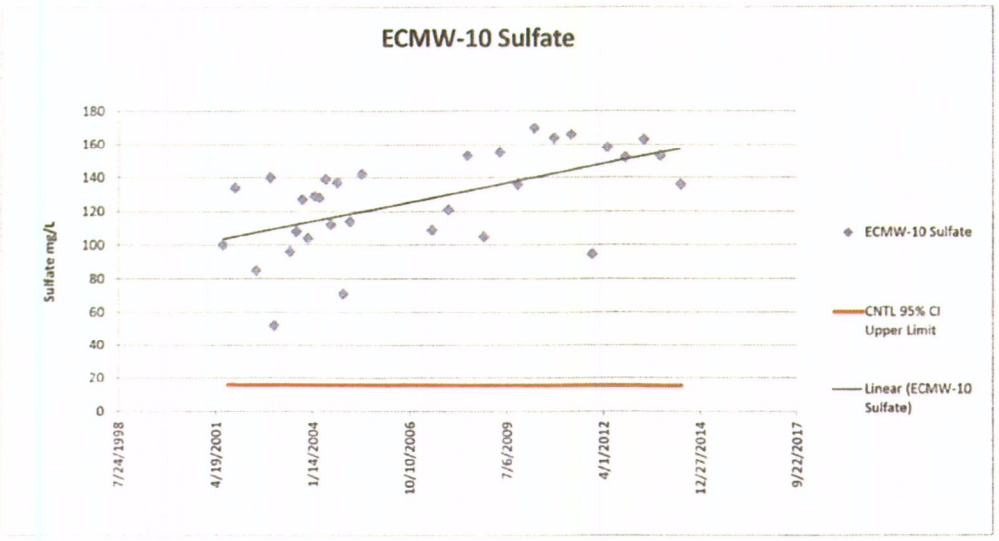

ECMW-10 Nitrate
Nitrate mg/L
180
160
140
120
100
80
60
40
20
0
7/24/1998
4/19/2001
1/14/2004
10/10/2006
7/6/2009
4/1/2012
12/27/2014
9/22/2017
ECMW-10 Nitrate
CNTL 95% CI Upper Limit
Linear (ECMW-10 Nitrate)

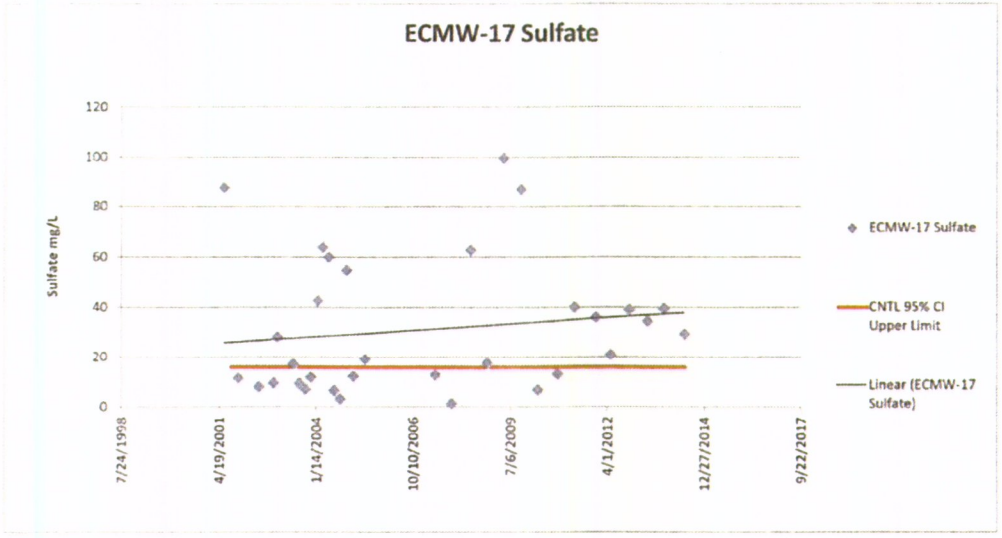

ECMW-16 Nitrate
Nitrate mg/L
160
140
120
100
80
60
40
20
0
7/24/1998
4/19/2001
1/14/2004
10/10/2006
7/6/2009
4/1/2012
12/27/2014
9/22/2017
ECMW-16 Nitrate
CNTL 95% CI Upper Limit
Linear (ECMW-16 Nitrate)

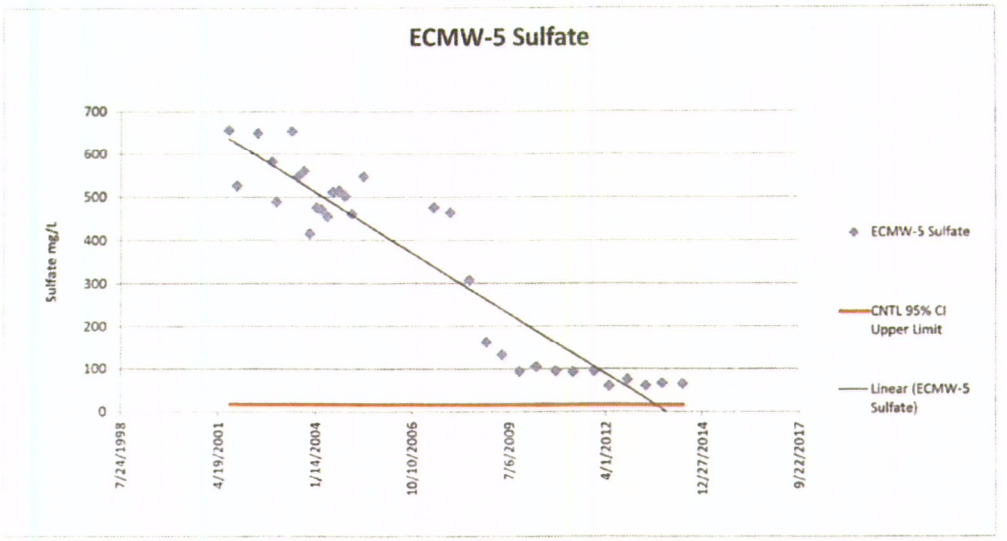

ECMW-18 Nitrate
Nitrate mg/L
120
100
80
60
40
20
0
7/24/1998
4/19/2001
1/14/2004
10/10/2006
7/6/2009
4/1/2012
12/27/2014
9/22/2017
ECMW-18 Nitrate
CNTL 95% CI Upper Limit
Linear (ECMW-18 Nitrate)

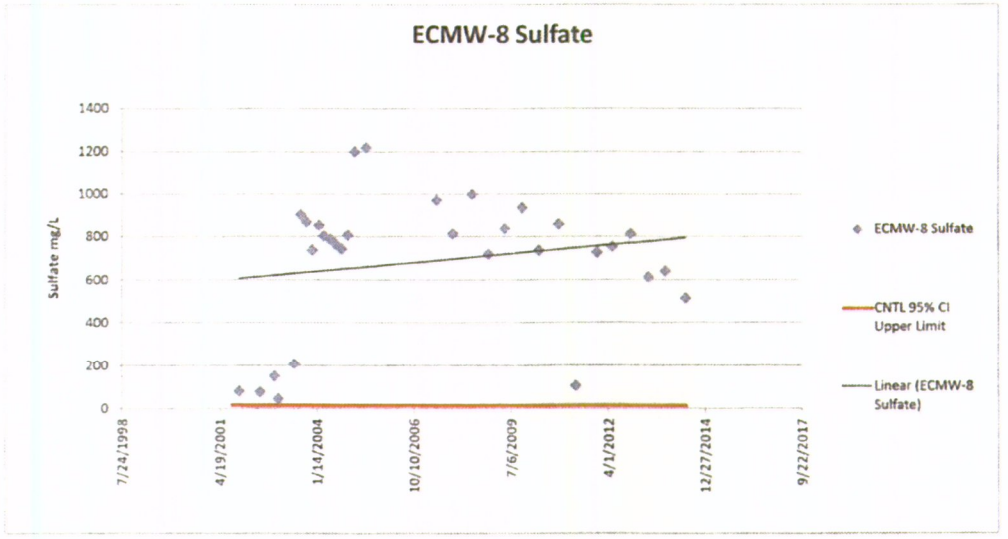

ECMW-4 Sulfate
Sulfate mg/L
1200
1000
800
600
400
200
0
7/24/1998
4/19/2001
1/14/2004
10/10/2006
7/6/2009
4/1/2012
12/27/2014
9/22/2017
ECMW-4 Sulfate
CNTL 95% CI Upper Limit
Linear (ECMW-4 Sulfate)

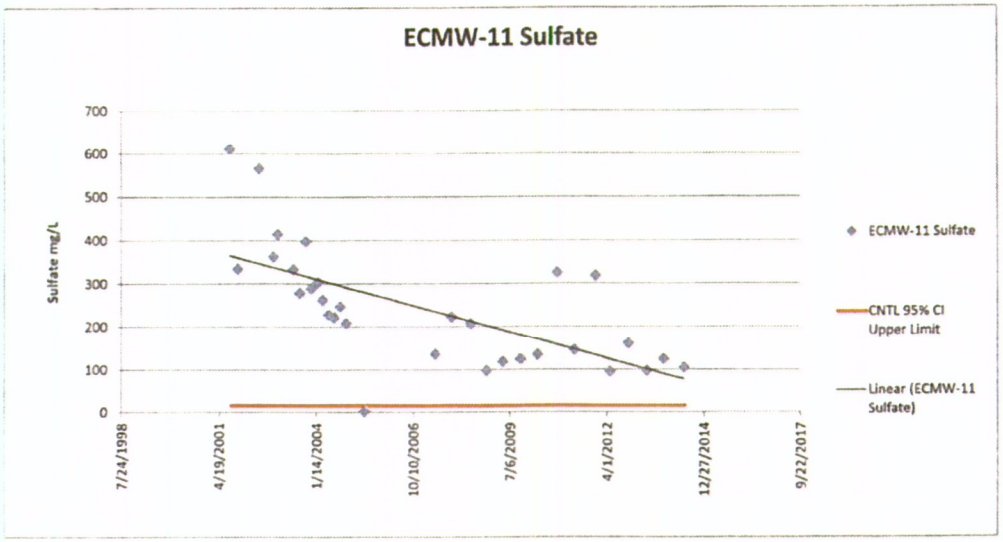

ECMW-7 Sulfate
Sulfate mg/L
4000
3500
3000
2500
2000
1500
1000
500
0
7/24/1998
4/19/2001
1/14/2004
10/10/2006
7/6/2009
4/1/2012
12/27/2014
9/22/2017
ECMW-7 Sulfate
CNTL 95% CI Upper Limit
Linear (ECMW-7 Sulfate)

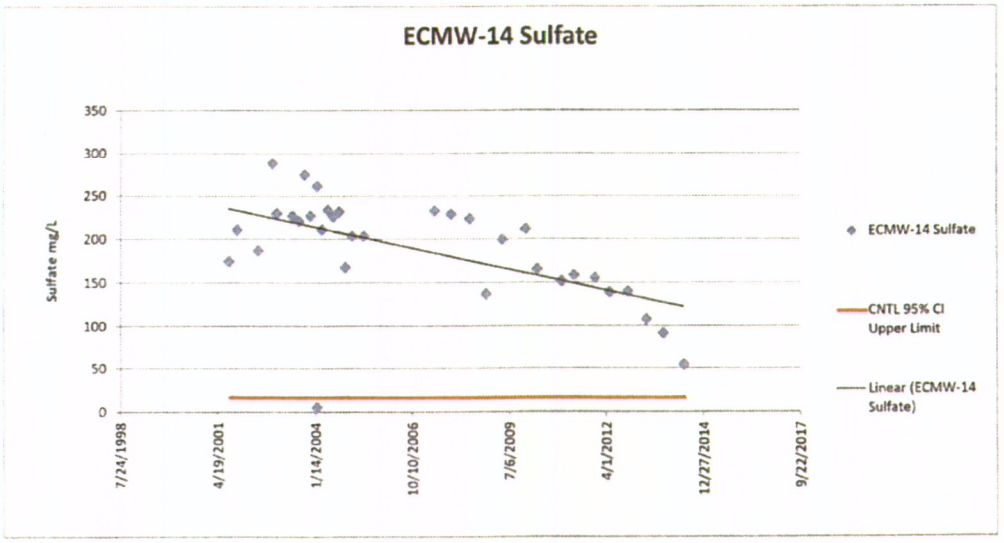

ECMW-10 Sulfate
Sulfate mg/L
180
160
140
120
100
80
60
40
20
0
7/24/1998
4/19/2001
1/14/2004
10/10/2006
7/6/2009
4/1/2012
12/27/2014
9/22/2017
ECMW-10 Sulfate
CNTL 95% CI Upper Limit
Linear (ECMW-10 Sulfate)

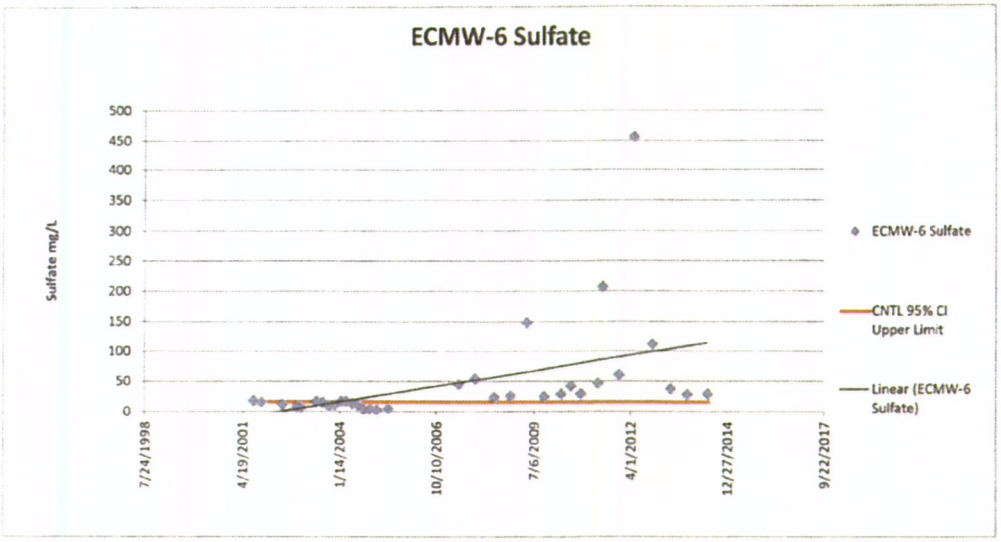

ECMW-17 Sulfate
Sulfate mg/L
120
100
80
60
40
20
0
7/24/1998
4/19/2001
1/14/2004
10/10/2006
7/6/2009
4/1/2012
12/27/2014
9/22/2017
ECMW-17 Sulfate
CNTL 95% CI Upper Limit
Linear (ECMW-17 Sulfate)

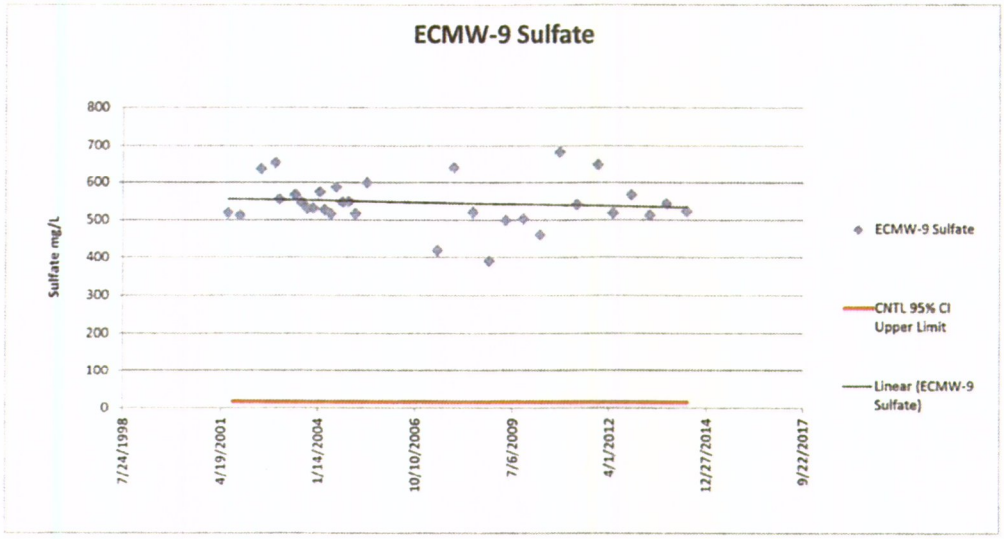

ECMW-5 Sulfate
Sulfate mg/L
700
600
500
400
300
200
100
0
7/24/1998
4/19/2001
1/14/2004
10/10/2006
7/6/2009
4/1/2012
12/27/2014
9/22/2017
ECMW-5 Sulfate
CNTL 95% CI Upper Limit
Linear (ECMW-5 Sulfate)

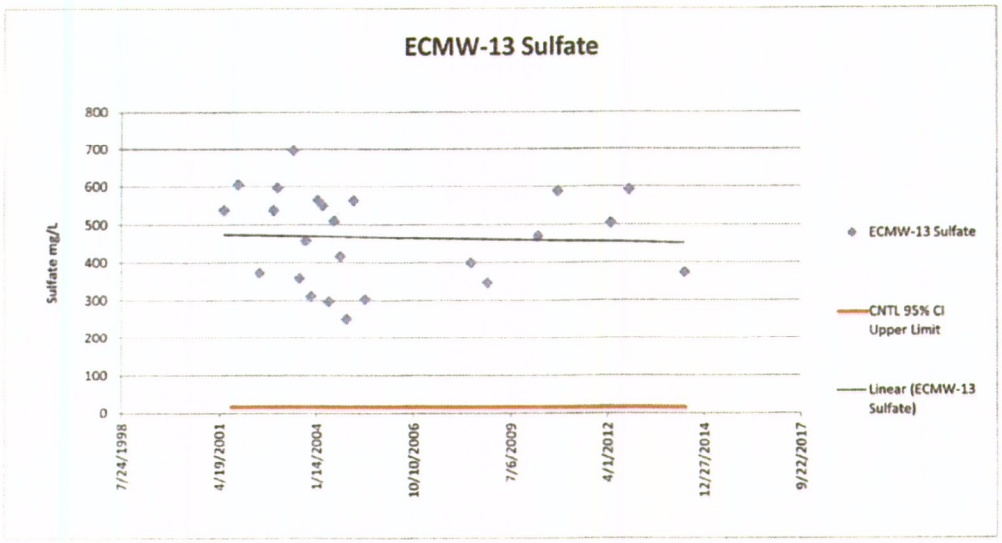

ECMW-8 Sulfate
Sulfate mg/L
1400
1200
1000
800
600
400
200
0
7/24/1998
4/19/2001
1/14/2004
10/10/2006
7/6/2009
4/1/2012
12/27/2014
9/22/2017
ECMW-8 Sulfate
CNTL 95% CI Upper Limit
Linear (ECMW-8 Sulfate)

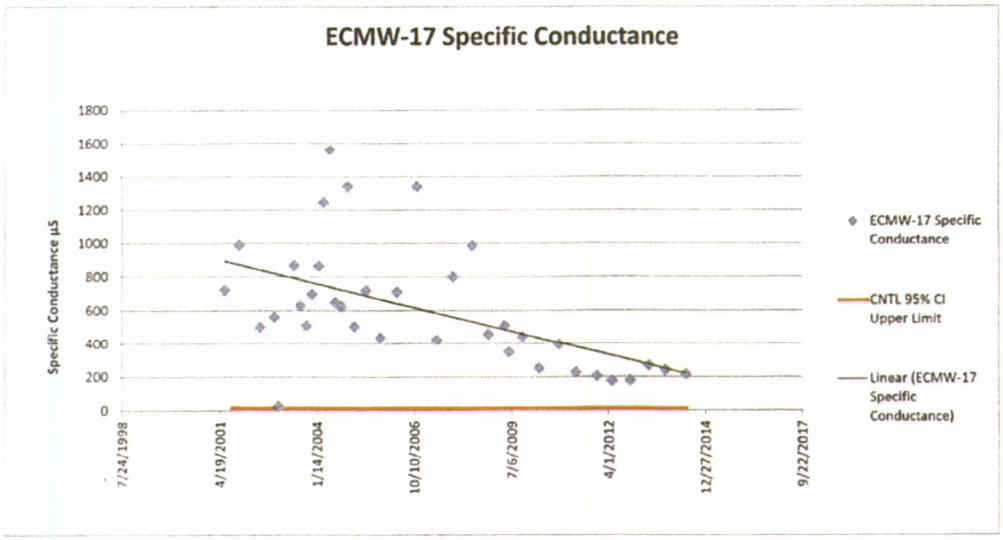

ECMW-11 Sulfate
Sulfate mg/L
700
600
500
400
300
200
100
0
7/24/1998
4/19/2001
1/14/2004
10/10/2006
7/6/2009
4/1/2012
12/27/2014
9/22/2017
ECMW-11 Sulfate
CNTL 95% CI Upper Limit
Linear (ECMW-11 Sulfate)

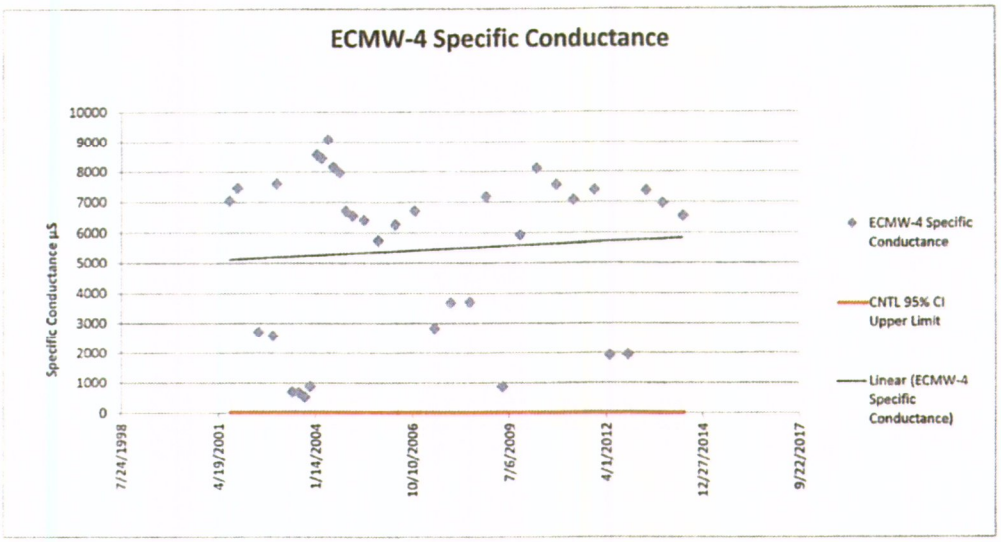

ECMW-14 Sulfate
Sulfate mg/L
350
300
250
200
150
100
50
0
7/24/1998
4/19/2001
1/14/2004
10/10/2006
7/6/2009
4/1/2012
12/27/2014
9/22/2017
ECMW-14 Sulfate
CNTL 95% CI Upper Limit
Linear (ECMW-14 Sulfate)

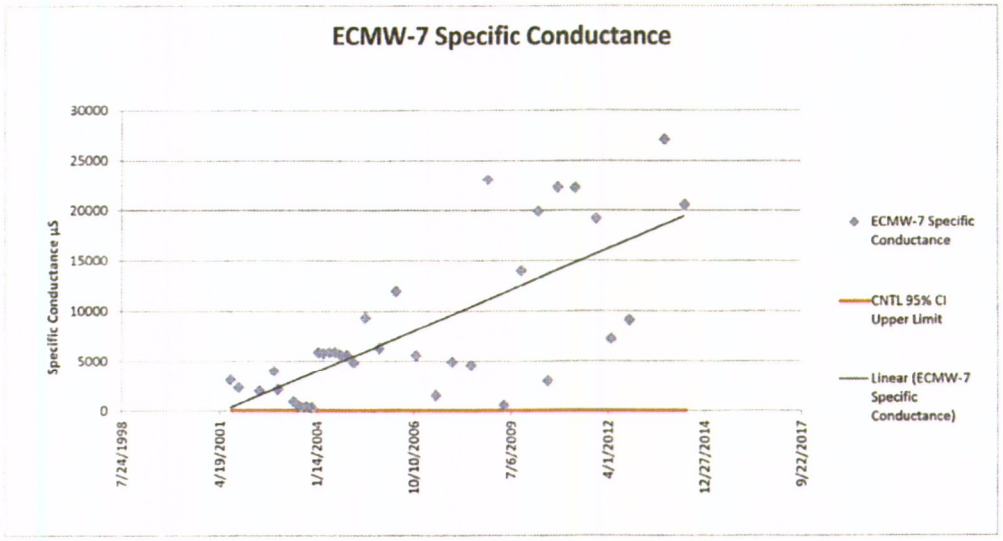

ECMW-6 Sulfate
Sulfate mg/L
500
450
400
350
300
250
200
150
100
50
0
7/24/1998
4/19/2001
1/14/2004
10/10/2006
7/6/2009
4/1/2012
12/27/2014
9/22/2017
ECMW-6 Sulfate
CNTL 95% CI Upper Limit
Linear (ECMW-6 Sulfate)

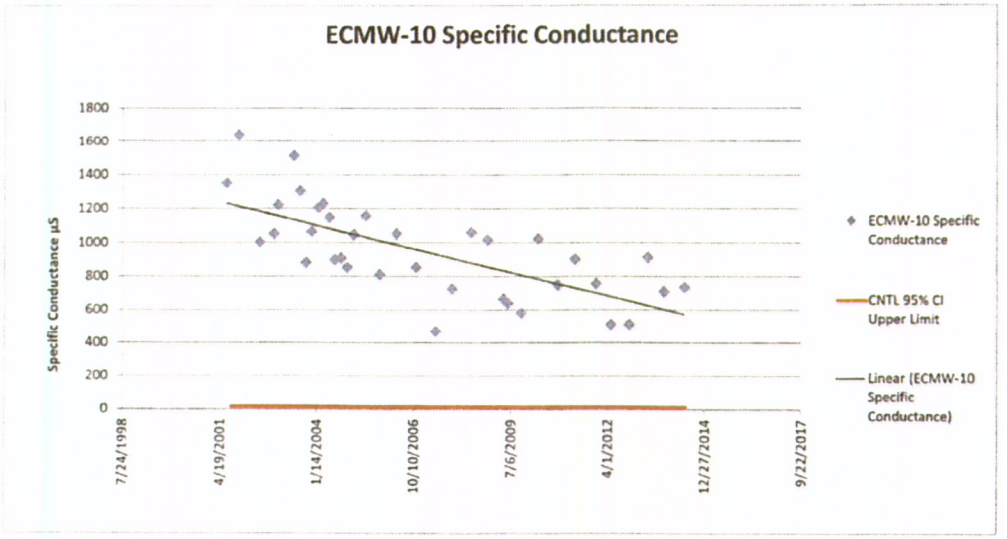

ECMW-9 Sulfate
Sulfate mg/L
800
700
600
500
400
300
200
100
0
7/24/1998
4/19/2001
1/14/2004
10/10/2006
7/6/2009
4/1/2012
12/27/2014
9/22/2017
ECMW-9 Sulfate
CNTL 95% CI Upper Limit
Linear (ECMW-9 Sulfate)

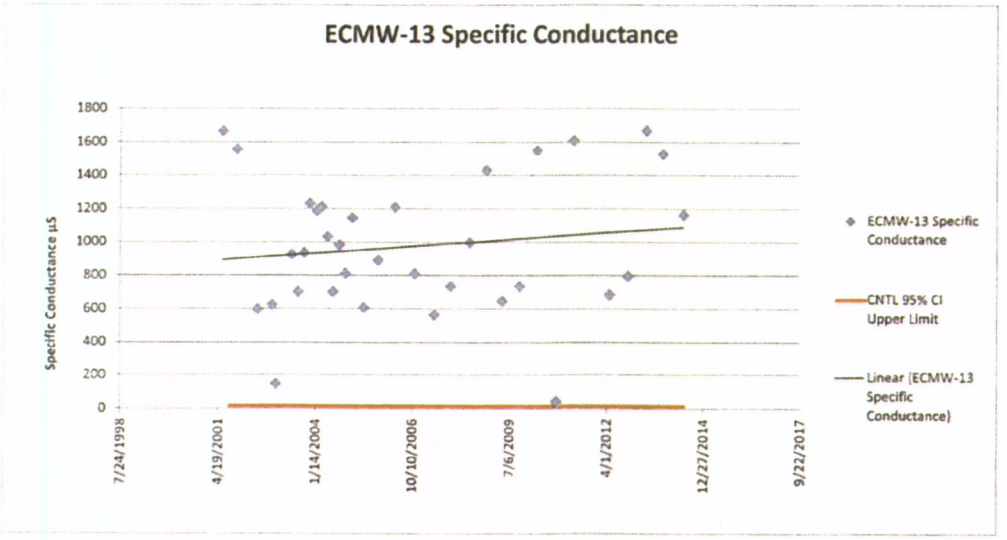

ECMW-13 Sulfate
Sulfate mg/L
800
700
600
500
400
300
200
100
0
7/24/1998
4/19/2001
1/14/2004
10/10/2006
7/6/2009
4/1/2012
12/27/2014
9/22/2017
ECMW-13 Sulfate
CNTL 95% CI Upper Limit
Linear (ECMW-13 Sulfate)

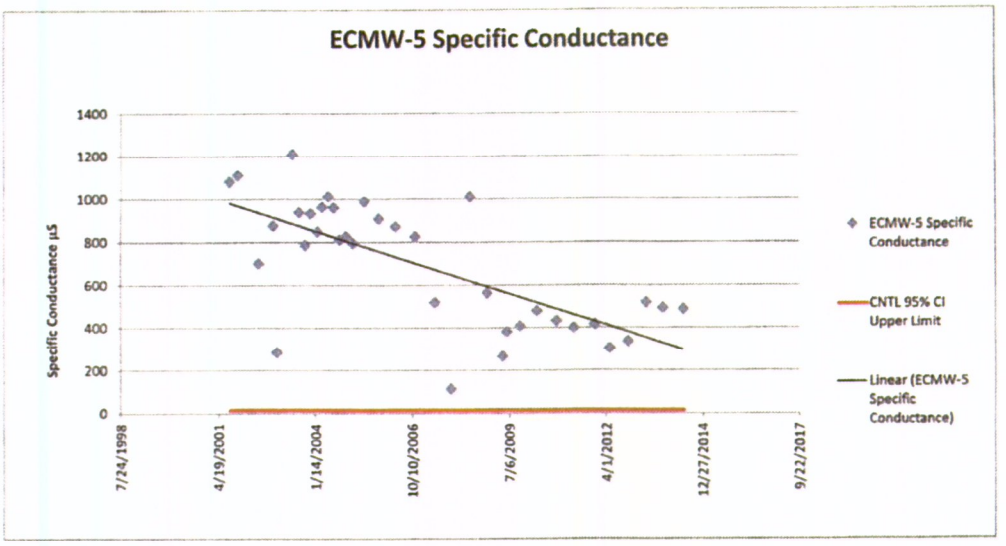

ECMW-17 Specific Conductance
Specific Conductance µS
1800
1600
1400
1200
1000
800
600
400
200
0
7/24/1998
4/19/2001
1/14/2004
10/10/2006
7/6/2009
4/1/2012
12/27/2014
9/22/2017
ECMW-17 Specific Conductance
CNTL 95% CI Upper Limit
Linear (ECMW-17 Specific Conductance)

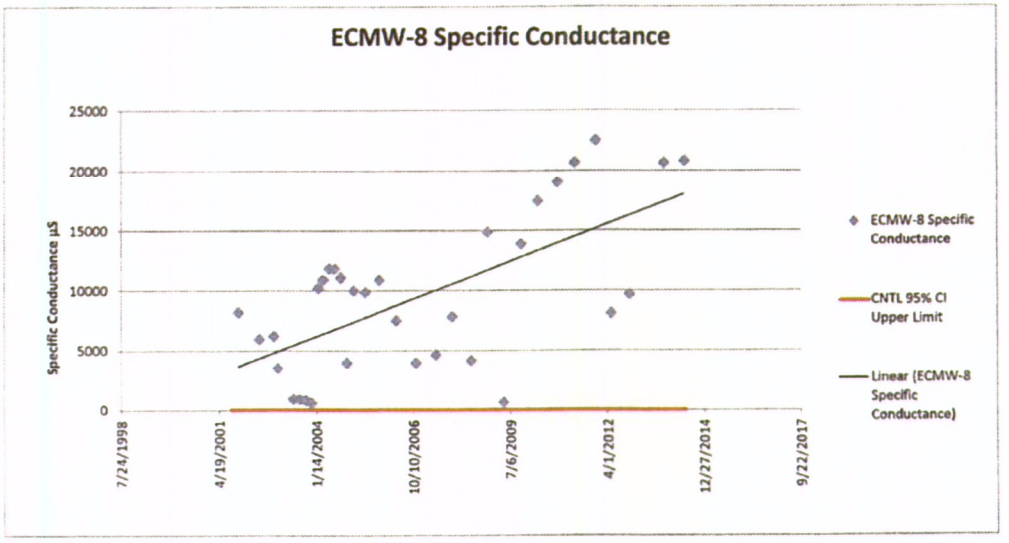

ECMW-4 Specific Conductance
Specific Conductance µS
10000
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
7/24/1998
4/19/2001
1/14/2004
10/10/2006
7/6/2009
4/1/2012
12/27/2014
9/22/2017
ECMW-4 Specific Conductance
CNTL 95% CI Upper Limit
Linear (ECMW-4 Specific Conductance)

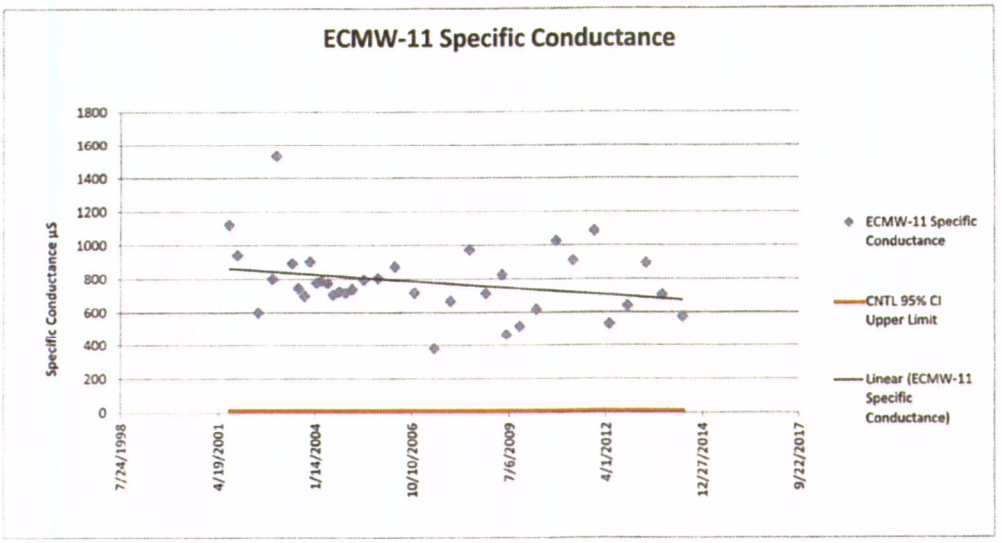

ECMW-7 Specific Conductance
Specific Conductance µS
30000
25000
20000
15000
10000
5000
0
7/24/1998
4/19/2001
1/14/2004
10/10/2006
7/6/2009
4/1/2012
12/27/2014
9/22/2017
ECMW-7 Specific Conductance
CNTL 95% CI Upper Limit
Linear (ECMW-7 Specific Conductance)

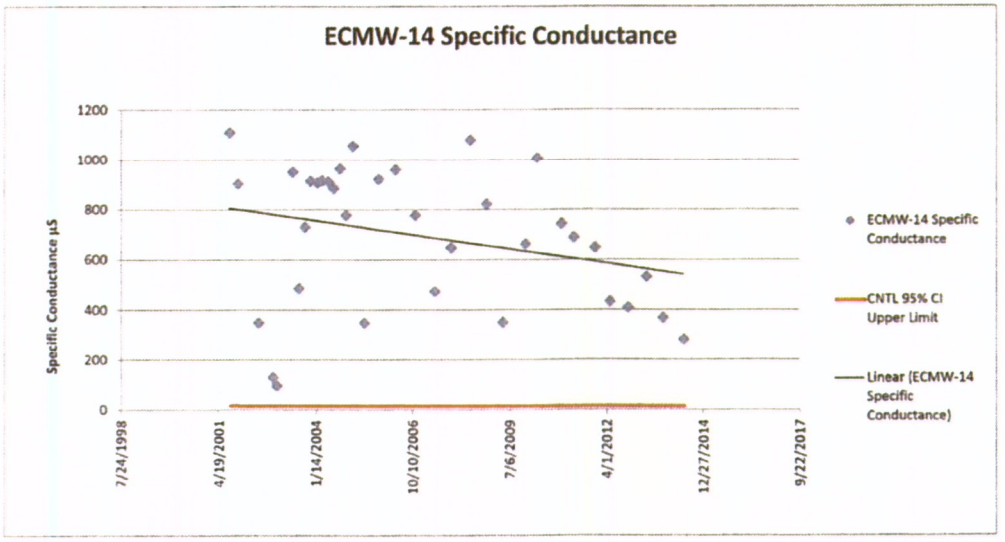

ECMW-10 Specific Conductance
Specific Conductance µS
1800
1600
1400
1200
1000
800
600
400
200
0
7/24/1998
4/19/2001
1/14/2004
10/10/2006
7/6/2009
4/1/2012
12/27/2014
9/22/2017
ECMW-10 Specific Conductance
CNTL 95% CI Upper Limit
Linear (ECMW-10 Specific Conductance)

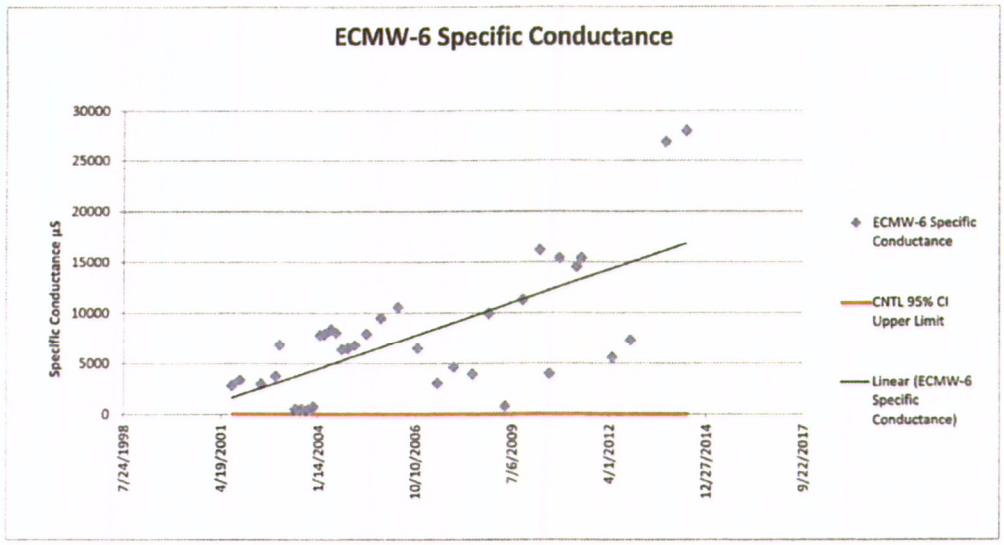

ECMW-13 Specific Conductance
Specific Conductance µS
1800
1600
1400
1200
1000
800
600
400
200
0
7/24/1998
4/19/2001
1/14/2004
10/10/2006
7/6/2009
4/1/2012
12/27/2014
9/22/2017
ECMW-13 Specific Conductance
CNTL 95% CI Upper Limit
Linear (ECMW-13 Specific Conductance)

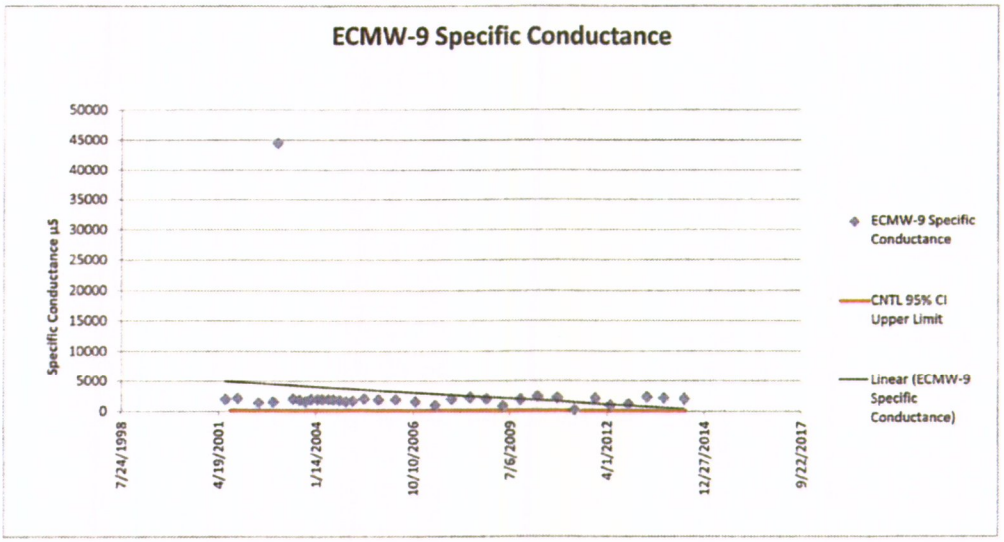

ECMW-5 Specific Conductance
Specific Conductance µS
1400
1200
1000
800
600
400
200
0
7/24/1998
4/19/2001
1/14/2004
10/10/2006
7/6/2009
4/1/2012
12/27/2014
9/22/2017
ECMW-5 Specific Conductance
CNTL 95% CI Upper Limit
Linear (ECMW-5 Specific Conductance)

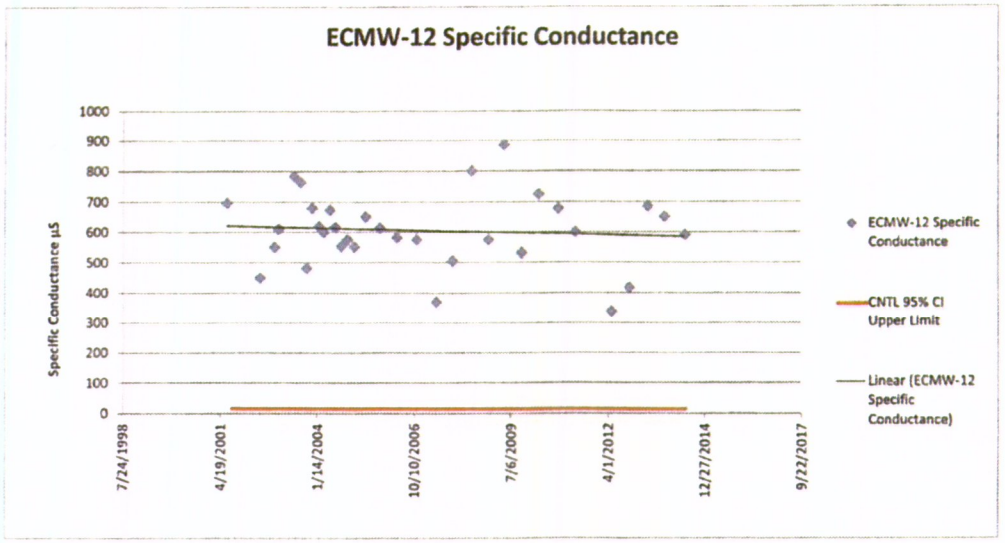

ECMW-8 Specific Conductance
Specific Conductance µS
25000
20000
15000
10000
5000
0
7/24/1998
4/19/2001
1/14/2004
10/10/2006
7/6/2009
4/1/2012
12/27/2014
9/22/2017
ECMW-8 Specific Conductance
CNTL 95% CI Upper Limit
Linear (ECMW-8 Specific Conductance)

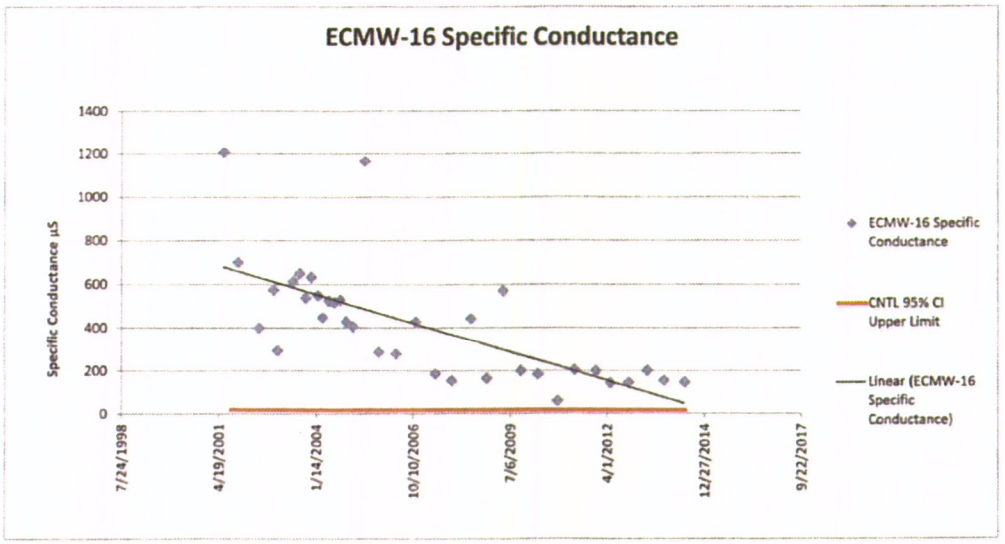

ECMW-11 Specific Conductance
Specific Conductance µS
1800
1600
1400
1200
1000
800
600
400
200
0
7/24/1998
4/19/2001
1/14/2004
10/10/2006
7/6/2009
4/1/2012
12/27/2014
9/22/2017
ECMW-11 Specific Conductance
CNTL 95% CI Upper Limit
Linear (ECMW-11 Specific Conductance)

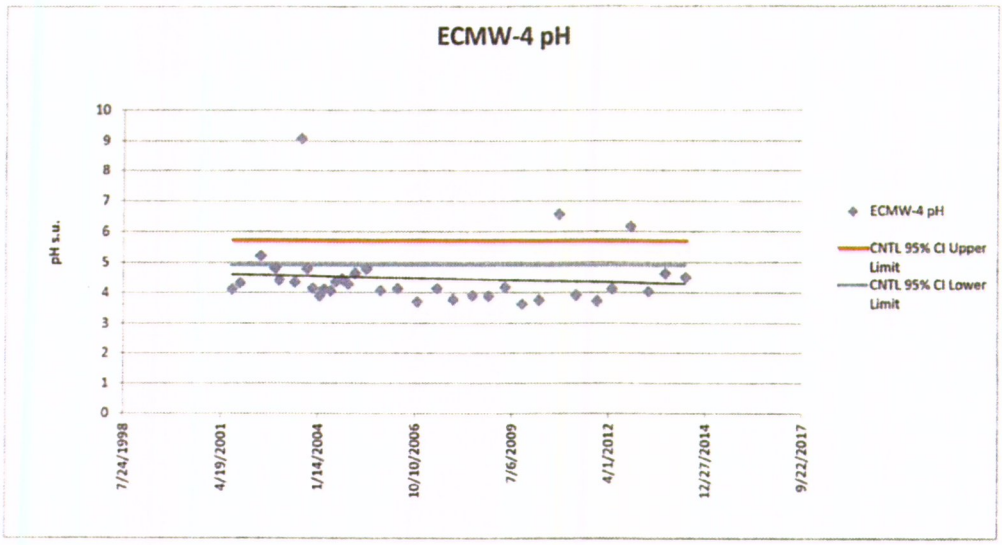

ECMW-14 Specific Conductance
Specific Conductance µS
1200
1000
800
600
400
200
0
7/24/1998
4/19/2001
1/14/2004
10/10/2006
7/6/2009
4/1/2012
12/27/2014
9/22/2017
ECMW-14 Specific Conductance
CNTL 95% CI Upper Limit
Linear (ECMW-14 Specific Conductance)

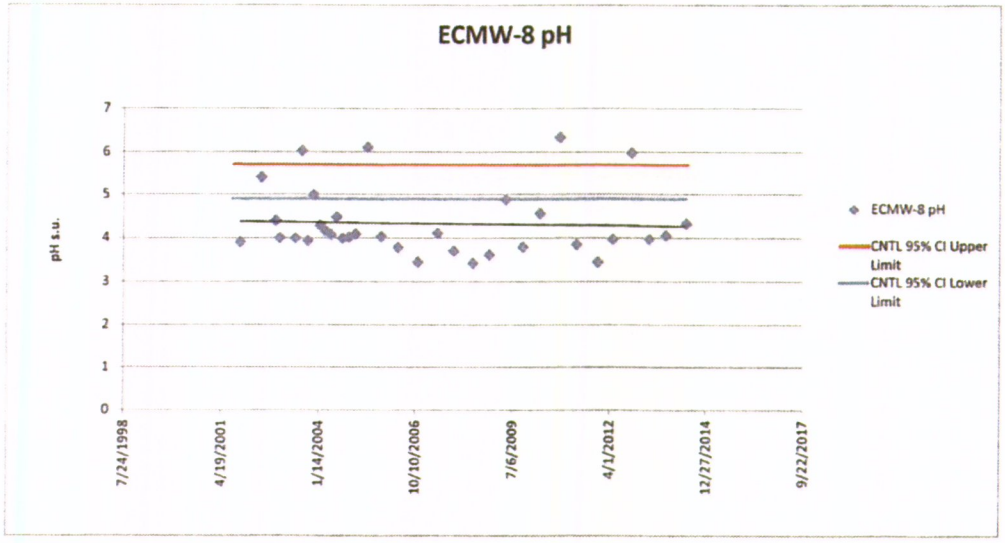

ECMW-6 Specific Conductance
Specific Conductance µS
30000
25000
20000
15000
10000
5000
0
7/24/1998
4/19/2001
1/14/2004
10/10/2006
7/6/2009
4/1/2012
12/27/2014
9/22/2017
ECMW-6 Specific Conductance
CNTL 95% CI Upper Limit
Linear (ECMW-6 Specific Conductance)

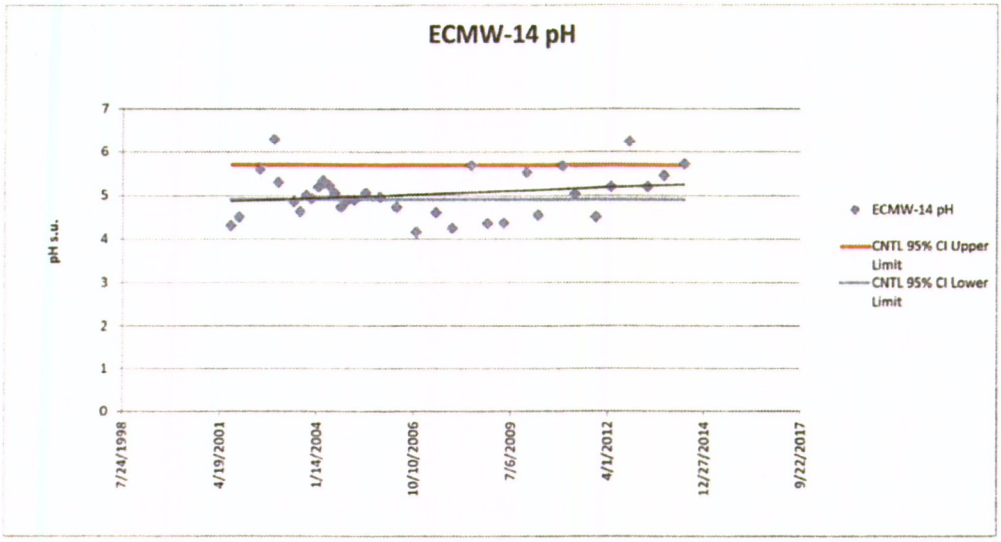

ECMW-9 Specific Conductance
Specific Conductance µS
50000
45000
40000
35000
30000
25000
20000
15000
10000
5000
0
7/24/1998
4/19/2001
1/14/2004
10/10/2006
7/6/2009
4/1/2012
12/27/2014
9/22/2017
ECMW-9 Specific Conductance
CNTL 95% CI Upper Limit
Linear (ECMW-9 Specific Conductance)

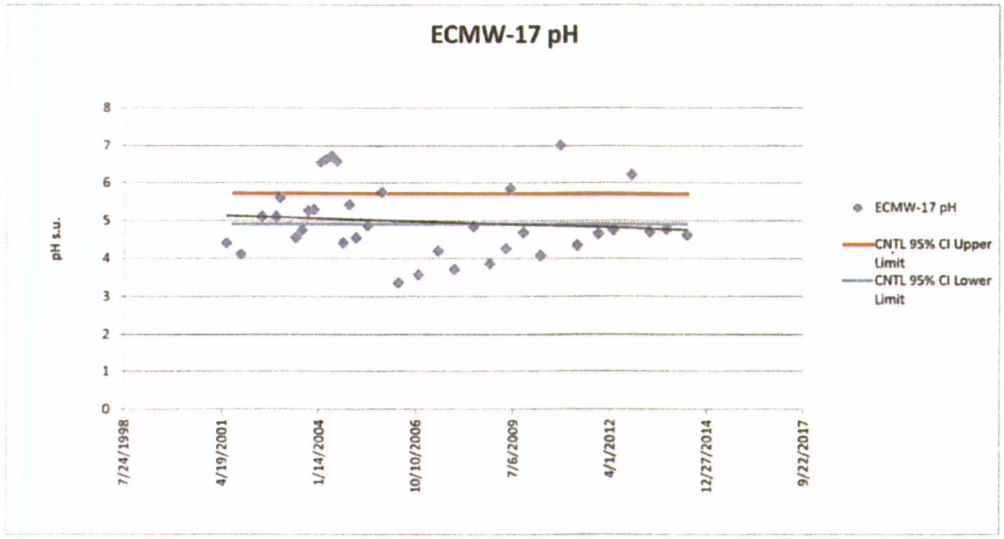

ECMW-12 Specific Conductance
Specific Conductance µS
1000
900
800
700
600
500
400
300
200
100
0
7/24/1998
4/19/2001
1/14/2004
10/10/2006
7/6/2009
4/1/2012
12/27/2014
9/22/2017
ECMW-12 Specific Conductance
CNTL 95% CI Upper Limit
Linear (ECMW-12 Specific Conductance)

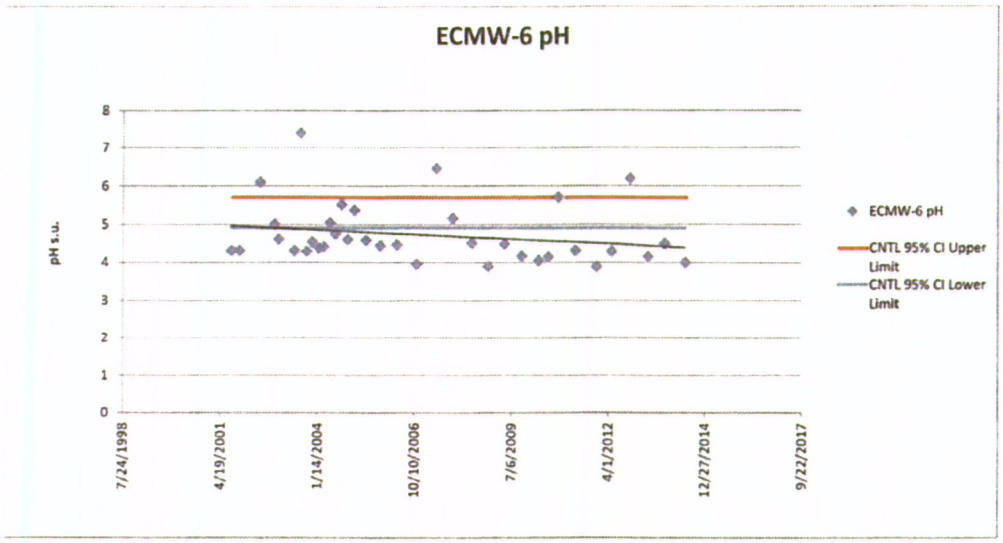

ECMW-16 Specific Conductance
Specific Conductance µS
1400
1200
1000
800
600
400
200
0
7/24/1998
4/19/2001
1/14/2004
10/10/2006
7/6/2009
4/1/2012
12/27/2014
9/22/2017
ECMW-16 Specific Conductance
CNTL 95% CI Upper Limit
Linear (ECMW-16 Specific Conductance)

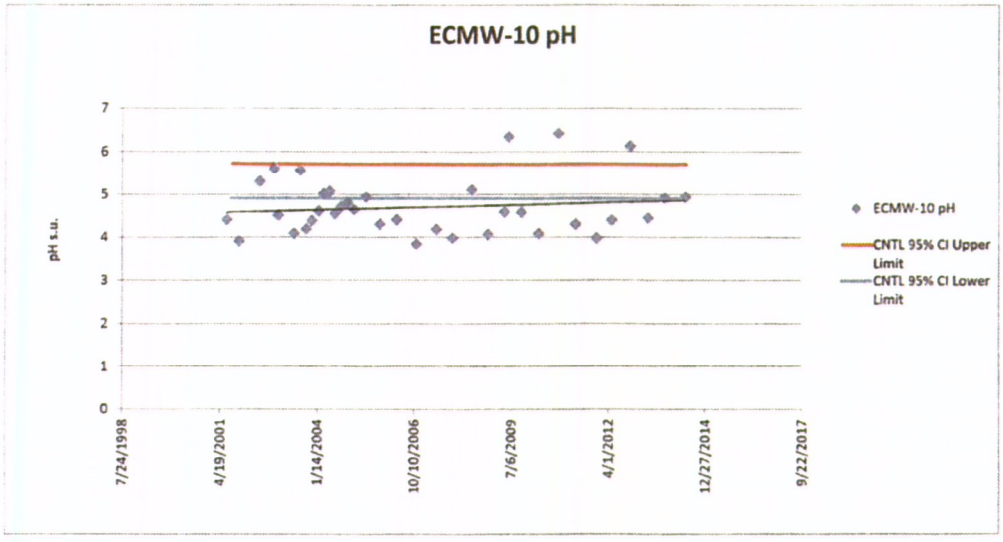

ECMW-4 pH
pH s.u.
10
9
8
7
6
5
4
3
2
1
0
7/24/1998
4/19/2001
1/14/2004
10/10/2006
7/6/2009
4/1/2012
12/27/2014
9/22/2017
ECMW-4 pH
CNTL 95% CI Upper Limit
CNTL 95% CI Lower Limit

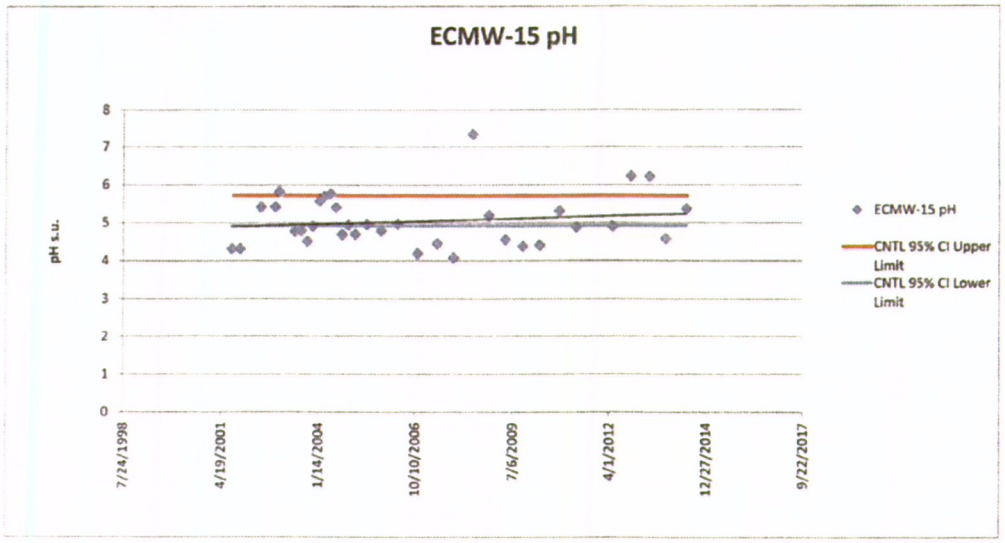

ECMW-8 pH
pH s.u.
7
6
5
4
3
2
1
0
7/24/1998
4/19/2001
1/14/2004
10/10/2006
7/6/2009
4/1/2012
12/27/2014
9/22/2017
ECMW-8 pH
CNTL 95% CI Upper Limit
CNTL 95% CI Lower Limit

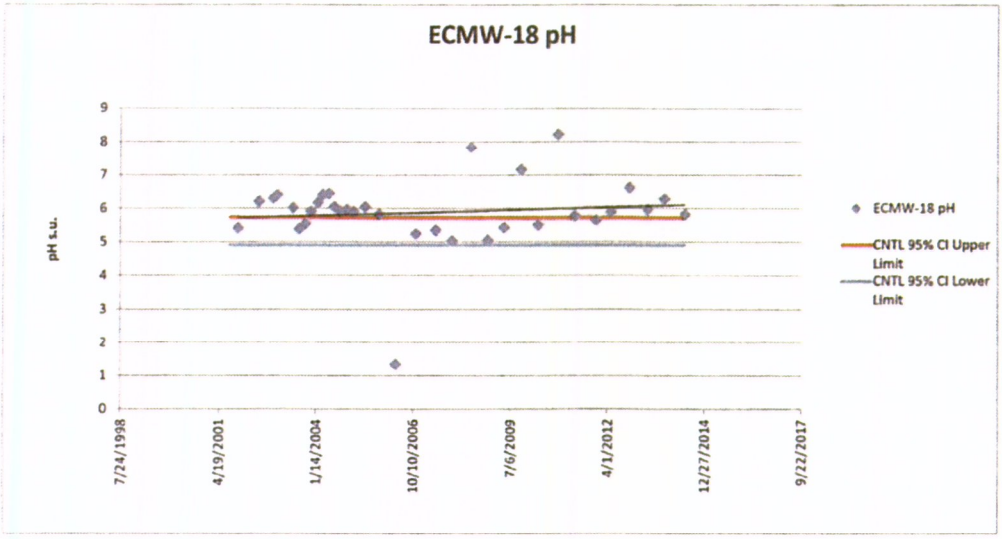

ECMW-14 pH
pH s.u.
0
1
2
3
4
5
6
7
7/24/1998
4/19/2001
1/14/2004
10/10/2006
7/6/2009
4/1/2012
12/27/2014
9/22/2017
ECMW-14 pH
CNTL 95% CI Upper Limit
CNTL 95% CI Lower Limit

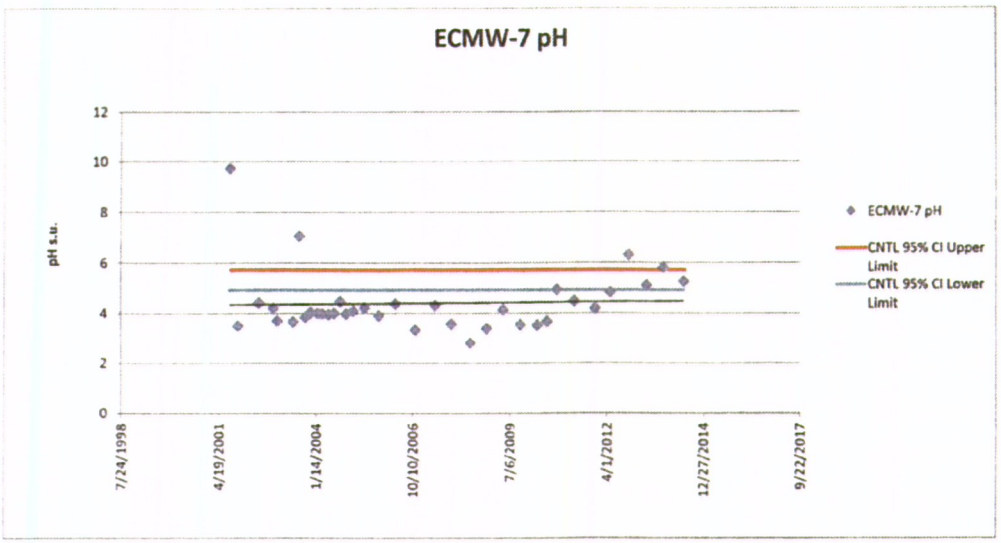

ECMW-17 pH
pH s.u.
0
1
2
3
4
5
6
7
8
7/24/1998
4/19/2001
1/14/2004
10/10/2006
7/6/2009
4/1/2012
12/27/2014
9/22/2017
ECMW-17 pH
CNTL 95% CI Upper Limit
CNTL 95% CI Lower Limit

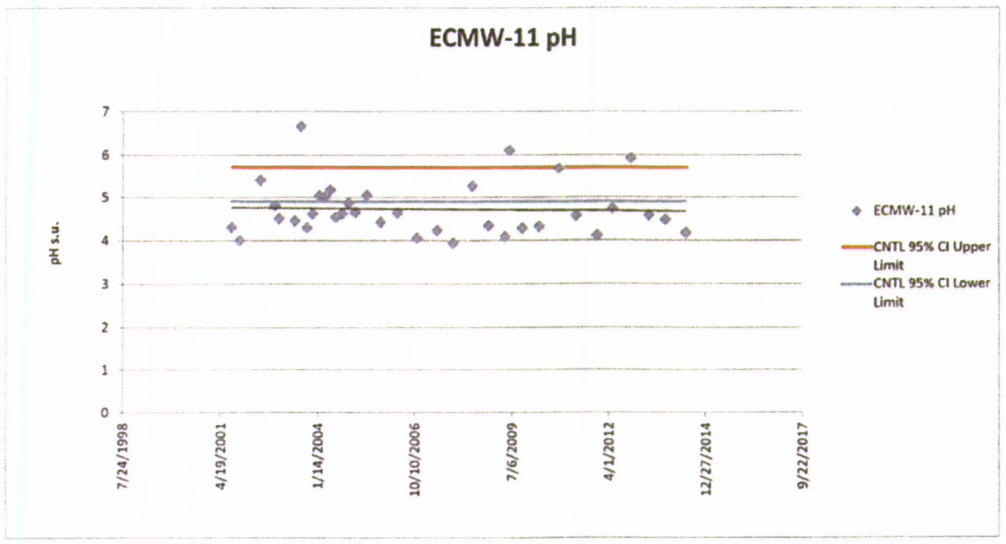

ECMW-6 pH
pH s.u.
8
7
6
5
4
3
2
1
0
7/24/1998
4/19/2001
1/14/2004
10/10/2006
7/6/2009
4/1/2012
12/27/2014
9/22/2017
ECMW-6 pH
CNTL 95% CI Upper Limit
CNTL 95% CI Lower Limit

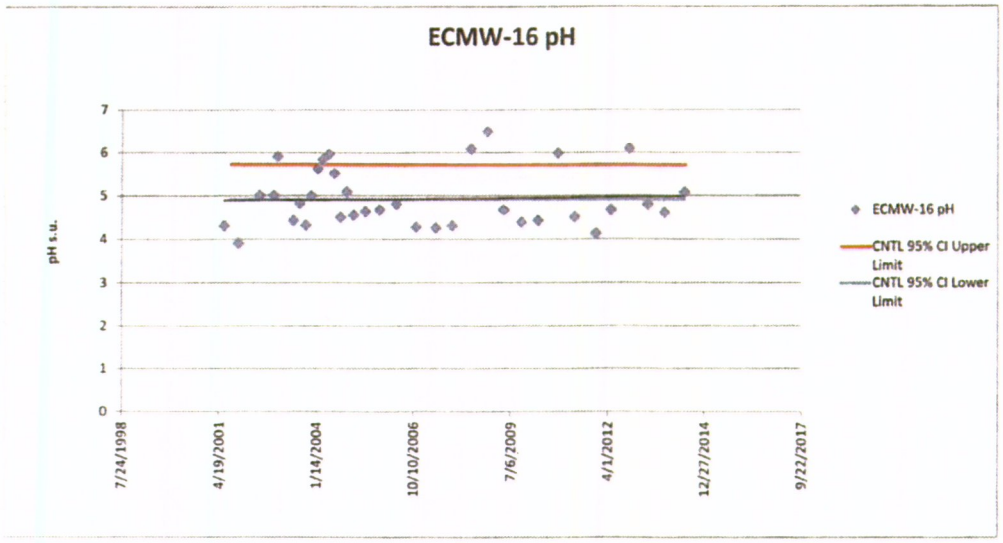

ECMW-10 pH
pH s.u.
7
6
5
4
3
2
1
0
7/24/1998
4/19/2001
1/14/2004
10/10/2006
7/6/2009
4/1/2012
12/27/2014
9/22/2017
ECMW-10 pH
CNTL 95% CI Upper Limit
CNTL 95% CI Lower Limit

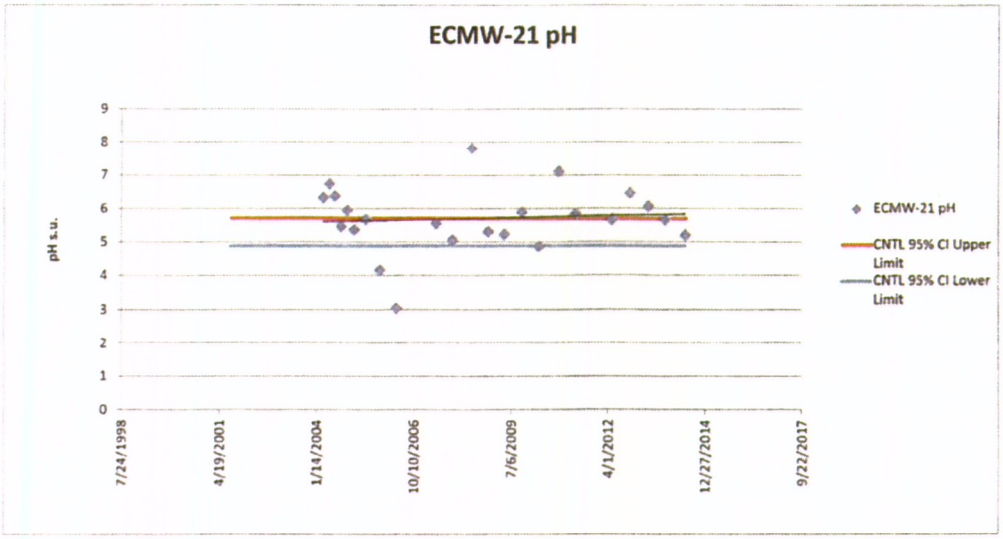

ECMW-15 pH
pH s.u.
8
7
6
5
4
3
2
1
0
7/24/1998
4/19/2001
1/14/2004
10/10/2006
7/6/2009
4/1/2012
12/27/2014
9/22/2017
ECMW-15 pH
CNTL 95% CI Upper Limit
CNTL 95% CI Lower Limit

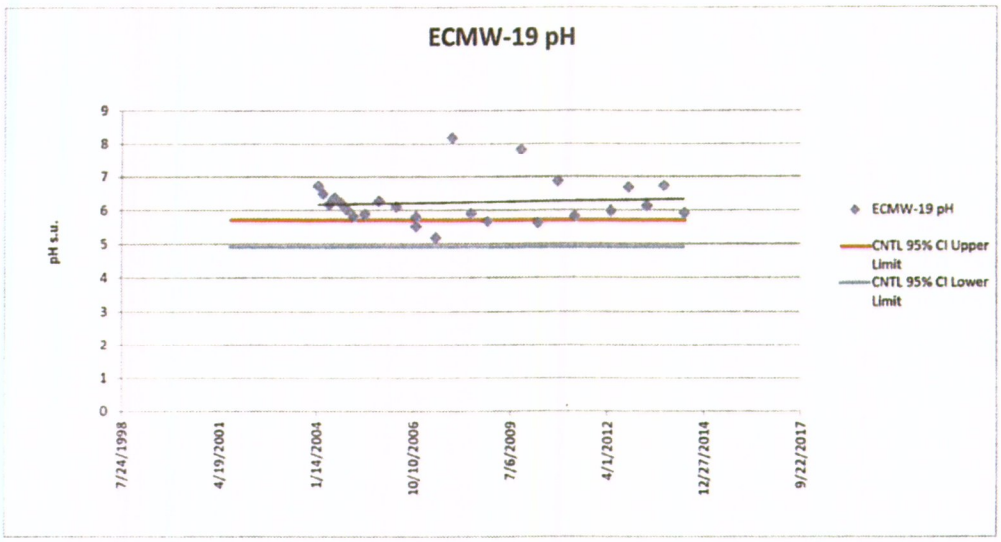

ECMW-18 pH
pH s.u.
9
8
7
6
5
4
3
2
1
0
7/24/1998
4/19/2001
1/14/2004
10/10/2006
7/6/2009
4/1/2012
12/27/2014
9/22/2017
ECMW-18 pH
CNTL 95% CI Upper Limit
CNTL 95% CI Lower Limit

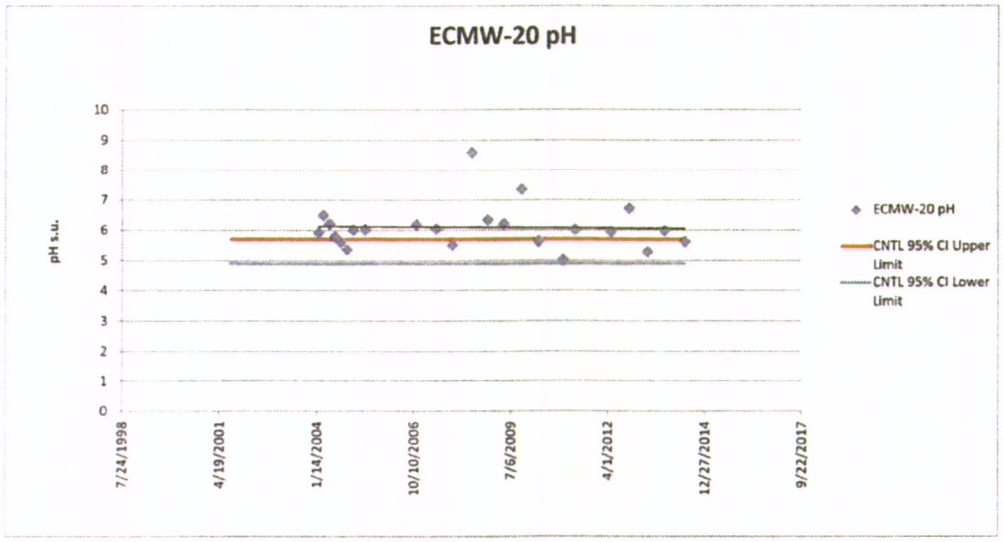

ECMW-7 pH
pH s.u.
12
10
8
6
4
2
0
7/24/1998
4/19/2001
1/14/2004
10/10/2006
7/6/2009
4/1/2012
12/27/2014
9/22/2017
ECMW-7 pH
CNTL 95% CI Upper Limit
CNTL 95% CI Lower Limit

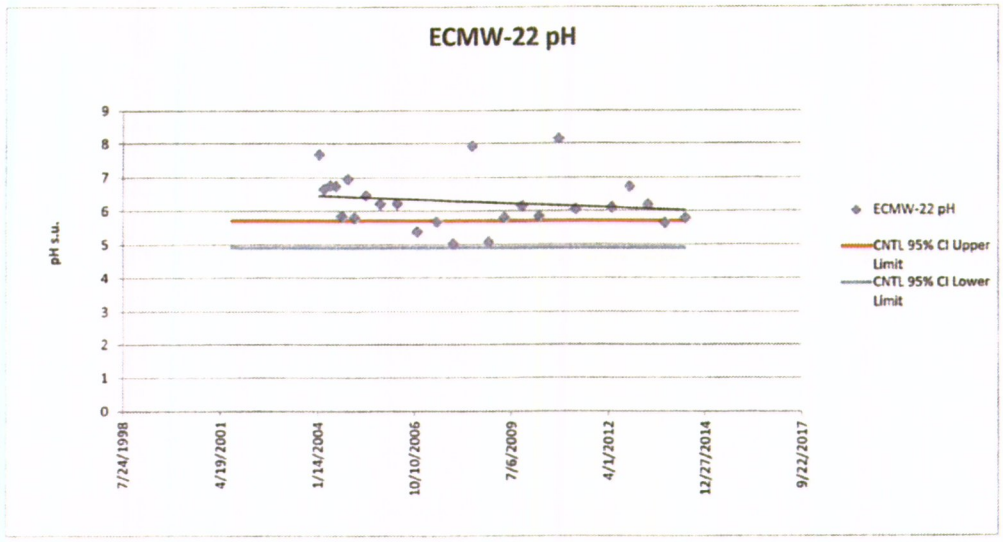

ECMW-11 pH
pH s.u.
7
6
5
4
3
2
1
0
7/24/1998
4/19/2001
1/14/2004
10/10/2006
7/6/2009
4/1/2012
12/27/2014
9/22/2017
ECMW-11 pH
CNTL 95% CI Upper Limit
CNTL 95% CI Lower Limit

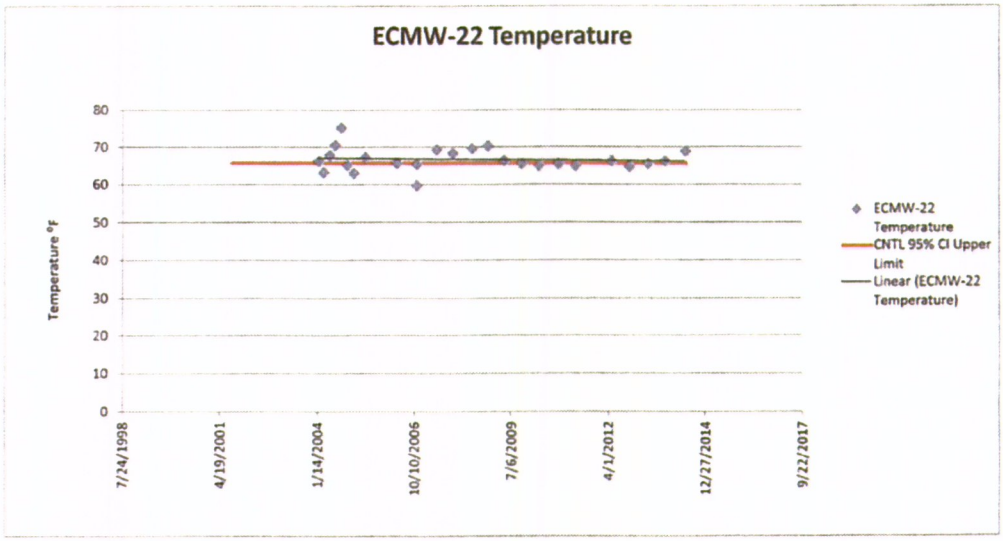

ECMW-16 pH
pH s.u.
7
6
5
4
3
2
1
0
7/24/1998
4/19/2001
1/14/2004
10/10/2006
7/6/2009
4/1/2012
12/27/2014
9/22/2017
ECMW-16 pH
CNTL 95% CI Upper Limit
CNTL 95% CI Lower Limit

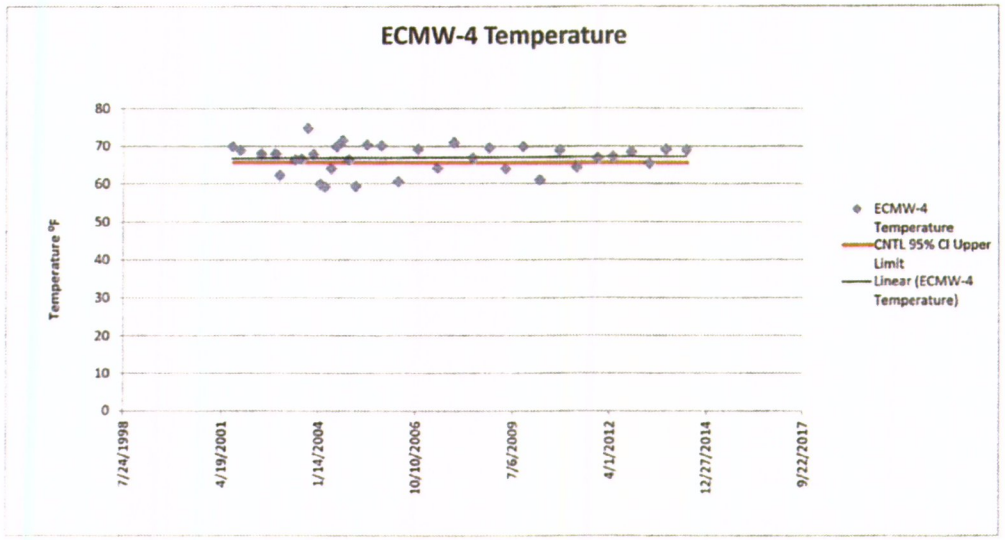

ECMW-21 pH
pH s.u.
9
8
7
6
5
4
3
2
1
0
7/24/1998
4/19/2001
1/14/2004
10/10/2006
7/6/2009
4/1/2012
12/27/2014
9/22/2017
ECMW-21 pH
CNTL 95% CI Upper Limit
CNTL 95% CI Lower Limit

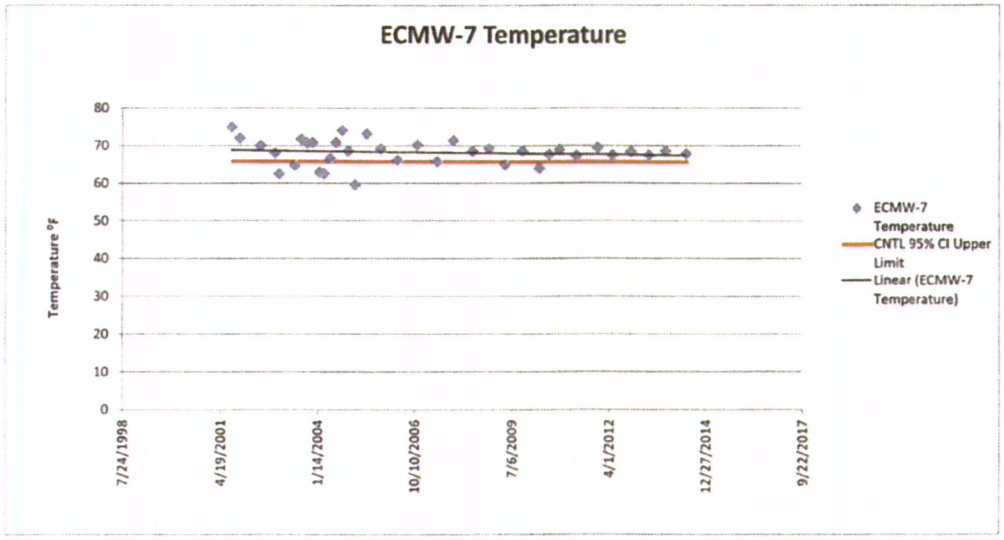

ECMW-19 pH
pH s.u.
9
8
7
6
5
4
3
2
1
0
7/24/1998
4/19/2001
1/14/2004
10/10/2006
7/6/2009
4/1/2012
12/27/2014
9/22/2017
ECMW-19 pH
CNTL 95% CI Upper Limit
CNTL 95% CI Lower Limit

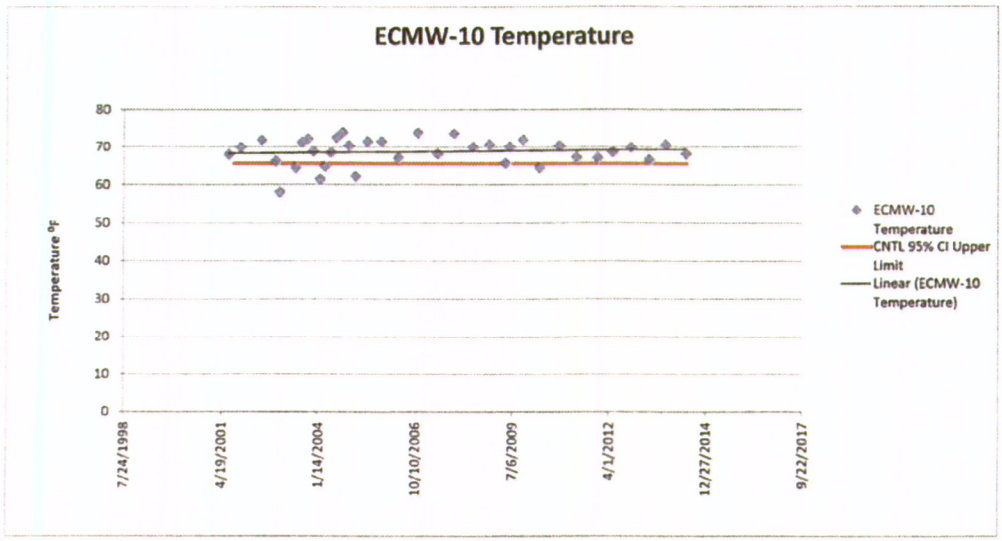

ECMW-20 pH
pH s.u.
10
9
8
7
6
5
4
3
2
1
0
7/24/1998
4/19/2001
1/14/2004
10/10/2006
7/6/2009
4/1/2012
12/27/2014
9/22/2017
ECMW-20 pH
CNTL 95% CI Upper Limit
CNTL 95% CI Lower Limit

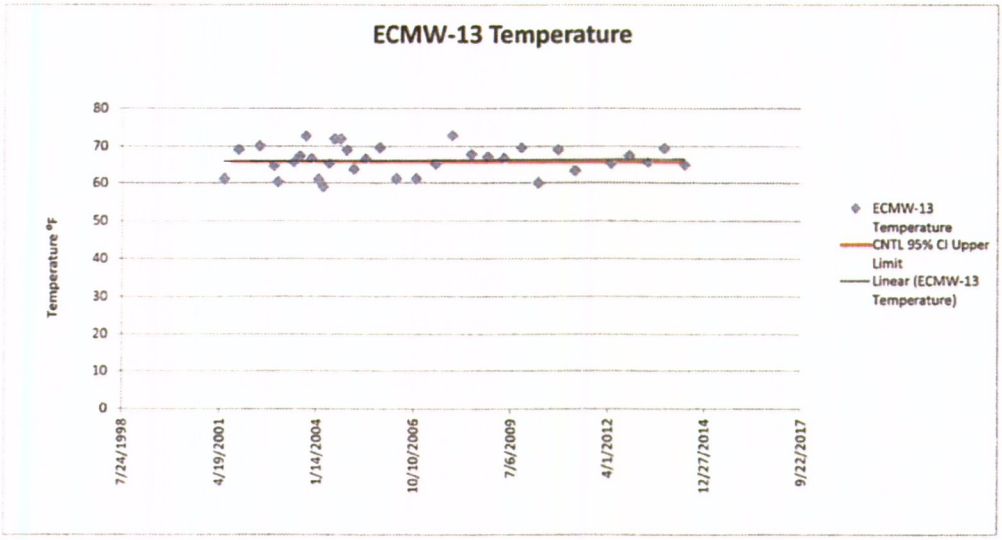

ECMW-22 pH
pH s.u.
9
8
7
6
5
4
3
2
1
0
7/24/1998
4/19/2001
1/14/2004
10/10/2006
7/6/2009
4/1/2012
12/27/2014
9/22/2017
ECMW-22 pH
CNTL 95% CI Upper Limit
CNTL 95% CI Lower Limit

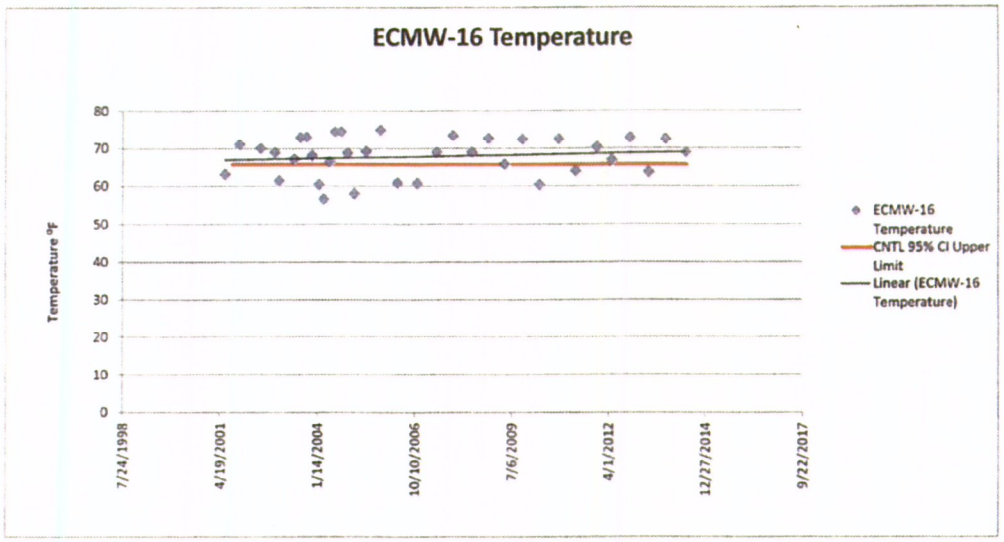

ECMW-22 Temperature
Temperature °F
80
70
60
50
40
30
20
10
0
7/24/1998
4/19/2001
1/14/2004
10/10/2006
7/6/2009
4/1/2012
12/27/2014
9/22/2017
ECMW-22 Temperature
CNTL 95% CI Upper Limit
Linear (ECMW-22 Temperature)

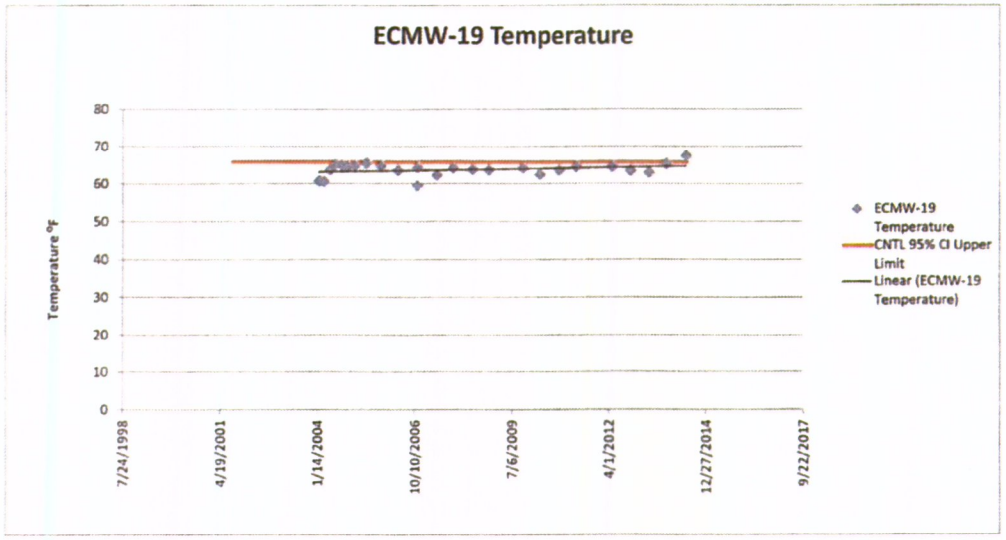

ECMW-4 Temperature
Temperature °F
80
70
60
50
40
30
20
10
0
7/24/1998
4/19/2001
1/14/2004
10/10/2006
7/6/2009
4/1/2012
12/27/2014
9/22/2017
ECMW-4 Temperature
CNTL 95% CI Upper Limit
Linear (ECMW-4 Temperature)

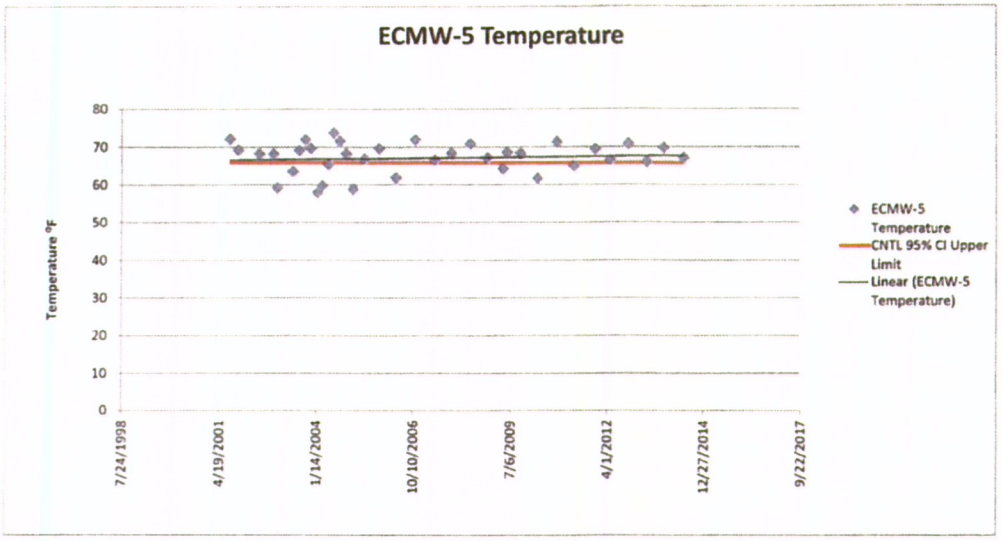

ECMW-7 Temperature
Temperature °F
80
70
60
50
40
30
20
10
0
7/24/1998
4/19/2001
1/14/2004
10/10/2006
7/6/2009
4/1/2012
12/27/2014
9/22/2017
ECMW-7 Temperature
CNTL 95% CI Upper Limit
Linear (ECMW-7 Temperature)

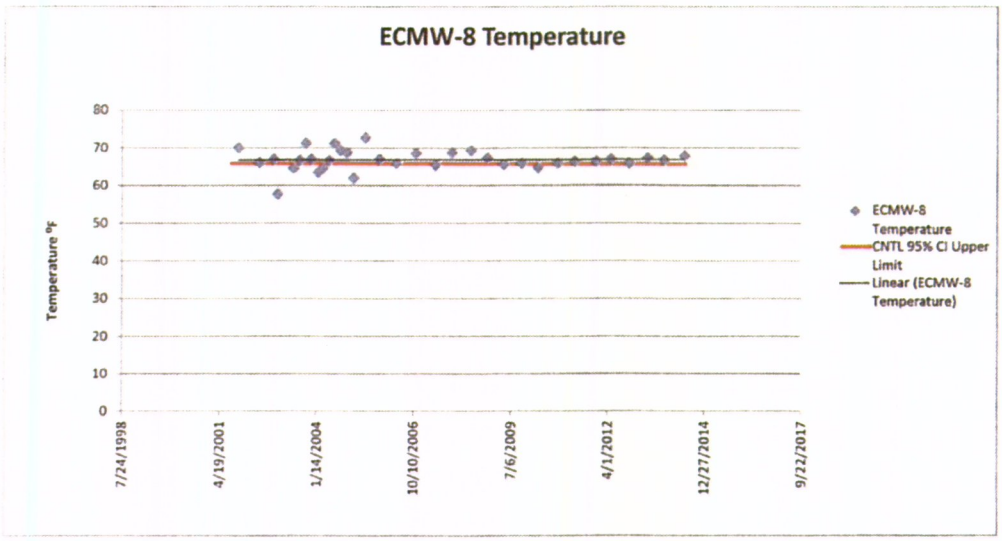

ECMW-10 Temperature
Temperature °F
80
70
60
50
40
30
20
10
0
7/24/1998
4/19/2001
1/14/2004
10/10/2006
7/6/2009
4/1/2012
12/27/2014
9/22/2017
ECMW-10 Temperature
CNTL 95% CI Upper Limit
Linear (ECMW-10 Temperature)

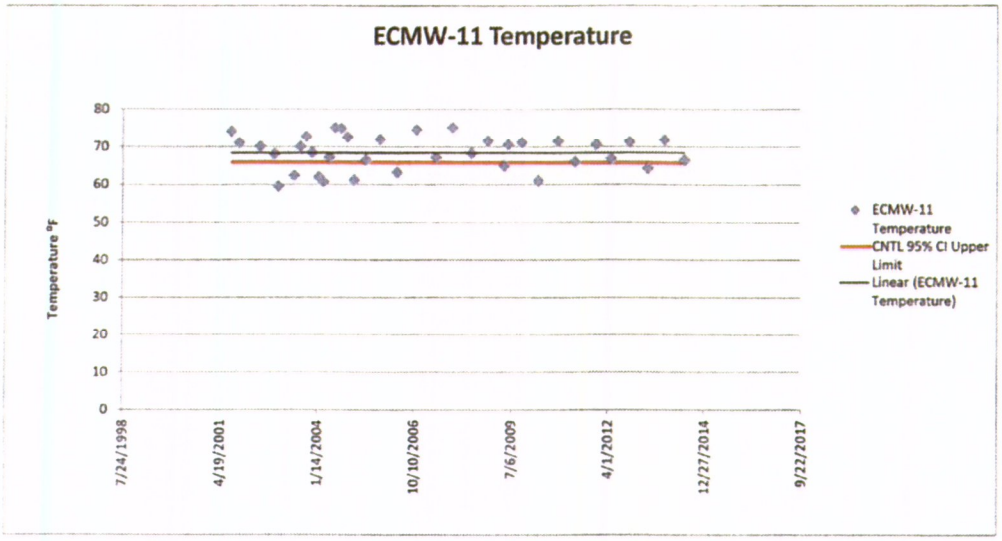

ECMW-13 Temperature
Temperature °F
80
70
60
50
40
30
20
10
0
7/24/1998
4/19/2001
1/14/2004
10/10/2006
7/6/2009
4/1/2012
12/27/2014
9/22/2017
ECMW-13 Temperature
CNTL 95% CI Upper Limit
Linear (ECMW-13 Temperature)

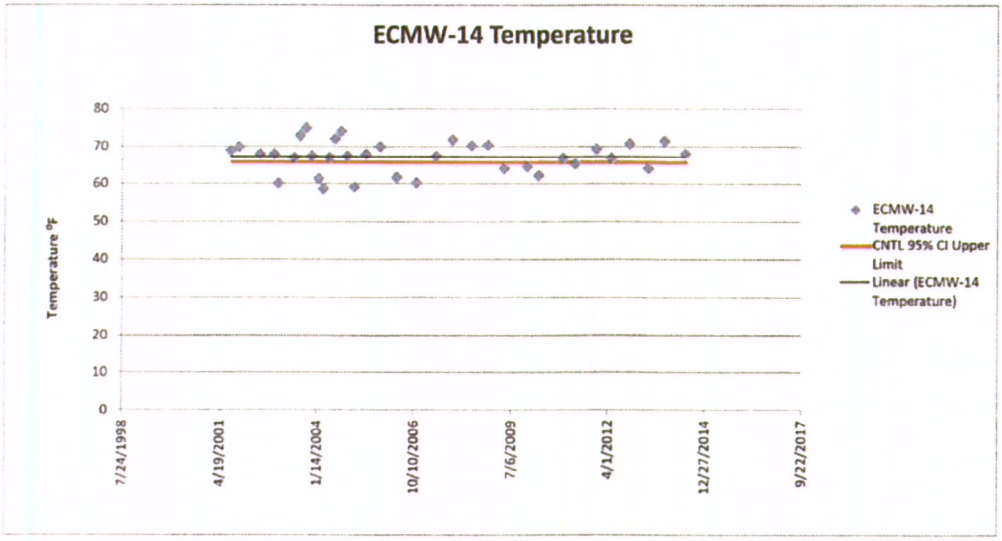

ECMW-16 Temperature
Temperature °F
80
70
60
50
40
30
20
10
0
7/24/1998
4/19/2001
1/14/2004
10/10/2006
7/6/2009
4/1/2012
12/27/2014
9/22/2017
ECMW-16 Temperature
CNTL 95% CI Upper Limit
Linear (ECMW-16 Temperature)

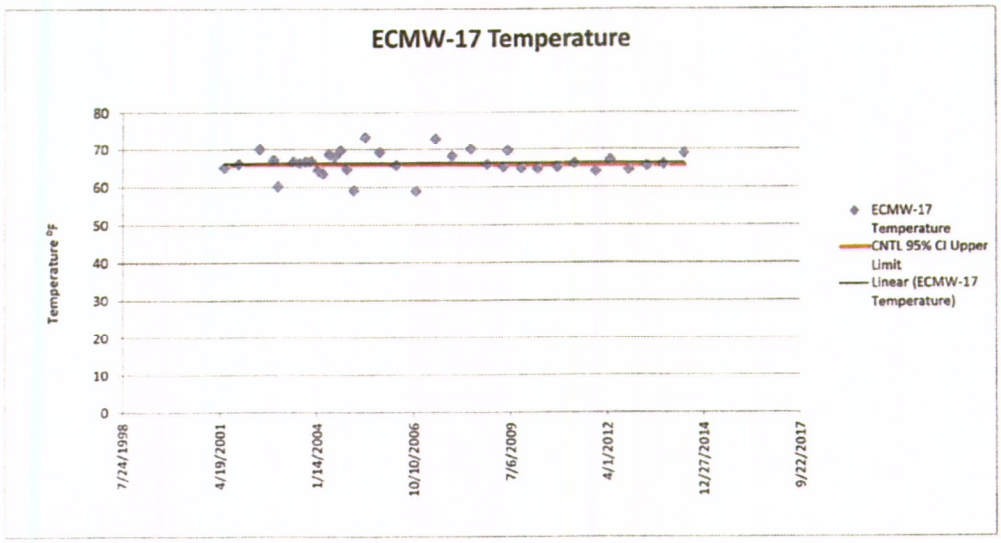

ECMW-19 Temperature
Temperature °F
80
70
60
50
40
30
20
10
0
7/24/1998
4/19/2001
1/14/2004
10/10/2006
7/6/2009
4/1/2012
12/27/2014
9/22/2017
ECMW-19 Temperature
CNTL 95% CI Upper Limit
Linear (ECMW-19 Temperature)

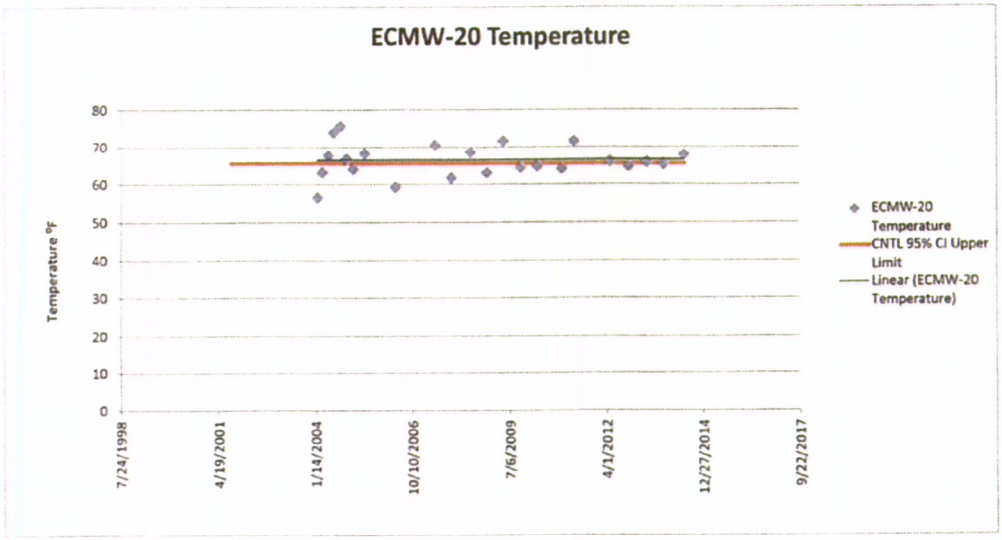

ECMW-5 Temperature
Temperature °F
80
70
60
50
40
30
20
10
0
7/24/1998
4/19/2001
1/14/2004
10/10/2006
7/6/2009
4/1/2012
12/27/2014
9/22/2017
ECMW-5 Temperature
CNTL 95% CI Upper Limit
Linear (ECMW-5 Temperature)

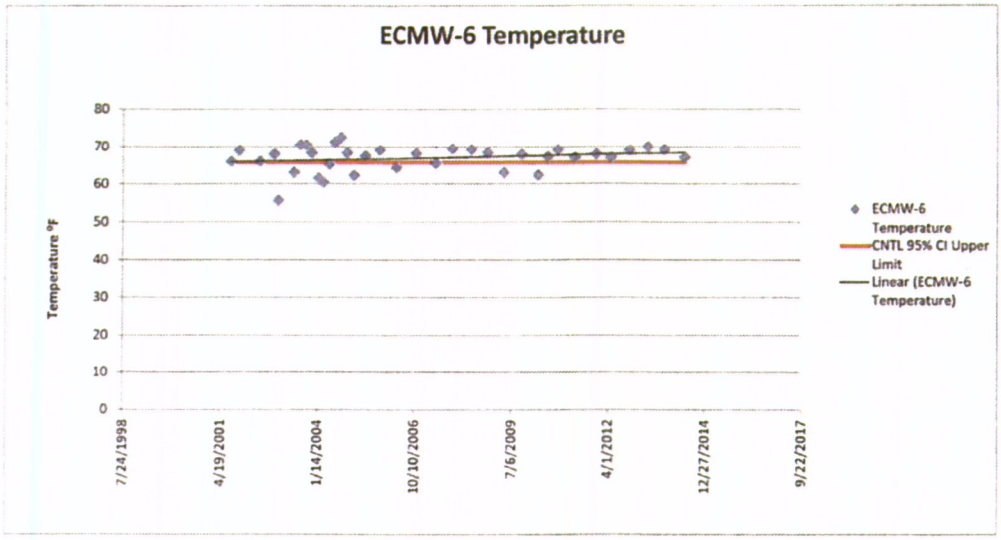

ECMW-8 Temperature
Temperature °F
80
70
60
50
40
30
20
10
0
7/24/1998
4/19/2001
1/14/2004
10/10/2006
7/6/2009
4/1/2012
12/27/2014
9/22/2017
ECMW-8 Temperature
CNTL 95% CI Upper Limit
Linear (ECMW-8 Temperature)

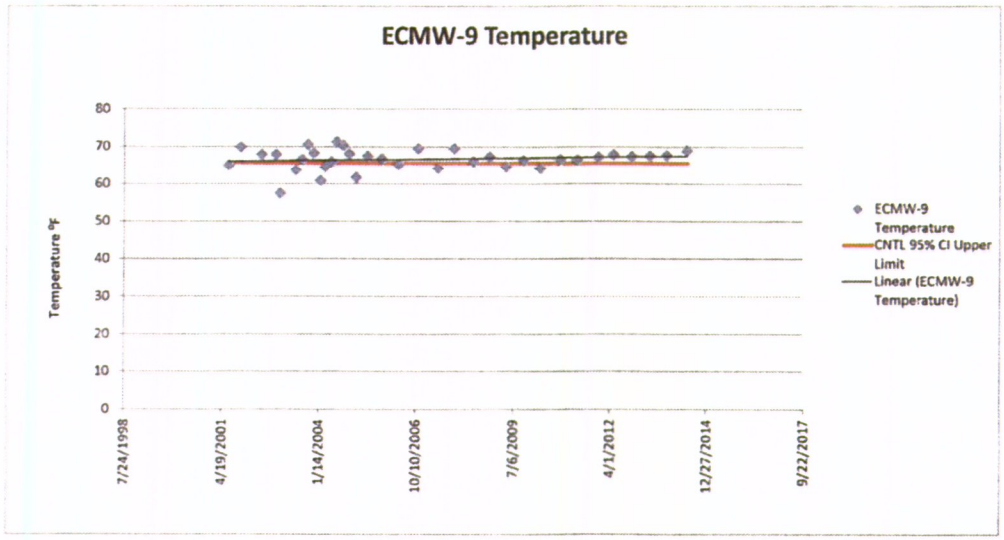

ECMW-11 Temperature
Temperature °F
80
70
60
50
40
30
20
10
0
7/24/1998
4/19/2001
1/14/2004
10/10/2006
7/6/2009
4/1/2012
12/27/2014
9/22/2017
ECMW-11 Temperature
CNTL 95% CI Upper Limit
Linear (ECMW-11 Temperature)

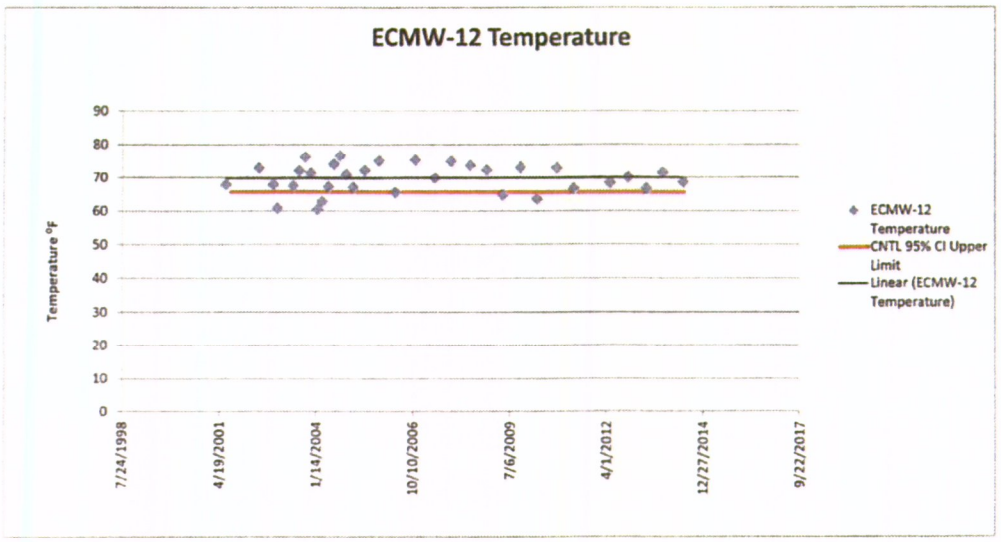

ECMW-14 Temperature
Temperature °F
80
70
60
50
40
30
20
10
0
7/24/1998
4/19/2001
1/14/2004
10/10/2006
7/6/2009
4/1/2012
12/27/2014
9/22/2017
ECMW-14 Temperature
CNTL 95% CI Upper Limit
Linear (ECMW-14 Temperature)

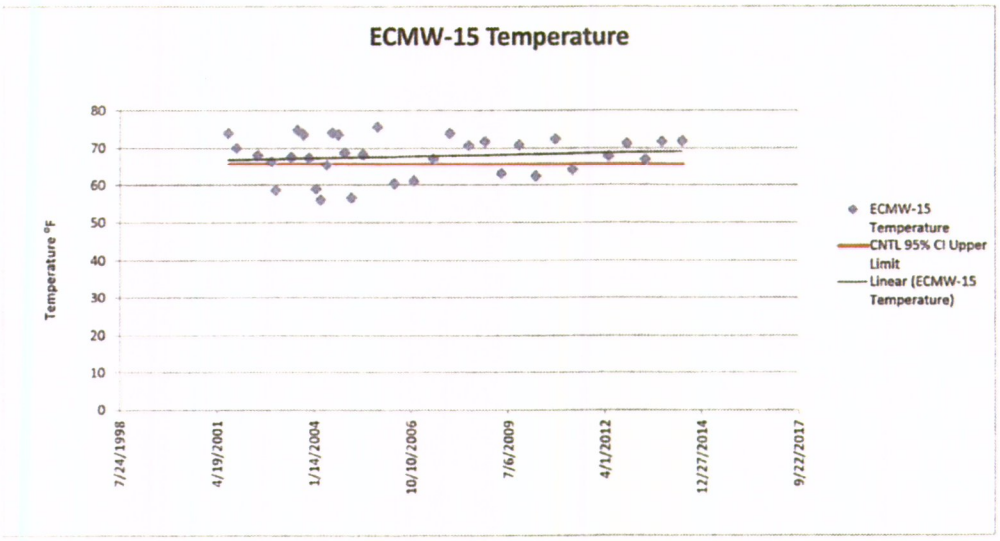

ECMW-17 Temperature
Temperature °F
80
70
60
50
40
30
20
10
0
7/24/1998
4/19/2001
1/14/2004
10/10/2006
7/6/2009
4/1/2012
12/27/2014
9/22/2017
ECMW-17 Temperature
CNTL 95% CI Upper Limit
Linear (ECMW-17 Temperature)

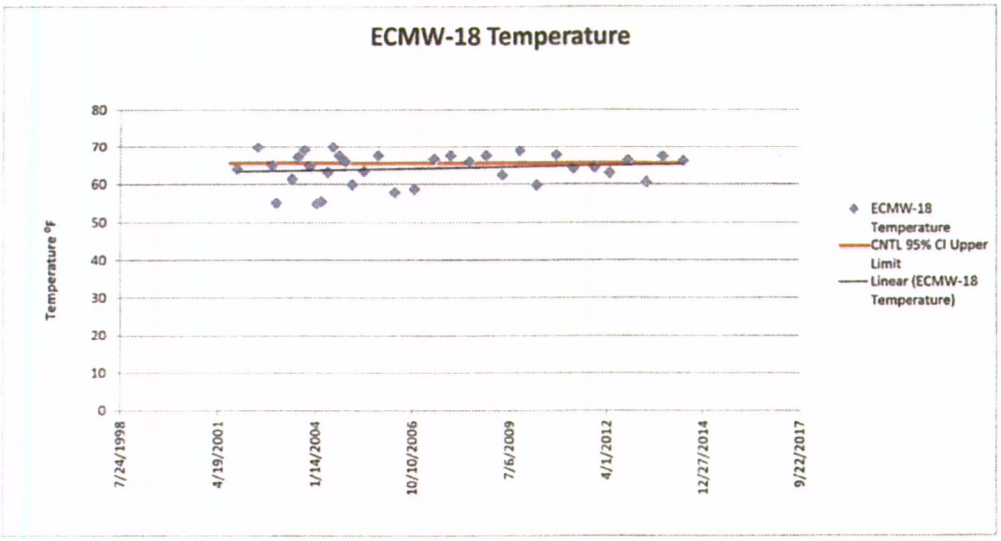

ECMW-20 Temperature
Temperature °F
80
70
60
50
40
30
20
10
0
7/24/1998
4/19/2001
1/14/2004
10/10/2006
7/6/2009
4/1/2012
12/27/2014
9/22/2017
ECMW-20 Temperature
CNTL 95% CI Upper Limit
Linear (ECMW-20 Temperature)

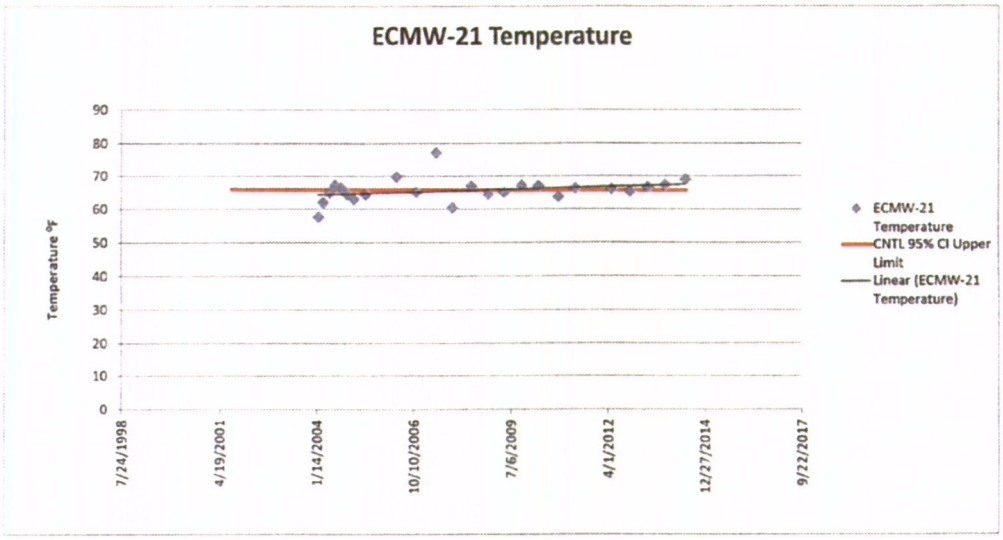

ECMW-6 Temperature
Temperature °F
80
70
60
50
40
30
20
10
0
7/24/1998
4/19/2001
1/14/2004
10/10/2006
7/6/2009
4/1/2012
12/27/2014
9/22/2017
ECMW-6 Temperature
CNTL 95% CI Upper Limit
Linear (ECMW-6 Temperature)

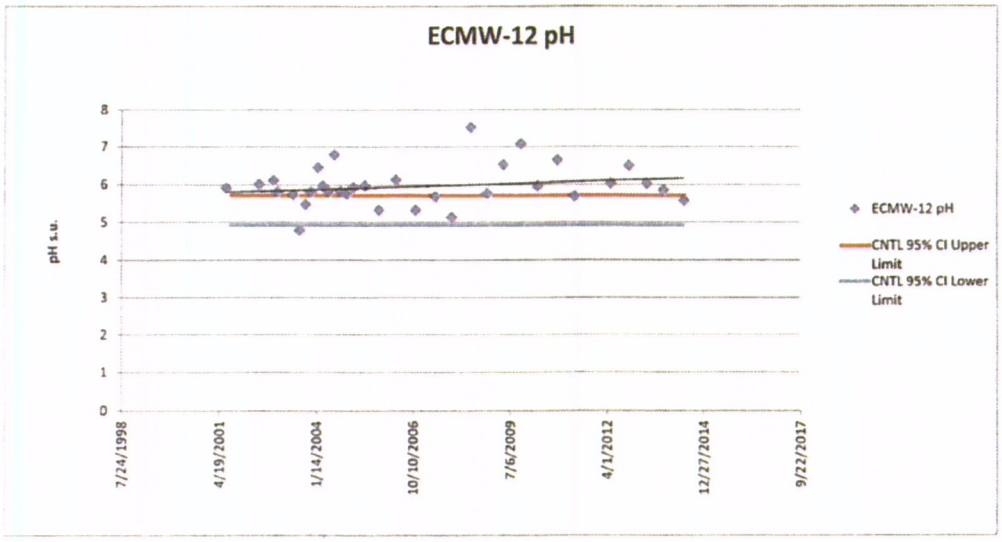

ECMW-9 Temperature
Temperature °F
80
70
60
50
40
30
20
10
0
7/24/1998
4/19/2001
1/14/2004
10/10/2006
7/6/2009
4/1/2012
12/27/2014
9/22/2017
ECMW-9 Temperature
CNTL 95% CI Upper Limit
Linear (ECMW-9 Temperature)


ECMW-12 Temperature
Temperature °F
90
80
70
60
50
40
30
20
10
0
7/24/1998
4/19/2001
1/14/2004
10/10/2006
7/6/2009
4/1/2012
12/27/2014
9/22/2017
ECMW-12 Temperature
CNTL 95% CI Upper Limit
Linear (ECMW-12 Temperature)


ECMW-15 Temperature
Temperature °F
80
70
60
50
40
30
20
10
0
7/24/1998
4/19/2001
1/14/2004
10/10/2006
7/6/2009
4/1/2012
12/27/2014
9/22/2017
ECMW-15 Temperature
CNTL 95% CI Upper Limit
Linear (ECMW-15 Temperature)


ECMW-18 Temperature
Temperature °F
80
70
60
50
40
30
20
10
0
7/24/1998
4/19/2001
1/14/2004
10/10/2006
7/6/2009
4/1/2012
12/27/2014
9/22/2017
ECMW-18 Temperature
CNTL 95% CI Upper Limit
Linear (ECMW-18 Temperature)


ECMW-21 Temperature
Temperature °F
90
80
70
60
50
40
30
20
10
0
7/24/1998
4/19/2001
1/14/2004
10/10/2006
7/6/2009
4/1/2012
12/27/2014
9/22/2017
ECMW-21 Temperature
CNTL 95% CI Upper Limit
Linear (ECMW-21 Temperature)


ECMW-12 pH
pH s.u.
8
7
6
5
4
3
2
1
0
7/24/1998
4/19/2001
1/14/2004
10/10/2006
7/6/2009
4/1/2012
12/27/2014
9/22/2017
ECMW-12 pH
CNTL 95% CI Upper Limit
CNTL 95% CI Lower Limit

Appendix B

Groundwater Monitoring Well Locations

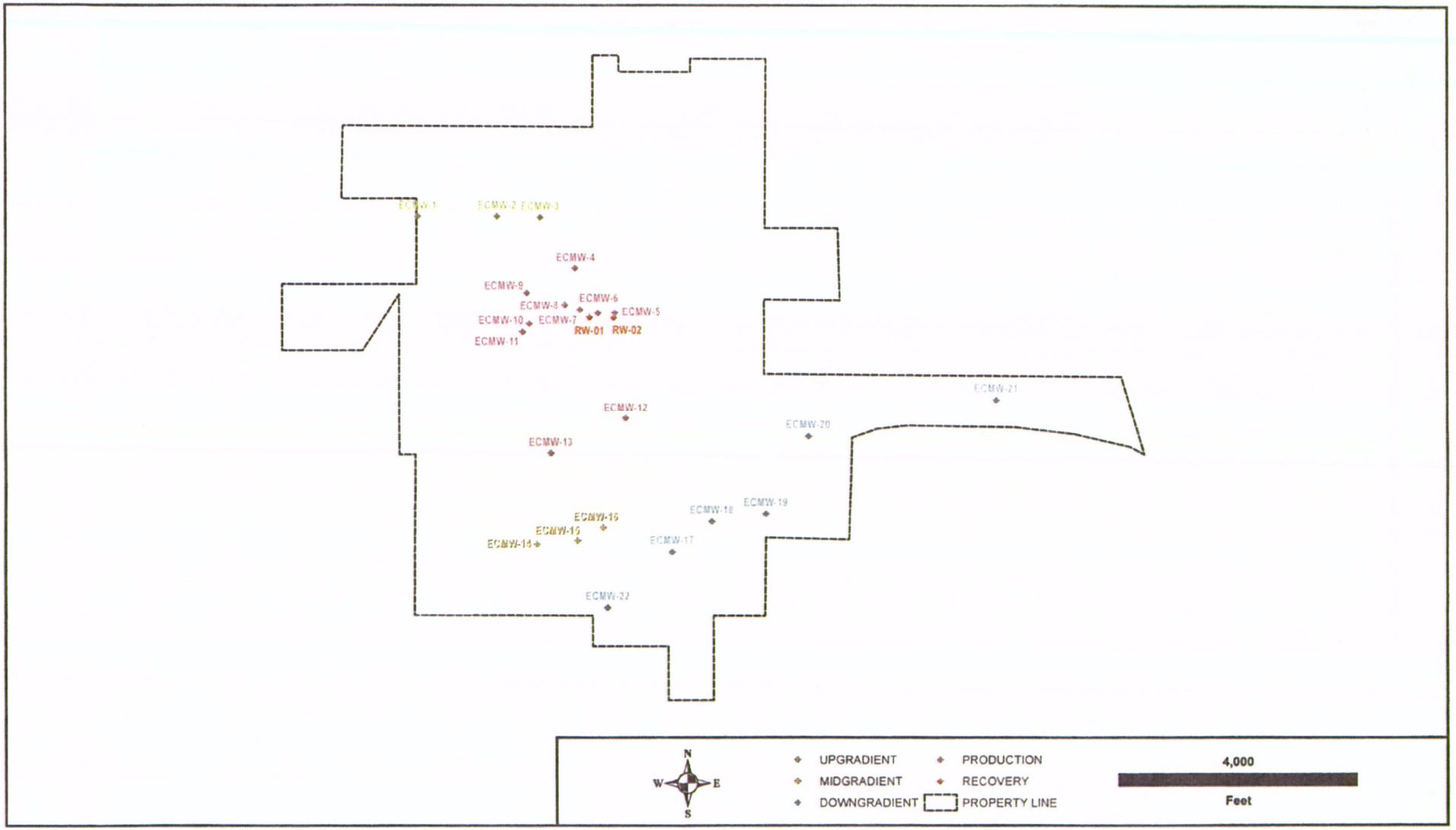
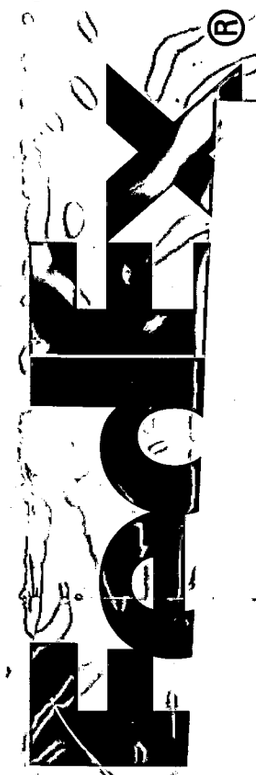


Figure 2.1. Monitoring/Recovery Well location map.



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