

ENVIRONMENTAL 
MANAGEMENT SERVICES, INC.

March 27, 2014

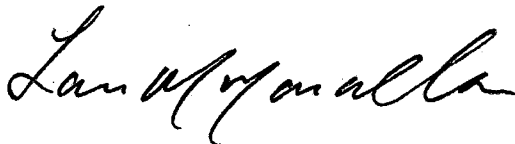
Linda Hanson, P.G.
Water Division
Arkansas Department of Environmental Quality
5301 Northshore Drive
North Little Rock, Arkansas 72118-5317

Dear Ms. Hanson:

On behalf of El Dorado Chemical Company, Environmental Management Services, Inc., has prepared the attached 2013 Annual Ground Water Report. This report is being submitted in accordance with CAO LIS Number 06-0153.

Should you have any questions concerning this report please contact me at (225) 751-5386.

Sincerely,



Lauren M. Marcella, P.G.
Project Geologist
Environmental Management Services, Inc.

2013 ANNUAL GROUND WATER REPORT

Prepared For:

EL DORADO

El Dorado Chemical Company

Prepared By:

ENVIRONMENTAL 
MANAGEMENT SERVICES, INC.

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March 27, 2014

**2013 ANNUAL GROUND WATER REPORT
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS**

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2013 ANNUAL GROUND WATER REPORT
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

The report contained herein has been prepared by Environmental Management Services, Inc. (EMS) under the direct supervision of the environmental professional(s) indicated below. To the best of our knowledge all appropriate standards of care and practices were utilized to collect and report the data contained within this document. Services performed by EMS were conducted in a manner consistent with that degree of care and skill ordinarily exercised by reputable members of the same profession as EMS practicing in the same locality under similar conditions as exists at the time the service was provided. No other representation, express or implied, and no warranty or guarantee is included or intended in this proposal, or any report, opinion, document or otherwise as a result of, or part of the work by EMS, its subcontractors, or vendors.

Prepared By:



Lauren M. Marcella

Date: March 27, 2014

Lauren M. Marcella, P.G.
Project Geologist
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**2013 ANNUAL GROUND WATER REPORT
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS**

1.0 INTRODUCTION

This report presents the results of ground water sampling activities conducted at the El Dorado Chemical Company (EDCC) facility during 2013. Field sampling techniques, ground water flow and ground water quality are discussed. A site map is provided as Figure 1.

2.0 SITE GEOLOGY

The EDCC facility is located west of the Mississippi Embayment in the Gulf Coastal Plain Geostratigraphic Region. Sediments within the region are characterized as a thick sequence of unconsolidated sediments, fluvial-deltaic in origin, and Tertiary in age. In some areas of Union County, unconsolidated alluvial deposits, Quaternary in age, overlay the Tertiary sediments.

Within the Claiborne Group, two units crop out in Union County, the Cook Mountain Formation and the Cockfield Formation. The Cook Mountain is overlain by the Cockfield Formation. The Cook Mountain is uniformly underlain by the Sparta Formation. The Cook Mountain is 50 to 200 feet thick and is composed of clay and silty clay containing minor amounts of localized very fine to silty sand. These clays serve as a confining unit between the more permeable overlying Cockfield Formation and the underlying aquifer. The Cockfield Formation, locally referred to as the "lignite sand", is generally characterized by fine sand, interbedded silty clay and lignite becoming more massive and containing less silt and clay with depth. The local shallow subsurface consists of interbedded sand, silty sand, silt and clay, with more clay in the northern area of the property and more sand to the south.

3.0 GROUND WATER MONITORING

The ground water monitoring program including parameters, sampling methodology and laboratory analyses is described in the following sections.

3.1 MONITORING PARAMETERS

In September 2005 statistical analyses were performed on ground water data to compare downgradient well data to upgradient (background) data and determine if the site constituents of concern are present at statistically significant levels. As a result of the statistical analyses, the monitoring program was revised in 2005 and implemented in 2006. The list was changed to allow EDCC to continue to collect data to evaluate the potential risk associated with the current ground water conditions, but eliminate parameters for which there is sufficient data.

Further revisions to the monitoring program were proposed in a letter dated April 25, 2007 and approved by the Arkansas Department of Environmental Quality (ADEQ) on June 8, 2007. The changes to the monitoring program that were implemented in 2007-2008 are as follows:

- **Lead and chromium:** These parameters were removed from the monitoring program during 2005; in 2007 ADEQ requested these parameters be sampled semiannually every two years to verify concentrations remain at the previously documented background levels.
- **Background Wells:** In 2004, data were used to establish the background levels of ammonia, nitrate, lead and chromium in the three upgradient wells ECMW-1, ECMW-2 and ECMW-3. These four parameters were dropped from the annual sampling list but are sampled semiannually every two years to verify concentrations remain at the previously documented background levels.
- **Nitrate:** The statistical evaluation indicates that wells ECMW-12, ECMW-13, ECMW-15 and ECMW-19 through ECMW-22 have concentrations of nitrate comparable to the background level. Nitrate was dropped from the annual parameter list for these wells, but is sampled semiannually every two years. Nitrate will continue to be analyzed semiannually in monitor wells ECMW-4 through ECMW-11, ECMW-14, ECMW-16, ECMW-17 and ECMW-18.
- **Ammonia:** The statistical evaluation indicates that wells ECMW-12, ECMW-13, ECMW-15 and ECMW-18 through ECMW-22 have concentrations of ammonia comparable to the background level. Ammonia was dropped from the annual parameter list for these wells, but is sampled semiannually every two years. Ammonia will continue to be analyzed semiannually in monitor wells ECMW-4 through ECMW-11, ECMW-14, ECMW-16 and ECMW-17.
- **Sulfate:** The statistical evaluation indicates that wells ECMW-12, ECMW-13, ECMW-15 and ECMW-18 through ECMW-22 have concentrations of sulfate comparable to the background level. Sulfate was dropped from the annual parameter list for these wells, but

is sampled semiannually every two years. Sulfate will continue to be analyzed semiannually in monitor wells ECMW-4 through ECMW-11, ECMW-14, ECMW-16 and ECMW-17.

- **Total Dissolved Solids:** There is sufficient ground water data for TDS. This parameter was dropped from the list of all monitoring wells at this time. TDS can be added back to the list if the information becomes necessary.
- **Vanadium:** Vanadium was added to the list of parameters in 2004. ADEQ recommended that vanadium remain on the list in order to obtain enough data for statistical comparison.

In a letter dated June 30, 2009, EDCC proposed a modification to the monitoring program requesting the elimination of vanadium from the list of sampling parameters. ADEQ responded in a September 1, 2009 letter, approving the request, stating that historical vanadium data have been non-detect or at low concentrations in the 22 monitor wells at the facility. The removal of vanadium from the sampling program became effective during the second half of 2009 sampling event.

Collection began for several new parameters for the evaluation of in situ remediation from all wells during the October 2005 sampling event. Field testing was conducted to collect measurements for dissolved oxygen, and redox. In addition, samples were shipped to the laboratory and analyzed for alkalinity, nitrite, dissolved manganese, dissolved iron, total phosphorus and Total Organic Carbon. In a letter to ADEQ dated June 3, 2011, EDCC requested additional changes to the monitoring program which included removal of these parameters from the list of constituents. The request was approved August 9, 2011 and was effective for the second half of 2011 sampling event.

3.2 FIELD SAMPLING

Ground water sampling events were conducted in May and November of 2013. Depth-to-water measurements were collected from each well using an electronic water level indicator. The device was decontaminated between each well to minimize cross-contamination. Depth-to-water measurements were subtracted from their respective top-of-casing elevations to calculate ground water elevations referenced to Mean Sea Level (MSL) at each well. Monitoring well

construction details are provided on Table 1. Ground water elevations for the 2013 sampling events are summarized on Table 2.

The depth-to-water measurements were used to calculate the volume of water within each well and determine the amount to be purged prior to sampling. Three well volumes were removed from each well or until the well became dry using a Redi-Flo electric pump. Dedicated polyethylene tubing was used for each well to minimize the potential for cross-contamination. The field parameters were recorded on the sampling forms during the 2013 sampling events (see Appendix A) to demonstrate when aquifer parameters have stabilized sufficiently prior to sampling. Meters used to measure field data were calibrated each day during sampling. Ground water indicator parameter data (final readings only) are summarized on Table 3. Purge water was containerized for proper disposal.

Ground water samples were collected using new, clean, dedicated, disposable polyethylene bailers. Ground water samples were placed into laboratory-provided containers with the appropriate preservatives. The containers were packed in ice-chests and shipped to the laboratory under chain-of-custody.

Field quality assurance/quality control samples collected consisted of blind duplicates. Duplicates are required at a rate of one (1) duplicate per twenty (20) field samples. Twelve wells were sampled each half, requiring one duplicate sample per half. However, two duplicates were collected in the second half of 2013. Duplicate samples were tested for all parameters (ammonia, nitrate and sulfate). The duplicate analyses are evaluated in Section 4.2.3.

3.3 LABORATORY ANALYSIS

Ground water samples were analyzed by Arkansas Analytical, Inc. in Little Rock, Arkansas. Arkansas Analytical is certified by the Arkansas Department of Environmental Quality. The analytical reports are provided in Appendix A.

Ground water samples were analyzed in 2013 for the following constituents:

| PARAMETER | ANALYTICAL METHODS |
|---------------------------------------|--------------------|
| Ammonia-N | 4500-NH3 D |
| Nitrate-N | EPA 300.0/9056A |
| Sulfate | EPA 300.0/9056A |
| pH, Temperature, Specific Conductance | Field |

4.0 SAMPLING RESULTS

The following sections present ground water flow and analytical data collected in 2013.

4.1 GROUND WATER FLOW

Ground water elevations from May and November 2013 were used to construct the potentiometric maps included as Figures 2 and 3. The average ground water elevation was approximately two feet higher in May than in November. The general ground water flow direction is from northwest to southeast for both sampling events and is consistent with previous measurements.

4.2 GROUND WATER QUALITY

4.2.1 Field Parameters

Indicator parameter data collected during well purging are summarized on Table 3. In 2013, pH values ranged from 3.97 standard units in ECMW-8 to 7.23 s.u. in ECMW-5, with an average of 5.32 s.u. The average of pH readings for 2013 (5.32 s.u.) did not differ significantly than 2012 (5.80 s.u.). Specific conductance values ranged from 48.6 (ECMW-21) to 21,120 (ECMW-7) micro-Siemens/cm ($\mu\text{S}/\text{cm}$) in 2013. The average of specific conductance readings for 2013 is higher than in 2012 due to continuing fluctuations in readings from Wells ECMW-6, ECMW-7 and ECMW-8.

4.2.2 Analytical Results

The analytical results are summarized in Tables 4 through 25 and the laboratory reports are provided in Appendix A. A discussion of each constituent is provided below:

Ammonia

During the year 2013, ammonia concentrations ranged from below the detection limit (0.5 mg/L) to 935 mg/L (ECMW-6). As with previous years, results from ECMW-6, ECMW-7 and ECMW-8 exhibited the highest concentrations. Figures 4 and 5 were prepared to show the distribution of ammonia in groundwater at the facility. However, because the monitoring program specifies that only wells with concentrations above background were sampled and not all wells have data for 2013, no concentration lines were drawn. As shown on Figures 4 and 5, the highest ammonia concentrations continue to be located north of the acid and nitrate process areas known as the Production Area.

Trend graphs of ammonia concentrations through 2013 are provided in Appendix B. Wells ECMW-6, ECMW-11 and ECMW-17 show an increasing trend. Well ECMW-16 shows a decreasing trend. Wells ECMW-4, ECMW-7, ECMW-8 and ECMW-9 show an overall steady or decreasing trend, but with recent increases in concentration. Ammonia concentration trends in all other wells are relatively constant.

Nitrate

For the year 2013, nitrate concentrations ranged from below the detection limit (0.25 mg/L) to 3380 mg/L (ECMW-6). ECMW-6, ECMW-7 and ECMW-8 exhibited the highest concentrations throughout the year. Figures 6 and 7 were prepared to show the distribution of nitrate in groundwater at the facility. However, because the monitoring program specifies that only wells with concentrations above background were sampled and not all wells have data for 2013, no concentration lines were drawn. As shown on Figures 6 and 7, the highest nitrate concentrations continue to be located north of the acid and nitrate process areas known as the Production Area.

Trends graphs for nitrate are provided in Appendix B. Nitrate concentrations in ECMW-5, ECMW-6 and ECMW-11 show increasing trends. Wells ECMW-4, ECMW-7, ECMW-10, ECMW-14, ECMW-15, ECMW-16 and ECMW-17 show decreasing trends. Well ECMW-8, while showing an overall decreasing trend, recently has shown increasing concentrations. Nitrate concentration trends in the remaining wells are relatively constant.

Sulfate

For the year 2013, sulfate concentrations ranged from 6.3 mg/L in ECMW-18 to 890 mg/L in ECMW-7. ECMW-4, ECMW-7, ECMW-8 and ECMW-9 exhibited the highest concentrations throughout the year.

Figures 8 and 9 were prepared to show the distribution of sulfate in groundwater at the facility. However, because the monitoring program specifies that only wells with concentrations above background were sampled and not all wells have data for 2013, no concentration lines were drawn. As shown on Figures 8 and 9, the highest sulfate concentrations are located north of the acid and nitrate process areas known as the Production Area.

Sulfate concentrations Wells ECMW-6 and ECMW-7 in show increasing trends. Wells ECMW-5, ECMW-11, ECMW-18 and ECMW-19 show decreasing trends. Sulfate concentration trends in the remaining wells are relatively constant.

4.2.3 Quality Assurance/Quality Control Results

Precision is the degree of agreement among repeated measurements of the same characteristic on samples collected as close as possible in time and place. It tells how consistent and reproducible field and analytical methods are by showing how close the measurements are to each other. Precision is determined by analyzing blind duplicate samples. The Relative Percent Difference (RPD) is calculated to determine the precision of duplicate analyses as follows:

$$RPD = \frac{(X_1 - X_2)}{(X_1 + X_2)/2} \times 100\%$$

The smaller the relative percent difference, the more precise the analyses. EPA and state guidelines generally consider RPD values below 20-30% to be within acceptable limits. The three duplicate samples collected in 2013 and analyzed for ammonia, nitrate and sulfate had RPD values ranging from 0.97 to 11.3%.

5.0 GROUND WATER REMEDIATION

Wells ECRW #1 and ECRW #2 began operating again in 2013 after the DSN Plant explosion that occurred in May 2012 caused the wells to be shut down. The recovered fluids are now pumped to the facility wastewater treatment system. The wells operated consistently from July 31 to December 31, 2013. Approximately 262,800 gallons of water were recovered from ECRW #1 and 131,400 gallons from ECRW #2, with average recovery rates ranging from 0.6 to 1.2 gallons per minute.

TABLES

TABLE 1
MONITORING WELL CONSTRUCTION DETAILS
2013 ANNUAL GROUND WATER REPORT
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

| Monitoring Well ID | Completion Date | Well Depth (ft below top of casing) | Screened Interval (ft from top of casing) | Top of Casing Elevation (ft above MSL) |
|--------------------|-----------------|-------------------------------------|---|--|
| ECMW-1 | 2/14/1996 | 22.1 | 12.1 to 22.2 | 213.28 |
| ECMW-2 | 2/14/1996 | 20.2 | 10.2 to 20.2 | 196.25 |
| ECMW-3 | 2/15/1996 | 27.1 | 17.1 to 27.1 | 192.11 |
| ECMW-4 | 2/15/1996 | 22.1 | 12.1 to 22.1 | 194.84 |
| ECMW-5 | 2/21/1996 | 17.7 | 7.7 to 17.7 | 182.69 |
| ECMW-6 | 2/21/1996 | 22.0 | 12 to 22 | 191.87 |
| ECMW-7 | 2/20/1996 | 23.9 | 13.9 to 23.9 | 195.88 |
| ECMW-8 | 2/20/1996 | 29.9 | 19.9 to 29.9 | 197.34 |
| ECMW-9 | 2/15/1996 | 30.0 | 20 to 30 | 198.39 |
| ECMW-10 | 2/19/1996 | 22.6 | 12.6 to 22.6 | 205.75 |
| ECMW-11 | 2/19/1996 | 19.8 | 9.8 to 19.8 | 201.65 |
| ECMW-12 | 2/19/1996 | 19.9 | 9.9 to 19.9 | 184.97 |
| ECMW-13 | 2/14/1996 | 19.8 | 9.8 to 19.8 | 177.26 |
| ECMW-14 | 2/13/1996 | 18.2 | 8.2 to 18.2 | 178.48 |
| ECMW-15 | 2/13/1996 | 17.0 | 7 to 17 | 180.84 |
| ECMW-16 | 2/12/1996 | 19.3 | 9.3 to 19.3 | 180.14 |
| ECMW-17 | 2/13/1996 | 34.7 | 24.7 to 34.7 | 185.40 |
| ECMW-18 | 2/22/1996 | 17.2 | 7.2 to 17.2 | 155.46 |
| ECMW-19 | 1/11/2004 | 61.5 | 51.5 to 61.5 | 150.41 |
| ECMW-20 | 1/7/2004 | 54.4 | 44.5 to 54.4 | 192.77 |
| ECMW-21 | 1/6/2004 | 34.9 | 24.9 to 34.9 | 176.29 |
| ECMW-22 | 1/21/2004 | 79.8 | 69.8 to 79.8 | 173.55 |

Notes:

1. EDC-MW-1 through EDC-MW-18 constructed of 4-inch Sch. 40 PVC flush threaded pipe with 4-inch diameter screens, 10-foot length and 0.01-inch openings, casing risers are approximately 3 feet above ground surface, drilled with hollow-stem auger (Data from Woodward-Clyde June 1996 Report)
2. EDC-MW-19, EDC-MW-20 and EDC-MW-22 constructed of 2-inch Sch. 40 PVC flush threaded pipe with 2-inch diameter screens, 10-foot length and 0.01-inch openings, casing risers are approximately 2.5 to 3 feet above ground surface, drilled with rotary wash procedures
2. EDC-MW-20 constructed of 1-inch Sch. 40 PVC flush threaded pipe with 1-inch diameter screen, 10-foot length and 0.01-inch opening, casing riser approximately 2.5 feet above ground surface, drilled with Geoprobe

**TABLE 2
GROUNDWATER ELEVATION DATA
2013 ANNUAL GROUND WATER REPORT
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS**

| Monitor Well | Top of Casing Elevation (ft above Mean Sea Level) | Measurement Date | | | |
|--------------|---|--|---------------------------------------|--|---------------------------------------|
| | | 5/14-15/2013 | | 11/4-5/13 | |
| | | Depth to Water (ft from top of casing) | Ground Water Elevation (ft above MSL) | Depth to Water (ft from top of casing) | Ground Water Elevation (ft above MSL) |
| ECMW-1 | 213.28 | 10.96 | 202.32 | 16.43 | 196.85 |
| ECMW-2 | 196.25 | 0.00 | 196.25 | 2.33 | 193.92 |
| ECMW-3 | 192.11 | 9.64 | 182.47 | 13.52 | 178.59 |
| ECMW-4 | 194.84 | 8.56 | 186.28 | 10.31 | 184.53 |
| ECMW-5 | 182.69 | 4.04 | 178.65 | 4.06 | 178.63 |
| ECMW-6 | 191.87 | 4.42 | 187.45 | 6.09 | 185.78 |
| ECMW-7 | 195.88 | 7.30 | 188.58 | 9.26 | 186.62 |
| ECMW-8 | 197.34 | 7.24 | 190.10 | 8.72 | 188.62 |
| ECMW-9 | 198.39 | 9.50 | 188.89 | 13.21 | 185.18 |
| ECMW-10 | 205.75 | 12.28 | 193.47 | 15.57 | 190.18 |
| ECMW-11 | 201.65 | 10.40 | 191.25 | 12.58 | 189.07 |
| ECMW-12 | 184.97 | 6.54 | 178.43 | 6.82 | 178.15 |
| ECMW-13 | 177.26 | 6.20 | 171.06 | 9.26 | 168.00 |
| ECMW-14 | 178.48 | 11.04 | 167.44 | 10.08 | 168.40 |
| ECMW-15 | 180.84 | 5.54 | 175.30 | 6.79 | 174.05 |
| ECMW-16 | 180.14 | 5.96 | 174.18 | 6.50 | 173.64 |
| ECMW-17 | 185.40 | 29.62 | 155.78 | 30.51 | 154.89 |
| ECMW-18 | 155.46 | 5.44 | 150.02 | 8.48 | 146.98 |
| ECMW-19 | 150.41 | 2.06 | 148.35 | 5.84 | 144.57 |
| ECMW-20 | 192.77 | 29.10 | 163.67 | 38.62 | 154.16 |
| ECMW-21 | 176.29 | 18.04 | 158.25 | 20.31 | 155.98 |
| ECMW-22 | 173.55 | 7.72 | 165.83 | 9.64 | 163.91 |

TABLE 3
GROUNDWATER INDICATOR PARAMETER DATA
2013 ANNUAL GROUND WATER REPORT
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

| WELL | TEMPERATURE (C) | | pH (s.u.) | | CONDUCTIVITY (uS) | |
|---------|-----------------|-----------|--------------|-----------|-------------------|-----------|
| | Date | | Date | | Date | |
| | 5/14-15/2013 | 11/4-5/13 | 5/14-15/2013 | 11/4-5/13 | 5/14-15/2013 | 11/4-5/13 |
| ECMW-1 | 16.1 | 19.4 | 5.03 | 5.21 | 66.6 | 54.5 |
| ECMW-2 | 16.7 | 19.0 | 5.75 | 5.91 | 336 | 309.5 |
| ECMW-3 | 17.9 | 19.1 | 6.29 | 5.72 | 208 | 273.5 |
| ECMW-4 | 18.6 | 20.7 | 4.03 | 4.63 | 7370 | 6960 |
| ECMW-5 | 18.8 | 20.9 | 5.07 | 7.23 | 519 | 493 |
| ECMW-6 | 21.1 | 20.7 | 4.15 | 4.49 | * | 26940 |
| ECMW-7 | 19.7 | 20.3 | 5.09 | 5.81 | * | 27120 |
| ECMW-8 | 19.6 | 19.3 | 3.97 | 4.06 | * | 20630 |
| ECMW-9 | 19.8 | 19.9 | 5.68 | 5.51 | 2380 | 2198 |
| ECMW-10 | 19.2 | 21.5 | 4.44 | 4.91 | 911 | 708 |
| ECMW-11 | 17.9 | 22.1 | 4.58 | 4.48 | 894 | 706 |
| ECMW-12 | 19.3 | 22.0 | 6.02 | 5.84 | 686 | 651 |
| ECMW-13 | 18.6 | 20.8 | 5.19 | 4.83 | 1669 | 1526 |
| ECMW-14 | 17.8 | 22.0 | 5.20 | 5.46 | 533 | 369.4 |
| ECMW-15 | 19.4 | 22.1 | 6.21 | 4.56 | 85.4 | 66 |
| ECMW-16 | 17.5 | 22.5 | 4.79 | 4.60 | 199.7 | 153.5 |
| ECMW-17 | 18.6 | 18.9 | 4.70 | 4.77 | 269 | 241.5 |
| ECMW-18 | 15.9 | 19.7 | 5.96 | 6.28 | 98.8 | 83.6 |
| ECMW-19 | 17.2 | 18.5 | 6.13 | 6.73 | 105.6 | 73.4 |
| ECMW-20 | 18.9 | 18.6 | 5.29 | 6.00 | 106 | 67.8 |
| ECMW-21 | 19.2 | 19.6 | 6.09 | 5.68 | 56.4 | 48.6 |
| ECMW-22 | 18.6 | 19.0 | 6.19 | 5.64 | 179.2 | 150.1 |

*Note: Readings registered 'Out of Range', likely due to instrument malfunction.

TABLE 4
ECMW-1 ANALYTICAL SUMMARY
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

| Sample Date | pH | Ammonia-N | Nitrate-N | Sulfate | Total Dissolved Solids | Lead (Total) | Lead (Dissolved) | Chromium (Total) | Chromium (Dissolved) | Vanadium (Total) | Vanadium (Dissolved) |
|-------------|------|-----------|-----------|---------|------------------------|--------------|------------------|------------------|----------------------|------------------|----------------------|
| | s.u. | mg/L | | | | | | | | | |
| 3/14/1996 | 9.70 | -- | 1.7 | 4.1 | -- | 0.0037 | <0.002 | <0.005 | <0.005 | -- | -- |
| 5/29/2001 | 5.10 | <0.5 | 1.83 | 3.67 | 42 | <0.04 | -- | <0.02 | -- | -- | -- |
| 11/1/2001 | 4.80 | <0.5 | 2.74 | 3.34 | 43 | <0.04 | -- | <0.02 | -- | -- | -- |
| 6/3/2002 | 5.50 | <0.5 | 2.01 | 4.66 | 83 | <0.02 | <0.02 | <0.02 | <0.02 | -- | -- |
| 10/30/2002 | 5.60 | 0.66 | 1.56 | 4.63 | 44 | <0.015 | <0.015 | <0.02 | <0.02 | -- | -- |
| 12/10/2002 | 6.10 | <0.5 | 1.8 | 6.73 | 108 | <0.015 | <0.015 | <0.02 | <0.02 | -- | -- |
| 5/20/2003 | 4.77 | <0.5 | 2.40 | 3.79 | 46 | <0.015 | <0.015 | <0.02 | <0.02 | -- | -- |
| 7/24/2003 | 7.10 | <0.5 | 2.55 | 5.05 | 59 | <0.015 | <0.015 | <0.02 | <0.02 | -- | -- |
| 9/24/2003 | 5.26 | <0.5 | 3.18 | 6.52 | 68 | <0.015 | <0.015 | <0.02 | <0.02 | -- | -- |
| 11/19/2003 | 5.11 | <0.5 | 1.47 | 5.85 | 64 | <0.015 | <0.015 | <0.02 | <0.02 | -- | -- |
| 1/28/2004 | 5.25 | 0.56 | 1.6 | 6.19 | 53 | <0.015 | <0.015 | <0.02 | <0.02 | -- | -- |
| 3/16/2004 | 5.59 | <0.5 | 2.73 | 4.22 | 56 | <0.015 | <0.015 | <0.02 | <0.02 | -- | -- |
| 5/18/2004 | 5.51 | <0.5 | 4.79 | 6.57 | 35 | <0.015 | <0.015 | <0.02 | <0.02 | -- | -- |
| 7/13/2004 | 6.16 | <0.5 | 3.68 | 3.88 | 80 | <0.015 | <0.015 | <0.02 | <0.02 | -- | -- |
| 9/14/2004 | 5.65 | 0.76 | 4.26 | 3.48 | 53 | <0.015 | <0.015 | <0.02 | <0.02 | <0.02 | -- |
| 11/16/2004 | 5.11 | <0.5 | 3.81 | 3.9 | 58 | <0.015 | <0.015 | <0.02 | <0.02 | <0.02 | <0.02 |
| 1/25/2005 | 5.43 | <0.5 | 2.88 | 6.69 | 86 | <0.015 | <0.015 | <0.02 | <0.02 | <0.02 | <0.02 |
| 5/24/2005 | 5.73 | 0.55 | 2.45 | 4.39 | 52 | <0.015 | <0.015 | <0.02 | <0.02 | <0.02 | <0.02 |
| 5/24/2005 | -- | <0.5 | 2.39 | 4.43 | 52 | <0.015 | <0.015 | <0.02 | <0.02 | <0.02 | <0.02 |
| 10/18/2005 | 3.61 | -- | -- | -- | -- | -- | -- | -- | -- | <0.02 | <0.02 |
| 10/18/2005 | -- | -- | -- | -- | -- | -- | -- | -- | -- | <0.02 | <0.02 |
| 4/11/2006 | 4.73 | -- | -- | -- | -- | -- | -- | -- | -- | <0.02 | <0.02 |
| 11/1/2006 | 4.98 | -- | -- | -- | -- | -- | -- | -- | -- | <0.02 | -- |
| 5/23/2007 | 5.24 | -- | -- | -- | -- | -- | -- | -- | -- | <0.02 | -- |
| 11/6/2007 | 4.77 | -- | -- | -- | -- | -- | -- | -- | -- | <0.02 | -- |
| 5/21/2008 | 7.91 | <0.5 | 1.57 | 4.23 | -- | <0.015 | -- | <0.02 | -- | <0.02 | -- |

"--" - Parameter not analyzed

E3 - Incorrect preservation, results qualified as "estimated".

TABLE 4
 ECMW-1 ANALYTICAL SUMMARY
 EL DORADO CHEMICAL COMPANY
 EL DORADO, ARKANSAS

| Sample Date | pH | Ammonia-N | Nitrate-N | Sulfate | Total Dissolved Solids | Lead (Total) | Lead (Dissolved) | Chromium (Total) | Chromium (Dissolved) | Vanadium (Total) | Vanadium (Dissolved) |
|-------------|------|-----------|-----------|---------|------------------------|--------------|------------------|------------------|----------------------|------------------|----------------------|
| | s.u. | mg/L | | | | | | | | | |
| 11/5/2008 | 4.63 | <0.5 | 0.732 | 4.34 | -- | <0.015 | -- | <0.02 | -- | <0.02 | -- |
| 4/22/2009 | 4.57 | -- | -- | -- | -- | -- | -- | -- | -- | <0.02 | -- |
| 10/20/2009 | 4.68 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 4/13/2010 | 4.53 | <0.5 | <0.5 | 6.46 | -- | <0.015 | -- | <0.02 | -- | -- | -- |
| 11/2/2010 | 7.69 | <0.5 | 1.31 | 5.55 | -- | <0.015 | -- | <0.01 | -- | -- | -- |
| 4/26/2011 | 5.04 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 5/2/2012 | 5.48 | <0.5 | 2.07 | 3.35 | -- | <0.015 E3 | <0.015 | <0.01 E3 | <0.02 | -- | -- |
| 11/7/2012 | 6.43 | <0.5 | 0.866 | 5.94 | -- | <0.015 | <0.015 | <0.01 | <0.02 | -- | -- |
| 5/15/2013 | 5.03 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 11/4/2013 | 5.21 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

"--" - Parameter not analyzed

E3 - Incorrect preservation, results qualified as "estimated".

TABLE 5
ECMW-2 ANALYTICAL SUMMARY
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

| Sample Date | pH | Ammonia-N | Nitrate-N | Sulfate | Total Dissolved Solids | Lead (Total) | Lead (Dissolved) | Chromium (Total) | Chromium (Dissolved) | Vanadium (Total) | Vanadium (Dissolved) |
|-------------|------|-----------|-----------|---------|------------------------|--------------|------------------|------------------|----------------------|------------------|----------------------|
| | s.u. | mg/L | | | | | | | | | |
| 3/14/1996 | 9.70 | -- | < 0.2 | 17 | -- | 0.018 | < 0.002 | 0.0342 | < 0.005 | -- | -- |
| 5/29/2001 | 5.40 | < 0.5 | < 0.5 | 19.6 | 340 | < 0.04 | -- | 0.032 | -- | -- | -- |
| 11/1/2001 | 5.30 | < 0.5 | < 0.5 | 22.9 | 300 | < 0.04 | -- | < 0.02 | -- | -- | -- |
| 6/3/2002 | 6.00 | < 0.5 | < 0.5 | 20 | 396 | < 0.02 | < 0.02 | < 0.02 | < 0.02 | -- | -- |
| 10/30/2002 | 6.10 | < 0.5 | < 0.5 | 25.7 | 517 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | -- | -- |
| 12/10/2002 | 6.70 | < 0.5 | < 0.5 | 24 | 305 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | -- | -- |
| 5/20/2003 | 5.31 | < 0.5 | < 0.5 | 22.1 | 309 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | -- | -- |
| 7/24/2003 | 7.26 | < 0.5 | < 0.5 | 22.9 | 370 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | -- | -- |
| 9/24/2003 | 5.50 | < 0.5 | < 0.5 | 24.9 | 380 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | -- | -- |
| 11/19/2003 | 5.42 | < 0.5 | < 0.5 | 28.2 | 360 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | -- | -- |
| 1/28/2004 | 5.20 | < 0.5 | < 0.5 | 25.3 | 490 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | -- | -- |
| 3/16/2004 | 5.47 | < 0.5 | < 0.5 | 20.9 | 311 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | -- | -- |
| 5/18/2004 | 5.40 | < 0.5 | < 0.5 | 24 | 298 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | -- | -- |
| 7/13/2004 | 5.68 | < 0.5 | < 0.5 | 22.4 | 330 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | -- | -- |
| 9/14/2004 | 5.44 | < 0.5 | < 0.5 | 24.3 | 340 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | < 0.02 | -- |
| 11/16/2004 | 6.12 | < 0.5 | < 0.5 | 21.5 | 320 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | < 0.02 | < 0.02 |
| 1/25/2005 | 5.38 | < 0.5 | < 0.5 | 20.8 | 300 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | < 0.02 | < 0.02 |
| 1/25/2005 | -- | < 0.5 | < 0.5 | 20.5 | 300 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | < 0.02 | < 0.02 |
| 5/24/2005 | 5.87 | 0.79 | < 0.5 | 22.9 | 290 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | < 0.02 | < 0.02 |
| 10/18/2005 | 5.15 | -- | < 0.5 | -- | -- | -- | -- | -- | -- | < 0.02 | < 0.02 |
| 4/11/2006 | 5.56 | -- | < 0.5 | -- | -- | -- | -- | -- | -- | < 0.02 | < 0.02 |
| 11/1/2006 | 5.20 | -- | -- | -- | -- | -- | -- | -- | -- | < 0.02 | -- |
| 5/23/2007 | 5.29 | -- | -- | -- | -- | -- | -- | -- | -- | < 0.02 | -- |
| 11/6/2007 | 5.17 | -- | -- | -- | -- | -- | -- | -- | -- | < 0.02 | -- |
| 5/21/2008 | 7.04 | < 0.5 | < 0.5 | 20.1 | -- | < 0.015 | -- | < 0.02 | -- | < 0.02 | -- |
| 11/5/2008 | 5.47 | < 0.5 | < 0.5 | 15.4 | -- | < 0.015 | -- | < 0.02 | -- | 0.02 | -- |

"--" - Parameter not analyzed

E3 - Incorrect preservation, results qualified as "estimated".

TABLE 5
 ECMW-2 ANALYTICAL SUMMARY
 EL DORADO CHEMICAL COMPANY
 EL DORADO, ARKANSAS

| Sample Date | pH | Ammonia-N | Nitrate-N | Sulfate | Total Dissolved Solids | Lead (Total) | Lead (Dissolved) | Chromium (Total) | Chromium (Dissolved) | Vanadium (Total) | Vanadium (Dissolved) |
|-------------|------|-----------|-----------|---------|------------------------|--------------|------------------|------------------|----------------------|------------------|----------------------|
| | s.u. | mg/L | | | | | | | | | |
| 4/22/2009 | 5.41 | -- | -- | -- | -- | -- | -- | -- | -- | <0.02 | -- |
| 10/20/2009 | 5.48 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 4/13/2010 | 5.23 | <0.5 | <0.5 | 16.9 | -- | <0.015 | -- | <0.02 | -- | -- | -- |
| 11/2/2010 | 8.28 | <0.5 | <0.5 | 22.6 | -- | <0.015 | -- | <0.01 | -- | -- | -- |
| 4/26/2011 | 5.51 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 5/2/2012 | 5.76 | <0.5 | <0.5 | 18.7 | -- | <0.015 E3 | <0.015 | <0.01 E3 | <0.02 | -- | -- |
| 11/7/2012 | 6.57 | <0.5 | <0.5 | 22 | -- | <0.015 | <0.015 | <0.01 | <0.02 | -- | -- |
| 5/15/2013 | 5.75 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 11/4/2013 | 5.91 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

-- - Parameter not analyzed

E3 - Incorrect preservation, results qualified as "estimated".

TABLE 6
ECMW-3 ANALYTICAL SUMMARY
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

| Sample Date | pH | Ammonia-N | Nitrate-N | Sulfate | Total Dissolved Solids | Lead (Total) | Lead (Dissolved) | Chromium (Total) | Chromium (Dissolved) | Vanadium (Total) | Vanadium (Dissolved) |
|-------------|------|-----------|-----------|---------|------------------------|--------------|------------------|------------------|----------------------|------------------|----------------------|
| | s.u. | mg/L | | | | | | | | | |
| 3/14/1996 | 8.00 | -- | < 0.2 | 10 | -- | 0.0027 | < 0.002 | < 0.005 | < 0.005 | -- | -- |
| 5/29/2001 | 6.20 | < 0.5 | < 0.5 | 10.6 | 180 | < 0.04 | -- | < 0.02 | -- | -- | -- |
| 11/1/2001 | 5.40 | < 0.5 | < 0.5 | 22.5 | 240 | < 0.04 | -- | < 0.02 | -- | -- | -- |
| 6/3/2002 | 6.40 | < 0.5 | < 0.5 | 11.4 | 228 | < 0.02 | < 0.02 | < 0.02 | < 0.02 | -- | -- |
| 10/30/2002 | 6.50 | < 0.5 | < 0.5 | 21.6 | 295 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | -- | -- |
| 12/10/2002 | 6.00 | < 0.5 | < 0.5 | 16.4 | 242 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | -- | -- |
| 5/20/2003 | 6.05 | < 0.5 | < 0.5 | 12.5 | 207 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | -- | -- |
| 7/24/2003 | 6.23 | < 0.5 | < 0.5 | 11.8 | 210 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | -- | -- |
| 9/24/2003 | 5.97 | < 0.5 | < 0.5 | 27.7 | 250 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | -- | -- |
| 11/19/2003 | 5.81 | < 0.5 | < 0.5 | 23.5 | 220 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | -- | -- |
| 1/28/2004 | 5.59 | < 0.5 | < 0.5 | 26.9 | 270 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | -- | -- |
| 3/16/2004 | 5.94 | < 0.5 | < 0.5 | 11.2 | 188 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | -- | -- |
| 5/18/2004 | 5.86 | < 0.5 | < 0.5 | 9.75 | 176 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | -- | -- |
| 7/13/2004 | 5.92 | < 0.5 | < 0.5 | 13 | 260 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | -- | -- |
| 9/14/2004 | 5.74 | < 0.5 | < 0.5 | 18.3 | 220 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | < 0.02 | -- |
| 11/16/2004 | 5.96 | < 0.5 | < 0.5 | 18.8 | 260 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | < 0.02 | < 0.02 |
| 1/25/2005 | 6.33 | < 0.5 | < 0.5 | 15.8 | 240 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | < 0.02 | < 0.02 |
| 5/24/2005 | 6.05 | 0.98 | < 0.5 | 11.8 | 200 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | < 0.02 | < 0.02 |
| 10/18/2005 | 6.04 | -- | < 0.5 | -- | -- | -- | -- | -- | -- | < 0.02 | < 0.02 |
| 4/12/2006 | 6.39 | -- | < 0.5 | -- | -- | -- | -- | -- | -- | < 0.02 | < 0.02 |
| 11/1/2006 | 5.37 | -- | -- | -- | -- | -- | -- | -- | -- | < 0.02 | -- |
| 5/23/2007 | 5.92 | -- | -- | -- | -- | -- | -- | -- | -- | < 0.02 | -- |
| 11/6/2007 | 4.85 | -- | -- | -- | -- | -- | -- | -- | -- | < 0.02 | -- |
| 5/21/2008 | 7.96 | < 0.5 | < 0.5 | 10.5 | -- | < 0.015 | -- | < 0.02 | -- | < 0.02 | -- |
| 11/5/2008 | 4.86 | < 0.5 | < 0.5 | 9.65 | -- | < 0.015 | -- | < 0.02 | -- | < 0.02 | -- |
| 4/22/2009 | 5.76 | -- | -- | -- | -- | -- | -- | -- | -- | < 0.02 | -- |

"--" - Parameter not analyzed

E3 - Incorrect preservation, results qualified as "estimated".

TABLE 6
ECMW-3 ANALYTICAL SUMMARY
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

| Sample Date | pH | Ammonia-N | Nitrate-N | Sulfate | Total Dissolved Solids | Lead (Total) | Lead (Dissolved) | Chromium (Total) | Chromium (Dissolved) | Vanadium (Total) | Vanadium (Dissolved) |
|-------------|------|-----------|-----------|---------|------------------------|--------------|------------------|------------------|----------------------|------------------|----------------------|
| | s.u. | mg/L | | | | | | | | | |
| 4/22/2009 | -- | <0.5 | <0.5 | 10.5 | -- | -- | -- | -- | -- | <0.02 | -- |
| 10/20/2009 | 5.83 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 4/13/2010 | 6.20 | <0.5 | <0.5 | 9.39 | -- | <0.015 | -- | <0.02 | -- | -- | -- |
| 11/2/2010 | 6.97 | <0.5 | <0.5 | 17.5 | -- | <0.015 | -- | <0.01 | -- | -- | -- |
| 4/27/2011 | 6.19 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 5/3/2012 | 6.28 | <0.5 | <0.5 | 8.87 | -- | <0.015 E3 | <0.015 | <0.01 E3 | <0.02 | -- | -- |
| 11/7/2012 | 6.74 | <0.5 | <0.5 | 13.4 | -- | 0.0169 | <0.015 | <0.01 | <0.02 | -- | -- |
| 5/15/2013 | 6.29 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 11/4/2013 | 5.72 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

"--" - Parameter not analyzed

E3 - Incorrect preservation, results qualified as "estimated".

TABLE 7
 ECMW-4 ANALYTICAL SUMMARY
 EL DORADO CHEMICAL COMPANY
 EL DORADO, ARKANSAS

| Sample Date | pH | Ammonia-N | Nitrate-N | Sulfate | Total Dissolved Solids | Lead (Total) | Lead (Dissolved) | Chromium (Total) | Chromium (Dissolved) | Vanadium (Total) | Vanadium (Dissolved) |
|-------------|------|-----------|-----------|---------|------------------------|--------------|------------------|------------------|----------------------|------------------|----------------------|
| | s.u. | mg/L | | | | | | | | | |
| 3/14/1996 | 8.10 | -- | 1.3 | 728 | -- | 0.0025 | < 0.002 | < 0.005 | < 0.005 | -- | -- |
| 8/8/2001 | 4.10 | 0.66 | < 0.5 | 925 | 5100 | < 0.04 | -- | < 0.02 | -- | -- | -- |
| 10/30/2001 | 4.30 | < 0.5 | < 0.5 | 936 | 5200 | 0.06 | -- | 0.04 | -- | -- | -- |
| 6/3/2002 | 5.20 | < 0.5 | < 0.5 | 979 | 4862 | < 0.02 | < 0.02 | < 0.02 | < 0.02 | -- | -- |
| 10/30/2002 | 4.80 | < 0.5 | 0.62 | 756 | 4240 | 0.02 | < 0.015 | < 0.02 | < 0.02 | -- | -- |
| 12/10/2002 | 4.40 | < 0.5 | 2.4 | 976 | 5360 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | -- | -- |
| 5/20/2003 | 4.33 | < 0.5 | < 0.5 | 936 | 4800 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | -- | -- |
| 5/20/2003 | -- | < 0.5 | < 0.5 | 1000 | 5150 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | -- | -- |
| 7/24/2003 | 9.08 | < 0.5 | < 0.5 | 978 | 5300 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | -- | -- |
| 7/24/2003 | -- | < 0.5 | < 0.5 | 958 | 5400 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | -- | -- |
| 9/24/2003 | 4.78 | < 0.5 | 2.42 | 989 | 5200 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | -- | -- |
| 9/24/2003 | -- | < 0.5 | 2.31 | 952 | 5200 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | -- | -- |
| 11/19/2003 | 4.13 | < 0.5 | 2.05 | 848 | 5300 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | -- | -- |
| 1/28/2004 | 3.88 | < 0.5 | 6.39 | 1040 | 5200 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | -- | -- |
| 3/16/2004 | 4.10 | < 0.5 | < 0.5 | 919 | 5204 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | -- | -- |
| 5/19/2004 | 4.05 | < 0.5 | 1.45 | 1040 | 5300 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | -- | -- |
| 7/13/2004 | 4.35 | < 0.5 | < 0.5 | 973 | 5500 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | -- | -- |
| 9/14/2004 | 4.44 | 0.68 | < 0.5 | 943 | 5200 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | < 0.02 | -- |
| 11/16/2004 | 4.26 | < 0.5 | < 0.5 | 874 | 4600 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | < 0.02 | < 0.02 |
| 1/25/2005 | 4.63 | 0.64 | 8.5 | 805 | 4700 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | < 0.02 | < 0.02 |
| 5/24/2005 | 4.77 | 2.14 | 0.997 | 1020 | 4700 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | < 0.02 | < 0.02 |
| 10/18/2005 | 4.06 | -- | 0.517 | -- | -- | -- | -- | -- | -- | < 0.02 | < 0.02 |
| 4/12/2006 | 4.12 | -- | < 0.5 | -- | -- | -- | -- | -- | -- | < 0.02 | < 0.02 |
| 11/1/2006 | 3.69 | < 0.5 | < 0.5 | -- | -- | < 0.015 | -- | < 0.02 | -- | < 0.02 | -- |
| 5/23/2007 | 4.13 | < 0.5 | 0.099 | 779 | -- | -- | -- | -- | -- | < 0.02 | -- |
| 11/6/2007 | 3.76 | < 0.5 | < 0.5 | 1020 | -- | -- | -- | -- | -- | < 0.02 | -- |

"--" - Parameter not analyzed

E3 - Incorrect preservation, results qualified as "estimated".

TABLE 7
 ECMW-4 ANALYTICAL SUMMARY
 EL DORADO CHEMICAL COMPANY
 EL DORADO, ARKANSAS

| Sample Date | pH | Ammonia-N | Nitrate-N | Sulfate | Total Dissolved Solids | Lead (Total) | Lead (Dissolved) | Chromium (Total) | Chromium (Dissolved) | Vanadium (Total) | Vanadium (Dissolved) |
|-------------|------|-----------|-----------|---------|------------------------|--------------|------------------|------------------|----------------------|------------------|----------------------|
| | s.u. | mg/L | | | | | | | | | |
| 5/21/2008 | 3.89 | <0.5 | <0.5 | 896 | -- | 0.017 | -- | <0.02 | -- | <0.02 | -- |
| 11/5/2008 | 3.87 | <0.5 | <0.5 | 758 | -- | <0.015 | -- | <0.02 | -- | <0.02 | -- |
| 4/22/2009 | 4.17 | <0.5 | <0.5 | 68.3 | -- | -- | -- | -- | -- | <0.02 | -- |
| 10/20/2009 | 3.62 | <0.5 | <0.5 | 830 | -- | -- | -- | -- | -- | -- | -- |
| 10/20/2009 | -- | <0.5 | <0.5 | 906 | -- | -- | -- | -- | -- | -- | -- |
| 4/13/2010 | 3.75 | <0.5 | <0.5 | 655 | -- | 0.029 | -- | <0.02 | -- | -- | -- |
| 11/2/2010 | 6.57 | <0.5 | <0.5 | 745 | -- | <0.015 | -- | <0.01 | -- | -- | -- |
| 11/2/2010 | -- | <0.5 | <0.5 | 1000 | -- | <0.015 | -- | <0.01 | -- | -- | -- |
| 4/27/2011 | 3.91 | 1.02 | <0.5 | 845 | -- | -- | -- | -- | -- | -- | -- |
| 11/30/2011 | 3.72 | <0.5 | <0.5 | 930 | -- | -- | -- | -- | -- | -- | -- |
| 5/3/2012 | 4.12 | <0.5 | <0.5 | 865 | -- | <0.015 E3 | <0.015 | <0.01 E3 | <0.02 | -- | -- |
| 11/7/2012 | 6.17 | <0.5 | <0.5 | 890 | -- | <0.015 | <0.015 | <0.01 | <0.02 | -- | -- |
| 5/15/2013 | 4.03 | 2.12 | 0.37 | 856 | -- | -- | -- | -- | -- | -- | -- |
| 11/5/2013 | 4.63 | 2.03 | 0.752 | 609 | -- | -- | -- | -- | -- | -- | -- |

"--" - Parameter not analyzed

E3 - Incorrect preservation, results qualified as "estimated".

TABLE 8
ECMW-5 ANALYTICAL SUMMARY
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

| Sample Date | pH | Ammonia-N | Nitrate-N | Sulfate | Total Dissolved Solids | Lead (Total) | Lead (Dissolved) | Chromium (Total) | Chromium (Dissolved) | Vanadium (Total) | Vanadium (Dissolved) |
|-------------|------|-----------|-----------|---------|------------------------|--------------|------------------|------------------|----------------------|------------------|----------------------|
| | s.u. | mg/L | | | | | | | | | |
| 3/13/1996 | 5.80 | -- | 4.4 | 441 | -- | < 0.002 | < 0.002 | < 0.005 | < 0.005 | -- | -- |
| 8/8/2001 | 4.60 | < 0.5 | 3.54 | 657 | 1000 | < 0.04 | -- | < 0.02 | -- | -- | -- |
| 10/30/2001 | 4.70 | < 0.5 | 3.27 | 526 | 980 | < 0.04 | -- | < 0.02 | -- | -- | -- |
| 6/3/2002 | 6.30 | < 0.5 | 3.35 | 650 | 934 | < 0.02 | < 0.02 | < 0.02 | < 0.02 | -- | -- |
| 10/30/2002 | 5.40 | < 0.5 | 3.66 | 582 | 929 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | -- | -- |
| 12/10/2002 | 5.20 | < 0.5 | 3.26 | 489 | 901 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | -- | -- |
| 5/20/2003 | 4.75 | < 0.5 | 3.60 | 654 | 845 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | -- | -- |
| 7/24/2003 | 6.85 | < 0.5 | 3.47 | 546 | 950 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | -- | -- |
| 9/24/2003 | 4.82 | < 0.5 | 3.53 | 560 | 950 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | -- | -- |
| 11/19/2003 | 4.79 | < 0.5 | 2.40 | 416 | 780 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | -- | -- |
| 1/28/2004 | 5.03 | < 0.5 | 3.19 | 476 | 740 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | -- | -- |
| 1/28/2004 | -- | < 0.5 | 3.07 | 482 | 730 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | -- | -- |
| 3/16/2004 | 5.13 | < 0.5 | 3.6 | 472 | 780 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | -- | -- |
| 5/19/2004 | 5.85 | < 0.5 | 3.41 | 455 | 860 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | -- | -- |
| 5/19/2004 | -- | < 0.5 | 3.3 | 494 | 900 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | -- | -- |
| 7/13/2004 | 4.96 | < 0.5 | 3.75 | 511 | 910 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | -- | -- |
| 9/14/2004 | 6.70 | 0.59 | 3.75 | 515 | 700 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | < 0.02 | -- |
| 11/16/2004 | 5.28 | < 0.5 | 3.33 | 502 | 850 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | < 0.02 | < 0.02 |
| 1/25/2005 | 6.36 | < 0.5 | 3.18 | 461 | 870 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | < 0.02 | < 0.02 |
| 5/24/2005 | 6.42 | 3.62 | 3.21 | 547 | 820 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | < 0.02 | < 0.02 |
| 10/19/2005 | 4.96 | -- | -- | -- | -- | -- | -- | -- | -- | < 0.02 | < 0.02 |
| 10/19/2005 | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 0.02 | < 0.02 |
| 4/12/2006 | 4.39 | -- | -- | -- | -- | -- | -- | -- | -- | < 0.02 | < 0.02 |
| 11/1/2006 | 4.42 | -- | -- | -- | -- | -- | -- | -- | -- | < 0.02 | -- |
| 5/23/2007 | 5.18 | < 0.5 | 3.53 | 476 | -- | -- | -- | -- | -- | < 0.02 | -- |
| 11/7/2007 | 4.64 | < 0.5 | 3.32 | 464 | -- | -- | -- | -- | -- | < 0.02 | -- |
| 5/21/2008 | 6.45 | < 0.5 | 4.17 | 308 | -- | < 0.015 | -- | < 0.02 | -- | < 0.02 | -- |

"--" - Parameter not analyzed

E3 - Incorrect preservation, results qualified as "estimated".

TABLE 8
ECMW-5 ANALYTICAL SUMMARY
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

| Sample Date | pH | Ammonia-N | Nitrate-N | Sulfate | Total Dissolved Solids | Lead (Total) | Lead (Dissolved) | Chromium (Total) | Chromium (Dissolved) | Vanadium (Total) | Vanadium (Dissolved) |
|-------------|------|-----------|-----------|---------|------------------------|--------------|------------------|------------------|----------------------|------------------|----------------------|
| | s.u. | mg/L | | | | | | | | | |
| 11/12/2008 | 2.40 | 0.55 | 4.15 | 163 | -- | <0.015 | -- | <0.02 | -- | <0.02 | -- |
| 4/22/2009 | 5.06 | <0.5 | 7.81 | 133 | -- | -- | -- | -- | -- | <0.02 | -- |
| 6/3/2009 | 5.92 | -- | 7.58 | -- | -- | -- | -- | -- | -- | -- | -- |
| 10/20/2009 | 4.98 | <0.5 | 8.82 | 93.4 | -- | -- | -- | -- | -- | -- | -- |
| 4/13/2010 | 4.75 | <0.5 | 7.96 | 105 | -- | <0.015 | -- | <0.02 | -- | -- | -- |
| 11/2/2010 | 5.64 | <0.5 | 11 | 94.7 | -- | <0.015 | -- | <0.01 | -- | -- | -- |
| 4/27/2011 | 5.03 | 1.08 | 15 | 92.4 | -- | -- | -- | -- | -- | -- | -- |
| 11/30/2011 | 4.67 | <0.5 | 19 | 94.4 | -- | -- | -- | -- | -- | -- | -- |
| 5/3/2012 | 5.13 | <0.5 | 23.5 | 59.6 | -- | <0.015 E3 | <0.015 | <0.01 E3 | <0.02 | -- | -- |
| 11/7/2012 | 6.43 | <0.5 | 26.6 | 74.6 | -- | <0.015 | <0.015 | <0.01 | <0.02 | -- | -- |
| 5/15/2013 | 5.07 | <0.5 | 32.8 | 60.7 | -- | -- | -- | -- | -- | -- | -- |
| 11/5/2013 | 7.23 | 0.56 | 34.7 | 66.5 | -- | -- | -- | -- | -- | -- | -- |
| 11/5/2013 | -- | <0.5 | 35.5 | 62.8 | -- | -- | -- | -- | -- | -- | -- |

"--" - Parameter not analyzed

E3 - Incorrect preservation, results qualified as "estimated".

TABLE 9
ECMW-6 ANALYTICAL SUMMARY
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

| Sample Date | pH | Ammonia-N | Nitrate-N | Sulfate | Total Dissolved Solids | Lead (Total) | Lead (Dissolved) | Chromium (Total) | Chromium (Dissolved) | Vanadium (Total) | Vanadium (Dissolved) |
|-------------|------|-----------|-----------|---------|------------------------|--------------|------------------|------------------|----------------------|------------------|----------------------|
| | s.u. | mg/L | | | | | | | | | |
| 3/13/1996 | 7.70 | -- | 51.1 | 24 | -- | 0.0026 | <0.002 | <0.005 | <0.005 | -- | -- |
| 8/8/2001 | 4.30 | 0.5 | 298 | 18.3 | 2100 | <0.04 | -- | <0.02 | -- | -- | -- |
| 10/30/2001 | 4.30 | <0.5 | 326 | 15.7 | 2700 | <0.04 | -- | <0.02 | -- | -- | -- |
| 6/3/2002 | 6.10 | <0.5 | 459 | 12.1 | 290 | <0.02 | <0.02 | <0.02 | <0.02 | -- | -- |
| 10/30/2002 | 5.00 | 0.51 | 661 | 8.13 | 3840 | <0.015 | <0.015 | <0.02 | <0.02 | -- | -- |
| 12/10/2002 | 4.60 | <0.5 | 580 | 7.15 | 3360 | <0.015 | <0.015 | <0.02 | <0.02 | -- | -- |
| 12/10/2002 | -- | <0.5 | 588 | 6.45 | 3280 | <0.015 | <0.015 | <0.02 | <0.02 | -- | -- |
| 5/21/2003 | 4.30 | 0.5 | 608 | 17.0 | 4020 | <0.015 | <0.015 | <0.02 | <0.02 | -- | -- |
| 7/24/2003 | 7.41 | 1.09 | 681 | 15.0 | 4600 | <0.015 | <0.015 | <0.02 | <0.02 | -- | -- |
| 9/24/2003 | 4.28 | 4.88 | 857 | 9.35 | 5100 | <0.015 | <0.015 | <0.02 | <0.02 | -- | -- |
| 11/19/2003 | 4.53 | 5.72 | 865 | 10.7 | 4700 | <0.015 | <0.015 | <0.02 | <0.02 | -- | -- |
| 11/19/2003 | -- | 5.60 | 866 | 9.21 | 4900 | <0.015 | <0.015 | <0.02 | <0.02 | -- | -- |
| 1/28/2004 | 4.36 | 12.3 | 835 | 17.2 | 5300 | <0.015 | <0.015 | <0.02 | <0.02 | -- | -- |
| 3/16/2004 | 4.40 | 13 | 826 | 17.2 | 5106 | <0.015 | <0.015 | <0.02 | <0.02 | -- | -- |
| 5/19/2004 | 5.04 | 21.4 | 915 | 13.4 | 5800 | <0.015 | <0.015 | <0.02 | <0.02 | -- | -- |
| 7/13/2004 | 4.74 | 17.9 | 995 | 11.7 | 6100 | <0.015 | <0.015 | <0.02 | <0.02 | -- | -- |
| 7/13/2004 | -- | 17.5 | 868 | 11.7 | 6200 | <0.015 | <0.015 | <0.02 | <0.02 | -- | -- |
| 9/14/2004 | 5.51 | 20 | 1130 | 3.84 | 6300 | <0.015 | <0.015 | <0.02 | <0.02 | <0.02 | -- |
| 11/16/2004 | 4.59 | 37.6 | 1140 | 4.4 | 7100 | <0.015 | <0.015 | <0.02 | <0.02 | <0.02 | <0.02 |
| 1/25/2005 | 5.36 | 43.1 | 1130 | 3.14 | 6600 | <0.015 | <0.015 | <0.02 | <0.02 | <0.02 | <0.02 |
| 5/24/2005 | 4.57 | 68.2 | 1410 | 5.19 | 6700 | <0.015 | <0.015 | <0.02 | <0.02 | <0.02 | <0.02 |
| 10/18/2005 | 4.43 | 110 | 1350 | -- | -- | -- | -- | -- | -- | <0.02 | <0.02 |
| 4/11/2006 | 4.45 | 154 | 1680 | -- | -- | -- | -- | -- | -- | <0.02 | <0.02 |
| 11/1/2006 | 3.94 | 170 | 2390 | -- | -- | -- | -- | -- | -- | <0.02 | -- |
| 5/23/2007 | 6.46 | 63.3 | 3550 | 44.9 | -- | -- | -- | -- | -- | <0.02 | -- |
| 11/6/2007 | 5.15 | 35.7 | 941 | 54.1 | -- | -- | -- | -- | -- | <0.02 | -- |

"--" - Parameter not analyzed

E3 - Incorrect preservation, results qualified as "estimated".

TABLE 9
ECMW-6 ANALYTICAL SUMMARY
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

| Sample Date | pH | Ammonia-N | Nitrate-N | Sulfate | Total Dissolved Solids | Lead (Total) | Lead (Dissolved) | Chromium (Total) | Chromium (Dissolved) | Vanadium (Total) | Vanadium (Dissolved) |
|-------------|------|-----------|-----------|---------|------------------------|--------------|------------------|------------------|----------------------|------------------|----------------------|
| | s.u. | mg/L | | | | | | | | | |
| 5/21/2008 | 4.50 | 59.1 | 1130 | 23.7 | -- | <0.015 | -- | <0.02 | -- | <0.02 | -- |
| 5/21/2008 | -- | 72.5 | 256 | 28.3 | -- | <0.015 | -- | <0.02 | -- | <0.02 | -- |
| 11/5/2008 | 3.89 | 103 | 1060 | 26.1 | -- | <0.015 | -- | <0.02 | -- | <0.02 | -- |
| 4/21/2009 | 4.47 | 135 | 1070 | 148 | -- | -- | -- | -- | -- | <0.02 | -- |
| 10/20/2009 | 4.16 | 181 | 1330 | 24.7 | -- | -- | -- | -- | -- | -- | -- |
| 4/13/2010 | 4.04 | 92.8 | 1660 | 29.2 | -- | <0.015 | -- | <0.02 | -- | -- | -- |
| 4/13/2010 | -- | 566 | 1640 | 25.7 | -- | 0.023 | -- | <0.02 | -- | -- | -- |
| 7/22/2010 | -- | 246 | 1940 | 42.3 | -- | <0.015 | -- | <0.02 | -- | -- | -- |
| 11/2/2010 | 5.71 | 311 | 1460 | 29.6 | -- | <0.015 | -- | 0.011 | -- | -- | -- |
| 4/27/2011 | 4.30 | 371 | 1680 | 46.8 | -- | -- | -- | -- | -- | -- | -- |
| 6/16/2011 | 4.01 | 393 | 1620 | 207 | -- | -- | -- | -- | -- | -- | -- |
| 11/30/2011 | 3.88 | 445 | 1970 | 60.5 | -- | -- | -- | -- | -- | -- | -- |
| 11/30/2011 | -- | 455 | 2060 | 63.8 | -- | -- | -- | -- | -- | -- | -- |
| 5/3/2012 | 4.28 | 344 | 1850 | 456 | -- | 0.0312 E3 | 0.032 | <0.01 | <0.02 | -- | -- |
| 5/3/2012 | -- | 407 | 1740 | 36.5 | -- | 0.0298 E3 | 0.028 | <0.01 E3 | <0.02 | -- | -- |
| 11/7/2012 | 6.20 | 620 | 2520 | 112 | -- | 0.0185 | 0.017 | <0.01 | <0.02 | -- | -- |
| 11/7/2012 | -- | 655 | 2430 | 113 | -- | 0.0211 | 0.016 | <0.01 | <0.02 | -- | -- |
| 5/15/2013 | 4.15 | 521 | 3120 | 37.7 | -- | -- | -- | -- | -- | -- | -- |
| 11/5/2013 | 4.49 | 935 | 3380 | 28.5 | -- | -- | -- | -- | -- | -- | -- |

"--" - Parameter not analyzed

E3 - Incorrect preservation, results qualified as "estimated".

TABLE 10
 ECMW-7 ANALYTICAL SUMMARY
 EL DORADO CHEMICAL COMPANY
 EL DORADO, ARKANSAS

| Sample Date | pH | Ammonia-N | Nitrate-N | Sulfate | Total Dissolved Solids | Lead (Total) | Lead (Dissolved) | Chromium (Total) | Chromium (Dissolved) | Vanadium (Total) | Vanadium (Dissolved) |
|-------------|------|-----------|-----------|---------|------------------------|--------------|------------------|------------------|----------------------|------------------|----------------------|
| | s.u. | mg/L | | | | | | | | | |
| 3/13/1996 | 8.10 | -- | 282 | 380 | -- | 0.0221 | 0.0185 | 0.0078 | < 0.005 | -- | -- |
| 8/8/2001 | 9.70 | 184 | 336 | 316 | 1300 | < 0.04 | -- | < 0.02 | -- | -- | -- |
| 10/30/2001 | 3.50 | < 0.5 | 189 | 322 | 1056 | < 0.04 | -- | < 0.02 | -- | -- | -- |
| 10/30/2001 | -- | < 0.5 | 186 | 325 | 1100 | < 0.04 | -- | < 0.02 | < 0.02 | -- | -- |
| 6/3/2002 | 4.40 | 190 | 361 | 363 | 1324 | 0.031 | < 0.015 | < 0.02 | < 0.02 | -- | -- |
| 6/3/2002 | -- | 205 | 358 | 360 | 1386 | 0.027 | < 0.02 | < 0.02 | < 0.02 | -- | -- |
| 10/30/2002 | 4.20 | 167 | 294 | 345 | 1080 | 0.017 | < 0.015 | < 0.02 | < 0.02 | -- | -- |
| 12/10/2002 | 3.70 | 180 | 344 | 275 | 1316 | < 0.015 | 0.016 | < 0.02 | < 0.02 | -- | -- |
| 12/10/2002 | -- | 149 | 349 | 276 | 1350 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | -- | -- |
| 5/21/2003 | 3.66 | 244 | 563 | 298 | 1850 | 0.02 | 0.017 | < 0.02 | < 0.02 | -- | -- |
| 7/24/2003 | 7.05 | 95.1 | 141 | 378 | 1400 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | -- | -- |
| 9/24/2003 | 3.84 | 116 | 953 | 341 | 1700 | 0.02 | 0.018 | < 0.02 | < 0.02 | -- | -- |
| 11/19/2003 | 4.03 | 124 | 152 | 476 | 1500 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | -- | -- |
| 1/28/2004 | 3.99 | 147 | 300 | 644 | 1300 | 0.018 | < 0.015 | < 0.02 | < 0.02 | -- | -- |
| 3/16/2004 | 3.98 | 190 | 310 | 496 | 1280 | 0.018 | 0.017 | < 0.02 | < 0.02 | -- | -- |
| 5/19/2004 | 3.95 | 204 | 337 | 524 | 1500 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | -- | -- |
| 7/13/2004 | 3.99 | 73.4 | 150 | 498 | 1600 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | -- | -- |
| 9/14/2004 | 4.45 | 26.5 | 75.5 | 142 | 1000 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | < 0.02 | -- |
| 9/14/2004 | -- | 25.9 | 76 | 143 | 990 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | < 0.02 | -- |
| 11/16/2004 | 3.97 | 219 | 370 | 428 | 1700 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | < 0.02 | < 0.02 |
| 1/25/2005 | 4.08 | 281 | 480 | 312 | 1700 | 0.016 | < 0.015 | < 0.02 | < 0.02 | < 0.02 | < 0.02 |
| 5/24/2005 | 4.21 | 323 | 595 | 349 | 1400 | 0.022 | 0.017 | < 0.02 | < 0.02 | < 0.02 | < 0.02 |
| 10/18/2005 | 3.90 | 14.3 | 91.6 | -- | -- | < 0.015 | < 0.015 | -- | -- | < 0.02 | < 0.02 |
| 4/11/2006 | 4.36 | 267 | 516 | -- | -- | 0.017 | < 0.015 | -- | -- | < 0.02 | < 0.02 |
| 11/1/2006 | 3.34 | 57.4 | 105 | -- | -- | < 0.015 | -- | -- | -- | < 0.02 | -- |
| 5/23/2007 | 4.30 | 96 | 181 | 798 | -- | -- | -- | -- | -- | < 0.02 | -- |

"--" - Parameter not analyzed

E3 - Incorrect preservation, results qualified as "estimated".

TABLE 10
ECMW-7 ANALYTICAL SUMMARY
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

| Sample Date | pH | Ammonia-N | Nitrate-N | Sulfate | Total Dissolved Solids | Lead (Total) | Lead (Dissolved) | Chromium (Total) | Chromium (Dissolved) | Vanadium (Total) | Vanadium (Dissolved) |
|-------------|------|-----------|-----------|---------|------------------------|--------------|------------------|------------------|----------------------|------------------|----------------------|
| | s.u. | mg/L | | | | | | | | | |
| 11/6/2007 | 3.58 | 49.9 | 85.3 | 906 | -- | -- | -- | -- | -- | <0.02 | -- |
| 5/21/2008 | 2.81 | 55.2 | 153 | 936 | -- | <0.015 | -- | <0.02 | -- | <0.02 | -- |
| 11/5/2008 | 3.40 | 115 | 237 | 962 | -- | <0.015 | -- | <0.02 | -- | <0.02 | -- |
| 4/21/2009 | 4.13 | 77.8 | 126 | 895 | -- | -- | -- | -- | -- | <0.02 | -- |
| 10/20/2009 | 3.55 | 51.2 | 49.9 | 1090 | -- | -- | -- | -- | -- | -- | -- |
| 4/13/2010 | 3.53 | 1000 | 1080 | 214 | -- | 0.06 | -- | <0.02 | -- | -- | -- |
| 7/22/2010 | -- | 43.2 | 103 | 3490 | -- | <0.015 | -- | <0.02 | -- | -- | -- |
| 11/2/2010 | 4.92 | 107 | 155 | 156 | -- | <0.015 | -- | <0.01 | -- | -- | -- |
| 4/27/2011 | 4.47 | 1630 | 2640 | 248 | -- | -- | -- | -- | -- | -- | -- |
| 6/16/2011 | 4.17 | 56.6 | 227 | 899 | -- | -- | -- | -- | -- | -- | -- |
| 11/30/2011 | 4.18 | 132 | 192 | 259 | -- | -- | -- | -- | -- | -- | -- |
| 5/3/2012 | 4.82 | 132 | 161 | 761 | -- | <0.015 E3 | <0.015 | <0.01 E3 | <0.02 | -- | -- |
| 11/7/2012 | 6.31 | 187 | 153 | 692 | -- | <0.015 | <0.015 | <0.01 | <0.02 | -- | -- |
| 5/15/2013 | 5.09 | 105 | 141 | 930 | -- | -- | -- | -- | -- | -- | -- |
| 5/15/2013 | -- | 110 | 145 | 921 | -- | -- | -- | -- | -- | -- | -- |
| 11/5/2013 | 5.81 | 132 | 156 | 927 | -- | -- | -- | -- | -- | -- | -- |

"--" - Parameter not analyzed

E3 - Incorrect preservation, results qualified as "estimated".

TABLE 11
 ECMW-8 ANALYTICAL SUMMARY
 EL DORADO CHEMICAL COMPANY
 EL DORADO, ARKANSAS

| Sample Date | pH | Ammonia-N | Nitrate-N | Sulfate | Total Dissolved Solids | Lead (Total) | Lead (Dissolved) | Chromium (Total) | Chromium (Dissolved) | Vanadium (Total) | Vanadium (Dissolved) |
|-------------|------|-----------|-----------|---------|------------------------|--------------|------------------|------------------|----------------------|------------------|----------------------|
| | s.u. | mg/L | | | | | | | | | |
| 3/13/1996 | 7.90 | -- | 1010 | 68.3 | -- | 0.0234 | 0.0238 | < 0.005 | < 0.005 | -- | -- |
| 10/30/2001 | 3.90 | 0.94 | 1030 | 81.1 | 5000 | < 0.04 | -- | < 0.02 | -- | -- | -- |
| 6/3/2002 | 5.40 | 551 | 1070 | 77.8 | 4246 | < 0.02 | < 0.02 | < 0.02 | < 0.02 | -- | -- |
| 6/3/2002 | -- | 551 | 1200 | 70.4 | 4378 | 0.031 | < 0.02 | < 0.02 | < 0.02 | -- | -- |
| 10/30/2002 | 4.40 | 406 | 1330 | 151 | 4560 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | -- | -- |
| 12/10/2002 | 4.00 | 220 | 1080 | 46.2 | 5120 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | -- | -- |
| 12/10/2002 | -- | 261 | 1030 | 47.6 | 5140 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | -- | -- |
| 5/21/2003 | 3.99 | 214 | 1250 | 209 | 4200 | 0.019 | 0.019 | < 0.02 | < 0.02 | -- | -- |
| 5/21/2003 | -- | 167 | 1270 | 162 | 4010 | 0.019 | 0.019 | < 0.02 | < 0.02 | -- | -- |
| 7/24/2003 | 6.04 | 179 | 472 | 904 | 3700 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | -- | -- |
| 7/24/2003 | -- | 177 | 478 | 913 | 3700 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | -- | -- |
| 9/23/2003 | 3.93 | 157.5 | 524 | 870 | 3400 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | -- | -- |
| 9/23/2003 | -- | 153 | 539 | 899 | 3400 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | -- | -- |
| 11/19/2003 | 4.99 | 206 | 464 | 738 | 3200 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | -- | -- |
| 1/28/2004 | 4.29 | 45.7 | 142 | 854 | 1800 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | -- | -- |
| 3/16/2004 | 4.18 | 88 | 203 | 805 | 2221 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | -- | -- |
| 5/19/2004 | 4.07 | 120 | 298 | 789 | 2500 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | -- | -- |
| 7/13/2004 | 4.48 | 120 | 354 | 767 | 2600 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | -- | -- |
| 9/14/2004 | 3.99 | 107 | 392 | 743 | 2400 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | < 0.02 | -- |
| 11/16/2004 | 4.01 | 82.1 | 304 | 808 | 2800 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | < 0.02 | < 0.02 |
| 1/25/2005 | 4.09 | 48.9 | 126 | 1200 | 2700 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | < 0.02 | < 0.02 |
| 5/24/2005 | 6.12 | 79.6 | 225 | 1220 | 2700 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | < 0.02 | < 0.02 |
| 10/18/2005 | 4.03 | 84.8 | 246 | -- | -- | -- | -- | -- | -- | < 0.02 | < 0.02 |
| 4/11/2006 | 3.78 | 53.5 | 194 | -- | -- | -- | -- | -- | -- | < 0.02 | < 0.02 |
| 11/1/2006 | 3.44 | 74.5 | 224 | -- | -- | -- | -- | -- | -- | < 0.02 | -- |
| 5/23/2007 | 4.11 | 122 | < 0.5 | 971 | -- | -- | -- | -- | -- | < 0.02 | -- |
| 11/6/2007 | 3.70 | 96.2 | 340 | 816 | -- | -- | -- | -- | -- | < 0.02 | -- |

"--" - Parameter not analyzed

E3 - Incorrect preservation, results qualified as "estimated".

TABLE 11
 ECMW-8 ANALYTICAL SUMMARY
 EL DORADO CHEMICAL COMPANY
 EL DORADO, ARKANSAS

| Sample Date | pH | Ammonia-N | Nitrate-N | Sulfate | Total Dissolved Solids | Lead (Total) | Lead (Dissolved) | Chromium (Total) | Chromium (Dissolved) | Vanadium (Total) | Vanadium (Dissolved) |
|-------------|------|-----------|-----------|---------|------------------------|--------------|------------------|------------------|----------------------|------------------|----------------------|
| | s.u. | mg/L | | | | | | | | | |
| 5/21/2008 | 3.42 | 56.8 | 171 | 1000 | -- | <0.015 | -- | <0.02 | -- | <0.02 | -- |
| 11/5/2008 | 3.61 | 70 | 181 | 719 | -- | <0.015 | -- | <0.02 | -- | <0.02 | -- |
| 4/21/2009 | 4.88 | 53.6 | 108 | 839 | -- | -- | -- | -- | -- | <0.02 | -- |
| 10/20/2009 | 3.79 | 45.8 | 116 | 937 | -- | -- | -- | -- | -- | -- | -- |
| 4/13/2010 | 4.56 | 62.1 | 52.2 | 737 | -- | <0.015 | -- | <0.02 | -- | -- | -- |
| 11/2/2010 | 6.35 | 63.4 | 163 | 860 | -- | <0.015 | -- | <0.01 | -- | -- | -- |
| 4/27/2011 | 3.85 | 1980 | 3310 | 106 | -- | -- | -- | -- | -- | -- | -- |
| 6/29/2011 | 4.10 | 175 | 350 | -- | -- | -- | -- | -- | -- | -- | -- |
| 6/29/2011 | -- | 168 | 352 | -- | -- | -- | -- | -- | -- | -- | -- |
| 11/30/2011 | 3.44 | 120 | 401 | 727 | -- | -- | -- | -- | -- | -- | -- |
| 11/30/2011 | -- | 101 | 361 | 637 | -- | -- | -- | -- | -- | -- | -- |
| 5/3/2012 | 3.97 | 122 | 296 | 754 | -- | 0.0159 E3 | 0.015 | <0.01 | <0.02 | -- | -- |
| 5/3/2012 | -- | 111 | 287 | 762 | -- | <0.015 E3 | <0.015 | <0.01 E3 | <0.02 | -- | -- |
| 11/7/2012 | 5.99 | 193 | 429 | 814 | -- | 0.0166 | <0.015 | <0.01 | <0.02 | -- | -- |
| 5/15/2013 | 3.97 | 172 | 551 | 614 | -- | -- | -- | -- | -- | -- | -- |
| 11/5/2013 | 4.06 | 150 | 584 | 642 | -- | -- | -- | -- | -- | -- | -- |

-- - Parameter not analyzed

E3 - Incorrect preservation, results qualified as "estimated".

TABLE 12
 ECMW-9 ANALYTICAL SUMMARY
 EL DORADO CHEMICAL COMPANY
 EL DORADO, ARKANSAS

| Sample Date | pH | Ammonia-N | Nitrate-N | Sulfate | Total Dissolved Solids | Lead (Total) | Lead (Dissolved) | Chromium (Total) | Chromium (Dissolved) | Vanadium (Total) | Vanadium (Dissolved) |
|-------------|------|-----------|-----------|---------|------------------------|--------------|------------------|------------------|----------------------|------------------|----------------------|
| | s.u. | mg/L | | | | | | | | | |
| 3/14/1996 | 9.00 | -- | 37.3 | 621 | -- | 0.004 | <0.002 | <0.005 | <0.005 | -- | -- |
| 6/27/2001 | 5.40 | <0.5 | 28.8 | 520 | 1600 | <0.04 | -- | <0.02 | -- | -- | -- |
| 10/30/2001 | 5.50 | <0.5 | 26.7 | 514 | 2600 | <0.04 | -- | <0.02 | -- | -- | -- |
| 6/3/2002 | 6.00 | <0.5 | 24.4 | 639 | 1597 | <0.02 | <0.02 | <0.02 | <0.02 | -- | -- |
| 10/30/2002 | 6.00 | 18.8 | 59 | 655 | 1630 | <0.015 | <0.015 | <0.02 | <0.02 | -- | -- |
| 12/10/2002 | 5.20 | 0.7 | 28.1 | 556 | 1680 | <0.015 | <0.015 | <0.02 | <0.02 | -- | -- |
| 12/10/2002 | -- | <0.5 | 31.5 | 555 | 1640 | <0.015 | <0.015 | <0.02 | <0.02 | -- | -- |
| 5/21/2003 | 5.33 | <0.5 | 26.3 | 568 | 1600 | <0.015 | <0.015 | <0.02 | <0.02 | -- | -- |
| 7/24/2003 | 7.05 | <0.5 | 28.4 | 547 | 1500 | <0.015 | <0.015 | <0.02 | <0.02 | -- | -- |
| 9/23/2003 | 5.24 | <0.5 | 146 | 531 | 1500 | <0.015 | <0.015 | <0.02 | <0.02 | -- | -- |
| 11/19/2003 | 5.72 | <0.5 | 28.0 | 532 | 1600 | <0.015 | <0.015 | <0.02 | <0.02 | -- | -- |
| 1/28/2004 | 5.53 | <0.5 | 29.2 | 575 | 1500 | <0.015 | <0.015 | <0.02 | <0.02 | -- | -- |
| 3/16/2004 | 5.88 | <0.5 | 30.6 | 528 | 1524 | <0.015 | <0.015 | <0.02 | <0.02 | -- | -- |
| 5/19/2004 | 5.47 | <0.5 | 27.4 | 517 | 1600 | <0.015 | <0.015 | <0.02 | <0.02 | -- | -- |
| 7/13/2004 | 6.87 | <0.5 | 24.6 | 588 | 1600 | <0.015 | <0.015 | <0.02 | <0.02 | -- | -- |
| 9/14/2004 | 5.04 | 1.14 | 25.3 | 548 | 1500 | <0.015 | <0.015 | <0.02 | <0.02 | <0.02 | -- |
| 11/16/2004 | 5.67 | 0.7 | 24 | 549 | 580 | <0.015 | <0.015 | <0.02 | <0.02 | <0.02 | <0.02 |
| 1/25/2005 | 5.57 | <0.5 | 26.3 | 518 | 1600 | <0.015 | <0.015 | <0.02 | <0.02 | <0.02 | <0.02 |
| 5/24/2005 | 5.77 | <0.5 | 27.4 | 600 | 1600 | 0.018 | <0.015 | <0.02 | <0.02 | <0.02 | <0.02 |
| 10/18/2005 | 5.64 | -- | 29.9 | -- | -- | -- | -- | -- | -- | <0.02 | <0.02 |
| 4/11/2006 | 5.83 | -- | 29.5 | -- | -- | -- | -- | -- | -- | <0.02 | <0.02 |
| 11/1/2006 | 5.00 | -- | 40.2 | -- | -- | -- | -- | -- | -- | <0.02 | -- |
| 5/23/2007 | 5.57 | 2.91 | 32.8 | 420 | -- | -- | -- | -- | -- | <0.02 | -- |
| 5/23/2007 | -- | 1.48 | 31.2 | 502 | -- | -- | -- | -- | -- | <0.02 | -- |
| 11/6/2007 | 4.94 | 3.59 | 30.6 | 642 | -- | -- | -- | -- | -- | <0.02 | -- |
| 5/21/2008 | 6.04 | <0.5 | 31.7 | 522 | -- | <0.015 | -- | <0.02 | -- | <0.02 | -- |

"--" - Parameter not analyzed

E3 - Incorrect preservation, results qualified as "estimated".

TABLE 12
ECMW-9 ANALYTICAL SUMMARY
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

| Sample Date | pH | Ammonia-N | Nitrate-N | Sulfate | Total Dissolved Solids | Lead (Total) | Lead (Dissolved) | Chromium (Total) | Chromium (Dissolved) | Vanadium (Total) | Vanadium (Dissolved) |
|-------------|------|-----------|-----------|---------|------------------------|--------------|------------------|------------------|----------------------|------------------|----------------------|
| | s.u. | mg/L | | | | | | | | | |
| 11/5/2008 | 4.41 | <0.5 | 23.7 | 391 | -- | <0.015 | -- | <0.02 | -- | <0.02 | -- |
| 4/21/2009 | 5.91 | <0.5 | 28 | 501 | -- | -- | -- | -- | -- | <0.02 | -- |
| 10/20/2009 | 5.41 | 2.31 | 21 | 505 | -- | -- | -- | -- | -- | -- | -- |
| 4/13/2010 | 5.44 | <0.5 | 16.8 | 462 | -- | <0.015 | -- | <0.02 | -- | -- | -- |
| 11/2/2010 | 7.04 | <0.5 | 20 | 684 | -- | <0.015 | -- | <0.01 | -- | -- | -- |
| 4/27/2011 | 5.74 | 2.96 | 32.1 | 542 | -- | -- | -- | -- | -- | -- | -- |
| 11/30/2011 | 5.37 | 0.7 | 28.5 | 650 | -- | -- | -- | -- | -- | -- | -- |
| 5/3/2012 | 5.71 | <0.5 | 25.5 | 520 | -- | <0.015 E3 | <0.015 | <0.01 E3 | <0.02 | -- | -- |
| 11/7/2012 | 6.50 | 0.68 | 32.5 | 568 | -- | <0.015 | <0.015 | <0.01 | <0.02 | -- | -- |
| 5/15/2013 | 5.68 | <0.5 | 30.1 | 514 | -- | -- | -- | -- | -- | -- | -- |
| 11/5/2013 | 5.51 | 17 | 53.9 | 545 | -- | -- | -- | -- | -- | -- | -- |

"--" - Parameter not analyzed

E3 - Incorrect preservation, results qualified as "estimated".

TABLE 13
ECMW-10 ANALYTICAL SUMMARY
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

| Sample Date | pH | Ammonia-N | Nitrate-N | Sulfate | Total Dissolved Solids | Lead (Total) | Lead (Dissolved) | Chromium (Total) | Chromium (Dissolved) | Vanadium (Total) | Vanadium (Dissolved) |
|-------------|------|--------------|-----------|---------|------------------------|--------------|------------------|------------------|----------------------|------------------|----------------------|
| | s.u. | mg/L | | | | | | | | | |
| 3/13/1996 | 7.70 | -- | 257 | 89 | -- | 0.0052 | 0.0039 | < 0.005 | < 0.005 | -- | -- |
| 6/27/2001 | 4.40 | < 0.5 | 156 | 100 | 1300 | < 0.04 | -- | 0.025 | -- | -- | -- |
| 10/30/2001 | 3.90 | < 0.5 | 153 | 134 | 1400 | < 0.04 | -- | 0.04 | -- | -- | -- |
| 6/3/2002 | 5.30 | < 0.5 | 138 | 84.9 | 1122 | < 0.02 | < 0.02 | < 0.02 | < 0.02 | -- | -- |
| 10/30/2002 | 5.60 | 1.84 | 137 | 140 | 968 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | -- | -- |
| 12/10/2002 | 4.50 | < 0.5 | 70.4 | 52.2 | 1120 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | -- | -- |
| 5/21/2003 | 4.08 | < 0.5 | 148 | 96.0 | 1140 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | -- | -- |
| 7/24/2003 | 5.56 | < 0.5 | 118 | 108 | 1000 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | -- | -- |
| 9/23/2003 | 4.18 | < 0.5 | 147 | 127 | 1000 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | -- | -- |
| 11/19/2003 | 4.38 | < 0.5 | 119 | 104 | 970 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | -- | -- |
| 1/28/2004 | 4.60 | < 0.5 | 126 | 129 | 1000 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | -- | -- |
| 3/16/2004 | 5.01 | < 0.5 | 135 | 128 | 1078 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | -- | -- |
| 5/18/2004 | 5.07 | < 0.5 | 123 | 139 | 1055 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | -- | -- |
| 7/13/2004 | 4.54 | < 0.5 | 114 | 112 | 920 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | -- | -- |
| 9/14/2004 | 4.70 | 0.77 | 123 | 137 | 1000 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | < 0.02 | -- |
| 11/16/2004 | 4.79 | < 0.5 | 94.4 | 71.1 | 800 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | < 0.02 | < 0.02 |
| 1/25/2005 | 4.63 | < 0.5 | 115 | 114 | 1000 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | < 0.02 | < 0.02 |
| 5/25/2005 | 4.93 | 1.45 | 120 | 142 | 990 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | < 0.02 | < 0.02 |
| 10/18/2005 | 4.30 | -- | 97.7 | -- | -- | -- | -- | -- | -- | < 0.02 | < 0.02 |
| 4/11/2006 | 4.40 | -- | 97.5 | -- | -- | -- | -- | -- | -- | < 0.02 | < 0.02 |
| 4/11/2006 | -- | -- | 95.5 | -- | -- | -- | -- | -- | -- | < 0.02 | < 0.02 |
| 11/1/2006 | 3.83 | -- | 71 | -- | -- | < 0.015 | -- | -- | -- | < 0.02 | -- |
| 5/23/2007 | 4.18 | 0.79 | 79.9 | 109 | -- | -- | -- | -- | -- | < 0.02 | -- |
| 11/6/2007 | 3.97 | < 0.5 | 65.9 | 121 | -- | -- | -- | -- | -- | < 0.02 | -- |
| 5/21/2008 | 5.11 | < 0.5 | 69.2 | 153 | -- | < 0.015 | -- | < 0.02 | -- | < 0.02 | -- |
| 11/5/2008 | 4.06 | < 0.5 | 40.9 | 105 | -- | < 0.015 | -- | < 0.02 | -- | < 0.02 | -- |
| 4/21/2009 | 4.58 | 12.7 outlier | 48.9 | 155 | -- | -- | -- | -- | -- | < 0.02 | -- |

"--" - Parameter not analyzed

E3 - Incorrect preservation, results qualified as "estimated".

TABLE 13
 ECMW-10 ANALYTICAL SUMMARY
 EL DORADO CHEMICAL COMPANY
 EL DORADO, ARKANSAS

| Sample Date | pH | Ammonia-N | Nitrate-N | Sulfate | Total Dissolved Solids | Lead (Total) | Lead (Dissolved) | Chromium (Total) | Chromium (Dissolved) | Vanadium (Total) | Vanadium (Dissolved) |
|-------------|------|-----------|-----------|---------|------------------------|--------------|------------------|------------------|----------------------|------------------|----------------------|
| | s.u. | mg/L | | | | | | | | | |
| 6/3/2009 | 6.35 | <0.5 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 10/20/2009 | 4.57 | <0.5 | 53.5 | 136 | -- | -- | -- | -- | -- | -- | -- |
| 4/13/2010 | 4.08 | 0.8 | 44.7 | 170 | -- | <0.015 | -- | <0.02 | -- | -- | -- |
| 11/2/2010 | 6.42 | <0.5 | 41.9 | 164 | -- | <0.015 | -- | <0.01 | -- | -- | -- |
| 4/27/2011 | 4.30 | 3.18 | 54.1 | 166 | -- | -- | -- | -- | -- | -- | -- |
| 11/30/2011 | 3.97 | <0.5 | 49.2 | 94.8 | -- | -- | -- | -- | -- | -- | -- |
| 5/3/2012 | 4.39 | <0.5 | 38.4 | 158 | -- | <0.015 E3 | <0.015 | <0.01 E3 | <0.02 | -- | -- |
| 11/7/2012 | 6.13 | <0.5 | 44.4 | 152 | -- | <0.015 | <0.015 | <0.01 | <0.02 | -- | -- |
| 5/15/2013 | 4.44 | <0.5 | 42.1 | 163 | -- | -- | -- | -- | -- | -- | -- |
| 11/5/2013 | 4.91 | <0.5 | 47.8 | 153 | -- | -- | -- | -- | -- | -- | -- |

"--" - Parameter not analyzed

E3 - Incorrect preservation, results qualified as "estimated".

TABLE 14
 ECMW-11 ANALYTICAL SUMMARY
 EL DORADO CHEMICAL COMPANY
 EL DORADO, ARKANSAS

| Sample Date | pH | Ammonia-N | Nitrate-N | Sulfate | Total Dissolved Solids | Lead (Total) | Lead (Dissolved) | Chromium (Total) | Chromium (Dissolved) | Vanadium (Total) | Vanadium (Dissolved) |
|-------------|-------|-----------|-----------|---------|------------------------|--------------|------------------|------------------|----------------------|------------------|----------------------|
| | s.u. | mg/L | | | | | | | | | |
| 3/13/1996 | 11.10 | -- | 22.1 | 578 | -- | < 0.002 | < 0.002 | < 0.005 | < 0.005 | -- | -- |
| 8/8/2001 | 4.30 | 4.21 | 7.99 | 611 | 1100 | < 0.04 | -- | < 0.02 | -- | -- | -- |
| 10/30/2001 | 4.00 | < 0.5 | 21.9 | 334 | 610 | < 0.04 | -- | < 0.02 | -- | -- | -- |
| 6/3/2002 | 5.40 | < 0.5 | 6.46 | 565 | 897 | < 0.02 | < 0.02 | < 0.02 | < 0.02 | -- | -- |
| 6/3/2002 | -- | 3.9 | 5.81 | 586 | 968 | < 0.02 | < 0.015 | < 0.02 | < 0.02 | -- | -- |
| 10/30/2002 | 4.80 | 18 | 9.22 | 362 | 625 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | -- | -- |
| 12/10/2002 | 4.50 | 10.73 | 6.12 | 414 | 809 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | -- | -- |
| 5/21/2003 | 4.45 | 7.84 | 6.02 | 333 | 576 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | -- | -- |
| 7/24/2003 | 6.66 | 25.6 | 6.68 | 278 | 540 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | -- | -- |
| 9/23/2003 | 4.29 | 5.25 | 4.24 | 397 | 660 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | -- | -- |
| 11/19/2003 | 4.61 | 12.0 | 6.26 | 289 | 570 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | -- | -- |
| 11/19/2003 | -- | 14.3 | 6.85 | 276 | 340 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | -- | -- |
| 1/28/2004 | 5.04 | 19.6 | 6.72 | 303 | 520 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | -- | -- |
| 3/16/2004 | 5.00 | 15 | 9.63 | 262 | 511 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | -- | -- |
| 3/16/2004 | -- | 18 | 8.79 | 278 | 535 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | -- | -- |
| 5/18/2004 | 5.17 | 19.9 | 13.5 | 228 | 452 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | -- | -- |
| 7/13/2004 | 4.53 | 17.4 | 13.6 | 222 | 480 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | -- | -- |
| 9/14/2004 | 4.61 | 14.5 | 9.85 | 247 | 480 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | < 0.02 | -- |
| 11/17/2004 | 4.86 | 19.1 | 11.1 | 209 | 450 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | < 0.02 | < 0.02 |
| 1/25/2005 | 4.64 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 5/25/2005 | 5.05 | 20.6 | 1.12 | 3.58 | 410 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | < 0.02 | < 0.02 |
| 10/18/2005 | 4.42 | 10.6 | 2.02 | -- | -- | -- | -- | -- | -- | < 0.02 | < 0.02 |
| 4/11/2006 | 4.63 | 10.9 | 6.01 | -- | -- | -- | -- | -- | -- | < 0.02 | < 0.02 |
| 11/1/2006 | 4.06 | 4.88 | 1.43 | -- | -- | -- | -- | -- | -- | < 0.02 | -- |
| 5/23/2007 | 4.23 | 25.4 | 29.2 | 137 | -- | -- | -- | -- | -- | < 0.02 | -- |
| 5/23/2007 | -- | 17.4 | 26.4 | 242 | -- | -- | -- | -- | -- | < 0.02 | -- |

"--" - Parameter not analyzed

E3 - Incorrect preservation, results qualified as "estimated".

TABLE 14
 ECMW-11 ANALYTICAL SUMMARY
 EL DORADO CHEMICAL COMPANY
 EL DORADO, ARKANSAS

| Sample Date | pH | Ammonia-N | Nitrate-N | Sulfate | Total Dissolved Solids | Lead (Total) | Lead (Dissolved) | Chromium (Total) | Chromium (Dissolved) | Vanadium (Total) | Vanadium (Dissolved) |
|-------------|------|--------------|-----------|---------|------------------------|--------------|------------------|------------------|----------------------|------------------|----------------------|
| | s.u. | mg/L | | | | | | | | | |
| 11/6/2007 | 3.94 | 8.01 | 9.75 | 223 | -- | -- | -- | -- | -- | <0.02 | -- |
| 5/21/2008 | 5.26 | 19.5 | 18.9 | 208 | -- | <0.015 | -- | <0.02 | -- | <0.02 | -- |
| 11/5/2008 | 4.34 | 18.4 | 16.9 | 98.6 | -- | <0.015 | -- | <0.02 | -- | <0.02 | -- |
| 4/21/2009 | 4.09 | <0.5 outlier | 14 | 119 | -- | -- | -- | -- | -- | <0.02 | -- |
| 6/3/2009 | 6.10 | 17.7 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 10/20/2009 | 4.28 | 18.2 | 9.44 | 125 | -- | -- | -- | -- | -- | -- | -- |
| 4/13/2010 | 4.32 | 32.6 | 7.78 | 135 | -- | <0.015 | -- | <0.02 | -- | -- | -- |
| 11/2/2010 | 5.67 | 3.17 | 4.52 | 325 | -- | <0.015 | -- | <0.01 | -- | -- | -- |
| 4/27/2011 | 4.57 | 47 | 15.8 | 146 | -- | -- | -- | -- | -- | -- | -- |
| 11/30/2011 | 4.11 | 2.19 | 3.56 | 318 | -- | -- | -- | -- | -- | -- | -- |
| 5/3/2012 | 4.73 | 14.5 | 29.4 | 95.6 | -- | <0.015 E3 | <0.015 | <0.01 E3 | <0.02 | -- | -- |
| 11/7/2012 | 5.92 | 33.2 | 23.8 | 161 | -- | <0.015 | <0.015 | <0.01 | <0.02 | -- | -- |
| 5/15/2013 | 4.58 | 17 | 45.4 | 98 | -- | -- | -- | -- | -- | -- | -- |
| 5/15/2013 | -- | 15.7 | 40.7 | 102 | -- | -- | -- | -- | -- | -- | -- |
| 11/5/2013 | 4.48 | <0.5 | 30.5 | 125 | -- | -- | -- | -- | -- | -- | -- |

"--" - Parameter not analyzed

E3 - Incorrect preservation, results qualified as "estimated".

TABLE 15
ECMW-12 ANALYTICAL SUMMARY
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

| Sample Date | pH | Ammonia-N | Nitrate-N | Sulfate | Total Dissolved Solids | Lead (Total) | Lead (Dissolved) | Chromium (Total) | Chromium (Dissolved) | Vanadium (Total) | Vanadium (Dissolved) |
|-------------|------|-----------|-----------|---------|------------------------|--------------|------------------|------------------|----------------------|------------------|----------------------|
| | s.u. | mg/L | | | | | | | | | |
| 3/13/1996 | 6.10 | -- | <0.2 | 9.6 | -- | <0.002 | <0.002 | <0.005 | <0.005 | -- | -- |
| 6/27/2001 | 5.90 | 2.2 | <0.5 | 13 | 330 | <0.04 | -- | <0.02 | -- | -- | -- |
| 6/4/2002 | 6.00 | 0.9 | <0.5 | 4.85 | 510 | <0.02 | <0.02 | <0.02 | <0.02 | -- | -- |
| 6/4/2002 | -- | 1.4 | <0.5 | 6.01 | 500 | <0.02 | <0.02 | <0.02 | <0.02 | -- | -- |
| 10/30/2002 | 6.10 | 4.2 | <0.5 | 21.6 | 382 | <0.015 | <0.015 | <0.02 | <0.02 | -- | -- |
| 12/10/2002 | 5.80 | 2.3 | <0.5 | 12.5 | 424 | <0.015 | <0.015 | <0.02 | <0.02 | -- | -- |
| 5/21/2003 | 5.71 | 1.89 | <0.5 | 5.31 | 307 | <0.015 | <0.015 | <0.02 | <0.02 | -- | -- |
| 7/24/2003 | 4.76 | 1.74 | <0.5 | 18.7 | 380 | <0.015 | <0.015 | <0.02 | <0.02 | -- | -- |
| 9/24/2003 | 5.45 | 1.43 | <0.5 | 26 | 440 | <0.015 | <0.015 | <0.02 | <0.02 | -- | -- |
| 11/19/2003 | 5.79 | 1.83 | <0.5 | 30.6 | 460 | <0.015 | <0.015 | <0.02 | <0.02 | -- | -- |
| 1/28/2004 | 6.44 | 1.87 | <0.5 | 6.76 | 320 | <0.015 | <0.015 | <0.02 | <0.02 | -- | -- |
| 3/16/2004 | 5.96 | 2.2 | <0.5 | 4.04 | 252 | <0.015 | <0.015 | <0.02 | <0.02 | -- | -- |
| 5/19/2004 | 5.80 | 1.94 | <0.5 | 5.11 | 360 | <0.015 | <0.015 | <0.02 | <0.02 | -- | -- |
| 7/13/2004 | 6.78 | 1.2 | <0.5 | 7.18 | 220 | <0.015 | <0.015 | <0.02 | <0.02 | -- | -- |
| 9/15/2004 | 5.80 | 2.38 | <0.5 | 23 | 440 | <0.015 | <0.015 | <0.02 | <0.02 | <0.02 | -- |
| 11/16/2004 | 5.73 | 1.55 | <0.5 | 18.5 | 340 | <0.015 | <0.015 | <0.02 | <0.02 | <0.02 | <0.02 |
| 1/26/2005 | 5.91 | 1.98 | <0.5 | 4.88 | 360 | <0.015 | <0.015 | <0.02 | <0.02 | <0.02 | <0.02 |
| 5/25/2005 | 5.96 | 1.02 | <0.5 | 11.2 | 370 | <0.015 | <0.015 | <0.02 | <0.02 | <0.02 | <0.02 |
| 10/20/2005 | 5.30 | 1.06 | -- | -- | -- | -- | -- | -- | -- | <0.02 | <0.02 |
| 4/11/2006 | 6.12 | 1.58 | -- | -- | -- | -- | -- | -- | -- | <0.02 | <0.02 |
| 11/1/2006 | 5.30 | 1.37 | -- | -- | -- | -- | -- | -- | -- | <0.02 | -- |
| 5/23/2007 | 5.66 | -- | -- | -- | -- | -- | -- | -- | -- | <0.02 | -- |
| 11/6/2007 | 5.11 | -- | -- | -- | -- | -- | -- | -- | -- | <0.02 | -- |
| 5/21/2008 | 7.53 | 1.67 | <0.5 | 7.14 | -- | <0.015 | -- | <0.02 | -- | <0.02 | -- |
| 11/7/2008 | 5.75 | 1.17 | <0.5 | 8.74 | -- | <0.015 | -- | <0.02 | -- | <0.02 | -- |
| 4/21/2009 | 6.52 | -- | -- | -- | -- | -- | -- | -- | -- | <0.02 | -- |

"--" - Parameter not analyzed

E3 - Incorrect preservation, results qualified as "estimated".

TABLE 15
 ECMW-12 ANALYTICAL SUMMARY
 EL DORADO CHEMICAL COMPANY
 EL DORADO, ARKANSAS

| Sample Date | pH | Ammonia-N | Nitrate-N | Sulfate | Total Dissolved Solids | Lead (Total) | Lead (Dissolved) | Chromium (Total) | Chromium (Dissolved) | Vanadium (Total) | Vanadium (Dissolved) |
|-------------|------|-----------|-----------|---------|------------------------|--------------|------------------|------------------|----------------------|------------------|----------------------|
| | s.u. | mg/L | | | | | | | | | |
| 10/21/2009 | 7.08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 4/13/2010 | 5.95 | 5.56 | <0.5 | 2.14 | -- | <0.015 | -- | <0.02 | -- | -- | -- |
| 11/3/2010 | 6.64 | 1.44 | <0.5 | 21.5 | -- | <0.015 | -- | <0.01 | -- | -- | -- |
| 11/3/2010 | -- | 1.34 | <0.5 | 20.5 | -- | <0.015 | -- | <0.01 | -- | -- | -- |
| 4/27/2011 | 5.67 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 5/3/2012 | 6.02 | 1.81 | <0.5 | 17 | -- | <0.015 E3 | <0.015 | <0.01 E3 | <0.02 | -- | -- |
| 11/7/2012 | 6.49 | 3.55 | <0.5 | 21.5 | -- | <0.015 | <0.015 | <0.01 | <0.02 | -- | -- |
| 5/15/2013 | 6.02 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 11/4/2013 | 5.84 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

"--" - Parameter not analyzed

E3 - Incorrect preservation, results qualified as "estimated".

TABLE 16
 ECMW-13 ANALYTICAL SUMMARY
 EL DORADO CHEMICAL COMPANY
 EL DORADO, ARKANSAS

| Sample Date | pH | Ammonia-N | Nitrate-N | Sulfate | Total Dissolved Solids | Lead (Total) | Lead (Dissolved) | Chromium (Total) | Chromium (Dissolved) | Vanadium (Total) | Vanadium (Dissolved) |
|-------------|------|-----------|-----------|---------|------------------------|--------------|------------------|------------------|----------------------|------------------|----------------------|
| | s.u. | mg/L | | | | | | | | | |
| 3/13/1996 | 5.60 | -- | 0.2 | 809 | -- | <0.002 | <0.002 | <0.005 | <0.005 | -- | -- |
| 6/5/2001 | 5.60 | <0.5 | <0.5 | 538 | 1400 | <0.04 | -- | <0.02 | -- | -- | -- |
| 10/30/2001 | 5.30 | <0.5 | <0.5 | 606 | 1300 | <0.04 | -- | <0.02 | -- | -- | -- |
| 6/4/2002 | 5.70 | <0.5 | <0.5 | 372 | 718 | <0.02 | <0.02 | <0.02 | <0.02 | -- | -- |
| 10/30/2002 | 6.10 | 1.28 | <0.5 | 538 | 1030 | <0.015 | <0.015 | <0.02 | <0.02 | -- | -- |
| 12/10/2002 | 5.50 | <0.5 | <0.5 | 598 | 1320 | <0.015 | <0.015 | <0.02 | <0.02 | -- | -- |
| 5/20/2003 | 5.51 | <0.5 | <0.5 | 697 | 1330 | <0.015 | <0.015 | <0.02 | <0.02 | -- | -- |
| 7/23/2003 | 6.05 | <0.5 | <0.5 | 358 | 820 | <0.015 | <0.015 | <0.02 | <0.02 | -- | -- |
| 9/24/2003 | 4.70 | 0.71 | <0.5 | 458 | 920 | <0.015 | <0.015 | <0.02 | <0.02 | -- | -- |
| 11/19/2003 | 4.91 | <0.5 | 0.62 | 310 | 680 | <0.015 | <0.015 | <0.02 | <0.02 | -- | -- |
| 1/28/2004 | 5.02 | <0.5 | <0.5 | 565 | 1100 | <0.015 | <0.015 | <0.02 | <0.02 | -- | -- |
| 3/16/2004 | 5.19 | <0.5 | <0.5 | 550 | 1175 | <0.015 | <0.015 | <0.02 | <0.02 | -- | -- |
| 5/18/2004 | 5.27 | <0.5 | <0.5 | 296 | 647 | <0.015 | <0.015 | <0.02 | <0.02 | -- | -- |
| 7/13/2004 | 6.02 | <0.5 | <0.5 | 510 | 1100 | <0.015 | <0.015 | <0.02 | <0.02 | -- | -- |
| 9/14/2004 | 5.03 | 0.5 | <0.5 | 416 | 940 | <0.015 | <0.015 | <0.02 | <0.02 | <0.02 | -- |
| 9/14/2004 | -- | 0.51 | <0.5 | 425 | 960 | <0.015 | <0.015 | <0.02 | <0.02 | <0.02 | -- |
| 11/16/2004 | 4.83 | <0.5 | <0.5 | 250 | 1500 | <0.015 | <0.015 | <0.02 | <0.02 | <0.02 | <0.02 |
| 1/26/2005 | 4.86 | <0.5 | 0.72 | 564 | 1200 | <0.015 | <0.015 | <0.02 | <0.02 | <0.02 | <0.02 |
| 5/25/2005 | 5.07 | 0.54 | <0.5 | 302 | 580 | <0.015 | <0.015 | <0.02 | <0.02 | <0.02 | <0.02 |
| 10/19/2005 | 4.19 | -- | -- | -- | -- | -- | -- | -- | -- | <0.02 | <0.02 |
| 4/12/2006 | 4.97 | -- | -- | -- | -- | -- | -- | -- | -- | <0.02 | <0.02 |
| 11/2/2006 | 4.71 | <0.5 | <0.5 | -- | -- | -- | <0.015 | <0.02 | -- | <0.02 | -- |
| 5/23/2007 | 4.97 | -- | -- | -- | -- | -- | -- | -- | -- | <0.02 | -- |
| 11/7/2007 | 4.64 | -- | -- | -- | -- | -- | -- | -- | -- | <0.02 | -- |
| 5/21/2008 | 5.85 | <0.5 | <0.5 | 399 | -- | <0.015 | -- | <0.02 | -- | <0.02 | -- |
| 5/21/2008 | -- | <0.5 | <0.5 | 409 | -- | <0.015 | -- | <0.02 | -- | <0.02 | -- |

"--" - Parameter not analyzed

E3 - Incorrect preservation, results qualified as "estimated".

TABLE 16
 ECMW-13 ANALYTICAL SUMMARY
 EL DORADO CHEMICAL COMPANY
 EL DORADO, ARKANSAS

| Sample Date | pH | Ammonia-N | Nitrate-N | Sulfate | Total Dissolved Solids | Lead (Total) | Lead (Dissolved) | Chromium (Total) | Chromium (Dissolved) | Vanadium (Total) | Vanadium (Dissolved) |
|-------------|------|-----------|-----------|---------|------------------------|--------------|------------------|------------------|----------------------|------------------|----------------------|
| | s.u. | mg/L | | | | | | | | | |
| 11/7/2008 | 5.01 | <0.5 | <0.5 | 346 | -- | <0.015 | -- | <0.02 | -- | <0.02 | -- |
| 4/21/2009 | 4.77 | -- | -- | -- | -- | -- | -- | -- | -- | <0.02 | -- |
| 10/21/2009 | 4.63 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 4/14/2010 | 4.75 | <0.5 | <0.5 | 470 | -- | <0.015 | -- | <0.02 | -- | -- | -- |
| 11/3/2010 | 6.44 | <0.5 | <0.5 | 589 | -- | <0.015 | -- | <0.01 | -- | -- | -- |
| 4/26/2011 | 4.68 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 5/2/2012 | 5.23 | <0.5 | <0.5 | 505 | -- | <0.015 E3 | <0.015 | <0.01 E3 | <0.02 | -- | -- |
| 11/6/2012 | 6.25 | <0.5 | <0.5 | 593 | -- | <0.015 | <0.015 | <0.01 | <0.02 | -- | -- |
| 5/15/2013 | 5.19 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 11/4/2013 | 4.83 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

"--" - Parameter not analyzed

E3 - Incorrect preservation, results qualified as "estimated".

TABLE 17
 ECMW-14 ANALYTICAL SUMMARY
 EL DORADO CHEMICAL COMPANY
 EL DORADO, ARKANSAS

| Sample Date | pH | Ammonia-N | Nitrate-N | Sulfate | Total Dissolved Solids | Lead (Total) | Lead (Dissolved) | Chromium (Total) | Chromium (Dissolved) | Vanadium (Total) | Vanadium (Dissolved) |
|-------------|------|-----------|-----------|---------|------------------------|--------------|------------------|------------------|----------------------|------------------|----------------------|
| | s.u. | mg/L | | | | | | | | | |
| 3/13/1996 | 4.60 | -- | 11.9 | 139 | -- | <0.002 | <0.002 | <0.005 | <0.005 | -- | -- |
| 8/8/2001 | 4.30 | <0.5 | 75 | 175 | 1000 | <0.04 | -- | <0.02 | -- | -- | -- |
| 10/30/2001 | 4.50 | <0.5 | 25.2 | 211 | 790 | <0.04 | -- | <0.02 | -- | -- | -- |
| 6/4/2002 | 5.60 | <0.5 | 26.5 | 187 | 675 | <0.02 | <0.02 | <0.02 | <0.02 | -- | -- |
| 10/30/2002 | 6.30 | 5.32 | 17 | 288 | 669 | <0.015 | <0.015 | <0.02 | <0.02 | -- | -- |
| 12/10/2002 | 5.30 | <0.5 | 23.4 | 230 | 709 | <0.015 | <0.015 | <0.02 | <0.02 | -- | -- |
| 5/20/2003 | 4.85 | <0.5 | 44.9 | 227 | 865 | <0.015 | <0.015 | <0.02 | <0.02 | -- | -- |
| 7/23/2003 | 4.62 | <0.5 | 23.1 | 221 | 750 | <0.015 | <0.015 | <0.02 | <0.02 | -- | -- |
| 9/23/2003 | 5.00 | <0.5 | 20.3 | 275 | 700 | <0.015 | <0.015 | <0.02 | <0.02 | -- | -- |
| 11/19/2003 | 4.92 | <0.5 | 16.1 | 227 | 740 | <0.015 | <0.015 | <0.02 | <0.02 | -- | -- |
| 1/28/2004 | 5.19 | <0.5 | 24.5 | 262 | 710 | 0.028 | <0.015 | 0.022 | <0.02 | -- | -- |
| 3/16/2004 | 5.34 | <0.5 | 33.4 | 211 | 792 | <0.015 | <0.015 | <0.02 | <0.02 | -- | -- |
| 5/18/2004 | 5.23 | <0.5 | 32.6 | 234 | 784 | <0.015 | <0.015 | <0.02 | <0.02 | -- | -- |
| 7/13/2004 | 5.05 | <0.5 | 45.7 | 226 | 820 | <0.015 | <0.015 | <0.02 | <0.02 | -- | -- |
| 7/13/2004 | -- | <0.5 | 47.3 | 234 | 840 | <0.015 | <0.015 | <0.02 | <0.02 | -- | -- |
| 9/14/2004 | 4.72 | <0.5 | 57.7 | 232 | 900 | <0.015 | <0.015 | <0.02 | <0.02 | <0.02 | -- |
| 11/16/2004 | 4.88 | <0.5 | 21.7 | 168 | 660 | <0.015 | <0.015 | <0.02 | <0.02 | <0.02 | <0.02 |
| 1/26/2005 | 4.89 | <0.5 | 62.4 | 204 | 930 | <0.015 | <0.015 | <0.02 | <0.02 | <0.02 | <0.02 |
| 5/25/2005 | 5.06 | <0.5 | 31 | 204 | 700 | <0.015 | <0.015 | <0.02 | <0.02 | <0.02 | <0.02 |
| 10/19/2005 | 4.96 | -- | 36 | -- | -- | -- | -- | -- | -- | <0.02 | <0.02 |
| 4/12/2006 | 4.72 | -- | 48.2 | -- | -- | -- | -- | -- | -- | <0.02 | <0.02 |
| 4/12/2006 | -- | -- | 48.5 | -- | -- | -- | -- | -- | -- | <0.02 | <0.02 |
| 11/2/2006 | 4.15 | -- | 13.6 | -- | -- | -- | -- | -- | -- | <0.02 | -- |
| 5/23/2007 | 4.60 | <0.5 | 25.5 | 233 | -- | -- | -- | -- | -- | <0.02 | -- |
| 11/7/2007 | 4.24 | <0.5 | 12.6 | 229 | -- | -- | -- | -- | -- | <0.02 | -- |
| 5/21/2008 | 5.69 | <0.5 | 22.5 | 224 | -- | <0.015 | -- | <0.02 | -- | <0.02 | -- |

"--" - Parameter not analyzed

E3 - Incorrect preservation, results qualified as "estimated".

TABLE 17
 ECMW-14 ANALYTICAL SUMMARY
 EL DORADO CHEMICAL COMPANY
 EL DORADO, ARKANSAS

| Sample Date | pH | Ammonia-N | Nitrate-N | Sulfate | Total Dissolved Solids | Lead (Total) | Lead (Dissolved) | Chromium (Total) | Chromium (Dissolved) | Vanadium (Total) | Vanadium (Dissolved) |
|-------------|------|-----------|-----------|---------|------------------------|--------------|------------------|------------------|----------------------|------------------|----------------------|
| | s.u. | mg/L | | | | | | | | | |
| 11/5/2008 | 4.35 | <0.5 | 11.1 | 137 | -- | <0.015 | -- | <0.02 | -- | <0.02 | -- |
| 4/21/2009 | 4.36 | 0.72 | 13.2 | 200 | -- | -- | -- | -- | -- | <0.02 | -- |
| 12/16/2009 | 5.53 | <0.5 | 15.7 | 212 | -- | -- | -- | -- | -- | -- | -- |
| 4/14/2010 | 4.54 | 0.5 | 24.3 | 166 | -- | <0.015 | -- | <0.02 | -- | -- | -- |
| 12/21/2010 | 5.68 | <0.5 | 12.7 | 152 | -- | <0.015 | -- | <0.01 | -- | -- | -- |
| 4/26/2011 | 5.04 | <0.5 | 10.7 | 159 | -- | -- | -- | -- | -- | -- | -- |
| 11/30/2011 | 4.50 | <0.5 | 8.09 | 156 | -- | -- | -- | -- | -- | -- | -- |
| 5/2/2012 | 5.20 | <0.5 | 17.4 | 139 | -- | <0.015 E3 | <0.015 | <0.01 E3 | <0.02 | -- | -- |
| 11/6/2012 | 6.25 | <0.5 | 8.03 | 140 | -- | <0.015 | <0.015 | <0.01 | <0.02 | -- | -- |
| 5/15/2013 | 5.20 | <0.5 | 6.17 | 108 | -- | -- | -- | -- | -- | -- | -- |
| 11/5/2013 | 5.46 | 7.52 | 6.92 | 91.6 | -- | -- | -- | -- | -- | -- | -- |

"-" - Parameter not analyzed

E3 - Incorrect preservation, results qualified as "estimated".

TABLE 18
ECMW-15 ANALYTICAL SUMMARY
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

| Sample Date | pH | Ammonia-N | Nitrate-N | Sulfate | Total Dissolved Solids | Lead (Total) | Lead (Dissolved) | Chromium (Total) | Chromium (Dissolved) | Vanadium (Total) | Vanadium (Dissolved) |
|-------------|------|-----------|-----------|---------|------------------------|--------------|------------------|------------------|----------------------|------------------|----------------------|
| | s.u. | mg/L | | | | | | | | | |
| 3/13/1996 | 6.40 | -- | 34.5 | 4.4 | -- | < 0.002 | < 0.002 | < 0.005 | < 0.005 | -- | -- |
| 8/8/2001 | 4.30 | < 0.5 | 19.1 | 7.8 | 140 | < 0.04 | -- | < 0.02 | -- | -- | -- |
| 10/30/2001 | 4.30 | < 0.5 | 12.6 | 10.2 | 110 | < 0.04 | -- | < 0.02 | -- | -- | -- |
| 6/4/2002 | 5.40 | < 0.5 | 10.7 | 11.1 | 100 | < 0.02 | < 0.02 | < 0.02 | < 0.02 | -- | -- |
| 10/30/2002 | 5.40 | 1.16 | 18.2 | 9.22 | 120 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | -- | -- |
| 12/10/2002 | 5.80 | 0.5 | 12.2 | 10.8 | 120 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | -- | -- |
| 5/20/2003 | 4.75 | < 0.5 | 9.45 | 13 | 66 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | -- | -- |
| 7/23/2003 | 4.77 | < 0.5 | 7.63 | 12.8 | 100 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | -- | -- |
| 9/23/2003 | 4.49 | < 0.5 | 9.62 | 11.8 | 180 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | -- | -- |
| 11/19/2003 | 4.89 | < 0.5 | 9.81 | 12.6 | 100 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | -- | -- |
| 1/28/2004 | 5.56 | 3.96 | 4.52 | 18.6 | 81 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | -- | -- |
| 3/16/2004 | 5.68 | < 0.5 | 7.66 | 13.9 | 97 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | -- | -- |
| 5/18/2004 | 5.75 | < 0.5 | 6.82 | 15.2 | 83 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | -- | -- |
| 7/13/2004 | 5.39 | < 0.5 | 9.52 | 11 | 110 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | -- | -- |
| 9/14/2004 | 4.67 | 0.61 | 8.22 | 13.2 | 100 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | < 0.02 | -- |
| 11/16/2004 | 4.92 | < 0.5 | 7.42 | 11.8 | 110 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | < 0.02 | < 0.02 |
| 1/25/2005 | 4.68 | < 0.5 | 7.62 | 11.8 | 110 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | < 0.02 | < 0.02 |
| 5/25/2005 | 4.94 | < 0.5 | 5.79 | 16.1 | 79 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | < 0.02 | < 0.02 |
| 10/19/2005 | 4.77 | -- | 5.63 | -- | -- | -- | -- | -- | -- | < 0.02 | < 0.02 |
| 4/11/2006 | 4.95 | -- | 1.6 | -- | -- | -- | -- | -- | -- | < 0.02 | < 0.02 |
| 11/2/2006 | 4.17 | -- | 2.54 | -- | -- | -- | -- | -- | -- | < 0.02 | -- |
| 5/23/2007 | 4.43 | -- | -- | -- | -- | -- | -- | -- | -- | < 0.02 | -- |
| 11/7/2007 | 4.06 | -- | -- | -- | -- | -- | -- | -- | -- | < 0.02 | -- |
| 5/21/2008 | 7.35 | < 0.5 | 1.52 | 15.9 | -- | < 0.015 | -- | < 0.02 | -- | < 0.02 | -- |
| 11/5/2008 | 5.18 | < 0.5 | 2.32 | 8.79 | -- | < 0.015 | -- | < 0.02 | -- | < 0.02 | -- |
| 4/21/2009 | 4.53 | -- | -- | -- | -- | -- | -- | -- | -- | < 0.02 | -- |

"--" - Parameter not analyzed

E3 - Incorrect preservation, results qualified as "estimated".

TABLE 18
 ECMW-15 ANALYTICAL SUMMARY
 EL DORADO CHEMICAL COMPANY
 EL DORADO, ARKANSAS

| Sample Date | pH | Ammonia-N | Nitrate-N | Sulfate | Total Dissolved Solids | Lead (Total) | Lead (Dissolved) | Chromium (Total) | Chromium (Dissolved) | Vanadium (Total) | Vanadium (Dissolved) |
|-------------|------|-----------|-----------|---------|------------------------|--------------|------------------|------------------|----------------------|------------------|----------------------|
| | s.u. | mg/L | | | | | | | | | |
| 10/20/2009 | 4.36 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 4/14/2010 | 4.39 | <0.5 | 2.99 | 10.7 | -- | <0.015 | -- | <0.02 | -- | -- | -- |
| 11/3/2010 | 5.30 | <0.5 | 1.9 | 13.2 | -- | <0.015 | -- | <0.01 | -- | -- | -- |
| 4/26/2011 | 4.86 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 5/2/2012 | 4.88 | <0.5 | 1.08 | 13.9 | -- | <0.015 E3 | <0.015 | <0.01 E3 | <0.02 | -- | -- |
| 11/6/2012 | 6.22 | <0.5 | 1.26 | 13 | -- | <0.015 | <0.015 | <0.01 | <0.02 | -- | -- |
| 5/15/2013 | 6.21 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 11/4/2013 | 4.56 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

"--" - Parameter not analyzed

E3 - Incorrect preservation, results qualified as "estimated".

TABLE 19
ECMW-16 ANALYTICAL SUMMARY
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

| Sample Date | pH | Ammonia-N | Nitrate-N | Sulfate | Total Dissolved Solids | Lead (Total) | Lead (Dissolved) | Chromium (Total) | Chromium (Dissolved) | Vanadium (Total) | Vanadium (Dissolved) |
|-------------|------|-----------|-----------|---------|------------------------|--------------|------------------|------------------|----------------------|------------------|----------------------|
| | s.u. | mg/L | | | | | | | | | |
| 3/13/1996 | 5.70 | -- | 137 | 4.6 | -- | 0.0036 | 0.0034 | <0.005 | <0.005 | -- | -- |
| 6/5/2001 | 4.30 | 4.61 | 134 | 5.09 | 1100 | <0.04 | -- | <0.02 | -- | -- | -- |
| 10/30/2001 | 3.90 | <0.5 | 58.4 | 6.44 | 330 | <0.04 | -- | <0.02 | -- | -- | -- |
| 6/4/2002 | 5.00 | 6.2 | 72.5 | 7.19 | 396 | <0.02 | <0.02 | <0.02 | <0.02 | -- | -- |
| 6/4/2002 | -- | 5.0 | 72.6 | 6.82 | 404 | <0.02 | <0.015 | <0.02 | <0.02 | -- | -- |
| 10/30/2002 | 5.00 | 11.6 | 72 | 9.21 | 263 | <0.015 | <0.015 | <0.02 | <0.02 | -- | -- |
| 12/10/2002 | 5.90 | 2.99 | 89.4 | 5.64 | 595 | <0.015 | <0.015 | <0.02 | <0.02 | -- | -- |
| 5/20/2003 | 4.42 | 3.69 | 90.8 | 6.55 | 555 | <0.015 | <0.015 | <0.02 | <0.02 | -- | -- |
| 7/23/2003 | 4.81 | 6.45 | 72.3 | 7.15 | 430 | <0.015 | <0.015 | <0.02 | <0.02 | -- | -- |
| 9/23/2003 | 4.31 | 5.97 | 72.8 | 7.09 | 400 | <0.015 | <0.015 | <0.02 | <0.02 | -- | -- |
| 11/19/2003 | 4.99 | 8.61 | 44.3 | 9.78 | 230 | <0.015 | <0.015 | <0.02 | <0.02 | -- | -- |
| 1/28/2004 | 5.61 | 5.66 | 59 | 9.84 | 280 | <0.015 | <0.015 | <0.02 | <0.02 | -- | -- |
| 3/16/2004 | 5.83 | 8.39 | 34.8 | 11.2 | 180 | <0.015 | <0.015 | <0.02 | <0.02 | -- | -- |
| 5/18/2004 | 5.95 | 10.4 | 31.9 | 13.3 | 167 | <0.015 | <0.015 | <0.02 | <0.02 | -- | -- |
| 5/18/2004 | -- | 11.5 | 31.5 | 13.8 | 135 | <0.015 | <0.015 | <0.02 | <0.02 | -- | -- |
| 7/13/2004 | 5.50 | 9.35 | 40.2 | 7.7 | 160 | <0.015 | <0.015 | <0.02 | <0.02 | -- | -- |
| 9/14/2004 | 4.49 | 8.57 | 47.1 | 7.83 | 190 | <0.015 | <0.015 | <0.02 | <0.02 | <0.02 | -- |
| 11/16/2004 | 5.08 | 6.49 | 38.2 | 8.11 | 310 | <0.015 | <0.015 | <0.02 | <0.02 | <0.02 | <0.02 |
| 11/16/2004 | -- | 6.87 | 38.3 | 8.02 | 270 | <0.015 | <0.015 | <0.02 | <0.02 | <0.02 | <0.02 |
| 1/25/2005 | 4.54 | 4.15 | 43.1 | 8.13 | 310 | <0.015 | <0.015 | <0.02 | <0.02 | <0.02 | <0.02 |
| 5/25/2005 | 4.62 | 7.62 | 26.8 | 10.2 | 110 | <0.015 | <0.015 | <0.02 | <0.02 | <0.02 | <0.02 |
| 10/19/2005 | 4.66 | 6.28 | 17 | -- | -- | -- | -- | -- | -- | <0.02 | <0.02 |
| 4/11/2006 | 4.79 | 2.01 | 17 | -- | -- | -- | -- | -- | -- | <0.02 | <0.02 |
| 11/2/2006 | 4.27 | 2.16 | 24.8 | -- | -- | -- | -- | -- | -- | <0.02 | -- |
| 5/23/2007 | 4.25 | 2.21 | 12.8 | 14.4 | -- | -- | -- | -- | -- | <0.02 | -- |
| 11/7/2007 | 4.30 | 1.77 | 19.6 | 12.6 | -- | -- | -- | -- | -- | <0.02 | -- |

"--" - Parameter not analyzed

E3 - Incorrect preservation, results qualified as "estimated".

TABLE 19
ECMW-16 ANALYTICAL SUMMARY
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

| Sample Date | pH | Ammonia-N | Nitrate-N | Sulfate | Total Dissolved Solids | Lead (Total) | Lead (Dissolved) | Chromium (Total) | Chromium (Dissolved) | Vanadium (Total) | Vanadium (Dissolved) |
|-------------|------|-----------|-----------|---------|------------------------|--------------|------------------|------------------|----------------------|------------------|----------------------|
| | s.u. | mg/L | | | | | | | | | |
| 5/21/2008 | 6.08 | 3.35 | 14.8 | 15.9 | -- | <0.015 | -- | <0.02 | -- | <0.02 | -- |
| 11/5/2008 | 6.50 | 1.92 | 11.4 | 10.4 | -- | <0.015 | -- | <0.02 | -- | <0.02 | -- |
| 4/21/2009 | 4.66 | 3.25 | 8.85 | 14.5 | -- | -- | -- | -- | -- | <0.02 | -- |
| 10/21/2009 | 4.38 | 0.88 | 13.1 | 12.1 | -- | -- | -- | -- | -- | -- | -- |
| 10/21/2009 | -- | 0.94 | 13.2 | 13 | -- | -- | -- | -- | -- | -- | -- |
| 4/14/2010 | 4.42 | 2.38 | 4.73 | 15.3 | -- | <0.015 | -- | <0.02 | -- | -- | -- |
| 11/3/2010 | 5.98 | 0.96 | 19.2 | 13.4 | -- | <0.015 | -- | <0.01 | -- | -- | -- |
| 4/26/2011 | 4.50 | 3.56 | 7.5 | 15.8 | -- | -- | -- | -- | -- | -- | -- |
| 11/30/2011 | 4.12 | 0.84 | 11.6 | 17.9 | -- | -- | -- | -- | -- | -- | -- |
| 5/2/2012 | 4.66 | 0.81 | 10.7 | 15.4 | -- | <0.015 E3 | <0.015 | <0.01 E3 | <0.02 | -- | -- |
| 11/6/2012 | 6.09 | 1.19 | 9.94 | 14.6 | -- | <0.015 | <0.015 | <0.01 | <0.02 | -- | -- |
| 5/15/2013 | 4.79 | 3.91 | 12.2 | 13 | -- | -- | -- | -- | -- | -- | -- |
| 11/5/2013 | 4.60 | 1.58 | 10.3 | 13.3 | -- | -- | -- | -- | -- | -- | -- |

"--" - Parameter not analyzed

E3 - Incorrect preservation, results qualified as "estimated".

TABLE 20
ECMW-17 ANALYTICAL SUMMARY
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

| Sample Date | pH | Ammonia-N | Nitrate-N | Sulfate | Total Dissolved Solids | Lead (Total) | Lead (Dissolved) | Chromium (Total) | Chromium (Dissolved) | Vanadium (Total) | Vanadium (Dissolved) |
|-------------|------|-----------|-----------|---------|------------------------|--------------|------------------|------------------|----------------------|------------------|----------------------|
| | s.u. | mg/L | | | | | | | | | |
| 3/13/1996 | 4.90 | -- | 45 | 145 | -- | <0.002 | <0.002 | <0.005 | <0.005 | -- | -- |
| 6/5/2001 | 4.40 | 1.16 | 54.2 | 87.7 | 600 | <0.04 | -- | <0.02 | -- | -- | -- |
| 10/30/2001 | 4.10 | <0.5 | 106 | 11.5 | 760 | <0.04 | -- | <0.02 | -- | -- | -- |
| 6/4/2002 | 5.10 | <0.5 | 83.4 | 8.04 | 603 | <0.02 | <0.02 | <0.02 | <0.02 | -- | -- |
| 10/30/2002 | 5.10 | 2.36 | 92 | 9.53 | 540 | <0.015 | <0.015 | <0.02 | <0.02 | -- | -- |
| 12/10/2002 | 5.60 | 1.22 | 101 | 28.2 | 751 | <0.015 | <0.015 | <0.02 | <0.02 | -- | -- |
| 5/20/2003 | 4.54 | <0.5 | 83.6 | 17.1 | 603 | <0.015 | <0.015 | <0.02 | <0.02 | -- | -- |
| 7/23/2003 | 4.74 | 0.58 | 74.7 | 9.31 | 548 | <0.015 | <0.015 | <0.02 | <0.02 | -- | -- |
| 9/23/2003 | 5.25 | <0.5 | 64.3 | 6.98 | 400 | <0.015 | <0.015 | <0.02 | <0.02 | -- | -- |
| 11/19/2003 | 5.28 | 0.55 | 77.3 | 11.8 | 530 | <0.015 | <0.015 | <0.02 | <0.02 | -- | -- |
| 1/28/2004 | 6.54 | <0.5 | 81.3 | 42.8 | 560 | <0.015 | <0.015 | <0.02 | <0.02 | -- | -- |
| 3/16/2004 | 6.62 | 8.14 | 129 | 64 | 983 | <0.015 | <0.015 | <0.02 | <0.02 | -- | -- |
| 5/18/2004 | 6.73 | 8.05 | 134 | 60.1 | 944 | <0.015 | <0.015 | <0.02 | <0.02 | -- | -- |
| 7/13/2004 | 6.57 | <0.5 | 67.6 | 6.54 | 460 | <0.015 | <0.015 | <0.02 | <0.02 | -- | -- |
| 9/14/2004 | 4.40 | 1.42 | 78.4 | 3.14 | 570 | <0.015 | <0.015 | <0.02 | <0.02 | <0.02 | -- |
| 11/16/2004 | 5.41 | 9.55 | 219 | 54.8 | 1800 | <0.015 | <0.015 | <0.02 | <0.02 | <0.02 | <0.02 |
| 1/26/2005 | 4.54 | 1.79 | 53.3 | 12.2 | 360 | <0.015 | <0.015 | <0.02 | <0.02 | <0.02 | <0.02 |
| 5/25/2005 | 4.86 | <0.5 | 56.4 | 19.1 | 390 | <0.015 | <0.015 | <0.02 | <0.02 | <0.02 | <0.02 |
| 5/25/2005 | -- | <0.5 | 58.4 | 4.27 | 440 | <0.015 | <0.015 | <0.02 | <0.02 | <0.02 | <0.02 |
| 10/20/2005 | 5.74 | 0.67 | 48.9 | -- | -- | -- | -- | -- | -- | <0.02 | <0.02 |
| 4/11/2006 | 3.35 | 1.15 | 66.6 | -- | -- | -- | -- | -- | -- | <0.02 | <0.02 |
| 11/2/2006 | 3.56 | 4.81 | 47.6 | -- | -- | -- | -- | -- | -- | <0.02 | -- |
| 5/23/2007 | 4.19 | 1.49 | 58.5 | 12.7 | -- | -- | -- | -- | -- | <0.02 | -- |
| 11/7/2007 | 3.70 | 0.64 | 83.3 | 51.7 | -- | -- | -- | -- | -- | <0.02 | -- |
| 5/21/2008 | 4.84 | 1.63 | 63.1 | 63 | -- | <0.015 | -- | <0.02 | -- | <0.02 | -- |
| 11/5/2008 | 3.85 | 1.31 | 34.6 | 17.5 | -- | <0.015 | -- | <0.02 | -- | <0.02 | -- |

"--" - Parameter not analyzed

E3 - Incorrect preservation, results qualified as "estimated".

TABLE 20
ECMW-17 ANALYTICAL SUMMARY
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

| Sample Date | pH | Ammonia-N | Nitrate-N | Sulfate | Total Dissolved Solids | Lead (Total) | Lead (Dissolved) | Chromium (Total) | Chromium (Dissolved) | Vanadium (Total) | Vanadium (Dissolved) |
|-------------|------|--------------|-----------|---------|------------------------|--------------|------------------|------------------|----------------------|------------------|----------------------|
| | s.u. | mg/L | | | | | | | | | |
| 4/21/2009 | 4.25 | 12.2 outlier | 27.1 | 99.9 | -- | -- | -- | -- | -- | <0.02 | -- |
| 6/3/2009 | 5.84 | 3.04 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 10/21/2009 | 4.68 | 11.2 | 14.4 | 87.1 | -- | -- | -- | -- | -- | -- | -- |
| 4/14/2010 | 4.07 | <0.5 | 15.9 | 6.73 | -- | <0.015 | -- | <0.02 | -- | -- | -- |
| 11/3/2010 | 7.02 | 1.94 | 27.2 | 13.1 | -- | <0.015 | -- | <0.01 | -- | -- | -- |
| 4/26/2011 | 4.34 | 10.1 | 4.03 | 40.2 | -- | -- | -- | -- | -- | -- | -- |
| 11/30/2011 | 4.65 | 2.75 | 5.95 | 36.1 | -- | -- | -- | -- | -- | -- | -- |
| 5/2/2012 | 4.75 | 2.51 | 8.13 | 20.9 | -- | <0.015 E3 | <0.015 | <0.01 E3 | <0.02 | -- | -- |
| 11/6/2012 | 6.21 | 3.82 | 1.82 | 39.2 | -- | <0.015 | <0.015 | <0.01 | <0.02 | -- | -- |
| 11/6/2012 | -- | 5.67 | 1.51 | 37.3 | -- | <0.015 | <0.015 | 0.0174 | <0.02 | -- | -- |
| 5/15/2013 | 4.70 | 1.41 | 3.6 | 34.5 | -- | -- | -- | -- | -- | -- | -- |
| 11/5/2013 | 4.77 | <0.5 | 1.24 | 39.6 | -- | -- | -- | -- | -- | -- | -- |

"--" - Parameter not analyzed

E3 - Incorrect preservation, results qualified as "estimated".

TABLE 21
ECMW-18 ANALYTICAL SUMMARY
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

| Sample Date | pH | Ammonia-N | Nitrate-N | Sulfate | Total Dissolved Solids | Lead (Total) | Lead (Dissolved) | Chromium (Total) | Chromium (Dissolved) | Vanadium (Total) | Vanadium (Dissolved) |
|-------------|------|-----------|-----------|---------|------------------------|--------------|------------------|------------------|----------------------|------------------|----------------------|
| | s.u. | mg/L | | | | | | | | | |
| 3/14/1996 | 6.60 | -- | 0.4 | 3.3 | -- | 0.017 | < 0.002 | 0.0194 | < 0.005 | -- | -- |
| 10/30/2001 | 5.40 | < 0.5 | < 0.5 | 3.74 | 300 | < 0.04 | -- | 0.05 | -- | -- | -- |
| 6/4/2002 | 6.20 | < 0.5 | < 0.5 | 8.38 | 796 | 0.115 | < 0.02 | 0.147 | 0.137 | -- | -- |
| 10/30/2002 | 6.30 | 0.43 | < 0.5 | 3.22 | 258 | 0.018 | < 0.015 | < 0.02 | < 0.02 | -- | -- |
| 12/10/2002 | 6.40 | < 0.5 | < 0.5 | 5.01 | 495 | < 0.015 | < 0.015 | 0.02 | < 0.02 | -- | -- |
| 5/21/2003 | 6.01 | 0.59 | < 0.5 | 7.08 | 786 | 0.029 | < 0.015 | 0.02 | < 0.02 | -- | -- |
| 7/23/2003 | 5.38 | < 0.5 | 113 | 115 | 2000 | 0.029 | < 0.015 | 0.047 | < 0.02 | -- | -- |
| 9/24/2003 | 5.54 | 5.79 | < 0.5 | 3.81 | 590 | 0.025 | < 0.015 | 0.036 | 0.026 | -- | -- |
| 11/19/2003 | 5.90 | < 0.5 | < 0.5 | 9.68 | 300 | < 0.015 | < 0.015 | < 0.02 | < 0.02 | -- | -- |
| 1/28/2004 | 6.17 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 3/16/2004 | 6.40 | < 0.5 | < 0.5 | 7.01 | 666 | 0.021 | < 0.015 | 0.027 | 0.021 | -- | -- |
| 5/19/2004 | 6.43 | < 0.5 | < 0.5 | 5.63 | 720 | 0.063 | < 0.015 | 0.088 | < 0.02 | -- | -- |
| 7/13/2004 | 6.05 | < 0.5 | < 0.5 | 5.68 | 1100 | 0.033 | < 0.015 | 0.043 | < 0.02 | -- | -- |
| 9/15/2004 | 5.89 | 0.56 | < 0.5 | 3.88 | 1200 | 0.109 | 0.038 | 0.12 | 0.05 | 0.213 | -- |
| 11/17/2004 | 5.96 | < 0.5 | < 0.5 | 4.61 | 1100 | < 0.015 | < 0.015 | 0.027 | < 0.02 | 0.045 | < 0.02 |
| 11/17/2004 | -- | < 0.5 | < 0.5 | 4.85 | 1100 | 0.03 | < 0.015 | 0.043 | < 0.02 | 0.079 | < 0.02 |
| 1/26/2005 | 5.90 | < 0.5 | < 0.5 | 5.13 | 1000 | 0.056 | < 0.015 | 0.055 | 0.022 | 0.099 | 0.031 |
| 5/25/2005 | 6.04 | < 0.5 | < 0.5 | 5.18 | 700 | 0.018 | < 0.015 | 0.032 | < 0.02 | 0.048 | 0.03 |
| 10/19/2005 | 5.82 | -- | -- | -- | -- | < 0.015 | < 0.015 | < 0.02 | 0.052 | < 0.02 | 0.081 |
| 4/12/2006 | 1.34 | -- | -- | -- | -- | < 0.015 | 0.016 | < 0.02 | 0.065 | < 0.02 | < 0.02 |
| 11/2/2006 | 5.23 | -- | -- | -- | -- | < 0.015 | -- | < 0.02 | -- | 0.02 | -- |
| 5/23/2007 | 5.34 | -- | 0.98 | -- | -- | -- | -- | -- | -- | < 0.02 | -- |
| 11/7/2007 | 5.03 | -- | < 0.5 | -- | -- | -- | -- | -- | -- | 0.05 | -- |
| 5/21/2008 | 7.82 | < 0.5 | 0.567 | 6.57 | -- | 0.02 | -- | 0.028 | -- | 0.04 | -- |
| 11/7/2008 | 5.05 | < 0.5 | < 0.5 | 1.52 | -- | 0.032 | -- | 0.025 | -- | 0.05 | -- |
| 4/22/2009 | 5.42 | -- | < 0.5 | -- | -- | -- | -- | -- | -- | 0.03 | -- |

"--" - Parameter not analyzed

E3 - Incorrect preservation, results qualified as "estimated".

TABLE 21
ECMW-18 ANALYTICAL SUMMARY
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

| Sample Date | pH | Ammonia-N | Nitrate-N | Sulfate | Total Dissolved Solids | Lead (Total) | Lead (Dissolved) | Chromium (Total) | Chromium (Dissolved) | Vanadium (Total) | Vanadium (Dissolved) |
|-------------|------|-----------|-----------|---------|------------------------|--------------|------------------|------------------|----------------------|------------------|----------------------|
| | s.u. | mg/L | | | | | | | | | |
| 10/21/2009 | 7.16 | -- | <0.5 | -- | -- | -- | -- | -- | -- | -- | -- |
| 4/14/2010 | 5.50 | <0.5 | <0.5 | 2.82 | -- | <0.015 | -- | <0.02 | -- | -- | -- |
| 11/3/2010 | 8.22 | <0.5 | <1 | 3.65 | -- | <0.015 | -- | <0.01 | -- | -- | -- |
| 4/26/2011 | 5.77 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 6/30/2011 | 5.71 | -- | <0.5 | -- | -- | -- | -- | -- | -- | -- | -- |
| 11/30/2011 | 5.64 | -- | <0.5 | -- | -- | -- | -- | -- | -- | -- | -- |
| 5/2/2012 | 5.89 | <0.5 | <0.5 | 2.17 | -- | <0.015 E3 | <0.015 | <0.01 E3 | <0.02 | -- | -- |
| 11/6/2012 | 6.61 | <0.5 | <0.5 | 2.99 | -- | <0.015 | <0.015 | <0.01 | <0.02 | -- | -- |
| 5/15/2013 | 5.96 | <0.5 | 0.328 | 6.25 | -- | -- | -- | -- | -- | -- | -- |
| 11/5/2013 | 6.28 | 9.64 | <0.25 | 6.3 | -- | -- | -- | -- | -- | -- | -- |

"--" - Parameter not analyzed

E3 - Incorrect preservation, results qualified as "estimated".

TABLE 22
ECMW-19 ANALYTICAL SUMMARY
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

| Sample Date | pH | Ammonia-N | Nitrate-N | Sulfate | Total Dissolved Solids | Lead (Total) | Lead (Dissolved) | Chromium (Total) | Chromium (Dissolved) | Vanadium (Total) | Vanadium (Dissolved) |
|-------------|------|-----------|-----------|---------|------------------------|--------------|------------------|------------------|----------------------|------------------|----------------------|
| | s.u. | mg/L | | | | | | | | | |
| 1/28/2004 | 6.73 | 0.64 | <0.5 | 8.32 | 1400 | 0.122 | 0.045 | 0.077 | 0.077 | -- | -- |
| 3/16/2004 | 6.49 | <0.5 | <0.5 | 6.38 | 238 | 0.019 | <0.015 | <0.02 | <0.02 | -- | -- |
| 3/16/2004 | -- | <0.5 | <0.5 | 7.63 | 164 | 0.021 | <0.015 | <0.02 | <0.02 | -- | -- |
| 5/19/2004 | 6.19 | <0.5 | <0.5 | 9.05 | 220 | <0.015 | <0.015 | <0.02 | <0.02 | -- | -- |
| 7/13/2004 | 6.37 | <0.5 | <0.5 | 6.85 | 180 | <0.015 | <0.015 | <0.02 | <0.02 | -- | -- |
| 9/15/2004 | 6.23 | 0.54 | <0.5 | 4.11 | 120 | <0.015 | <0.015 | <0.02 | <0.02 | <0.02 | -- |
| 11/17/2004 | 6.02 | <0.5 | <0.5 | 4.63 | 130 | <0.015 | <0.015 | <0.02 | <0.02 | <0.02 | <0.02 |
| 1/26/2005 | 5.82 | <0.5 | <0.5 | 3.67 | 100 | <0.015 | <0.015 | <0.02 | <0.02 | <0.02 | <0.02 |
| 5/25/2005 | 5.88 | <0.5 | <0.5 | 4.56 | 120 | <0.015 | <0.015 | <0.02 | <0.02 | <0.02 | <0.02 |
| 10/19/2005 | 6.27 | <0.5 | <0.5 | -- | -- | <0.015 | <0.015 | <0.02 | <0.02 | <0.02 | <0.02 |
| 4/12/2006 | 6.10 | <0.5 | <0.5 | -- | -- | <0.015 | <0.015 | <0.02 | <0.02 | <0.02 | <0.02 |
| 11/2/2006 | 5.51 | <0.5 | <0.5 | -- | -- | <0.015 | -- | <0.02 | -- | <0.02 | -- |
| 5/23/2007 | 5.80 | -- | -- | -- | -- | -- | -- | -- | -- | <0.02 | -- |
| 11/7/2007 | 5.18 | -- | -- | -- | -- | -- | -- | -- | -- | <0.02 | -- |
| 5/21/2008 | 8.17 | <0.5 | <0.5 | 3.18 | -- | <0.015 | -- | <0.02 | -- | <0.02 | -- |
| 11/7/2008 | 5.90 | <0.5 | <0.5 | 2.04 | -- | <0.015 | -- | <0.02 | -- | <0.02 | -- |
| 4/22/2009 | 5.66 | -- | -- | -- | -- | -- | -- | -- | -- | <0.02 | -- |
| 10/21/2009 | 7.82 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 4/14/2010 | 5.62 | <0.5 | <0.5 | 2.46 | -- | <0.015 | -- | <0.02 | -- | -- | -- |
| 4/14/2010 | -- | <0.5 | <0.5 | 2.43 | -- | <0.015 | -- | <0.02 | -- | -- | -- |
| 11/3/2010 | 6.87 | <0.5 | <0.5 | 2.97 | -- | <0.015 | -- | <0.01 | -- | -- | -- |
| 4/26/2011 | 5.82 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 5/2/2012 | 5.98 | <0.5 | <0.5 | 2.31 | -- | <0.015 E3 | <0.015 | <0.01 E3 | <0.02 | -- | -- |
| 11/6/2012 | 6.68 | <0.5 | <0.5 | 2.88 | -- | <0.015 | <0.015 | <0.01 | <0.02 | -- | -- |
| 5/14/2013 | 6.13 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 11/5/2013 | 6.73 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

"--" - Parameter not analyzed

E3 - Incorrect preservation, results qualified as "estimated".

TABLE 23
ECMW-20 ANALYTICAL SUMMARY
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

| Sample Date | pH | Ammonia-N | Nitrate-N | Sulfate | Total Dissolved Solids | Lead (Total) | Lead (Dissolved) | Chromium (Total) | Chromium (Dissolved) | Vanadium (Total) | Vanadium (Dissolved) |
|-------------|------|-----------|-----------|---------|------------------------|--------------|------------------|------------------|----------------------|------------------|----------------------|
| | s.u. | mg/L | | | | | | | | | |
| 1/28/2004 | 5.93 | <0.5 | <0.5 | 11.4 | 730 | 0.024 | <0.015 | 0.034 | <0.02 | -- | -- |
| 3/16/2004 | 6.51 | <0.5 | <0.5 | 15.9 | 186 | <0.015 | <0.015 | <0.02 | <0.02 | -- | -- |
| 5/19/2004 | 6.23 | <0.5 | <0.5 | 10.6 | 140 | <0.015 | <0.015 | <0.02 | <0.02 | -- | -- |
| 7/13/2004 | 5.80 | <0.5 | <0.5 | 17.2 | 130 | <0.015 | <0.015 | <0.02 | <0.02 | -- | -- |
| 9/15/2004 | 5.61 | 0.86 | <0.5 | 17.2 | 120 | <0.015 | <0.015 | <0.02 | <0.02 | <0.02 | -- |
| 11/17/2004 | 5.36 | <0.5 | <0.5 | 13.5 | 160 | <0.015 | <0.015 | <0.02 | <0.02 | <0.02 | <0.02 |
| 1/26/2005 | 6.02 | <0.5 | <0.5 | 13.8 | 160 | 0.017 | <0.015 | <0.02 | <0.02 | <0.02 | <0.02 |
| 5/26/2005 | 6.03 | <0.5 | 1.86 | 7.72 | 85 | <0.015 | <0.015 | <0.02 | <0.02 | <0.02 | <0.02 |
| 10/20/2005 | -- | <0.5 | <0.5 | -- | -- | <0.015 | <0.015 | <0.02 | <0.02 | <0.02 | <0.02 |
| 4/12/2006 | -- | 3.58 | 6.29 | -- | -- | <0.015 | <0.015 | <0.02 | <0.02 | <0.02 | <0.02 |
| 11/2/2006 | 6.20 | <0.5 | 1.21 | -- | -- | <0.015 | -- | <0.02 | -- | <0.02 | -- |
| 5/23/2007 | 6.06 | -- | -- | -- | -- | -- | -- | -- | -- | <0.02 | -- |
| 11/7/2007 | 5.52 | -- | -- | -- | -- | -- | -- | -- | -- | <0.02 | -- |
| 5/21/2008 | 8.60 | <0.5 | <0.5 | 8.94 | -- | <0.015 | -- | <0.02 | -- | <0.02 | -- |
| 11/7/2008 | 6.36 | <0.5 | <0.5 | 7.94 | -- | 0.016 | -- | <0.02 | -- | <0.02 | -- |
| 4/22/2009 | 6.22 | -- | -- | -- | -- | -- | -- | -- | -- | <0.02 | -- |
| 10/21/2009 | 7.37 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 4/14/2010 | 5.64 | <0.5 | <0.5 | 10.1 | -- | <0.015 | -- | <0.02 | -- | -- | -- |
| 12/21/2010 | 5.02 | <0.5 | <0.5 | 8.95 | -- | <0.015 | -- | <0.01 | -- | -- | -- |
| 4/26/2011 | 6.03 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 5/2/2012 | 5.96 | <0.5 | <0.5 | 7.82 | -- | <0.015 E3 | <0.015 | <0.01 E3 | <0.02 | -- | -- |
| 11/6/2012 | 6.74 | <0.5 | <0.5 | 9.31 | -- | <0.015 | <0.015 | <0.01 | <0.02 | -- | -- |
| 5/14/2013 | 5.29 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 11/5/2013 | 6.00 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

"--" - Parameter not analyzed

E3 - Incorrect preservation, results qualified as "estimated".

TABLE 24
ECMW-21 ANALYTICAL SUMMARY
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

| Sample Date | pH | Ammonia-N | Nitrate-N | Sulfate | Total Dissolved Solids | Lead (Total) | Lead (Dissolved) | Chromium (Total) | Chromium (Dissolved) | Vanadium (Total) | Vanadium (Dissolved) |
|-------------|------|-----------|-----------|---------|------------------------|--------------|------------------|------------------|----------------------|------------------|----------------------|
| | s.u. | mg/L | | | | | | | | | |
| 1/28/2004 | 5.56 | <0.5 | 1.63 | 8.17 | 82 | 0.169 | <0.015 | 0.837 | <0.02 | -- | -- |
| 3/16/2004 | 6.34 | <0.5 | 0.54 | 3.62 | 130 | <0.015 | <0.015 | 0.028 | <0.02 | -- | -- |
| 5/19/2004 | 6.75 | <0.5 | 2.15 | 4.59 | 110 | 0.029 | <0.015 | 0.07 | <0.02 | -- | -- |
| 7/13/2004 | 6.39 | <0.5 | 2.5 | 3.74 | 103 | 0.032 | <0.015 | 0.056 | <0.02 | -- | -- |
| 9/15/2004 | 5.47 | 0.81 | 4.65 | 4.15 | 150 | <0.015 | <0.015 | 0.029 | <0.02 | <0.02 | -- |
| 11/17/2004 | 5.96 | <0.5 | 2.97 | 3.14 | 110 | <0.015 | <0.015 | 0.047 | <0.02 | <0.02 | <0.02 |
| 1/26/2005 | 5.37 | 4.06 | 3.23 | 2.88 | 77 | 0.02 | <0.015 | 0.044 | <0.02 | <0.02 | <0.02 |
| 5/26/2005 | 5.69 | <0.5 | 3.17 | 3.64 | 76 | 0.063 | <0.015 | 0.265 | <0.02 | 0.092 | <0.02 |
| 10/20/2005 | 4.17 | <0.5 | 4.16 | -- | -- | <0.015 | <0.015 | <0.02 | <0.02 | <0.02 | <0.02 |
| 4/12/2006 | -- | <0.5 | 3.19 | -- | -- | <0.015 | <0.015 | <0.02 | <0.02 | <0.02 | <0.02 |
| 11/2/2006 | -- | <0.5 | 2.23 | -- | -- | <0.015 | -- | <0.02 | -- | <0.02 | -- |
| 5/23/2007 | 5.56 | -- | -- | -- | -- | -- | -- | -- | -- | <0.02 | -- |
| 11/7/2007 | 5.07 | -- | -- | -- | -- | -- | -- | -- | -- | <0.02 | -- |
| 5/21/2008 | 7.81 | <0.5 | 1.85 | 5.18 | -- | <0.015 | -- | <0.02 | -- | <0.02 | -- |
| 11/7/2008 | 5.32 | <0.5 | 1.26 | 3 | -- | <0.015 | -- | <0.02 | -- | <0.02 | -- |
| 4/22/2009 | 5.24 | -- | -- | -- | -- | -- | -- | -- | -- | <0.02 | -- |
| 10/21/2009 | 5.91 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 4/14/2010 | 4.88 | <0.5 | 2.24 | 3.7 | -- | <0.015 | -- | <0.02 | -- | -- | -- |
| 11/3/2010 | 7.13 | <0.5 | 1.8 | 6.07 | -- | <0.015 | -- | <0.01 | -- | -- | -- |
| 4/26/2011 | 5.85 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 5/2/2012 | 5.68 | <0.5 | 1.4 | 3.94 | -- | <0.015 E3 | <0.015 | <0.01 E3 | <0.02 | -- | -- |
| 11/6/2012 | 6.48 | <0.5 | 1.1 | 6.28 | -- | <0.015 | <0.015 | <0.01 | <0.02 | -- | -- |
| 5/15/2013 | 6.09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 11/5/2013 | 5.68 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

"--" - Parameter not analyzed

E3 - Incorrect preservation, results qualified as "estimated".

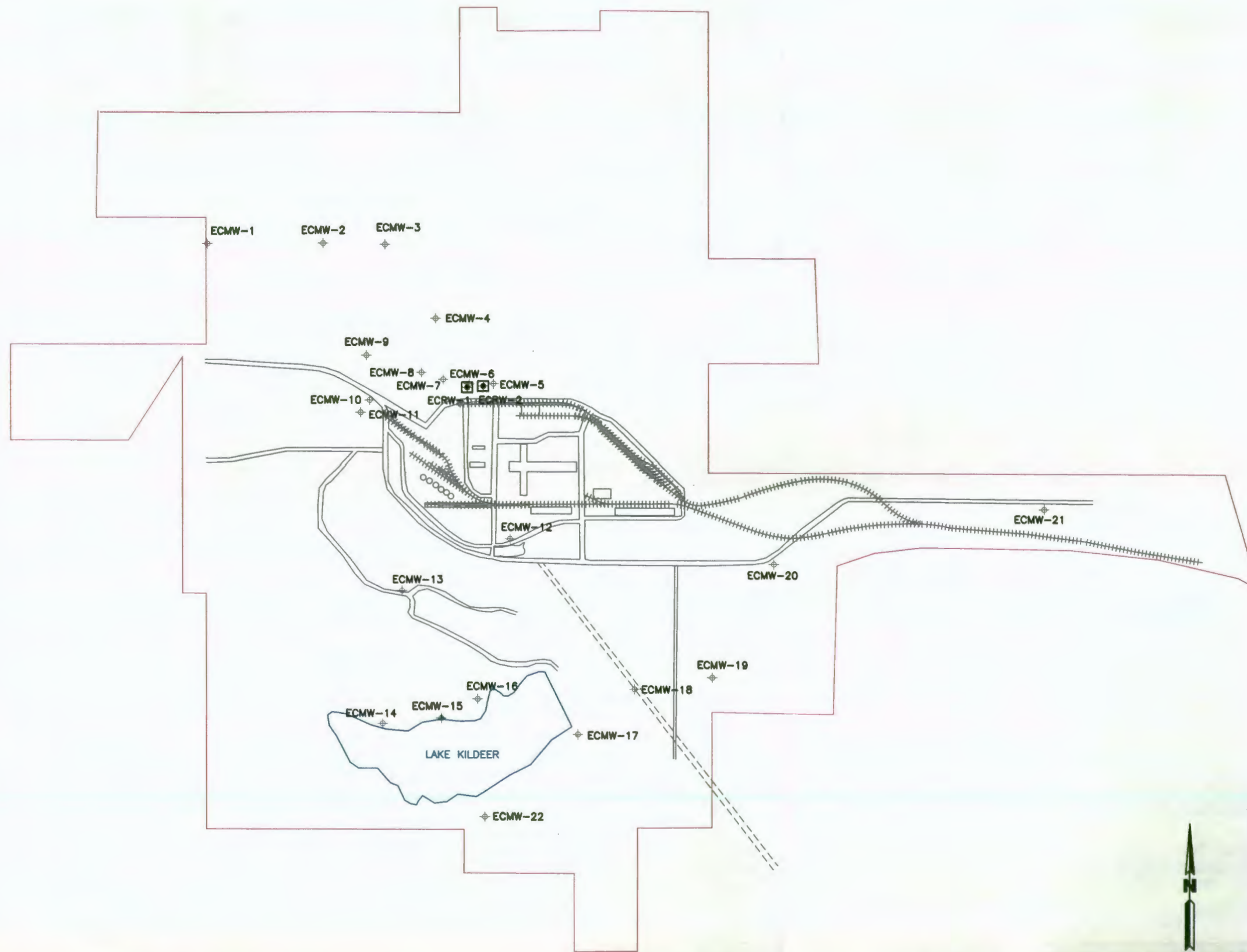
TABLE 25
ECMW-22 ANALYTICAL SUMMARY
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

| Sample Date | pH | Ammonia-N | Nitrate-N | Sulfate | Total Dissolved Solids | Lead (Total) | Lead (Dissolved) | Chromium (Total) | Chromium (Dissolved) | Vanadium (Total) | Vanadium (Dissolved) |
|-------------|------|-----------|-----------|---------|------------------------|--------------|------------------|------------------|----------------------|------------------|----------------------|
| | s.u. | mg/L | | | | | | | | | |
| 1/28/2004 | 7.68 | 0.61 | 0.53 | 6.62 | 540 | 0.021 | <0.015 | 0.021 | <0.02 | -- | -- |
| 1/28/2004 | -- | <0.5 | 0.52 | 6.62 | 610 | 0.021 | <0.015 | 0.023 | <0.02 | -- | -- |
| 3/16/2004 | 6.65 | <0.5 | 0.66 | 2.88 | <1 | <0.015 | <0.015 | <0.02 | <0.02 | -- | -- |
| 5/18/2004 | 6.76 | <0.5 | 0.95 | 3.74 | 136 | <0.015 | <0.015 | <0.02 | <0.02 | -- | -- |
| 7/13/2004 | 6.74 | <0.5 | <0.5 | 3.8 | 140 | <0.015 | <0.015 | <0.02 | <0.02 | -- | -- |
| 9/14/2004 | 5.84 | 0.7 | <0.5 | 2.94 | 170 | <0.015 | <0.015 | <0.02 | <0.02 | <0.02 | -- |
| 11/16/2004 | 6.95 | <0.5 | <0.5 | 2.51 | 180 | <0.015 | <0.015 | <0.02 | <0.02 | <0.02 | <0.02 |
| 1/26/2005 | 5.79 | <0.5 | 1.09 | 3.56 | 140 | <0.015 | <0.015 | <0.02 | <0.02 | <0.02 | <0.02 |
| 5/25/2005 | 6.46 | <0.5 | 1.12 | 3.61 | 130 | <0.015 | <0.015 | <0.02 | <0.02 | <0.02 | <0.02 |
| 10/19/2005 | 6.21 | <0.5 | <0.5 | -- | -- | 0.056 | <0.015 | <0.02 | <0.02 | <0.02 | <0.02 |
| 4/11/2006 | 6.22 | <0.5 | 2.56 | -- | -- | <0.015 | <0.015 | <0.02 | <0.02 | <0.02 | <0.02 |
| 11/2/2006 | 5.37 | <0.5 | 1.07 | -- | -- | <0.015 | -- | <0.02 | -- | <0.02 | -- |
| 5/23/2007 | 5.67 | -- | -- | -- | -- | -- | -- | -- | -- | <0.02 | -- |
| 11/7/2007 | 5.01 | -- | -- | -- | -- | -- | -- | -- | -- | <0.02 | -- |
| 5/21/2008 | 7.93 | <0.5 | 3.65 | 7.6 | -- | <0.015 | -- | <0.02 | -- | <0.02 | -- |
| 11/5/2008 | 5.06 | <0.5 | 1.87 | 4.7 | -- | <0.015 | -- | <0.02 | -- | <0.02 | -- |
| 4/21/2009 | 5.80 | -- | -- | -- | -- | -- | -- | -- | -- | <0.02 | -- |
| 4/21/2009 | -- | <0.5 | 0.991 | 3.67 | -- | -- | -- | -- | -- | <0.02 | -- |
| 10/21/2009 | 6.15 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 4/14/2010 | 5.84 | <0.5 | 1.13 | 7.73 | -- | <0.015 | -- | <0.02 | -- | -- | -- |
| 11/3/2010 | 8.15 | <0.5 | 1.31 | 6.68 | -- | <0.015 | -- | <0.01 | -- | -- | -- |
| 4/26/2011 | 6.05 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 5/2/2012 | 6.10 | <0.5 | 1.15 | 4.99 | -- | <0.015 E3 | <0.015 | <0.01 E3 | <0.02 | -- | -- |
| 11/6/2012 | 6.73 | <0.5 | 1.74 | 7.01 | -- | <0.015 | <0.015 | <0.01 | <0.02 | -- | -- |
| 5/14/2013 | 6.19 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 11/4/2013 | 5.64 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

"--" - Parameter not analyzed

E3 - Incorrect preservation, results qualified as "estimated".

FIGURES



LEGEND

| | |
|---|-------------------|
| ◆ | MONITOR WELLS |
| ⊠ | RECOVERY WELLS |
| — | PROPERTY BOUNDARY |

EL DORADO

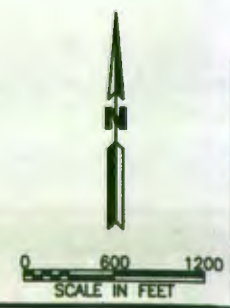
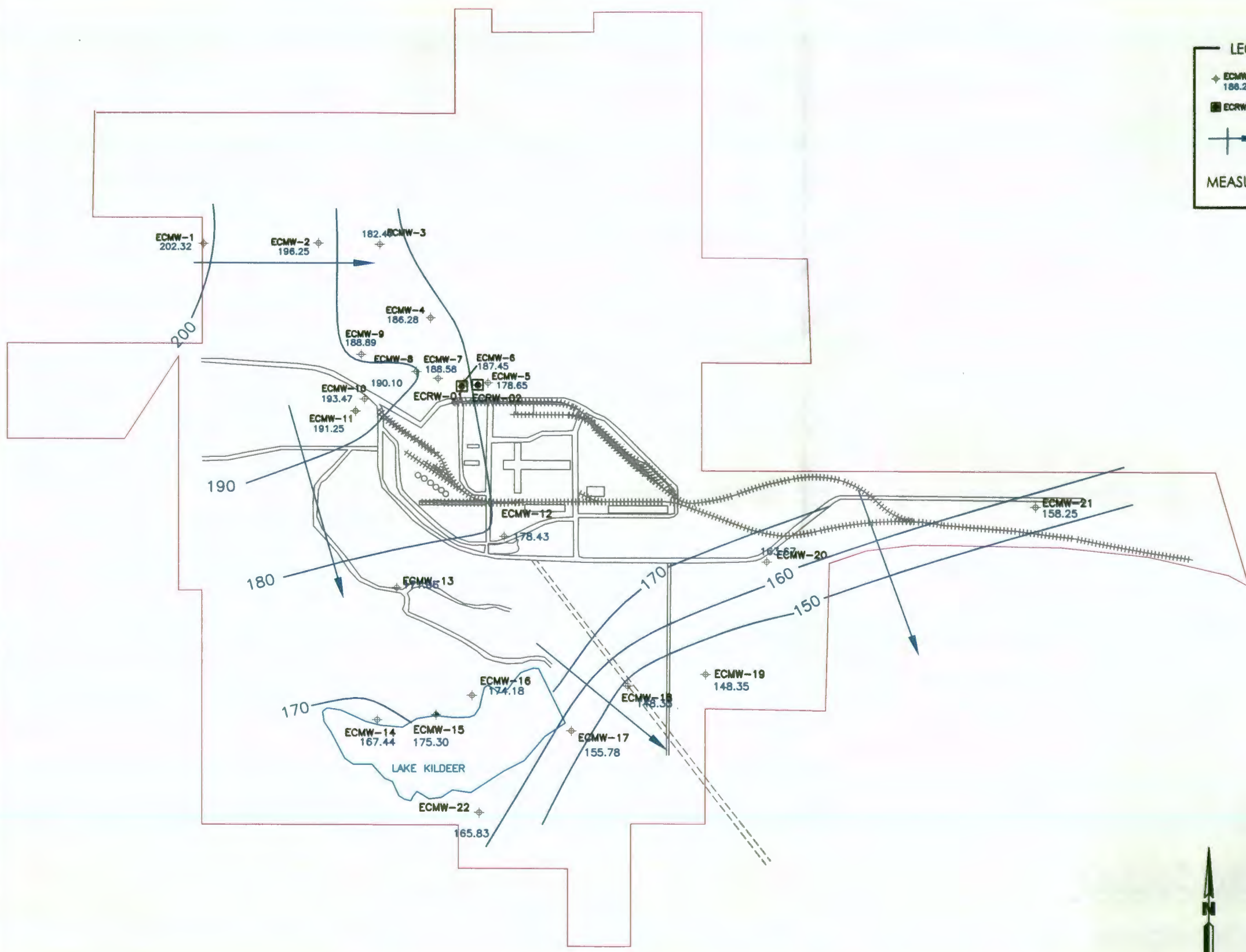
SITE MAP
2013 ANNUAL GROUND WATER REPORT
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

| | | |
|---|---------------------|------------------|
| DATE: 03/17/2014 | APPROVED: <i>SB</i> | DRAWN BY: LMM |
| SCALE: see above | BY: <i>SB</i> | CAD NO. 02EC0100 |
| ENVIRONMENTAL MANAGEMENT SERVICES, INC. | | FIGURE 1 |

LEGEND

- ◆ ECMW-4 186.28 Monitor Well with Water Elevation (feet MSL)
- ECRW-01 Recovery Well
- ➔ Ground Water Flow Direction

MEASUREMENTS TAKEN MAY 14-15, 2013



EL DORADO

MAY 2013 GROUND WATER ELEVATION MAP
 2013 ANNUAL GROUND WATER REPORT
 EL DORADO CHEMICAL COMPANY
 EL DORADO, ARKANSAS

| | | |
|------------------|---------------------|------------------|
| DATE: 03/17/2014 | APPROVED: <i>SR</i> | DRAWN BY: LJM |
| SCALE: as shown | DATE: 3/27/14 | CAD NO. 02EC0100 |

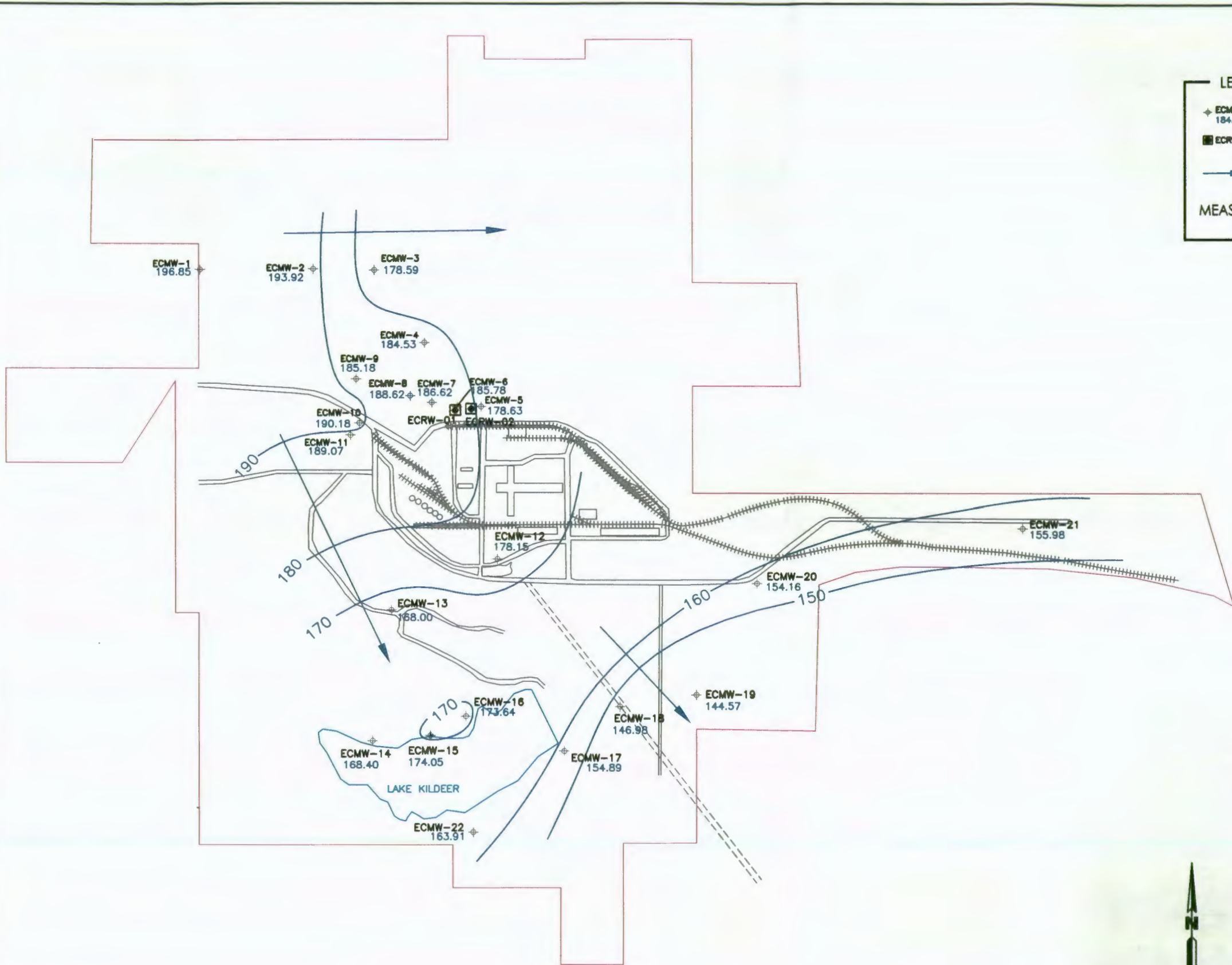
ENVIRONMENTAL
MANAGEMENT SERVICES, INC.

FIGURE
2

LEGEND

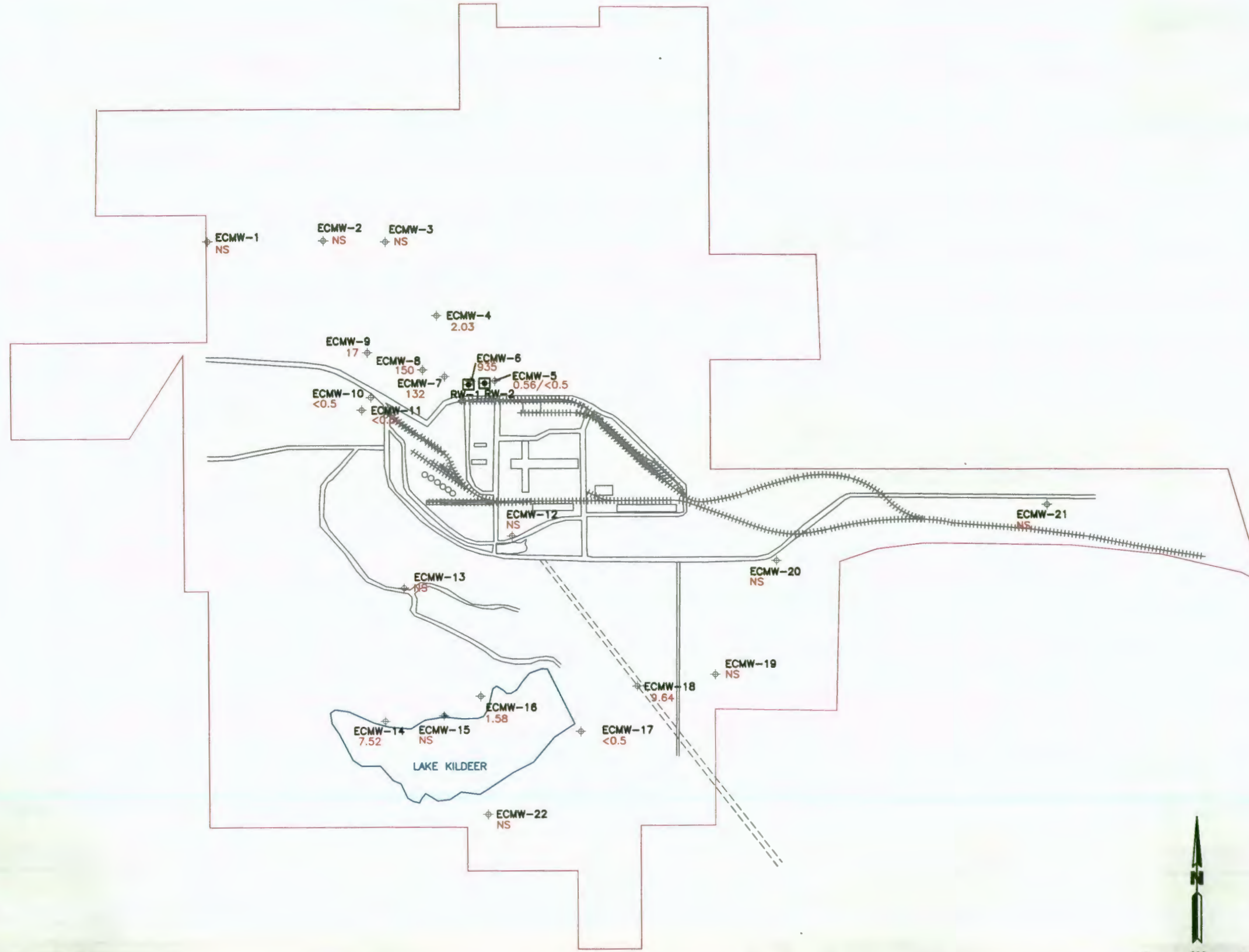
- ◆ ECMW-4 184.53 Monitor Well with Water Elevation (feet MSL)
- ECRW-01 Recovery Well
- Ground Water Flow Direction

MEASUREMENTS TAKEN NOVEMBER 4-5, 2013



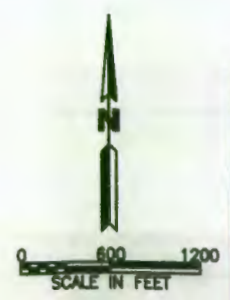
EL DORADO

| | | | |
|--|------------|---------------|----------------------|
| NOVEMBER 2013 GROUND WATER ELEVATION MAP | | | |
| 2013 ANNUAL GROUND WATER REPORT | | | |
| EL DORADO CHEMICAL COMPANY | | | |
| EL DORADO, ARKANSAS | | | |
| DATE: | 03/17/2014 | APPROVED: | DRWN BY: LJM |
| SCALE: | as shown | BY: <i>SR</i> | DATE: <i>3/17/14</i> |
| ENVIRONMENTAL MANAGEMENT SERVICES, INC. | | | FIGURE 3 |



LEGEND

- PROPERTY BOUNDARY
- ◆ ECMW-4 MONITOR WELL WITH AMMONIA CONCENTRATION (mg/L)
- ☒ RECOVERY WELLS
- NS - Not Sampled in Odd Numbered Years

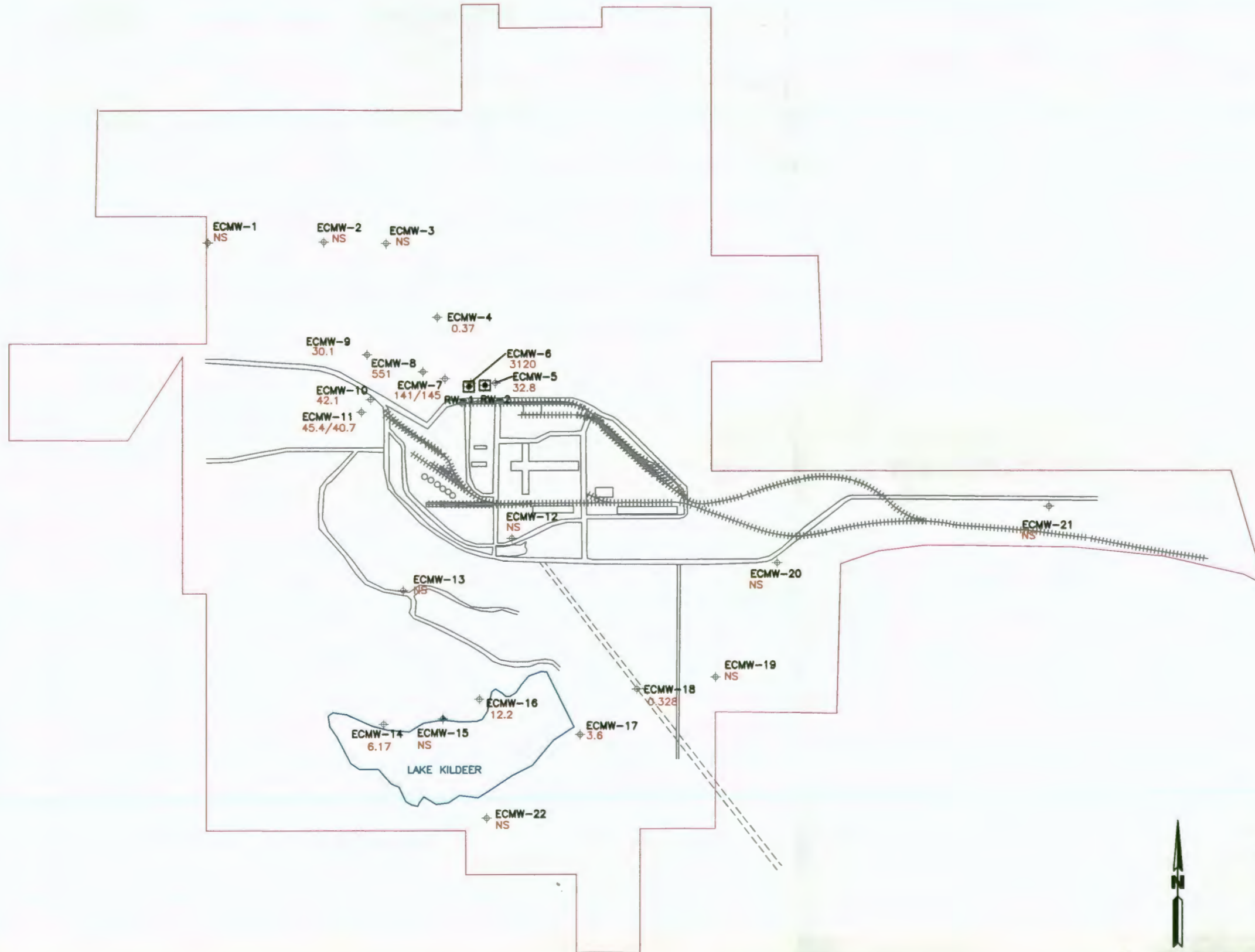


EL DORADO

NOVEMBER 2013 AMMONIA CONCENTRATION MAP
2013 ANNUAL GROUND WATER REPORT
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

| | | | |
|------------------|----------------------|------------------|----------|
| DATE: 03/17/2014 | APPROVED: <i>SR</i> | DRAWN BY: LMM | |
| SCALE: as shown | DATE: <i>3/27/14</i> | CAD NO. 02EC0100 | FIGURE 5 |

ENVIRONMENTAL
MANAGEMENT SERVICES, INC.



LEGEND

- PROPERTY BOUNDARY
- ◆ ECMW-4 MONITOR WELL WITH NITRATE CONCENTRATION (mg/L)
- ⊕ RECOVERY WELLS
- NS - Not Sampled in Odd Numbered Years

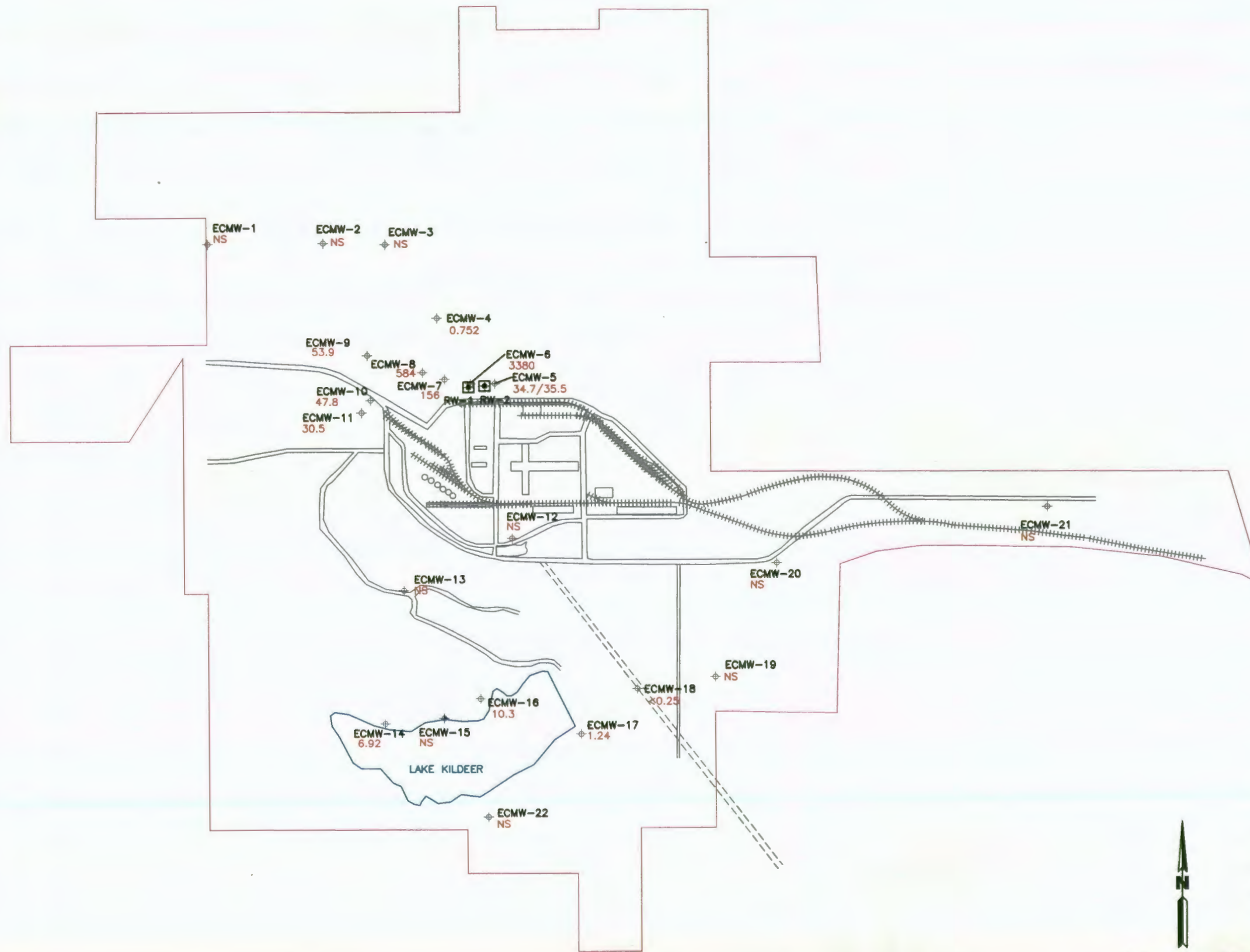


EL DORADO

MAY 2013 NITRATE CONCENTRATION MAP
2013 ANNUAL GROUND WATER REPORT
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

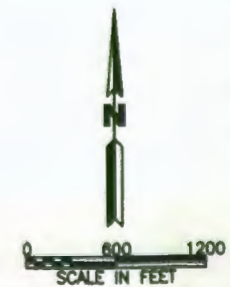
| | | | |
|------------------|------------------------|------------------|----------|
| DATE: 03/17/2014 | APPROVED BY: <i>SR</i> | DRAWN BY: LMB | |
| SCALE: as shown | DATE: 3/27/14 | CAD NO. 02ECO100 | FIGURE 6 |

ENVIRONMENTAL
MANAGEMENT SERVICES, INC.



LEGEND

- PROPERTY BOUNDARY
- ⊕ ECMW-4 MONITOR WELL WITH NITRATE CONCENTRATION (mg/L)
- ⊕ RECOVERY WELLS
- NS - Not Sampled in Odd Numbered Years

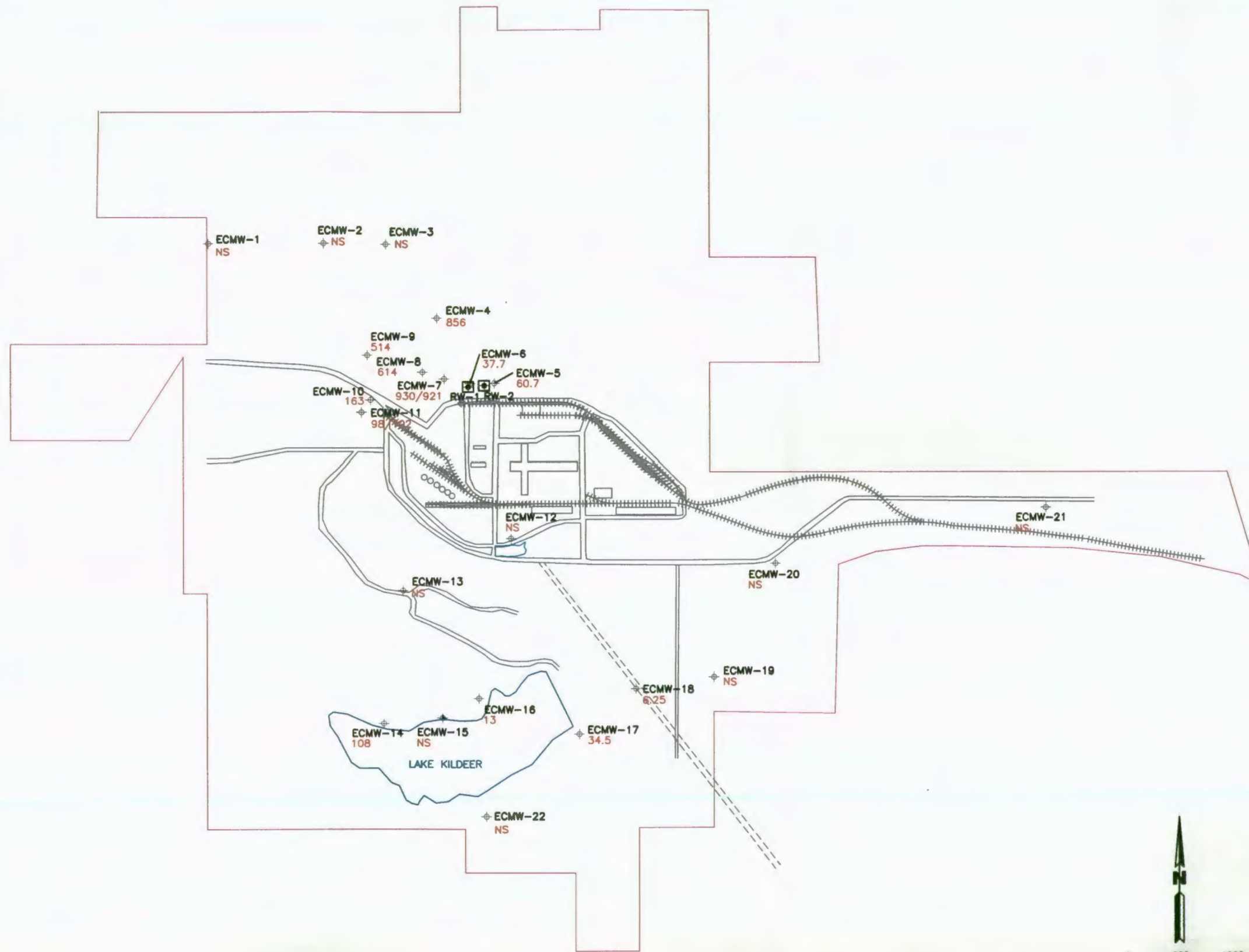


EL DORADO

NOVEMBER 2013 NITRATE CONCENTRATION MAP
2013 ANNUAL GROUND WATER REPORT
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

| | | | |
|------------------|------------------------|------------------|----------|
| DATE: 03/17/2014 | APPROVED BY: <i>SR</i> | DRAWN BY: LMM | |
| SCALE: as shown | DATE: 3/17/14 | CAD NO. 02E00100 | FIGURE 7 |

ENVIRONMENTAL
MANAGEMENT SERVICES, INC.



LEGEND

- PROPERTY BOUNDARY
- ◆ ECMW-4 MONITOR WELL WITH SULFATE CONCENTRATION (mg/L)
856
- ◻ RECOVERY WELLS
- NS - Not Sampled in Odd Numbered Years

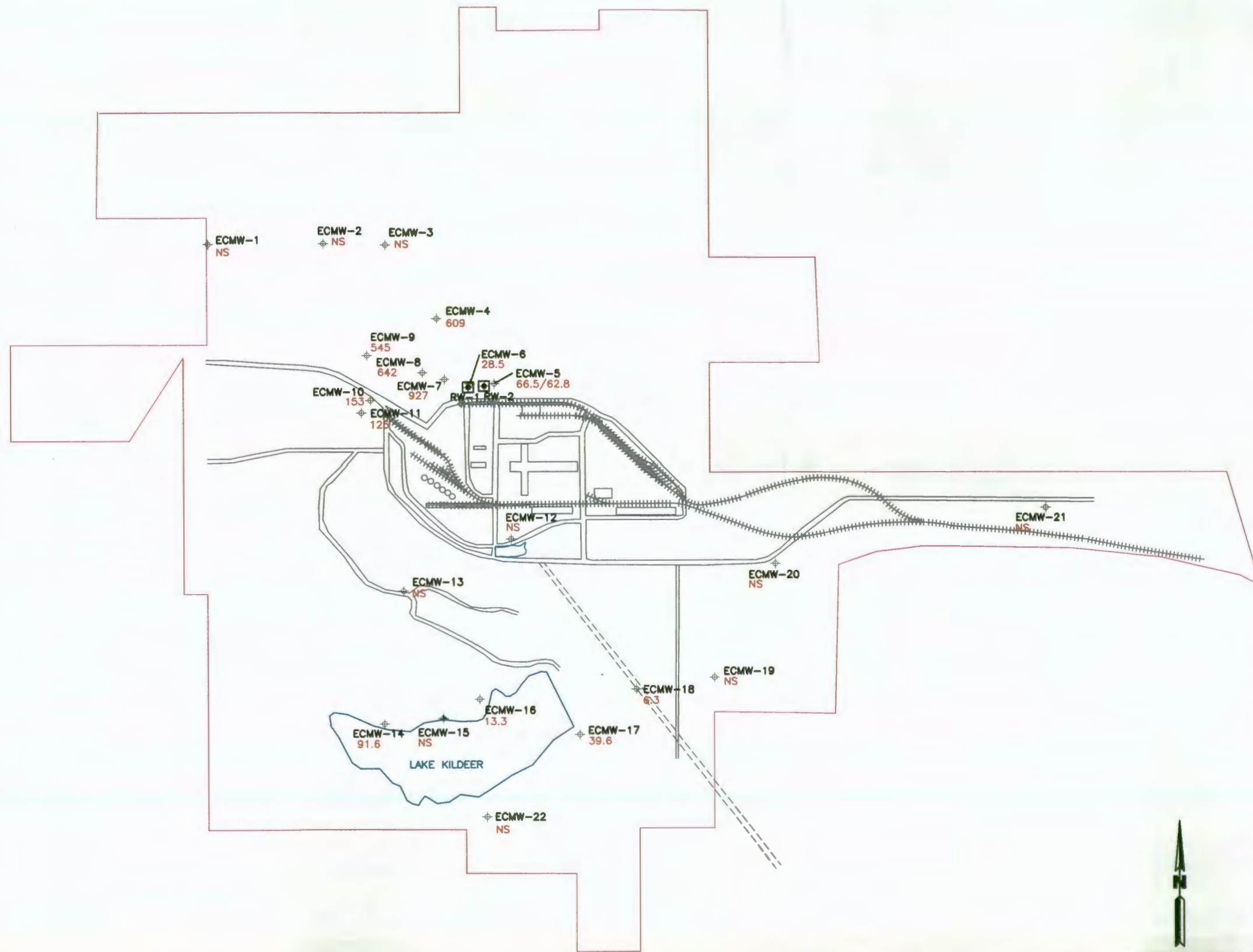


EL DORADO

MAY 2013 SULFATE CONCENTRATION MAP
2013 ANNUAL GROUND WATER REPORT
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

| | | | |
|---------------------|---|---------------------|-------------|
| DATE: 03/17/2014 | APPROVED: BY: <i>SK</i> DATE: 5/27/14 | DRAWN BY: LMM | |
| SCALE: as shown | | CAD NO. 02E00100 | FIGURE 8 |

ENVIRONMENTAL
MANAGEMENT SERVICES, INC.



LEGEND

- PROPERTY BOUNDARY
- ⊕ ECMW-4 MONITOR WELL WITH SULFATE CONCENTRATION (mg/L)
609
- ⊕ RECOVERY WELLS
- NS - Not Sampled in Odd Numbered Years



EL DORADO

NOVEMBER 2013 SULFATE CONCENTRATION MAP
2013 ANNUAL GROUND WATER REPORT
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

| | | |
|------------------|------------------------------|------------------|
| DATE: 03/17/2014 | APPROVED: <i>[Signature]</i> | DRAWN BY: LMM |
| SCALE: as shown | DATE: <i>[Signature]</i> | CAD NO. 02ECO100 |

ENVIRONMENTAL
MANAGEMENT SERVICES, INC.

FIGURE 9

APPENDIX A

SAMPLING FORMS AND LABORATORY ANALYTICAL REPORTS

GROUNDWATER SAMPLING DATA FORM

El Dorado Chemical Company

FIELD LOG

Site El Dorado Facility EDCC Well No. MW-1
 Collector _____

MONITORING WELL INFORMATION

| | | | |
|------------------------------|----------------|--------------------------|------------------|
| Evacuation Date/Time | <u>5-15-13</u> | Method of Evacuation | <u>12V pump</u> |
| Top of casing to water level | <u>1086</u> ft | Gallons per well volume | <u>7.42</u> gal |
| Top of casing to bottom | <u>2238</u> ft | Total gallons evacuated | <u>22.26</u> gal |
| Water level after evacuation | _____ ft | Elevation, Top of casing | _____ ft |
| Sampling Date/Time | _____ | Elevation of well water | _____ ft |
| Top of casing to water level | _____ ft | Method of Sampling | _____ |

SAMPLE DATA

| Temperature [°C] | pH | Conductivity [µS] | Dissolved Oxygen [mg/l] | Turbidity [NTU] |
|------------------|-------------|-------------------|-------------------------|-----------------|
| <u>16.8</u> | <u>5.12</u> | <u>84.0</u> | _____ | <u>8.46</u> |
| <u>16.2</u> | <u>4.95</u> | <u>67.5</u> | _____ | <u>10.25</u> |
| <u>16.1</u> | <u>5.03</u> | <u>66.6</u> | _____ | <u>14.7</u> |

GENERAL INFORMATION

Weather conditions at time of sampling: clear light wind

Sample characteristics: _____

Containers and preservatives: _____

Comments and observations: _____

Recommendations: _____

Certification: Joe Chongear

| Well Casing Volumes [gal/ft] | | | |
|------------------------------|-------------|-------------|---------|
| 1 1/4"=0.077 | 2"=0.16 | 3"=0.37 | 4"=0.65 |
| 1 1/2"=0.10 | 2 1/2"=0.24 | 3 1/2"=0.50 | 6"=1.46 |

FIGURE 2

GROUNDWATER SAMPLING DATA FORM
El Dorado Chemical Company

Site El Dorado Facility EDCC Well No. MW-2
 Collector SC

FIELD LOG

MONITORING WELL INFORMATION

| | | | |
|------------------------------|----------------|--------------------------|------------------|
| Evacuation: Date/Time | <u>5-15-18</u> | Method of Evacuation | <u>12V pump</u> |
| Top of casing to water level | <u>0</u> ft | Gallons per well volume | <u>13.32</u> gal |
| Top of casing to bottom | <u>2050</u> ft | Total gallons evacuated | <u>39.97</u> gal |
| Water level after evacuation | _____ ft | Elevation, Top of casing | _____ ft |
| Sampling: Date/Time | _____ | Elevation of well water | _____ ft |
| Top of casing to water level | _____ ft | Method of Sampling | _____ |

SAMPLE DATA

| Temperature [°C] | pH | Conductivity [µS] | Dissolved Oxygen [mg/l] | Turbidity [NTU] |
|------------------|-------------|-------------------|-------------------------|-----------------|
| <u>17.3</u> | <u>5.52</u> | <u>309</u> | _____ | <u>38.3</u> |
| <u>16.7</u> | <u>5.60</u> | <u>324</u> | _____ | <u>844</u> |
| <u>16.7</u> | <u>5.25</u> | <u>336</u> | _____ | <u>896</u> |

GENERAL INFORMATION

Weather conditions at time of sampling: cloudy

Sample characteristics: _____

Containers and preservatives: _____

Comments and observations: _____

Recommendations: _____

Certification: Joe Thompson

| Well Casing Volumes [gal/ft] | | | |
|------------------------------|-------------|-------------|---------|
| 1 1/4"=0.077 | 2"=0.16 | 3"=0.37 | 4"=0.65 |
| 1 1/2"=0.10 | 2 1/2"=0.24 | 3 1/2"=0.50 | 6"=1.46 |

GROUNDWATER SAMPLING DATA FORM
El Dorado Chemical Company

FIELD LOG

Site _____ Facility EDCC Well No. MW3
 Collector Joe Thompson

MONITORING WELL INFORMATION

| | | | |
|------------------------------|----------------|--------------------------|------------------|
| Evacuation: Date/Time | <u>5-15-10</u> | Method of Evacuation | <u>12 v pump</u> |
| Top of casing to water level | <u>964</u> ft | Gallons per well volume | <u>11.54</u> gal |
| Top of casing to bottom | <u>2740</u> ft | Total gallons evacuated | <u>3463</u> gal |
| Water level after evacuation | _____ ft | Elevation, Top of casing | _____ ft |
| Sampling: Date/Time | _____ | Elevation of well water | _____ ft |
| Top of casing to water level | _____ ft | Method of Sampling | _____ |

SAMPLE DATA

| Temperature[°C] | pH | Conductivity[µS] | Dissolved Oxygen[mg/l] | Turbidity [NTU] |
|-----------------|-------------|------------------|------------------------|-----------------|
| <u>17.7</u> | <u>6.34</u> | <u>216</u> | _____ | <u>6.22</u> |
| <u>17.6</u> | <u>6.83</u> | <u>207</u> | _____ | <u>6.81</u> |
| <u>17.9</u> | <u>6.29</u> | <u>208</u> | _____ | <u>6.25</u> |

GENERAL INFORMATION

Weather conditions at time of sampling: cloudy light wind
 Sample characteristics: _____
 Containers and preservatives: _____
 Comments and observations: _____
 Recommendations: _____

Certification: Joe Thompson

| Well Casing Volumes [gal/ft] | | | |
|------------------------------|-------------|-------------|---------|
| 1 1/4"=0.077 | 2"=0.16 | 3"=0.37 | 4"=0.65 |
| 1 1/2"=0.10 | 2 1/2"=0.24 | 3 1/2"=0.50 | 6"=1.46 |

FIGURE 2

GROUNDWATER SAMPLING DATA FORM
El Dorado Chemical Company

FIELD LOG

Site _____ Facility EDCC Well No. MW-12
 Collected by: Joe Thompson

MONITORING WELL INFORMATION

| | | | |
|------------------------------|----------------|--------------------------|------------------|
| Evacuation: Date/Time | <u>5-15-13</u> | Method of Evacuation | <u>12 v pump</u> |
| Top of casing to water level | <u>654</u> ft | Gallons per well volume | <u>8.81</u> gal |
| Top of casing to bottom | <u>2010</u> ft | Total gallons evacuated | <u>26.44</u> gal |
| Water level after evacuation | _____ ft | Elevation, Top of casing | _____ ft |
| Sampling: Date/Time | _____ | Elevation of well water | _____ ft |
| Top of casing to water level | _____ ft | Method of Sampling | _____ |

SAMPLE DATA

| Temperature [°C] | pH | Conductivity [µS] | Dissolved Oxygen [mg/l] | Turbidity [NTU] |
|------------------|-------------|-------------------|-------------------------|-----------------|
| <u>19.6</u> | <u>6.03</u> | <u>659</u> | _____ | <u>58.9</u> |
| <u>19.4</u> | <u>6.11</u> | <u>690</u> | _____ | <u>9.47</u> |
| <u>19.3</u> | <u>6.02</u> | <u>686</u> | _____ | <u>22.2</u> |

GENERAL INFORMATION

Weather conditions at time of sampling: cloudy light windy
 Sample characteristics: _____
 Containers and preservatives: _____
 Comments and observations: _____
 Recommendations: _____

Certification: Joe Thompson

| Well Casing Volumes [gal/ft] | | | |
|------------------------------|-------------|-------------|---------|
| 1 1/4"=0.077 | 2"=0.16 | 3"=0.37 | 4"=0.65 |
| 1 1/2"=0.10 | 2 1/2"=0.24 | 3 1/2"=0.50 | 6"=1.46 |

FIGURE 2

GROUNDWATER SAMPLING DATA FORM

El Dorado Chemical Company

FIELD LOG

Site El Dorado Facility ECCC Well No. 13
 Collector Joe Thompson

MONITORING WELL INFORMATION

| | | | |
|------------------------------|----------------|--------------------------|------------------|
| Evacuation: Date/Time | <u>5-13-13</u> | Method of Evacuation | <u>12 v pump</u> |
| Top of casing to water level | <u>620</u> ft | Gallons per well volume | <u>894</u> gal |
| Top of casing to bottom | <u>1996</u> ft | Total gallons evacuated | <u>26.83</u> gal |
| Water level after evacuation | _____ ft | Elevation, Top of casing | _____ ft |
| Sampling: Date/Time | _____ | Elevation of well water | _____ ft |
| Top of casing to water level | _____ ft | Method of Sampling | _____ |

SAMPLE DATA

| Temperature [°C] | pH | Conductivity [µS] | Dissolved Oxygen [mg/l] | Turbidity [NTU] |
|------------------|-------------|-------------------|-------------------------|-----------------|
| <u>18.1</u> | <u>4.81</u> | <u>1452</u> | _____ | <u>11.4</u> |
| <u>18.6</u> | <u>5.19</u> | <u>1669</u> | _____ | <u>9.89</u> |
| _____ | _____ | <u>dry</u> | _____ | _____ |

GENERAL INFORMATION

Weather conditions at time of sampling: clear windy
 Sample characteristics: _____
 Containers and preservatives: _____
 Comments and observations: _____
 Recommendations: _____

Certification: Joe Thompson

| Well Casing Volumes [gal/ft] | | | |
|------------------------------|-------------|-------------|---------|
| 1 1/4"=0.077 | 2"=0.16 | 3"=0.37 | 4"=0.65 |
| 1 1/2"=0.10 | 2 1/2"=0.24 | 3 1/2"=0.50 | 6"=1.46 |

FIGURE 2

GROUNDWATER SAMPLING DATA FORM

El Dorado Chemical Company

FIELD LOG

Site El Dorado Facility EDCC Well No. 15
 Collected by Joe Thompson

MONITORING WELL INFORMATION

| | | | |
|------------------------------|----------------|--------------------------|------------------|
| Evacuation Date/Time | <u>5-15-13</u> | Method of Evacuation | <u>12V pump</u> |
| Top of casing to water level | <u>554</u> ft | Gallons per well volume | <u>7.68</u> gal |
| Top of casing to bottom | <u>1736</u> ft | Total gallons evacuated | <u>23.04</u> gal |
| Water level after evacuation | _____ ft | Elevation, Top of casing | _____ ft |
| Sampling Date/Time | _____ | Elevation of well water | _____ ft |
| Top of casing to water level | _____ ft | Method of Sampling | _____ |

SAMPLE DATA

| Temperature [°C] | pH | Conductivity [µS] | Dissolved Oxygen [mg/l] | Turbidity [NTU] |
|------------------|-------------|-------------------|-------------------------|-----------------|
| <u>19.2</u> | <u>6.60</u> | <u>113.7</u> | _____ | <u>4.37</u> |
| <u>19.4</u> | <u>6.21</u> | <u>85.4</u> | _____ | <u>11.0</u> |
| _____ | _____ | <u>dry</u> | _____ | _____ |

GENERAL INFORMATION

Weather conditions at time of sampling: clear windy

Sample characteristics: _____

Containers and preservatives: _____

Comments and observations: _____

Recommendations: _____

Certification: Joe Thompson

| Well Casing Volumes [gal/ft] | | | |
|------------------------------|-------------|-------------|---------|
| 1 1/4"=0.077 | 2"=0.16 | 3"=0.37 | 4"=0.65 |
| 1 1/2"=0.10 | 2 1/2"=0.24 | 3 1/2"=0.50 | 6"=1.46 |

FIGURE 2

GROUNDWATER SAMPLING DATA FORM

El Dorado Chemical Company

FIELD LOG

Site El Dorado Facility EDCC Well No. MW 19
 Collected by Joe Thompson

MONITORING WELL INFORMATION

| | | | |
|------------------------------|----------------|--------------------------|------------------|
| Evacuation Date/Time | <u>5-19-13</u> | Method of Evacuation | <u>12" pump</u> |
| Top of casing to water level | <u>2.06</u> ft | Gallons per well volume | <u>9.12</u> gal |
| Top of casing to bottom | <u>5.10</u> ft | Total gallons evacuated | <u>22.37</u> gal |
| Water level after evacuation | _____ ft | Elevation, Top of casing | _____ ft |
| Sampling Date/Time | _____ ft | Elevation of well water | _____ ft |
| Top of casing to water level | _____ ft | Method of Sampling | _____ |

SAMPLE DATA

| Temperature [°C] | pH | Conductivity [µS] | Dissolved Oxygen [mg/l] | Turbidity [NTU] |
|------------------|-------------|-------------------|-------------------------|-----------------|
| <u>17.2</u> | <u>6.80</u> | <u>111.6</u> | _____ | <u>17.8</u> |
| <u>17.2</u> | <u>6.86</u> | <u>159.2</u> | _____ | <u>49.9</u> |
| <u>17.2</u> | <u>6.13</u> | <u>105.6</u> | _____ | <u>15.7</u> |

GENERAL INFORMATION

Weather conditions at time of sampling: _____
 Sample characteristics: _____

 Containers and preservatives: _____

 Comments and observations: _____

 Recommendations: _____

Certification: Joe Thompson

| Well Casing Volumes [gal/ft] | | | |
|------------------------------|-------------|-------------|---------|
| 1 1/4"=0.077 | 2"=0.16 | 3"=0.37 | 4"=0.65 |
| 1 1/2"=0.10 | 2 1/2"=0.24 | 3 1/2"=0.50 | 6"=1.46 |

GROUNDWATER SAMPLING DATA FORM

El Dorado Chemical Company

FIELD LOG

Site: EDC Facility: _____ Well No. 10 W 20
 Collector: Joe Thompson

MONITORING WELL INFORMATION

| | |
|---|---|
| Evacuation: Date/Time: <u>5/1</u> | Method of Evacuation: _____ |
| Top of casing to water level: <u>29.40</u> ft | Gallons per well volume: <u>3.79</u> gal |
| Top of casing to bottom: <u>53.10</u> ft | Total gallons evacuated: <u>17.32</u> gal |
| Water level after evacuation: _____ ft | Elevation, Top of casing: _____ ft |
| Sampling: Date/Time: _____ | Elevation of well water: _____ ft |
| Top of casing to water level: _____ ft | Method of Sampling: _____ |

SAMPLE DATA

| Temperature [°C] | pH | Conductivity [µS] | Dissolved Oxygen [mg/l] | Turbidity [NTU] |
|------------------|-------------|-------------------|-------------------------|-----------------|
| <u>18.7</u> | <u>5.44</u> | <u>122.9</u> | _____ | <u>166</u> |
| <u>19.4</u> | <u>5.38</u> | <u>104.3</u> | _____ | <u>132</u> |
| <u>18.9</u> | <u>5.29</u> | <u>106.0</u> | _____ | <u>120</u> |

GENERAL INFORMATION

Weather conditions at time of sampling: _____
 Sample characteristics: _____
 Containers and preservatives: _____
 Comments and observations: _____
 Recommendations: _____

Certification: Joe Thompson

| Well Casing Volumes [gal/ft] | | | |
|------------------------------|-------------|-------------|---------|
| 1 1/4"=0.077 | 2"=0.16 | 3"=0.37 | 4"=0.65 |
| 1 1/2"=0.10 | 2 1/2"=0.24 | 3 1/2"=0.50 | 6"=1.46 |

FIGURE 2

GROUNDWATER SAMPLING DATA FORM

El Dorado Chemical Company

FIELD LOG

Site: _____ Facility: EDCC Well No. MW 21
 Collected by: Joe Thompson

MONITORING WELL INFORMATION

| | | | |
|------------------------------|-----------------|--------------------------|------------------|
| Evacuation: Date/Time | <u>5/5/93</u> | Method of Evacuation | <u>elec pump</u> |
| Top of casing to water level | <u>18.04</u> ft | Gallons per well volume | _____ gal |
| Top of casing to bottom | <u>30.10</u> ft | Total gallons evacuated | _____ gal |
| Water level after evacuation | _____ ft | Elevation: Top of casing | _____ ft |
| Sampling: Date/Time | _____ | Elevation of well water | _____ ft |
| Top of casing to water level | _____ ft | Method of Sampling | _____ |

SAMPLE DATA

| Temperature [°C] | pH | Conductivity [µS] | Dissolved Oxygen [mg/l] | Turbidity [NTU] |
|------------------|-------------|-------------------|-------------------------|-----------------|
| <u>19.7</u> | <u>6.15</u> | <u>63.4</u> | _____ | <u>12.4</u> |
| <u>19.6</u> | <u>5.96</u> | <u>56.4</u> | _____ | <u>8.15</u> |
| <u>19.2</u> | <u>6.09</u> | <u>56.4</u> | _____ | <u>7.49</u> |

GENERAL INFORMATION

Weather conditions at time of sampling: cloudy

Sample characteristics: _____

Containers and preservatives: _____

Comments and observations: _____

Recommendations: _____

Certification: Joe Thompson

| Well Casing Volumes [gal/ft] | | | |
|------------------------------|-------------|-------------|---------|
| 1 1/4"=0.077 | 2"=0.16 | 3"=0.37 | 4"=0.65 |
| 1 1/2"=0.10 | 2 1/2"=0.24 | 3 1/2"=0.50 | 6"=1.46 |

GROUNDWATER SAMPLING DATA FORM

El Dorado Chemical Company

FIELD LOG

Site: El Dorado Facility: EDCC Well No. MW 22
 Collector: Joe Thompson

MONITORING WELL INFORMATION

| | | | |
|------------------------------|---------------------|--------------------------|------------------------|
| Evacuation Date/Time | <u>4/14/13</u> | Method of Evacuation | <u>12 v pump</u> |
| Top of casing to water level | <u>7.72</u> ft | Gallons per well volume | <u>11.44</u> gal |
| Top of casing to bottom | <u>79.24</u> ft | Total gallons evacuated | <u>34.32</u> gal |
| Water level after evacuation | _____ ft | Elevation, Top of casing | _____ ft |
| Sampling Date/Time | <u>5/13/13 0859</u> | Elevation of well water | _____ ft |
| Top of casing to water level | _____ ft | Method of Sampling | <u>Dea PVC Driller</u> |

SAMPLE DATA

| Temperature [°C] | pH | Conductivity [µS] | Dissolved Oxygen [mg/l] | Turbidity [NTU] |
|------------------|-------------|-------------------|-------------------------|-----------------|
| <u>19.8</u> | <u>6.06</u> | <u>1745</u> | _____ | <u>16.1</u> |
| <u>18.4</u> | <u>6.17</u> | <u>172.5</u> | _____ | <u>2.09</u> |
| <u>18.6</u> | <u>6.19</u> | <u>179.2</u> | _____ | <u>4.07</u> |

GENERAL INFORMATION

Weather conditions at time of sampling: clear light wind

Sample characteristics: _____

Containers and preservatives: _____

Comments and observations: _____

Recommendations: _____

Certification: Joe Thompson

| Well Casing Volumes [gal/ft] | | | |
|------------------------------|-------------|-------------|---------|
| 1 1/4"=0.077 | 2"=0.16 | 3"=0.37 | 4"=0.65 |
| 1 1/2"=0.10 | 2 1/2"=0.24 | 3 1/2"=0.50 | 6"=1.46 |

FIGURE 2

GROUNDWATER SAMPLING DATA FORM

El Dorado Chemical Company

FIELD LOG

Site: El Dorado Facility: EDCC Well No. MW4
 Collected by: Joe Thompson

MONITORING WELL INFORMATION

| | | | |
|------------------------------|---------------------|--------------------------|-----------------------|
| Evacuation: Date/Time | <u>5-14-93</u> | Method of Evacuation | <u>12V Pump</u> |
| Top of casing to water level | <u>8.56</u> ft | Gallons per well volume | <u>8.97</u> gal |
| Top of casing to bottom | <u>22.40</u> ft | Total gallons evacuated | <u>26.98</u> gal |
| Water level after evacuation | _____ ft | Elevation, Top of casing | _____ ft |
| Sampling: Date/Time | <u>5-15-93 0944</u> | Elevation of well water | _____ ft |
| Top of casing to water level | _____ ft | Method of Sampling | <u>Dee PVC Boiler</u> |

SAMPLE DATA

| Temperature [°C] | pH | Conductivity [µS] | Dissolved Oxygen [mg/l] | Turbidity [NTU] |
|------------------|-------------|-------------------|-------------------------|-----------------|
| <u>21.3</u> | <u>7.10</u> | <u>6.71</u> | _____ | <u>12.0</u> |
| <u>18.6</u> | <u>4.03</u> | <u>7.37</u> | _____ | <u>11.8</u> |
| _____ | _____ | <u>dry</u> | _____ | _____ |

GENERAL INFORMATION

Weather conditions at time of sampling: clear windy

Sample characteristics: _____

Containers and preservatives: _____

Comments and observations: _____

Recommendations: _____

Certification: Joe Thompson

| Well Casing Volumes [gal/ft] | | | |
|------------------------------|-------------|-------------|---------|
| 1 1/4"=0.077 | 2"=0.16 | 3"=0.37 | 4"=0.65 |
| 1 1/2"=0.10 | 2 1/2"=0.24 | 3 1/2"=0.50 | 6"=1.46 |

FIGURE 2

GROUNDWATER SAMPLING DATA FORM

El Dorado Chemical Company

FIELD LOG

Site: El Dorado Facility: EDCC Well No. MWS
 Colle. Joe Thompson

MONITORING WELL INFORMATION

| | | | |
|------------------------------|----------------------|--------------------------|-----------------------|
| Evacuation: Date/Time | <u>5/14/13</u> | Method of Evacuation | <u>12V pump</u> |
| Top of casing to water level | <u>404</u> ft | Gallons per well volume | <u>903</u> gal |
| Top of casing to bottom | <u>1294</u> ft | Total gallons evacuated | <u>27.10</u> gal |
| Water level after evacuation | _____ ft | Elevation, Top of casing | _____ ft |
| Sampling: Date/Time | <u>5/15/13 09:22</u> | Elevation of well water | _____ ft |
| Top of casing to water level | _____ ft | Method of Sampling | <u>Det PVC Bailor</u> |

SAMPLE DATA

| Temperature [°C] | pH | Conductivity [µS] | Dissolved Oxygen [mg/l] | Turbidity [NTU] |
|------------------|-------------|-------------------|-------------------------|-----------------|
| <u>19.2</u> | <u>5.30</u> | <u>505</u> | _____ | <u>2.32</u> |
| <u>18.7</u> | <u>5.04</u> | <u>513</u> | _____ | <u>8.30</u> |
| <u>18.8</u> | <u>5.07</u> | <u>519</u> | _____ | <u>1.54</u> |

GENERAL INFORMATION

Weather conditions at time of sampling: clear windy

Sample characteristics: _____

Containers and preservatives: _____

Comments and observations: _____

Recommendations: _____

Certification: Joe Thompson

| Well Casing Volumes [gal/ft] | | | |
|------------------------------|-------------|-------------|---------|
| 1 1/4"=0.077 | 2"=0.16 | 3"=0.37 | 4"=0.65 |
| 1 1/2"=0.10 | 2 1/2"=0.24 | 3 1/2"=0.50 | 6"=1.46 |

GROUNDWATER SAMPLING DATA FORM

El Dorado Chemical Company

FIELD LOG

Site El Dorado Facility ECCC Well No. MW6
 Collected by Joe Thompson

MONITORING WELL INFORMATION

| | |
|--|---|
| Evacuation: Date/Time: <u>5/14/13</u> | Method of Evacuation: <u>12V pump</u> |
| Top of casing to water level: <u>4.42</u> ft | Gallons per well volume: <u>11.49</u> gal |
| Top of casing to bottom: <u>82.12</u> ft | Total gallons evacuated: <u>34.47</u> gal |
| Water level after evacuation: _____ ft | Elevation, Top of casing: _____ ft |
| Sampling: Date/Time: <u>5/15/13 0930</u> | Elevation of well water: _____ ft |
| Top of casing to water level: _____ ft | Method of Sampling: <u>Ded PVC Port</u> |

SAMPLE DATA

| Temperature [°C] | pH | Conductivity [µS] | Dissolved Oxygen [mg/l] | Turbidity [NTU] |
|------------------|-------------|-------------------|-------------------------|-----------------|
| <u>20.1</u> | <u>7.20</u> | <u>0.1</u> | | <u>5.39</u> |
| <u>19.1</u> | <u>7.14</u> | <u>0.1</u> | | <u>3.85</u> |
| <u>21.1</u> | <u>7.15</u> | <u>0.1</u> | | <u>2.49</u> |

GENERAL INFORMATION

Weather conditions at time of sampling: clear windy
 Sample characteristics: _____

Containers and preservatives: _____

Comments and observations: _____

Recommendations: _____

Certification: Joe Thompson

| Well Casing Volumes [gal/ft] | | | |
|------------------------------|-------------|-------------|---------|
| 1 1/4"=0.077 | 2"=0.16 | 3"=0.37 | 4"=0.65 |
| 1 1/2"=0.10 | 2 1/2"=0.24 | 3 1/2"=0.50 | 6"=1.46 |

FIGURE 2

GROUNDWATER SAMPLING DATA FORM
El Dorado Chemical Company

FIELD LOG

Site El Dorado Facility EDCC Well No. MW 7
 Collector Joe Thompson

MONITORING WELL INFORMATION

| | | | |
|------------------------------|---------------------|--------------------------|------------------------|
| Evacuation Date/Time | <u>5-14-13</u> | Method of Evacuation | <u>12 v. 06 19</u> |
| Top of casing to water level | <u>7.30</u> ft | Gallons per well volume | <u>11.57</u> gal |
| Top of casing to bottom | <u>2510</u> ft | Total gallons evacuated | <u>39.71</u> gal |
| Water level after evacuation | _____ ft | Elevation, Top of casing | _____ ft |
| Sampling Date/Time | <u>5/15/13 0956</u> | Elevation of well water | _____ ft |
| Top of casing to water level | _____ ft | Method of Sampling | <u>Dist PVC Bailer</u> |

SAMPLE DATA

| Temperature[°C] | pH | Conductivity[μS] | Dissolved Oxygen[mg/l] | Turbidity[NTU] |
|-----------------|-------------|------------------|------------------------|----------------|
| <u>20.4</u> | <u>5.09</u> | <u>or</u> | | <u>5.71</u> |
| <u>19.4</u> | <u>5.10</u> | <u>or</u> | | <u>1.71</u> |
| <u>19.7</u> | <u>5.09</u> | <u>or</u> | | <u>2.01</u> |

GENERAL INFORMATION

Weather conditions at time of sampling: clear windy 80°
 Sample characteristics: _____
 Containers and preservatives: _____
 Comments and observations: _____
 Recommendations: Dup 16 MW 23 10:10

Certification: Joe Thompson

| Well Casing Volumes [gal/ft] | | | |
|------------------------------|-------------|-------------|---------|
| 1 1/4"=0.077 | 2"=0.16 | 3"=0.37 | 4"=0.65 |
| 1 1/2"=0.10 | 2 1/2"=0.24 | 3 1/2"=0.50 | 6"=1.46 |

FIGURE 2

GROUNDWATER SAMPLING DATA FORM

El Dorado Chemical Company

FIELD LOG

Site El Dorado Facility EDCC Well No. MW8
 Collector Joe Thompson

MONITORING WELL INFORMATION

| | | | |
|------------------------------|---------------------|--------------------------|------------------------|
| Evacuation: Date/Time | <u>5/4/13</u> | Method of Evacuation | <u>12 V pump</u> |
| Top of casing to water level | <u>724</u> ft | Gallons per well volume | <u>1478</u> gal |
| Top of casing to bottom | <u>2998</u> ft | Total gallons evacuated | <u>4434</u> gal |
| Water level after evacuation | _____ ft | Elevation, Top of casing | _____ ft |
| Sampling: Date/Time | <u>5/5/13 10:22</u> | Elevation of well water | _____ ft |
| Top of casing to water level | _____ ft | Method of Sampling | <u>Dead PVC Bacter</u> |

SAMPLE DATA

| Temperature [°C] | pH | Conductivity [µS] | Dissolved Oxygen [mg/l] | Turbidity [NTU] |
|------------------|-------------|-------------------|-------------------------|-----------------|
| <u>18.8</u> | <u>3.99</u> | <u>0V</u> | _____ | <u>3.12</u> |
| <u>19.3</u> | <u>3.93</u> | <u>0V</u> | _____ | <u>2.93</u> |
| <u>19.6</u> | <u>3.97</u> | <u>0V</u> | _____ | <u>2.19</u> |

GENERAL INFORMATION

Weather conditions at time of sampling: clear windy

Sample characteristics: _____

Containers and preservatives: _____

Comments and observations: _____

Recommendations: _____

Certification: Joe Thompson

| Well Casing Volumes [gal/ft] | | | |
|------------------------------|-------------|-------------|---------|
| 1 1/4"=0.077 | 2"=0.16 | 3"=0.37 | 4"=0.65 |
| 1 1/2"=0.10 | 2 1/2"=0.24 | 3 1/2"=0.50 | 6"=1.46 |

FIGURE 2

GROUNDWATER SAMPLING DATA FORM

El Dorado Chemical Company

FIELD LOG

Site: El Dorado Facility: EDCC Well No. ② MW 9
 Collector: Joe Thompson

MONITORING WELL INFORMATION

| | | | |
|------------------------------|-------------------|--------------------------|-----------------------|
| Evacuation: Date/Time | <u>5/14/13</u> | Method of Evacuation | <u>12V pump</u> |
| Top of casing to water level | <u>9.50</u> ft | Gallons per well volume | <u>1352</u> gal |
| Top of casing to bottom | <u>30.30</u> ft | Total gallons evacuated | <u>40.56</u> gal |
| Water level after evacuation | _____ ft | Elevation, Top of casing | _____ ft |
| Sampling: Date/Time | <u>5/13/10 36</u> | Elevation of well water | _____ ft |
| Top of casing to water level | _____ ft | Method of Sampling | <u>Deh PVC Boiler</u> |

SAMPLE DATA

| Temperature [°C] | pH | Conductivity [µS] | Dissolved Oxygen [mg/l] | Turbidity [NTU] |
|------------------|-------------|-------------------|-------------------------|-----------------|
| <u>19.8</u> | <u>5.61</u> | <u>2.64</u> | _____ | <u>2.30</u> |
| <u>20.2</u> | <u>5.70</u> | <u>2.35</u> | _____ | <u>3.13</u> |
| <u>19.8</u> | <u>5.68</u> | <u>2.38</u> | _____ | <u>3.33</u> |

GENERAL INFORMATION

Weather conditions at time of sampling: clear windy

Sample characteristics: _____

Containers and preservatives: _____

Comments and observations: _____

Recommendations: _____

Certification: Joe Thompson

| Well Casing Volumes [gal/ft] | | | |
|------------------------------|-------------|-------------|---------|
| 1 1/4"=0.077 | 2"=0.16 | 3"=0.37 | 4"=0.65 |
| 1 1/2"=0.10 | 2 1/2"=0.24 | 3 1/2"=0.50 | 6"=1.46 |

GROUNDWATER SAMPLING DATA FORM
El Dorado Chemical Company

FIELD LOG

Site El Dorado Facility EDCC Well No. MW 10
 Collected by Joe Thompson

MONITORING WELL INFORMATION

| | | | |
|------------------------------|----------------------|--------------------------|-----------------------|
| Evacuation: Date/Time: | <u>5-14-18</u> | Method of Evacuation | <u>12V pump</u> |
| Top of casing to water level | <u>1220</u> ft | Gallons per well volume | <u>690</u> gal |
| Top of casing to bottom | <u>2290</u> ft | Total gallons evacuated | <u>2070</u> gal |
| Water level after evacuation | _____ ft | Elevation, Top of casing | _____ ft |
| Sampling: Date/Time: | <u>5-15-18 10:45</u> | Elevation of well water | _____ ft |
| Top of casing to water level | _____ ft | Method of Sampling | <u>Doc PVC Boiler</u> |

SAMPLE DATA

| Temperature[°C] | pH | Conductivity[µS] | Dissolved Oxygen[mg/l] | Turbidity [NTU] |
|-----------------|-------------|------------------|------------------------|-----------------|
| <u>20.0</u> | <u>4.67</u> | <u>755</u> | _____ | <u>9.69</u> |
| <u>19.9</u> | <u>4.42</u> | <u>822</u> | _____ | <u>6.59</u> |
| <u>19.2</u> | <u>4.44</u> | <u>911</u> | _____ | <u>2.00</u> |

GENERAL INFORMATION

Weather conditions at time of sampling: clear windy
 Sample characteristics: _____
 Containers and preservatives: _____
 Comments and observations: _____
 Recommendations: _____

Certification: Joe Thompson

| Well Casing Volumes [gal/ft] | | | |
|------------------------------|-------------|-------------|---------|
| 1 1/4"=0.077 | 2"=0.16 | 3"=0.37 | 4"=0.65 |
| 1 1/2"=0.10 | 2 1/2"=0.24 | 3 1/2"=0.50 | 6"=1.46 |

GROUNDWATER SAMPLING DATA FORM
El Dorado Chemical Company

FIELD LOG

Site: El Dorado Facility: EDCC Well No. MW 11
 Collector: Joe Thompson

MONITORING WELL INFORMATION

| | | | |
|-------------------------------|----------------------|---------------------------|-----------------------|
| Evacuation: Date/Time: | <u>5/14/13</u> | Method of Evacuation: | <u>12 V pump</u> |
| Top of casing to water level: | <u>1040</u> ft | Gallons per well volume: | <u>6.31</u> gal |
| Top of casing to bottom: | <u>2012</u> ft | Total gallons evacuated: | <u>18.95</u> gal |
| Water level after evacuation: | _____ ft | Elevation, Top of casing: | _____ ft |
| Sampling: Date/Time: | <u>5/15/13 11:02</u> | Elevation of well water: | _____ ft |
| Top of casing to water level: | _____ ft | Method of Sampling: | <u>Ded PVC Bottle</u> |

SAMPLE DATA

| Temperature [°C] | pH | Conductivity [µS] | Dissolved Oxygen [mg/l] | Turbidity [NTU] |
|------------------|-------------|-------------------|-------------------------|-----------------|
| <u>18.4</u> | <u>4.45</u> | <u>703</u> | | <u>10.30</u> |
| <u>17.8</u> | <u>4.51</u> | <u>759</u> | | <u>19.3</u> |
| <u>17.9</u> | <u>4.58</u> | <u>894</u> | | <u>336</u> |

GENERAL INFORMATION

Weather conditions at time of sampling: clear windy
 Sample characteristics: _____
 Containers and preservatives: _____
 Comments and observations: _____
 Recommendations: Dup on MW 11 Dup is MW 24 11:15

Certification: _____

Joe Thompson

| Well Casing Volumes [gal/ft] | | | |
|------------------------------|-------------|-------------|---------|
| 1 1/4"=0.077 | 2"=0.16 | 3"=0.37 | 4"=0.65 |
| 1 1/2"=0.10 | 2 1/2"=0.24 | 3 1/2"=0.50 | 6"=1.46 |

GROUNDWATER SAMPLING DATA FORM
El Dorado Chemical Company

FIELD LOG

Site: El Dorado Facility: ERCC Well No.: MW 14
 Colle: Joe Thompson

MONITORING WELL INFORMATION

| | | | |
|------------------------------|-----------------------|--------------------------|---------------------|
| Evacuation: Date/Time | <u>9/14/13</u> | Method of Evacuation | <u>12 V Pump</u> |
| Top of casing to water level | <u>11.04</u> ft | Gallons per well volume | <u>4.84</u> gal |
| Top of casing to bottom | <u>18.50</u> ft | Total gallons evacuated | <u>14.54</u> gal |
| Water level after evacuation | _____ ft | Elevation, Top of casing | _____ ft |
| Sampling: Date/Time | <u>05/15/13 08:33</u> | Elevation of well water | _____ ft |
| Top of casing to water level | _____ ft | Method of Sampling | <u>Ord PVC Bail</u> |

SAMPLE DATA

| Temperature[°C] | pH | Conductivity[µS] | Dissolved Oxygen[mg/l] | Turbidity [NTU] |
|-----------------|-------------|------------------|------------------------|-----------------|
| <u>17.7</u> | <u>5.59</u> | <u>439</u> | _____ | <u>75.1</u> |
| <u>17.7</u> | <u>5.25</u> | <u>568</u> | _____ | <u>43.5</u> |
| <u>17.8</u> | <u>5.20</u> | <u>533</u> | _____ | <u>39.6</u> |

GENERAL INFORMATION

Weather conditions at time of sampling: clear cool

Sample characteristics: _____

Containers and preservatives: _____

Comments and observations: _____

Recommendations: _____

Certification: Joe Thompson

| Well Casing Volumes [gal/ft] | | | |
|------------------------------|-------------|-------------|---------|
| 1 1/4"=0.077 | 2"=0.16 | 3"=0.37 | 4"=0.65 |
| 1 1/2"=0.10 | 2 1/2"=0.24 | 3 1/2"=0.50 | 6"=1.46 |

GROUNDWATER SAMPLING DATA FORM

El Dorado Chemical Company

FIELD LOG

Site El Dorado Facility EDCC Well No. MW 16
 Collector Joe Thompson

MONITORING WELL INFORMATION

| | | | |
|------------------------------|----------------------|--------------------------|-----------------------|
| Evacuation: Date/Time | <u>5-14-13</u> | Method of Evacuation | <u>12 V pump</u> |
| Top of casing to water level | <u>5.96</u> ft | Gallons per well volume | <u>2.55</u> gal |
| Top of casing to bottom | <u>19.58</u> ft | Total gallons evacuated | <u>26.55</u> gal |
| Water level after evacuation | _____ ft | Elevation, Top of casing | _____ ft |
| Sampling: Date/Time | <u>5-15-13 08:35</u> | Elevation of well water | _____ ft |
| Top of casing to water level | _____ ft | Method of Sampling | <u>Dee PVC Bailor</u> |

SAMPLE DATA

| Temperature [°C] | pH | Conductivity [uS] | Dissolved Oxygen [mg/l] | Turbidity [NTU] |
|------------------|-------------|-------------------|-------------------------|-----------------|
| <u>17.2</u> | <u>4.91</u> | <u>186</u> | _____ | <u>4.32</u> |
| <u>17.5</u> | <u>4.71</u> | <u>197</u> | _____ | <u>1.32</u> |
| <u>17.5</u> | <u>4.79</u> | <u>199.7</u> | _____ | <u>0.91</u> |

GENERAL INFORMATION

Weather conditions at time of sampling: _____

Sample characteristics: _____

Containers and preservatives: _____

Comments and observations: _____

Recommendations: _____

Certification: _____

| Well Casing Volumes [gal/ft] | | | |
|------------------------------|-------------|-------------|---------|
| 1 1/4"=0.077 | 2"=0.16 | 3"=0.37 | 4"=0.65 |
| 1 1/2"=0.10 | 2 1/2"=0.24 | 3 1/2"=0.50 | 6"=1.46 |

FIGURE 2

GROUNDWATER SAMPLING DATA FORM

El Dorado Chemical Company

FIELD LOG

Site El Dorado Facility EDCC Well No. MW 18
 Collector Joe Thompson

MONITORING WELL INFORMATION

| | | | |
|------------------------------|---------------------|--------------------------|-----------------------|
| Evacuation: Date/Time | <u>5-14-13</u> | Method of Evacuation | <u>12 v pump</u> |
| Top of casing to water level | <u>544</u> ft | Gallons per well volume | <u>267</u> gal |
| Top of casing to bottom | <u>1724</u> ft | Total gallons evacuated | <u>2301</u> gal |
| Water level after evacuation | _____ ft | Elevation, Top of casing | _____ ft |
| Sampling: Date/Time | <u>5-15-13 0755</u> | Elevation of well water | _____ ft |
| Top of casing to water level | _____ ft | Method of Sampling | <u>Det PVC Bailer</u> |

SAMPLE DATA

| Temperature [°C] | pH | Conductivity [µS] | Dissolved Oxygen [mg/l] | Turbidity [NTU] |
|------------------|-------------|-------------------|-------------------------|-------------------|
| <u>15.6</u> | <u>5.91</u> | <u>110.9</u> | _____ | <u>4.38</u> |
| <u>15.8</u> | <u>5.82</u> | <u>106.2</u> | _____ | <u>Too cloudy</u> |
| <u>15.9</u> | <u>5.96</u> | <u>98.8</u> | _____ | <u>Too cloudy</u> |

GENERAL INFORMATION

Weather conditions at time of sampling: clear cool

Sample characteristics: _____

Containers and preservatives: _____

Comments and observations: _____

Recommendations: _____

Certification: Joe Thompson

| Well Casing Volumes [gal/ft] | | | |
|------------------------------|-------------|-------------|---------|
| 1 1/4"=0.077 | 2"=0.16 | 3"=0.37 | 4"=0.65 |
| 1 1/2"=0.10 | 2 1/2"=0.24 | 3 1/2"=0.50 | 6"=1.46 |

GROUNDWATER SAMPLING DATA FORM

El Dorado Chemical Company

FIELD LOG

Site: El Dorado Facility: EDCC Well No. MW 17
 Collector: Joe Thompson

MONITORING WELL INFORMATION

| | | | |
|------------------------------|----------------------|--------------------------|-----------------------|
| Evacuation: Date/Time | <u>5/14/13</u> | Method of Evacuation | <u>12 V pump</u> |
| Top of casing to water level | <u>29.62</u> ft | Gallons per well volume | <u>351</u> gal |
| Top of casing to bottom | <u>35.02</u> ft | Total gallons evacuated | <u>1053</u> gal |
| Water level after evacuation | _____ ft | Elevation, Top of casing | _____ ft |
| Sampling: Date/Time | <u>5/15/13 09:58</u> | Elevation of well water | _____ ft |
| Top of casing to water level | _____ ft | Method of Sampling | <u>Dev PVC Bailer</u> |

SAMPLE DATA

| Temperature [°C] | pH | Conductivity [µS] | Dissolved Oxygen [mg/l] | Turbidity [NTU] |
|------------------|-------------|-------------------|-------------------------|-----------------|
| <u>18.8</u> | <u>4.51</u> | <u>248</u> | _____ | <u>14.7</u> |
| <u>18.6</u> | <u>4.67</u> | <u>263</u> | _____ | <u>3.22</u> |
| <u>18.6</u> | <u>4.70</u> | <u>269</u> | _____ | <u>2.29</u> |

GENERAL INFORMATION

Weather conditions at time of sampling: clear

Sample characteristics: _____

Containers and preservatives: _____

Comments and observations: _____

Recommendations: _____

Certification: Joe Muzar

| Well Casing Volumes [gal/ft] | | | |
|------------------------------|-------------|-------------|---------|
| 1 1/4"=0.077 | 2"=0.16 | 3"=0.37 | 4"=0.65 |
| 1 1/2"=0.10 | 2 1/2"=0.24 | 3 1/2"=0.50 | 6"=1.46 |

GROUNDWATER SAMPLING DATA FORM
El Dorado Chemical Company

FIELD LOG

Site EL DORADO CHEMICAL Facility EL DORADO, AR Well No. EC MW-5
 Colle. R. DURHAM FDUP

MONITORING WELL INFORMATION

| | | | |
|------------------------------|---------------------|--------------------------|-------------------|
| Evacuation: Date/Time | <u>11-4-13 0840</u> | Method of Evacuation | <u>ELEC. PUMP</u> |
| Top of casing to water level | <u>4.06</u> ft | Gallons per well volume | <u>3.9</u> |
| Top of casing to bottom | <u>17.7</u> ft | Total gallons evacuated | <u>26.5</u> |
| Water level after evacuation | _____ ft | Elevation, Top of casing | _____ |
| Sampling: Date/Time | <u>11-5-13 6:50</u> | Elevation of well water | _____ |
| Top of casing to water level | _____ ft | Method of Sampling | <u>PVC BAILER</u> |

SAMPLE D.

| Temperature[°C] | pH | Conductivity[μS] | Diss. Oxygen[mg/l] | Turbidity[NT] |
|-----------------|-------------|------------------|--------------------|---------------|
| <u>20.7</u> | <u>7.87</u> | <u>525 μS</u> | _____ | _____ |
| <u>21.0</u> | <u>7.41</u> | <u>485 μS</u> | _____ | _____ |
| <u>20.9</u> | <u>7.23</u> | <u>493 μS</u> | _____ | _____ |

GENERAL INFORMATION

Weather conditions at time of sampling: CLOUDY/COOL
 Sample characteristics: CLEAR

Containers and preservatives: _____

Comments and observations: _____

Recommendations: _____

Certification: R. Durham

| Well Casing Volumes [gal/ft] | | | |
|------------------------------|-------------|-------------|---------|
| 1 1/4"=0.077 | 2"=0.16 | 3"=0.37 | 4"=0.65 |
| 1 1/2"=0.10 | 2 1/2"=0.24 | 3 1/2"=0.50 | 6"=1.46 |

GROUNDWATER SAMPLING DATA FORM
El Dorado Chemical Company

FIELD LOG

Site EL DORADO CHEMICAL Facility EL DORADO, AR Well No. ECMW-6
 Colle. R. DURHAM

MONITORING WELL INFORMATION

Evacuation: Date/Time 11-4-15 0910 Method of Evacuation ELEC. PUMP
 Top of casing to water level 6.29 ft Gallons per well volume 10.3
 Top of casing to bottom 22.0 ft Total gallons evacuated 30.9
 Water level after evacuation _____ ft Elevation, Top of casing _____
 Sampling: Date/Time 11-5-15 0810 Elevation of well water _____
 Top of casing to water level _____ ft Method of Sampling PVC BAILER

SAMPLE D.

| Temperature [°C] | pH | Conductivity [µS] | Diss. Oxygen [mg/l] | Turbidity [NT] |
|------------------|-------------|-------------------|---------------------|----------------|
| <u>19.8</u> | <u>4.99</u> | <u>30.45 MS</u> | | |
| <u>20.2</u> | <u>4.78</u> | <u>29.62 MS</u> | | |
| <u>20.7</u> | <u>4.49</u> | <u>26.94 MS</u> | | |

GENERAL INFORMATION

Weather conditions at time of sampling: CLOUDY/COOL
 Sample characteristics: CLEAR
 Containers and preservatives: _____
 Comments and observations: _____
 Recommendations: _____

Certification:

R. Durham

| Well Casing Volumes [gal/ft] | | | |
|------------------------------|-------------|-------------|---------|
| 1 1/4"=0.077 | 2"=0.16 | 3"=0.37 | 4"=0.65 |
| 1 1/2"=0.10 | 2 1/2"=0.24 | 3 1/2"=0.50 | 6"=1.46 |

GROUNDWATER SAMPLING DATA FORM

El Dorado Chemical Company

FIELD LOG

Site: EL DORADO CHEMICAL Facility: EL DORADO, AR Well No.: ECMW-4
 Collector: R. DURHAM

MONITORING WELL INFORMATION

| | | | |
|------------------------------|----------------------|--------------------------|-------------------|
| Evacuation: Date/Time | <u>11-4-13 10:25</u> | Method of Evacuation | <u>ELEC. PUMP</u> |
| Top of casing to water level | <u>10.31</u> ft | Gallons per well-volume | <u>2.2</u> |
| Top of casing to bottom | <u>22.1</u> ft | Total gallons evacuated | <u>23.1</u> |
| Water level after evacuation | _____ ft | Elevation, Top of casing | _____ |
| Sampling: Date/Time | <u>11-5-13 8:25</u> | Elevation of well water | <u>1</u> |
| Top of casing to water level | _____ ft | Method of Sampling | <u>PVC BAILER</u> |

SAMPLE DATA

| Temperature [°C] | pH | Conductivity [µS] | Diss. Oxygen [mg/l] | Turbidity [NT] |
|------------------|-------------|-------------------|---------------------|----------------|
| <u>19.3</u> | <u>5.94</u> | <u>8.27 MS</u> | _____ | _____ |
| <u>19.8</u> | <u>5.43</u> | <u>7.07 MS</u> | _____ | _____ |
| <u>20.7</u> | <u>4.63</u> | <u>6.96 MS</u> | _____ | _____ |

GENERAL INFORMATION

Weather conditions at time of sampling: CLOUDY/COOL

Sample characteristics: BEAR

Containers and preservatives: _____

Comments and observations: _____

Recommendations: _____

Certification: R. Durham

| Well Casing Volumes [gal/ft] | | | |
|------------------------------|-------------|-------------|---------|
| 1 1/4"=0.077 | 2"=0.16 | 3"=0.37 | 4"=0.65 |
| 1 1/2"=0.10 | 2 1/2"=0.24 | 3 1/2"=0.50 | 6"=1.46 |

GROUNDWATER SAMPLING DATA FORM
El Dorado Chemical Company

FIELD LOG

Site EL DORADO CHEMICAL Facility EL DORADO, AR Well No. ECALW-7
 Collected by R. DURHAM

MONITORING WELL INFORMATION

Evacuation: Date/Time 11-4-14 0925 Method of Evacuation ELEC. PUMP
 Top of casing to water level 9.26 ft Gallons per well volume 2.5
 Top of casing to bottom 23.9 ft Total gallons evacuated 285
 Water level after evacuation _____ ft Elevation, Top of casing _____
 Sampling: Date/Time 11-5-13 0850 Elevation of well water _____
 Top of casing to water level _____ ft Method of Sampling PVC BAILER

SAMPLE D.

| Temperature [°C] | pH | Conductivity [µS] | Diss. Oxygen [mg/l] | Turbidity [NT] |
|------------------|-------------|-------------------|---------------------|----------------|
| <u>19.3</u> | <u>5.07</u> | <u>85.1 MS</u> | | |
| <u>26.2</u> | <u>5.98</u> | <u>34.10 MS</u> | | |
| <u>20.3</u> | <u>5.81</u> | <u>27.12 MS</u> | | |

GENERAL INFORMATION

Weather conditions at time of sampling: CLOUDY/COOL
 Sample characteristics: CLEAR
 Containers and preservatives: _____
 Comments and observations: _____
 Recommendations: _____

Certification: R. Durham

| Well Casing Volumes [gal/ft] | | | |
|------------------------------|-------------|-------------|---------|
| 1 1/4"=0.077 | 2"=0.16 | 3"=0.37 | 4"=0.65 |
| 1 1/2"=0.10 | 2 1/2"=0.24 | 3 1/2"=0.50 | 6"=1.46 |

GROUNDWATER SAMPLING DATA FORM

El Dorado Chemical Company

FIELD LOG

Site EL DORADO CHEMICAL Facility EL DORADO, AR Well No. ECMW-8
 Colle. R. DURHAM

MONITORING WELL INFORMATION

Evacuation: Date/Time 11-4-13 1210 Method of Evacuation ELEC. PUMP
 Top of casing to water level 8.72 ft Gallons per well volume 13.8
 Top of casing to bottom 29.9 ft Total gallons evacuated 41.4
 Water level after evacuation _____ ft Elevation, Top of casing _____
 Sampling: Date/Time 11-5-13 0905 Elevation of well water _____
 Top of casing to water level _____ ft Method of Sampling PVC BAILER

SAMPLE D.

| Temperature[°C] | pH | Conductivity[µS] | Diss. Oxygen[^{mg} /l] | Turbidity [NT] |
|-----------------|-------------|------------------|---------------------------------|----------------|
| <u>19.0</u> | <u>4.23</u> | <u>19.72 MS</u> | | |
| <u>18.6</u> | <u>4.18</u> | <u>18.42 MS</u> | | |
| <u>19.3</u> | <u>4.06</u> | <u>20.63 MS</u> | | |

GENERAL INFORMATION

Weather conditions at time of sampling: CLOUDY/COOL
 Sample characteristics: CLEAR
 Containers and preservatives: _____
 Comments and observations: _____
 Recommendations: _____

Certification: R. Durham

| Well Casing Volumes [gal/ft] | | | |
|------------------------------|-------------|-------------|---------|
| 1 1/4"=0.077 | 2"=0.16 | 3"=0.37 | 4"=0.65 |
| 1 1/2"=0.10 | 2 1/2"=0.24 | 3 1/2"=0.50 | 6"=1.46 |

GROUNDWATER SAMPLING DATA FORM
El Dorado Chemical Company

FIELD LOG

Site EL DORADO CHEMICAL Facility EL DORADO, AR Well No. ECMW-9
 Collected by R. DURHAM

MONITORING WELL INFORMATION

Evacuation: Date/Time 11-4-13 12:35 Method of Evacuation ELEC. PUMP
 Top of casing to water level 13.21 ft Gallons per well volume 10.9
 Top of casing to bottom 30.0 ft Total gallons evacuated 32.7
 Water level after evacuation _____ ft Elevation, Top of casing _____
 Sampling: Date/Time 11-5-13 09:20 Elevation of well water _____
 Top of casing to water level _____ ft Method of Sampling PVC BAILER

SAMPLE D.

| Temperature [°C] | pH | Conductivity [µS] | Diss. [mg/l] | Oxygen [mg/l] | Turbidity [NT] |
|------------------|-------------|-------------------|--------------|---------------|----------------|
| <u>18.5</u> | <u>5.29</u> | <u>2528 µS</u> | | | |
| <u>19.4</u> | <u>5.42</u> | <u>2199 µS</u> | | | |
| <u>19.9</u> | <u>5.51</u> | <u>2198 µS</u> | | | |

GENERAL INFORMATION

Weather conditions at time of sampling: CLOUDY/cool
 Sample characteristics: CLEAR
 Containers and preservatives: _____
 Comments and observations: _____
 Recommendations: _____

Certification: R. Durham

| Well Casing Volumes [gal/ft] | | | |
|------------------------------|-------------|-------------|---------|
| 1 1/4"=0.077 | 2"=0.16 | 3"=0.37 | 4"=0.65 |
| 1 1/2"=0.10 | 2 1/2"=0.24 | 3 1/2"=0.50 | 6"=1.46 |

GROUNDWATER SAMPLING DATA FORM
El Dorado Chemical Company

FIELD LOG

Site EL DORADO CHEMICAL Facility EL DORADO, AR Well No. ECMW-10
 Colle: R. DURHAM

MONITORING WELL INFORMATION

Evacuation: Date/Time 11-4-13 1315 Method of Evacuation ELEC PUMP
 Top of casing to water level 15.57 ft Gallons per well volume 4.6
 Top of casing to bottom 22.6 ft Total gallons evacuated 13.8
 Water level after evacuation _____ ft Elevation, Top of casing _____
 Sampling: Date/Time 11-5-13 0945 Elevation of well water _____
 Top of casing to water level _____ ft Method of Sampling PVC BAILER

SAMPLE D.

| Temperature [°C] | pH | Conductivity [µS] | Dissc | Oxygen [mg/l] | Turbidity [NT] |
|------------------|-------------|-------------------|-------|---------------|----------------|
| <u>21.4</u> | <u>5.61</u> | <u>840 µS</u> | | | |
| <u>21.2</u> | <u>5.22</u> | <u>730 µS</u> | | | |
| <u>21.5</u> | <u>4.91</u> | <u>708 µS</u> | | | |

GENERAL INFORMATION

Weather conditions at time of sampling: CLOUDY/COOL
 Sample characteristics: CLEAR
 Containers and preservatives: _____
 Comments and observations: _____
 Recommendations: _____

Certification: R. Durham

| Well Casing Volumes [gal/ft] | | | |
|------------------------------|-------------|-------------|---------|
| 1 1/4"=0.077 | 2"=0.16 | 3"=0.37 | 4"=0.65 |
| 1 1/2"=0.10 | 2 1/2"=0.24 | 3 1/2"=0.50 | 6"=1.46 |

GROUNDWATER SAMPLING DATA FORM
El Dorado Chemical Company

FIELD LOG

Site EL DORADO CHEMICAL Facility EL DORADO, AR Well No. ECMW-11
 Colle. R. DURHAM

MONITORING WELL INFORMATION

Evacuation: Date/Time 11-4-13 1330 Method of Evacuation ELEC. PUMP
 Top of casing to water level 12.58 ft Gallons per well volume 4.7
 Top of casing to bottom 19.0 ft Total gallons evacuated 14.1
 Water level after evacuation _____ ft Elevation, Top of casing _____
 Sampling: Date/Time 11-5-13 1005 Elevation of well water _____
 Top of casing to water level _____ ft Method of Sampling PVC BAULER

SAMPLE D.

| Temperature [°C] | pH | Conductivity [µS] | Diss. Oxygen [mg/l] | Turbidity [NT] |
|------------------|-------------|-------------------|---------------------|----------------|
| <u>21.2</u> | <u>4.70</u> | <u>761 µS</u> | | |
| <u>22.1</u> | <u>4.55</u> | <u>746 µS</u> | | |
| <u>22.1</u> | <u>4.48</u> | <u>706 µS</u> | | |

GENERAL INFORMATION

Weather conditions at time of sampling: CLOUDY/COOL
 Sample characteristics: CLEAR
 Containers and preservatives: _____
 Comments and observations: _____
 Recommendations: _____

Certification: R. Durham

| Well Casing Volumes [gal/ft] | | | |
|------------------------------|-------------|-------------|---------|
| 1 1/4"=0.077 | 2"=0.16 | 3"=0.37 | 4"=0.65 |
| 1 1/2"=0.10 | 2 1/2"=0.24 | 3 1/2"=0.50 | 6"=1.46 |

GROUNDWATER SAMPLING DATA FORM

El Dorado Chemical Company

FIELD LOG

Site: EL DORADO CHEMICAL Facility: EL DORADO, AR Well No.: EC MW-14
 Colle: R. DURHAM

MONITORING WELL INFORMATION

Evacuation: Date/Time 11-4-13 1415 Method of Evacuation ELEC. PUMP
 Top of casing to water level 10.08 ft Gallons per well volume 5.3
 Top of casing to bottom 18.2 ft Total gallons evacuated 25.9
 Water level after evacuation _____ ft Elevation, Top of casing _____
 Sampling: Date/Time 11-5-13 1025 Elevation of well water _____
 Top of casing to water level _____ ft Method of Sampling PVC BAILER

SAMPLE DATA

| Temperature [°C] | pH | Conductivity [µS] | Diss. Oxygen [mg/l] | Turbidity [NTU] |
|------------------|-------------|-------------------|---------------------|-----------------|
| <u>21.2</u> | <u>5.30</u> | <u>477.40</u> | | |
| <u>21.8</u> | <u>5.34</u> | <u>370.2</u> | | |
| <u>22.0</u> | <u>5.46</u> | <u>369.4</u> | | |

GENERAL INFORMATION

Weather conditions at time of sampling: CLOUDY, COOL
 Sample characteristics: CLEAR
 Containers and preservatives: _____
 Comments and observations: _____
 Recommendations: _____

Certification: R. Durham

| Well Casing Volumes [gal/ft] | | | |
|------------------------------|-------------|-------------|---------|
| 1 1/4"=0.077 | 2"=0.16 | 3"=0.37 | 4"=0.65 |
| 1 1/2"=0.10 | 2 1/2"=0.24 | 3 1/2"=0.50 | 6"=1.46 |

FIGURE

GROUNDWATER SAMPLING DATA FORM
El Dorado Chemical Company

FIELD LOG

Site EL DORADO CHEMICAL Facility EL DORADO, AR Well No. 2cmw-16
 Collected by R. DURHAM

MONITORING WELL INFORMATION

Evacuation: Date/Time 11-4-13 1510 Method of Evacuation ELEC. PUMP
 Top of casing to water level 6.50 ft Gallons per well volume 3.3
 Top of casing to bottom 19.3 ft Total gallons evacuated 24.9
 Water level after evacuation _____ ft Elevation, Top of casing _____
 Sampling: Date/Time 11-5-13 1050 Elevation of well water _____
 Top of casing to water level _____ ft Method of Sampling PVC BAILEY

SAMPLE D.

| Temperature [°C] | pH | Conductivity [µS] | Diss. Oxygen [mg/l] | Turbidity [NT] |
|------------------|-------------|-------------------|---------------------|----------------|
| <u>21.4</u> | <u>4.93</u> | <u>146.9 µS</u> | _____ | _____ |
| <u>20.2</u> | <u>4.60</u> | <u>148.0 µS</u> | _____ | _____ |
| <u>22.5</u> | <u>4.60</u> | <u>153.5 µS</u> | _____ | _____ |

GENERAL INFORMATION

Weather conditions at time of sampling: CLOUDY/COOL
 Sample characteristics: CLEAR
 Containers and preservatives: _____
 Comments and observations: _____
 Recommendations: _____

Certification: R. Durham

| Well Casing Volumes [gal/ft] | | | |
|------------------------------|-------------|-------------|---------|
| 1 1/4"=0.077 | 2"=0.16 | 3"=0.37 | 4"=0.65 |
| 1 1/2"=0.10 | 2 1/2"=0.24 | 3 1/2"=0.50 | 6"=1.46 |

GROUNDWATER SAMPLING DATA FORM
El Dorado Chemical Company

FIELD LOG

Site EL DORADO CHEMICAL Facility EL DORADO, AR Well No. ECM00-17
 Colle. R. DURHAM

MONITORING WELL INFORMATION

Evacuation: Date/Time: 11-4-13 1555 Method of Evacuation: ELEC. PUMP
 Top of casing to water level: 30.51 ft Gallons per well volume: 2.7
 Top of casing to bottom: 34.7 ft Total gallons evacuated: 8.1
 Water level after evacuation: _____ ft Elevation, Top of casing: _____
 Sampling: Date/Time: 11-5-13 1110 Elevation of well water: _____
 Top of casing to water level: _____ ft Method of Sampling: PVC BAILEY

SAMPLE D.

| Temperature [°C] | pH | Conductivity [µS] | Diss. Oxygen [mg/l] | Turbidity [NT] |
|------------------|-------------|-------------------|---------------------|----------------|
| <u>18.5</u> | <u>5.37</u> | <u>233.9 uS</u> | | |
| <u>18.7</u> | <u>5.01</u> | <u>244.9 uS</u> | | |
| <u>18.9</u> | <u>4.77</u> | <u>241.5 uS</u> | | |

GENERAL INFORMATION

Weather conditions at time of sampling: CLOUDY/COOL
 Sample characteristics: CLEAR
 Containers and preservatives: _____
 Comments and observations: _____
 Recommendations: _____

Certification:

R. Durham

| Well Casing Volumes [gal/ft] | | | |
|------------------------------|-------------|-------------|---------|
| 1 1/4"=0.077 | 2"=0.16 | 3"=0.37 | 4"=0.65 |
| 1 1/2"=0.10 | 2 1/2"=0.24 | 3 1/2"=0.50 | 6"=1.46 |

GROUNDWATER SAMPLING DATA FORM

El Dorado Chemical Company

FIELD LOG

Site EL DORADO CHEMICAL Facility EL DORADO, AR Well No. ECM W-18
 Colle. R. DURHAM

MONITORING WELL INFORMATION

| | |
|---|--|
| Evacuation: Date/Time <u>11-4-13 1645</u> | Method of Evacuation <u>ELEC. PUMP</u> |
| Top of casing to water level <u>8.48</u> ft | Gallons per well volume <u>5.7</u> |
| Top of casing to bottom <u>17.2</u> ft | Total gallons evacuated <u>17.1</u> |
| Water level after evacuation _____ ft | Elevation, Top of casing _____ |
| Sampling: Date/Time <u>11-5-13 1125</u> | Elevation of well water _____ |
| Top of casing to water level _____ ft | Method of Sampling <u>PVC BAILER</u> |

SAMPLE D.

| Temperature [°C] | pH | Conductivity [µS] | Dissl. Oxygen [mg/l] | Turbidity [NT] |
|------------------|-------------|-------------------|----------------------|----------------|
| <u>19.5</u> | <u>6.79</u> | <u>94.4 µS</u> | _____ | _____ |
| <u>19.6</u> | <u>6.53</u> | <u>98.5 µS</u> | _____ | _____ |
| <u>19.7</u> | <u>6.28</u> | <u>83.6 µS</u> | _____ | _____ |

GENERAL INFORMATION

Weather conditions at time of sampling: CLOUDY/COOL
 Sample characteristics: CLOUDY
 Containers and preservatives: _____
 Comments and observations: _____
 Recommendations: _____

Certification: R. Durham

| Well Casing Volumes [gal/ft] | | | |
|------------------------------|-------------|-------------|---------|
| 1 1/4"=0.077 | 2"=0.16 | 3"=0.37 | 4"=0.65 |
| 1 1/2"=0.10 | 2 1/2"=0.24 | 3 1/2"=0.50 | 6"=1.46 |

GROUNDWATER SAMPLING DATA FORM
El Dorado Chemical Company

FIELD LOG

Site EL DORADO CHEMICAL Facility EL DORADO, AR Well No. EC MW-20
 Colle. R. DURHAM

MONITORING WELL INFORMATION

Evacuation: Date/Time 11-5-13 12:15 Method of Evacuation ELEC. PUMP
 Top of casing to water level 38.62 ft Gallons per well volume 2.5
 Top of casing to bottom 54.4 ft Total gallons evacuated 7.5
 Water level after evacuation _____ ft Elevation, Top of casing _____
 Sampling: Date/Time _____ Elevation of well water _____
 Top of casing to water level _____ ft Method of Sampling PVC BAILER

SAMPLE D.

| Temperature [°C] | pH | Conductivity [µS] | Disse. | Oxygen [mg/l] | Turbidity [NT] |
|------------------|-------------|-------------------|--------|---------------|----------------|
| <u>19.4</u> | <u>6.37</u> | <u>78.6 µS</u> | _____ | _____ | _____ |
| <u>18.7</u> | <u>6.23</u> | <u>67.9 µS</u> | _____ | _____ | _____ |
| <u>18.8</u> | <u>6.00</u> | <u>67.9 µS</u> | _____ | _____ | _____ |

GENERAL INFORMATION

Weather conditions at time of sampling: PCLOUDY/COOL
 Sample characteristics: CLOUDY
 Containers and preservatives: _____
 Comments and observations: _____
 Recommendations: _____

Certification: R. Durham

| Well Casing Volumes [gal/ft] | | | |
|------------------------------|-------------|-------------|---------|
| 1 1/4"=0.077 | 2"=0.16 | 3"=0.37 | 4"=0.65 |
| 1 1/2"=0.10 | 2 1/2"=0.24 | 3 1/2"=0.50 | 6"=1.46 |

FIGURE

GROUNDWATER SAMPLING DATA FORM

El Dorado Chemical Company

FIELD LOG

Site EL DORADO CHEMICAL Facility EL DORADO, AR Well No. ECMW-19
 Collected by R. DURHAM

MONITORING WELL INFORMATION

| | | | | |
|------------------------------|----------------|-------------|--------------------------|-------------------|
| Evacuation: Date/Time | <u>11-5-13</u> | <u>1145</u> | Method of Evacuation | <u>ELEC. PUMP</u> |
| Top of casing to water level | <u>5.84</u> | ft | Gallons per well-volume | <u>8.9</u> |
| Top of casing to bottom | <u>61.5</u> | ft | Total gallons evacuated | <u>26.7</u> |
| Water level after evacuation | | ft | Elevation, Top of casing | |
| Sampling: Date/Time | | | Elevation of well water | |
| Top of casing to water level | | ft | Method of Sampling | <u>PVC BAILER</u> |

SAMPLE DATA

| Temperature [°C] | pH | Conductivity [µS] | Diss. Oxygen [mg/l] | Turbidity [NT] |
|------------------|-------------|-------------------|---------------------|----------------|
| <u>19.6</u> | <u>5.86</u> | <u>75.4 µS</u> | | |
| <u>18.7</u> | <u>6.74</u> | <u>75.1 µS</u> | | |
| <u>18.5</u> | <u>6.73</u> | <u>73.4 µS</u> | | |

GENERAL INFORMATION

Weather conditions at time of sampling: PCLOUDY/COOL
 Sample characteristics: CLEAR
 Containers and preservatives: _____
 Comments and observations: _____
 Recommendations: _____

Certification: R. Durham

| Well Casing Volumes [gal/ft] | | | |
|------------------------------|-------------|-------------|---------|
| 1 1/4"=0.077 | 2"=0.16 | 3"=0.37 | 4"=0.65 |
| 1 1/2"=0.10 | 2 1/2"=0.24 | 3 1/2"=0.50 | 6"=1.46 |

GROUNDWATER SAMPLING DATA FORM

El Dorado Chemical Company

FIELD LOG

Site EL DORADO CHEMICAL Facility EL DORADO, AR Well No. EL MW-12
 Colle. R. DURHAM

MONITORING WELL INFORMATION

| | |
|---|--|
| Evacuation: Date/Time <u>11-4-13 1620</u> | Method of Evacuation <u>ELEC. PUMP</u> |
| Top of casing to water level <u>6.82</u> ft | Gallons per well volume <u>8.5</u> |
| Top of casing to bottom <u>19.9</u> ft | Total gallons evacuated <u>76.5</u> |
| Water level after evacuation _____ ft | Elevation, Top of casing _____ |
| Sampling: Date/Time _____ | Elevation of well water _____ |
| Top of casing to water level _____ ft | Method of Sampling <u>PVC BAILER</u> |

SAMPLE D.

| Temperature [°C] | pH | Conductivity [µS] | Dissc. | Oxygen [mg/l] | Turbidity [NT] |
|------------------|-------------|-------------------|--------|---------------|----------------|
| <u>20.8</u> | <u>5.64</u> | <u>786 µS</u> | _____ | _____ | _____ |
| <u>21.5</u> | <u>5.84</u> | <u>622 µS</u> | _____ | _____ | _____ |
| <u>22.0</u> | <u>5.84</u> | <u>251 µS</u> | _____ | _____ | _____ |

GENERAL INFORMATION

Weather conditions at time of sampling: CLOUDY/COOL

Sample characteristics: CLEAR

Containers and preservatives: _____

Comments and observations: _____

Recommendations: _____

Certification: R. Durham

| Well Casing Volumes [gal/ft] | | | |
|------------------------------|-------------|-------------|---------|
| 1 1/4"=0.077 | 2"=0.16 | 3"=0.37 | 4"=0.65 |
| 1 1/2"=0.10 | 2 1/2"=0.24 | 3 1/2"=0.50 | 6"=1.46 |

GROUNDWATER SAMPLING DATA FORM

El Dorado Chemical Company

FIELD LOG

Site: EL DORADO CHEMICAL Facility: EL DORADO, AR Well No. ECMW-3
 Collector: R. DURHAM

MONITORING WELL INFORMATION

| | |
|---|---|
| Evacuation: Date/Time: <u>11-4-13 10:45</u> | Method of Evacuation: <u>ELEC. PUMP</u> |
| Top of casing to water level: <u>13.52</u> ft | Gallons per well volume: <u>3.8</u> |
| Top of casing to bottom: <u>27.1</u> ft | Total gallons evacuated: <u>26.4</u> |
| Water level after evacuation: _____ ft | Elevation, Top of casing: _____ |
| Sampling: Date/Time: _____ | Elevation of well water: _____ |
| Top of casing to water level: _____ ft | Method of Sampling: <u>PVC BAILER</u> |

SAMPLE DATA

| Temperature [°C] | pH | Conductivity [µS] | Dissolved Oxygen [mg/l] | Turbidity [NT] |
|------------------|-------------|-------------------|-------------------------|----------------|
| <u>18.6</u> | <u>5.84</u> | <u>441.2 µS</u> | | |
| <u>18.7</u> | <u>5.81</u> | <u>278.5 µS</u> | | |
| <u>18.1</u> | <u>5.72</u> | <u>273.5 µS</u> | | |

GENERAL INFORMATION

Weather conditions at time of sampling: CLOUDY/COOL

Sample characteristics: CLEAR

Containers and preservatives: _____

Comments and observations: _____

Recommendations: _____

Certification: R. Durham

| Well Casing Volumes [gal/ft] | | | |
|------------------------------|-------------|-------------|---------|
| 1 1/4"=0.077 | 2"=0.16 | 3"=0.37 | 4"=0.65 |
| 1 1/2"=0.10 | 2 1/2"=0.24 | 3 1/2"=0.50 | 6"=1.46 |

GROUNDWATER SAMPLING DATA FORM
El Dorado Chemical Company

FIELD LOG

Site EL DORADO CHEMICAL Facility EL DORADO, AR Well No. ECMW-2
 Colle. R. DURHAM

MONITORING WELL INFORMATION

| | | | |
|------------------------------|----------------------|--------------------------|-------------------|
| Evacuation: Date/Time | <u>11-4-13 11:00</u> | Method of Evacuation | <u>ELEC. PUMP</u> |
| Top of casing to water level | <u>2.33</u> ft | Gallons per well volume | <u>8.4</u> |
| Top of casing to bottom: | <u>20.2</u> ft | Total gallons evacuated | <u>28.2</u> |
| Water level after evacuation | _____ ft | Elevation, Top of casing | _____ |
| Sampling: Date/Time | _____ | Elevation of well water | _____ |
| Top of casing to water level | _____ ft | Method of Sampling | <u>PVC BAILER</u> |

SAMPLE D.

| Temperature[°C] | pH | Conductivity[μS] | Diss. Oxygen[^{mg} /l] | Turbidity[NT] |
|-----------------|-------------|------------------|---------------------------------|---------------|
| <u>19.0</u> | <u>5.72</u> | <u>320.4 μS</u> | _____ | _____ |
| <u>19.2</u> | <u>5.80</u> | <u>312.7 μS</u> | _____ | _____ |
| <u>19.0</u> | <u>5.91</u> | <u>309.5 μS</u> | _____ | _____ |

GENERAL INFORMATION

Weather conditions at time of sampling: Cloudy / Cool
 Sample characteristics: Clean
 Containers and preservatives: _____
 Comments and observations: _____
 Recommendations: _____

Certification: R. Durham

| Well Casing Volumes [gal/ft] | | | |
|------------------------------|-------------|-------------|---------|
| 1 1/4"=0.077 | 2"=0.16 | 3"=0.37 | 4"=0.65 |
| 1 1/2"=0.10 | 2 1/2"=0.24 | 3 1/2"=0.50 | 6"=1.46 |

GROUNDWATER SAMPLING DATA FORM
El Dorado Chemical Company

FIELD LOG

Site EL DORADO CHEMICAL Facility EL DORADO, AR Well No. ECMW-1
 Collector R. DURHAM

MONITORING WELL INFORMATION

| | | | |
|------------------------------|---------------------|--------------------------|-------------------|
| Evacuation: Date/Time | <u>11/4/83 1140</u> | Method of Evacuation | <u>ELEC. PUMP</u> |
| Top of casing to water level | <u>16.43</u> ft | Gallons per well volume: | |
| Top of casing to bottom | <u>22.1</u> ft | Total gallons evacuated | <u>PUMPED DRY</u> |
| Water level after evacuation | | Elevation, Top of casing | |
| Sampling: Date/Time | | Elevation of well water | <u>1</u> |
| Top of casing to water level | | Method of Sampling | <u>PVC BAILER</u> |

SAMPLE D.

| <u>Temperature [°C]</u> | <u>pH</u> | <u>Conductivity [µS]</u> | <u>Disse</u> | <u>Dissolved Oxygen [mg/l]</u> | <u>Turbidity [NT]</u> |
|-------------------------|-------------|--------------------------|--------------|--------------------------------|-----------------------|
| <u>18.7</u> | <u>6.36</u> | <u>68.0 µS</u> | | | |
| <u>19.0</u> | <u>5.56</u> | <u>55.4 µS</u> | | | |
| <u>19.4</u> | <u>5.21</u> | <u>54.5 µS</u> | | | |

GENERAL INFORMATION

Weather conditions at time of sampling: Cloudy/Cool
 Sample characteristics: CLEAR
 Containers and preservatives: _____
 Comments and observations: _____
 Recommendations: _____

Certification: R. Durham

| Well Casing Volumes [gal/ft] | | | |
|------------------------------|-------------|-------------|---------|
| 1 1/4"=0.077 | 2"=0.16 | 3"=0.37 | 4"=0.65 |
| 1 1/2"=0.10 | 2 1/2"=0.24 | 3 1/2"=0.50 | 6"=1.46 |

GROUNDWATER SAMPLING DATA FORM
El Dorado Chemical Company

FIELD LOG

Site EL DORADO CHEMICAL Facility EL DORADO, AR Well No. ECM W-13
 Colle. R. DURHAM

MONITORING WELL INFORMATION

Evacuation: Date/Time 11-2-13 1355 Method of Evacuation ELEC. PUMP
 Top of casing to water level 9.26 ft Gallons per well volume 6.9
 Top of casing to bottom 19.8 ft Total gallons evacuated 25.7
 Water level after evacuation _____ ft Elevation, Top of casing _____
 Sampling: Date/Time _____ Elevation of well water _____
 Top of casing to water level _____ ft Method of Sampling PVC BAULER

SAMPLE D.

| Temperature [°C] | pH | Conductivity [µS] | Disse | Oxygen [mg/l] | Turbidity [NT] |
|------------------|-------------|-------------------|-------|---------------|----------------|
| <u>20.1</u> | <u>4.87</u> | <u>1567 us</u> | | | |
| <u>20.6</u> | <u>4.87</u> | <u>1543 us</u> | | | |
| <u>20.8</u> | <u>4.83</u> | <u>1526 us</u> | | | |

GENERAL INFORMATION

Weather conditions at time of sampling: CLOUDY / COOL
 Sample characteristics: CLEAR
 Containers and preservatives: _____
 Comments and observations: _____
 Recommendations: _____

Certification: R. Durham

| Well Casing Volumes [gal/ft] | | | |
|------------------------------|-------------|-------------|---------|
| 1 1/4"=0.077 | 2"=0.16 | 3"=0.37 | 4"=0.65 |
| 1 1/2"=0.10 | 2 1/2"=0.24 | 3 1/2"=0.50 | 6"=1.46 |

GROUNDWATER SAMPLING DATA FORM
El Dorado Chemical Company

FIELD LOG

Site EL DORADO CHEMICAL Facility EL DORADO, AR Well No. EC MW-15
 Colle. R. DURHAM

MONITORING WELL INFORMATION

| | | | |
|------------------------------|----------------------|--------------------------|-------------------|
| Evacuation: Date/Time | <u>11-4-13 14:35</u> | Method of Evacuation | <u>ELEC. PUMP</u> |
| Top of casing to water level | <u>6.79</u> ft | Gallons per well volume | <u>6.6</u> |
| Top of casing to bottom | <u>17.0</u> ft | Total gallons evacuated | <u>19.8</u> |
| Water level after evacuation | _____ ft | Elevation, Top of casing | _____ |
| Sampling: Date/Time | _____ | Elevation of well water | _____ |
| Top of casing to water level | _____ ft | Method of Sampling | <u>PVC BAILER</u> |

SAMPLE D.

| <u>Temperature [°C]</u> | <u>pH</u> | <u>Conductivity [µS]</u> | <u>Diss. Oxygen [mg/l]</u> | <u>Turbidity [NT]</u> |
|-------------------------|-------------|--------------------------|----------------------------|-----------------------|
| <u>21.3</u> | <u>5.30</u> | <u>26.9 uS</u> | _____ | _____ |
| <u>21.8</u> | <u>4.67</u> | <u>66.2 uS</u> | _____ | _____ |
| <u>22.1</u> | <u>4.56</u> | <u>66.0 uS</u> | _____ | _____ |

GENERAL INFORMATION

Weather conditions at time of sampling: CLOUDY/COOL
 Sample characteristics: CLEAR
 Containers and preservatives: _____
 Comments and observations: _____
 Recommendations: _____

Certification: R. Durham

| Well Casing Volumes [gal/ft] | | | |
|------------------------------|-------------|-------------|---------|
| 1 1/4"=0.077 | 2"=0.16 | 3"=0.37 | 4"=0.65 |
| 1 1/2"=0.10 | 2 1/2"=0.24 | 3 1/2"=0.50 | 6"=1.46 |

GROUNDWATER SAMPLING DATA FORM
El Dorado Chemical Company

FIELD LOG

Site EL DORADO CHEMICAL Facility EL DORADO, AR Well No ECMW-22
 Colle R. DURHAM

MONITORING WELL INFORMATION

| | | | |
|------------------------------|---------------------|--------------------------|-------------------|
| Evacuation: Date/Time | <u>11-4-13 1535</u> | Method of Evacuation: | <u>EWEC PUMP</u> |
| Top of casing to water level | <u>9.64</u> ft | Gallons per well volume | <u>11.2</u> |
| Top of casing to bottom | <u>79.8</u> ft | Total gallons evacuated | <u>53.6</u> |
| Water level after evacuation | _____ ft | Elevation, Top of casing | _____ |
| Sampling: Date/Time | _____ | Elevation of well water | _____ |
| Top of casing to water level | _____ ft | Method of Sampling | <u>PVC BAILER</u> |

SAMPLE D.

| <u>Temperature [°C]</u> | <u>pH</u> | <u>Conductivity [µS]</u> | <u>Diss.</u> | <u>Oxygen [mg/l]</u> | <u>Turbidity [NT]</u> |
|-------------------------|-------------|--------------------------|--------------|----------------------|-----------------------|
| <u>19.4</u> | <u>5.36</u> | <u>148.9 µS</u> | _____ | _____ | _____ |
| <u>18.1</u> | <u>5.54</u> | <u>147.6 µS</u> | _____ | _____ | _____ |
| <u>19.0</u> | <u>5.64</u> | <u>150.1 µS</u> | _____ | _____ | _____ |

GENERAL INFORMATION

Weather conditions at time of sampling: Cloudy, Cool

Sample characteristics: CLEAR

Containers and preservatives: _____

Comments and observations: _____

Recommendations: _____

Certification:

R. Durham

| Well Casing Volumes [gal/ft] | | | |
|-------------------------------------|-------------|-------------|---------|
| 1 1/4"=0.077 | 2"=0.16 | 3"=0.37 | 4"=0.65 |
| 1 1/2"=0.10 | 2 1/2"=0.24 | 3 1/2"=0.50 | 6"=1.46 |

FIGURE

GROUNDWATER SAMPLING DATA FORM

El Dorado Chemical Company

FIELD LOG

Site EL DORADO CHEMICAL Facility EL DORADO, AR Well No. EC-MW-21
 Colle. R. DURHAM

MONITORING WELL INFORMATION

| | | | |
|------------------------------|---------------------|--------------------------|-------------------|
| Evacuation: Date/Time | <u>11-5-13 1235</u> | Method of Evacuation | <u>ELEC. PUMP</u> |
| Top of casing to water level | <u>20.31</u> ft | Gallons per well volume | <u>1.0</u> |
| Top of casing to bottom | <u>34.9</u> ft | Total gallons evacuated | <u>3.0</u> |
| Water level after evacuation | _____ ft | Elevation, Top of casing | _____ |
| Sampling: Date/Time | _____ | Elevation of well water | <u>1</u> |
| Top of casing to water level | _____ ft | Method of Sampling | <u>PVC BAILER</u> |

SAMPLE D.

| Temperature [°C] | pH | Conductivity [µS] | Diss. Oxygen [mg/l] | Turbidity [NT] |
|------------------|-------------|-------------------|---------------------|----------------|
| <u>18.7</u> | <u>6.04</u> | <u>21.6 ud</u> | _____ | _____ |
| <u>19.6</u> | <u>5.92</u> | <u>50.3 ud</u> | _____ | _____ |
| <u>19.6</u> | <u>5.68</u> | <u>48.6 ud</u> | _____ | _____ |

GENERAL INFORMATION

Weather conditions at time of sampling: _____

Sample characteristics: _____

Containers and preservatives: _____

Comments and observations: _____

Recommendations: _____

Certification: R. Durham

| Well Casing Volumes [gal/ft] | | | |
|------------------------------|-------------|-------------|---------|
| 1 1/4"=0.077 | 2"=0.16 | 3"=0.37 | 4"=0.65 |
| 1 1/2"=0.10 | 2 1/2"=0.24 | 3 1/2"=0.50 | 6"=1.46 |



11701 I-30 Bldg 1, Ste 115 - Little Rock, AR 72209
501-455-3233 Fax 501-455-6118

22 May 2013

Larken Pennington
El Dorado Chemical Inc.
4500 North West Ave.
El Dorado, AR 71731

RE: Groundwater Sample(s)
SDG Number: 1305201

Enclosed are the results of analyses for samples received by the laboratory on 15-May-13 15:36. If you have any questions concerning this report, please feel free to contact me.

Sample Receipt Information:

| | |
|------------------------|--------|
| Custody Seals | ✓ |
| Containers Correct | ✓ |
| COC/Labels Agree | ✓ |
| Preservation Confirmed | ✓ |
| Received On Ice | ✓ |
| Temperature on Receipt | 14.0°C |

Sincerely,

Norma James
President

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22 May 2013

Larken Pennington
El Dorado Chemical Inc.
4500 North West Ave.
El Dorado, AR 71731
Project: Groundwater Sample(s)



Date Received: 15-May-13 15:36

CASE NARRATIVE

Sample Delivery Group – 1305201

Qualified Analytical and/or Quality Control Results are Discussed Below:

Anions Analysis:

Matrix Spike/Matrix Spike Duplicate (MS/MSD) Failure: Sulfate failed to recover within acceptance criteria in the MS and/or MSD sample. The recoveries were qualified by "%D1" in the quality control section of the final report. Sulfate was qualified as "estimated" (E20) in the parent sample, 1305201-01.

22 May 2013

Larken Pennington
El Dorado Chemical Inc.
4500 North West Ave.
El Dorado, AR 71731
Project: Groundwater Sample(s)



Date Received: 15-May-13 15:36

ANALYTICAL RESULTS

Lab Number: 1305201-01
Sample Name: ECMW-18
Date/Time Collected: 5/15/13 7:55
Sample Matrix: Water

| <u>Anions</u> | <u>Units</u> | <u>Result</u> | <u>Qualifier(s)</u> | <u>Date/Time Analyzed</u> | <u>Batch</u> | <u>Method</u> |
|----------------------|--------------|---------------|---------------------|---------------------------|--------------|---------------------|
| Sulfate as SO4 | mg/L | 6.25 | E20 | 5/16/13 9:05 | A305211 | 300.0, 2.1-1993 |
| Nitrate as N | mg/L | 0.328 | | 5/16/13 9:05 | A305211 | 300.0, 2.1-1993 |
| <u>Wet Chemistry</u> | <u>Units</u> | <u>Result</u> | <u>Qualifier(s)</u> | <u>Date/Time Analyzed</u> | <u>Batch</u> | <u>Method</u> |
| Ammonia as N | mg/L | < 0.50 | | 5/21/13 7:49 | A305255 | 4500-NH3 B,D,C-1997 |

ANALYTICAL RESULTS

Lab Number: 1305201-02
Sample Name: ECMW-14
Date/Time Collected: 5/15/13 8:23
Sample Matrix: Water

| <u>Anions</u> | <u>Units</u> | <u>Result</u> | <u>Qualifier(s)</u> | <u>Date/Time Analyzed</u> | <u>Batch</u> | <u>Method</u> |
|----------------------|--------------|---------------|---------------------|---------------------------|--------------|---------------------|
| Sulfate as SO4 | mg/L | 108 | | 5/17/13 14:15 | A305211 | 300.0, 2.1-1993 |
| Nitrate as N | mg/L | 6.17 | | 5/16/13 9:28 | A305211 | 300.0, 2.1-1993 |
| <u>Wet Chemistry</u> | <u>Units</u> | <u>Result</u> | <u>Qualifier(s)</u> | <u>Date/Time Analyzed</u> | <u>Batch</u> | <u>Method</u> |
| Ammonia as N | mg/L | < 0.50 | | 5/21/13 7:49 | A305255 | 4500-NH3 B,D,C-1997 |

ANALYTICAL RESULTS

Lab Number: 1305201-03
Sample Name: ECMW-16
Date/Time Collected: 5/15/13 8:35
Sample Matrix: Water

| <u>Anions</u> | <u>Units</u> | <u>Result</u> | <u>Qualifier(s)</u> | <u>Date/Time Analyzed</u> | <u>Batch</u> | <u>Method</u> |
|----------------------|--------------|---------------|---------------------|---------------------------|--------------|---------------------|
| Sulfate as SO4 | mg/L | 13.0 | | 5/16/13 9:50 | A305211 | 300.0, 2.1-1993 |
| Nitrate as N | mg/L | 12.2 | | 5/16/13 9:50 | A305211 | 300.0, 2.1-1993 |
| <u>Wet Chemistry</u> | <u>Units</u> | <u>Result</u> | <u>Qualifier(s)</u> | <u>Date/Time Analyzed</u> | <u>Batch</u> | <u>Method</u> |
| Ammonia as N | mg/L | 3.91 | | 5/21/13 7:49 | A305255 | 4500-NH3 B,D,C-1997 |

22 May 2013

Larken Pennington
El Dorado Chemical Inc.
4500 North West Ave.
El Dorado, AR 71731
Project: Groundwater Sample(s)



Date Received: 15-May-13 15:36

ANALYTICAL RESULTS

Lab Number: 1305201-04
Sample Name: ECMW-17
Date/Time Collected: 5/15/13 8:59
Sample Matrix: Water

| <u>Anions</u> | <u>Units</u> | <u>Result</u> | <u>Qualifier(s)</u> | <u>Date/Time Analyzed</u> | <u>Batch</u> | <u>Method</u> |
|----------------------|--------------|---------------|---------------------|---------------------------|--------------|---------------------|
| Sulfate as SO4 | mg/L | 34.5 | | 5/17/13 14:38 | A305211 | 300.0, 2.1-1993 |
| Nitrate as N | mg/L | 3.60 | | 5/16/13 10:13 | A305211 | 300.0, 2.1-1993 |
| <u>Wet Chemistry</u> | <u>Units</u> | <u>Result</u> | <u>Qualifier(s)</u> | <u>Date/Time Analyzed</u> | <u>Batch</u> | <u>Method</u> |
| Ammonia as N | mg/L | 1.41 | | 5/21/13 7:49 | A305255 | 4500-NH3 B,D,C-1997 |

ANALYTICAL RESULTS

Lab Number: 1305201-05
Sample Name: ECMW-5
Date/Time Collected: 5/15/13 9:22
Sample Matrix: Water

| <u>Anions</u> | <u>Units</u> | <u>Result</u> | <u>Qualifier(s)</u> | <u>Date/Time Analyzed</u> | <u>Batch</u> | <u>Method</u> |
|----------------------|--------------|---------------|---------------------|---------------------------|--------------|---------------------|
| Sulfate as SO4 | mg/L | 60.7 | | 5/16/13 16:59 | A305211 | 300.0, 2.1-1993 |
| Nitrate as N | mg/L | 32.8 | | 5/16/13 16:59 | A305211 | 300.0, 2.1-1993 |
| <u>Wet Chemistry</u> | <u>Units</u> | <u>Result</u> | <u>Qualifier(s)</u> | <u>Date/Time Analyzed</u> | <u>Batch</u> | <u>Method</u> |
| Ammonia as N | mg/L | < 0.50 | | 5/21/13 7:49 | A305255 | 4500-NH3 B,D,C-1997 |

ANALYTICAL RESULTS

Lab Number: 1305201-06
Sample Name: ECMW-6
Date/Time Collected: 5/15/13 9:33
Sample Matrix: Water

| <u>Anions</u> | <u>Units</u> | <u>Result</u> | <u>Qualifier(s)</u> | <u>Date/Time Analyzed</u> | <u>Batch</u> | <u>Method</u> |
|----------------------|--------------|---------------|---------------------|---------------------------|--------------|---------------------|
| Sulfate as SO4 | mg/L | 37.7 | | 5/17/13 15:00 | A305211 | 300.0, 2.1-1993 |
| Nitrate as N | mg/L | 3120 | | 5/16/13 18:07 | A305211 | 300.0, 2.1-1993 |
| <u>Wet Chemistry</u> | <u>Units</u> | <u>Result</u> | <u>Qualifier(s)</u> | <u>Date/Time Analyzed</u> | <u>Batch</u> | <u>Method</u> |
| Ammonia as N | mg/L | 521 | | 5/21/13 7:49 | A305255 | 4500-NH3 B,D,C-1997 |

22 May 2013



Larken Pennington
El Dorado Chemical Inc.
4500 North West Ave.
El Dorado, AR 71731
Project: Groundwater Sample(s)

Date Received: 15-May-13 15:36

ANALYTICAL RESULTS

Lab Number: 1305201-07
Sample Name: ECMW-4
Date/Time Collected: 5/15/13 9:44
Sample Matrix: Water

| <u>Anions</u> | <u>Units</u> | <u>Result</u> | <u>Qualifier(s)</u> | <u>Date/Time Analyzed</u> | <u>Batch</u> | <u>Method</u> |
|----------------------|--------------|---------------|---------------------|---------------------------|--------------|---------------------|
| Sulfate as SO4 | mg/L | 856 | | 5/17/13 15:27 | A305211 | 300.0, 2.1-1993 |
| Nitrate as N | mg/L | 0.370 | | 5/16/13 11:21 | A305211 | 300.0, 2.1-1993 |
| <u>Wet Chemistry</u> | <u>Units</u> | <u>Result</u> | <u>Qualifier(s)</u> | <u>Date/Time Analyzed</u> | <u>Batch</u> | <u>Method</u> |
| Ammonia as N | mg/L | 2.12 | | 5/21/13 7:49 | A305255 | 4500-NH3 B,D,C-1997 |

ANALYTICAL RESULTS

Lab Number: 1305201-08
Sample Name: ECMW-7
Date/Time Collected: 5/15/13 9:56
Sample Matrix: Water

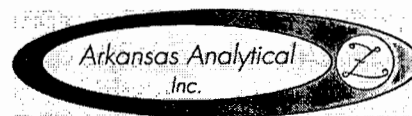
| <u>Anions</u> | <u>Units</u> | <u>Result</u> | <u>Qualifier(s)</u> | <u>Date/Time Analyzed</u> | <u>Batch</u> | <u>Method</u> |
|----------------------|--------------|---------------|---------------------|---------------------------|--------------|---------------------|
| Sulfate as SO4 | mg/L | 930 | | 5/16/13 18:29 | A305211 | 300.0, 2.1-1993 |
| Nitrate as N | mg/L | 141 | | 5/16/13 18:29 | A305211 | 300.0, 2.1-1993 |
| <u>Wet Chemistry</u> | <u>Units</u> | <u>Result</u> | <u>Qualifier(s)</u> | <u>Date/Time Analyzed</u> | <u>Batch</u> | <u>Method</u> |
| Ammonia as N | mg/L | 105 | | 5/21/13 7:49 | A305255 | 4500-NH3 B,D,C-1997 |

ANALYTICAL RESULTS

Lab Number: 1305201-09
Sample Name: ECMW-23
Date/Time Collected: 5/15/13 10:10
Sample Matrix: Water

| <u>Anions</u> | <u>Units</u> | <u>Result</u> | <u>Qualifier(s)</u> | <u>Date/Time Analyzed</u> | <u>Batch</u> | <u>Method</u> |
|----------------------|--------------|---------------|---------------------|---------------------------|--------------|---------------------|
| Sulfate as SO4 | mg/L | 921 | | 5/16/13 18:52 | A305211 | 300.0, 2.1-1993 |
| Nitrate as N | mg/L | 145 | | 5/16/13 18:52 | A305211 | 300.0, 2.1-1993 |
| <u>Wet Chemistry</u> | <u>Units</u> | <u>Result</u> | <u>Qualifier(s)</u> | <u>Date/Time Analyzed</u> | <u>Batch</u> | <u>Method</u> |
| Ammonia as N | mg/L | 110 | | 5/21/13 7:49 | A305255 | 4500-NH3 B,D,C-1997 |

22 May 2013



Larken Pennington
El Dorado Chemical Inc.
4500 North West Ave.
El Dorado, AR 71731
Project: Groundwater Sample(s)

Date Received: 15-May-13 15:36

ANALYTICAL RESULTS

Lab Number: 1305201-10
Sample Name: ECMW-8
Date/Time Collected: 5/15/13 10:22
Sample Matrix: Water

| Anions | Units | Result | Qualifier(s) | Date/Time Analyzed | Batch | Method |
|----------------|-------|--------|--------------|--------------------|---------|---------------------|
| Sulfate as SO4 | mg/L | 614 | | 5/16/13 19:15 | A305211 | 300.0, 2.1-1993 |
| Nitrate as N | mg/L | 551 | | 5/16/13 19:15 | A305211 | 300.0, 2.1-1993 |
| Wet Chemistry | Units | Result | Qualifier(s) | Date/Time Analyzed | Batch | Method |
| Ammonia as N | mg/L | 172 | | 5/21/13 7:49 | A305255 | 4500-NH3 B,D,C-1997 |

ANALYTICAL RESULTS

Lab Number: 1305201-11
Sample Name: ECMW-9
Date/Time Collected: 5/15/13 10:36
Sample Matrix: Water

| Anions | Units | Result | Qualifier(s) | Date/Time Analyzed | Batch | Method |
|----------------|-------|--------|--------------|--------------------|---------|---------------------|
| Sulfate as SO4 | mg/L | 514 | | 5/17/13 15:50 | A305211 | 300.0, 2.1-1993 |
| Nitrate as N | mg/L | 30.1 | | 5/16/13 13:36 | A305211 | 300.0, 2.1-1993 |
| Wet Chemistry | Units | Result | Qualifier(s) | Date/Time Analyzed | Batch | Method |
| Ammonia as N | mg/L | < 0.50 | | 5/21/13 7:49 | A305255 | 4500-NH3 B,D,C-1997 |

ANALYTICAL RESULTS

Lab Number: 1305201-12
Sample Name: ECMW-10
Date/Time Collected: 5/15/13 10:45
Sample Matrix: Water

| Anions | Units | Result | Qualifier(s) | Date/Time Analyzed | Batch | Method |
|----------------|-------|--------|--------------|--------------------|---------|---------------------|
| Sulfate as SO4 | mg/L | 163 | | 5/17/13 16:35 | A305211 | 300.0, 2.1-1993 |
| Nitrate as N | mg/L | 42.1 | | 5/16/13 13:59 | A305211 | 300.0, 2.1-1993 |
| Wet Chemistry | Units | Result | Qualifier(s) | Date/Time Analyzed | Batch | Method |
| Ammonia as N | mg/L | < 0.50 | | 5/21/13 7:49 | A305255 | 4500-NH3 B,D,C-1997 |

22 May 2013

Larken Pennington
El Dorado Chemical Inc.
4500 North West Ave.
El Dorado, AR 71731
Project: Groundwater Sample(s)



Date Received: 15-May-13 15:36

ANALYTICAL RESULTS

Lab Number: 1305201-13
Sample Name: ECMW-11
Date/Time Collected: 5/15/13 11:02
Sample Matrix: Water

| Anions | Units | Result | Qualifier(s) | Date/Time Analyzed | Batch | Method |
|----------------|-------|--------|--------------|--------------------|---------|---------------------|
| Sulfate as SO4 | mg/L | 98.0 | | 5/17/13 16:57 | A305211 | 300.0, 2.1-1993 |
| Nitrate as N | mg/L | 45.4 | | 5/16/13 14:21 | A305211 | 300.0, 2.1-1993 |
| Wet Chemistry | Units | Result | Qualifier(s) | Date/Time Analyzed | Batch | Method |
| Ammonia as N | mg/L | 17.0 | | 5/21/13 7:49 | A305255 | 4500-NH3 B,D,C-1997 |

ANALYTICAL RESULTS

Lab Number: 1305201-14
Sample Name: ECMW-24
Date/Time Collected: 5/15/13 11:15
Sample Matrix: Water

| Anions | Units | Result | Qualifier(s) | Date/Time Analyzed | Batch | Method |
|----------------|-------|--------|--------------|--------------------|---------|---------------------|
| Sulfate as SO4 | mg/L | 102 | | 5/17/13 17:20 | A305228 | 300.0, 2.1-1993 |
| Nitrate as N | mg/L | 40.7 | | 5/16/13 14:44 | A305228 | 300.0, 2.1-1993 |
| Wet Chemistry | Units | Result | Qualifier(s) | Date/Time Analyzed | Batch | Method |
| Ammonia as N | mg/L | 15.7 | | 5/21/13 7:49 | A305255 | 4500-NH3 B,D,C-1997 |

QUALITY CONTROL RESULTS

Anions -- Batch: A305211 (Water)

Prepared: 15-May-13 16:46 By: MB -- Analyzed: 16-May-13 15:29 By: Melis

| Analyte | BLK | LCS / LCSD | MS / MSD | Dup | RPD | Qualifiers |
|----------------|-------------|------------|-------------|-----|--------|------------|
| Nitrate as N | <0.250 mg/L | 104% / NA | 103% / 103% | | 0.629% | |
| Sulfate as SO4 | <0.500 mg/L | 102% / NA | 118% / 115% | | 1.13% | %D1 |

Anions -- Batch: A305228 (Water)

Prepared: 17-May-13 08:04 By: MB -- Analyzed: 17-May-13 12:40 By: Melis

| Analyte | BLK | LCS / LCSD | MS / MSD | Dup | RPD | Qualifiers |
|----------------|-------------|------------|-------------|-----|--------|------------|
| Nitrate as N | <0.250 mg/L | 104% / NA | 104% / 104% | | 0.240% | |
| Sulfate as SO4 | <0.500 mg/L | 101% / NA | 100% / 101% | | 0.520% | |

Wet Chemistry -- Batch: A305255 (Water)

Prepared: 20-May-13 08:02 By: KP -- Analyzed: 21-May-13 07:49 By: KP

| Analyte | BLK | LCS / LCSD | MS / MSD | Dup | RPD | Qualifiers |
|--------------|------------|------------|---------------|-----|--------|------------|
| Ammonia as N | <0.50 mg/L | 89.8% / NA | 89.1% / 89.5% | | 0.421% | |

22 May 2013



Larken Pennington
El Dorado Chemical Inc.
4500 North West Ave.
El Dorado, AR 71731
Project: Groundwater Sample(s)

Date Received: 15-May-13 15:36

QUALIFIER(S)

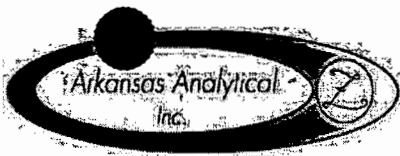
*%D1: Matrix Spike and/or Matrix Spike Duplicate Percent Recovery Does Not Meet Laboratory Acceptance Criteria
*E20: Estimated Result Due to Matrix Spike and/or Matrix Spike Duplicate Failure; This sample was used as the "parent sample" in MS/MSD prep.

All Analysis performed according to EPA approved methodology when available:
SW 846, Revised December, 1996; EPA 600/4-79-020, Revised March, 1983; Standard Methods.
Instrument calibration and quality control samples performed at or above frequency specified in analytical method.

A rectangular box containing a handwritten signature in cursive script that reads "Norma James".

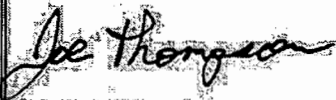

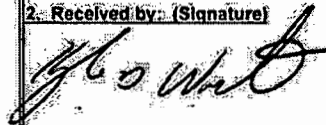
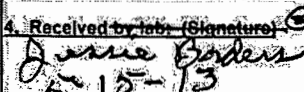
Reviewed by:

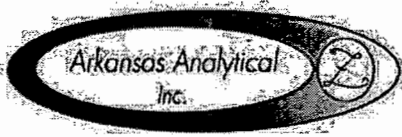
Norma James
President



11701 Interstate 30, Bldg. 1, Ste. 115
 Little Rock, AR 72209
 PHONE: 501-455-3233
 FAX: 501-455-6118

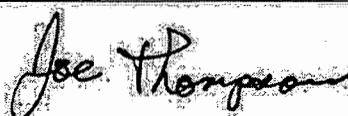

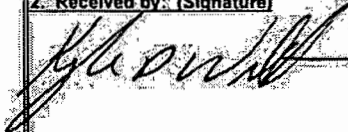
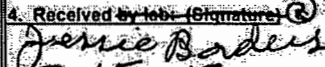
CHAIN OF CUSTODY RECORD

| CLIENT INFORMATION | | BILLING INFORMATION | | Project Description | | Turnaround Time | | Preservation Codes: | | | | | | | | | | | |
|---|-------------------|-------------------------|------|---|-------------------|---|------------------------------------|--|------------------|----------------------------|--|-------------------------------------|--|--|--|------------------------|--|--|--|
| El Dorado Chemical Inc. | | El Dorado Chemical Inc. | | Groundwater Samples | | 24 Hour | | 1. Cool, 4 Degrees Centigrade. | | | | 4. Thiosulfate for Dechlorination | | | | | | | |
| 4500 Northwest Ave. | | P.O. Box 231 | | | | 48 Hour | | 2. Sulfuric Acid (H ₂ SO ₄), pH < 2 | | | | 5. Hydrochloric Acid (HCl) | | | | | | | |
| El Dorado, AR 71731 | | El Dorado, AR 71731 | | Reporting Information | | 72 Hour | | 3. Nitric Acid (HNO ₃), pH < 2 | | | | 6. Sodium Hydroxide (NaOH), pH > 12 | | | | | | | |
| Attn: Larken Pennington | | | | Telephone: 870-863-1484 | | Routine (5 Day) | | TEST PARAMETERS | | | | | | | | Bottle Type Code | | | |
| | | | | Fax: 870-863-1499 | | Preservative Code: | | 1 | | 1;2 | | | | | | G = Glass; P = Plastic | | | |
| | | | | Email: LPennington@edc-ark.com | | Bottle Type | | P | | P | | | | | | V = Septum; A = Amber | | | |
|  Sampler(s) Signature | | | | Joe Thompson Sampler(s) Printed | | | | Nitrate, Sulfate | | Ammonia | | | | | | | | Arkansas Analytical Work Order Number: | |
| Field Number | SAMPLE COLLECTION | | Grab | Comp | Number of Bottles | Sample Matrix | SAMPLE IDENTIFICATION/ DESCRIPTION | | Nitrate, Sulfate | Ammonia | | | | | | | | | |
| | 5/15/13 | 07:55 | X | | 2 | Water | ECMW- 18 | X | X | | | | | | | | | 01 | |
| | | 08:23 | X | | 2 | Water | ECMW- 14 | X | X | | | | | | | | | 02 | |
| | | 08:35 | X | | 2 | Water | ECMW- 16 | X | X | | | | | | | | | 03 | |
| | | 08:59 | X | | 2 | Water | ECMW- 17 | X | X | | | | | | | | | 04 | |
| | | 09:22 | X | | 2 | Water | ECMW- 5 | X | X | | | | | | | | | 05 | |
| | | 09:33 | X | | 2 | Water | ECMW- 6 | X | X | | | | | | | | | 06 | |
| | | 09:44 | X | | 2 | Water | ECMW- 4 | X | X | | | | | | | | | 07 | |
| | | 09:56 | X | | 2 | Water | ECMW- 7 | X | X | | | | | | | | | 08 | |
| | | 10:10 | X | | 2 | Water | ECMW- 23 | X | X | | | | | | | | | 09 | |
| | | 10:22 | X | | 2 | Water | ECMW- 8 | X | X | | | | | | | | | 10 | |
| | | 10:36 | X | | 2 | Water | ECMW- 9 | X | X | | | | | | | | | 11 | |
| | | 10:45 | X | | 2 | Water | ECMW- 10 | X | X | | | | | | | | | 12 | |
| 1. Relinquished by: (Signature) | | Date/Time | | 2. Received by: (Signature) | | SAMPLE CONDITION UPON RECEIPT IN LAB | | | | REMARKS / SAMPLE COMMENTS | | | | | | | | | |
|  | | 5/15/13 | |  | | 1. CUSTODY SEALS: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | | | delivered via Goldstar - | | | | | | | | | |
| | | | | | | 2. CONTAINERS CORRECT: <input type="checkbox"/> Yes <input type="checkbox"/> No | | | | received in lab - | | | | | | | | | |
| | | | | | | 3. COC/LABELS AGREE: <input type="checkbox"/> Yes <input type="checkbox"/> No | | | | Sydney Sims, 5/15/13, 1536 | | | | | | | | | |
| 3. Relinquished by: (Signature) | | Date/Time | | 4. Received by lab: (Signature) | | 4. PRESERVATION CONFIRMED: <input type="checkbox"/> Yes <input type="checkbox"/> No | | | | | | | | | | | | | |
| | | | |  | | 5. RECEIVED ON ICE: <input type="checkbox"/> Yes <input type="checkbox"/> No | | | | | | | | | | | | | |
| | | | | 5-15-13 | | 6. TEMPERATURE ON RECEIPT: 14°C | | | | | | | | | | | | | |
| | | | | 12:10 | | FOR COMPLETION BY LAB ONLY | | | | | | | | | | | | | |



11701 Interstate 30, Bldg. 1, Ste. 115
 Little Rock, AR 72209
 PHONE: 501-455-3233
 FAX: 501-455-6118

CHAIN OF CUSTODY RECORD

| CLIENT INFORMATION | | BILLING INFORMATION | | Project Description | | Turnaround Time | | Preservation Codes: | | | | | | | | | | | |
|---|-------------------|-------------------------|------|---|-------------------|---|------------------------------------|--|------------------|-----------------------------|--|-------------------------------------|--|--|--|------------------------|--|--|--|
| El Dorado Chemical Inc. | | El Dorado Chemical Inc. | | Groundwater Samples | | 24 Hour | | 1. Cool, 4 Degrees Centigrade | | | | 4. Thiosulfate for Dechlorination | | | | | | | |
| 4500 Northwest Ave. | | P.O. Box 231 | | | | 48 Hour | | 2. Sulfuric Acid (H ₂ SO ₄), pH < 2 | | | | 5. Hydrochloric Acid (HCl) | | | | | | | |
| El Dorado, AR 71731 | | El Dorado, AR 71731 | | Reporting Information | | 72 Hour | | 3. Nitric Acid (HNO ₃), pH < 2 | | | | 6. Sodium Hydroxide (NaOH), pH > 12 | | | | | | | |
| Attn: Larken Pennington | | | | Telephone: 870-863-1484 | | Routine (5 Day) | | TEST PARAMETERS | | | | | | | | Bottle Type Code | | | |
| | | | | Fax: 870-863-1499 | | Preservative Code: | | 1 | | 1,2 | | | | | | G = Glass; P = Plastic | | | |
| | | | | Email: LPennington@edc-ark.com | | Bottle Type: | | P | | P | | | | | | V = Septum; A = Amber | | | |
|  Sampler(s) Signature | | | | Joe Thompson Sampler(s) Printed | | | | | | Nitrate, Sulfate | | Ammonia | | | | | | Arkansas Analytical Work Order Number: | |
| Field Number | SAMPLE COLLECTION | | Grab | Comp. | Number of Bottles | Sample Matrix | SAMPLE IDENTIFICATION/ DESCRIPTION | | Nitrate, Sulfate | Ammonia | | | | | | | | | |
| | 5/15/13 | 1102 | X | | 2 | Water | ECMW- 11 | | X | X | | | | | | | | 1305201-13 | |
| | | 1115 | X | | 2 | Water | ECMW- 24 | | X | X | | | | | | | | 14 | |
| | | | X | | 2 | Water | ECMW- | | X | X | | | | | | | | | |
| | | | X | | 2 | Water | ECMW- | | X | X | | | | | | | | | |
| | | | X | | 2 | Water | ECMW- | | X | X | | | | | | | | | |
| | | | X | | 2 | Water | ECMW- | | X | X | | | | | | | | | |
| | | | X | | 2 | Water | ECMW- | | X | X | | | | | | | | | |
| | | | X | | 2 | Water | ECMW- | | X | X | | | | | | | | | |
| | | | X | | 2 | Water | ECMW- | | X | X | | | | | | | | | |
| | | | X | | 2 | Water | ECMW- | | X | X | | | | | | | | | |
| | | | X | | 2 | Water | ECMW- | | X | X | | | | | | | | | |
| 1. Relinquished by: (Signature) | | Date/Time | | 2. Received by: (Signature) | | SAMPLE CONDITION UPON RECEIPT IN LAB | | | | REMARKS / SAMPLE COMMENTS | | | | | | | | | |
|  | | 5/15/13 | |  | | 1. CUSTODY SEALS: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | | | delivered via Goldstar- | | | | | | | | | |
| | | | | | | 2. CONTAINERS CORRECT: <input type="checkbox"/> Yes <input type="checkbox"/> No | | | | received in lab- | | | | | | | | | |
| | | | | | | 3. COC/LABELS AGREE: <input type="checkbox"/> Yes <input type="checkbox"/> No | | | | Sydney James - 5/15/13 1530 | | | | | | | | | |
| 3. Relinquished by: (Signature) | | Date/Time | | 4. Received by lab: (Signature) | | 4. PRESERVATION CONFIRMED: <input type="checkbox"/> Yes <input type="checkbox"/> No | | | | | | | | | | | | | |
| | | | |  | | 5. RECEIVED ON ICE: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | | | | | | | | | | | | |
| | | | | 5-15-13 | | 6. TEMPERATURE ON RECEIPT: 14°C | | | | | | | | | | | | | |
| | | | | 12:10 | | FOR COMPLETION BY LAB ONLY | | | | | | | | | | | | | |



11701 Interstate 30, Bldg. 1, Ste. 115
 Little Rock, AR 72209
 PHONE: 501-455-3233
 FAX: 501-455-8118

CHAIN OF CUSTODY RECORD

| | | | | | | | | | | | | | | | | | |
|---------------------------|--|----------------------------|--|-------------------------------|--|------------------------|--|--|---|---|-------------------------------------|-----|-----|-------------------------|--|--|--|
| CLIENT INFORMATION | | BILLING INFORMATION | | Project Description | | Turnaround Time | | Preservation Codes: | | | | | | | | | |
| El Dorado Chemical Inc. | | El Dorado Chemical Inc. | | Groundwaters | | 24 Hour | | 1. Cool, 4 Degree Centigrade | | | 4. Thiosulfate for Dechlorination | | | | | | |
| 4500 Northwest Ave. | | P.O. Box 231 | | | | 48 Hour | | 2. Sulfuric Acid (H ₂ SO ₄), pH < 2 | | | 5. Hydrochloric Acid (HCl) | | | | | | |
| El Dorado, AR 71731 | | El Dorado, AR 71731 | | Reporting Information: | | 72 Hour | | 3. Nitric Acid (HNO ₃), pH < 2 | | | 6. Sodium Hydroxide (NaOH), pH > 12 | | | | | | |
| Attn: Brent Parker | | | | Telephone: 870-863-1484 | | Routine (5 Day) | | TEST PARAMETERS | | | | | | Bottle Type Code | | | |
| | | | | Fax: 870-863-1499 | | Preservative Code: | | 1 | 1 | 1 | 1,2 | 1,2 | 1,5 | | | | |
| | | | | Email: BParker@edc-ark.com | | Bottle Type: | | P | P | P | P | P | GV | | | | |

Sampler(s) Signature: *Joe Thompson*
 Sampler(s) Printed: Joe Thompson
 Bottle Type Code: G = Glass, P = Plastic, V = Septum, A = Amber
 Arkansas Analytical Work Order Number:

| Field Number | SAMPLE COLLECTION | | Grab | Comp | Number of Bottles | Sample Matrix | SAMPLE IDENTIFICATION/ DESCRIPTION | NO ₃ Alkalinity | NO ₃ , NO ₂ , SO ₄ Alkalinity | NO ₂ , NO ₃ Alkalinity | T. Phosphorus | Ammonia | TOC | Nitrate - Sulfate |
|--------------|-------------------|--------|------|------|-------------------|---------------|------------------------------------|----------------------------|--|--|---------------|---------|-----|-------------------|
| | Date/s | Time/s | | | | | | | | | | | | |
| | 5/13/13 | 1010 | X | | 2 | W | MW-23 is Dup of 7 | | | | | X | | + |
| | 1 | 1115 | X | | 2 | W | MW-24 is Dup of 11 | | | | | X | | + |
| | | | X | | | W | MW- | | | | | | | |
| | | | X | | | W | MW- | | | | | | | |
| | | | X | | | W | MW- | | | | | | | |
| | | | X | | | W | MW- | | | | | | | |
| | | | X | | | W | MW- | | | | | | | |
| | | | X | | | W | MW- | | | | | | | |
| | | | X | | | W | MW- | | | | | | | |
| | | | X | | | W | MW- | | | | | | | |
| | | | X | | | W | MW- | | | | | | | |

| | | | | | | | | | | | |
|---------------------------------|--|-----------|--|---------------------------------|--|---|--|----------------------------------|--|--|--|
| 1. Relinquished by: (Signature) | | Date/Time | | 2. Received by: (Signature) | | SAMPLE CONDITION UPON RECEIPT IN LAB | | REMARKS / SAMPLE COMMENTS | | | |
| | | | | | | 1. CUSTODY SEALS: Yes ___ No ___ 2. CONTAINERS CORRECT: Yes ___ No ___ 3. COC/LABELS AGREE: Yes ___ No ___ 4. PRESERVATION CONFIRMED: Yes ___ No ___ 5. RECEIVED ON ICE: Yes ___ No ___ 6. TEMPERATURE ON RECEIPT: | | P.O. Number: | | | |
| 3. Relinquished by: (Signature) | | Date/Time | | 4. Received by lab: (Signature) | | FOR COMPLETION BY LAB ONLY | | | | | |
| | | | | | | | | | | | |



11701 I-30 Bldg 1, Ste 115 - Little Rock, AR 72209
501-455-3233 Fax 501-455-6118

08 November 2013

Larken Pennington
El Dorado Chemical Inc.
4500 North West Ave.
El Dorado, AR 71731

RE: Groundwater Sample(s)

SDG Number: 1311064

Enclosed are the results of analyses for samples received by the laboratory on 05-Nov-13 16:15. If you have any questions concerning this report, please feel free to contact me.

Sample Receipt Information:

| | |
|------------------------|-------|
| Custody Seals | ✓ |
| Containers Correct | ✓ |
| COC/Labels Agree | ✓ |
| Preservation Confirmed | ✓ |
| Received On Ice | ✓ |
| Temperature on Receipt | 5.0°C |

Sincerely,

A handwritten signature in cursive script that reads "Norma James". The signature is written in dark ink on a light-colored background.

Norma James
President

This document is intended only for the use of the person(s) to whom it is expressly addressed. This document may contain information that is confidential and legally privileged. If you are not the intended recipient, you are notified that any disclosure, distribution, or copying of this document is strictly prohibited. If you have received this document in error, please destroy.

08 November 2013

Larken Pennington
El Dorado Chemical Inc.
4500 North West Ave.
El Dorado, AR 71731
Project: Groundwater Sample(s)



Date Received: 05-Nov-13 16:15

CASE NARRATIVE

Sample Delivery Group – 1311064

Qualified Analytical and/or Quality Control Results are Discussed Below:

Anions Analysis:

Matrix Spike/Matrix Spike Duplicate (MS/MSD) Failure: Sulfate failed to recover within laboratory acceptance criteria in the MS/MSD sample due to the high concentration of Sulfate in the parent sample. The recoveries were qualified by "MBA", which means "Masked by Analyte", in the quality control section of the final report. Sulfate was qualified as "estimated" in the parent sample which was NOT a member of this sample delivery group.

08 November 2013

Larken Pennington
El Dorado Chemical Inc.
4500 North West Ave.
El Dorado, AR 71731
Project: Groundwater Sample(s)



Date Received: 05-Nov-13 16:15

ANALYTICAL RESULTS

Lab Number: 1311064-01
Sample Name: ECMW-5
Date/Time Collected: 11/5/13 7:50
Sample Matrix: Water

| <u>Anions</u> | <u>Units</u> | <u>Result</u> | <u>Qualifier(s)</u> | <u>Date/Time Analyzed</u> | <u>Batch</u> | <u>Method</u> |
|----------------------|--------------|---------------|---------------------|---------------------------|--------------|---------------------|
| Sulfate as SO4 | mg/L | 66.5 | | 11/6/13 10:25 | A311045 | 300.0, 2.1-1993 |
| Nitrate as N | mg/L | 34.7 | | 11/6/13 10:25 | A311045 | 300.0, 2.1-1993 |
| <u>Wet Chemistry</u> | <u>Units</u> | <u>Result</u> | <u>Qualifier(s)</u> | <u>Date/Time Analyzed</u> | <u>Batch</u> | <u>Method</u> |
| Ammonia as N | mg/L | 0.56 | | 11/7/13 16:46 | A311079 | 4500-NH3 B,D,C-1997 |

ANALYTICAL RESULTS

Lab Number: 1311064-02
Sample Name: ECMW-6
Date/Time Collected: 11/5/13 8:10
Sample Matrix: Water

| <u>Anions</u> | <u>Units</u> | <u>Result</u> | <u>Qualifier(s)</u> | <u>Date/Time Analyzed</u> | <u>Batch</u> | <u>Method</u> |
|----------------------|--------------|---------------|---------------------|---------------------------|--------------|---------------------|
| Sulfate as SO4 | mg/L | 28.5 | | 11/6/13 10:49 | A311045 | 300.0, 2.1-1993 |
| Nitrate as N | mg/L | 3380 | | 11/6/13 17:11 | A311045 | 300.0, 2.1-1993 |
| <u>Wet Chemistry</u> | <u>Units</u> | <u>Result</u> | <u>Qualifier(s)</u> | <u>Date/Time Analyzed</u> | <u>Batch</u> | <u>Method</u> |
| Ammonia as N | mg/L | 935 | | 11/7/13 16:46 | A311079 | 4500-NH3 B,D,C-1997 |

ANALYTICAL RESULTS

Lab Number: 1311064-03
Sample Name: ECMW-4
Date/Time Collected: 11/5/13 8:25
Sample Matrix: Water

| <u>Anions</u> | <u>Units</u> | <u>Result</u> | <u>Qualifier(s)</u> | <u>Date/Time Analyzed</u> | <u>Batch</u> | <u>Method</u> |
|----------------------|--------------|---------------|---------------------|---------------------------|--------------|---------------------|
| Sulfate as SO4 | mg/L | 609 | | 11/6/13 17:35 | A311045 | 300.0, 2.1-1993 |
| Nitrate as N | mg/L | 0.752 | | 11/6/13 11:12 | A311045 | 300.0, 2.1-1993 |
| <u>Wet Chemistry</u> | <u>Units</u> | <u>Result</u> | <u>Qualifier(s)</u> | <u>Date/Time Analyzed</u> | <u>Batch</u> | <u>Method</u> |
| Ammonia as N | mg/L | 2.03 | | 11/7/13 16:46 | A311079 | 4500-NH3 B,D,C-1997 |

08 November 2013

Larken Pennington
El Dorado Chemical Inc.
4500 North West Ave.
El Dorado, AR 71731
Project: Groundwater Sample(s)



Date Received: 05-Nov-13 16:15

ANALYTICAL RESULTS

Lab Number: 1311064-04
Sample Name: ECMW-7
Date/Time Collected: 11/5/13 8:50
Sample Matrix: Water

| <u>Anions</u> | <u>Units</u> | <u>Result</u> | <u>Qualifier(s)</u> | <u>Date/Time Analyzed</u> | <u>Batch</u> | <u>Method</u> |
|----------------------|--------------|---------------|---------------------|---------------------------|--------------|---------------------|
| Sulfate as SO4 | mg/L | 927 | | 11/6/13 12:23 | A311045 | 300.0, 2.1-1993 |
| Nitrate as N | mg/L | 156 | | 11/6/13 12:23 | A311045 | 300.0, 2.1-1993 |
| <u>Wet Chemistry</u> | <u>Units</u> | <u>Result</u> | <u>Qualifier(s)</u> | <u>Date/Time Analyzed</u> | <u>Batch</u> | <u>Method</u> |
| Ammonia as N | mg/L | 132 | | 11/7/13 16:46 | A311079 | 4500-NH3 B,D,C-1997 |

ANALYTICAL RESULTS

Lab Number: 1311064-05
Sample Name: ECMW-8
Date/Time Collected: 11/5/13 9:05
Sample Matrix: Water

| <u>Anions</u> | <u>Units</u> | <u>Result</u> | <u>Qualifier(s)</u> | <u>Date/Time Analyzed</u> | <u>Batch</u> | <u>Method</u> |
|----------------------|--------------|---------------|---------------------|---------------------------|--------------|---------------------|
| Sulfate as SO4 | mg/L | 642 | | 11/6/13 12:47 | A311045 | 300.0, 2.1-1993 |
| Nitrate as N | mg/L | 584 | | 11/6/13 12:47 | A311045 | 300.0, 2.1-1993 |
| <u>Wet Chemistry</u> | <u>Units</u> | <u>Result</u> | <u>Qualifier(s)</u> | <u>Date/Time Analyzed</u> | <u>Batch</u> | <u>Method</u> |
| Ammonia as N | mg/L | 150 | | 11/7/13 16:46 | A311079 | 4500-NH3 B,D,C-1997 |

ANALYTICAL RESULTS

Lab Number: 1311064-06
Sample Name: ECMW-9
Date/Time Collected: 11/5/13 9:20
Sample Matrix: Water

| <u>Anions</u> | <u>Units</u> | <u>Result</u> | <u>Qualifier(s)</u> | <u>Date/Time Analyzed</u> | <u>Batch</u> | <u>Method</u> |
|----------------------|--------------|---------------|---------------------|---------------------------|--------------|---------------------|
| Sulfate as SO4 | mg/L | 545 | | 11/6/13 17:58 | A311045 | 300.0, 2.1-1993 |
| Nitrate as N | mg/L | 53.9 | | 11/6/13 13:10 | A311045 | 300.0, 2.1-1993 |
| <u>Wet Chemistry</u> | <u>Units</u> | <u>Result</u> | <u>Qualifier(s)</u> | <u>Date/Time Analyzed</u> | <u>Batch</u> | <u>Method</u> |
| Ammonia as N | mg/L | 17.0 | | 11/7/13 16:46 | A311079 | 4500-NH3 B,D,C-1997 |

08 November 2013

Larken Pennington
El Dorado Chemical Inc.
4500 North West Ave.
El Dorado, AR 71731
Project: Groundwater Sample(s)



Date Received: 05-Nov-13 16:15

ANALYTICAL RESULTS

Lab Number: 1311064-07
Sample Name: ECMW-10
Date/Time Collected: 11/5/13 9:45
Sample Matrix: Water

| <u>Anions</u> | <u>Units</u> | <u>Result</u> | <u>Qualifier(s)</u> | <u>Date/Time Analyzed</u> | <u>Batch</u> | <u>Method</u> |
|----------------------|--------------|---------------|---------------------|---------------------------|--------------|---------------------|
| Sulfate as SO4 | mg/L | 153 | | 11/6/13 13:34 | A311045 | 300.0, 2.1-1993 |
| Nitrate as N | mg/L | 47.8 | | 11/6/13 13:34 | A311045 | 300.0, 2.1-1993 |
| <u>Wet Chemistry</u> | <u>Units</u> | <u>Result</u> | <u>Qualifier(s)</u> | <u>Date/Time Analyzed</u> | <u>Batch</u> | <u>Method</u> |
| Ammonia as N | mg/L | < 0.50 | | 11/7/13 16:46 | A311079 | 4500-NH3 B,D,C-1997 |

ANALYTICAL RESULTS

Lab Number: 1311064-08
Sample Name: ECMW-11
Date/Time Collected: 11/5/13 10:05
Sample Matrix: Water

| <u>Anions</u> | <u>Units</u> | <u>Result</u> | <u>Qualifier(s)</u> | <u>Date/Time Analyzed</u> | <u>Batch</u> | <u>Method</u> |
|----------------------|--------------|---------------|---------------------|---------------------------|--------------|---------------------|
| Sulfate as SO4 | mg/L | 125 | | 11/6/13 18:22 | A311045 | 300.0, 2.1-1993 |
| Nitrate as N | mg/L | 30.5 | | 11/6/13 13:57 | A311045 | 300.0, 2.1-1993 |
| <u>Wet Chemistry</u> | <u>Units</u> | <u>Result</u> | <u>Qualifier(s)</u> | <u>Date/Time Analyzed</u> | <u>Batch</u> | <u>Method</u> |
| Ammonia as N | mg/L | < 0.50 | | 11/7/13 16:46 | A311079 | 4500-NH3 B,D,C-1997 |

ANALYTICAL RESULTS

Lab Number: 1311064-09
Sample Name: ECMW-14
Date/Time Collected: 11/5/13 10:25
Sample Matrix: Water

| <u>Anions</u> | <u>Units</u> | <u>Result</u> | <u>Qualifier(s)</u> | <u>Date/Time Analyzed</u> | <u>Batch</u> | <u>Method</u> |
|----------------------|--------------|---------------|---------------------|---------------------------|--------------|---------------------|
| Sulfate as SO4 | mg/L | 91.6 | | 11/6/13 14:21 | A311045 | 300.0, 2.1-1993 |
| Nitrate as N | mg/L | 6.92 | | 11/6/13 14:21 | A311045 | 300.0, 2.1-1993 |
| <u>Wet Chemistry</u> | <u>Units</u> | <u>Result</u> | <u>Qualifier(s)</u> | <u>Date/Time Analyzed</u> | <u>Batch</u> | <u>Method</u> |
| Ammonia as N | mg/L | 7.52 | | 11/7/13 16:46 | A311079 | 4500-NH3 B,D,C-1997 |

08 November 2013



Larken Pennington
El Dorado Chemical Inc.
4500 North West Ave.
El Dorado, AR 71731
Project: Groundwater Sample(s)

Date Received: 05-Nov-13 16:15

ANALYTICAL RESULTS

Lab Number: 1311064-10
Sample Name: ECMW-16
Date/Time Collected: 11/5/13 10:50
Sample Matrix: Water

| <u>Anions</u> | <u>Units</u> | <u>Result</u> | <u>Qualifier(s)</u> | <u>Date/Time Analyzed</u> | <u>Batch</u> | <u>Method</u> |
|----------------------|--------------|---------------|---------------------|---------------------------|--------------|---------------------|
| Sulfate as SO4 | mg/L | 13.3 | | 11/6/13 14:44 | A311045 | 300.0, 2.1-1993 |
| Nitrate as N | mg/L | 10.3 | | 11/6/13 14:44 | A311045 | 300.0, 2.1-1993 |
| <u>Wet Chemistry</u> | <u>Units</u> | <u>Result</u> | <u>Qualifier(s)</u> | <u>Date/Time Analyzed</u> | <u>Batch</u> | <u>Method</u> |
| Ammonia as N | mg/L | 1.58 | | 11/7/13 16:46 | A311079 | 4500-NH3 B,D,C-1997 |

ANALYTICAL RESULTS

Lab Number: 1311064-11
Sample Name: ECMW-17
Date/Time Collected: 11/5/13 11:10
Sample Matrix: Water

| <u>Anions</u> | <u>Units</u> | <u>Result</u> | <u>Qualifier(s)</u> | <u>Date/Time Analyzed</u> | <u>Batch</u> | <u>Method</u> |
|----------------------|--------------|---------------|---------------------|---------------------------|--------------|---------------------|
| Sulfate as SO4 | mg/L | 39.6 | | 11/6/13 18:45 | A311045 | 300.0, 2.1-1993 |
| Nitrate as N | mg/L | 1.24 | | 11/6/13 15:08 | A311045 | 300.0, 2.1-1993 |
| <u>Wet Chemistry</u> | <u>Units</u> | <u>Result</u> | <u>Qualifier(s)</u> | <u>Date/Time Analyzed</u> | <u>Batch</u> | <u>Method</u> |
| Ammonia as N | mg/L | < 0.50 | | 11/7/13 16:46 | A311079 | 4500-NH3 B,D,C-1997 |

ANALYTICAL RESULTS

Lab Number: 1311064-12
Sample Name: ECMW-18
Date/Time Collected: 11/5/13 11:25
Sample Matrix: Water

| <u>Anions</u> | <u>Units</u> | <u>Result</u> | <u>Qualifier(s)</u> | <u>Date/Time Analyzed</u> | <u>Batch</u> | <u>Method</u> |
|----------------------|--------------|---------------|---------------------|---------------------------|--------------|---------------------|
| Sulfate as SO4 | mg/L | 6.30 | | 11/6/13 15:31 | A311045 | 300.0, 2.1-1993 |
| Nitrate as N | mg/L | < 0.250 | | 11/6/13 15:31 | A311045 | 300.0, 2.1-1993 |
| <u>Wet Chemistry</u> | <u>Units</u> | <u>Result</u> | <u>Qualifier(s)</u> | <u>Date/Time Analyzed</u> | <u>Batch</u> | <u>Method</u> |
| Ammonia as N | mg/L | 9.64 | | 11/7/13 16:46 | A311079 | 4500-NH3 B,D,C-1997 |

08 November 2013

Larken Pennington
El Dorado Chemical Inc.
4500 North West Ave.
El Dorado, AR 71731
Project: Groundwater Sample(s)



Date Received: 05-Nov-13 16:15

ANALYTICAL RESULTS

Lab Number: 1311064-13
Sample Name: Duplicate
Date/Time Collected: 11/5/13 0:00
Sample Matrix: Water

| Anions | Units | Result | Qualifier(s) | Date/Time Analyzed | Batch | Method |
|----------------|-------|--------|--------------|--------------------|---------|---------------------|
| Sulfate as SO4 | mg/L | 62.8 | | 11/6/13 15:59 | A311045 | 300.0, 2.1-1993 |
| Nitrate as N | mg/L | 35.5 | | 11/6/13 15:59 | A311045 | 300.0, 2.1-1993 |
| Wet Chemistry | Units | Result | Qualifier(s) | Date/Time Analyzed | Batch | Method |
| Ammonia as N | mg/L | < 0.50 | | 11/7/13 16:46 | A311079 | 4500-NH3 B,D,C-1997 |

QUALITY CONTROL RESULTS

Anions -- Batch: A311045 (Water)

Prepared: 05-Nov-13 15:51 By: MB -- Analyzed: 06-Nov-13 10:02 By: Melis

| Analyte | BLK | LCS / LCSD | MS / MSD | Dup | RPD | Qualifiers |
|----------------|-------------|------------|-------------|-----|--------|------------|
| Nitrate as N | <0.250 mg/L | 102% / NA | 106% / 110% | | 1.85% | |
| Sulfate as SO4 | <0.500 mg/L | 99.7% / NA | MBA / MBA | | 0.383% | MBA |

Wet Chemistry -- Batch: A311079 (Water)


Prepared: 07-Nov-13 09:00 By: KP -- Analyzed: 07-Nov-13 16:46 By: KP

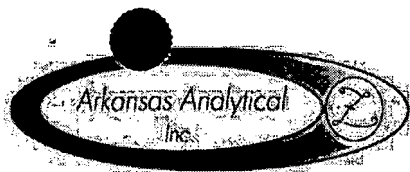
| Analyte | BLK | LCS / LCSD | MS / MSD | Dup | RPD | Qualifiers |
|--------------|------------|------------|---------------|-----|--------|------------|
| Ammonia as N | <0.50 mg/L | 95.9% / NA | 97.4% / 96.6% | | 0.790% | |

QUALIFIER(S)

*MBA: Masked By Analyte

All Analysis performed according to EPA approved methodology when available:
SW 846, Revised December, 1996; EPA 600/4-79-020, Revised March, 1983; Standard Methods.
Instrument calibration and quality control samples performed at or above frequency specified in analytical method.

Reviewed by: 
Norma James
President



11701 Interstate 30, Bldg. 1, Ste. 115
 Little Rock, AR 72209
 PHONE: 501-455-3233
 FAX: 501-455-6118

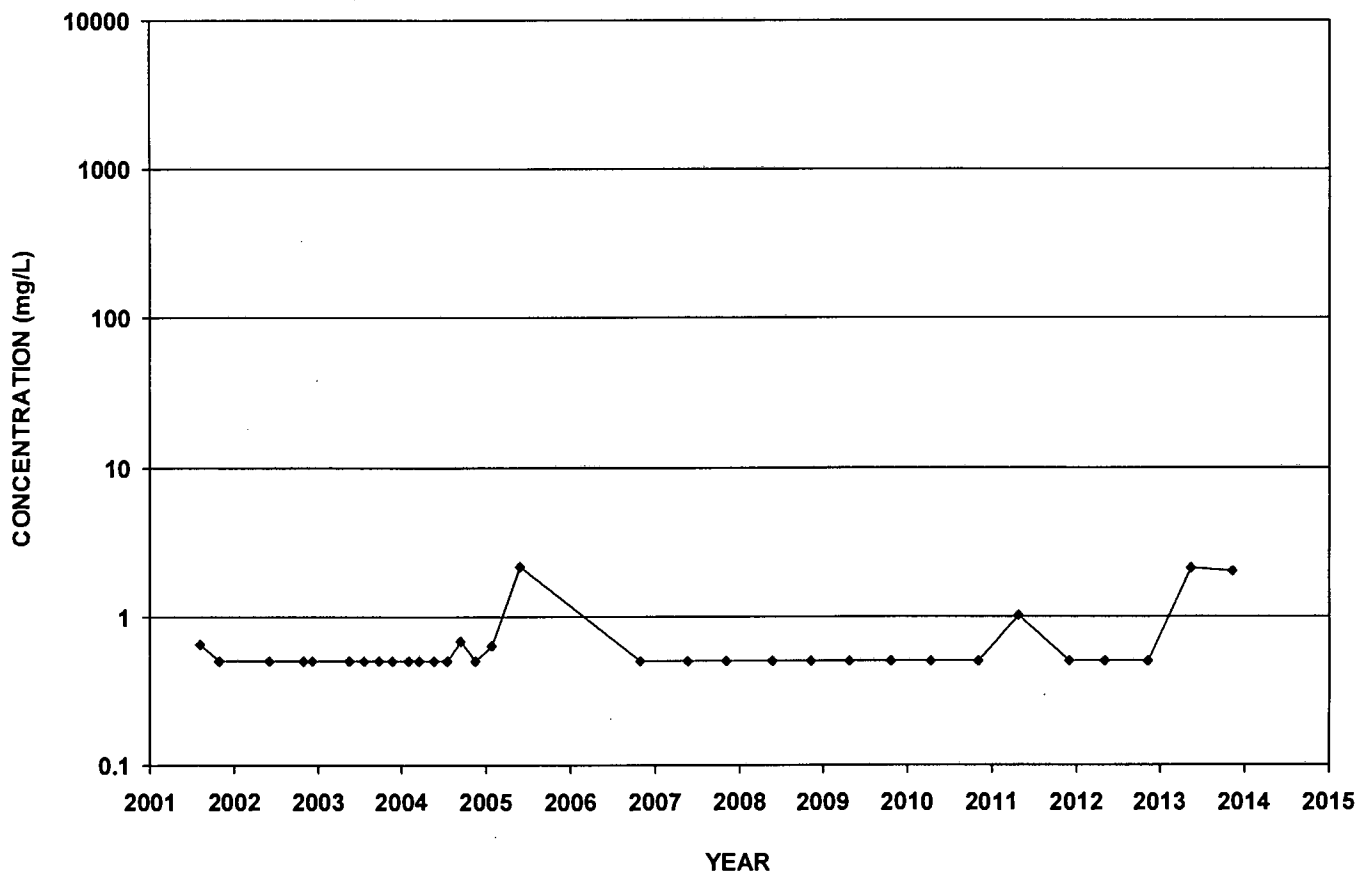
CHAIN OF CUSTODY RECORD

| CLIENT INFORMATION | | BILLING INFORMATION | | Project Description | | Turnaround Time | | Preservation Codes: | | | | | | | | | | | |
|---|-------------------|-------------------------|------|---|-------------------|--|------------------------------------|--|------------------|---------|--|--|--|--|--|------------------|--|--|--|
| El Dorado Chemical Inc. | | El Dorado Chemical Inc. | | Groundwater Samples | | 24 Hour | | 1. Cool, 4 Degrees Centigrade | | | | 4. Thiosulfate for Dechlorination | | | | | | | |
| 4500 Northwest Ave. | | P.O. Box 231 | | | | 48 Hour | | 2. Sulfuric Acid (H ₂ SO ₄), pH < 2 | | | | 5. Hydrochloric Acid (HCl) | | | | | | | |
| El Dorado, AR 71731 | | El Dorado, AR 71731 | | Reporting Information | | 72 Hour | | 3. Nitric Acid (HNO ₃), pH < 2 | | | | 6. Sodium Hydroxide (NaOH), pH > 12 | | | | | | | |
| Attn: Larken Pennington | | | | Telephone: 870-863-1484 | | Routine (5 Day) | | TEST PARAMETERS | | | | | | | | Bottle Type Code | | | |
| | | | | Fax: 870-863-1499 | | Preservative Code: | | 1 | 1,2 | | | | | | | | | O = Glass; P = Plastic | |
| | | | | Email: LPennington@edc-ark.com | | Bottle Type: | | P | P | | | | | | | | | V = Septum; A = Amber | |
| <i>E. Duban</i> EM9 INC Sampler(s) Signature | | | | R. DURHAM EM9 INC Sampler(s) Printed | | | | | | | | | | | | | | | |
| Field Number | SAMPLE COLLECTION | | Grab | Comp | Number of Bottles | Sample Matrix | SAMPLE IDENTIFICATION/ DESCRIPTION | | Nitrate, Sulfate | Ammonia | | | | | | | | Arkansas Analytical Work Order Number: | |
| | 11-5-13 | 0750 | X | | 2 | Water | ECMW- 5 | X | X | | | | | | | | | 1311064- | |
| | | 0810 | X | | 2 | Water | ECMW- 6 | X | X | | | | | | | | | 01 | |
| | | 0825 | X | | 2 | Water | ECMW- 4 | X | X | | | | | | | | | 02 | |
| | | 0850 | X | | 2 | Water | ECMW- 7 | X | X | | | | | | | | | 03 | |
| | | 0905 | X | | 2 | Water | ECMW- 8 | X | X | | | | | | | | | 04 | |
| | | 0920 | X | | 2 | Water | ECMW- 9 | X | X | | | | | | | | | 05 | |
| | | 0945 | X | | 2 | Water | ECMW- 10 | X | X | | | | | | | | | 06 | |
| | | 1005 | X | | 2 | Water | ECMW- 11 | X | X | | | | | | | | | 07 | |
| | | 1025 | X | | 2 | Water | ECMW- 14 | X | X | | | | | | | | | 08 | |
| | | 1050 | X | | 2 | Water | ECMW- 16 | X | X | | | | | | | | | 09 | |
| | | 1110 | X | | 2 | Water | ECMW- 17 | X | X | | | | | | | | | 10 | |
| | | 1125 | X | | 2 | Water | ECMW- 18 | X | X | | | | | | | | | 11 | |
| 1. Relinquished by: (Signature) | | Date/Time | | 2. Received by: (Signature) | | SAMPLE CONDITION UPON RECEIPT IN LAB: | | | | | | REMARKS / SAMPLE COMMENTS | | | | | | | |
| <i>R. Durham</i> EM9 INC | | 11-5-13 1115 | | <i>Larken Pennington</i> 11/5/13 | | 1. CUSTODY SEALS: <input checked="" type="checkbox"/> Yes ___ No | | | | | | Dup sample = 13 11/5/13 | | | | | | | |
| | | | | | | 2. CONTAINERS CORRECT: <input type="checkbox"/> Yes ___ No | | | | | | | | | | | | | |
| | | | | | | 3. COC LABELS AGREE: <input type="checkbox"/> Yes ___ No | | | | | | | | | | | | | |
| 3. Relinquished by: (Signature) | | Date/Time | | 4. Received by: (Signature) | | 4. PRESERVATION CONFIRMED: <input type="checkbox"/> Yes ___ No | | | | | | Added Dup to COC per sample containers received | | | | | | | |
| <i>Jessie Borders</i> 11-5-13 | | 11-5-13 1115 | | <i>Sydney James</i> | | 5. RECEIVED ON ICE: <input type="checkbox"/> Yes ___ No | | | | | | | | | | | | | |
| | | | | | | 6. TEMPERATURE ON RECEIPT: 5°C | | | | | | 11/5/13-(8) | | | | | | | |
| Revision 1 12/7/10 | | | | | | | | | | | | | | | | | | | |

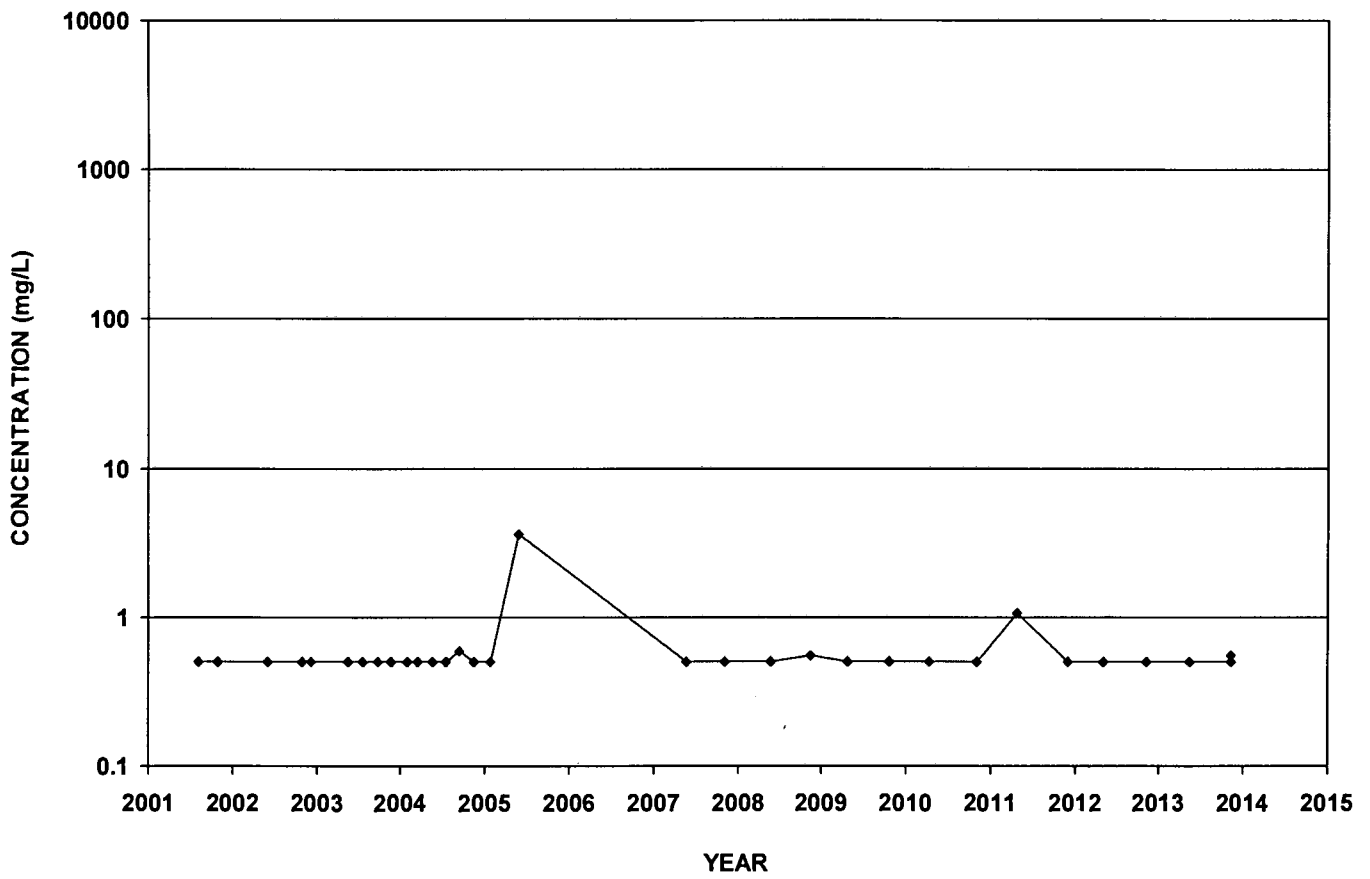
Delivered via Goldstar Courier

APPENDIX B
TREND GRAPHS

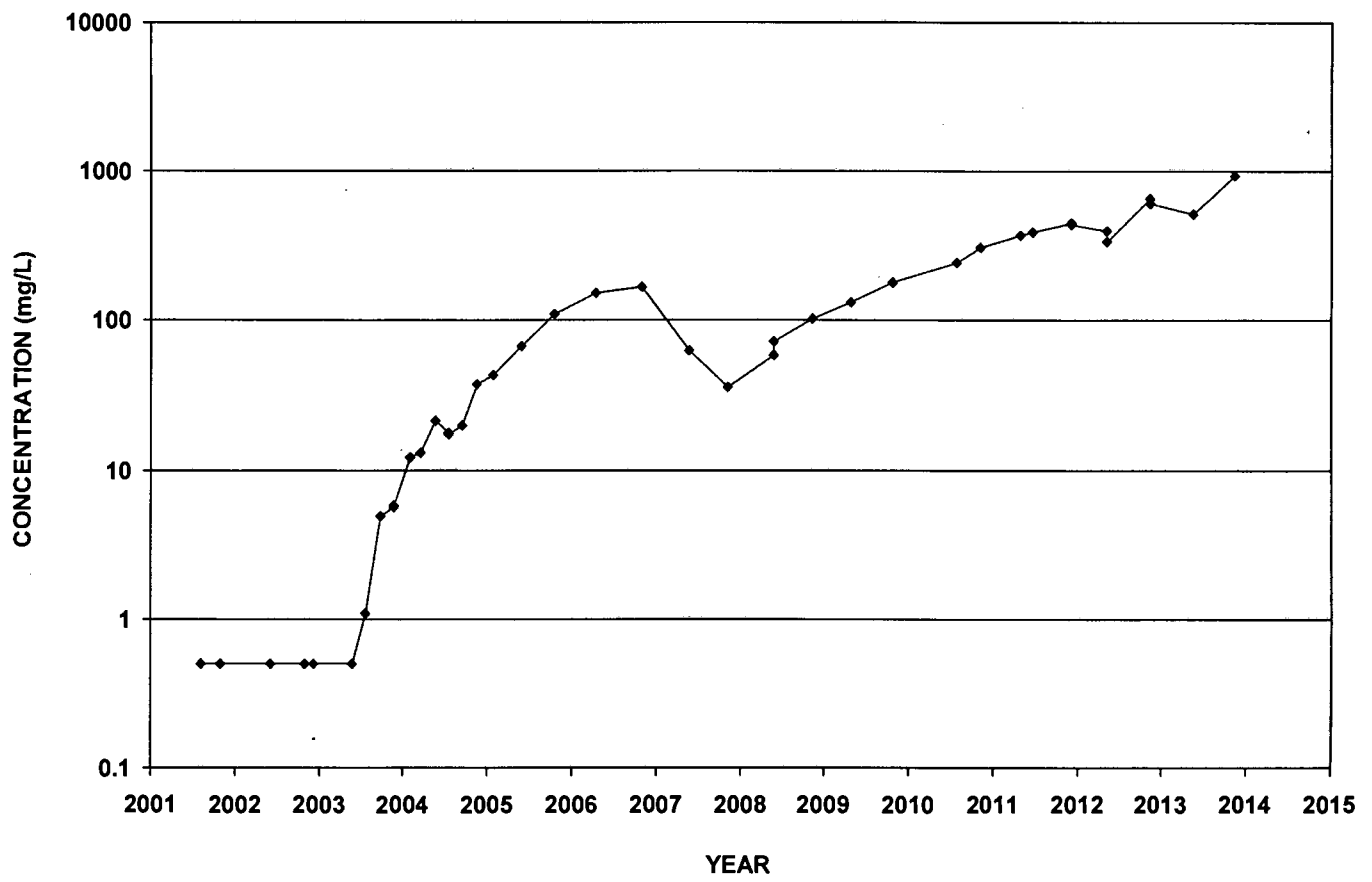
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Ammonia-N



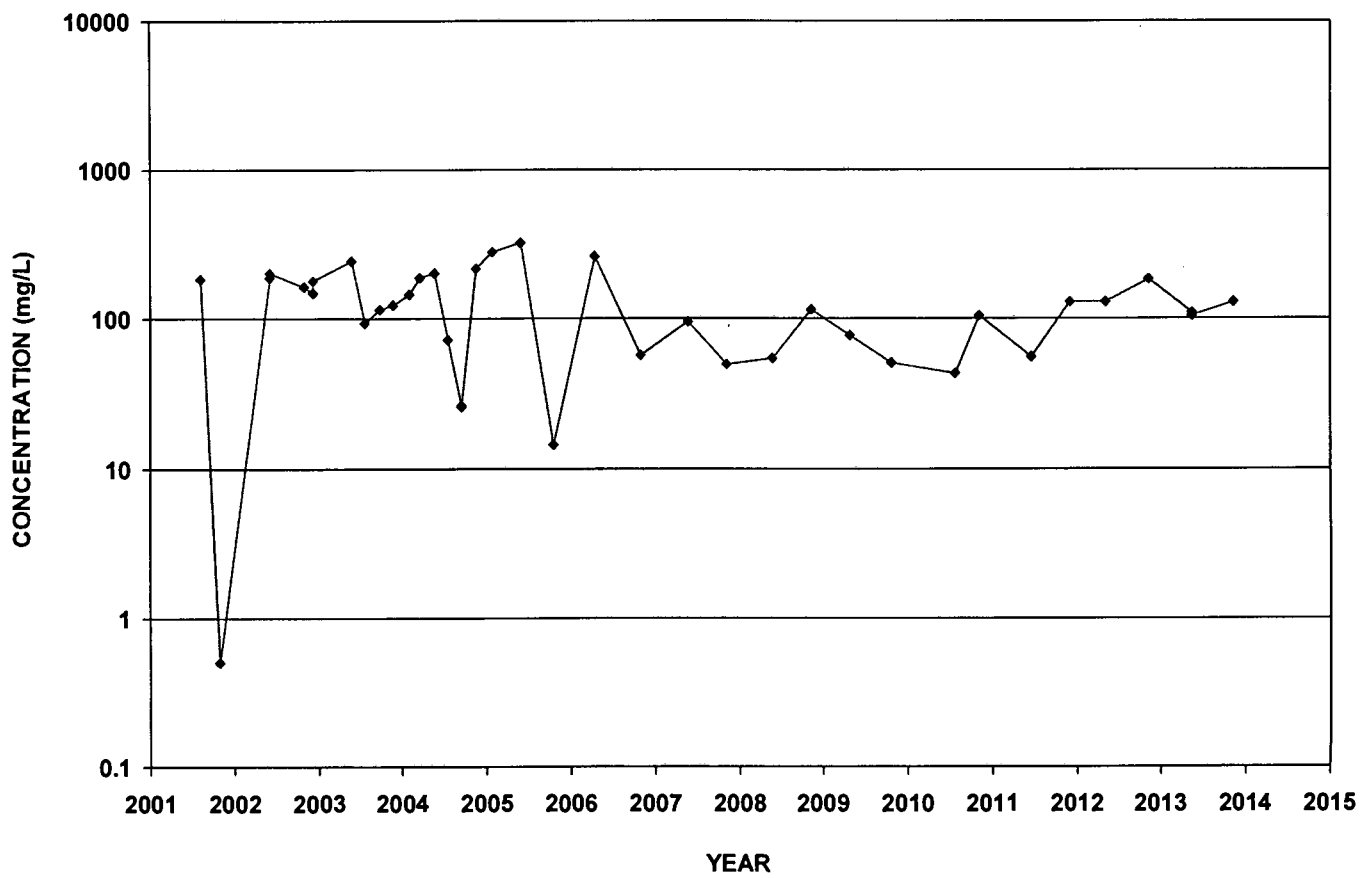
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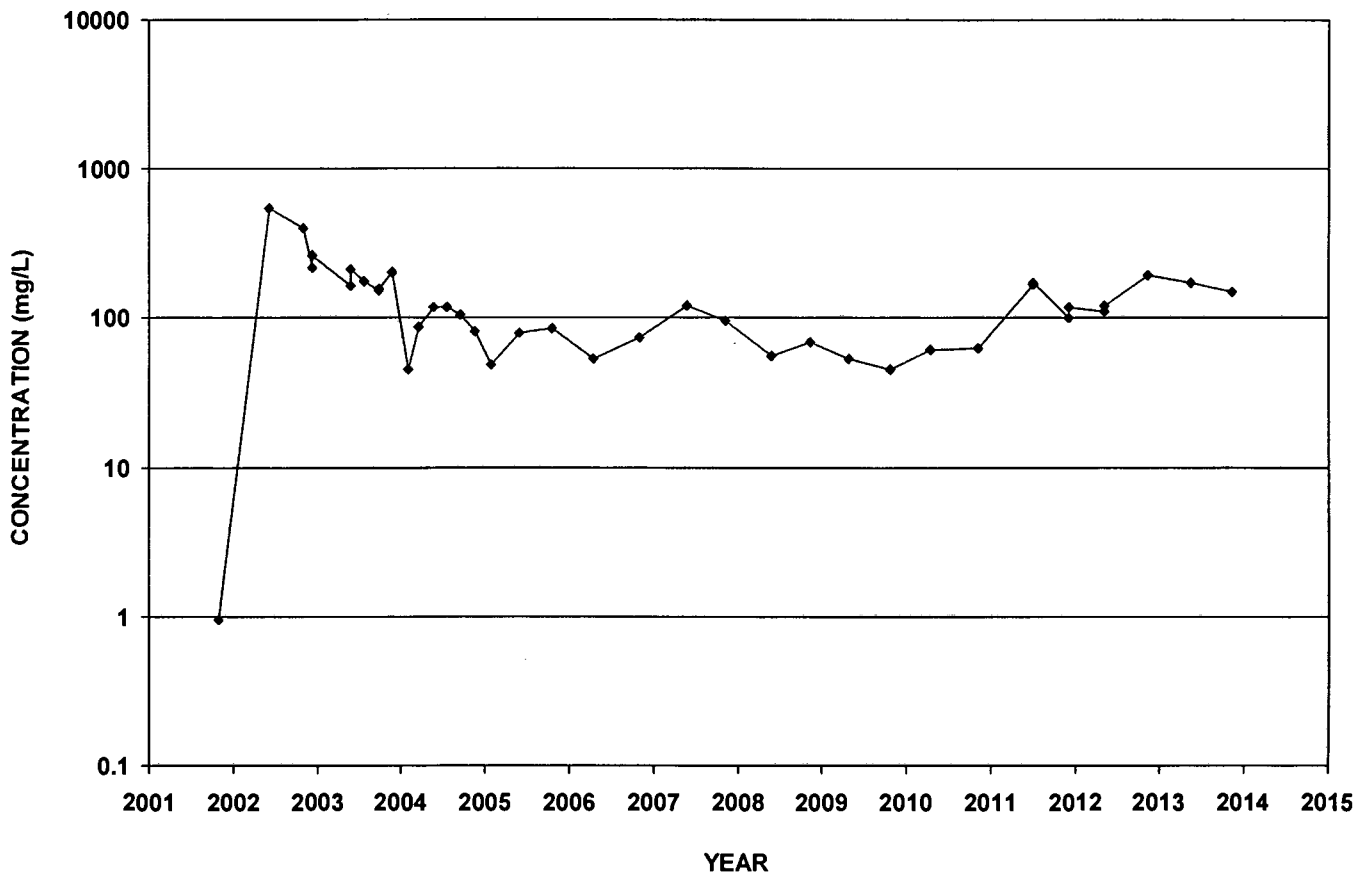
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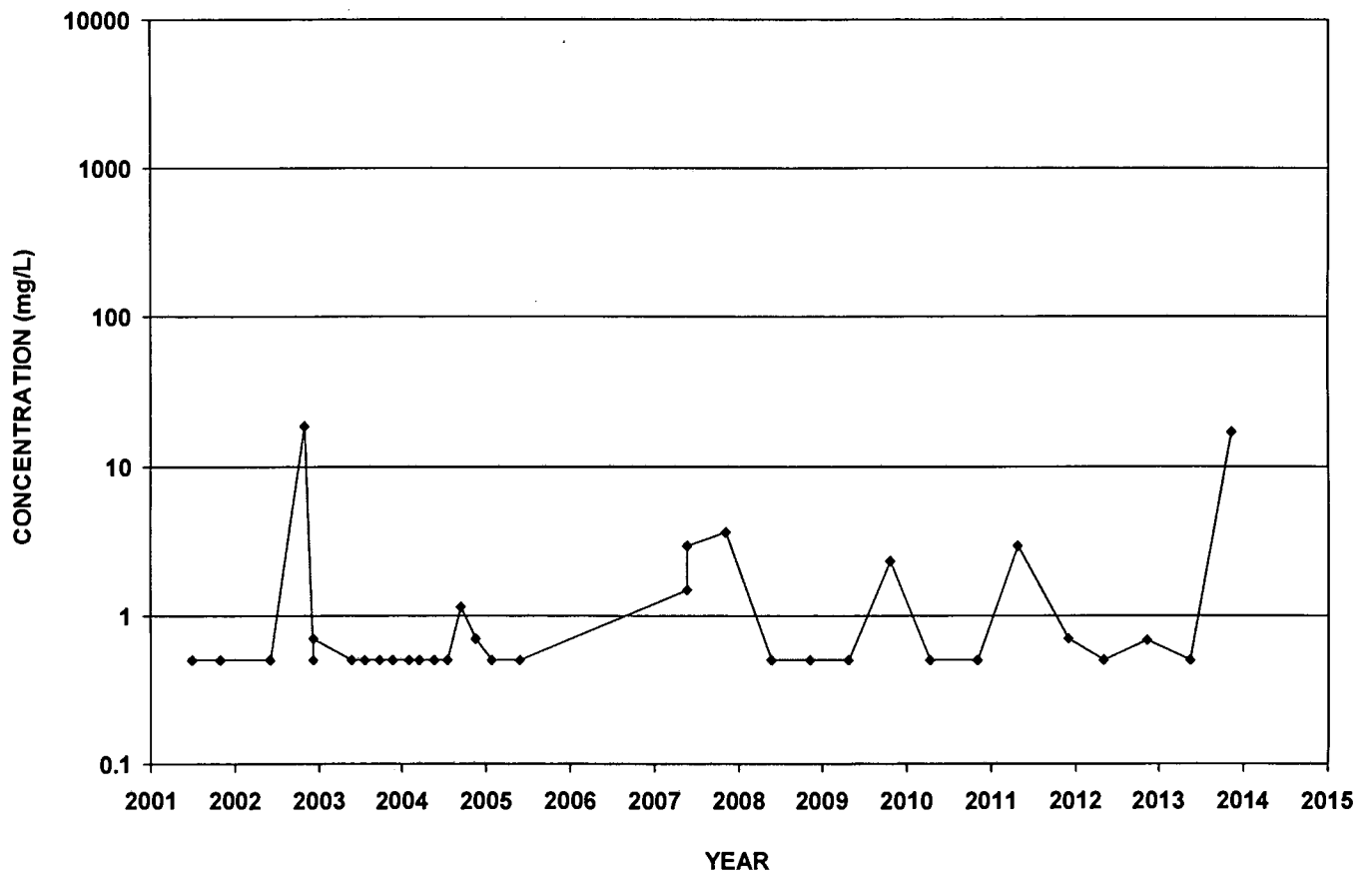
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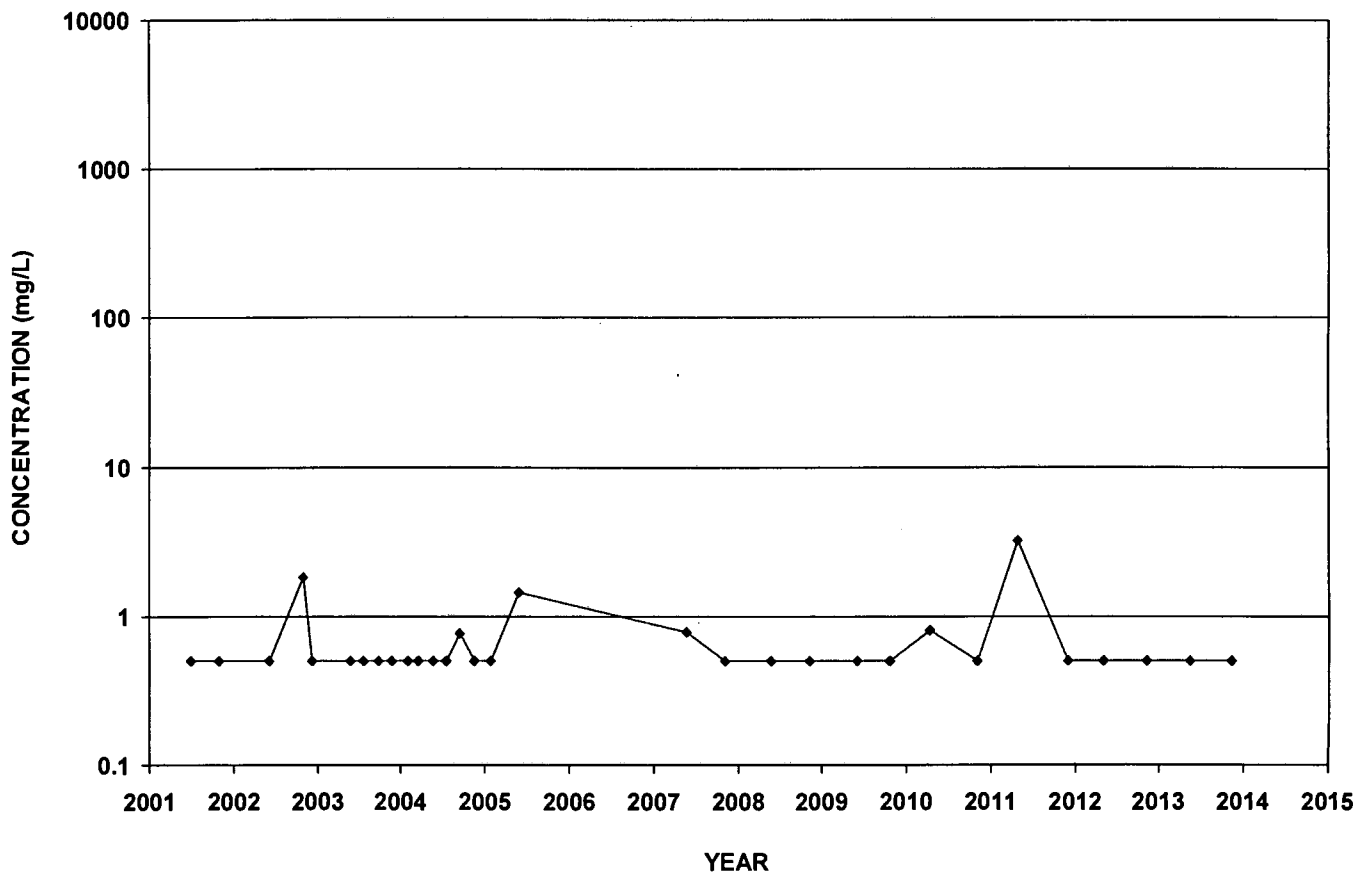
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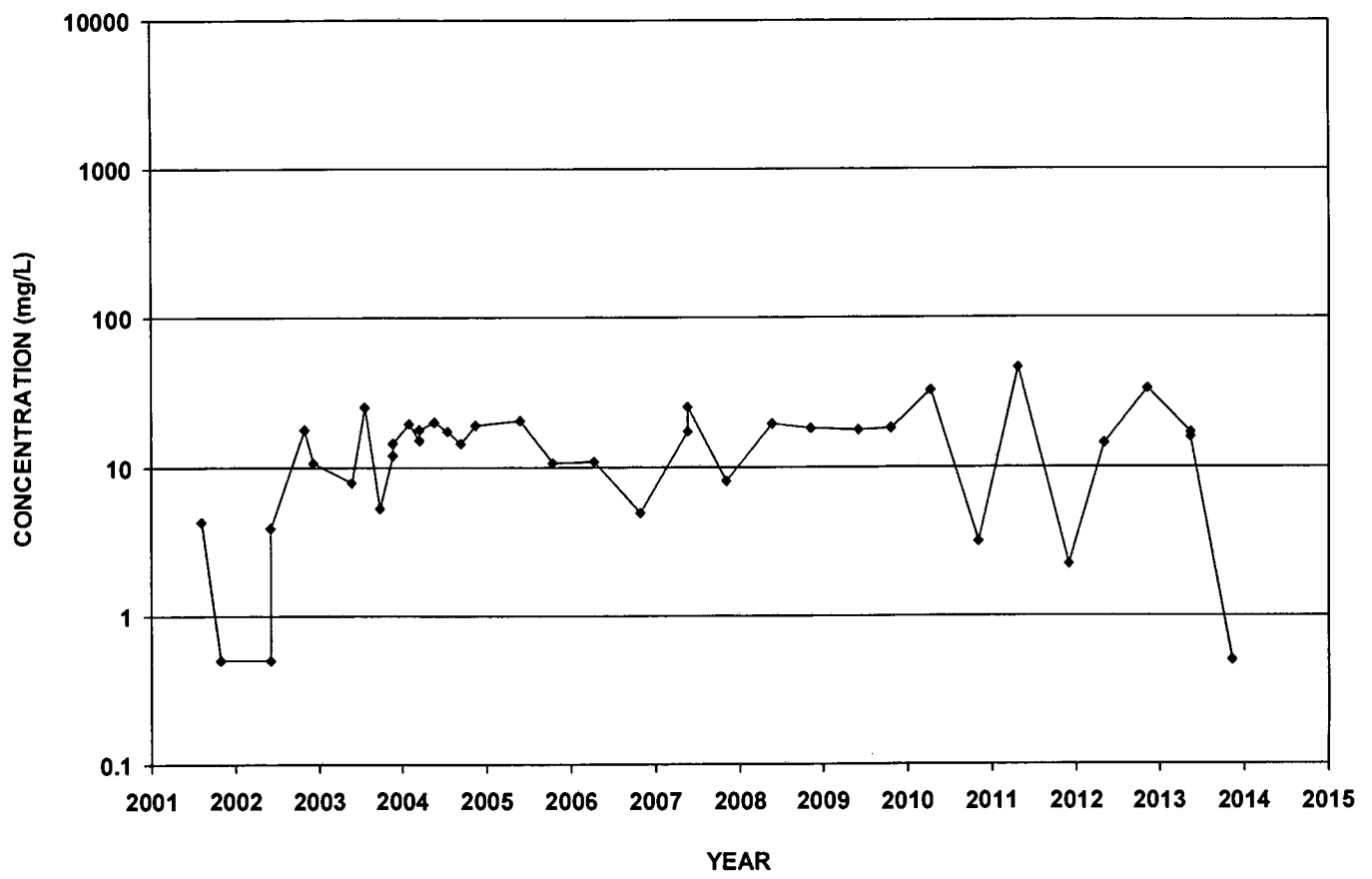
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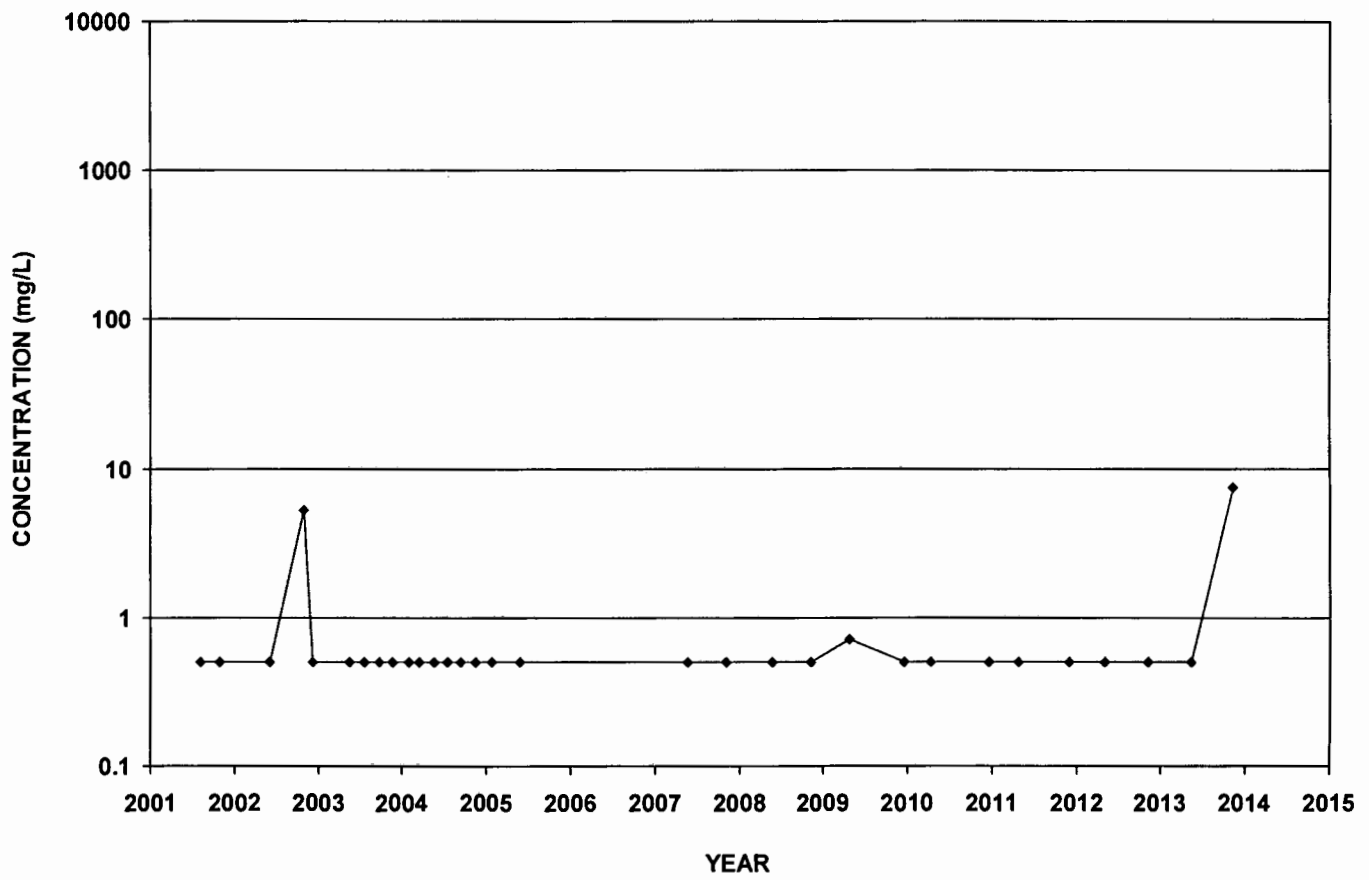
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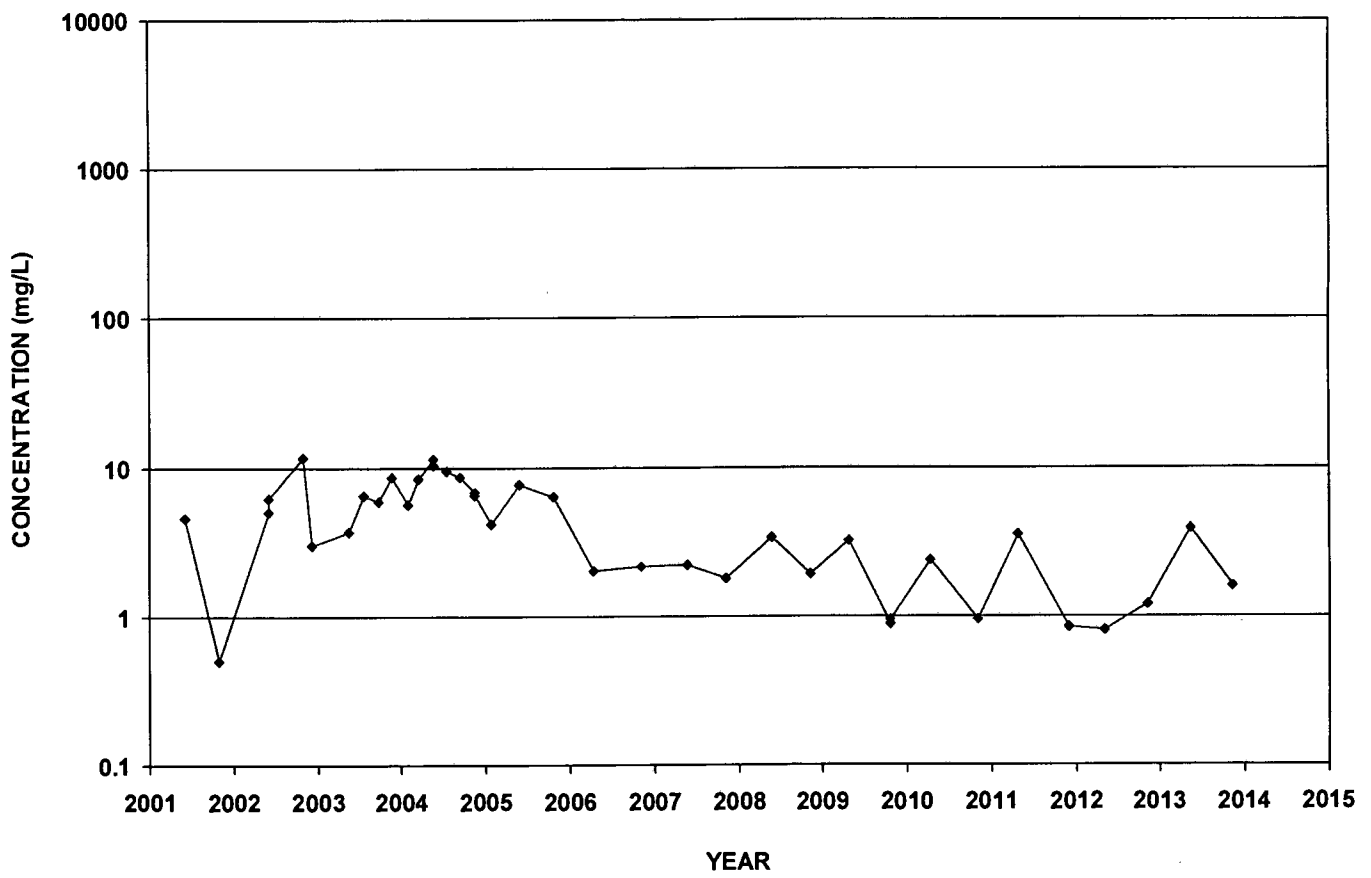
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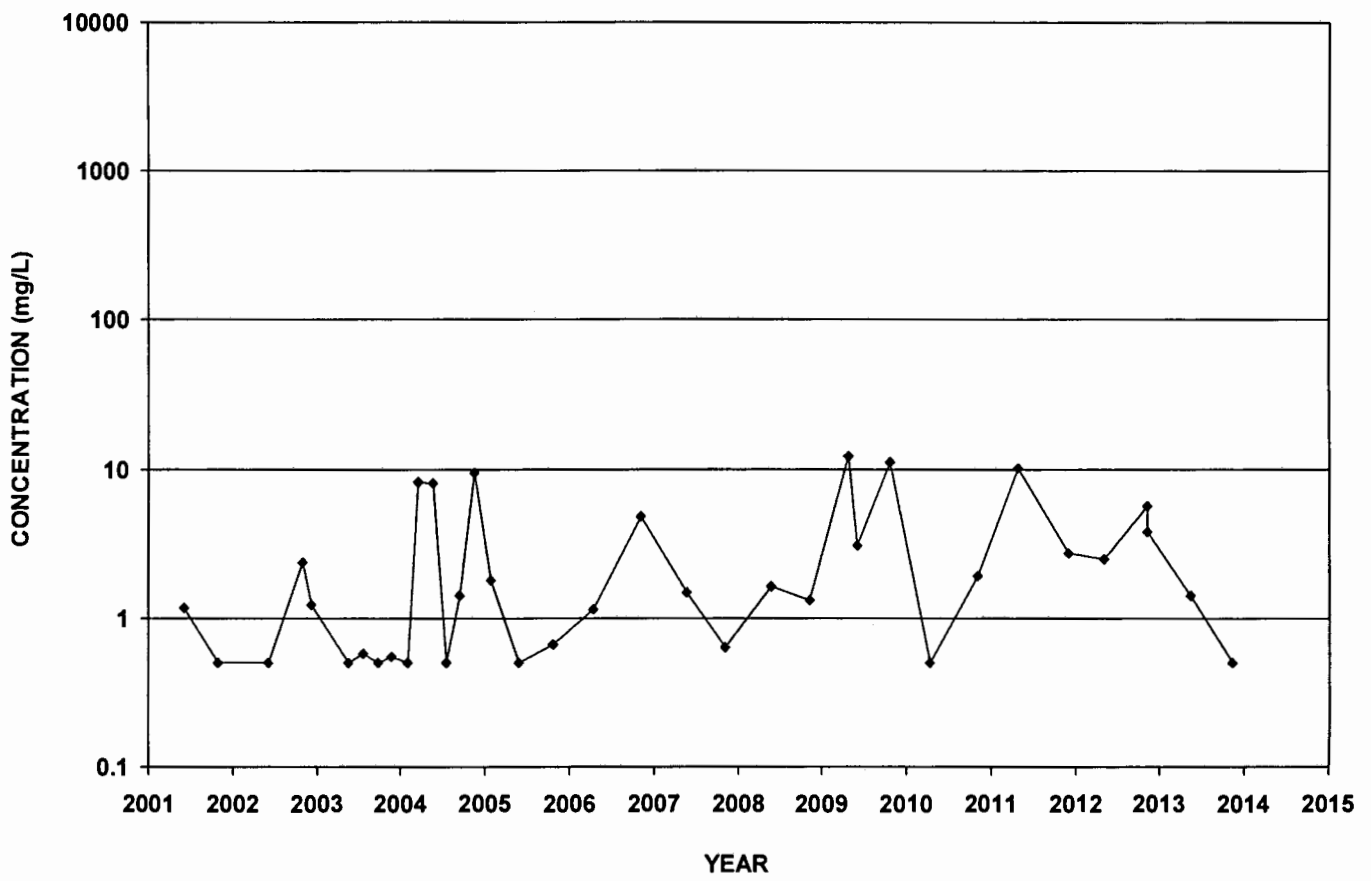
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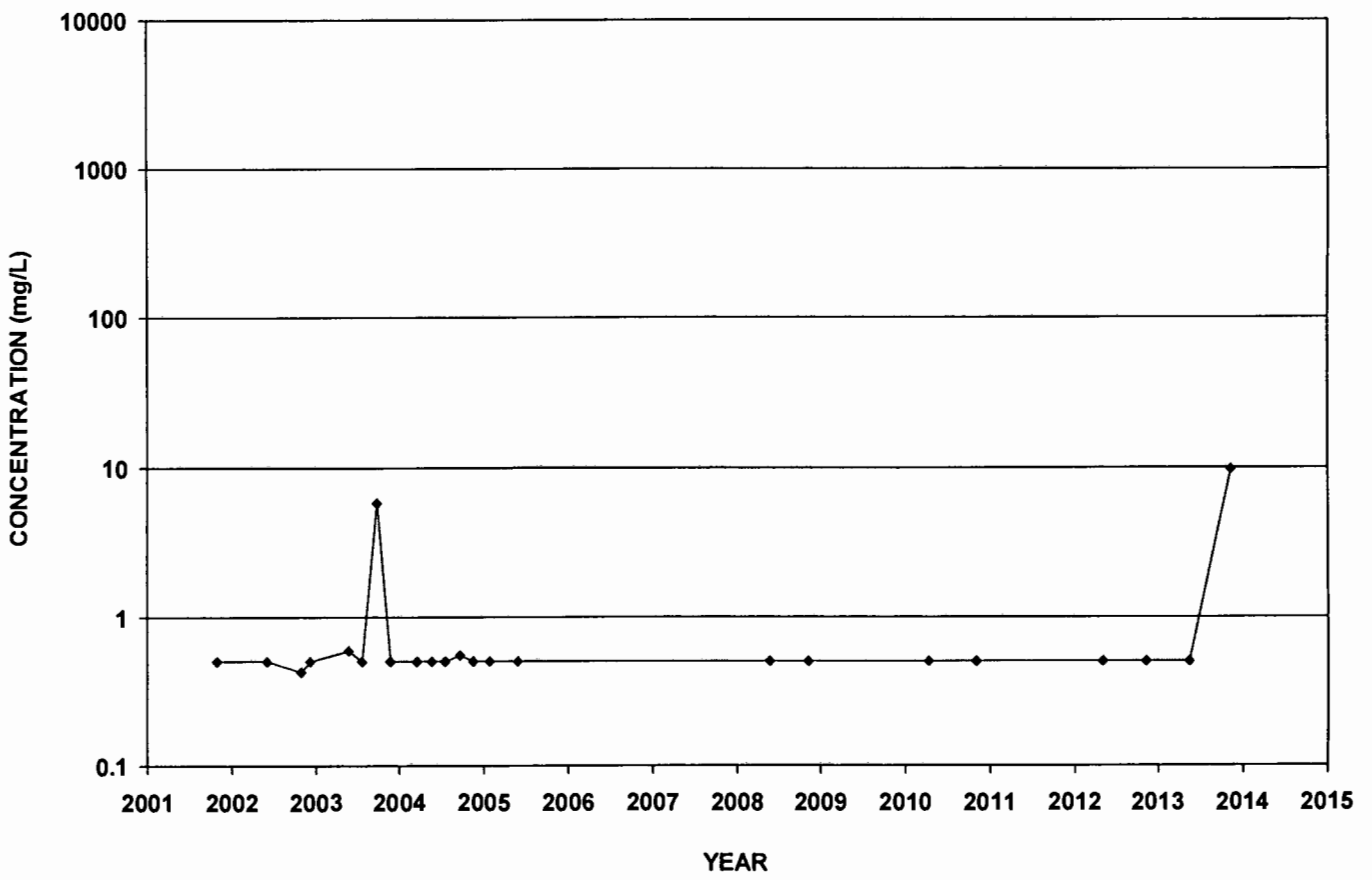
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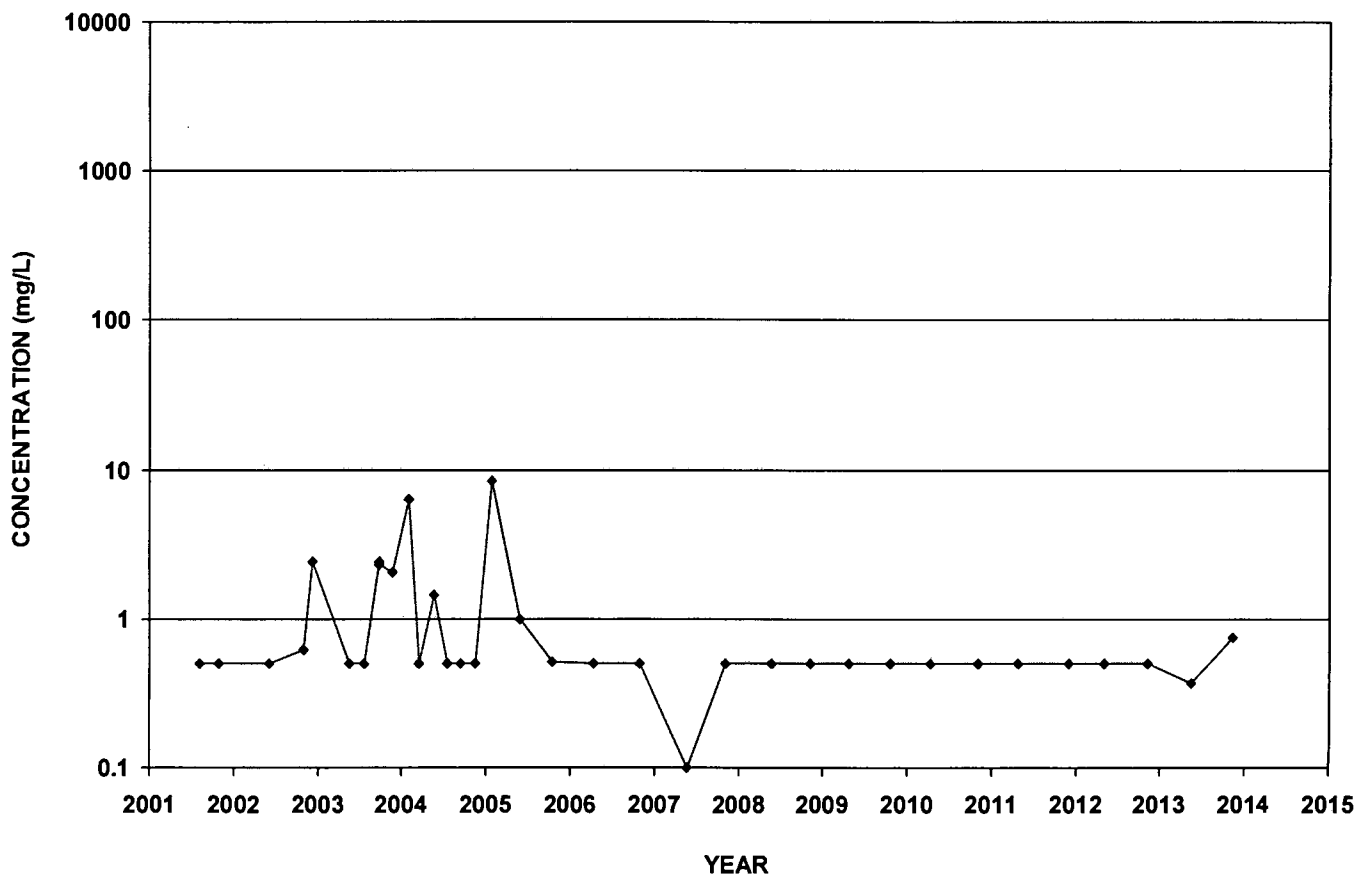
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Ammonia-N



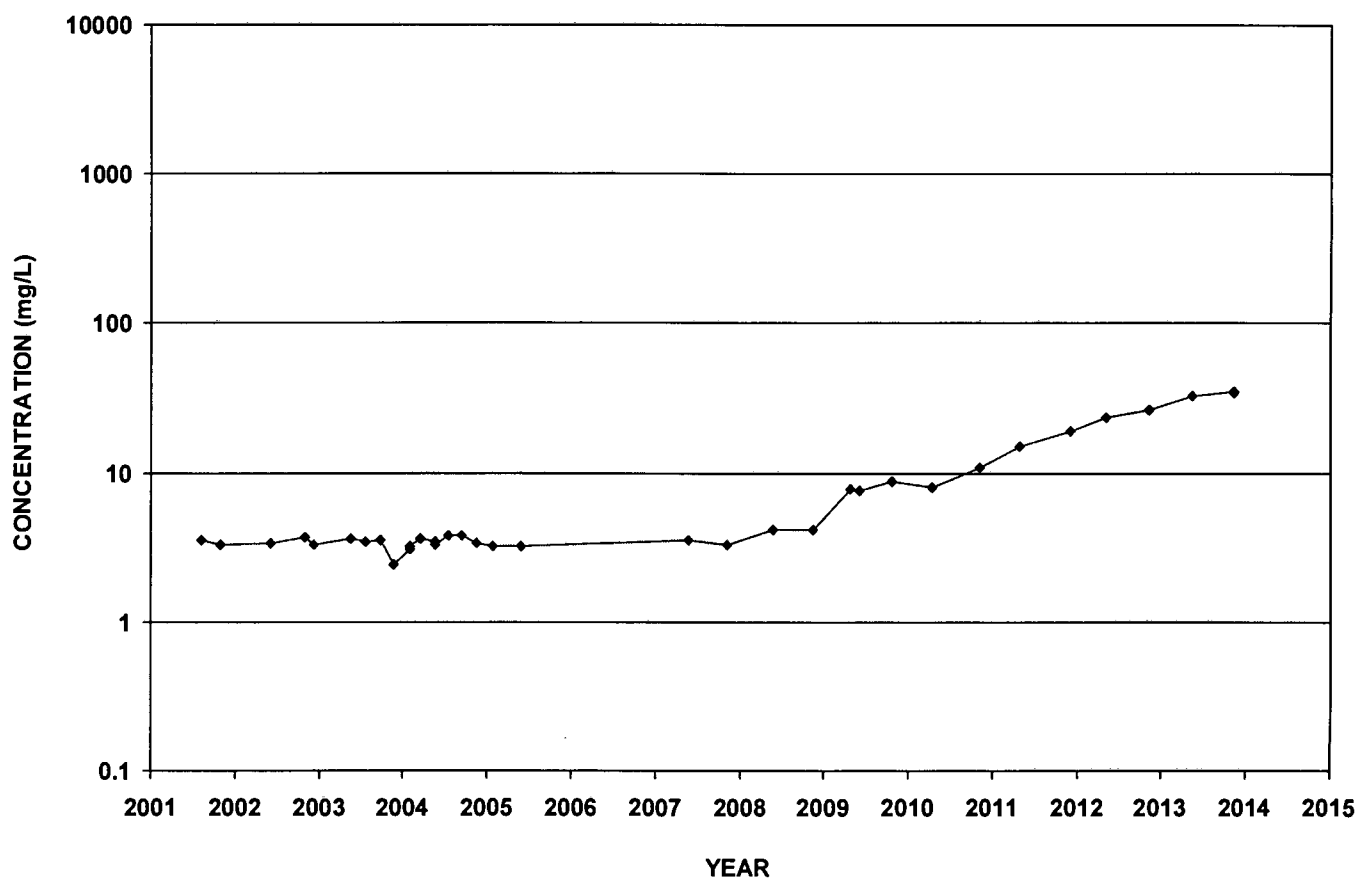
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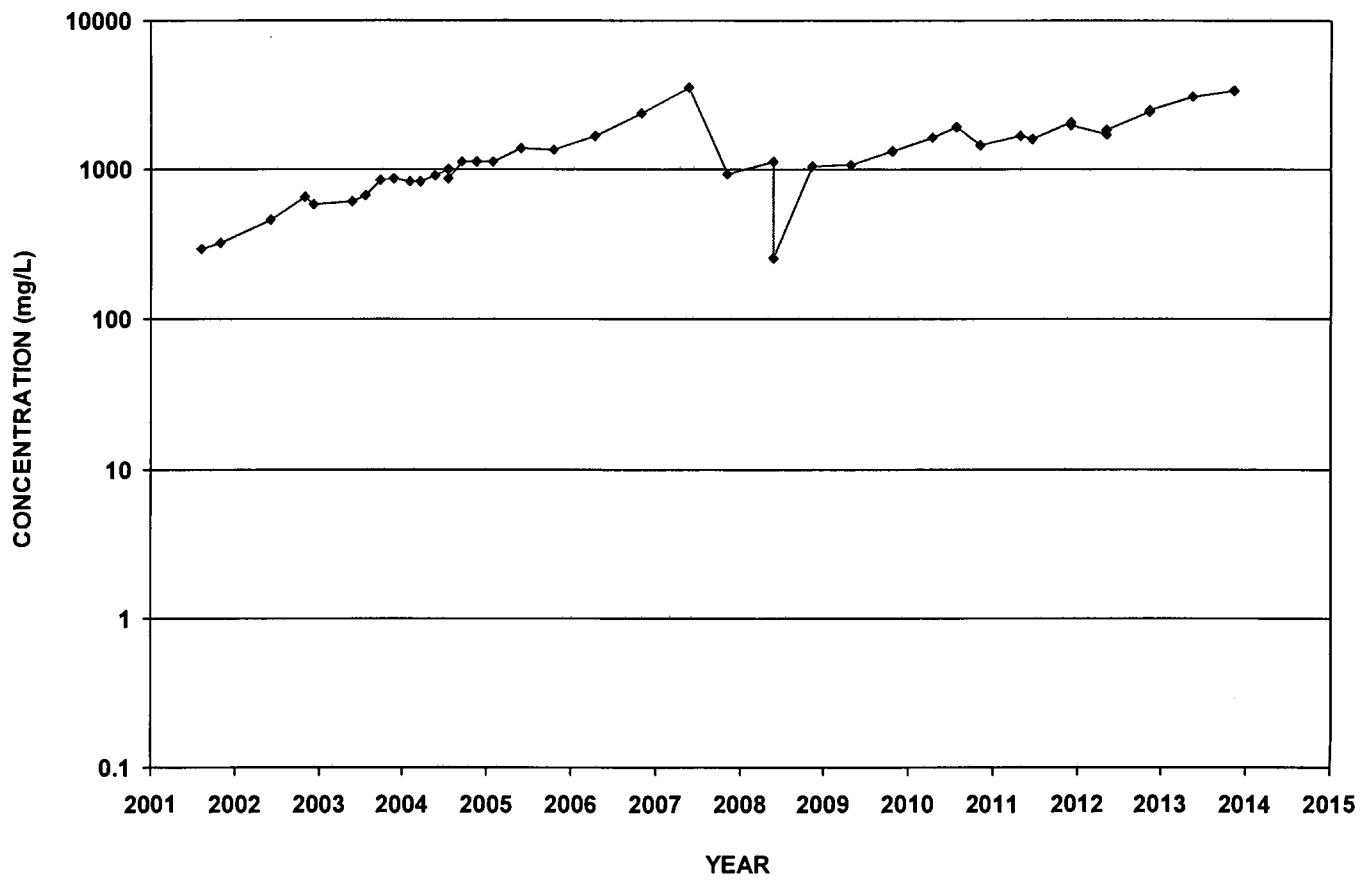
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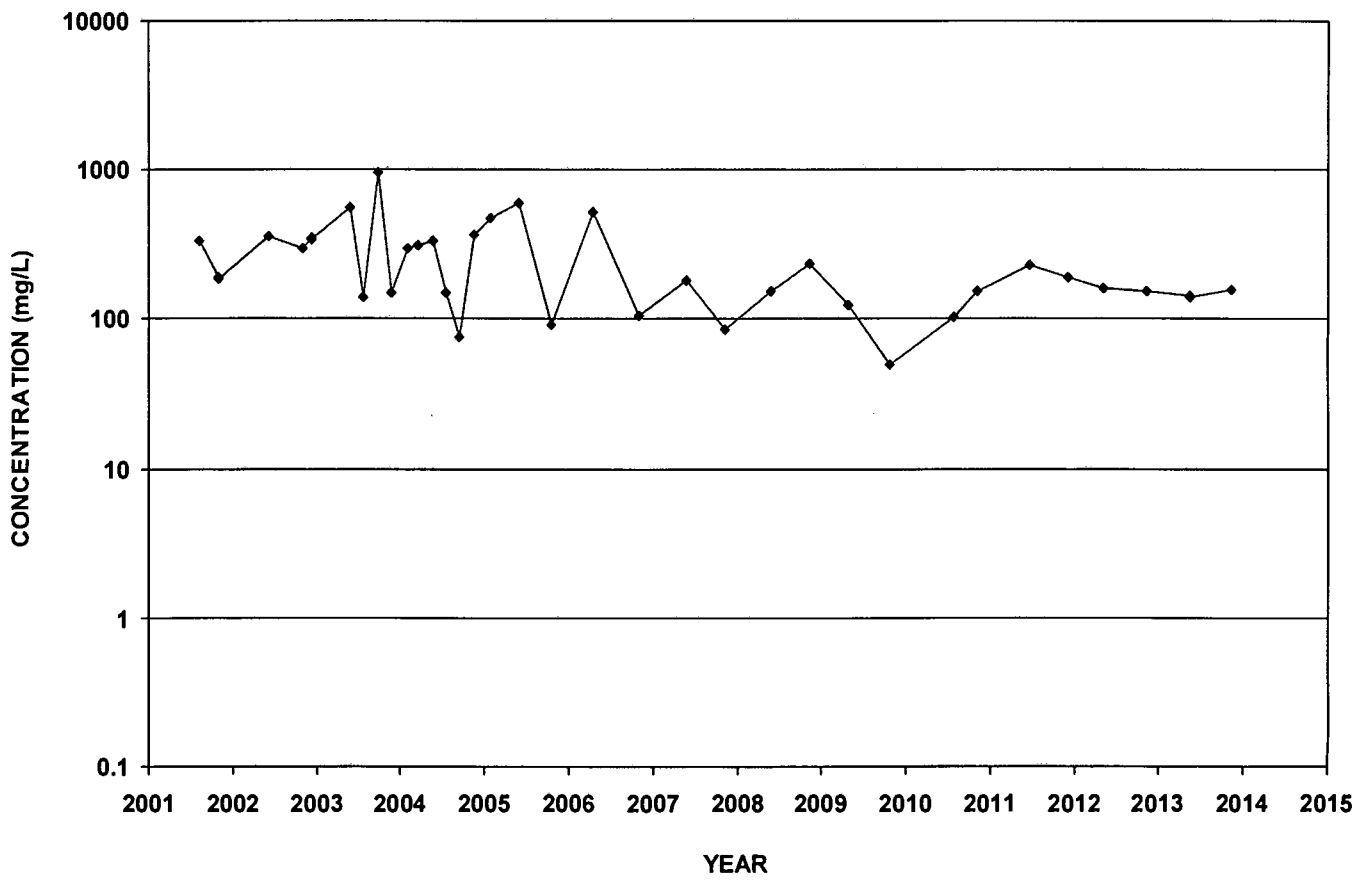
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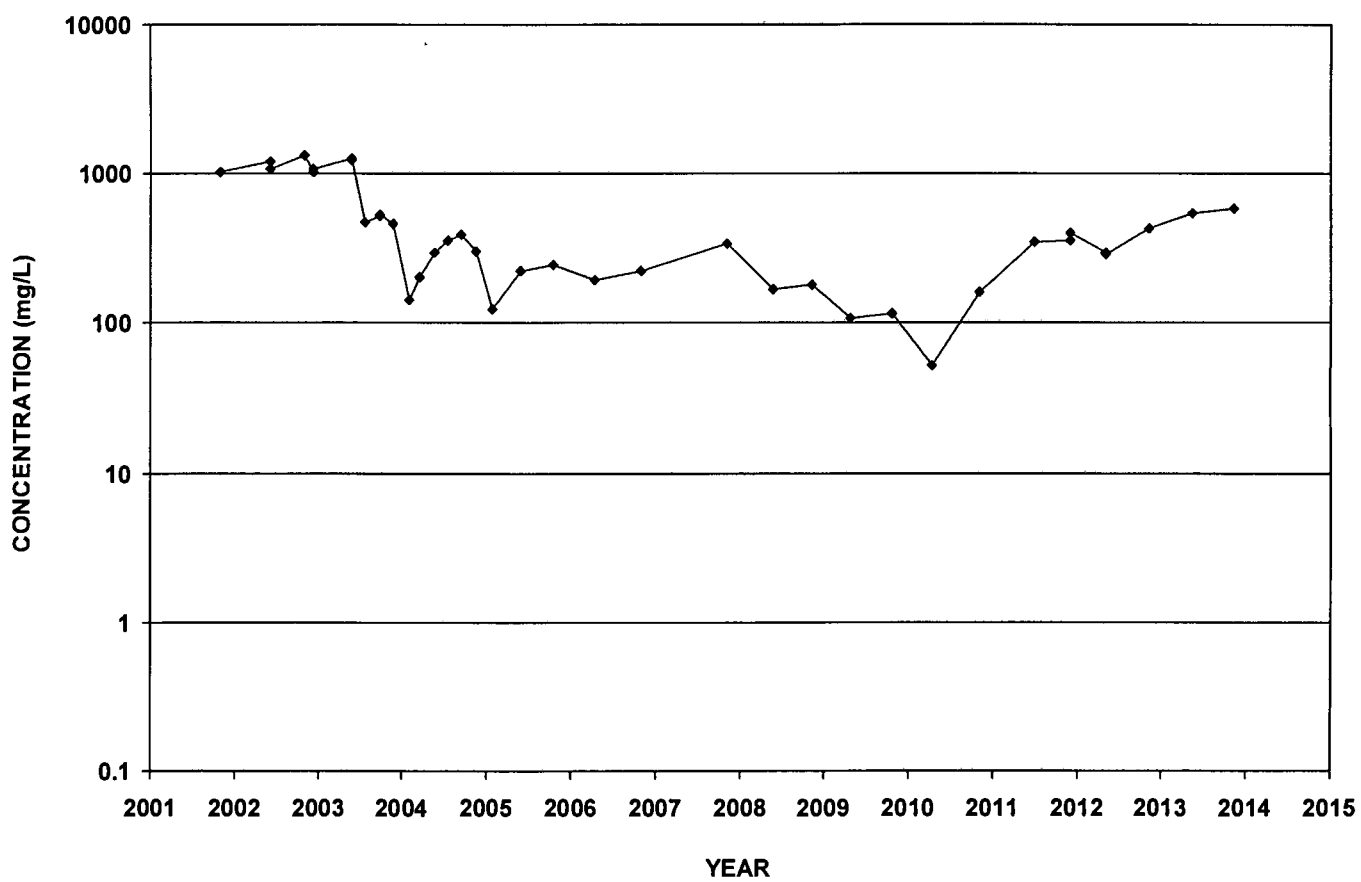
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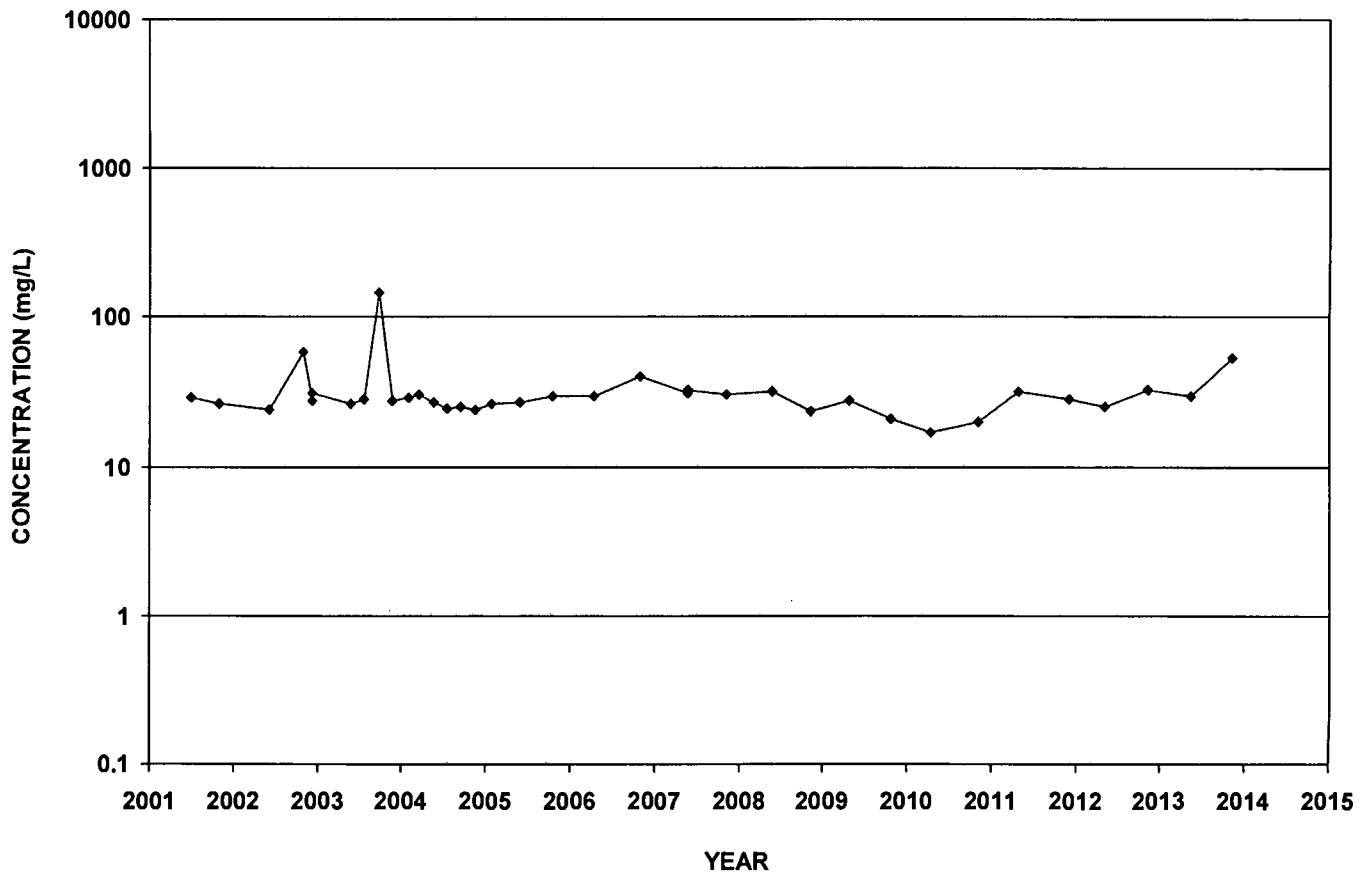
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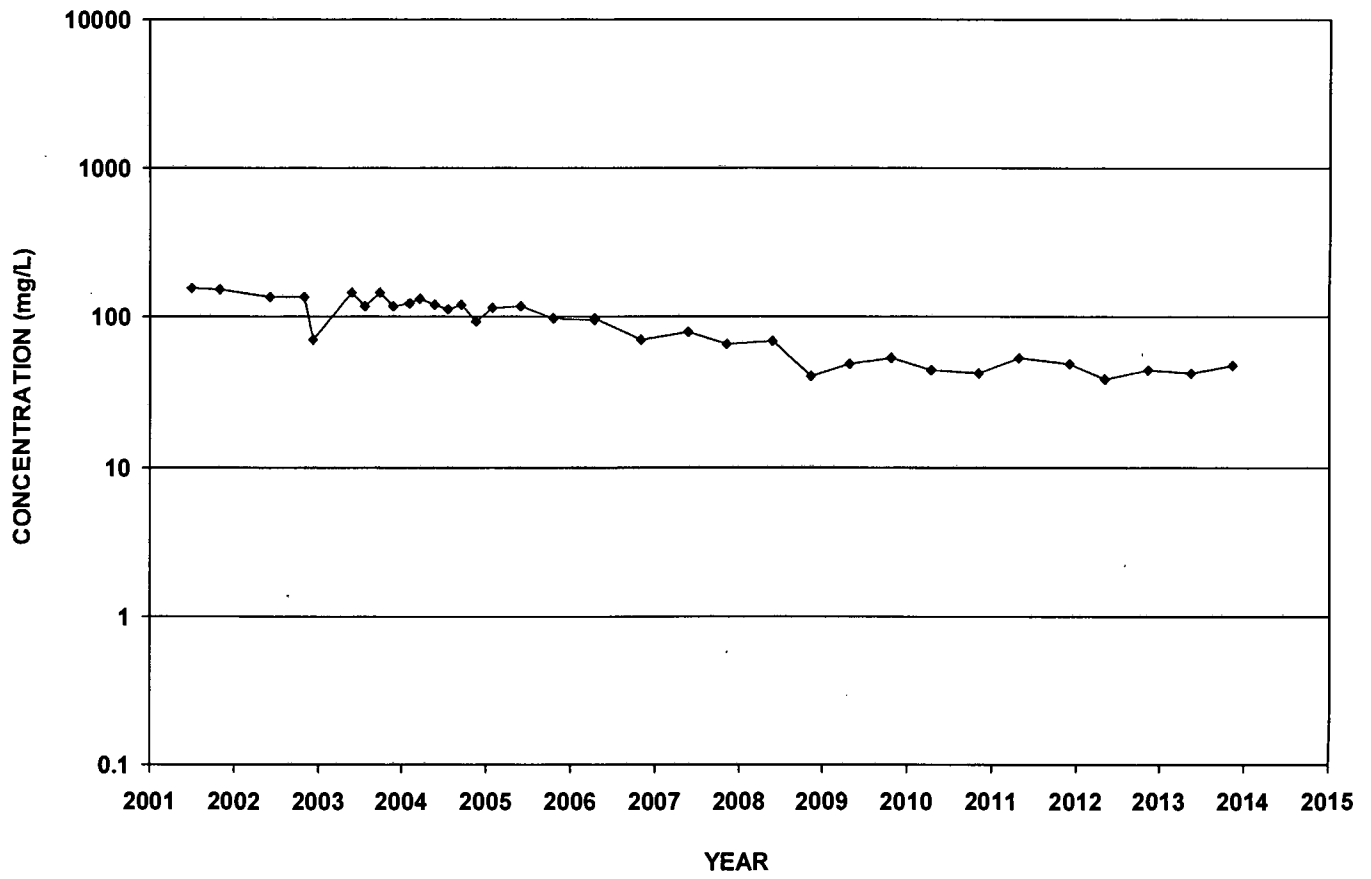
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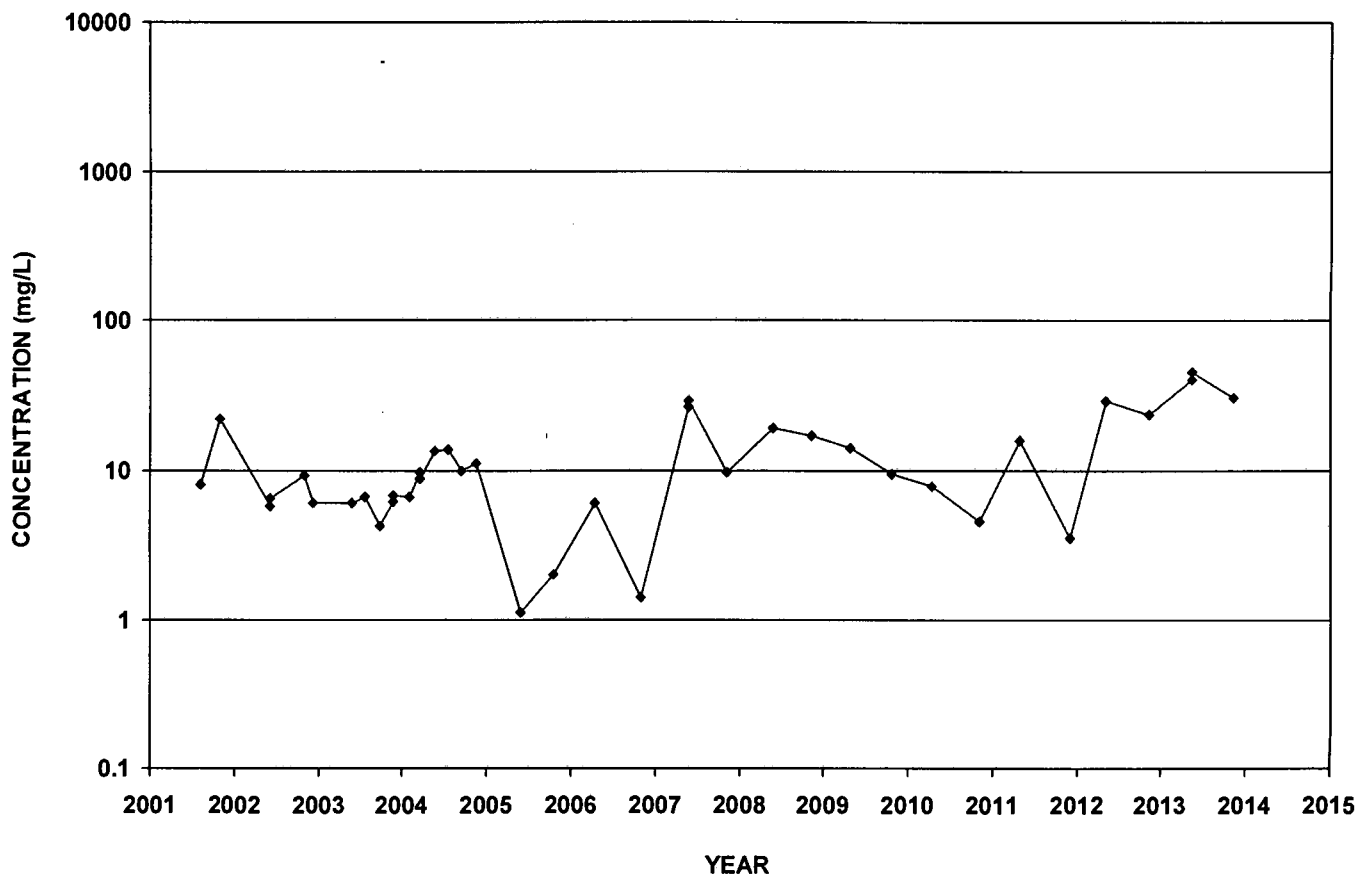
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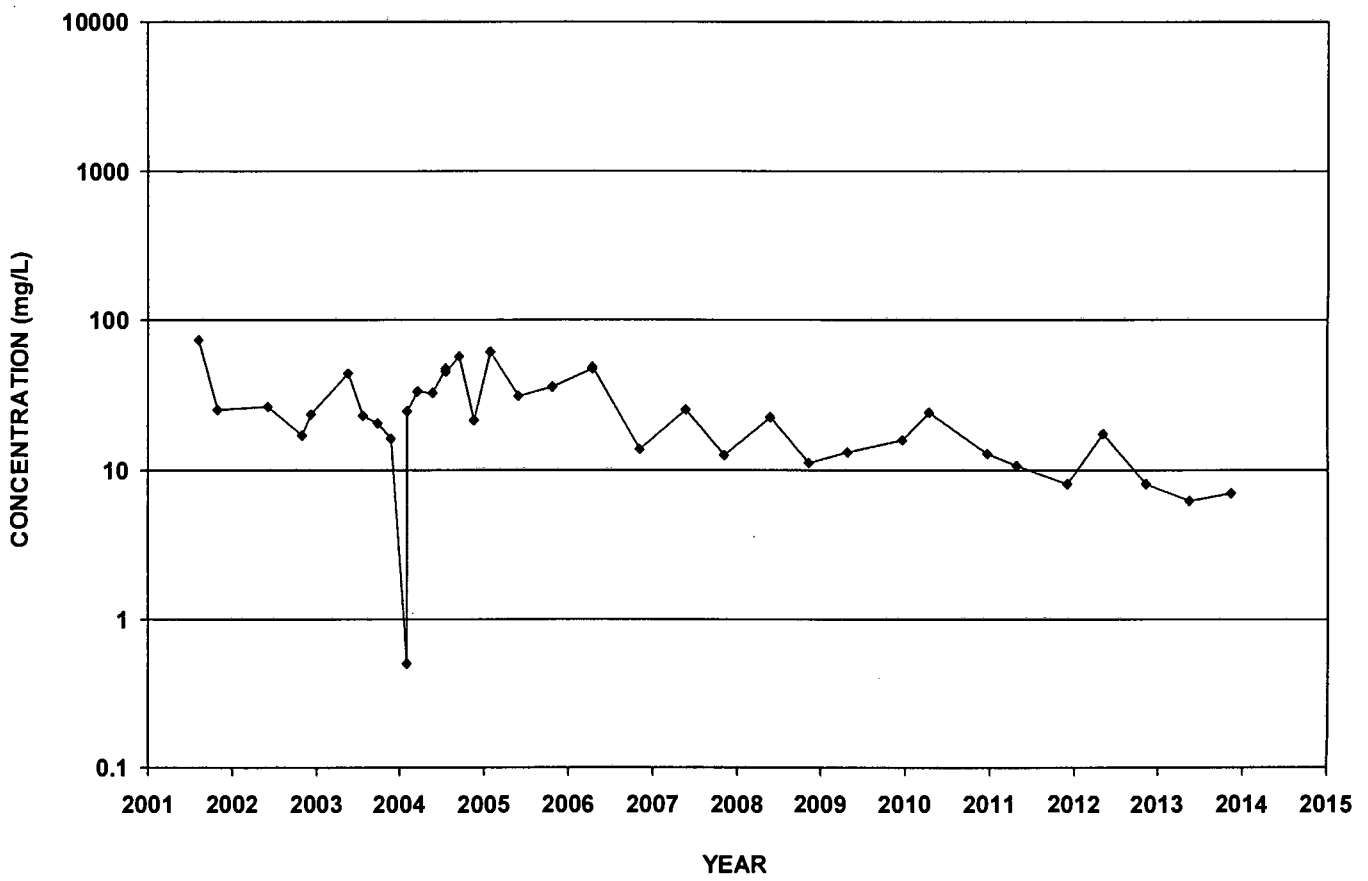
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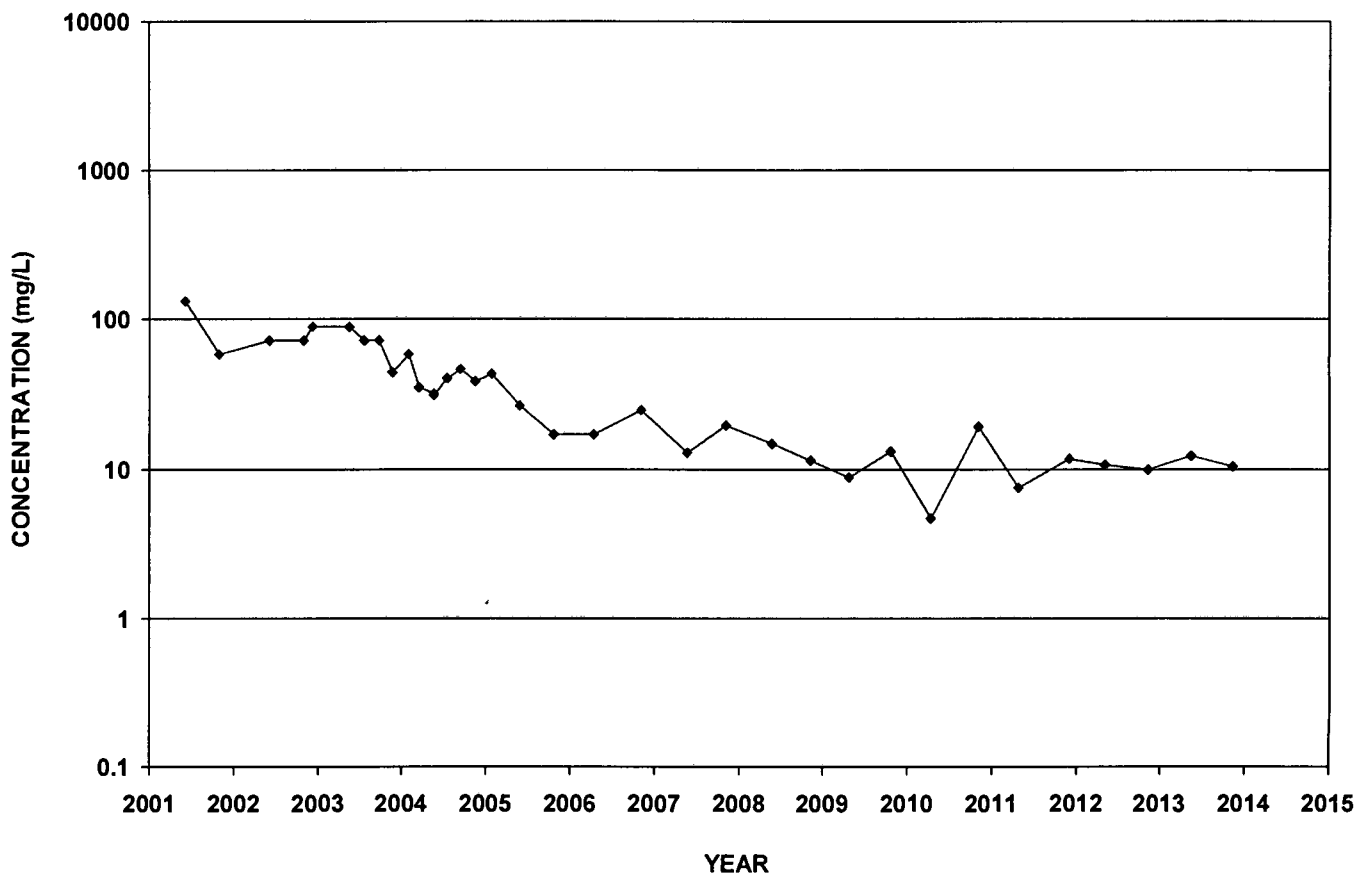
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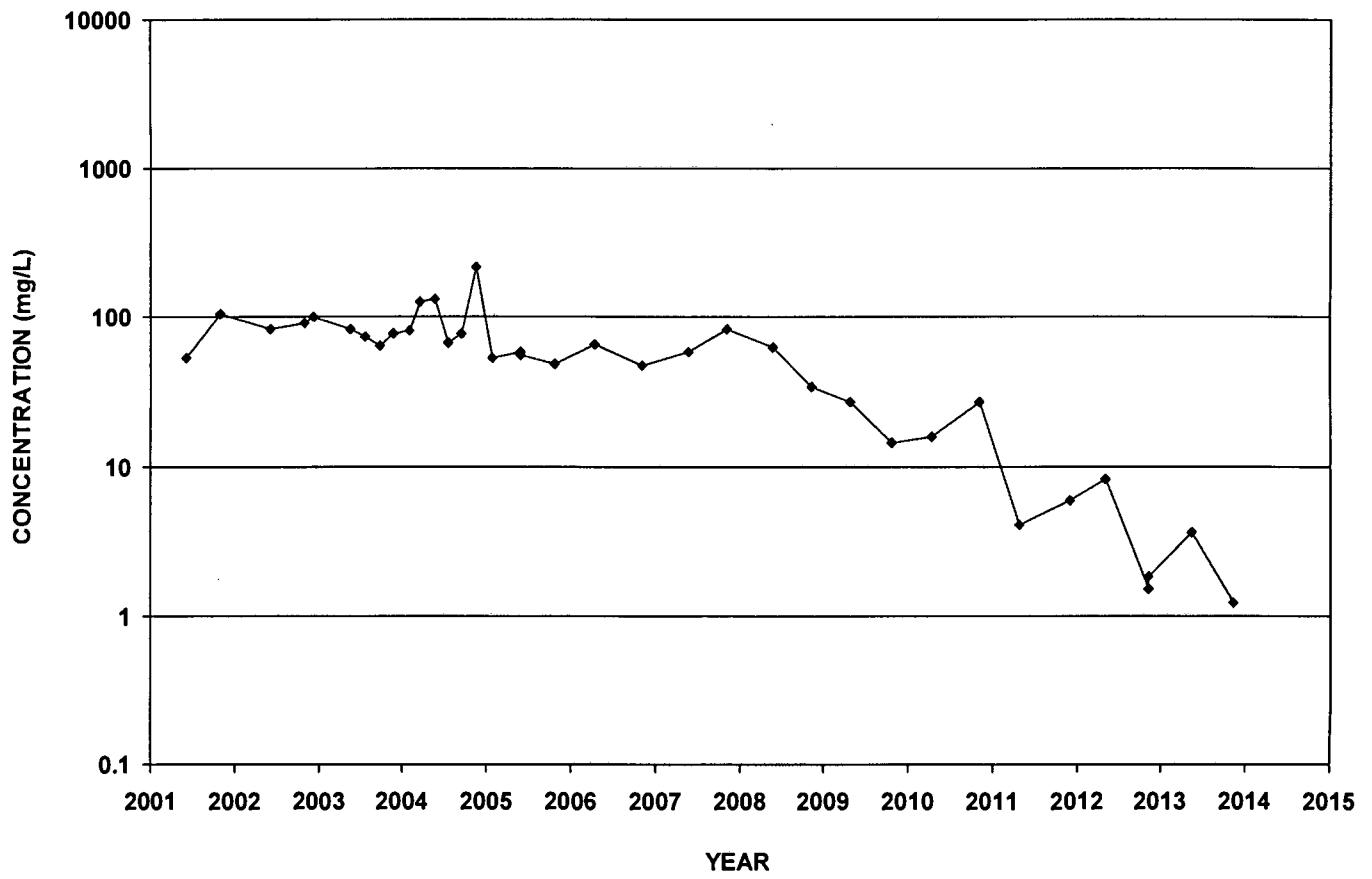
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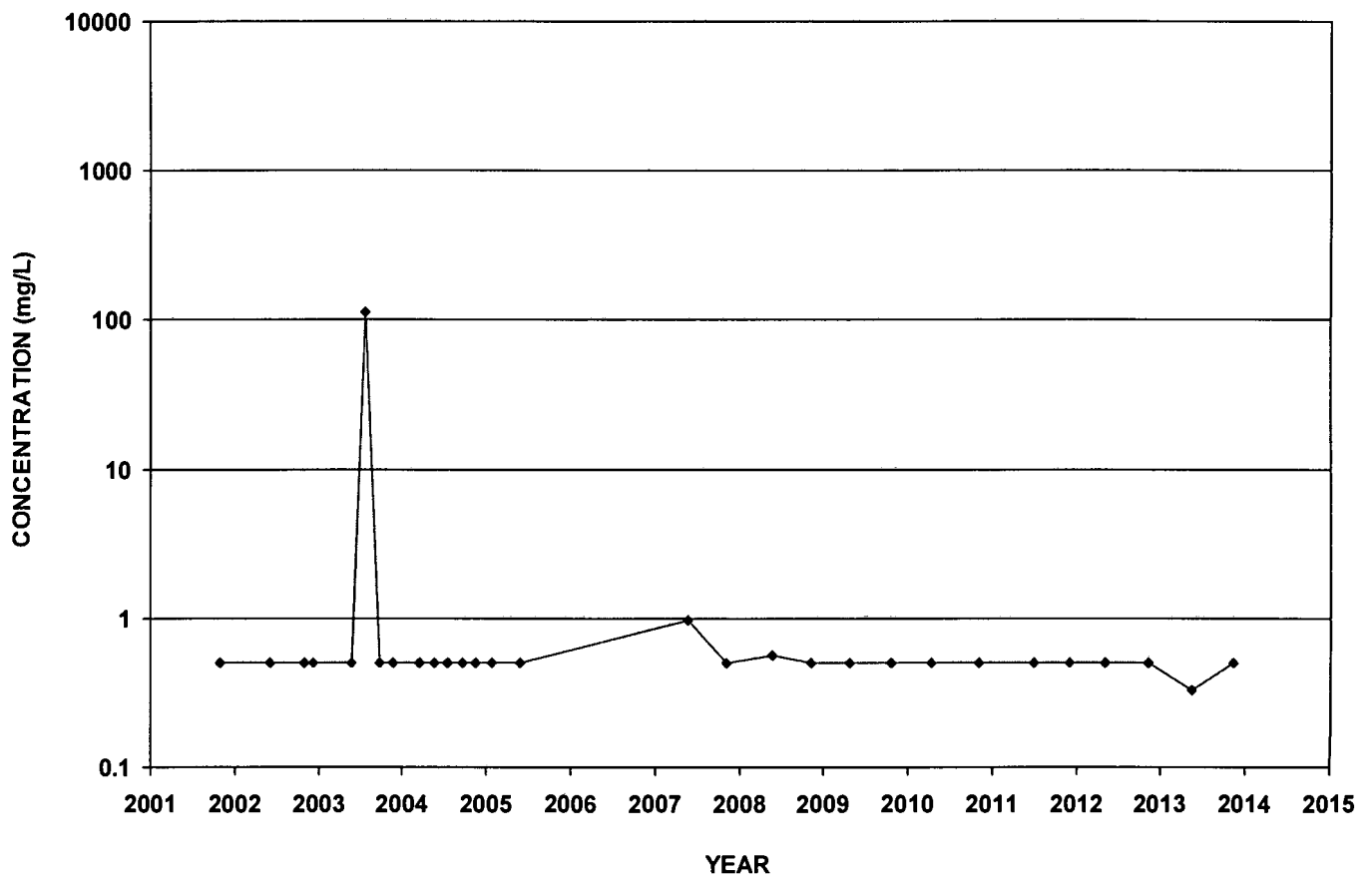
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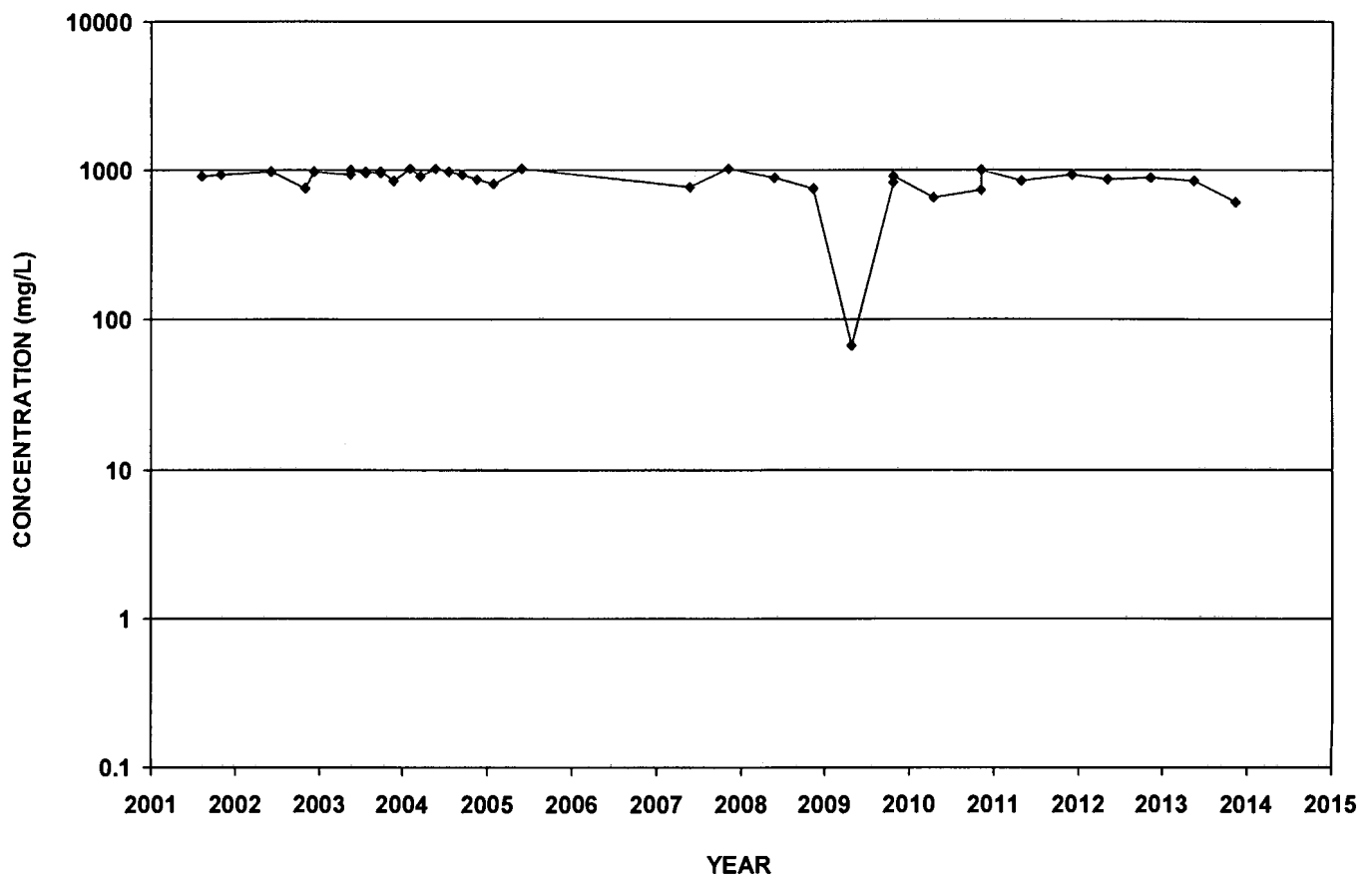
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Nitrate-N



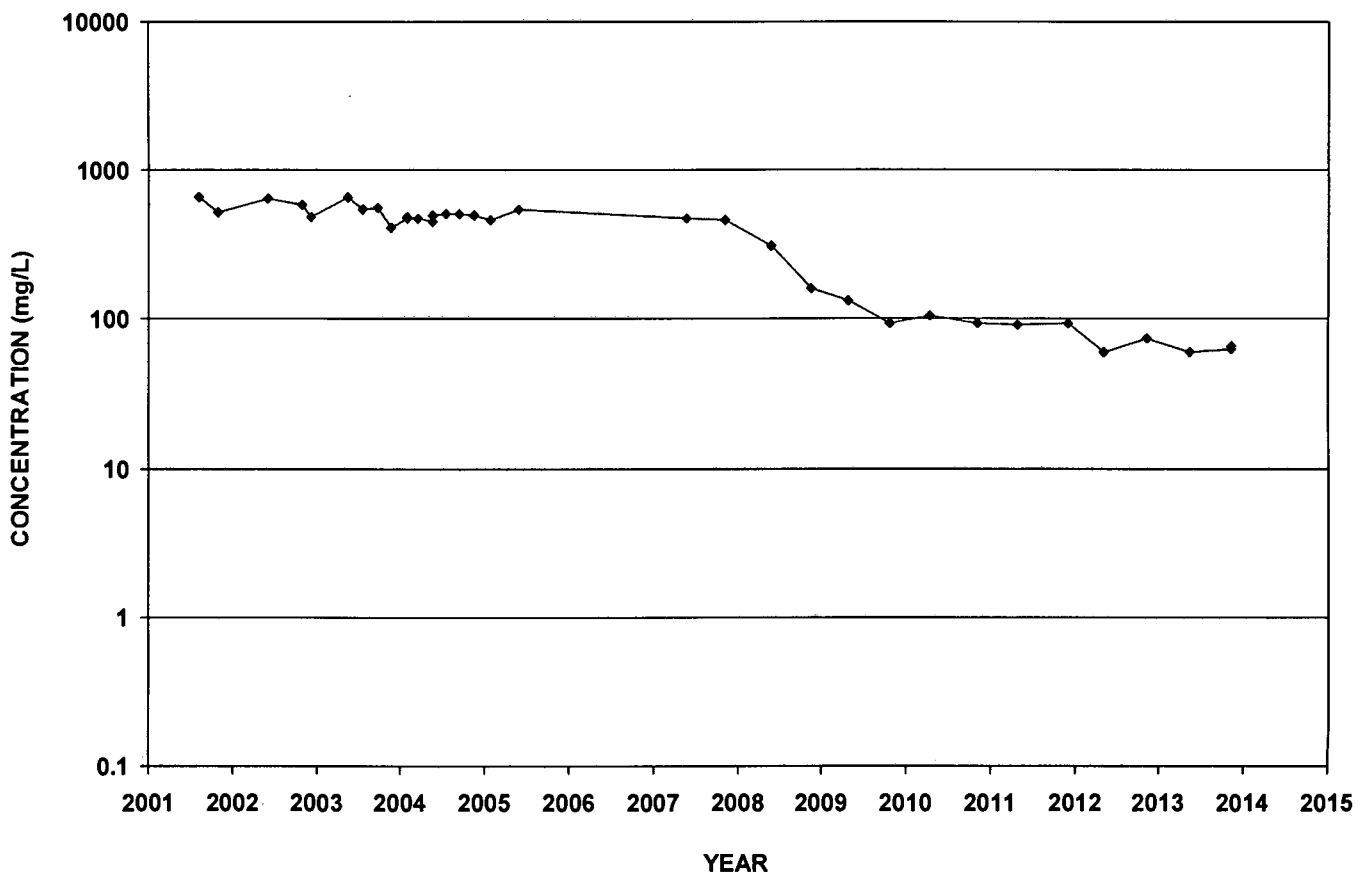
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Nitrate-N



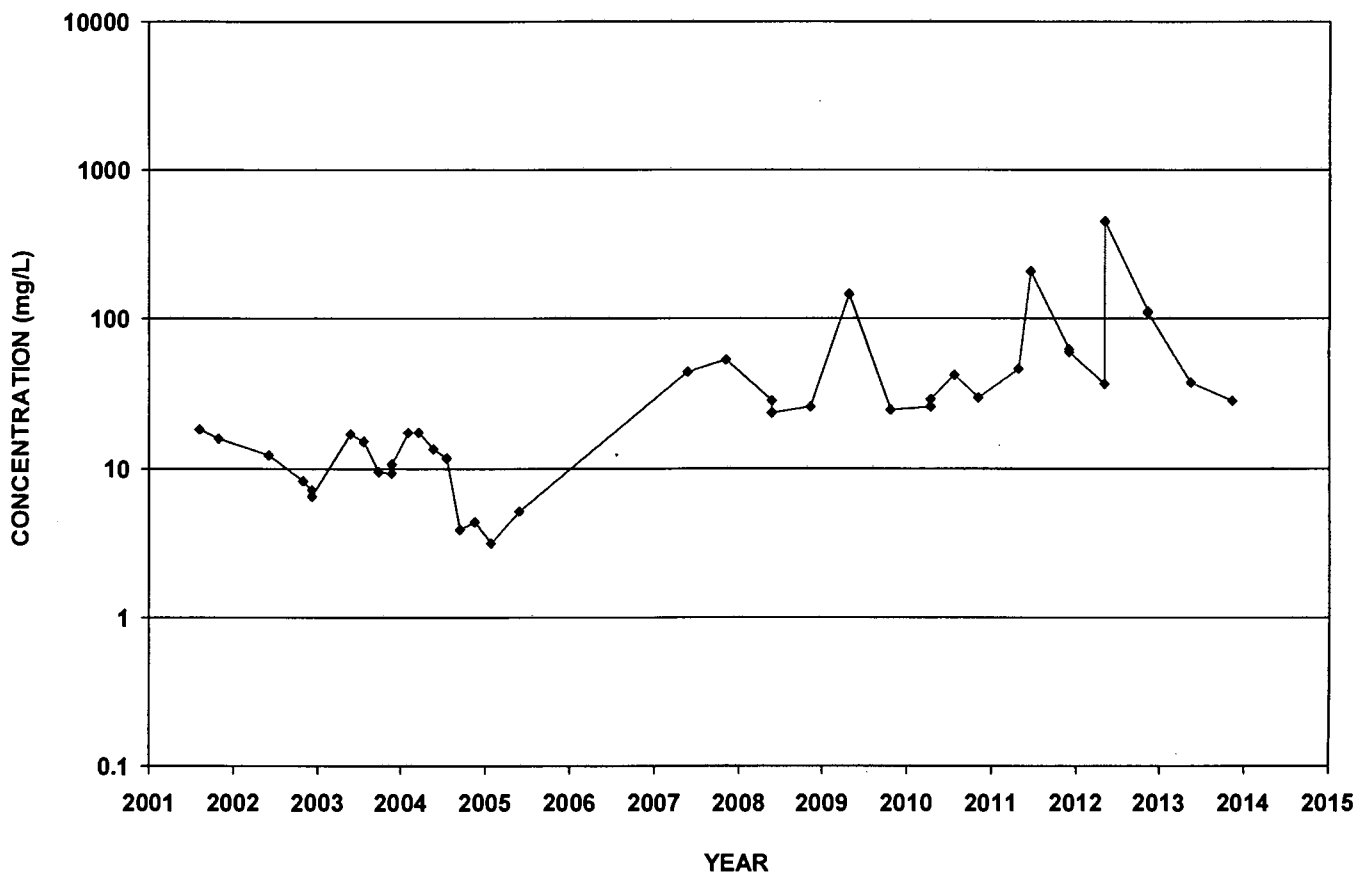
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Sulfate as SO4



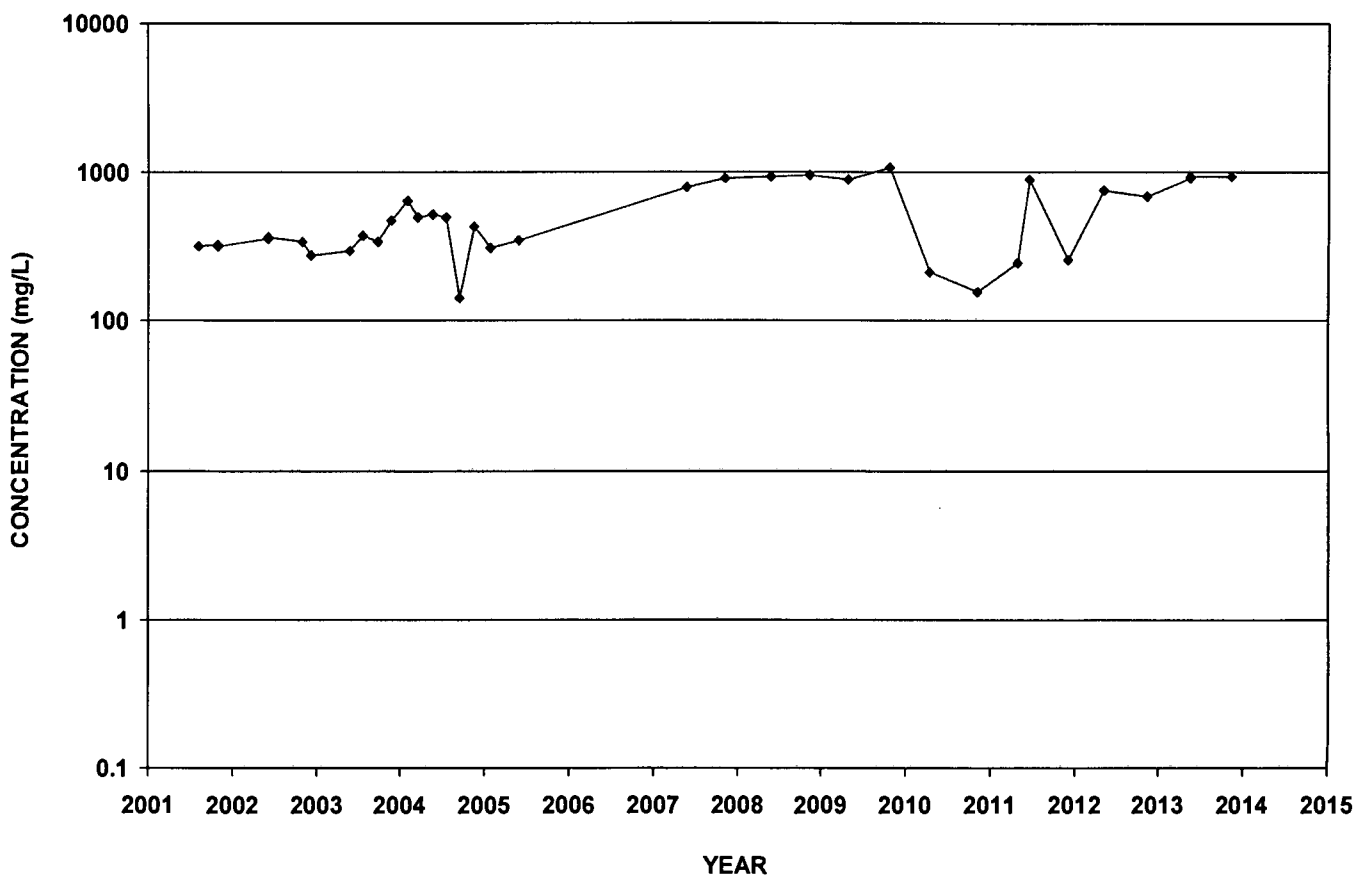
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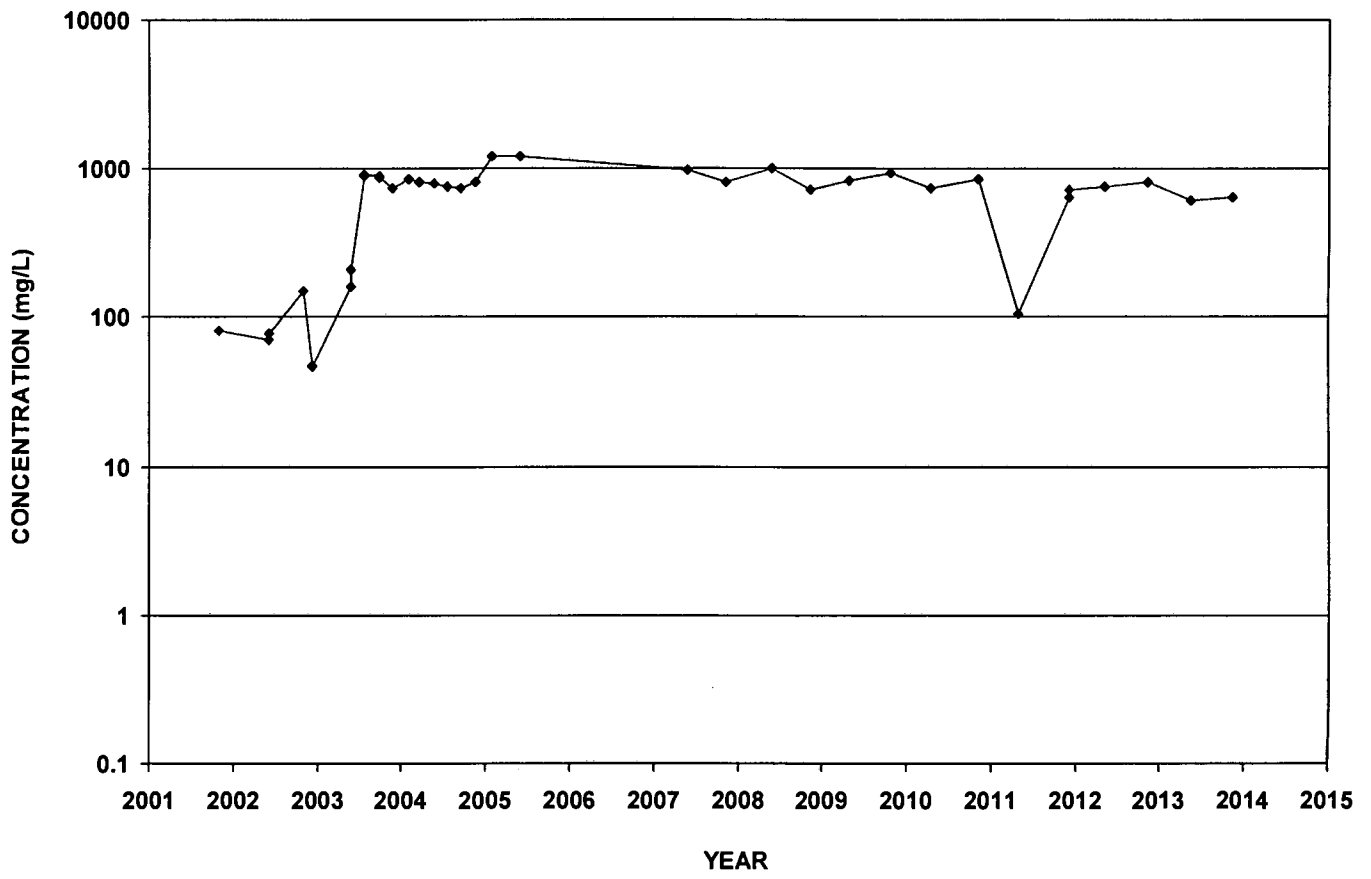
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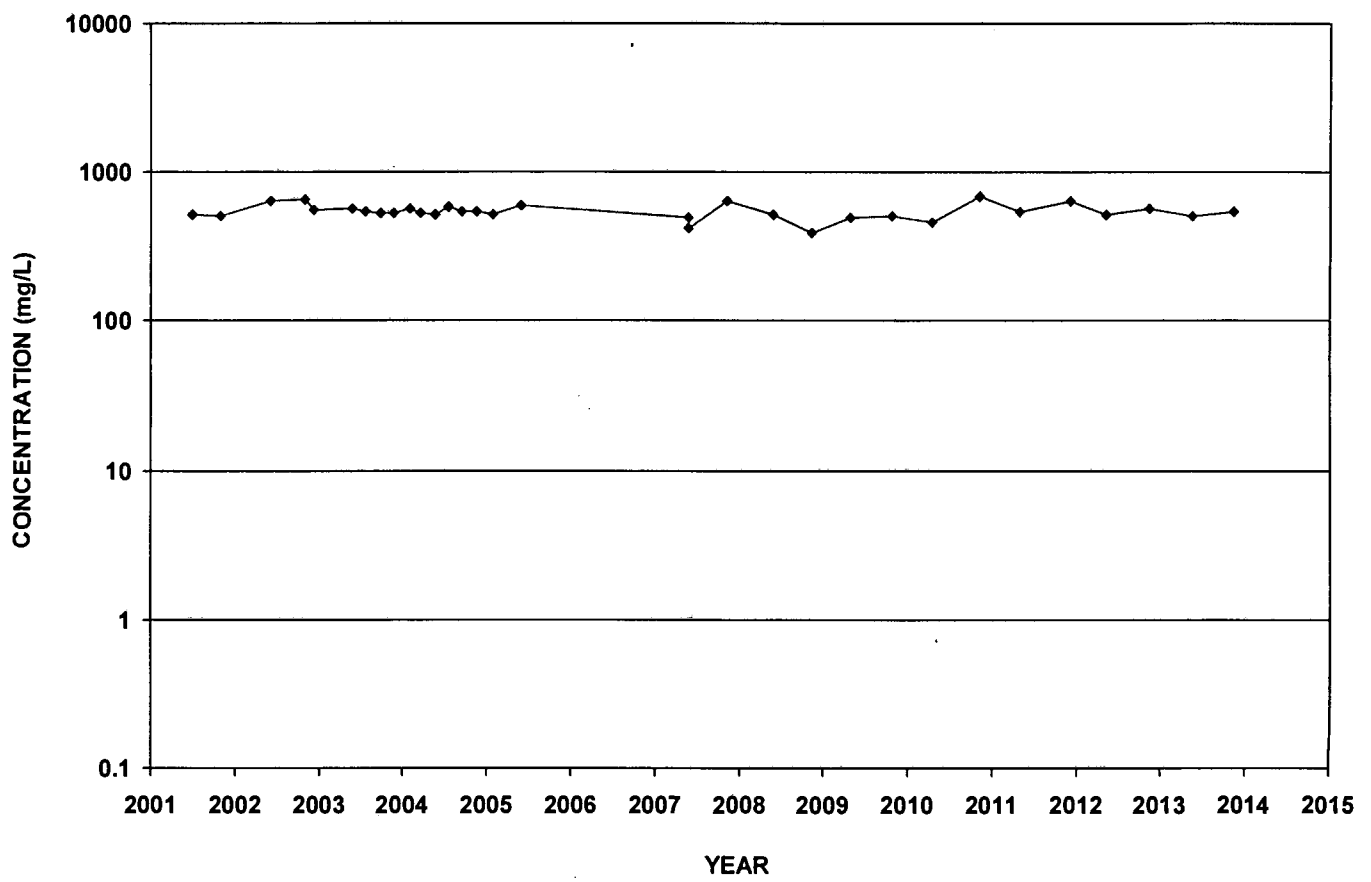
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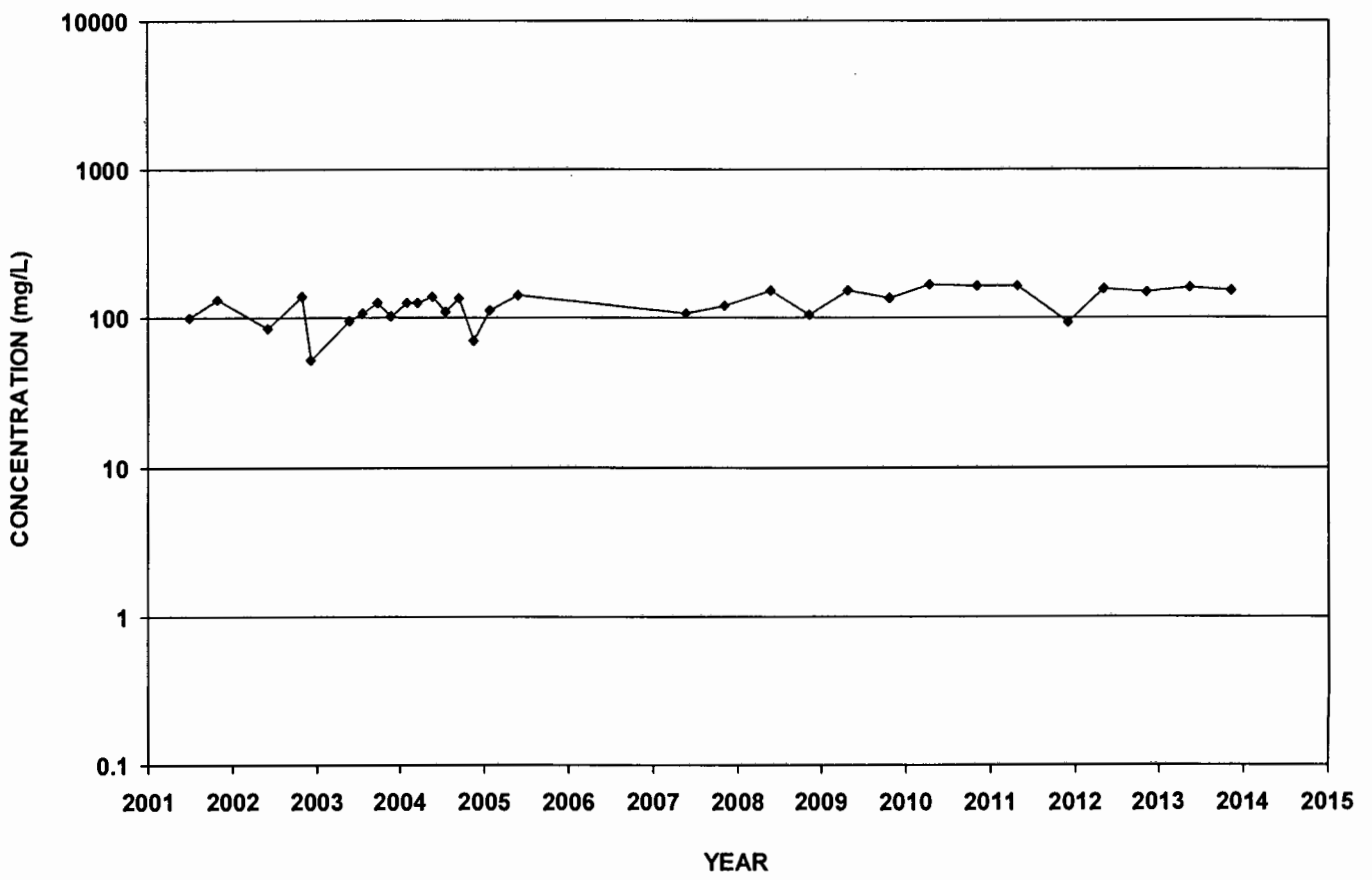
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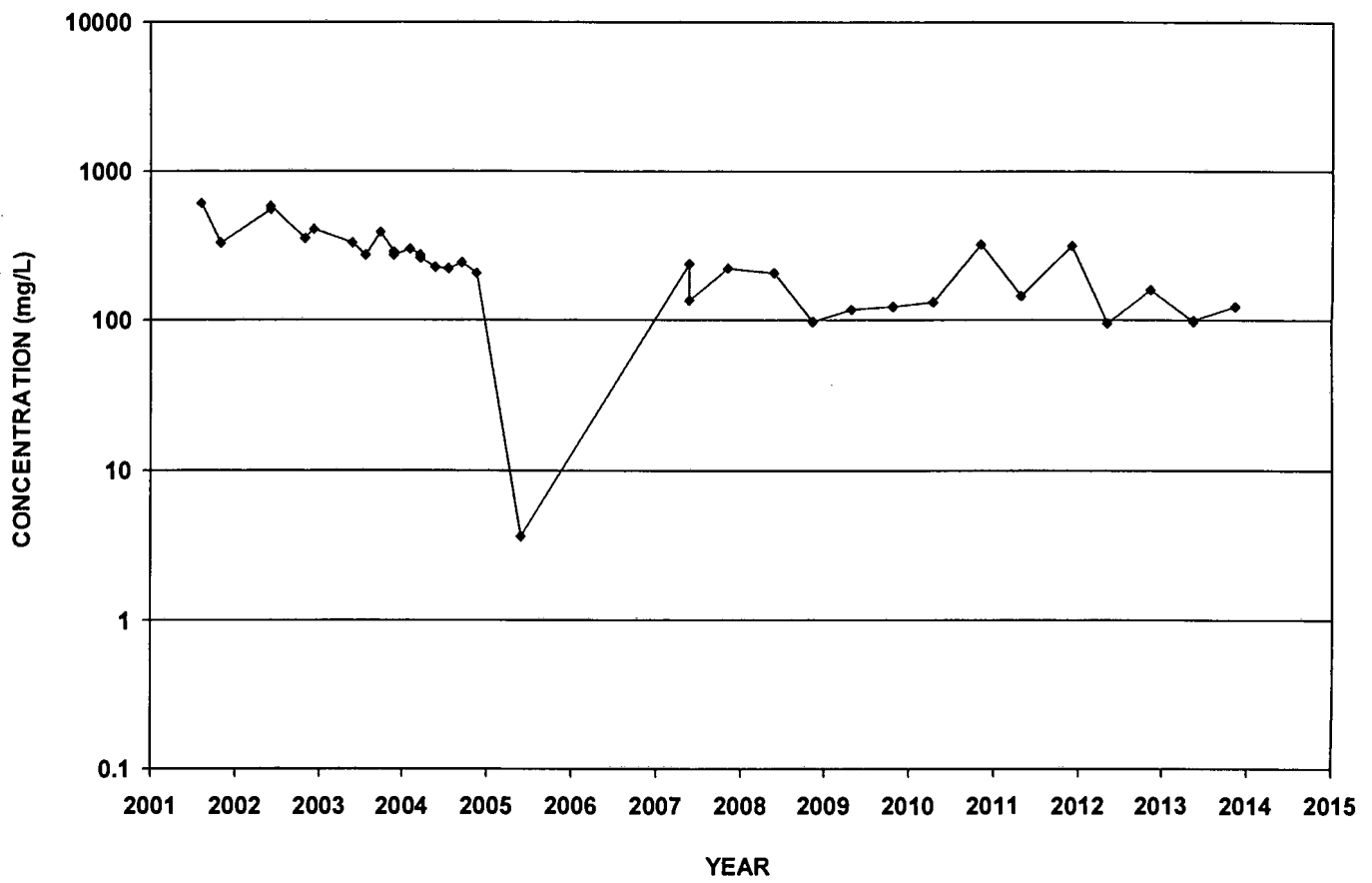
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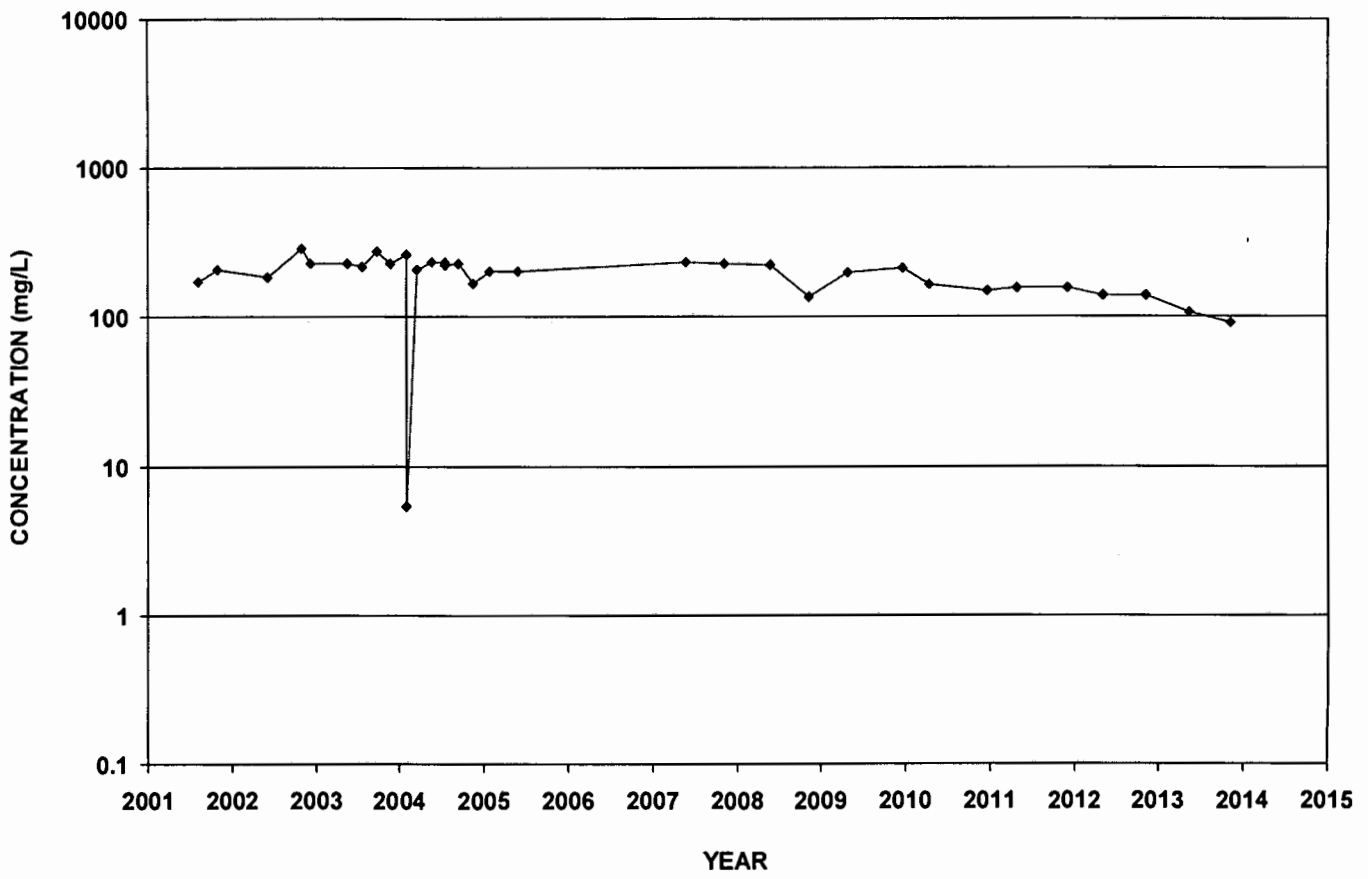
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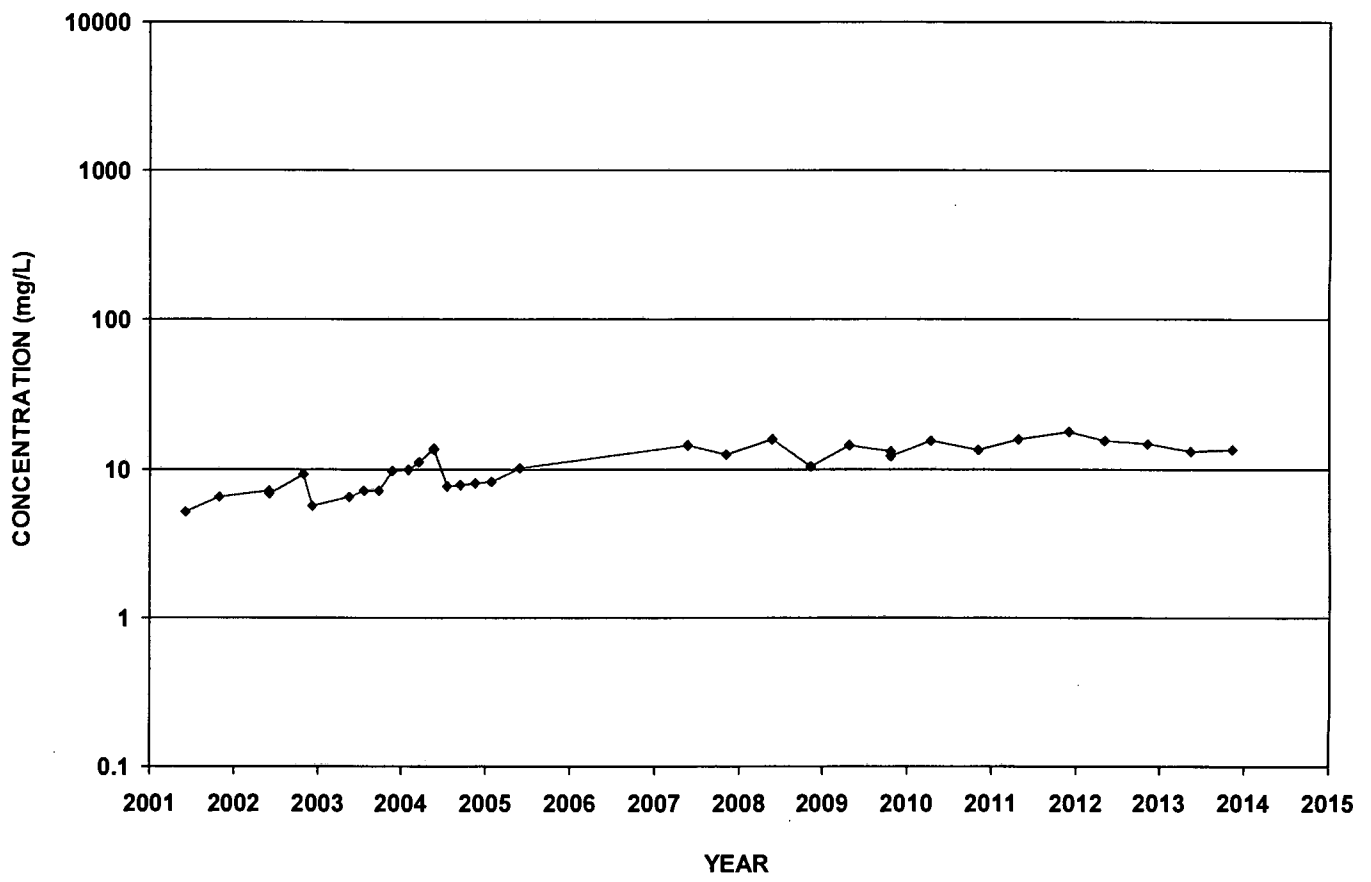
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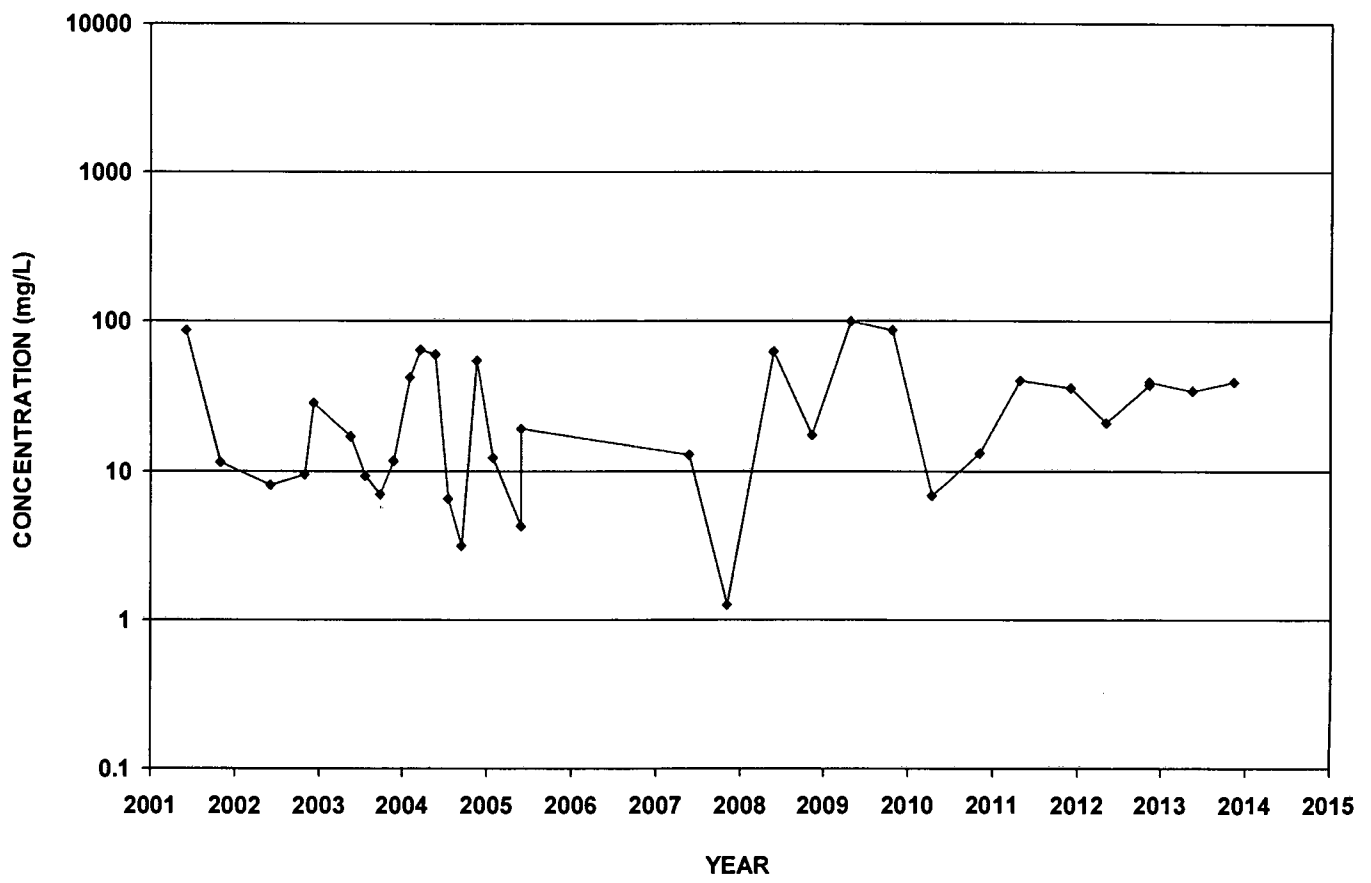
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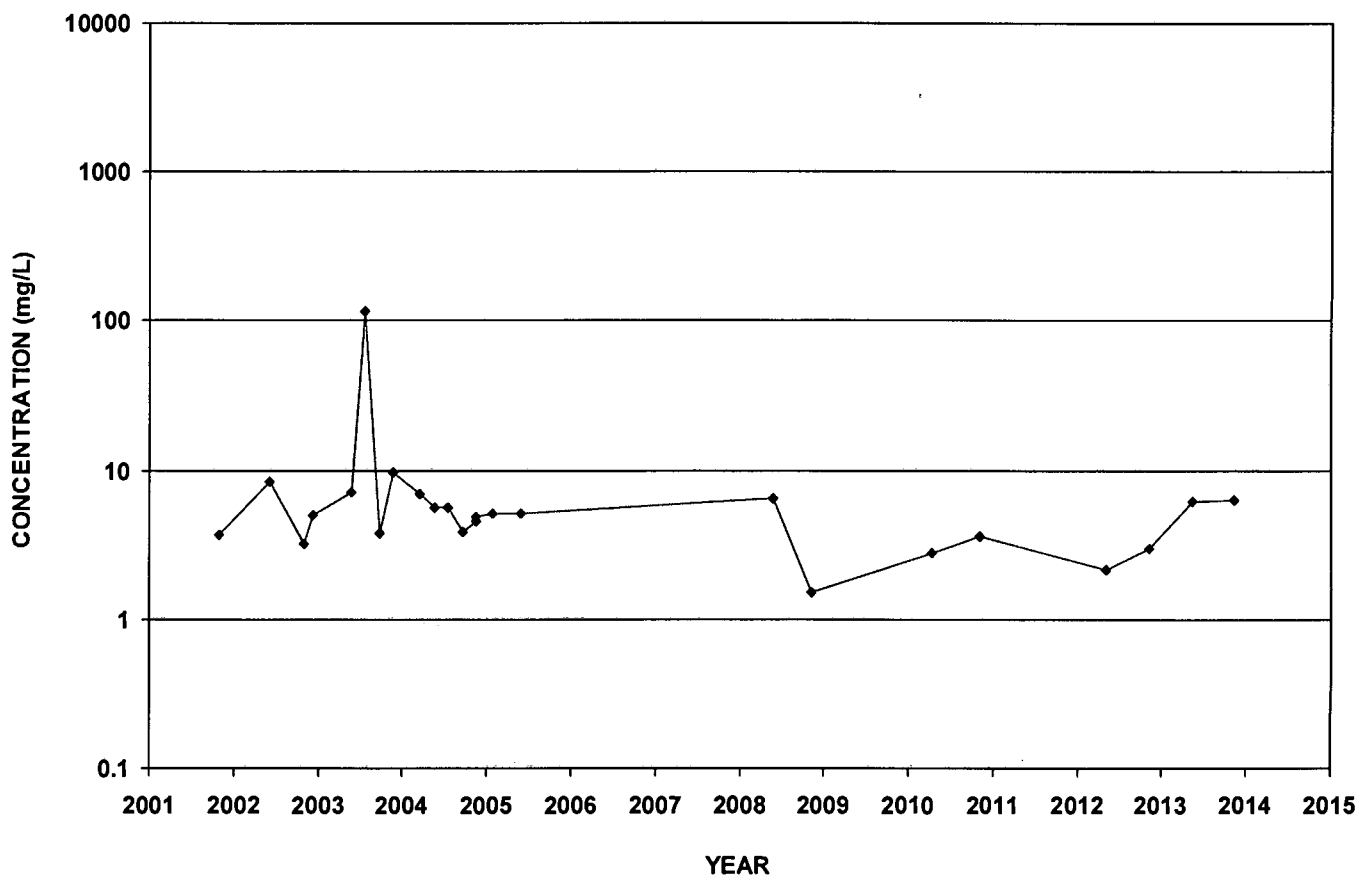
ECMW-16
Sulfate as SO4



ECMW-17
Sulfate as SO4



ECMW-18
Sulfate as SO4



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L. Marcello
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 Arkansas Dept of Env Quality
 Water Division
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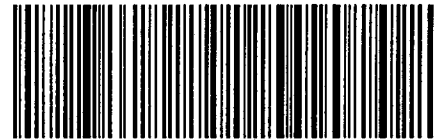
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