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2012 AGWMR

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FINAL REPORT

2012 ANNUAL GROUNDWATER MONITORING REPORT

Cooper-Jal Unit South Injection Station
Case No. 1R289/ Ogrid No. 4323
NW/4, NW/4, SE/4, Section 24, T-24-S, R-36-E
Lea County, New Mexico

Prepared for: Chevron Environmental Management Company

Conestoga-Rovers & Associates
2135 South Loop 250 West
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June 2013 • #039123 (9)

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1.0 INTRODUCTION

This Annual Groundwater Monitoring Report presents groundwater data collected during the 2012 reporting period by Conestoga-Rovers & Associates (CRA) on behalf of Chevron Environmental Management Company (CEMC) at the Cooper-Jal Unit South Injection Station (hereafter referred to as the "Site"). Groundwater sampling events were performed on May 16-17 and on October 10-11, 2012.

The Site is located on Lea County Road J7, approximately 5.5 miles northwest of Jal, New Mexico and situated in Unit Letter J, northwest quarter (NW/4) of the northwest quarter (NW/4) of the southeast quarter (SE/4), Section 24, Township 24 South, Range 36 East, Lea County, New Mexico. The Site is relatively flat and improved with bermed, above-ground storage tanks (ASTs), hardened caliche roadways and oil and gas production equipment that includes four production wells. Land use in the vicinity of the Site is undeveloped rangeland vegetated with indigenous grass, livestock ranching and oil and gas production. The topography slopes southeast toward Monument Draw located approximately 7.5 miles southeast of the Site. A Site Location Map is presented as Figure 1.

Site assessment activities were initiated in 1993 when Environmental Spill Control, Inc. (ESCI) of Hobbs, New Mexico performed a subsurface assessment of an unlined earthen emergency produced water overflow pit that was located adjacent to the west edge of the Site. During the investigation, five boreholes were advanced to depths ranging from 15 feet to 100 feet below ground surface (bgs). The investigation revealed the presence of hydrocarbon-affected soil. In 1996, Texaco Exploration and Production, Inc. (Texaco) filed a notice of intent to close the pit with the New Mexico Oil Conservation Division (NMOCD). Approximately 1,248 cubic yards of hydrocarbon-affected material were removed from the pit. During the closure activities, the excavation was lined with approximately 1,091 cubic yards of imported clay and backfilled with 3,360 cubic yards of imported caliche. Texaco submitted a pit closure report to the NMOCD in December 1996.

In 1997, the NMOCD requested additional assessment activities to define the vertical extent of affected soil beneath the pit. Assessment activities performed by Highlander Environmental Corporation revealed elevated soil chloride concentrations. In October 1997, monitor well MW-1 was installed near the former pit. Groundwater samples collected from the well contained chloride concentrations above the New Mexico Water Quality Control Commission (NMWQCC) Human Health Standards for Groundwater. Assessment activities performed through May 1998 included the installation of 14 monitor wells. In 1998, electromagnetic (EM-34) terrain conductivity surveys were performed to identify areas of elevated soil chloride concentrations.

In June 1998, Texaco prepared a groundwater corrective action plan to mitigate chloride concentrations and to provide plume containment by extracting groundwater from the affected groundwater-bearing unit. Assessment activities performed in 1999 included the installation of wells MW-11, RW-1 and RW-2. Monitor wells MW-12 and MW-13 were installed in 2001. Semi-annual groundwater monitoring activities and annual reporting to the NMOCD for this Site have been performed by CRA since 2005.

2.0 REGULATORY FRAMEWORK

2.1 NEW MEXICO OIL CONSERVATION DIVISION

The NMOCD guidelines require groundwater to be analyzed for potential contaminants as defined by the NMWQCC regulations. In addition, the NMWQCC regulations present the Human Health Standards for Groundwater and Other Standards for Domestic Water Supply. The constituent of concern (COC) in affected groundwater at the Site is chloride. In this report, groundwater analytical results for chloride and four additional analytes are compared to the NMWQCC standards as shown in the following table:

Analyte	*NMWQCC Standard for Groundwater (mg/L)*
Fluoride[1]	1.6
Nitrate (NO_3 as N)[1]	10
Chloride[2]	250
Sulfate (SO_4)[2]	600
Total Dissolved Solids (TDS)[2]	1,000

Notes:

1) [1]NMWQCC Human Health Standards per NMAC 20.6.2.3103A

2) [2]NMWQCC Other Standards for Domestic Water Supply per NMAC 20.6.2.3103B

2.2 NEW MEXICO OFFICE OF THE STATE ENGINEER

The New Mexico Office of the State Engineer (NMOSE) governs water usage in the State of New Mexico. Applications for permit to appropriate groundwater were submitted by Texaco in October 1999 and were approved with specific conditions in June 2008. A total of 65 acre-feet (ac-ft) per annum from two on-Site recovery wells (RW-1 and RW-2) was granted by the NMOSE for environmental remediation purposes. Usage of groundwater was granted by the NMOSE under well permits CP-884 (RW-2; 32.5 ac-ft per annum) and CP-885 (RW-1; 32.5 ac-ft per annum).

NMOSE Permit CP-884 and CP-884 POD2

On September 15, 2009 an Application for Permit to Change the Location of recovery well RW-2 (CP-884) was submitted to the NMOSE (form wr-06), due to a compromised casing rendering it non-functional as a recovery well. The application was approved for

permit (CP-884 POD2) in correspondence dated April 22, 2010 with the condition that a Proof of Completion of Well or an Extension of Time be submitted to the NMOSE no later than April 30, 2012. Permit CP-884 POD2 supersedes permit CP-884. Recovery well RW-2 will be retained for monitoring use only.

NMOSE Permit CP-885

On June 15, 2010 an Application for an Extension of Time in which to Perfect an Appropriation of Underground Water for permit CP-885 was submitted to the NMOSE (form wr-13). The application was requested because the well for the CP-885 was drilled but not yet equipped. The extension was approved by the NMOSE in correspondence dated August 9, 2010, with the condition that a Proof of Completion of Well or an Extension of Time be submitted to the NMOSE no later than June 30, 2013.

3.0 GROUNDWATER SAMPLING AND ANALYSIS

Groundwater at the Site is monitored with a network of 17 monitor wells and two recovery wells, in accordance with the *Work Plan for Plume Delineation and Modification to Proposed Groundwater Monitoring Schedule* (Larson & Associates, November 18, 1998). Five wells (MW-8, MW-9, MW-9A, MW-10 and MW-11) were sampled during the first semi-annual monitoring event performed on May 16-17, 2012. All wells were sampled during the second semi-annual monitoring event performed on October 10-11, 2012 except for monitor well MW-6 which is damaged with a collapsed casing. A Site Details Map is presented as Figure 2.

The stratification of chloride-impacted groundwater is monitored with selectively screened wells in the affected groundwater-bearing unit. Monitor wells MW-1 through MW-5, MW-7 through MW-10, MW-12 and MW-13 are screened across the basal 10 to 20 feet of the groundwater-bearing unit. These wells were drilled and completed to the Chinle Formation "Red Beds" underlying the Ogallala Aquifer and are referred to as the "deep wells" in this report. Wells MW-2A, MW-4A, MW-5A and MW-9A are screened across the water table interface with approximately five feet of screen above the water table and 15 feet of screen below the water table. These wells are referred to as the "shallow wells." Wells MW-6, MW-11, RW-1 and RW-2 are screened across the entire saturated zone of the groundwater-bearing unit and are referred to as "fully penetrating" wells.

Prior to purging the monitor wells, static fluid levels were measured with an electric interface probe to the nearest hundredth of a foot and recorded. During the first semiannual sampling event, purging was considered complete when three well volumes had been removed or the well was purged dry. Water quality field parameters including pH, temperature and conductivity were collected during the purging process. All non-disposable groundwater sampling equipment was decontaminated with a soap (Liquinox®) and potable water wash, a potable water rinse and a final deionized water rinse to minimize potential cross-contamination between each monitor well. Subsequent to the purging process, each groundwater sample was collected using a new disposable PVC bailer. Laboratory-supplied sample containers were then filled directly from the disposable PVC bailers. During the second semiannual sampling event, samples were collected from the wells with Hydrosleeves™, using the EPA-approved no purge methodology.

Groundwater samples were placed on ice in insulated coolers and chilled to a temperature of approximately 4°C (40°F). The coolers were sealed for shipment and proper chain-of-custody documentation accompanied the samples to ALS Laboratory Group (ALS) in Houston, Texas for analysis of major cations, anions and TDS by various

Environmental Protection Agency (EPA) Methods. The fluids recovered and generated during the sampling event were containerized in a dedicated polyethylene tank located on Site and subsequently transported and disposed at an NMOCD-permitted salt water disposal (SWD), and CEMC approved facility by Nabors Well Services, LTD. (Nabors).

3.1 POTENTIOMETRIC SURFACE AND GRADIENT

Groundwater elevation data is presented in Table I. Groundwater gradient maps for May 2012 and October 2012 are presented as Figures 3 and 4, respectively. Groundwater elevations ranged from 3,179.46 feet to 3,193.79 feet on May 16, 2012 and from 3,179.20 feet to 3,193.67 feet on October 10, 2012. Although the Site's network of wells is completed at various intervals (shallow, deep and fully penetrating), the groundwater elevations appear to be consistent with historical levels with groundwater flow to the southeast. The gradient observed in 2012 was 0.003 feet/foot for both May and October events.

3.2 ANALYTICAL RESULTS

The 2012 analytical results generally fall within historical ranges for the two individual sampling strata. Higher chloride concentrations were observed in the basal portion of the Ogallala Aquifer, as reported in Table II. An isoconcentration map of the chloride concentrations for the May 2012 groundwater monitoring event is presented as Figure 5. Chloride isoconcentration maps for the shallow and deep wells for October 2012 are presented as Figures 6 and 7, respectively. Copies of the certified analytical reports and chain-of-custody documentation are attached in Appendix A.

During the May 2012 sampling event, two monitor wells (MW-9A and MW-10) exceeded the NMWQCC groundwater standards for chloride; one monitor well (MW-9) exceeded the NMWQCC groundwater standard for fluoride; and two monitor wells (MW-9A and MW-10) exceeded the NMWQCC groundwater standards for TDS. No wells exceeded the NMWQCC groundwater standards for sulfate or nitrates.

During the October 2012 sampling event, eleven wells (MW-1, MW-2, MW-4, MW-4A, MW-5, MW-7, MW-9A, MW-10, MW-13, RW-1 and RW-2) exceeded the NMWQCC groundwater standards for chloride; three wells (MW-1, MW-4, MW-9) exceeded the NMWQCC groundwater standard for fluoride; eleven wells (MW-1, MW-2, MW-4, MW-4A, MW-5, MW-7, MW-9A, MW-10, MW-13, RW-1 and RW-2) exceeded the NMWQCC groundwater standards for TDS; and two wells (MW-4 and RW-1) exceeded

the NMWQCC groundwater standard for sulfate. No wells exceeded the NMWQCC groundwater standard for nitrates.

4.0 SUMMARY OF FINDINGS

Based on groundwater monitoring activities performed at the Site, CRA presents the following summary:

- Groundwater at the Site is monitored with a network of 17 monitor wells and two recovery wells. Five wells (MW-8, MW-9, MW-9A, MW-10 and MW-11) were sampled during the first semi-annual monitoring event in May 2012. All wells were sampled during the second semi-annual monitoring event in October 2012 except MW-6 (damaged casing prevented sampling).
- Groundwater elevations ranged from 3,179.46 feet to 3,193.79 feet on May 16, 2012 and from 3,179.20 feet to 3,193.67 feet on October 10, 2012. Groundwater flow at the Site is to the southeast at a gradient of 0.003 feet/foot.
- The analytical results generally fall within historical ranges with higher chloride concentrations in the basal portion of the Ogallala aquifer.
- During the May 2012 sampling event, two monitor wells exceeded the NMWQCC groundwater standards for chloride; one monitor well exceeded the NMWQCC groundwater standard for fluoride; two monitor wells exceeded the NMWQCC groundwater standards for TDS; and no wells exceeded the NMWQCC groundwater standards for sulfate or nitrates.
- During the October 2012 sampling event, eleven wells exceeded the NMWQCC groundwater standards for chloride; three wells exceeded the NMWQCC groundwater standard for fluoride; eleven wells exceeded the NMWQCC groundwater standards for TDS; two wells exceeded the NMWQCC groundwater standard for sulfate; and no wells exceeded the NMWQCC groundwater standard for nitrates.
- The chloride plume appears stable with little migration since 1998.

5.0 PLANNED ACTIVITIES

Based upon the summary and conclusions presented in this report, the following is recommended for the 2013 calendar year:

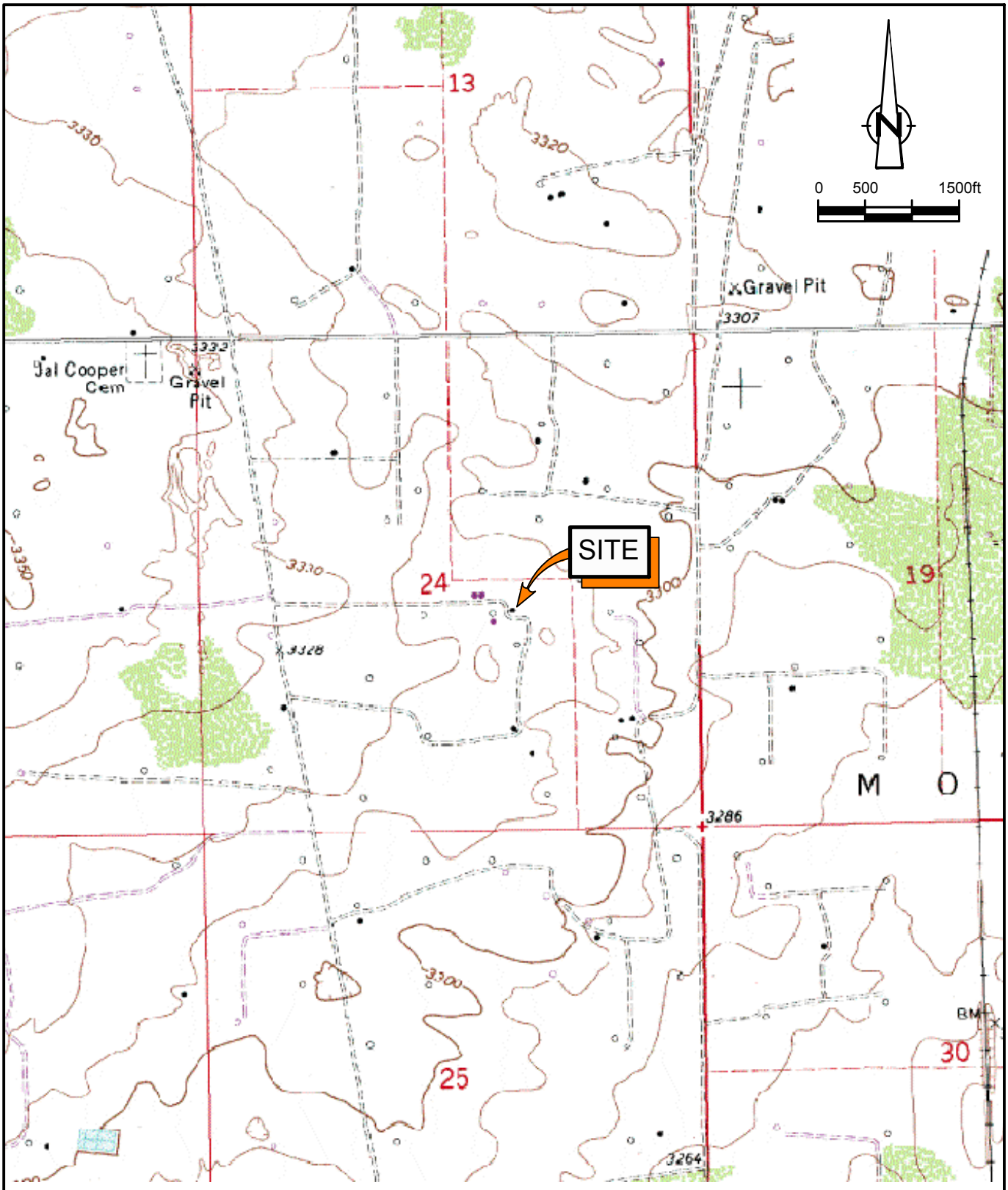
- Perform the 2013 semi-annual groundwater monitoring events that are scheduled for May and October 2013.
- Install a replacement recovery well for RW-2. The existing well RW-2 will be retained for monitoring purposes.
- Perform an aquifer evaluation pump test.
- Install one additional delineation monitor well to the southeast of the Site.
- Install one monitor well to replace damaged monitor well MW-6.

All of Which is Respectfully Submitted,
Conestoga-Rovers & Associates

Todd Wells
Senior Project Manager

Thomas C. Larson
Midland Office Manager

FIGURES



SOURCE: USGS 7.5 MINUTE QUADRANGLE;
JAL NW, NEW MEXICO (1977)

32° 12' 7.13" N, 103° 13' 4.36" W

figure 1

SITE LOCATION MAP
COOPER-JAL UNIT SOUTH INJECTION STATION
LEA COUNTY, NEW MEXICO
Chevron Environmental Management Company

039123-2012(009)GN-DL001 JAN 3/2013

LEGEND

- MONITOR WELL LOCATION (DEEP)
- MONITOR WELL LOCATION (SHALLOW)
- COOPER-JAL OIL WELL LOCATION
- RECOVERY WELL LOCATION (FULLY PENETRATING)
- MONITOR WELL LOCATION (FULLY PENETRATING)

BASEMAP ADAPTED FROM LARSON & ASSOCIATES, INC. (AUGUST 18, 2005).

figure 2

SITE DETAILS MAP
COOPER-JAL UNIT SOUTH INJECTION STATION
LEA COUNTY, NEW MEXICO
Chevron Environmental Management Company

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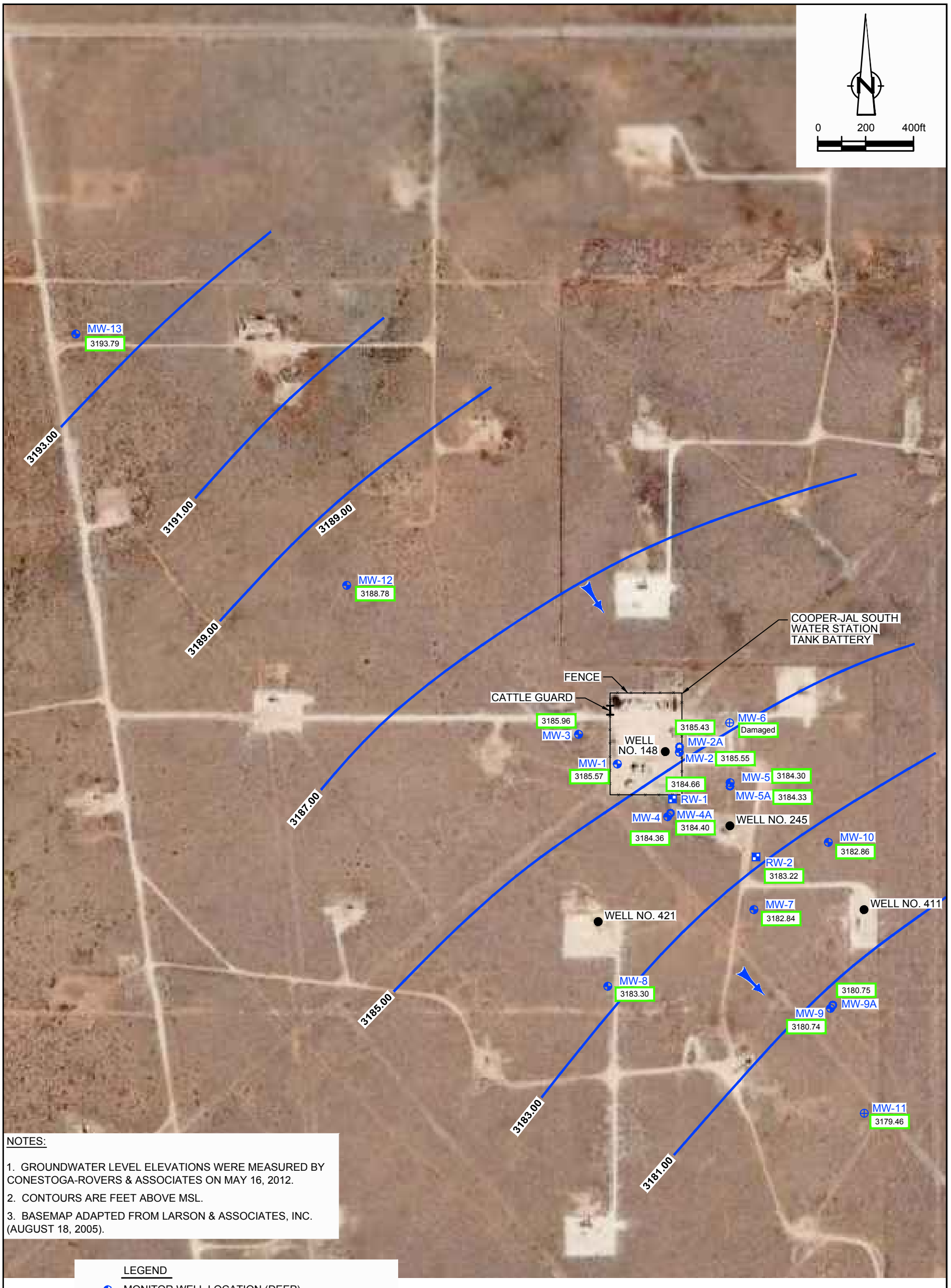

NOTES:

1. GROUNDWATER LEVEL ELEVATIONS WERE MEASURED BY CONESTOGA-ROVERS & ASSOCIATES ON MAY 16, 2012.
2. CONTOURS ARE FEET ABOVE MSL.
3. BASEMAP ADAPTED FROM LARSON & ASSOCIATES, INC. (AUGUST 18, 2005).

LEGEND

- MONITOR WELL LOCATION (DEEP)
- MONITOR WELL LOCATION (SHALLOW)
- COOPER-JAL OIL WELL LOCATION
- RECOVERY WELL LOCATION (FULLY PENETRATING)
- MONITOR WELL LOCATION (FULLY PENETRATING)
- 3185.57 GROUNDWATER LEVEL ELEVATION
- GROUNDWATER LEVEL ELEVATION CONTOUR (INTERVAL = 2 FT)
- DIRECTION OF GROUNDWATER FLOW

figure 3

GROUNDWATER GRADIENT MAP - MAY 2012
COOPER-JAL UNIT SOUTH INJECTION STATION
LEA COUNTY, NEW MEXICO
Chevron Environmental Management Company

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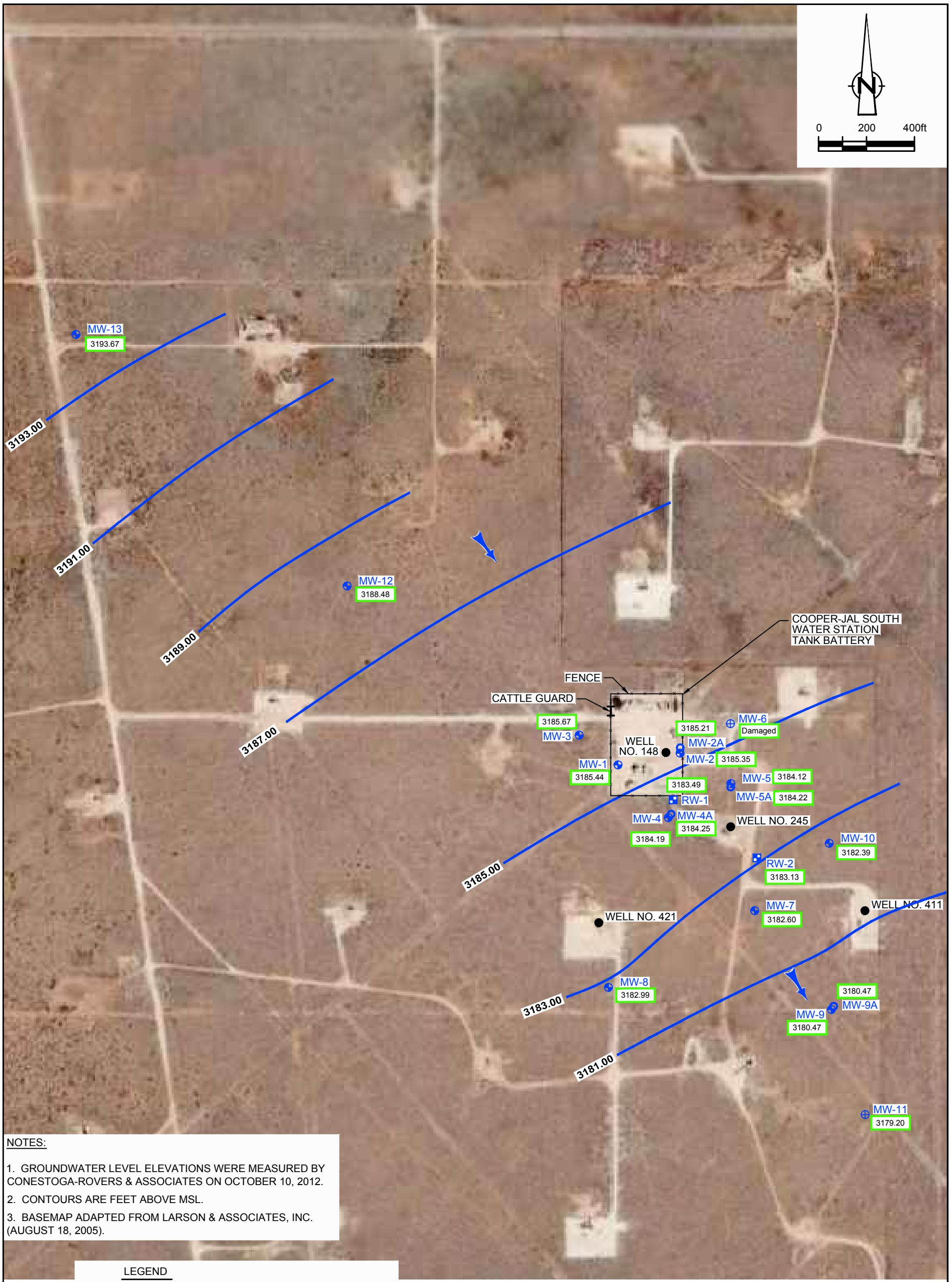

figure 4

GROUNDWATER GRADIENT MAP - OCTOBER 2012
COOPER-JAL UNIT SOUTH INJECTION STATION
LEA COUNTY, NEW MEXICO

Chevron Environmental Management Company

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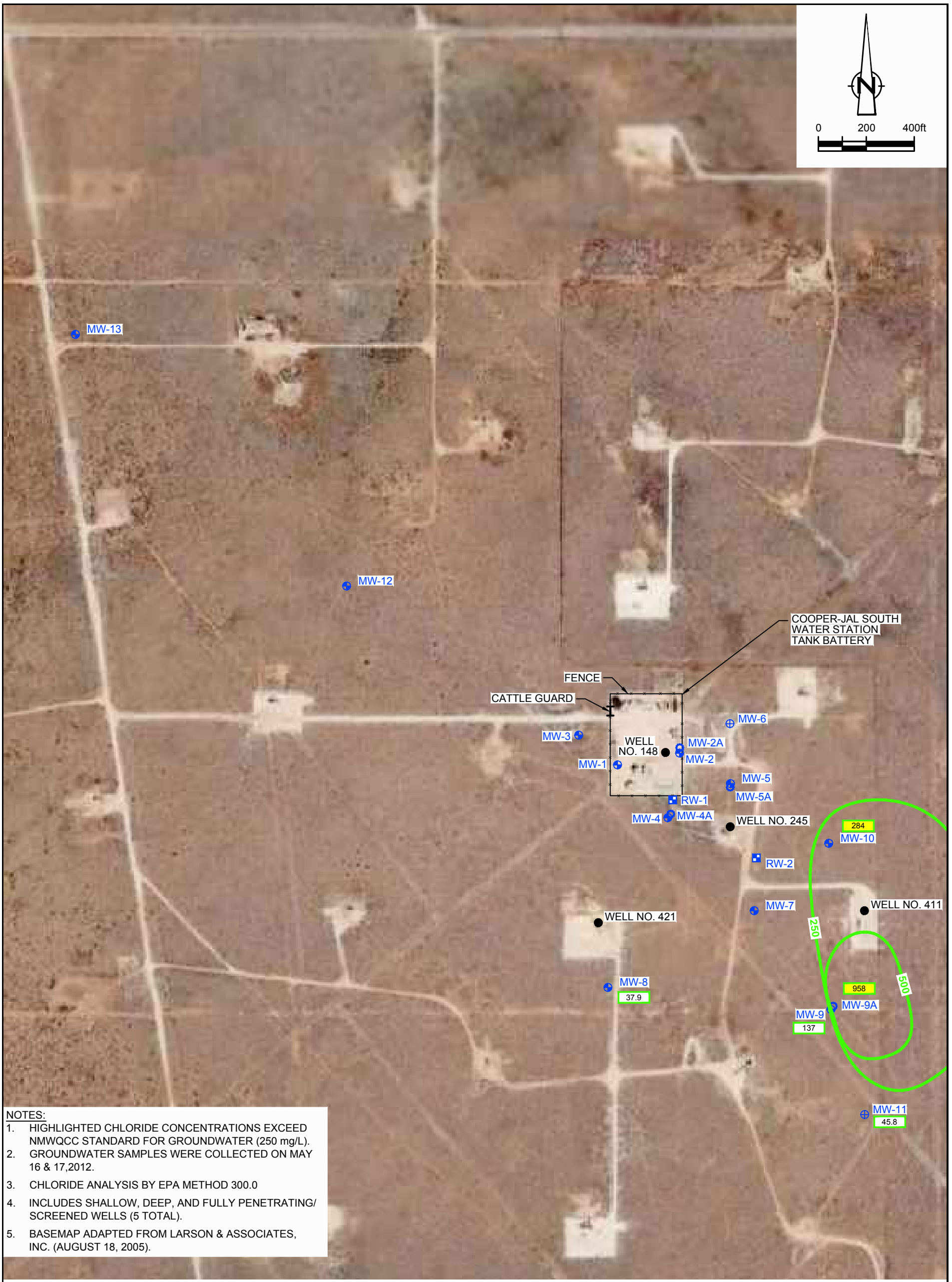

NOTES:

1. HIGHLIGHTED CHLORIDE CONCENTRATIONS EXCEED NMWQCC STANDARD FOR GROUNDWATER (250 mg/L).
2. GROUNDWATER SAMPLES WERE COLLECTED ON MAY 16 & 17,2012.
3. CHLORIDE ANALYSIS BY EPA METHOD 300.0
4. INCLUDES SHALLOW, DEEP, AND FULLY PENETRATING/ SCREENED WELLS (5 TOTAL).
5. BASEMAP ADAPTED FROM LARSON & ASSOCIATES, INC. (AUGUST 18, 2005).

LEGEND

- MONITOR WELL LOCATION (DEEP)
- MONITOR WELL LOCATION (SHALLOW)
- COOPER-JAL OIL WELL LOCATION
- RECOVERY WELL LOCATION (FULLY PENETRATING)
- MONITOR WELL LOCATION (FULLY PENETRATING)
- 37.9 CHLORIDE CONCENTRATION (MG/L)
- CHLORIDE CONCENTRATION CONTOUR (INTERVAL = 250 MG/L)

figure 5

CHLORIDE ISOCONCENTRATION MAP - MAY 2012
COOPER-JAL UNIT SOUTH INJECTION STATION
LEA COUNTY, NEW MEXICO

Chevron Environmental Management Company

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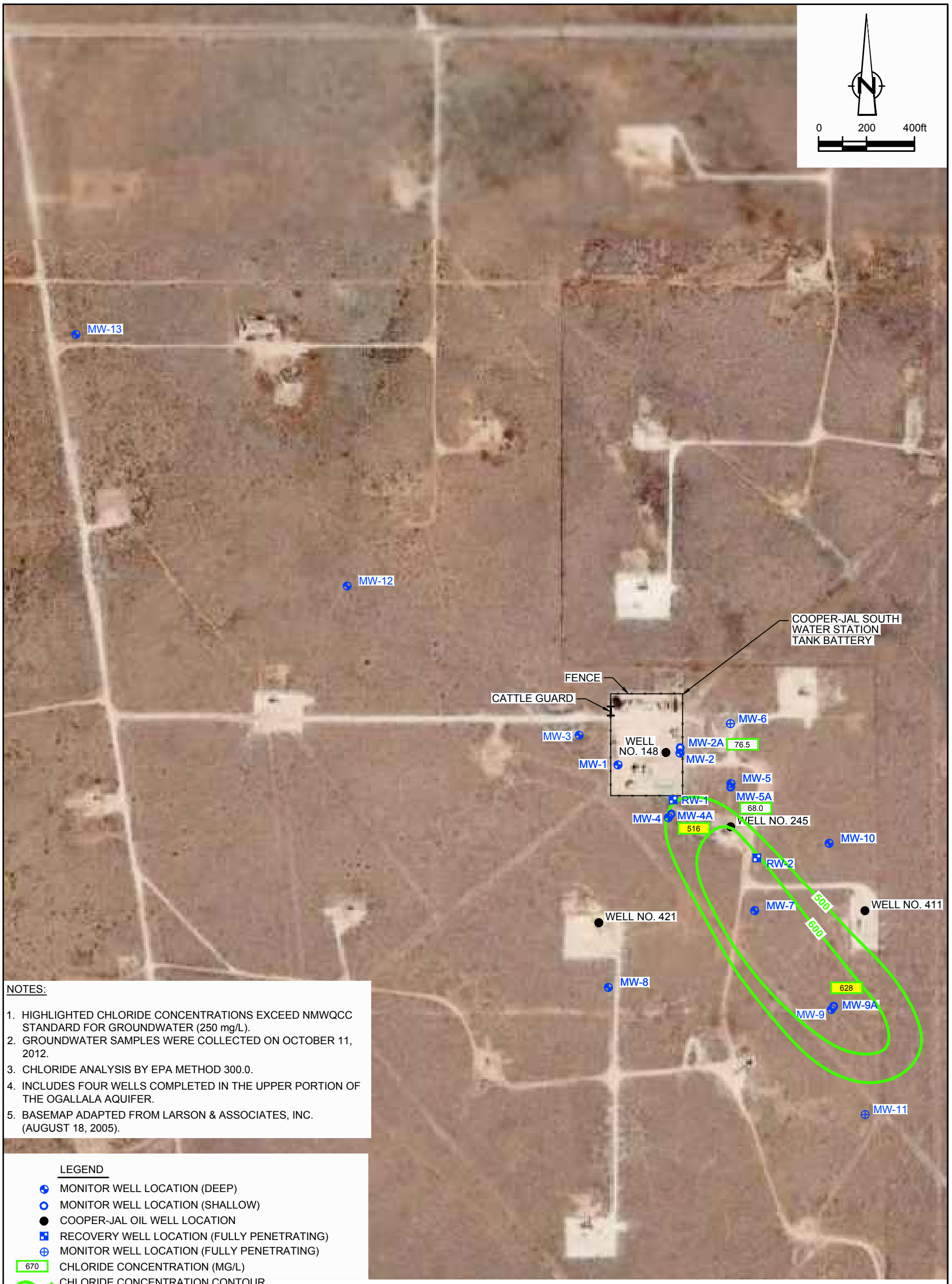

NOTES:

1. HIGHLIGHTED CHLORIDE CONCENTRATIONS EXCEED NMWQCC STANDARD FOR GROUNDWATER (250 mg/L).
2. GROUNDWATER SAMPLES WERE COLLECTED ON OCTOBER 11, 2012.
3. CHLORIDE ANALYSIS BY EPA METHOD 300.0.
4. INCLUDES FOUR WELLS COMPLETED IN THE UPPER PORTION OF THE OGALLALA AQUIFER.
5. BASEMAP ADAPTED FROM LARSON & ASSOCIATES, INC. (AUGUST 18, 2005).

LEGEND

- MONITOR WELL LOCATION (DEEP)
- MONITOR WELL LOCATION (SHALLOW)
- COOPER-JAL OIL WELL LOCATION
- RECOVERY WELL LOCATION (FULLY PENETRATING)
- MONITOR WELL LOCATION (FULLY PENETRATING)
- 670 CHLORIDE CONCENTRATION (MG/L)
- CHLORIDE CONCENTRATION CONTOUR (INTERVAL = 100 MG/L)

figure 6

SHALLOW GROUNDWATER CHLORIDE ISOCONCENTRATION MAP - OCTOBER 2012
COOPER-JAL UNIT SOUTH INJECTION STATION
LEA COUNTY, NEW MEXICO

Chevron Environmental Management Company

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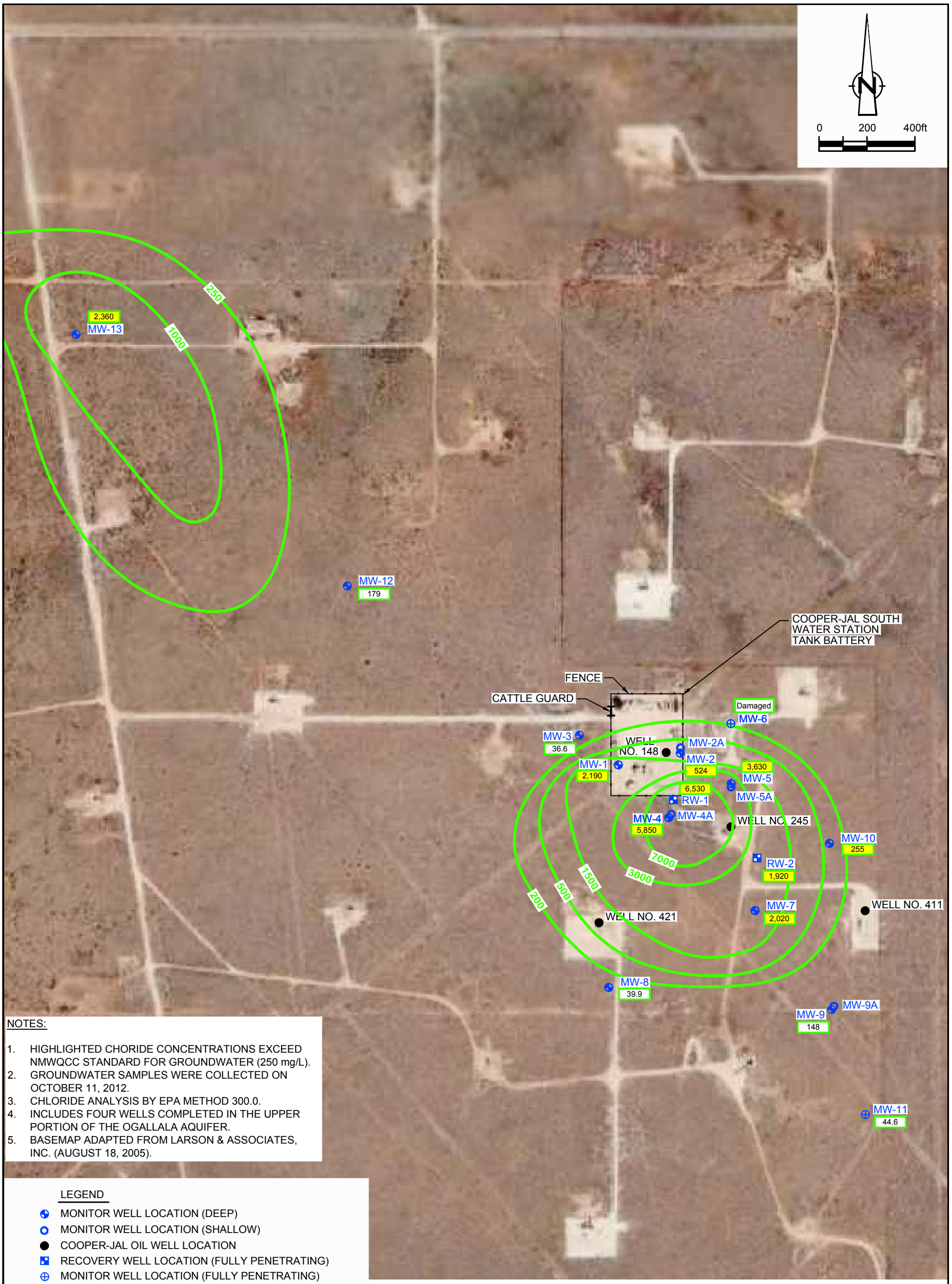

NOTES:

1. HIGHLIGHTED CHORIDE CONCENTRATIONS EXCEED NMWQCC STANDARD FOR GROUNDWATER (250 mg/L).
2. GROUNDWATER SAMPLES WERE COLLECTED ON OCTOBER 11, 2012.
3. CHLORIDE ANALYSIS BY EPA METHOD 300.0.
4. INCLUDES FOUR WELLS COMPLETED IN THE UPPER PORTION OF THE OGALLALA AQUIFER.
5. BASEMAP ADAPTED FROM LARSON & ASSOCIATES, INC. (AUGUST 18, 2005).

LEGEND

- MONITOR WELL LOCATION (DEEP)
- MONITOR WELL LOCATION (SHALLOW)
- COOPER-JAL OIL WELL LOCATION
- RECOVERY WELL LOCATION (FULLY PENETRATING)
- MONITOR WELL LOCATION (FULLY PENETRATING)
- 41 CHLORIDE CONCENTRATION (MG/L)
- CHLORIDE CONCENTRATION CONTOUR (INTERVAL = VARIABLE mg/L)

figure 7

DEEP GROUNDWATER CHLORIDE ISOCONCENTRATION MAP - OCTOBER 2012
COOPER-JAL UNIT SOUTH INJECTION STATION
LEA COUNTY, NEW MEXICO

Chevron Environmental Management Company

039123-2012(009)GN-DL001 JAN 3/2013

TABLES

TABLE I

GROUNDWATER GAUGING SUMMARY
CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY
COOPER-JAL UNIT INJECTION STATION
LEA COUNTY, NEW MEXICO

Well ID TOC [1] Elevation	Collection Date	Depth to Groundwater (ft TOC [1])	Groundwater Elevation (ft)	Well Depth (ft TOC [1])	Casing Diameter (in)	Well Screen Interval (ft bgs [2])
MW-1	05/18/98	135.05	3185.12	172.38	2	153-173
3320.17	05/25/99	134.93	3185.24	---	---	---
	02/08/01	134.80	3185.37	---	---	---
	05/10/02	134.77	3185.40	---	---	---
	10/22/02	134.89	3185.28	---	---	---
	05/20/03	135.17	3185.00	---	---	---
	11/24/03	134.70	3185.47	---	---	---
	05/11/04	134.75	3185.42	---	---	---
	11/15/04	134.76	3185.41	---	---	---
	05/17/05	134.29	3185.88	---	---	---
	11/15/05	134.93	3185.24	---	---	---
	05/08/06	134.68	3185.49	---	---	---
	11/13/06	134.62	3185.55	---	---	---
	05/29/07	134.71	3185.46	---	---	---
	11/16/07	134.70	3185.47	---	---	---
	05/14/08	134.73	3185.44	---	---	---
	11/03/08	134.69	3185.48	---	---	---
	05/19/09	134.64	3185.53	---	---	---
	11/02/09	134.71	3185.46	---	---	---
	05/05/10	134.90	3185.27	172.20	---	---
	11/08/10	134.50	3185.67	172.20	---	---
	05/11/11	134.60	3185.57	---	---	---
	11/08/11	134.64	3185.53	---	---	---
	05/16/12	134.60	3185.57	172.16	---	---
	10/10/12	134.73	3185.44	177.45	---	---
MW-2	05/18/98	135.00	3184.86	170.60	2	163-173
3319.86	05/25/99	134.79	3185.07	---	---	---
	02/08/01	134.63	3185.23	---	---	---
	05/10/02	134.65	3185.21	---	---	---
	10/22/02	134.72	3185.14	---	---	---
	05/20/03	134.95	3184.91	---	---	---
	11/24/03	134.56	3185.30	---	---	---
	05/11/04	134.55	3185.31	---	---	---
	11/15/04	134.53	3185.33	---	---	---
	05/17/05	134.39	3185.47	---	---	---
	11/15/05	134.77	3185.09	---	---	---
	05/08/06	134.52	3185.34	---	---	---
	11/13/06	134.44	3185.42	---	---	---
	05/29/07	134.54	3185.32	---	---	---
	11/14/07	134.52	3185.34	---	---	---
	05/14/08	134.53	3185.33	---	---	---
	11/03/08	134.44	3185.42	---	---	---
	05/19/09	134.46	3185.40	---	---	---
	11/16/09	134.51	3185.35	---	---	---
	05/05/10	134.62	3185.24	170.50	---	---
	11/08/10	134.25	3185.61	170.50	---	---

TABLE I

GROUNDWATER GAUGING SUMMARY
CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY
COOPER-JAL UNIT INJECTION STATION
LEA COUNTY, NEW MEXICO

Well ID *TOC [1] Elevation*	*Collection Date*	*Depth to Groundwater (ft TOC [1])*	*Groundwater Elevation (ft)*	*Well Depth (ft TOC [1])*	*Casing Diameter (in)*	*Well Screen Interval (ft bgs [2])*
MW-2 (cont)	05/11/11	134.31	3185.55	---	---	---
	11/08/11	134.36	3185.50	170.77	---	---
	05/16/12	134.31	3185.55	170.89	---	---
	10/10/12	134.51	3185.35	170.91	---	---
MW-2A	05/18/98	134.80	3185.06	142.30	2	130-145
3319.86	05/25/99	134.73	3185.13	---	---	---
	02/08/01	134.58	3185.28	---	---	---
	05/10/02	134.50	3185.36	---	---	---
	10/22/02	134.66	3185.20	---	---	---
	05/20/03	135.80	3184.06	---	---	---
	11/24/03	134.60	3185.26	---	---	---
	05/11/04	134.53	3185.33	---	---	---
	11/15/04	134.58	3185.28	---	---	---
	05/17/05	134.47	3185.39	---	---	---
	11/15/05	134.74	3185.12	---	---	---
	05/08/06	134.46	3185.40	---	---	---
	11/13/06	134.39	3185.47	---	---	---
	05/29/07	134.50	3185.36	---	---	---
	11/14/07	134.48	3185.38	---	---	---
	05/14/08	134.49	3185.37	---	---	---
	11/03/08	134.46	3185.40	---	---	---
	05/19/09	134.42	3185.44	---	---	---
	11/02/09	134.45	3185.41	---	---	---
	05/05/10	134.52	3185.34	142.19	---	---
	11/08/10	134.30	3185.56	142.19	---	---
	05/11/11	134.38	3185.48	---	---	---
	11/08/11	134.42	3185.44	142.31	---	---
	05/16/12	134.43	3185.43	142.32	---	---
	10/10/12	134.65	3185.21	142.35	---	---
MW-3	05/18/98	132.65	3185.56	171.93	2	161-171
3318.21	05/25/99	132.52	3185.69	---	---	---
	02/08/01	132.40	3185.81	---	---	---
	05/10/02	132.40	3185.81	---	---	---
	10/22/02	132.49	3185.72	---	---	---
	05/20/03	132.75	3185.46	---	---	---
	11/24/03	132.29	3185.92	---	---	---
	05/11/04	132.38	3185.83	---	---	---
	11/15/04	132.46	3185.75	---	---	---
	05/17/05	132.32	3185.89	---	---	---
	11/15/05	132.55	3185.66	---	---	---
	05/08/06	132.32	3185.89	---	---	---
	11/13/06	132.27	3185.94	---	---	---
	05/29/07	132.36	3185.85	---	---	---
	11/16/07	132.34	3185.87	---	---	---
	05/14/08	132.36	3185.85	---	---	---

TABLE I

GROUNDWATER GAUGING SUMMARY
CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY
COOPER-JAL UNIT INJECTION STATION
LEA COUNTY, NEW MEXICO

Well ID *TOC [1] Elevation*	*Collection Date*	*Depth to Groundwater (ft TOC [1])*	*Groundwater Elevation (ft)*	*Well Depth (ft TOC [1])*	*Casing Diameter (in)*	*Well Screen Interval (ft bgs [2])*
MW-3 (cont)	11/03/08	132.31	3185.90	---	---	---
	05/19/09	132.25	3185.96	---	---	---
	11/02/09	132.37	3185.84	---	---	---
	05/05/10	132.48	3185.73	171.93	---	---
	11/08/10	132.14	3186.07	171.93	---	---
	05/11/11	132.24	3185.97	---	---	---
	11/08/11	132.30	3185.91	171.89	---	---
	05/16/12	132.25	3185.96	171.86	---	---
	10/10/12	132.54	3185.67	171.98	---	---
MW-4	05/18/98	136.01	3183.73	171.41	2	161-171
3319.74	05/25/99	135.57	3184.17	---	---	---
	02/08/01	135.87	3183.87	---	---	---
	05/10/02	135.67	3184.07	---	---	---
	10/22/02	135.90	3183.84	---	---	---
	05/20/03	136.00	3183.74	---	---	---
	11/24/03	135.70	3184.04	---	---	---
	05/11/04	135.34	3184.40	---	---	---
	11/15/04	135.76	3183.98	---	---	---
	05/17/05	135.69	3184.05	---	---	---
	11/15/05	135.85	3183.89	---	---	---
	05/08/06	135.60	3184.14	---	---	---
	11/13/06	135.59	3184.15	---	---	---
	05/29/07	135.75	3183.99	---	---	---
	11/14/07	135.62	3184.12	---	---	---
	05/14/08	135.76	3183.98	---	---	---
	11/03/08	135.66	3184.08	---	---	---
	05/19/09	135.67	3184.07	---	---	---
	11/02/09	135.68	3184.06	---	---	---
	05/05/10	135.83	3183.91	171.56	---	---
	11/08/10	135.36	3184.38	171.56	---	---
	05/05/11	135.40	3184.34	---	---	---
	11/08/11	135.43	3184.31	171.76	---	---
	05/16/12	135.38	3184.36	171.74	---	---
	10/10/12	135.55	3184.19	171.88	---	---
MW-4A	05/18/98	135.68	3183.90	146.00	2	128-143
3319.58	05/21/99	135.65	3183.93	---	---	---
	05/25/99	135.90	3183.68	---	---	---
	02/08/01	135.34	3184.24	---	---	---
	05/10/02	135.30	3184.28	---	---	---
	10/22/02	135.51	3184.07	---	---	---
	05/20/03	135.55	3184.03	---	---	---
	11/24/03	135.31	3184.27	---	---	---
	05/11/04	135.72	3183.86	---	---	---
	11/15/04	135.38	3184.20	---	---	---
	05/17/05	135.32	3184.26	---	---	---

TABLE I

GROUNDWATER GAUGING SUMMARY
CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY
COOPER-JAL UNIT INJECTION STATION
LEA COUNTY, NEW MEXICO

Well ID TOC [1] Elevation	Collection Date	Depth to Groundwater (ft TOC [1])	Groundwater Elevation (ft)	Well Depth (ft TOC [1])	Casing Diameter (in)	Well Screen Interval (ft bgs [2])
MW-4A (cont)	11/15/05	135.52	3184.06	---	---	---
	05/08/06	135.26	3184.32	---	---	---
	11/13/06	135.20	3184.38	---	---	---
	05/29/07	135.32	3184.26	---	---	---
	11/14/07	135.20	3184.38	---	---	---
	05/14/08	135.31	3184.27	---	---	---
	11/03/08	135.27	3184.31	---	---	---
	05/19/09	135.25	3184.33	---	---	---
	11/02/09	135.25	3184.33	---	---	---
	05/05/10	135.33	3184.25	145.95	---	---
	11/08/10	135.18	3184.40	145.95	---	---
	05/11/11	135.17	3184.41	---	---	---
	11/08/11	135.22	3184.36	145.72	---	---
	05/16/12	135.18	3184.40	145.62	---	---
	10/10/12	135.33	3184.25	145.75	---	---
MW-5	05/18/98	137.42	3183.68	173.65	2	161-171
3321.10	05/25/99	137.28	3183.82	---	---	---
	02/08/01	137.18	3183.92	---	---	---
	05/10/02	137.10	3184.00	---	---	---
	10/22/02	137.04	3184.06	---	---	---
	05/20/03	137.45	3183.65	---	---	---
	11/24/03	137.01	3184.09	---	---	---
	05/11/04	137.01	3184.09	---	---	---
	11/15/04	137.08	3184.02	---	---	---
	05/17/05	137.00	3184.10	---	---	---
	11/15/05	137.18	3183.92	---	---	---
	05/08/06	136.90	3184.20	---	---	---
	11/13/06	136.81	3184.29	---	---	---
	05/29/07	136.92	3184.18	---	---	---
	11/14/07	136.85	3184.25	---	---	---
	05/14/08	136.97	3184.13	---	---	---
	11/03/08	136.89	3184.21	---	---	---
	05/19/09	136.90	3184.20	---	---	---
	11/02/09	136.90	3184.20	---	---	---
	05/05/10	137.02	3184.08	173.60	---	---
	11/08/10	136.93	3184.17	173.60	---	---
	05/11/11	136.92	3184.18	---	---	---
	11/08/11	136.84	3184.26	173.61	---	---
	05/16/12	136.80	3184.30	173.58	---	---
	10/10/12	136.98	3184.12	173.59	---	---
MW-5A	05/18/98	137.20	3183.87	143.85	2	126-141
3321.07	05/25/99	137.11	3183.96	---	---	---
	02/08/01	136.99	3184.08	---	---	---
	05/10/02	136.90	3184.17	---	---	---
	10/22/02	137.17	3183.90	---	---	---

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GROUNDWATER GAUGING SUMMARY
CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY
COOPER-JAL UNIT INJECTION STATION
LEA COUNTY, NEW MEXICO

Well ID *TOC [1] Elevation*	*Collection Date*	*Depth to Groundwater (ft TOC [1])*	*Groundwater Elevation (ft)*	*Well Depth (ft TOC [1])*	*Casing Diameter (in)*	*Well Screen Interval (ft bgs [2])*
MW-5A (cont)	05/20/03	137.24	3183.83	---	---	---
	11/24/03	136.91	3184.16	---	---	---
	05/11/04	136.88	3184.19	---	---	---
	11/15/04	136.92	3184.15	---	---	---
	05/17/05	136.83	3184.24	---	---	---
	11/15/05	137.06	3184.01	---	---	---
	05/08/06	136.80	3184.27	---	---	---
	11/13/06	136.74	3184.33	---	---	---
	05/29/07	136.82	3184.25	---	---	---
	11/14/07	136.88	3184.19	---	---	---
	05/14/08	136.83	3184.24	---	---	---
	11/03/08	136.81	3184.26	---	---	---
	05/19/09	136.78	3184.29	---	---	---
	11/02/09	136.80	3184.27	---	---	---
	05/05/10	136.91	3184.16	143.90	---	---
	11/08/10	136.69	3184.38	143.90	---	---
	05/11/11	136.87	3184.20	---	---	---
	11/08/11	136.77	3184.30	144.06	---	---
	05/16/12	136.74	3184.33	144.01	---	---
	10/10/12	136.85	3184.22	143.89	---	---
MW-6	05/18/98	136.73	3184.42	169.25	2	120-170
3321.15	05/25/99	136.61	3184.54	---	---	---
	02/08/01	136.50	3184.65	---	---	---
	05/10/02	136.40	3184.75	---	---	---
	10/22/02	136.57	3184.58	---	---	---
	05/20/03	136.85	3184.30	---	---	---
	11/24/03	136.38	3184.77	---	---	---
	05/11/04	136.41	3184.74	---	---	---
	11/15/04	136.08	3185.07	---	---	---
	05/17/05	136.58	3184.57	---	---	---
	11/15/05	136.82	3184.33	---	---	---
	05/08/06	136.58	3184.57	---	---	---
	11/13/06	136.49	3184.66	---	---	---
	05/29/07	136.61	3184.54	---	---	---
	11/15/07	136.59	3184.56	---	---	---
	05/14/08	136.58	3184.57	---	---	---
	11/03/08	136.52	3184.63	---	---	---
	05/19/09	136.52	3184.63	---	---	---
	11/02/09	136.51	3184.64	---	---	---
	05/05/10	136.53	3184.62	168.97	---	---
	11/08/10	136.40	3184.75	168.97	---	---
	05/11/11	Well Casing Damaged				
	11/08/11	Well Casing Damaged				
	05/16/12	Well Casing Damaged				
	10/10/12	Well Casing Damaged				

TABLE I

GROUNDWATER GAUGING SUMMARY
CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY
COOPER-JAL UNIT INJECTION STATION
LEA COUNTY, NEW MEXICO

Well ID *TOC [1] Elevation*	*Collection Date*	*Depth to Groundwater (ft TOC [1])*	*Groundwater Elevation (ft)*	*Well Depth (ft TOC [1])*	*Casing Diameter (in)*	*Well Screen Interval (ft bgs [2])*
MW-7	05/18/98	136.19	3182.20	166.15	2	151-166
3318.39	05/25/99	135.98	3182.41	---	---	---
	02/08/01	135.87	3182.52	---	---	---
	05/10/02	135.67	3182.72	---	---	---
	10/22/02	135.89	3182.50	---	---	---
	05/20/03	136.12	3182.27	---	---	---
	11/24/03	135.71	3182.68	---	---	---
	05/11/04	135.74	3182.65	---	---	---
	11/15/04	135.78	3182.61	---	---	---
	05/17/05	135.68	3182.71	---	---	---
	11/15/05	135.90	3182.49	---	---	---
	05/08/06	135.64	3182.75	---	---	---
	11/13/06	135.58	3182.81	---	---	---
	05/29/07	135.73	3182.66	---	---	---
	11/15/07	135.64	3182.75	---	---	---
	05/14/08	135.68	3182.71	---	---	---
	11/03/08	135.66	3182.73	---	---	---
	05/19/09	135.63	3182.76	---	---	---
	11/02/09	135.65	3182.74	---	---	---
	05/05/10	135.80	3182.59	165.90	---	---
	11/08/10	135.51	3182.88	165.90	---	---
	05/11/11	135.68	3182.71	---	---	---
	11/08/11	135.62	3182.77	166.07	---	---
	05/16/12	135.55	3182.84	165.98	---	---
	10/10/12	135.79	3182.60	166.19	---	---
MW-8	05/18/98	134.36	3182.78	171.92	2	155-170
3317.14	05/25/99	134.21	3182.93	---	---	---
	02/08/01	134.08	3183.06	---	---	---
	05/10/02	133.95	3183.19	---	---	---
	10/22/02	134.18	3182.96	---	---	---
	05/20/03	134.38	3182.76	---	---	---
	11/24/03	133.99	3183.15	---	---	---
	05/11/04	134.02	3183.12	---	---	---
	11/15/04	134.11	3183.03	---	---	---
	05/17/05	133.97	3183.17	---	---	---
	11/15/05	134.21	3182.93	---	---	---
	05/08/06	133.94	3183.20	---	---	---
	11/13/06	133.90	3183.24	---	---	---
	05/29/07	134.02	3183.12	---	---	---
	11/15/07	133.76	3183.38	---	---	---
	05/15/08	133.98	3183.16	---	---	---
	11/03/08	134.01	3183.13	---	---	---
	05/19/09	133.97	3183.17	---	---	---
	11/02/09	134.00	3183.14	---	---	---
	05/05/10	134.08	3183.06	171.94	---	---
	11/08/10	134.03	3183.11	171.94	---	---

TABLE I

GROUNDWATER GAUGING SUMMARY
CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY
COOPER-JAL UNIT INJECTION STATION
LEA COUNTY, NEW MEXICO

Well ID *TOC [1] Elevation*	*Collection Date*	*Depth to Groundwater (ft TOC [1])*	*Groundwater Elevation (ft)*	*Well Depth (ft TOC [1])*	*Casing Diameter (in)*	*Well Screen Interval (ft bgs [2])*
MW-8 (cont)	05/11/11	133.98	3183.16	171.85	---	---
	11/08/11	133.96	3183.18	171.93	---	---
	05/16/12	133.84	3183.30	171.94	---	---
	10/10/12	134.15	3182.99	171.9	---	---
MW-9	05/18/98	132.89	3179.90	161.40	2	149-164
3312.79	05/25/99	132.68	3180.11	---	---	---
	02/08/01	132.52	3180.27	---	---	---
	05/10/02	137.20	3175.59	---	---	---
	10/22/02	132.56	3180.23	---	---	---
	05/20/03	132.75	3180.04	---	---	---
	11/24/03	132.35	3180.44	---	---	---
	05/11/04	132.39	3180.40	---	---	---
	11/15/04	132.43	3180.36	---	---	---
	05/17/05	132.26	3180.53	---	---	---
	11/15/05	132.60	3180.19	---	---	---
	05/08/06	132.26	3180.53	---	---	---
	11/13/06	132.19	3180.60	---	---	---
	05/29/07	132.32	3180.47	---	---	---
	11/14/07	132.34	3180.45	---	---	---
	05/15/08	132.29	3180.50	---	---	---
	11/03/08	132.33	3180.46	---	---	---
	05/19/09	132.21	3180.58	---	---	---
	11/02/09	132.35	3180.44	---	---	---
	05/05/10	132.41	3180.38	161.32	---	---
	11/08/10	132.10	3180.69	161.32	---	---
	05/11/11	132.22	3180.57	161.38	---	---
	11/08/11	132.19	3180.60	161.49	---	---
	05/16/12	132.05	3180.74	161.41	---	---
	10/10/12	132.32	3180.47	161.48	---	---
MW-9A	05/18/98	132.65	3179.91	144.15	2	127-142
3312.56	05/25/99	132.43	3180.13	---	---	---
	02/08/01	132.37	3180.19	---	---	---
	05/10/02	137.20	3175.36	---	---	---
	10/22/02	132.35	3180.21	---	---	---
	05/20/03	132.55	3180.01	---	---	---
	11/24/03	132.10	3180.46	---	---	---
	05/11/04	132.14	3180.42	---	---	---
	11/15/04	132.19	3180.37	---	---	---
	05/17/05	132.06	3180.50	---	---	---
	11/15/05	132.35	3180.21	---	---	---
	05/08/06	132.02	3180.54	---	---	---
	11/13/06	131.09	3181.47	---	---	---
	05/29/07	132.08	3180.48	---	---	---
	11/14/07	132.06	3180.50	---	---	---
	05/15/08	132.03	3180.53	---	---	---

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GROUNDWATER GAUGING SUMMARY
CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY
COOPER-JAL UNIT INJECTION STATION
LEA COUNTY, NEW MEXICO

Well ID *TOC [1] Elevation*	*Collection Date*	*Depth to Groundwater (ft TOC [1])*	*Groundwater Elevation (ft)*	*Well Depth (ft TOC [1])*	*Casing Diameter (in)*	*Well Screen Interval (ft bgs [2])*
MW-9A (cont)	11/03/08	131.98	3180.58	---	---	---
	05/19/09	132.00	3180.56	---	---	---
	11/02/09	131.90	3180.66	---	---	---
	05/05/10	131.96	3180.60	143.85	---	---
	11/08/10	131.85	3180.71	143.85	---	---
	05/11/11	132.06	3180.50	143.40	---	---
	11/08/11	131.95	3180.61	143.47	---	---
	05/16/12	131.81	3180.75	143.42	---	---
	10/10/12	132.09	3180.47	143.58	---	---
MW-10	05/18/98	137.18	3182.12	164.15	2	151-166
3319.30	05/25/99	137.04	3182.26	---	---	---
	02/08/01	136.88	3182.42	---	---	---
	05/10/02	136.80	3182.50	---	---	---
	10/22/02	136.91	3182.39	---	---	---
	05/20/03	137.13	3182.17	---	---	---
	11/24/03	136.71	3182.59	---	---	---
	05/11/04	136.77	3182.53	---	---	---
	11/15/04	136.82	3182.48	---	---	---
	05/17/05	136.34	3182.96	---	---	---
	11/15/05	136.95	3182.35	---	---	---
	05/08/06	136.65	3182.65	---	---	---
	11/13/06	136.59	3182.71	---	---	---
	05/29/07	136.68	3182.62	---	---	---
	11/15/07	136.61	3182.69	---	---	---
	05/15/08	136.65	3182.65	---	---	---
	11/03/08	136.60	3182.70	---	---	---
	05/19/09	136.60	3182.70	---	---	---
	11/02/09	136.60	3182.70	---	---	---
	05/05/10	136.44	3182.86	163.98	---	---
	11/08/10	136.58	3182.72	163.98	---	---
	05/11/11	136.62	3182.68	163.77	---	---
	11/08/11	136.57	3182.73	163.79	---	---
	05/16/12	136.44	3182.86	163.69	---	---
	10/10/12	136.91	3182.39	163.74	---	---
MW-11	03/23/99	131.12	3178.57	165.71	4	125-140
3309.69	05/25/99	130.91	3178.78	---	---	---
	02/08/01	130.11	3179.58	---	---	---
	05/10/02	135.60	3174.09	---	---	---
	10/22/02	130.76	3178.93	---	---	---
	05/20/03	131.03	3178.66	---	---	---
	11/24/03	130.57	3179.12	---	---	---
	05/11/04	130.61	3179.08	---	---	---
	11/15/04	130.65	3179.04	---	---	---
	05/17/05	131.56	3178.13	---	---	---
	11/15/05	130.70	3178.99	---	---	---

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GROUNDWATER GAUGING SUMMARY
CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY
COOPER-JAL UNIT INJECTION STATION
LEA COUNTY, NEW MEXICO

Well ID *TOC [1] Elevation*	*Collection Date*	*Depth to Groundwater (ft TOC [1])*	*Groundwater Elevation (ft)*	*Well Depth (ft TOC [1])*	*Casing Diameter (in)*	*Well Screen Interval (ft bgs [2])*
MW-11 (cont)	05/08/06	130.41	3179.28	---	---	---
	11/13/06	130.42	3179.27	---	---	---
	05/29/07	130.52	3179.17	---	---	---
	11/14/07	130.42	3179.27	---	---	---
	05/15/08	130.46	3179.23	---	---	---
	11/03/08	130.41	3179.28	---	---	---
	05/19/09	130.40	3179.29	---	---	---
	11/02/09	130.40	3179.29	---	---	---
	05/05/10	130.43	3179.26	165.75	---	---
	11/08/10	130.28	3179.41	165.75	---	---
	05/11/11	130.40	3179.29	165.50	---	---
	11/08/11	130.37	3179.32	165.65	---	---
	05/16/12	130.23	3179.46	165.54	---	---
	10/10/12	130.49	3179.20	165.89	---	---
MW-12	05/10/02	139.57	3188.86	165.50	2	156.68-171.65
3328.43	10/22/02	139.73	3188.70	---	---	---
	05/20/03	139.72	3188.71	---	---	---
	11/24/03	139.69	3188.74	---	---	---
	05/11/04	139.64	3188.79	---	---	---
	11/15/04	139.68	3188.75	---	---	---
	05/17/05	139.58	3188.85	---	---	---
	11/15/05	139.83	3188.60	---	---	---
	05/08/06	139.55	3188.88	---	---	---
	11/13/06	139.53	3188.90	---	---	---
	05/29/07	139.65	3188.78	---	---	---
	11/16/07	139.05	3189.38	---	---	---
	05/14/08	139.69	3188.74	---	---	---
	11/03/08	139.61	3188.82	---	---	---
	05/19/09	139.59	3188.84	---	---	---
	11/02/09	139.62	3188.81	---	---	---
	05/05/10	139.66	3188.77	165.85	---	---
	11/08/10	139.55	3188.88	165.85	---	---
	05/11/11	139.04	3189.39	---	---	---
	11/08/11	139.68	3188.75	171.91	---	---
	05/16/12	139.65	3188.78	171.04	---	---
	10/10/12	139.95	3188.48	171.85	---	---
MW-13	05/10/02	144.45	3194.04	167.40	2	156.68-171.65
3338.49	10/22/02	144.49	3194.00	---	---	---
	05/20/03	144.90	3193.59	---	---	---
	11/24/03	144.37	3194.12	---	---	---
	05/11/04	144.47	3194.02	---	---	---
	11/15/04	144.56	3193.93	---	---	---
	05/17/05	144.36	3194.13	---	---	---
	11/15/05	144.60	3193.89	---	---	---
	05/08/06	144.29	3194.20	---	---	---

TABLE I

GROUNDWATER GAUGING SUMMARY
CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY
COOPER-JAL UNIT INJECTION STATION
LEA COUNTY, NEW MEXICO

Well ID TOC [1] Elevation	Collection Date	Depth to Groundwater (ft TOC [1])	Groundwater Elevation (ft)	Well Depth (ft TOC [1])	Casing Diameter (in)	Well Screen Interval (ft bgs [2])
MW-13 (cont)	11/13/06	144.38	3194.11	---	---	---
	05/29/07	144.54	3193.95	---	---	---
	11/16/07	144.54	3193.95	---	---	---
	05/14/08	144.45	3194.04	---	---	---
	11/03/08	144.36	3194.13	---	---	---
	05/19/09	144.51	3193.98	---	---	---
	11/02/09	144.35	3194.14	---	---	---
	05/05/10	144.39	3194.10	166.41	---	---
	11/08/10	144.40	3194.09	166.41	---	---
	05/11/11	144.60	3193.89	---	---	---
	11/08/11	144.74	3193.75	171.05	---	---
	05/16/12	144.70	3193.79	170.97	---	---
	10/10/12	144.82	3193.67	171.20	---	---
RW-1	05/21/99	134.32	3184.18	171.25	5	130.41-174.37
3318.50	05/25/99	134.24	3184.26	---	---	---
	02/08/01	134.15	3184.35	---	---	---
	05/10/02	134.00	3184.50	---	---	---
	10/22/02	134.17	3184.33	---	---	---
	05/20/03	134.40	3184.10	---	---	---
	11/24/03	134.02	3184.48	---	---	---
	05/11/04	134.01	3184.49	---	---	---
	11/15/04	134.06	3184.44	---	---	---
	05/17/05	133.97	3184.53	---	---	---
	11/15/05	134.20	3184.30	---	---	---
	05/08/06	133.93	3184.57	---	---	---
	11/13/06	133.92	3184.58	---	---	---
	05/29/07	134.00	3184.50	---	---	---
	11/15/07	133.88	3184.62	---	---	---
	05/14/08	133.98	3184.52	---	---	---
	11/03/08	133.99	3184.51	---	---	---
	05/19/09	133.92	3184.58	---	---	---
	11/02/09	134.00	3184.50	---	---	---
	05/05/10	134.03	3184.47	161.70	---	---
	11/08/10	133.81	3184.69	161.70	---	---
	05/11/11	133.83	3184.67	---	---	---
	11/08/11	133.88	3184.62	165.85	---	---
	05/16/12	133.84	3184.66	165.96	---	---
	10/10/12	135.01	3183.49	166.75	---	---
RW-2	02/08/01	135.58	3183.04	154.63	5	134.22-172.73
3318.62	05/10/02	135.55	3183.07	---	---	---
	10/22/02	135.55	3183.07	---	---	---
	05/20/03	135.58	3183.04	---	---	---
	11/24/03	135.54	3183.08	---	---	---
	05/11/04	135.48	3183.14	---	---	---
	11/15/04	135.43	3183.19	---	---	---

TABLE I

GROUNDWATER GAUGING SUMMARY
CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY
COOPER-JAL UNIT INJECTION STATION
LEA COUNTY, NEW MEXICO

Well ID TOC [1] Elevation	*Collection Date*	*Depth to Groundwater (ft TOC [1])*	*Groundwater Elevation (ft)*	*Well Depth (ft TOC [1])*	*Casing Diameter (in)*	*Well Screen Interval (ft bgs [2])*
RW-2 (cont)	05/17/05	135.46	3183.16	---	---	---
	11/15/05	135.65	3182.97	---	---	---
	05/08/06	135.42	3183.20	---	---	---
	11/13/06	135.47	3183.15	---	---	---
	05/29/07	135.54	3183.08	---	---	---
	11/15/07	135.48	3183.14	---	---	---
	05/14/08	135.48	3183.14	---	---	---
	11/03/08	135.44	3183.18	---	---	---
	05/19/09	135.44	3183.18	---	---	---
	11/02/09	135.45	3183.17	---	---	---
	05/05/10	135.47	3183.15	154.71	---	---
	11/08/10	135.30	3183.32	154.71	---	---
	05/11/11	135.55	3183.07	---	---	---
	11/08/11	135.46	3183.16	156.28	---	---
	05/16/12	135.40	3183.22	156.37	---	---
	10/10/12	135.49	3183.13	156.48	---	---

Notes:

1. TOC - Top of Casing.
2. bgs - below ground surface.
3. A - Indicates shallow groundwater monitor well.

TABLE II
GROUNDWATER ANALYTICAL SUMMARY
CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY
COOPER-JAL UNIT INJECTION STATION
LEA COUNTY, NEW MEXICO

Sample ID	Sample Date	Carbonate Alkalinity	Bicarbonate Alkalinity	Total Alkalinity	Chloride[2]	Fluoride[1]	Nitrate - N[1]	Sulfate[2]	Calcium	Magnesium	Potassium	Sodium	TDS[2]
New Mexico Water Quality Control Commission Groundwater Standard					*250*	*1.6*	*10*	*600*					*1,000*
MW-1	9/16/97	--	--	280	8,500	--	--	1,100	520.0	630.0	50.00	4,300.0	15,000
	2/25/98	--	--	280	5,600	--	--	570	285.0	520.0	116.00	2,900.0	9,300
	2/14/01	<1.0	306	306	11,000	4.40	7.70	1,000	374.0	780.0	236.00	5,236.0	20,000
	5/17/02	<1.0	208	208	237	5.83	3.28	86.9	45.7	20.1	11.90	184.0	784
	10/23/02	--	--	--	168	--	--	96.8	--	--	--	--	696
	5/21/03	<1.0	290	290	6,600	<8.00	10.90	875	238.0	475.0	96.50	3,410.0	13,200
	11/25/03	<1.0	250	250	402	7.03	2.72	125	19.2	22.0	18.50	294.0	1,158
	5/12/04	<1.00	264	264	504	7.31	2.70	136	17.2	23.1	22.40	355.0	1,328
	11/16/04	<1.00	232	232	384	4.94	3.30	103	29.2	22.7	25.40	373.0	952
	11/16/05	<10.0	262	262	1,210 D1	3.0	2.4	215 D1	85.400	92.600	23.000	847.000	2,640 N
	11/14/06	<10	200	200	96	4.2	2.0	76	13.200	6.490	15.600	172.000	624
	11/16/07	<10.0	255	255	4,250 D1	3.7	3.90 D1	602 D1	154.000	187.000	54.000	2100.000 D1	10,900
	11/4/08	<5.0	190	190	110	6.3	1.6	83	10	5.8	7.9	180	590
	11/3/09	<10	270	270	4,100	4.1	2.8	640	190	250	61	2,300	8,000
	11/10/10	<10	223	223	2,670	1.92	2.62	373	138	196	21.5	1,480	5,020
	11/10/11	<5.00	209	209	3,220	1.02	2.37	275	169	176	22.5	1,340	5,250
DUP 1	11/10/11	<5.00	213	213	2,930	1.05	2.35	240	183	197	22.6	1,480	4,640
	10/11/12	<5.00	190	190	2,190	6.74	4.52	301	132	145	17.9	1,140	1,880
MW-2	2/25/98	--	--	210	5,900	--	--	760	840.0	380.0	30.00	2,650.0	9,400
	4/9/98	--	--	290	8,200	--	--	990	1,100.0	490.0	29.00	3,430.0	15,000
	2/14/01	<1.0	184	184	7,400	2.30	4.10	870	1,025.0	488.0	48.50	3,189.0	15,000
	5/17/02	<1.0	160	160	3,200	1.72	3.18	483	587.0	239.0	35.60	1,160.0	6,040
	10/23/02	--	--	--	2,920	--	--	451	--	--	--	--	6,770
	5/22/03	<1.0	158	158	2,550	2.04	3.87	386	448.0	176.0	20.00	1,020.0	5,880
	11/25/03	<1.0	160	160	3,330	<4.00	5.63	446	555.0	227.0	32.00	1,120.0	6,760
	5/12/04	<1.00	146	146	1,750	<2.00	2.78	246	308.0	112.0	29.70	549.0	3,965
	11/16/04	<1.00	120	120	430	<1.00	2.13	56.9	104.0	29.4	22.40	158.0	832
	11/16/05	<10.0	171	171	4,720 D1	0.72	2.6	645 D1	594.000	209.000	20.800	3,290.000	10,000 N

TABLE II
GROUNDWATER ANALYTICAL SUMMARY
CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY
COOPER-JAL UNIT INJECTION STATION
LEA COUNTY, NEW MEXICO

Sample ID	*Sample Date*	*Carbonate Alkalinity*	*Bicarbonate Alkalinity*	*Total Alkalinity*	*Chloride*[2]	*Fluoride*[1]	*Nitrate - N*[1]	*Sulfate*[2]	*Calcium*	*Magnesium*	*Potassium*	*Sodium*	*TDS*[2]
New Mexico Water Quality Control Commission Groundwater Standard					*250*	*1.6*	*10*	*600*					*1,000*
MW-2 (cont)	11/14/06	<10	160	160	3,500	0.78 N	2.1	470	535.000	212.000	21.000	1,5400.000	8,260
	11/14/07	<10.0	178	178	3,280 D1	0.76	1.93	462 D1	449.000	152.000	16.200	1310.000 D1	9,110
	11/4/08	<5.0	150	150	2,900	<1.0	1.1	430	380	160	26	1,200	5,600
	11/16/09	<10	150	150	2,000	1.1	1.6	340	290	120	20	750	4,300
	11/12/10	<10	186	186	1,890	0.726	1.86	327	326	120	9.80	795	3,680
	11/10/11	<5.00	175	175	1,480	0.814	1.31	150	227	83.2	9.75	668	2,860
	10/11/12	<5.00	149	149	524	0.546	1.92	231	119	31.7	8.78	286	1,090
MW-2A	2/26/98	--	--	190	280	--	--	330	144.0	36.0	5.70	215.0	1,200
	2/14/01	<1.0	162	162	44	1.30	2.30	76	64.4	16.7	7.02	45.5	390
	5/15/02	<1.0	176	176	36.6	<1.00	2.34	79.1	57.6	13.9	4.35	43.8	435
	10/23/02	--	--	--	44.3	--	--	97	--	--	--	--	425
	5/22/03	<1.0	168	168	40.5	<1.00	2.18	75.5	67.2	14.3	3.76	47.9	418
	11/25/03	<1.0	166	166	43.1	1.00	2.23	77.4	51.7	14.4	3.98	43.8	452
	5/12/04	<1.00	176	176	44.8	<1.00	2.24	76.5	62.9	15.0	3.66	43.6	440
	11/16/04	<1.00	164	164	52.5	1.22	2.78	75.4	68.8	15.3	3.98	49.1	428
	11/16/05	<10.0	151	151	56.8	0.60	2.3	75.1 D1	157.000	18.000	4.200	49.800	630 N
	11/14/06	<10	180	180	49	0.55	1.6	76	69.800	15.600	3.470	49.900	488
	11/14/07	<10.0	170	170	74.6	0.58	1.51	66.8 D1	666.00	15.300	<5.000	45.400	504
	11/4/08	<5.0	220	220	68	0.49	1.4	74	67	15	3.2	42	470
	11/3/09	<10	230	230	62	0.59	1.6	81	66	15	3.4	50	480
	11/11/10	<10	158	158	86.1	0.453	1.73	74.0	53.9	14.9	2.86	42.8	474
	11/10/11	<5.00	175	175	129	0.280	1.25	101	92.5	23.3	4.17	64.7	614
	10/11/12	<5.00	173	173	76.5	0.455	1.60	79.4	69.2	15.7	3.62	45.3	500
MW-3	2/27/98	--	--	190	452	--	--	406	200.0	50.0	11.00	237.0	1,500
	2/14/01	<1.0	158	158	34	1.60	2.40	100	54.5	19.0	7.61	48.6	440
	5/17/02	<1.0	158	158	30.6	1.56	2.35	102	55.6	18.4	5.04	50.0	433
	10/23/02	--	--	--	35.4	--	--	104	--	--	--	--	419

TABLE II
GROUNDWATER ANALYTICAL SUMMARY
CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY
COOPER-JAL UNIT INJECTION STATION
LEA COUNTY, NEW MEXICO

Sample ID	*Sample Date*	*Carbonate Alkalinity*	*Bicarbonate Alkalinity*	*Total Alkalinity*	*Chloride*[2]	*Fluoride*[1]	*Nitrate - N*[1]	*Sulfate*[2]	*Calcium*	*Magnesium*	*Potassium*	*Sodium*	*TDS*[2]
New Mexico Water Quality Control Commission Groundwater Standard					*250*	*1.6*	*10*	*600*					*1,000*
MW-3 (cont)	5/22/03	<1.0	**156**	**156**	**30.6**	**1.17**	**2.25**	**96.3**	**53.2**	**17.8**	**5.39**	**54.6**	**435**
	11/25/03	<1.0	**160**	**160**	**31.4**	**1.35**	**2.30**	**103**	**46.5**	**18.0**	**5.19**	**51.7**	**440**
	5/12/04	<1.00	**164**	**164**	**32.3**	**1.20**	**2.38**	**101**	**52.2**	**16.8**	**4.77**	**47.5**	**448**
	11/16/04	<1.00	**166**	**166**	**35.1**	**1.53**	**2.77**	**95.4**	**56.3**	**23.6**	**12.70**	**58.9**	**424**
	11/17/05	<10.0	**171**	**171**	**96.3**	**0.97**	**2.2**	**108 D1**	**89.200**	**22.100**	**8.870**	**93.400**	**840 N**
	11/15/06	<10	**170**	**170**	**30**	**0.92 N**	**1.7**	**96**	**51.300**	**17.300**	**4.300**	**57.200**	**505**
	11/16/07	<10.0	**170**	**170**	**39.7**	**0.93**	**1.58**	**88.2 D1**	**50.800**	**16.300**	<5.000	**50.600**	**570**
	11/6/08	<5.0	**150**	**150**	**36**	**1.1**	**1.4**	**97**	**50**	**17**	**4.0**	**48**	**430**
	11/3/09	<10	**160**	**160**	**35**	**1.1**	**1.6**	**110**	**49**	**17**	**4.2**	**56**	**410**
	11/10/10	<10	**164**	**164**	**35.4**	**0.836**	**1.77**	**99.9**	**48.8**	**15.2**	**3.42**	**45.1**	**380**
	11/10/11	<5.00	**165**	**165**	**36.4**	**0.833**	**1.35**	**87.9**	**57.9**	**18.0**	**3.79**	**53.0**	**404**
	10/11/12	<5.00	**162**	**162**	**36.6**	**1.01**	**1.74**	**100**	**51.2**	**16.9**	**4.11**	**51.0**	**438**
MW-4	2/27/98	--	--	**230**	**12,000**	--	**--**	**1,300**	**1,700.0**	**880.0**	**48.00**	**5,300.0**	**22,000**
	4/9/98	--	--	**240**	**13,000**	--	**--**	**1,500**	**1,740.0**	**840.0**	**42.00**	**5,400.0**	**23,000**
	2/14/01	<1.0	**232**	**232**	**15,000**	**1.80**	**6.80**	**1,500**	**--**	**--**	**--**	**--**	**29,000**
	5/17/02	<1.0	**232**	**232**	**11,300**	**2.01**	**6.09**	**1,380**	**1,610.0**	**814.0**	**60.90**	**4,310.0**	**22,600**
	10/23/02	--	--	--	**11,300**	--	**--**	**1,320**	**--**	**--**	**--**	**--**	**23,200**
	5/22/03	<1.0	**220**	**220**	**11,300**	<10.00	**12.30**	**1,370**	**1,450.0**	**659.0**	**47.30**	**4,140.0**	**62,500**
	11/26/03	<1.0	**218**	**218**	**12,100**	<8.00	**12.30**	**1,400**	**1830.0**	**889.0**	**62.00**	**4,620.0**	**54,450**
	5/11/04	<1.00	**214**	**214**	**14,200**	<8.00	**8.97**	**1,560**	**1800.0**	**829.0**	**60.70**	**4,850.0**	**65,450**
	11/17/04	<1.00	**222**	**222**	**13,600**	<20.00	**31.50**	**1,410**	**2020.0**	**972.0**	**73.60**	**5,900.0**	**25,200**
	11/17/05	<10.0	**181**	**181**	**9,440 D1**	**0.82**	**0.20**	**45.8 D1**	**849.000**	**387.000**	**28.100**	**3,880.000**	**24,300 N**
	11/15/06	<10	**260**	**260**	**14,000**	<5.0 C	**5.2**	**1,400**	**1,760.000**	**897.000**	**58.800**	**6,150.000**	**28,700**
	11/14/07	<10.0	**255**	**255**	**14,800 D1**	**0.54**	**7.15 D1**	**1,410 D1**	**1170.000**	**382.000**	**48.000**	**4,760.000 D1**	**36,300**
	11/12/08	<5.0	**200**	**200**	**12,000**	**1.2**	**0.33**	**1,300**	**1,500**	**840**	**82**	**4,800**	**22,000**
	11/4/09	<5.0	**250**	**250**	**15,000**	**1.1**	**5.3**	**1,600**	**1,500**	**1,000**	**65**	**5,800**	**30,000**
	11/11/10	<5.0	**294**	**294**	**15,500**	<1.00	**10**	**1,270**	**1,380**	**904**	**40**	**5,450**	**25,500**
	11/10/11	<5.00	**277**	**277**	**16,900**	**0.112**	**6.16**	**1,060**	**1,680**	**1,110**	**40.0**	**6,490**	**28,900**

TABLE II
GROUNDWATER ANALYTICAL SUMMARY
CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY
COOPER-JAL UNIT INJECTION STATION
LEA COUNTY, NEW MEXICO

Sample ID	*Sample Date*	*Carbonate Alkalinity*	*Bicarbonate Alkalinity*	*Total Alkalinity*	*Chloride*[2]	*Fluoride*[1]	*Nitrate - N*[1]	*Sulfate*[2]	*Calcium*	*Magnesium*	*Potassium*	*Sodium*	*TDS*[2]
New Mexico Water Quality Control Commission Groundwater Standard					*250*	*1.6*	*10*	*600*					*1,000*
MW-4 (cont)	10/11/12	<5.00	256	256	5,850	2.10	4.58	629	434	334	21.2	2,620	12,000
MW-4A	2/27/98	--	--	180	1,600	--	--	410	470.0	130.0	11.00	620.0	3,300
	2/14/01	<1.0	154	154	1,600	1.40	2.80	210	--	--	--	--	4,000
	5/15/02	<1.0	156	156	577	<1.00	2.23	121	200.0	49.5	10.30	125.0	1,610
	10/23/02	--	--	--	478	--	--	114	--	--	--	--	1,430
	5/22/03	<1.0	154	154	844	<1.00	2.43	160	279.0	58.9	10.10	248.0	2,200
	11/26/03	<1.0	158	158	1,060	<4.00	5.82	182	337.0	79.3	15.20	329.0	2,585
	5/11/04	<1.00	156	156	984	<2.00	3.30	179	297.0	66.5	11.50	279.0	2,300
	11/17/04	<1.00	164	164	1,110	<2.00	4.62	186	369.0	75.4	14.90	413.0	2,235
	11/16/05	<10.0	181	181	827 D1	<0.5	2.2	160 D1	335.000	64.400	9.230	382.000	2,340 N
	11/15/06	<10	620	620	960	<0.50	2.6	170	227.000	53.500	8.100	406.000	2,870
	11/14/07	<10.0	311	311	845 D1	0.35	3.60 D1	167 D1	205.000	44.900	7.330	334.000	2,650
	11/12/08	<5.0	640	640	650	0.32	2.2	170	160	37	9.9	290	1,700
	11/4/09	<5.0	670	670	670	0.56	2.6	150	110	27	7.4	300	1,600
	11/11/10	<5.0	217	217	663	0.505	2.58	125	65.9	15.6	4.42	317	1,760
	11/10/11	<5.00	171	171	621	0.775	2.02	134	78.8	18.7	4.71	389	1,400
	10/11/12	<5.00	169	169	516	1.12	2.60	100	48.7	11.3	4.45	359	1,200
MW-5	2/26/98	--	--	180	6,600	--	--	910	1,400.0	470.0	31.00	2,400.0	12,000
	2/14/01	<1.0	166	166	7,700	1.80	4.10	910	--	--	--	--	18,000
	5/17/02	<1.0	156	156	4,040	1.53	4.56	586	757.0	319.0	60.90	1,260.0	8,340
	10/23/02	--	--	--	3,900	--	--	94.8	--	--	--	--	422
	5/22/03	<1.0	158	158	3,170	<4.00	6.52	550	644.0	215.0	49.90	1,240.0	7,860
	11/25/03	<1.0	168	168	5,120	<4.00	6.77	739	978.0	365.0	54.90	1,680.0	11,940
	5/11/04	<1.00	160	160	6,760	<3.00	4.65	1,030	1,180.0	417.0	40.30	2,120.0	20,380
	11/17/04	<1.00	172	172	6,750	<10	16.60	786	1,210.0	486.0	40.60	2,300.0	11,980
	11/17/05	<10.0	161	161	2,140 D1	0.79	0.16	334 D1	339.000	126.000	10.800	791.000	7,120 N
	11/14/06	<10	160	160	2,000	0.60	1.5	300	437.000	173.000	14.200	918.000	4,420
	11/14/07	<10.0	161	161	5,790 D1	0.37	4.01 D1	668 D1	812.000	240.000	23.300	1,850.000 D1	16,300

TABLE II
GROUNDWATER ANALYTICAL SUMMARY
CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY
COOPER-JAL UNIT INJECTION STATION
LEA COUNTY, NEW MEXICO

Sample ID	*Sample Date*	*Carbonate Alkalinity*	*Bicarbonate Alkalinity*	*Total Alkalinity*	*Chloride*[2]	*Fluoride*[1]	*Nitrate - N*[1]	*Sulfate*[2]	*Calcium*	*Magnesium*	*Potassium*	*Sodium*	*TDS*[2]
New Mexico Water Quality Control Commission Groundwater Standard					*250*	*1.6*	*10*	*600*					*1,000*
MW-5 (cont)	11/6/08	<5.0	160	160	4,900	0.78	0.32	540	660	310	35	1,600	9,700
	11/3/09	<10	160	160	5,100	0.51	2.3	710	860	320	<13	1,800	11,000
	11/11/10	<5.0	176	176	4,200	0.159	2.37	554	687	250	17.3	1,400	8,890
	11/10/11	<5.00	172	172	4,340	0.243	0.549	411	944	326	19.7	1,780	7,840
	10/11/12	<5.00	164	164	3,630	0.376	2.26	474	671	239	17.0	1,360	8,300
MW-5A	2/26/98	--	--	170	190	--	--	180	107.0	23.0	3.50	117.0	740
	2/15/01	<1.0	164	164	140	1.20	2.10	130	90.2	27.9	8.70	74.6	670
	5/15/02	<1.0	182	182	53.5	<1.00	2.23	84.4	63.2	16.1	4.69	43.6	475
	10/23/02	--	--	--	50	--	--	616	--	--	--	--	8,670
	5/22/03	<1.0	158	158	32.5	<1.00	2.10	69.9	55.5	13.8	3.41	41.5	416
	11/25/03	<1.0	332	332	34.1	1.05	2.20	75.5	60.9	14.6	4.08	45.0	422
	5/11/04	<1.00	164	164	38.8	<1.00	2.25	75.8	60.9	15.0	3.40	43.2	484
	11/17/04	<1.00	152	152	39.6	1.37	2.66	74.3	58.1	13.6	3.83	48.5	430
	11/16/05	<10.0	191	191	40.2	0.82	2.1	75.2 D1	176.000	17.800	4.220	45.300	570 N
	11/14/06	<10	240	240	47	0.64	1.5	79	90.400	16.100	3.580	51.400	588
	11/14/07	<10.0	227	227	54.4	0.66	1.45	68.7 D1	73.700	14.000	<5.000	44.200	528
	11/6/08	<5.0	350	350	53	0.70	1.3	72	76	15	3.4	43	450
	11/3/09	<10	710	710	47	0.72	1.5	79	65	14	3.3	50	440
	11/11/10	<5.00	182	182	49.6	0.568	1.61	73.6	55.7	12.9	2.79	42.0	606
	11/10/11	<5.00	170	170	131	0.492	1.15	116	83.8	29.9	5.16	85.7	594
	10/11/12	<5.00	163	163	68.0	0.631	1.57	69.8	60.6	15.3	3.96	49.2	534
MW-6	2/26/98	--	--	200	260	--	--	400	180.0	44.0	6.20	205.0	1,200
	2/14/01	<1.0	158	158	59	1.70	2.20	99	67.5	22.1	7.67	52.3	470
	5/17/02	<1.0	162	162	37.8	1.62	2.14	99.3	63.1	19.6	5.12	48.6	427
	10/23/02	--	--	--	46.1	--	--	109	--	--	--	--	331
	5/22/03	<1.0	162	162	40.3	1.24	2.13	94.4	61.7	17.4	4.23	51.9	464
	11/25/03	<1.0	154	154	53.6	1.40	2.18	98	53.6	18.7	4.97	51.7	482

TABLE II
GROUNDWATER ANALYTICAL SUMMARY
CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY
COOPER-JAL UNIT INJECTION STATION
LEA COUNTY, NEW MEXICO

Sample ID	*Sample Date*	*Carbonate Alkalinity*	*Bicarbonate Alkalinity*	*Total Alkalinity*	*Chloride*[2]	*Fluoride*[1]	*Nitrate - N*[1]	*Sulfate*[2]	*Calcium*	*Magnesium*	*Potassium*	*Sodium*	*TDS*[2]
New Mexico Water Quality Control Commission Groundwater Standard					*250*	*1.6*	*10*	*600*					*1,000*
MW-6 (cont)	5/11/04	<1.00	**156**	**156**	**54.4**	**1.23**	**2.19**	**97**	**59.0**	**18.1**	**4.22**	**47.8**	**506**
	11/16/04	<1.00	**162**	**162**	**57.9**	**1.64**	**2.68**	**99.8**	**66.6**	**19.6**	**5.16**	**57.0**	**464**
	11/17/05	<10.0	**201**	**201**	**101**	**0.97**	**0.35**	**97.8 D1**	**103.000**	**20.200**	**4.100**	**59.100**	**730 N**
	11/15/06	<10	**750**	**750**	**68**	**0.99**	**1.5**	**93**	**64.600**	**20.400**	**4.230**	**57.100**	**507**
	11/15/07	<10.0	**284**	**284**	**162**	**51**	**1.35**	**96.3 D1**	**84.100**	**25.200**	<5.000	**62.100**	**630**
	11/6/08	<5.0	**220**	**220**	**84**	**1.2**	**1.2**	**95**	**67**	**21**	**4.3**	**53**	**490**
	11/3/09	<10	**190**	**190**	**81**	**1.2**	**1.4**	**100**	**66**	**20**	**4.5**	**59**	**550**
	11/8/10	NS - Well Damaged											
	11/10/11	NS - Well Damaged											
	10/11/12	NS - Well Damaged											
MW-7	5/14/98	--	--	**230**	**430**	--	--	**340**	**214.0**	**66.0**	**13.00**	**165.0**	**1,200**
	2/14/01	<1.0	**150**	**150**	**510**	**1.70**	**2.40**	**150**	--	--	--	--	**1,500**
	5/16/02	<1.0	**150**	**150**	**75.7**	**1.59**	**2.27**	**97.4**	**68.6**	**23.2**	**6.63**	**54.3**	**501**
	10/22/02	--	--	--	**88.6**	--	--	**109**	--	--	--	--	**490**
	5/22/03	<1.0	**140**	**140**	**173**	**1.17**	**2.14**	**88.9**	**85.5**	**28.2**	**6.18**	**64.6**	**631**
	11/26/03	<1.0	**136**	**136**	**189**	**1.29**	**2.23**	**93.5**	**95.7**	**31.0**	**7.91**	**63.6**	**704**
	5/13/04	<1.00	**130**	**130**	**267**	**1.11**	**2.18**	**94.7**	**107.0**	**34.7**	**6.59**	**62.9**	**914**
	11/16/04	<1.00	**130**	**130**	**367**	**1.49**	**2.72**	**97.3**	**142.0**	**49.3**	**8.61**	**87.9**	**870**
	11/17/05	<10.0	**121**	**121**	**456 D1**	**0.53**	**0.28**	**106 D1**	**412.000**	**64.700**	**12.100**	**100.000**	**1,440 N**
	11/15/06	<10	**240**	**240**	**550**	**0.63**	**1.5**	**110**	**202.000**	**70.300**	**7.400**	**102.000**	**2,100**
	11/15/07	<10.0	**189**	**189**	**458 D1**	**1.20**	**1.39**	**176 D1**	**144.000**	**59.500**	**9.950**	**148.000**	**1,880**
	11/12/08	<5.0	**110**	**110**	**650**	**0.84**	**1.2**	**140**	**210**	**76**	**12**	**120**	**1,600**
	11/4/09	<5.0	**110**	**110**	**1,100**	**0.63**	**1.5**	**160**	**310**	**120**	**11**	**130**	**2,800**
	11/10/10	<5.0	**111**	**111**	**1,310**	**0.372**	**1.64**	**173**	**415**	**149**	**10.0**	**150**	**3,130**
	11/10/11	<5.00	**106**	**109**	**1,710**	**0.296**	**1.45**	**147**	**662**	**203**	**12.3**	**198**	**3,660**
	10/11/12	<5.00	**108**	**108**	**2,020**	**0.439**	**1.71**	**261**	**619**	**215**	**12.3**	**208**	**5,580**
MW-8	5/13/98	--	--	**200**	**270**	--	--	**390**	**190.0**	**60.0**	**12.00**	**170.0**	**1,200**

TABLE II
GROUNDWATER ANALYTICAL SUMMARY
CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY
COOPER-JAL UNIT INJECTION STATION
LEA COUNTY, NEW MEXICO

Sample ID	*Sample Date*	*Carbonate Alkalinity*	*Bicarbonate Alkalinity*	*Total Alkalinity*	*Chloride*[2]	*Fluoride*[1]	*Nitrate - N*[1]	*Sulfate*[2]	*Calcium*	*Magnesium*	*Potassium*	*Sodium*	*TDS*[2]
New Mexico Water Quality Control Commission Groundwater Standard					*250*	*1.6*	*10*	*600*					*1,000*
MW-8 (cont)	2/14/01	<1.0	156	156	49	1.80	2.50	100	59.9	21.5	7.84	52.9	400
	5/16/02	<1.0	158	158	32.9	1.57	2.33	101	56.6	19.2	5.20	49.5	432
	10/22/02	--	--	--	40.8	--	--	104	--	--	--	--	392
	5/22/03	8	160	168	33.2	1.40	2.32	98.3	53.9	18.3	9.31	46.4	410
	11/26/03	<1.0	142	142	31.7	1.59	2.38	95.6	55.3	18.2	5.31	50.2	443
	5/12/04	<1.00	154	154	36.3	1.39	2.38	101	53.0	17.3	4.56	48.1	435
	11/16/04	<1.00	170	170	39.8	1.94	2.94	103	57.8	18.6	5.63	56.4	435
	5/17/05	4	152	156	41	1.64	2.94	105	61.0	18.6	5.78	47.3	434
	11/17/05	<10.0	171	171	113	1.1	<0.05	115 D1	83.400	21.700	5.740	102.000	750 N
	5/9/06	<10	160	160	210	0.89	1.4	200	72.700	33.300	7.120	125.000	896
	11/14/06	<10	150	150	230	1.1	1.2	200	74.200	38.300	9.610	162.000	912
	5/30/07	<10	141	141	62	1.2	1.74	120	54.100	19.100	<5	59.300	500
	11/15/07	<10.0	159	159	43.1	1.33	1.56	94.2 D1	52.100	17.200	<5.000	49.800	540
	5/15/08	<1.53	151	151	40.7	1.40	1.78	99.6 D1	51.7	16.8	4.10	54.8 D1	427
	11/12/08	<5.0	140	140	39	1.4	1.5	97	52	17	<2.6	46	350
	5/20/09	<5.0	140	140	39	1.3	1.6	110	50	17	4.3	49	430
	11/4/09	<5.0	150	150	41	1.4	1.7	110	46	16	3.3	47	450
	5/7/10	<5.0	<5.00	172	34.9	1.09	1.70	97.8	49.5	15.7	3.52	45.5	426
DUP	5/7/10	<5.0	<5.00	157	34.9	1.09	1.71	98.0	51.0	14.5	3.21	43.6	466
	11/12/10	<5.0	172	172	38.7	1.10	1.77	98.2	48.9	15.7	3.40	45.4	410
DUP	11/12/10	<5.0	160	160	38.7	1.10	1.76	98.3	50.5	15.3	3.44	44.8	398
	5/11/11	<5.0	170	170	185	1.20	1.60	93.0	73.0	28.4	5.68	165	692
	11/10/11	<5.0	161	161	36.9	1.06	1.41	87.4	57.1	17.0	3.46	48.6	406
	5/17/12	<5.0	173	173	37.9	1.09	1.59	92.9	53.3	16.4	3.83	56.7	440
	10/11/12	<5.0	158	158	39.9	1.29	1.83	103	49.0	16.6	4.30	49.0	444
MW-9	5/14/98	--	--	190	350	--	--	470	207.0	61.0	12.00	200.0	1,300
	2/15/01	<1.0	156	156	35	2.60	2.40	110	60.4	19.8	7.47	47.0	430
	5/16/02	<1.0	160	160	31.7	2.22	2.28	99.4	60.8	17.6	5.32	50.1	440

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CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY
COOPER-JAL UNIT INJECTION STATION
LEA COUNTY, NEW MEXICO

Sample ID	*Sample Date*	*Carbonate Alkalinity*	*Bicarbonate Alkalinity*	*Total Alkalinity*	*Chloride*[2]	*Fluoride*[1]	*Nitrate - N*[1]	*Sulfate*[2]	*Calcium*	*Magnesium*	*Potassium*	*Sodium*	*TDS*[2]
New Mexico Water Quality Control Commission Groundwater Standard					*250*	*1.6*	*10*	*600*					*1,000*
MW-9 (cont)	10/23/02	--	--	--	39	--	--	102	--	--	--	--	436
	5/22/03	<1.0	160	160	31	1.75	2.19	93.3	52.2	15.8	4.75	50.2	455
	11/26/03	<1.0	150	150	31.8	1.99	2.34	99.8	57.7	16.6	4.69	46.3	452
	5/12/04	<1.00	164	164	33.6	1.79	2.29	99.2	54.8	16.0	4.27	43.5	467
	11/16/04	8	154	162	367	1.49	2.72	97.3	63.2	17.8	5.59	55.5	433
	5/17/05	4	154	154	44.2	2.43	3.05	117	58.8	16.7	5.94	44.1	434
	11/17/05	<10.0	161	161	83.5	1.3	0.14	111 D1	149.000	26.200	7.430	80.400	790 N
	5/9/06	<10	170	170	37	1.8	1.8	99	52.700	15.000	3.210	45.500	428
	11/15/06	<10	150	150	210	1.1	1.2	190	70.500	35.800	8.640	152.000	905
	5/30/07	<10	153	153	35	2.1	1.69	110	52.200	15.800	<5	44.700	464
	11/14/07	<10.0	151	151	186	1.49	1.48	156 D1	74.100	39.400	8.730	141.000	808
	5/15/08	<1.53	174	174	42.5	2.38	1.72	105 D1	55.6	17.0	3.99	54.1 D1	467
	11/4/08	<5.0	160	160	39	2.1	1.4	98	54	16	3.7	47	440
	5/20/09	<5.0	320	320	69	2.1	1.5	120	58	19	4.6	58	520
	11/4/09	<5.0	160	160	42	2.2	1.6	110	50	15	3.0	43	460
	5/7/10	<5.0	<5.00	162	50.2	2.02	1.66	97.5	53.6	15.7	3.32	43.5	442
	11/9/10	<5.0	186	186	60.7	1.97	1.74	98.0	59.2	18.1	3.64	50.0	446
	5/11/11	<5.0	160	160	80.3	1.71	1.72	75.7	73.9	25.8	4.61	67.9	518
	11/10/11	<5.00	151	151	138	1.66	1.38	107	82.7	26.9	4.34	65.4	582
	5/16/12	<5.00	162	162	137	1.75	1.61	93.5	83.8	23.2	4.39	60.3	584
	10/11/12	<5.00	147	147	148	1.90	1.71	98.7	80.5	25.8	4.94	59.8	644
MW-9A	5/14/98	--	--	280	600	--	--	770	338.0	96.0	12.00	334.0	2,200
	2/15/01	<1.0	142	142	85	1.40	2.20	71	71.6	19.2	6.94	46.0	400
	5/15/02	<1.0	136	136	148	<1.00	2.18	65.3	62.9	16.1	4.62	46.8	445
	10/23/02	--	--	--	168	--	--	75.5	--	--	--	--	651
	5/22/03	<1.0	126	126	207	<1.00	2.09	62.1	102.0	25.2	4.80	55.7	672
	11/26/03	<1.0	118	118	216	1.14	2.26	62.7	107.0	25.1	5.31	53.2	648
	5/12/04	<1.00	122	122	242	<1.00	2.10	64.7	105.0	26.2	5.11	26.2	950

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Sample ID	*Sample Date*	*Carbonate Alkalinity*	*Bicarbonate Alkalinity*	*Total Alkalinity*	*Chloride*[2]	*Fluoride*[1]	*Nitrate - N*[1]	*Sulfate*[2]	*Calcium*	*Magnesium*	*Potassium*	*Sodium*	*TDS*[2]
New Mexico Water Quality Control Commission Groundwater Standard					*250*	*1.6*	*10*	*600*					*1,000*
MW-9A	11/16/04	<1.00	114	114	296	1.24	2.74	67.5	130.0	33.1	6.24	70.3	826
(cont)	5/17/05	<1.00	112	112	354	1.04	2.85	77.1	131.0	31.7	6.39	60.5	828
	11/17/05	<10.0	121	121	310 D1	0.82	0.31	74.7 D1	337.000	41.400	8.080	74.500	1,520 N
	5/9/06	<10	670	670	270	0.67	1.6	78	111.000	27.100	3.880	58.700	992
	11/15/06	<10	1,600	1,600	290	0.62	1.6	72	126.000	33.400	4.740	68.400	1,280
	5/30/07	<10	586	586	400	0.7	1.69	83	153.000	36.900	<5	71.800	1,450
	11/14/07	<10.0	605	605	285 D1	0.62	1.52	64.7 D1	153.000	35.400	5.030	70.700	1,430
	5/15/08	<1.53	738	738	380 D1	0.45	1.62	86.8 D1	146	35.5	5.45	77.2 D1	1,390
	11/4/08	<5.0	370	370	330	<1.0	1.2	84	130	32	5.1	66	1,000
	5/20/09	<5.0	600	600	480	0.49	1.5	86	170	43	6.4	76	1,600
	11/4/09	<5.0	110	110	430	0.49	1.6	82	160	41	5.3	71	1,500
	5/7/10	<5.0	<5.00	121	510	0.210	1.62	80.5	188	44.9	4.90	73.6	1,680
	11/9/10	<5.0	115	115	529	0.328	1.72	86.0	159	44.3	5.00	76.1	1,660
	5/11/11	<5.0	146	146	587	1.18	1.90	415	166	80.6	11.3	211	1,850
	11/10/11	<5.0	115	115	841	0.189	1.56	125	280	84.8	7.51	117	2,160
	5/16/12	<5.0	135	135	958	0.366	1.74	143	249	62.6	6.50	97.7	3,450
DUP	5/16/12	<5.0	128	128	882	0.308	1.70	134	270	65.7	6.72	92.3	3,050
	10/11/12	<5.0	125	125	628	0.366	1.70	121	235	60.4	6.72	94.0	1,810
MW-10	5/14/98	--	--	240	360	--	--	450	211.0	62.0	11.00	190.0	1,400
	2/15/01	<1.0	140	140	190	2.00	2.30	97	108.0	32.3	8.20	61.0	660
	5/17/02	<1.0	152	152	204	1.93	2.19	99.1	109.0	31.7	7.60	62.4	713
	10/22/02	--	--	--	213	--	--	108	--	--	--	--	758
	5/22/03	<1.0	152	152	213	1.45	2.17	96.6	109.0	29.9	8.65	74.2	764
	11/26/03	<1.0	152	152	220	1.54	2.26	103	120.0	35.7	6.96	64.0	752
	5/13/04	<1.00	158	158	232	1.39	2.23	102	114.0	31.6	5.95	57.2	802
	11/17/04	<1.00	170	170	245	1.73	2.78	104	121.0	35.7	7.07	70.3	764
	5/17/05	<1.00	150	150	233	1.77	2.80	106	113.0	32.3	6.83	60.2	776
	11/17/05	<10.0	151	151	205 D1	1.2	0.26	111 D1	482.000	47.400	13.100	82.400	970 N

TABLE II
GROUNDWATER ANALYTICAL SUMMARY
CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY
COOPER-JAL UNIT INJECTION STATION
LEA COUNTY, NEW MEXICO

Sample ID	Sample Date	Carbonate Alkalinity	Bicarbonate Alkalinity	Total Alkalinity	Chloride[2]	Fluoride[1]	Nitrate - N[1]	Sulfate[2]	Calcium	Magnesium	Potassium	Sodium	TDS[2]
New Mexico Water Quality Control Commission Groundwater Standard					*250*	*1.6*	*10*	*600*					*1,000*
MW-10 (cont)	5/9/06	<10	190	190	180	1.4	1.6	98	93.300	27.100	4.310	60.400	724
	11/16/06	<10	320	320	190	1.2	1.6	92	101.000	30.000	4.750	64.100	900
	5/30/07	<10	340	340	200	1.4	1.68	110	101.000	28.600	<5	62.400	820
	11/15/07	<10.0	189	189	251 D1	1.44	1.44	152 D1	104.000	33.400	6.010	84.700	1,010
	5/15/08	<1.53	374	374	342 D1	1.47	1.28	257 D1	106	52.9	11.7	165 D1	1,140
	11/6/08	<5.0	150	150	210	1.5	1.3	89	110	32	5.4	64	730
	5/20/09	<5.0	240	240	270	1.3	1.5	120	110	35	6.2	72	960
	11/4/09	<5.0	150	150	240	1.5	1.3	130	100	35	5.4	78	1,000
	5/7/10	<5.0	<5.00	157	236	1.18	1.62	106	111	30.7	4.59	60.3	940
	11/10/10	<5.0	166	166	280	1.16	1.61	112	98.4	36.9	5.63	81.0	812
	5/11/11	<5.0	157	157	274	1.11	1.99	87.2	117	32.2	5.63	85.0	930
	11/15/11	<5.0	150	150	266	1.03	6.93	94.9	128	32.3	4.58	62.8	1,450
	5/16/12	<5.0	163	163	284	1.12	1.58	99.9	132	36.8	5.22	72.9	1,120
	10/11/12	<5.0	151	151	255	1.32	1.75	98.7	113	34.3	5.68	67.6	1,010
MW-11	1/22/99	30	<1.0	30	46	2.30	4.20	94	33.0	7.0	9.10	58.0	370
	2/15/01	<1.0	156	156	37	2.40	2.40	120	64.0	19.1	7.83	50.1	360
	5/16/02	<1.0	160	160	31.9	2.13	2.33	98.8	63.5	17.2	4.83	47.0	444
	10/23/02	--	--	--	37.2	--	--	102	--	--	--	--	447
	5/22/03	12	154	166	32.3	1.74	2.28	96.7	62.3	0.0	4.63	47.6	437
	11/26/03	<1.0	160	160	32.4	1.83	2.23	96.4	59.2	16.6	4.67	48.6	448
	5/12/04	<1.00	164	164	34.6	1.71	2.38	97.7	54.8	15.7	4.28	46.2	457
	11/16/04	<1.00	160	160	39	2.17	2.81	100	65.2	16.8	5.14	54.3	454
	5/17/05	4	158	162	43.1	1.87	2.82	94.6	68.4	16.9	6.45	44.0	429
	11/17/05	<10.0	161	161	58.1	1.5	2.1	91.3 D1	75.000	17.700	4.550	64.700	700 N
	5/9/06	<10	180	180	37	1.8	1.7	100	54.100	16.200	3.260	46.900	456
	11/14/06	<10	170	170	34	1.8	1.8	110	58.000	18.200	4.130	53.400	532
	5/30/07	<10	142	142	36	1.9	1.79	120	54.000	16.700	<5	50.800	456
	11/14/07	<10.0	189	189	42.3	1.98	1.54	95.6 D1	57.200	17.400	<5.000	52.400	452

TABLE II
GROUNDWATER ANALYTICAL SUMMARY
CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY
COOPER-JAL UNIT INJECTION STATION
LEA COUNTY, NEW MEXICO

Sample ID	*Sample Date*	*Carbonate Alkalinity*	*Bicarbonate Alkalinity*	*Total Alkalinity*	*Chloride*[2]	*Fluoride*[1]	*Nitrate - N*[1]	*Sulfate*[2]	*Calcium*	*Magnesium*	*Potassium*	*Sodium*	*TDS*[2]
New Mexico Water Quality Control Commission Groundwater Standard					*250*	*1.6*	*10*	*600*					*1,000*
MW-11 (cont)	5/15/08	<1.53	177	177	72.4 D1	1.86	1.71	141	58.0	19.4	4.93	66.5 D1	544
	11/4/08	<5.0	170	170	49	1.5	1.3	90	60	16	3.6	47	440
	5/20/09	<5.0	360	360	40	2.2	1.7	130	51	17	4.5	53	450
	11/4/09	<5.0	150	150	43	1.6	1.6	100	52	15	2.9	42	470
	5/7/10	<5.0	<5.00	167	36.5	1.97	1.78	117	49.7	14.9	3.42	44.7	494
	11/9/10	<5.0	269	269	52.5	1.45	1.79	95.4	61.0	16.7	3.56	50.0	438
	5/11/11	<5.0	161	161	133	1.43	2.08	140	78.1	37.0	6.32	103	664
DUP	5/11/11	<5.0	161	161	130	1.44	2.01	137	77.4	37.0	6.29	104	706
	11/10/11	<5.0	162	162	38.8	1.86	1.49	97.1	66.2	17.9	3.62	52.3	420
	5/17/12	<5.0	176	176	45.8	1.29	1.62	88.5	63.6	16.3	3.66	53.4	456
	10/11/12	<5.0	166	166	44.6	1.49	1.74	95.1	55.8	15.8	3.80	49.3	440
MW-12	5/15/02	<1.0	160	160	58.3	1.09	2.44	91.3	53.5	15.9	5.52	50.3	462
	10/23/02	--	--	--	65	--	--	102	--	--	--	--	477
	5/22/03	<1.0	148	148	91.1	1.04	2.30	87.7	74.2	21.0	4.89	57.6	516
	11/25/03	<1.0	142	142	93.1	1.18	2.36	90.9	74.7	20.9	5.41	52.5	548
	5/12/04	<1.00	458	458	72.9	1.04	2.35	86.7	58.1	19.0	5.92	51.8	489
	11/15/04	<1.00	184	184	79.8	1.39	2.83	88.8	59.7	21.5	16.50	77.4	512
	11/17/05	<10.0	151	151	109	0.93	0.12	94.6 D1	193.000	26.600	13.400	87.500	700 N
	11/16/06	<10	270	270	120	0.71	1.7	84	82.300	27.000	4.820	62.200	620
	11/16/07	<10.0	170	170	258 D1	1.21	1.55	191 D1	77.200	42.700	11.000	154.000	1,270
	11/6/08	<5.0	130	130	110	0.89	1.4	79	61	20	4.5	52	460
	11/3/09	<25	2,000	2,000	120	0.87	1.6	98	68	24	6.0	79	600
	11/9/10	<5.0	144	144	211	0.566	1.76	89.8	75.6	27.8	4.60	60.6	712
	11/10/11	<5.00	134	134	179	0.464	1.37	92.8	93.8	27.8	4.53	64.0	594
	10/11/12	<5.00	145	145	179	0.705	0.791	86.5	80.4	25.4	5.44	62.9	724
MW-13	5/13/02	<1.0	100	100	517	<1.00	1.61	437	116.0	76.0	19.40	269.0	1,596
	10/23/02	--	--	--	549	--	--	370	--	--	--	--	1,740

TABLE II
GROUNDWATER ANALYTICAL SUMMARY
CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY
COOPER-JAL UNIT INJECTION STATION
LEA COUNTY, NEW MEXICO

Sample ID	*Sample Date*	*Carbonate Alkalinity*	*Bicarbonate Alkalinity*	*Total Alkalinity*	*Chloride*[2]	*Fluoride*[1]	*Nitrate - N*[1]	*Sulfate*[2]	*Calcium*	*Magnesium*	*Potassium*	*Sodium*	*TDS*[2]
New Mexico Water Quality Control Commission Groundwater Standard					*250*	*1.6*	*10*	*600*					*1,000*
MW-13 (cont)	5/22/03	<1.0	186	186	944	<2.00	2.33	361	289.0	101.0	15.30	458.0	3,060
	11/25/03	<1.0	226	226	1,460	<2.00	2.22	372	369.0	117.0	20.00	478.0	3,445
	5/12/04	<1.00	234	234	1,550	<4.00	4.58	369	384.0	114.0	18.60	485.0	4,240
	11/15/04	<1.00	226	226	1,870	<2.00	4.92	384	510.0	164.0	16.50	627.0	3,600
	11/17/05	<10.0	201	201	722 D1	1.0	2.5	206 D1	786.000	91.600	19.700	276.000	2,350 N
	11/16/06	<10	1,500	1,500	2,000	<0.50 N	2.7	500 N	529.000	176.000	14.200	493.000	5,060
	11/16/07	<10.0	236	236	2,000 D1	0.33	3.05 D1	312 D1	361.000	105.000	11.400	553.000 D1	6,320
	11/6/08	<5.0	180	180	970	0.98	1.8	280	240	96	17	370	2,400
	11/3/09	<25	15,000	15,000	2,200	<0.50	2.6	440	490	180	22	490	5,600
	11/9/10	<5.0	267	267	1,680	0.217	2.82	405	400	120	10.4	540	4,270
	11/10/11	<5.00	206	206	2,110	0.177	<0.500	273	690	223	13.2	472	4,870
	10/11/12	<5.00	204	204	2,360	0.307	2.70	422	706	228	14.4	423	6,290
RW-1	5/27/99	0	224	224	8,700	2.70	7.00	840	679.0	521.0	34.00	3,290	14,000
	5/22/03	<1.0	190	190	2,410	2.46	4.23	345	162.0	145.0	25.40	1,180.0	5,260
	11/26/03	<1.0	184	184	1,990	<4.00	20.00	324	199.0	147.0	38.60	1,080.0	5,050
	5/11/04	<1.00	148	148	491	1.32	2.65	109	66.3	23.4	11.20	252.0	1,224
	11/17/04	<1.00	160	160	633	1.65	3.23	121	89.7	43.5	18.00	382.0	1,314
	11/17/05	<10.0	221	221	895 D1	1.0	1.4	166 D1	122.000	70.900	8.400	493.000	2,380 N
	11/16/06	<10	380	380	11,000	<0.50	<20 HC	1,100	539.000	694.000	43.300	5,580.000	22,000
	11/15/07	<10.0	359	359	2,380 D1	1.26	3.74 D1	252 D1	141.000	137.000	16.000	1,100.000 D1	5,280
DUP	11/15/07	<10.0	208	208	2,620 D1	1.24	3.85 D1	316 D1	136.000	133.000	15.500	1,040.000 D1	5,360
	11/12/08	<5.0	210	210	370	0.82	1.9	97	66	34	5.0	190	920
	11/4/09	<5.0	170	170	1,700	1.1	2.6	250	110	120	22	750	3,800
	11/11/10	<5.0	192	192	1,340	0.716	2.72	204	95.5	104	12.6	792	2,830
	11/10/11	<5.00	396	396	14,000	3.32	9.16	1,540	942	1,260	44.6	8,720	32,200
	10/11/12	<5.00	263	263	6,530	2.19	4.75	625	314	445	28.0	3,490	10,100
DUP-2	10/11/12	<5.00	286	286	2,440	0.308	1.23	194	128	156	18.6	1,260	17,000
RW-2	5/22/03	324	<4.00	780	1,580	<2.00	2.43	23.9	1,060.0	<0.500	20.20	258.0	4,310

TABLE II
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COOPER-JAL UNIT INJECTION STATION
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Sample ID	*Sample Date*	*Carbonate Alkalinity*	*Bicarbonate Alkalinity*	*Total Alkalinity*	*Chloride*[2]	*Fluoride*[1]	*Nitrate - N*[1]	*Sulfate*[2]	*Calcium*	*Magnesium*	*Potassium*	*Sodium*	*TDS*[2]
New Mexico Water Quality Control Commission Groundwater Standard					*250*	*1.6*	*10*	*600*					*1,000*
RW-2 (cont)	11/26/03	**64**	<4.00	**704**	**1,480**	<5.00	**5.81**	**38.3**	**988.0**	<0.500	**23.80**	**240.0**	**3,535**
	11/17/04	**104.0**	<4.00	**692**	**2,280**	<10.0	<10.0	**116**	**1180.0**	<0.500	**18.50**	**415.0**	**3,915**
	11/17/05	**281**	<10.0	**422**	**1,770 D1**	**0.89**	**0.60**	**175 D1**	**861.000**	**16.600**	**13.100**	**361.000**	**7,350 N**
	11/16/06	**49**	**150**	**199**	**2,500**	**0.57**	**1.9**	**370**	**978.000**	**48.800**	**18.000**	**437.000**	**5,270**
	11/15/07	**170**	**37.8**	**208**	**1,680 D1**	**0.49**	**1.52**	**166 D1**	**586.000**	<5.000	**11.200**	**245.000**	**5,590**
	11/12/08	**150**	<5.0	**390**	**2,500**	<0.50	**0.24**	**250**	**1,200**	<0.38	**6.0**	**400**	**4,800**
	11/4/09	**34**	<5.0	**220**	**2,200**	<0.50	**1.7**	**240**	**940**	**0.18**	**16**	**420**	**6,300**
	11/11/10	**113**	<5.0	**172**	**2,100**	<0.50	**2.03**	**233**	**967**	**4.06**	**8.86**	**426**	**4,550**
	11/10/11	**36.9**	<5.00	**384**	**4,330**	<10.0	**2.13**	**305**	**2,040**	**1.12**	**18.7**	**711**	**8,300**
	10/11/12	**27.1**	<5.00	**202**	**1,920**	<0.50	**1.93**	**223**	**842**	**0.464**	**9.30**	**385**	**6,680**
DUP 1	10/11/12	**31.9**	<5.00	**206**	**2,310**	<0.50	**1.98**	**228**	**1,090**	**2.42**	**10.5**	**430**	**5,250**

Notes:

1. **Bold** value indicates a laboratory detection.
2. Shaded cells indicate New Mexico Water Quality Control Commission (NMWQCC) exceedance.
3. Results shown in mg/L.
4. N - See narrative in laboratory report for a detailed explanation.
5. D1 - The analysis was performed at a dilution due to the high analyte concentration.
6. H - The analysis was performed past holding time.
7. C - Elevated detection limit due to matrix effect.
8. Analyte detected below quantitation limit
9. [1]Human Health Standards for Groundwater.
10. [2]Other Standards for Domestic Water Supply.

APPENDICES

APPENDIX A

CERTIFIED LABORATORY REPORTS

12-Jun-2012

Todd Wells
Conestoga-Rovers & Associates
2135 S Loop 250 West
Midland, TX 79703

Tel: (432) 686-0086
Fax: (432) 686-0186

Re: Cooper Jal site Work Order: **1205834**

Dear Todd,

ALS Environmental received 6 samples on 19-May-2012 09:25 AM for the analyses presented in the following report.

This is a REVISED REPORT. Please see the Case Narrative for discussion concerning this revision.

The total number of pages in this revised report is 23.

Regards,

Patricia L. Lynch

Electronically approved by: Makenzie L. Henderson

Patricia L. Lynch
Project Manager

Certificate No: T104704231-09A-TX

ALS Environmental

Date: 12-Jun-12

Client: Conestoga-Rovers & Associates
Project: Cooper Jal site
Work Order: **1205834**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
1205834-01	MW-8-051712	Water		5/17/2012 11:09	5/19/2012 09:25	☐
1205834-02	MW-9-051612	Water		5/16/2012 16:15	5/19/2012 09:25	☐
1205834-03	MW-9A-051612	Water		5/16/2012 16:35	5/19/2012 09:25	☐
1205834-04	MW-10-051612	Water		5/16/2012 15:45	5/19/2012 09:25	☐
1205834-05	MW-11-051712	Water		5/17/2012 11:10	5/19/2012 09:25	☐
1205834-06	DUP-051612	Water		5/16/2012	5/19/2012 09:25	☐

ALS Environmental

Date: 12-Jun-12

Client:	Conestoga-Rovers & Associates
Project:	Cooper Jal site
Work Order:	1205834

Case Narrative

This report was revised on June 12, 2012 to change the project name to Cooper Jal site per client request.

Batch 61407, Cations, Sample 1205837-01C: MS recovery is for an unrelated sample.

ALS Environmental

Date: *12-Jun-12*

Client: Conestoga-Rovers & Associates
Project: Cooper Jal site
Sample ID: MW-8-051712
Collection Date: 5/17/2012 11:09 AM

Work Order: 1205834
Lab ID: 1205834-01
Matrix: WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
DISSOLVED METALS		Method: **SW6020**		Prep: SW3010A / 5/28/12			Analyst: **SKS**
Calcium	**53.3**		**0.086**	**0.500**	**mg/L**	1	5/29/2012 14:36
Magnesium	**16.4**		**0.082**	**0.200**	**mg/L**	1	5/29/2012 14:36
Potassium	**3.83**		**0.084**	**0.200**	**mg/L**	1	5/29/2012 14:36
Sodium	**56.7**		**0.085**	**0.200**	**mg/L**	1	5/29/2012 14:36
ANIONS - EPA 300.0 (1993)		Method: **E300**					Analyst: **JKP**
Chloride	**37.9**		**0.20**	**0.500**	**mg/L**	1	5/29/2012 13:02
Fluoride	**1.09**		**0.050**	**0.100**	**mg/L**	1	5/29/2012 13:02
Nitrogen, Nitrate (As N)	**1.59**		**0.30**	**1.00**	**mg/L**	10	5/30/2012 12:36
Sulfate	**92.9**		**0.20**	**0.500**	**mg/L**	1	5/29/2012 13:02
Surr: Selenate (surr)	*96.6*			*85-115*	*%REC*	1	5/29/2012 13:02
Surr: Selenate (surr)	*97.1*			*85-115*	*%REC*	10	5/30/2012 12:36
ALKALINITY		Method: **SM2320B**					Analyst: **DM**
Alkalinity, Bicarbonate (As CaCO3)	**173**		**5.0**	**5.00**	**mg/L**	1	5/29/2012 11:46
Alkalinity, Carbonate (As CaCO3)	U		5.0	5.00	mg/L	1	5/29/2012 11:46
Alkalinity, Hydroxide (As CaCO3)	U		5.0	5.00	mg/L	1	5/29/2012 11:46
Alkalinity, Total (As CaCO3)	**173**		**5.0**	**5.00**	**mg/L**	1	5/29/2012 11:46
TOTAL DISSOLVED SOLIDS		Method: **M2540C**					Analyst: **KAH**
Total Dissolved Solids (Residue, Filterable)	**440**		**5.0**	**10.0**	**mg/L**	1	5/23/2012 19:00

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *12-Jun-12*

Client: Conestoga-Rovers & Associates
Project: Cooper Jal site
Sample ID: MW-9-051612
Collection Date: 5/16/2012 04:15 PM

Work Order: 1205834
Lab ID: 1205834-02
Matrix: WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
DISSOLVED METALS		Method: **SW6020**		Prep: SW3010A / 5/28/12			Analyst: **SKS**
Calcium	**83.8**		**0.086**	**0.500**	**mg/L**	1	5/29/2012 14:38
Magnesium	**23.2**		**0.082**	**0.200**	**mg/L**	1	5/29/2012 14:38
Potassium	**4.39**		**0.084**	**0.200**	**mg/L**	1	5/29/2012 14:38
Sodium	**60.3**		**0.085**	**0.200**	**mg/L**	1	5/29/2012 14:38
ANIONS - EPA 300.0 (1993)		Method: **E300**					Analyst: **JKP**
Chloride	**137**		**2.0**	**5.00**	**mg/L**	10	5/29/2012 15:20
Fluoride	**1.75**		**0.050**	**0.100**	**mg/L**	1	5/29/2012 13:16
Nitrogen, Nitrate (As N)	**1.61**		**0.30**	**1.00**	**mg/L**	10	5/29/2012 03:38
Sulfate	**93.5**		**0.20**	**0.500**	**mg/L**	1	5/29/2012 13:16
Surr: Selenate (surr)	*98.2*			*85-115*	*%REC*	10	5/29/2012 03:38
Surr: Selenate (surr)	*101*			*85-115*	*%REC*	1	5/29/2012 13:16
Surr: Selenate (surr)	*101*			*85-115*	*%REC*	10	5/29/2012 15:20
ALKALINITY		Method: **SM2320B**					Analyst: **DM**
Alkalinity, Bicarbonate (As CaCO3)	**162**		**5.0**	**5.00**	**mg/L**	1	5/29/2012 11:46
Alkalinity, Carbonate (As CaCO3)	U		5.0	5.00	mg/L	1	5/29/2012 11:46
Alkalinity, Hydroxide (As CaCO3)	U		5.0	5.00	mg/L	1	5/29/2012 11:46
Alkalinity, Total (As CaCO3)	**162**		**5.0**	**5.00**	**mg/L**	1	5/29/2012 11:46
TOTAL DISSOLVED SOLIDS		Method: **M2540C**					Analyst: **KAH**
Total Dissolved Solids (Residue, Filterable)	**584**		**5.0**	**10.0**	**mg/L**	1	5/22/2012 19:00

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *12-Jun-12*

Client: Conestoga-Rovers & Associates
Project: Cooper Jal site
Sample ID: MW-9A-051612
Collection Date: 5/16/2012 04:35 PM

Work Order: 1205834
Lab ID: 1205834-03
Matrix: WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
DISSOLVED METALS		Method: **SW6020**		Prep: SW3010A / 5/28/12			Analyst: **SKS**
Calcium	**249**		**0.86**	**5.00**	**mg/L**	10	5/29/2012 16:58
Magnesium	**62.6**		**0.082**	**0.200**	**mg/L**	1	5/29/2012 14:41
Potassium	**6.50**		**0.084**	**0.200**	**mg/L**	1	5/29/2012 14:41
Sodium	**97.7**		**0.085**	**0.200**	**mg/L**	1	5/29/2012 14:41
ANIONS - EPA 300.0 (1993)		Method: **E300**					Analyst: **JKP**
Chloride	**958**		**2.0**	**5.00**	**mg/L**	10	5/29/2012 15:34
Fluoride	**0.366**		**0.050**	**0.100**	**mg/L**	1	5/29/2012 13:31
Nitrogen, Nitrate (As N)	**1.74**		**0.30**	**1.00**	**mg/L**	10	5/29/2012 03:59
Sulfate	**143**		**2.0**	**5.00**	**mg/L**	10	5/29/2012 15:34
Surr: Selenate (surr)	*98.6*			*85-115*	*%REC*	10	5/29/2012 03:59
Surr: Selenate (surr)	*101*			*85-115*	*%REC*	1	5/29/2012 13:31
Surr: Selenate (surr)	*99.7*			*85-115*	*%REC*	10	5/29/2012 15:34
ALKALINITY		Method: **SM2320B**					Analyst: **DM**
Alkalinity, Bicarbonate (As CaCO3)	**135**		**5.0**	**5.00**	**mg/L**	1	5/29/2012 11:46
Alkalinity, Carbonate (As CaCO3)	U		5.0	5.00	mg/L	1	5/29/2012 11:46
Alkalinity, Hydroxide (As CaCO3)	U		5.0	5.00	mg/L	1	5/29/2012 11:46
Alkalinity, Total (As CaCO3)	**135**		**5.0**	**5.00**	**mg/L**	1	5/29/2012 11:46
TOTAL DISSOLVED SOLIDS		Method: **M2540C**					Analyst: **KAH**
Total Dissolved Solids (Residue, Filterable)	**3,450**		**5.0**	**10.0**	**mg/L**	1	5/22/2012 19:00

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *12-Jun-12*

Client: Conestoga-Rovers & Associates
Project: Cooper Jal site
Sample ID: MW-10-051612
Collection Date: 5/16/2012 03:45 PM

Work Order: 1205834
Lab ID: 1205834-04
Matrix: WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
DISSOLVED METALS		Method: **SW6020**		Prep: SW3010A / 5/28/12			Analyst: **SKS**
Calcium	**132**		**0.086**	**0.500**	**mg/L**	1	5/29/2012 14:44
Magnesium	**36.8**		**0.082**	**0.200**	**mg/L**	1	5/29/2012 14:44
Potassium	**5.22**		**0.084**	**0.200**	**mg/L**	1	5/29/2012 14:44
Sodium	**72.9**		**0.085**	**0.200**	**mg/L**	1	5/29/2012 14:44
ANIONS - EPA 300.0 (1993)		Method: **E300**					Analyst: **JKP**
Chloride	**284**		**2.0**	**5.00**	**mg/L**	10	5/29/2012 15:49
Fluoride	**1.12**		**0.050**	**0.100**	**mg/L**	1	5/29/2012 13:45
Nitrogen, Nitrate (As N)	**1.58**		**0.30**	**1.00**	**mg/L**	10	5/29/2012 04:20
Sulfate	**99.9**		**0.20**	**0.500**	**mg/L**	1	5/29/2012 13:45
Surr: Selenate (surr)	*98.9*			*85-115*	*%REC*	10	5/29/2012 04:20
Surr: Selenate (surr)	*97.9*			*85-115*	*%REC*	1	5/29/2012 13:45
Surr: Selenate (surr)	*100*			*85-115*	*%REC*	10	5/29/2012 15:49
ALKALINITY		Method: **SM2320B**					Analyst: **DM**
Alkalinity, Bicarbonate (As CaCO3)	**163**		**5.0**	**5.00**	**mg/L**	1	5/29/2012 11:46
Alkalinity, Carbonate (As CaCO3)	U		5.0	5.00	mg/L	1	5/29/2012 11:46
Alkalinity, Hydroxide (As CaCO3)	U		5.0	5.00	mg/L	1	5/29/2012 11:46
Alkalinity, Total (As CaCO3)	**163**		**5.0**	**5.00**	**mg/L**	1	5/29/2012 11:46
TOTAL DISSOLVED SOLIDS		Method: **M2540C**					Analyst: **KAH**
Total Dissolved Solids (Residue, Filterable)	**1,120**		**5.0**	**10.0**	**mg/L**	1	5/22/2012 19:00

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *12-Jun-12*

Client: Conestoga-Rovers & Associates
Project: Cooper Jal site
Sample ID: MW-11-051712
Collection Date: 5/17/2012 11:10 AM

Work Order: 1205834
Lab ID: 1205834-05
Matrix: WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
DISSOLVED METALS		Method: **SW6020**		Prep: SW3010A / 5/28/12			Analyst: **SKS**
Calcium	**63.6**		**0.086**	**0.500**	**mg/L**	1	5/29/2012 14:46
Magnesium	**16.3**		**0.082**	**0.200**	**mg/L**	1	5/29/2012 14:46
Potassium	**3.66**		**0.084**	**0.200**	**mg/L**	1	5/29/2012 14:46
Sodium	**53.4**		**0.085**	**0.200**	**mg/L**	1	5/29/2012 14:46
ANIONS - EPA 300.0 (1993)		Method: **E300**					Analyst: **JKP**
Chloride	**45.8**		**0.20**	**0.500**	**mg/L**	1	5/29/2012 14:00
Fluoride	**1.29**		**0.050**	**0.100**	**mg/L**	1	5/29/2012 14:00
Nitrogen, Nitrate (As N)	**1.62**		**0.30**	**1.00**	**mg/L**	10	5/29/2012 04:42
Sulfate	**88.5**		**0.20**	**0.500**	**mg/L**	1	5/29/2012 14:00
Surr: Selenate (surr)	*99.0*			*85-115*	*%REC*	10	5/29/2012 04:42
Surr: Selenate (surr)	*99.5*			*85-115*	*%REC*	1	5/29/2012 14:00
ALKALINITY		Method: **SM2320B**					Analyst: **DM**
Alkalinity, Bicarbonate (As CaCO3)	**176**		**5.0**	**5.00**	**mg/L**	1	5/29/2012 11:46
Alkalinity, Carbonate (As CaCO3)	U		5.0	5.00	mg/L	1	5/29/2012 11:46
Alkalinity, Hydroxide (As CaCO3)	U		5.0	5.00	mg/L	1	5/29/2012 11:46
Alkalinity, Total (As CaCO3)	**176**		**5.0**	**5.00**	**mg/L**	1	5/29/2012 11:46
TOTAL DISSOLVED SOLIDS		Method: **M2540C**					Analyst: **KAH**
Total Dissolved Solids (Residue, Filterable)	**456**		**5.0**	**10.0**	**mg/L**	1	5/23/2012 19:00

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *12-Jun-12*

Client: Conestoga-Rovers & Associates
Project: Cooper Jal site
Sample ID: DUP-051612
Collection Date: 5/16/2012

Work Order: 1205834
Lab ID: 1205834-06
Matrix: WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
DISSOLVED METALS		Method: **SW6020**		Prep: SW3010A / 5/28/12			Analyst: **SKS**
Calcium	**270**		**0.86**	**5.00**	**mg/L**	10	5/29/2012 18:28
Magnesium	**65.7**		**0.082**	**0.200**	**mg/L**	1	5/29/2012 17:23
Potassium	**6.72**		**0.084**	**0.200**	**mg/L**	1	5/29/2012 17:23
Sodium	**92.3**		**0.085**	**0.200**	**mg/L**	1	5/29/2012 17:23
ANIONS - EPA 300.0 (1993)		Method: **E300**					Analyst: **JKP**
Chloride	**882**		**2.0**	**5.00**	**mg/L**	10	5/29/2012 18:12
Fluoride	**0.308**		**0.050**	**0.100**	**mg/L**	1	5/29/2012 14:14
Nitrogen, Nitrate (As N)	**1.70**		**0.30**	**1.00**	**mg/L**	10	5/29/2012 05:03
Sulfate	**134**		**2.0**	**5.00**	**mg/L**	10	5/29/2012 18:12
Surr: Selenate (surr)	*99.5*			*85-115*	*%REC*	10	5/29/2012 05:03
Surr: Selenate (surr)	*100*			*85-115*	*%REC*	1	5/29/2012 14:14
Surr: Selenate (surr)	*102*			*85-115*	*%REC*	10	5/29/2012 18:12
ALKALINITY		Method: **SM2320B**					Analyst: **DM**
Alkalinity, Bicarbonate (As CaCO3)	**128**		**5.0**	**5.00**	**mg/L**	1	5/29/2012 11:46
Alkalinity, Carbonate (As CaCO3)	U		5.0	5.00	mg/L	1	5/29/2012 11:46
Alkalinity, Hydroxide (As CaCO3)	U		5.0	5.00	mg/L	1	5/29/2012 11:46
Alkalinity, Total (As CaCO3)	**128**		**5.0**	**5.00**	**mg/L**	1	5/29/2012 11:46
TOTAL DISSOLVED SOLIDS		Method: **M2540C**					Analyst: **KAH**
Total Dissolved Solids (Residue, Filterable)	**3,050**		**5.0**	**10.0**	**mg/L**	1	5/22/2012 19:00

Note: See Qualifiers Page for a list of qualifiers and their explanation.

QC BATCH REPORT

Batch ID: **61406** Instrument ID **ICPMS05** Method: **SW6020** **(Dissolve)**

MBLK Sample ID: **MBLKW1-052812-61406** Units: **mg/L** Analysis Date: **5/29/2012 04:53 PM**

Client ID: Run ID: **ICPMS05_120529A** SeqNo: **2798957** Prep Date: **5/28/2012** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	U	0.50								
Magnesium	U	0.20								
Potassium	U	0.20								
Sodium	U	0.20								

LCS Sample ID: **MLCSW1-052812-61406** Units: **mg/L** Analysis Date: **5/29/2012 04:55 PM**

Client ID: Run ID: **ICPMS05_120529A** SeqNo: **2798958** Prep Date: **5/28/2012** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	4.964	0.50	5	0	99.3	80-120	0			
Magnesium	5.051	0.20	5	0	101	80-120	0			
Potassium	5.052	0.20	5	0	101	80-120	0			
Sodium	4.731	0.20	5	0	94.6	80-120	0			

MS Sample ID: **1205872-01BMS** Units: **mg/L** Analysis Date: **5/29/2012 05:10 PM**

Client ID: Run ID: **ICPMS05_120529A** SeqNo: **2798964** Prep Date: **5/28/2012** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	30.43	0.50	5	25.16	105	75-125	0			O
Magnesium	9.357	0.20	5	4.588	95.4	75-125	0			
Potassium	9.71	0.20	5	4.783	98.5	75-125	0			
Sodium	19.83	0.20	5	15.23	92	75-125	0			

MSD Sample ID: **1205872-01BMSD** Units: **mg/L** Analysis Date: **5/29/2012 05:13 PM**

Client ID: Run ID: **ICPMS05_120529A** SeqNo: **2798965** Prep Date: **5/28/2012** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	31.01	0.50	5	25.16	117	75-125	30.43	1.89	25	O
Magnesium	9.651	0.20	5	4.588	101	75-125	9.357	3.08	25	
Potassium	9.864	0.20	5	4.783	102	75-125	9.71	1.57	25	
Sodium	20.55	0.20	5	15.23	106	75-125	19.83	3.54	25	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Conestoga-Rovers & Associates
Work Order: 1205834
Project: Cooper Jal site

QC BATCH REPORT

Batch ID: **61406** Instrument ID **ICPMS05** Method: **SW6020** **(Dissolve)**

DUP Sample ID: **1205872-01BDUP** Units: **mg/L** Analysis Date: **5/29/2012 05:08 PM**

Client ID: Run ID: **ICPMS05_120529A** SeqNo: **2798963** Prep Date: **5/28/2012** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	23.35	0.50	0	0	0	0-0	25.16	7.47	25	
Magnesium	4.221	0.20	0	0	0	0-0	4.588	8.34	25	
Potassium	4.383	0.20	0	0	0	0-0	4.783	8.73	25	
Sodium	13.82	0.20	0	0	0	0-0	15.23	9.7	25	

The following samples were analyzed in this batch:

1205834-01A	1205834-02A	1205834-03A
1205834-04A	1205834-05A	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Conestoga-Rovers & Associates
Work Order: 1205834
Project: Cooper Jal site

QC BATCH REPORT

Batch ID: **61407** Instrument ID **ICPMS05** Method: **SW6020** **(Dissolve)**

MBLK Sample ID: **MBLKW2-052812-61407** Units: **mg/L** Analysis Date: **5/29/2012 05:18 PM**
Client ID: Run ID: **ICPMS05_120529A** SeqNo: **2798967** Prep Date: **5/28/2012** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	U	0.50								
Magnesium	U	0.20								
Potassium	U	0.20								
Sodium	U	0.20								

LCS Sample ID: **MLCSW2-052812-61407** Units: **mg/L** Analysis Date: **5/29/2012 05:20 PM**
Client ID: Run ID: **ICPMS05_120529A** SeqNo: **2798968** Prep Date: **5/28/2012** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	5.282	0.50	5	0	106	80-120	0			
Magnesium	5.249	0.20	5	0	105	80-120	0			
Potassium	5.177	0.20	5	0	104	80-120	0			
Sodium	4.934	0.20	5	0	98.7	80-120	0			

MS Sample ID: **1205837-01CMS** Units: **mg/L** Analysis Date: **5/29/2012 05:35 PM**
Client ID: Run ID: **ICPMS05_120529A** SeqNo: **2798974** Prep Date: **5/28/2012** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	120.4	0.50	5	114.1	127	75-125	0			SO
Magnesium	39.48	0.20	5	34.15	107	75-125	0			O
Potassium	7.842	0.20	5	2.738	102	75-125	0			
Sodium	13.49	0.20	5	8.359	103	75-125	0			

MSD Sample ID: **1205837-01CMSD** Units: **mg/L** Analysis Date: **5/29/2012 05:38 PM**
Client ID: Run ID: **ICPMS05_120529A** SeqNo: **2798975** Prep Date: **5/28/2012** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	119	0.50	5	114.1	98.7	75-125	120.4	1.18	25	O
Magnesium	38.97	0.20	5	34.15	96.4	75-125	39.48	1.32	25	O
Potassium	7.521	0.20	5	2.738	95.7	75-125	7.842	4.17	25	
Sodium	13.61	0.20	5	8.359	105	75-125	13.49	0.848	25	

DUP Sample ID: **1205837-01CDUP** Units: **mg/L** Analysis Date: **5/29/2012 05:28 PM**
Client ID: Run ID: **ICPMS05_120529A** SeqNo: **2798971** Prep Date: **5/28/2012** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	114	0.50	0	0	0	0-0	114.1	0.0216	25	
Magnesium	35.01	0.20	0	0	0	0-0	34.15	2.5	25	
Potassium	2.788	0.20	0	0	0	0-0	2.738	1.78	25	
Sodium	8.194	0.20	0	0	0	0-0	8.359	1.99	25	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Conestoga-Rovers & Associates
Work Order: 1205834
Project: Cooper Jal site

QC BATCH REPORT

Batch ID: **61407** Instrument ID **ICPMS05** Method: **SW6020** **(Dissolve)**

The following samples were analyzed in this batch: 1205834-06A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Conestoga-Rovers & Associates
Work Order: 1205834
Project: Cooper Jal site

QC BATCH REPORT

Batch ID: **R128351** Instrument ID **Balance1** Method: **M2540C** **(Dissolve)**

MBLK Sample ID: **WBLK-052212-R128351** Units: **mg/L** Analysis Date: **5/22/2012 07:00 PM**
Client ID: Run ID: **BALANCE1_120522L** SeqNo: **2792679** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Fil	U	10								

LCS Sample ID: **WLCS-052212-R128351** Units: **mg/L** Analysis Date: **5/22/2012 07:00 PM**
Client ID: Run ID: **BALANCE1_120522L** SeqNo: **2792681** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Fil	988	10	1000	0	98.8	85-115	0			

DUP Sample ID: **1205682-01GDUP** Units: **mg/L** Analysis Date: **5/22/2012 07:00 PM**
Client ID: Run ID: **BALANCE1_120522L** SeqNo: **2792653** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Fil	454	10	0	0	0	0-0	456	0.44	20	

DUP Sample ID: **1205834-03CDUP** Units: **mg/L** Analysis Date: **5/22/2012 07:00 PM**
Client ID: **MW-9A-051612** Run ID: **BALANCE1_120522L** SeqNo: **2792676** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Fil	3350	10	0	0	0	0-0	3446	2.83	20	

The following samples were analyzed in this batch: 1205834-02C 1205834-03C 1205834-04C 1205834-06C

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Conestoga-Rovers & Associates
Work Order: 1205834
Project: Cooper Jal site

QC BATCH REPORT

Batch ID: **R128425** Instrument ID **Balance1** Method: **M2540C** **(Dissolve)**

MBLK Sample ID: **WBLK-052312-R128425** Units: **mg/L** Analysis Date: **5/23/2012 07:00 PM**
Client ID: Run ID: **BALANCE1_120523D** SeqNo: **2794430** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Fil	U	10								

LCS Sample ID: **WLCS-052312-R128425** Units: **mg/L** Analysis Date: **5/23/2012 07:00 PM**
Client ID: Run ID: **BALANCE1_120523D** SeqNo: **2794431** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Fil	996	10	1000	0	99.6	85-115	0			

DUP Sample ID: **1205933-01GDUP** Units: **mg/L** Analysis Date: **5/23/2012 07:00 PM**
Client ID: Run ID: **BALANCE1_120523D** SeqNo: **2794429** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Fil	1366	10	0	0	0	0-0	1422	4.02	20	

The following samples were analyzed in this batch: 1205834-01C 1205834-05C

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Conestoga-Rovers & Associates
Work Order: 1205834
Project: Cooper Jal site

QC BATCH REPORT

Batch ID: **R128577** Instrument ID **WetChem** Method: **SM2320B** **(Dissolve)**

MBLK Sample ID: **WBLKW1-052912-R128577** Units: **mg/L** Analysis Date: **5/29/2012 11:46 AM**
Client ID: Run ID: **WETCHEM_120529G** SeqNo: **2798381** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Bicarbonate (As CaCO3)	U	5.0								
Alkalinity, Carbonate (As CaCO3)	U	5.0								
Alkalinity, Hydroxide (As CaCO3)	U	5.0								
Alkalinity, Total (As CaCO3)	U	5.0								

LCS Sample ID: **WLCSW1-052912-R128577** Units: **mg/L** Analysis Date: **5/29/2012 11:46 AM**
Client ID: Run ID: **WETCHEM_120529G** SeqNo: **2798382** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Total (As CaCO3)	1062	5.0	1000	0	106	80-120	0			

DUP Sample ID: **1205832-01GDUP** Units: **mg/L** Analysis Date: **5/29/2012 11:46 AM**
Client ID: Run ID: **WETCHEM_120529G** SeqNo: **2798396** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Bicarbonate (As CaCO3)	205.5	5.0	0	0	0	0-0	204.6	0.419	20	
Alkalinity, Carbonate (As CaCO3)	U	5.0	0	0	0	0-0	0	0	20	
Alkalinity, Hydroxide (As CaCO3)	U	5.0	0	0	0	0-0	0	0	20	
Alkalinity, Total (As CaCO3)	205.5	5.0	0	0	0	0-0	204.6	0.419	20	

The following samples were analyzed in this batch:

1205834-01C	1205834-02C	1205834-03C
1205834-04C	1205834-05C	1205834-06C

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Conestoga-Rovers & Associates
Work Order: 1205834
Project: Cooper Jal site

QC BATCH REPORT

Batch ID: **R128578** Instrument ID **ICS3000** Method: **E300** **(Dissolve)**

MBLK Sample ID: **WBLKW1-052912-R128578** Units: **mg/L** Analysis Date: **5/29/2012 02:55 AM**
Client ID: Run ID: **ICS3000_120529A** SeqNo: **2798399** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Nitrate (As N)	U	0.10								
Surr: Selenate (surr)	*4.895*	0.10	*5*	0	*97.9*	*85-115*	0			

LCS Sample ID: **WLCSW1-052912-R128578** Units: **mg/L** Analysis Date: **5/29/2012 03:16 AM**
Client ID: Run ID: **ICS3000_120529A** SeqNo: **2798400** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Nitrate (As N)	4.128	0.10	4	0	103	90-110	0			
Surr: Selenate (surr)	*4.948*	0.10	*5*	0	*99*	*85-115*	0			

MS Sample ID: **1205834-06BMS** Units: **mg/L** Analysis Date: **5/29/2012 05:24 AM**
Client ID: **DUP-051612** Run ID: **ICS3000_120529A** SeqNo: **2798406** Prep Date: DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Nitrate (As N)	22.43	1.0	20	1.702	104	80-120	0			
Surr: Selenate (surr)	*48.9*	1.0	*50*	0	*97.8*	*85-115*	0			

MSD Sample ID: **1205834-06BMDS** Units: **mg/L** Analysis Date: **5/29/2012 05:45 AM**
Client ID: **DUP-051612** Run ID: **ICS3000_120529A** SeqNo: **2798407** Prep Date: DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Nitrate (As N)	22.55	1.0	20	1.702	104	80-120	22.43	0.529	20	
Surr: Selenate (surr)	*48.97*	1.0	*50*	0	*97.9*	*85-115*	48.9	*0.139*	*20*	

The following samples were analyzed in this batch:

1205834-02B	1205834-03B	1205834-04B
1205834-05B	1205834-06B	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Conestoga-Rovers & Associates
Work Order: 1205834
Project: Cooper Jal site

QC BATCH REPORT

Batch ID: **R128605** Instrument ID **ICS2100** Method: **E300** **(Dissolve)**

MBLK Sample ID: **WBLKW2-052912-R128605** Units: **mg/L** Analysis Date: **5/29/2012 07:37 AM**
Client ID: Run ID: **ICS2100_120529B** SeqNo: **2798868** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	U	0.50								
Fluoride	U	0.10								
Sulfate	0.374	0.50								J
Surr: Selenate (surr)	*5.961*	0.10	*6*	0	*99.4*	*85-115*	0			

LCS Sample ID: **WLCSW2-052912-R128605** Units: **mg/L** Analysis Date: **5/29/2012 07:51 AM**
Client ID: Run ID: **ICS2100_120529B** SeqNo: **2798869** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	20.22	0.50	20	0	101	90-110	0			
Fluoride	3.929	0.10	4	0	98.2	90-110	0			
Sulfate	19.06	0.50	20	0	95.3	90-110	0			
Surr: Selenate (surr)	*5.191*	0.10	*5*	0	*104*	*85-115*	0			

LCSD Sample ID: **WLCSDW2-052912-R128605** Units: **mg/L** Analysis Date: **5/29/2012 08:06 AM**
Client ID: Run ID: **ICS2100_120529B** SeqNo: **2798870** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	20.12	0.50	20	0	101	90-110	20.22	0.476	20	
Fluoride	3.915	0.10	4	0	97.9	90-110	3.929	0.357	20	
Sulfate	18.97	0.50	20	0	94.8	90-110	19.06	0.51	20	
Surr: Selenate (surr)	*5.118*	0.10	*5*	0	*102*	*85-115*	5.191	*1.42*	*20*	

MS Sample ID: **1205872-15CMS** Units: **mg/L** Analysis Date: **5/29/2012 11:59 AM**
Client ID: Run ID: **ICS2100_120529B** SeqNo: **2798886** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	17.18	0.50	10	7.012	102	80-120	0			
Fluoride	2.028	0.10	2	0.182	92.3	80-120	0			
Sulfate	57.87	0.50	10	49.4	84.7	80-120	0			O
Surr: Selenate (surr)	*4.471*	0.10	*5*	0	*89.4*	*85-115*	0			

MSD Sample ID: **1205872-15CMSD** Units: **mg/L** Analysis Date: **5/29/2012 12:13 PM**
Client ID: Run ID: **ICS2100_120529B** SeqNo: **2798887** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	17.49	0.50	10	7.012	105	80-120	17.18	1.82	20	
Fluoride	2.051	0.10	2	0.182	93.4	80-120	2.028	1.13	20	
Sulfate	58.57	0.50	10	49.4	91.7	80-120	57.87	1.2	20	O
Surr: Selenate (surr)	*4.552*	0.10	*5*	0	*91*	*85-115*	4.471	*1.8*	*20*	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Conestoga-Rovers & Associates
Work Order: 1205834
Project: Cooper Jal site

QC BATCH REPORT

Batch ID: **R128605** Instrument ID **ICS2100** Method: **E300** **(Dissolve)**

The following samples were analyzed in this batch:

1205834-01C	1205834-02C	1205834-03C
1205834-04C	1205834-05C	1205834-06C

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Conestoga-Rovers & Associates
Work Order: 1205834
Project: Cooper Jal site

QC BATCH REPORT

Batch ID: **R128643** Instrument ID **ICS3000** Method: **E300** **(Dissolve)**

MBLK Sample ID: **WBLKW1-053012-R128643** Units: **mg/L** Analysis Date: **5/30/2012 11:20 AM**
Client ID: Run ID: **ICS3000_120530A** SeqNo: **2800149** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Nitrate (As N)	U	0.10								
Surr: Selenate (surr)	*5.446*	0.10	*5*	0	*109*	*85-115*	0			

LCS Sample ID: **WLCSW1-053012-R128643** Units: **mg/L** Analysis Date: **5/30/2012 11:59 AM**
Client ID: Run ID: **ICS3000_120530A** SeqNo: **2800150** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Nitrate (As N)	4.065	0.10	4	0	102	90-110	0			
Surr: Selenate (surr)	*4.839*	0.10	*5*	0	*96.8*	*85-115*	0			

MS Sample ID: **1205834-01BMS** Units: **mg/L** Analysis Date: **5/30/2012 12:58 PM**
Client ID: **MW-8-051712** Run ID: **ICS3000_120530A** SeqNo: **2800152** Prep Date: DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Nitrate (As N)	22.25	1.0	20	1.59	103	80-120	0			
Surr: Selenate (surr)	*47.9*	1.0	*50*	0	*95.8*	*85-115*	0			

MSD Sample ID: **1205834-01BMSD** Units: **mg/L** Analysis Date: **5/30/2012 01:19 PM**
Client ID: **MW-8-051712** Run ID: **ICS3000_120530A** SeqNo: **2800153** Prep Date: DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Nitrate (As N)	22.25	1.0	20	1.59	103	80-120	22.25	0	20	
Surr: Selenate (surr)	*47.85*	1.0	*50*	0	*95.7*	*85-115*	47.9	*0.107*	*20*	

The following samples were analyzed in this batch: 1205834-01B

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

ALS Environmental

Date: 12-Jun-12

Client: Conestoga-Rovers & Associates
Project: Cooper Jal site
WorkOrder: **1205834**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
M	Manually integrated, see raw data for justification
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL

Acronym	Description
DCS	Detectability Check Study
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitation Limit
SD	Serial Dilution
SDL	Sample Detection Limit
TRRP	Texas Risk Reduction Program

Units Reported	Description
mg/L	Milligrams per Liter

ALS Environmental

Sample Receipt Checklist

Client Name: **CRA-MID** Date/Time Received: **19-May-12 09:25**

Work Order: **1205834** Received by: **RDN**

Checklist completed by Rachel D. Naran (eSignature) 19-May-12 (Date) Reviewed by: Patricia L. Lynch (eSignature) 21-May-12 (Date)

Matrices: WATER
Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☐	No ☑	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	1.2	003	
Cooler(s)/Kit(s):	3868		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☑	No ☐	N/A ☐
pH adjusted?	Yes ☐	No ☑	N/A ☐
pH adjusted by:	-		

Login Notes: The date collected on COC for MW-11-051712 is 5/16/12. Confirmed with Todd Wells that sample was collected on 5/17/12.

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

ALS Environmental

Cincinnati, OH +1 513 733 5336 | Fort Collins, CO +1 970 490 1511
Everett, WA +1 425 356 2600 | Holland, MI +1 616 399 6070

Chain of Custody Form

Page 1 of 1

COC ID: 60846

1205834

CRA-MID: Conestoga-Rovers & Associates

Project: 039124 G.L. Erwin

ALS Project Manager:

Customer Information		Project Information			
Purchase Order		Project Name	G.L. Erwin	A	Dissolved Metals (6020/7000) Ca, Mg, Na, K
Work Order		Project Number	039124	B	Anions (300) Cl, SO4, F
Company Name	Conestoga-Rovers & Associates	Bill To Company	Conestoga-Rovers & Associates	C	Alkalinity
Send Report To	Todd Wells	Invoice Attn	Todd Wells	D	TDS
Address	2135 S Loop 250 West	Address	2135 S Loop 250 West	E	Nitrate (300)
				F	
City/State/Zip	Midland, TX 79703	City/State/Zip	Midland, TX 79703	G	
Phone	(432) 686-0086	Phone	(432) 686-0086	H	
Fax	(432) 686-0186	Fax	(432) 686-0186	I	
e-Mail Address		e-Mail Address		J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	MW-8-051712	5-17-12	1140	H_2O	2,3,8 Vials	3	X	X	X	X	X						
2	MW-9-051612	5-16-12	1615	H_2O	"2,3,8"	3	X	X	X	X	X						
3	MW-9A-051612	5-16-12	1635	H_2O	"2,3,8"	3	X	X	X	X	X						
4	MW-10-051612	5-16-12	1545	H_2O	"2,3,8"	3	X	X	X	X	X						
5	MW-11-051712	5-16-12	1110	H_2O	"2,3,8"	3	X	X	X	X	X						
6	DUP-051612	5-16-12	—	H_2O	"2,3,8"	3	X	X	X	X	X						
7																	
8																	
9																	
10																	

Sampler(s) Please Print & Sign: Todd Wells / Joe Mingles / Joe Mingles

Shipment Method: Fedex

Required Turnaround Time: (Check Box) ☒ Std 10 WK Days ☐ 5 WK Days ☐ Other ☐ 2 WK Days ☐ 24 Hour

Results Due Date:

Relinquished by: Joe Mingles	Date: 5-18-12	Time: 0920	Received by:	Notes: 10 Day TAT. Diss Metals to be field filtered.	
Relinquished by:	Date: 5/19/12	Time: 09:25	Received by (Laboratory): RW ALS	Cooler ID	Cooler Temp.
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):		

QC Package: (Check One Box Below)
☑ Level II Std QC ☐ TRRP CheckList
☐ Level III Std QC/Raw Data ☐ TRRP Level IV
☐ Level IV SW846/CLP
☐ Other / EDD

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
3. The Chain of Custody is a legal document. All information must be completed accurately.

19-Oct-2012

Todd Wells
Conestoga-Rovers & Associates
2135 S Loop 250 West
Midland, TX 79703

Tel: (432) 686-0086
Fax: (432) 686-0186

Re: CEMC Cooper-JAL - SSOW - 039123 Work Order: **1210491**

Dear Todd,

ALS Environmental received 20 samples on 12-Oct-2012 09:20 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 35.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

Patricia L. Lynch

Electronically approved by: Luke F. Hernandez

Patricia L. Lynch
Project Manager

Certificate No: TX: T104704231-12-10

ALS Environmental

Date: 19-Oct-12

Client: Conestoga-Rovers & Associates
Project: CEMC Cooper-JAL - SSOW - 039123
Work Order: **1210491**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
1210491-01	MW 13 101112	Water		10/11/2012 09:15	10/12/2012 09:20	☐
1210491-02	MW 12 101112	Water		10/11/2012 09:35	10/12/2012 09:20	☐
1210491-03	MW 3 101112	Water		10/11/2012 10:05	10/12/2012 09:20	☐
1210491-04	MW 1 101112	Water		10/11/2012 10:20	10/12/2012 09:20	☐
1210491-05	MW 2 101112	Water		10/11/2012 10:30	10/12/2012 09:20	☐
1210491-06	MW 2A 101112	Water		10/11/2012 10:40	10/12/2012 09:20	☐
1210491-07	RW 1 101112	Water		10/11/2012 11:15	10/12/2012 09:20	☐
1210491-08	MW 11 101112	Water		10/11/2012 14:00	10/12/2012 09:20	☐
1210491-09	MW 4 101112	Water		10/11/2012 11:40	10/12/2012 09:20	☐
1210491-10	MW 4A 101112	Water		10/11/2012 12:00	10/12/2012 09:20	☐
1210491-11	MW 5 101112	Water		10/11/2012 12:15	10/12/2012 09:20	☐
1210491-12	MW 5A 101112	Water		10/11/2012 12:25	10/12/2012 09:20	☐
1210491-13	RW 2 101112	Water		10/11/2012 12:30	10/12/2012 09:20	☐
1210491-14	MW 10 101112	Water		10/11/2012 13:00	10/12/2012 09:20	☐
1210491-15	MW 7 101112	Water		10/11/2012 13:20	10/12/2012 09:20	☐
1210491-16	MW 9 101112	Water		10/11/2012 13:35	10/12/2012 09:20	☐
1210491-17	MW 9A 101112	Water		10/11/2012 13:50	10/12/2012 09:20	☐
1210491-18	Dup 1 101112	Water		10/11/2012	10/12/2012 09:20	☐
1210491-19	MW 8 101112	Water		10/11/2012 14:25	10/12/2012 09:20	☐
1210491-20	Dup 2 101112	Water		10/11/2012	10/12/2012 09:20	☐

Client:	Conestoga-Rovers & Associates
Project:	CEMC Cooper-JAL - SSOW - 039123
Work Order:	1210491

Case Narrative

No exceptions.

ALS Environmental

Date: *19-Oct-12*

Client: Conestoga-Rovers & Associates

Project: CEMC Cooper-JAL - SSOW - 039123 **Work Order:** 1210491

Sample ID: MW 13 101112 **Lab ID:** 1210491-01

Collection Date: 10/11/2012 09:15 AM **Matrix:** WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Prep	Date Analyzed
DISSOLVED METALS			**SW6020**				Analyst: **IGF**
Calcium	**706**		**2.50**	**mg/L**	5	10/15/2012	10/17/2012 04:13 PM
Magnesium	**228**		**1.00**	**mg/L**	5	10/15/2012	10/17/2012 04:13 PM
Potassium	**14.4**		**1.00**	**mg/L**	5	10/15/2012	10/17/2012 04:13 PM
Sodium	**423**		**1.00**	**mg/L**	5	10/15/2012	10/17/2012 04:13 PM
ANIONS - EPA 300.0 (1993)			**E300**				Analyst: **JKP**
Chloride	**2,360**		**50.0**	**mg/L**	100		10/18/2012 04:12 PM
Fluoride	**0.307**	J	**0.500**	**mg/L**	5		10/12/2012 04:03 PM
Nitrogen, Nitrate (As N)	**2.70**		**0.500**	**mg/L**	5		10/12/2012 04:03 PM
Sulfate	**422**		**2.50**	**mg/L**	5		10/12/2012 04:03 PM
Surr: Selenate (surr)	*97.1*		*85-115*	*%REC*	100		10/18/2012 04:12 PM
Surr: Selenate (surr)	*103*		*85-115*	*%REC*	5		10/12/2012 04:03 PM
ALKALINITY-SM2320B			**SM2320B**				Analyst: **DM**
Alkalinity, Bicarbonate (As CaCO3	**204**		**5.00**	**mg/L**	1		10/18/2012 10:19 AM
Alkalinity, Carbonate (As CaCO3)	U		5.00	mg/L	1		10/18/2012 10:19 AM
Alkalinity, Hydroxide (As CaCO3)	U		5.00	mg/L	1		10/18/2012 10:19 AM
Alkalinity, Total (As CaCO3)	**204**		**5.00**	**mg/L**	1		10/18/2012 10:19 AM
TOTAL DISSOLVED SOLIDS			**M2540C**				Analyst: **KAH**
Total Dissolved Solids (Residue, Filterable)	**6,290**		**10.0**	**mg/L**	1		10/17/2012 02:30 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *19-Oct-12*

Client: Conestoga-Rovers & Associates

Project: CEMC Cooper-JAL - SSOW - 039123 **Work Order:** 1210491

Sample ID: MW 12 101112 **Lab ID:** 1210491-02

Collection Date: 10/11/2012 09:35 AM **Matrix:** WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Prep	Date Analyzed
DISSOLVED METALS			**SW6020**				Analyst: **IGF**
Calcium	**80.4**		**2.50**	**mg/L**	5	10/15/2012	10/17/2012 04:17 PM
Magnesium	**25.4**		**1.00**	**mg/L**	5	10/15/2012	10/17/2012 04:17 PM
Potassium	**5.44**		**1.00**	**mg/L**	5	10/15/2012	10/17/2012 04:17 PM
Sodium	**62.9**		**1.00**	**mg/L**	5	10/15/2012	10/17/2012 04:17 PM
ANIONS - EPA 300.0 (1993)			**E300**				Analyst: **JKP**
Chloride	**179**		**5.00**	**mg/L**	10		10/18/2012 04:33 PM
Fluoride	**0.705**		**0.100**	**mg/L**	1		10/12/2012 04:24 PM
Nitrogen, Nitrate (As N)	**0.791**		**0.100**	**mg/L**	1		10/12/2012 04:24 PM
Sulfate	**86.5**		**0.500**	**mg/L**	1		10/12/2012 04:24 PM
Surr: Selenate (surr)	*98.3*		*85-115*	*%REC*	10		10/18/2012 04:33 PM
Surr: Selenate (surr)	*102*		*85-115*	*%REC*	1		10/12/2012 04:24 PM
ALKALINITY-SM2320B			**SM2320B**				Analyst: **DM**
Alkalinity, Bicarbonate (As CaCO3	**145**		**5.00**	**mg/L**	1		10/18/2012 10:19 AM
Alkalinity, Carbonate (As CaCO3)	U		5.00	mg/L	1		10/18/2012 10:19 AM
Alkalinity, Hydroxide (As CaCO3)	U		5.00	mg/L	1		10/18/2012 10:19 AM
Alkalinity, Total (As CaCO3)	**145**		**5.00**	**mg/L**	1		10/18/2012 10:19 AM
TOTAL DISSOLVED SOLIDS			**M2540C**				Analyst: **KAH**
Total Dissolved Solids (Residue, Filterable)	**724**		**10.0**	**mg/L**	1		10/17/2012 02:30 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *19-Oct-12*

Client: Conestoga-Rovers & Associates

Project: CEMC Cooper-JAL - SSOW - 039123 **Work Order:** 1210491

Sample ID: MW 3 101112 **Lab ID:** 1210491-03

Collection Date: 10/11/2012 10:05 AM **Matrix:** WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Prep	Date Analyzed
DISSOLVED METALS			**SW6020**				Analyst: **IGF**
Calcium	**51.2**		**2.50**	**mg/L**	5	10/15/2012	10/17/2012 04:22 PM
Magnesium	**16.9**		**1.00**	**mg/L**	5	10/15/2012	10/17/2012 04:22 PM
Potassium	**4.11**		**1.00**	**mg/L**	5	10/15/2012	10/17/2012 04:22 PM
Sodium	**51.0**		**1.00**	**mg/L**	5	10/15/2012	10/17/2012 04:22 PM
ANIONS - EPA 300.0 (1993)			**E300**				Analyst: **JKP**
Chloride	**36.6**		**0.500**	**mg/L**	1		10/12/2012 04:45 PM
Fluoride	**1.01**		**0.100**	**mg/L**	1		10/12/2012 04:45 PM
Nitrogen, Nitrate (As N)	**1.74**		**0.100**	**mg/L**	1		10/12/2012 04:45 PM
Sulfate	**100**		**0.500**	**mg/L**	1		10/12/2012 04:45 PM
Surr: Selenate (surr)	*103*		*85-115*	*%REC*	1		10/12/2012 04:45 PM
ALKALINITY-SM2320B			**SM2320B**				Analyst: **DM**
Alkalinity, Bicarbonate (As CaCO3	**162**		**5.00**	**mg/L**	1		10/18/2012 10:19 AM
Alkalinity, Carbonate (As CaCO3)	U		5.00	mg/L	1		10/18/2012 10:19 AM
Alkalinity, Hydroxide (As CaCO3)	U		5.00	mg/L	1		10/18/2012 10:19 AM
Alkalinity, Total (As CaCO3)	**162**		**5.00**	**mg/L**	1		10/18/2012 10:19 AM
TOTAL DISSOLVED SOLIDS			**M2540C**				Analyst: **KAH**
Total Dissolved Solids (Residue, Filterable)	**438**		**10.0**	**mg/L**	1		10/17/2012 02:30 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *19-Oct-12*

Client: Conestoga-Rovers & Associates

Project: CEMC Cooper-JAL - SSOW - 039123 **Work Order:** 1210491

Sample ID: MW 1 101112 **Lab ID:** 1210491-04

Collection Date: 10/11/2012 10:20 AM **Matrix:** WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Prep	Date Analyzed
DISSOLVED METALS			**SW6020**				Analyst: **IGF**
Calcium	**132**		**2.50**	**mg/L**	5	10/15/2012	10/17/2012 04:28 PM
Magnesium	**145**		**1.00**	**mg/L**	5	10/15/2012	10/17/2012 04:28 PM
Potassium	**17.9**		**1.00**	**mg/L**	5	10/15/2012	10/17/2012 04:28 PM
Sodium	**1,140**		**10.0**	**mg/L**	50	10/15/2012	10/17/2012 08:36 PM
ANIONS - EPA 300.0 (1993)			**E300**				Analyst: **JKP**
Chloride	**2,190**		**50.0**	**mg/L**	100		10/19/2012 10:11 AM
Fluoride	**6.74**		**0.200**	**mg/L**	2		10/12/2012 05:07 PM
Nitrogen, Nitrate (As N)	**4.52**		**0.200**	**mg/L**	2		10/12/2012 05:07 PM
Sulfate	**301**		**5.00**	**mg/L**	10		10/18/2012 04:55 PM
Surr: Selenate (surr)	*104*		*85-115*	*%REC*	100		10/19/2012 10:11 AM
Surr: Selenate (surr)	*104*		*85-115*	*%REC*	2		10/12/2012 05:07 PM
Surr: Selenate (surr)	*98.5*		*85-115*	*%REC*	10		10/18/2012 04:55 PM
ALKALINITY-SM2320B			**SM2320B**				Analyst: **DM**
Alkalinity, Bicarbonate (As CaCO3	**190**		**5.00**	**mg/L**	1		10/18/2012 10:19 AM
Alkalinity, Carbonate (As CaCO3)	U		5.00	mg/L	1		10/18/2012 10:19 AM
Alkalinity, Hydroxide (As CaCO3)	U		5.00	mg/L	1		10/18/2012 10:19 AM
Alkalinity, Total (As CaCO3)	**190**		**5.00**	**mg/L**	1		10/18/2012 10:19 AM
TOTAL DISSOLVED SOLIDS			**M2540C**				Analyst: **KAH**
Total Dissolved Solids (Residue, Filterable)	**1,880**		**10.0**	**mg/L**	1		10/17/2012 02:30 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *19-Oct-12*

Client: Conestoga-Rovers & Associates

Project: CEMC Cooper-JAL - SSOW - 039123 **Work Order:** 1210491

Sample ID: MW 2 101112 **Lab ID:** 1210491-05

Collection Date: 10/11/2012 10:30 AM **Matrix:** WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Prep	Date Analyzed
DISSOLVED METALS			**SW6020**				Analyst: **IGF**
Calcium	**119**		**2.50**	**mg/L**	5	10/15/2012	10/17/2012 04:33 PM
Magnesium	**31.7**		**1.00**	**mg/L**	5	10/15/2012	10/17/2012 04:33 PM
Potassium	**8.78**		**1.00**	**mg/L**	5	10/15/2012	10/17/2012 04:33 PM
Sodium	**286**		**1.00**	**mg/L**	5	10/15/2012	10/17/2012 04:33 PM
ANIONS - EPA 300.0 (1993)			**E300**				Analyst: **JKP**
Chloride	**524**		**5.00**	**mg/L**	10		10/18/2012 05:17 PM
Fluoride	**0.546**		**0.100**	**mg/L**	1		10/12/2012 05:28 PM
Nitrogen, Nitrate (As N)	**1.92**		**0.100**	**mg/L**	1		10/12/2012 05:28 PM
Sulfate	**231**		**5.00**	**mg/L**	10		10/18/2012 05:17 PM
Surr: Selenate (surr)	*98.6*		*85-115*	*%REC*	10		10/18/2012 05:17 PM
Surr: Selenate (surr)	*104*		*85-115*	*%REC*	1		10/12/2012 05:28 PM
ALKALINITY-SM2320B			**SM2320B**				Analyst: **DM**
Alkalinity, Bicarbonate (As CaCO3	**149**		**5.00**	**mg/L**	1		10/18/2012 10:19 AM
Alkalinity, Carbonate (As CaCO3)	U		5.00	mg/L	1		10/18/2012 10:19 AM
Alkalinity, Hydroxide (As CaCO3)	U		5.00	mg/L	1		10/18/2012 10:19 AM
Alkalinity, Total (As CaCO3)	**149**		**5.00**	**mg/L**	1		10/18/2012 10:19 AM
TOTAL DISSOLVED SOLIDS			**M2540C**				Analyst: **KAH**
Total Dissolved Solids (Residue, Filterable)	**1,090**		**10.0**	**mg/L**	1		10/17/2012 02:30 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *19-Oct-12*

Client: Conestoga-Rovers & Associates

Project: CEMC Cooper-JAL - SSOW - 039123 **Work Order:** 1210491

Sample ID: MW 2A 101112 **Lab ID:** 1210491-06

Collection Date: 10/11/2012 10:40 AM **Matrix:** WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Prep	Date Analyzed
DISSOLVED METALS			**SW6020**				Analyst: **IGF**
Calcium	**69.2**		**2.50**	**mg/L**	5	10/15/2012	10/17/2012 04:37 PM
Magnesium	**15.7**		**1.00**	**mg/L**	5	10/15/2012	10/17/2012 04:37 PM
Potassium	**3.62**		**1.00**	**mg/L**	5	10/15/2012	10/17/2012 04:37 PM
Sodium	**45.3**		**1.00**	**mg/L**	5	10/15/2012	10/17/2012 04:37 PM
ANIONS - EPA 300.0 (1993)			**E300**				Analyst: **JKP**
Chloride	**76.5**		**0.500**	**mg/L**	1		10/12/2012 05:49 PM
Fluoride	**0.455**		**0.100**	**mg/L**	1		10/12/2012 05:49 PM
Nitrogen, Nitrate (As N)	**1.60**		**0.100**	**mg/L**	1		10/12/2012 05:49 PM
Sulfate	**79.4**		**0.500**	**mg/L**	1		10/12/2012 05:49 PM
Surr: Selenate (surr)	*104*		*85-115*	*%REC*	1		10/12/2012 05:49 PM
ALKALINITY-SM2320B			**SM2320B**				Analyst: **DM**
Alkalinity, Bicarbonate (As CaCO3	**173**		**5.00**	**mg/L**	1		10/18/2012 10:19 AM
Alkalinity, Carbonate (As CaCO3)	U		5.00	mg/L	1		10/18/2012 10:19 AM
Alkalinity, Hydroxide (As CaCO3)	U		5.00	mg/L	1		10/18/2012 10:19 AM
Alkalinity, Total (As CaCO3)	**173**		**5.00**	**mg/L**	1		10/18/2012 10:19 AM
TOTAL DISSOLVED SOLIDS			**M2540C**				Analyst: **KAH**
Total Dissolved Solids (Residue, Filterable)	**500**		**10.0**	**mg/L**	1		10/17/2012 02:30 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *19-Oct-12*

Client: Conestoga-Rovers & Associates

Project: CEMC Cooper-JAL - SSOW - 039123 **Work Order:** 1210491

Sample ID: RW 1 101112 **Lab ID:** 1210491-07

Collection Date: 10/11/2012 11:15 AM **Matrix:** WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Prep	Date Analyzed
DISSOLVED METALS			**SW6020**				Analyst: **IGF**
Calcium	**314**		**2.50**	**mg/L**	5	10/15/2012	10/17/2012 04:42 PM
Magnesium	**445**		**1.00**	**mg/L**	5	10/15/2012	10/17/2012 04:42 PM
Potassium	**28.0**		**1.00**	**mg/L**	5	10/15/2012	10/17/2012 04:42 PM
Sodium	**3,490**		**10.0**	**mg/L**	50	10/15/2012	10/17/2012 08:41 PM
ANIONS - EPA 300.0 (1993)			**E300**				Analyst: **JKP**
Chloride	**6,530**		**50.0**	**mg/L**	100		10/18/2012 05:38 PM
Fluoride	**2.19**		**0.500**	**mg/L**	5		10/12/2012 06:11 PM
Nitrogen, Nitrate (As N)	**4.75**		**0.500**	**mg/L**	5		10/12/2012 06:11 PM
Sulfate	**625**		**50.0**	**mg/L**	100		10/18/2012 05:38 PM
Surr: Selenate (surr)	*98.6*		*85-115*	*%REC*	100		10/18/2012 05:38 PM
Surr: Selenate (surr)	*104*		*85-115*	*%REC*	5		10/12/2012 06:11 PM
ALKALINITY-SM2320B			**SM2320B**				Analyst: **DM**
Alkalinity, Bicarbonate (As CaCO3	**263**		**5.00**	**mg/L**	1		10/18/2012 10:19 AM
Alkalinity, Carbonate (As CaCO3)	U		5.00	mg/L	1		10/18/2012 10:19 AM
Alkalinity, Hydroxide (As CaCO3)	U		5.00	mg/L	1		10/18/2012 10:19 AM
Alkalinity, Total (As CaCO3)	**263**		**5.00**	**mg/L**	1		10/18/2012 10:19 AM
TOTAL DISSOLVED SOLIDS			**M2540C**				Analyst: **KAH**
Total Dissolved Solids (Residue, Filterable)	**10,100**		**10.0**	**mg/L**	1		10/17/2012 02:30 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *19-Oct-12*

Client: Conestoga-Rovers & Associates

Project: CEMC Cooper-JAL - SSOW - 039123 **Work Order:** 1210491

Sample ID: MW 11 101112 **Lab ID:** 1210491-08

Collection Date: 10/11/2012 02:00 PM **Matrix:** WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Prep	Date Analyzed
DISSOLVED METALS			**SW6020**				Analyst: **IGF**
Calcium	**55.8**		**2.50**	**mg/L**	5	10/15/2012	10/17/2012 04:47 PM
Magnesium	**15.8**		**1.00**	**mg/L**	5	10/15/2012	10/17/2012 04:47 PM
Potassium	**3.80**		**1.00**	**mg/L**	5	10/15/2012	10/17/2012 04:47 PM
Sodium	**49.3**		**1.00**	**mg/L**	5	10/15/2012	10/17/2012 04:47 PM
ANIONS - EPA 300.0 (1993)			**E300**				Analyst: **JKP**
Chloride	**44.6**		**0.500**	**mg/L**	1		10/12/2012 07:14 PM
Fluoride	**1.49**		**0.100**	**mg/L**	1		10/12/2012 07:14 PM
Nitrogen, Nitrate (As N)	**1.74**		**0.100**	**mg/L**	1		10/12/2012 07:14 PM
Sulfate	**95.1**		**0.500**	**mg/L**	1		10/12/2012 07:14 PM
Surr: Selenate (surr)	*103*		*85-115*	*%REC*	1		10/12/2012 07:14 PM
ALKALINITY-SM2320B			**SM2320B**				Analyst: **DM**
Alkalinity, Bicarbonate (As CaCO3	**166**		**5.00**	**mg/L**	1		10/18/2012 10:19 AM
Alkalinity, Carbonate (As CaCO3)	U		5.00	mg/L	1		10/18/2012 10:19 AM
Alkalinity, Hydroxide (As CaCO3)	U		5.00	mg/L	1		10/18/2012 10:19 AM
Alkalinity, Total (As CaCO3)	**166**		**5.00**	**mg/L**	1		10/18/2012 10:19 AM
TOTAL DISSOLVED SOLIDS			**M2540C**				Analyst: **KAH**
Total Dissolved Solids (Residue, Filterable)	**440**		**10.0**	**mg/L**	1		10/17/2012 02:30 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *19-Oct-12*

Client: Conestoga-Rovers & Associates

Project: CEMC Cooper-JAL - SSOW - 039123 **Work Order:** 1210491

Sample ID: MW 4 101112 **Lab ID:** 1210491-09

Collection Date: 10/11/2012 11:40 AM **Matrix:** WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Prep	Date Analyzed
DISSOLVED METALS			**SW6020**				Analyst: **IGF**
Calcium	**434**		**2.50**	**mg/L**	5	10/15/2012	10/17/2012 04:52 PM
Magnesium	**334**		**1.00**	**mg/L**	5	10/15/2012	10/17/2012 04:52 PM
Potassium	**21.2**		**1.00**	**mg/L**	5	10/15/2012	10/17/2012 04:52 PM
Sodium	**2,620**		**10.0**	**mg/L**	50	10/15/2012	10/17/2012 08:46 PM
ANIONS - EPA 300.0 (1993)			**E300**				Analyst: **JKP**
Chloride	**5,850**		**50.0**	**mg/L**	100		10/19/2012 12:10 PM
Fluoride	**2.10**		**0.500**	**mg/L**	5		10/12/2012 07:36 PM
Nitrogen, Nitrate (As N)	**4.58**		**0.500**	**mg/L**	5		10/12/2012 07:36 PM
Sulfate	**629**		**50.0**	**mg/L**	100		10/19/2012 12:10 PM
Surr: Selenate (surr)	*102*		*85-115*	*%REC*	100		10/19/2012 12:10 PM
Surr: Selenate (surr)	*101*		*85-115*	*%REC*	5		10/12/2012 07:36 PM
ALKALINITY-SM2320B			**SM2320B**				Analyst: **DM**
Alkalinity, Bicarbonate (As CaCO3	**256**		**5.00**	**mg/L**	1		10/18/2012 10:19 AM
Alkalinity, Carbonate (As CaCO3)	U		5.00	mg/L	1		10/18/2012 10:19 AM
Alkalinity, Hydroxide (As CaCO3)	U		5.00	mg/L	1		10/18/2012 10:19 AM
Alkalinity, Total (As CaCO3)	**256**		**5.00**	**mg/L**	1		10/18/2012 10:19 AM
TOTAL DISSOLVED SOLIDS			**M2540C**				Analyst: **KAH**
Total Dissolved Solids (Residue, Filterable)	**12,000**		**10.0**	**mg/L**	1		10/17/2012 02:30 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *19-Oct-12*

Client: Conestoga-Rovers & Associates

Project: CEMC Cooper-JAL - SSOW - 039123 **Work Order:** 1210491

Sample ID: MW 4A 101112 **Lab ID:** 1210491-10

Collection Date: 10/11/2012 12:00 PM **Matrix:** WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Prep	Date Analyzed
DISSOLVED METALS			**SW6020**				Analyst: **IGF**
Calcium	**48.7**		**2.50**	**mg/L**	5	10/15/2012	10/17/2012 04:57 PM
Magnesium	**11.3**		**1.00**	**mg/L**	5	10/15/2012	10/17/2012 04:57 PM
Potassium	**4.45**		**1.00**	**mg/L**	5	10/15/2012	10/17/2012 04:57 PM
Sodium	**359**		**1.00**	**mg/L**	5	10/15/2012	10/17/2012 04:57 PM
ANIONS - EPA 300.0 (1993)			**E300**				Analyst: **JKP**
Chloride	**516**		**5.00**	**mg/L**	10		10/18/2012 06:00 PM
Fluoride	**1.12**		**0.100**	**mg/L**	1		10/12/2012 07:57 PM
Nitrogen, Nitrate (As N)	**2.60**		**0.100**	**mg/L**	1		10/12/2012 07:57 PM
Sulfate	**100**		**5.00**	**mg/L**	10		10/18/2012 06:00 PM
Surr: Selenate (surr)	*97.6*		*85-115*	*%REC*	10		10/18/2012 06:00 PM
Surr: Selenate (surr)	*106*		*85-115*	*%REC*	1		10/12/2012 07:57 PM
ALKALINITY-SM2320B			**SM2320B**				Analyst: **DM**
Alkalinity, Bicarbonate (As CaCO3	**169**		**5.00**	**mg/L**	1		10/18/2012 10:19 AM
Alkalinity, Carbonate (As CaCO3)	U		5.00	mg/L	1		10/18/2012 10:19 AM
Alkalinity, Hydroxide (As CaCO3)	U		5.00	mg/L	1		10/18/2012 10:19 AM
Alkalinity, Total (As CaCO3)	**169**		**5.00**	**mg/L**	1		10/18/2012 10:19 AM
TOTAL DISSOLVED SOLIDS			**M2540C**				Analyst: **KAH**
Total Dissolved Solids (Residue, Filterable)	**1,200**		**10.0**	**mg/L**	1		10/17/2012 02:30 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *19-Oct-12*

Client: Conestoga-Rovers & Associates

Project: CEMC Cooper-JAL - SSOW - 039123 **Work Order:** 1210491

Sample ID: MW 5 101112 **Lab ID:** 1210491-11

Collection Date: 10/11/2012 12:15 PM **Matrix:** WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Prep	Date Analyzed
DISSOLVED METALS			**SW6020**				Analyst: **SKS**
Calcium	**671**		**10.0**	**mg/L**	20	10/15/2012	10/19/2012 03:44 PM
Magnesium	**239**		**4.00**	**mg/L**	20	10/15/2012	10/17/2012 08:17 PM
Potassium	**17.0**		**0.200**	**mg/L**	1	10/15/2012	10/17/2012 03:34 PM
Sodium	**1,360**		**4.00**	**mg/L**	20	10/15/2012	10/17/2012 08:17 PM
ANIONS - EPA 300.0 (1993)			**E300**				Analyst: **JKP**
Chloride	**3,630**		**50.0**	**mg/L**	100		10/18/2012 07:05 PM
Fluoride	**0.376**	J	**0.500**	**mg/L**	5		10/12/2012 08:18 PM
Nitrogen, Nitrate (As N)	**2.26**		**0.500**	**mg/L**	5		10/12/2012 08:18 PM
Sulfate	**474**		**2.50**	**mg/L**	5		10/12/2012 08:18 PM
Surr: Selenate (surr)	*98.9*		*85-115*	*%REC*	100		10/18/2012 07:05 PM
Surr: Selenate (surr)	*105*		*85-115*	*%REC*	5		10/12/2012 08:18 PM
ALKALINITY-SM2320B			**SM2320B**				Analyst: **DM**
Alkalinity, Bicarbonate (As CaCO3	**164**		**5.00**	**mg/L**	1		10/18/2012 10:19 AM
Alkalinity, Carbonate (As CaCO3)	U		5.00	mg/L	1		10/18/2012 10:19 AM
Alkalinity, Hydroxide (As CaCO3)	U		5.00	mg/L	1		10/18/2012 10:19 AM
Alkalinity, Total (As CaCO3)	**164**		**5.00**	**mg/L**	1		10/18/2012 10:19 AM
TOTAL DISSOLVED SOLIDS			**M2540C**				Analyst: **KAH**
Total Dissolved Solids (Residue, Filterable)	**8,300**		**10.0**	**mg/L**	1		10/17/2012 02:30 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *19-Oct-12*

Client: Conestoga-Rovers & Associates

Project: CEMC Cooper-JAL - SSOW - 039123 **Work Order:** 1210491

Sample ID: MW 5A 101112 **Lab ID:** 1210491-12

Collection Date: 10/11/2012 12:25 PM **Matrix:** WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Prep	Date Analyzed
DISSOLVED METALS			**SW6020**				Analyst: **IGF**
Calcium	**60.6**		**2.50**	**mg/L**	5	10/15/2012	10/17/2012 05:11 PM
Magnesium	**15.3**		**1.00**	**mg/L**	5	10/15/2012	10/17/2012 05:11 PM
Potassium	**3.96**		**1.00**	**mg/L**	5	10/15/2012	10/17/2012 05:11 PM
Sodium	**49.2**		**1.00**	**mg/L**	5	10/15/2012	10/17/2012 05:11 PM
ANIONS - EPA 300.0 (1993)			**E300**				Analyst: **JKP**
Chloride	**68.0**		**0.500**	**mg/L**	1		10/12/2012 08:40 PM
Fluoride	**0.631**		**0.100**	**mg/L**	1		10/12/2012 08:40 PM
Nitrogen, Nitrate (As N)	**1.57**		**0.100**	**mg/L**	1		10/12/2012 08:40 PM
Sulfate	**69.8**		**0.500**	**mg/L**	1		10/12/2012 08:40 PM
Surr: Selenate (surr)	*105*		*85-115*	*%REC*	1		10/12/2012 08:40 PM
ALKALINITY-SM2320B			**SM2320B**				Analyst: **DM**
Alkalinity, Bicarbonate (As CaCO3	**163**		**5.00**	**mg/L**	1		10/18/2012 10:19 AM
Alkalinity, Carbonate (As CaCO3)	U		5.00	mg/L	1		10/18/2012 10:19 AM
Alkalinity, Hydroxide (As CaCO3)	U		5.00	mg/L	1		10/18/2012 10:19 AM
Alkalinity, Total (As CaCO3)	**163**		**5.00**	**mg/L**	1		10/18/2012 10:19 AM
TOTAL DISSOLVED SOLIDS			**M2540C**				Analyst: **KAH**
Total Dissolved Solids (Residue, Filterable)	**534**		**10.0**	**mg/L**	1		10/17/2012 02:30 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *19-Oct-12*

Client: Conestoga-Rovers & Associates

Project: CEMC Cooper-JAL - SSOW - 039123 **Work Order:** 1210491

Sample ID: RW 2 101112 **Lab ID:** 1210491-13

Collection Date: 10/11/2012 12:30 PM **Matrix:** WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Prep	Date Analyzed
DISSOLVED METALS			**SW6020**				Analyst: **IGF**
Calcium	**842**		**2.50**	**mg/L**	5	10/15/2012	10/17/2012 05:16 PM
Magnesium	**0.464**		**0.400**	**mg/L**	2	10/15/2012	10/17/2012 08:51 PM
Potassium	**9.30**		**1.00**	**mg/L**	5	10/15/2012	10/17/2012 05:16 PM
Sodium	**385**		**1.00**	**mg/L**	5	10/15/2012	10/17/2012 05:16 PM
ANIONS - EPA 300.0 (1993)			**E300**				Analyst: **JKP**
Chloride	**1,920**		**50.0**	**mg/L**	100		10/18/2012 07:27 PM
Fluoride	U		0.500	mg/L	5		10/12/2012 09:01 PM
Nitrogen, Nitrate (As N)	**1.93**		**0.500**	**mg/L**	5		10/12/2012 09:01 PM
Sulfate	**223**		**2.50**	**mg/L**	5		10/12/2012 09:01 PM
Surr: Selenate (surr)	*94.3*		*85-115*	*%REC*	100		10/18/2012 07:27 PM
Surr: Selenate (surr)	*106*		*85-115*	*%REC*	5		10/12/2012 09:01 PM
ALKALINITY-SM2320B			**SM2320B**				Analyst: **DM**
Alkalinity, Bicarbonate (As CaCO3)	U		5.00	mg/L	1		10/18/2012 10:19 AM
Alkalinity, Carbonate (As CaCO3)	**27.1**		**5.00**	**mg/L**	1		10/18/2012 10:19 AM
Alkalinity, Hydroxide (As CaCO3)	**175**		**5.00**	**mg/L**	1		10/18/2012 10:19 AM
Alkalinity, Total (As CaCO3)	**202**		**5.00**	**mg/L**	1		10/18/2012 10:19 AM
TOTAL DISSOLVED SOLIDS			**M2540C**				Analyst: **KAH**
Total Dissolved Solids (Residue, Filterable)	**6,680**		**10.0**	**mg/L**	1		10/17/2012 02:30 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *19-Oct-12*

Client: Conestoga-Rovers & Associates

Project: CEMC Cooper-JAL - SSOW - 039123 **Work Order:** 1210491

Sample ID: MW 10 101112 **Lab ID:** 1210491-14

Collection Date: 10/11/2012 01:00 PM **Matrix:** WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Prep	Date Analyzed
DISSOLVED METALS			**SW6020**				Analyst: **IGF**
Calcium	**113**		**2.50**	**mg/L**	5	10/15/2012	10/17/2012 05:24 PM
Magnesium	**34.3**		**1.00**	**mg/L**	5	10/15/2012	10/17/2012 05:24 PM
Potassium	**5.68**		**1.00**	**mg/L**	5	10/15/2012	10/17/2012 05:24 PM
Sodium	**67.6**		**1.00**	**mg/L**	5	10/15/2012	10/17/2012 05:24 PM
ANIONS - EPA 300.0 (1993)			**E300**				Analyst: **JKP**
Chloride	**255**		**5.00**	**mg/L**	10		10/18/2012 07:49 PM
Fluoride	**1.32**		**0.100**	**mg/L**	1		10/12/2012 09:22 PM
Nitrogen, Nitrate (As N)	**1.75**		**0.100**	**mg/L**	1		10/12/2012 09:22 PM
Sulfate	**98.7**		**5.00**	**mg/L**	10		10/18/2012 07:49 PM
Surr: Selenate (surr)	*95.6*		*85-115*	*%REC*	10		10/18/2012 07:49 PM
Surr: Selenate (surr)	*105*		*85-115*	*%REC*	1		10/12/2012 09:22 PM
ALKALINITY-SM2320B			**SM2320B**				Analyst: **DM**
Alkalinity, Bicarbonate (As CaCO3	**151**		**5.00**	**mg/L**	1		10/18/2012 10:19 AM
Alkalinity, Carbonate (As CaCO3)	U		5.00	mg/L	1		10/18/2012 10:19 AM
Alkalinity, Hydroxide (As CaCO3)	U		5.00	mg/L	1		10/18/2012 10:19 AM
Alkalinity, Total (As CaCO3)	**151**		**5.00**	**mg/L**	1		10/18/2012 10:19 AM
TOTAL DISSOLVED SOLIDS			**M2540C**				Analyst: **KAH**
Total Dissolved Solids (Residue, Filterable)	**1,010**		**10.0**	**mg/L**	1		10/17/2012 02:30 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *19-Oct-12*

Client: Conestoga-Rovers & Associates

Project: CEMC Cooper-JAL - SSOW - 039123 **Work Order:** 1210491

Sample ID: MW 7 101112 **Lab ID:** 1210491-15

Collection Date: 10/11/2012 01:20 PM **Matrix:** WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Prep	Date Analyzed
DISSOLVED METALS			**SW6020**				Analyst: **IGF**
Calcium	**619**		**2.50**	**mg/L**	5	10/15/2012	10/17/2012 05:29 PM
Magnesium	**215**		**1.00**	**mg/L**	5	10/15/2012	10/17/2012 05:29 PM
Potassium	**12.3**		**1.00**	**mg/L**	5	10/15/2012	10/17/2012 05:29 PM
Sodium	**208**		**1.00**	**mg/L**	5	10/15/2012	10/17/2012 05:29 PM
ANIONS - EPA 300.0 (1993)			**E300**				Analyst: **JKP**
Chloride	**2,020**		**50.0**	**mg/L**	100		10/18/2012 08:10 PM
Fluoride	**0.439**	J	**0.500**	**mg/L**	5		10/12/2012 09:43 PM
Nitrogen, Nitrate (As N)	**1.71**		**0.500**	**mg/L**	5		10/12/2012 09:43 PM
Sulfate	**261**		**2.50**	**mg/L**	5		10/12/2012 09:43 PM
Surr: Selenate (surr)	*95.8*		*85-115*	*%REC*	100		10/18/2012 08:10 PM
Surr: Selenate (surr)	*106*		*85-115*	*%REC*	5		10/12/2012 09:43 PM
ALKALINITY-SM2320B			**SM2320B**				Analyst: **DM**
Alkalinity, Bicarbonate (As CaCO3	**108**		**5.00**	**mg/L**	1		10/18/2012 10:19 AM
Alkalinity, Carbonate (As CaCO3)	U		5.00	mg/L	1		10/18/2012 10:19 AM
Alkalinity, Hydroxide (As CaCO3)	U		5.00	mg/L	1		10/18/2012 10:19 AM
Alkalinity, Total (As CaCO3)	**108**		**5.00**	**mg/L**	1		10/18/2012 10:19 AM
TOTAL DISSOLVED SOLIDS			**M2540C**				Analyst: **KAH**
Total Dissolved Solids (Residue, Filterable)	**5,580**		**10.0**	**mg/L**	1		10/17/2012 02:30 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *19-Oct-12*

Client: Conestoga-Rovers & Associates

Project: CEMC Cooper-JAL - SSOW - 039123 **Work Order:** 1210491

Sample ID: MW 9 101112 **Lab ID:** 1210491-16

Collection Date: 10/11/2012 01:35 PM **Matrix:** WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Prep	Date Analyzed
DISSOLVED METALS			**SW6020**				Analyst: **IGF**
Calcium	**80.5**		**2.50**	**mg/L**	5	10/15/2012	10/17/2012 05:34 PM
Magnesium	**25.8**		**1.00**	**mg/L**	5	10/15/2012	10/17/2012 05:34 PM
Potassium	**4.94**		**1.00**	**mg/L**	5	10/15/2012	10/17/2012 05:34 PM
Sodium	**59.8**		**1.00**	**mg/L**	5	10/15/2012	10/17/2012 05:34 PM
ANIONS - EPA 300.0 (1993)			**E300**				Analyst: **JKP**
Chloride	**148**		**5.00**	**mg/L**	10		10/18/2012 08:32 PM
Fluoride	**1.90**		**0.100**	**mg/L**	1		10/12/2012 10:05 PM
Nitrogen, Nitrate (As N)	**1.71**		**0.100**	**mg/L**	1		10/12/2012 10:05 PM
Sulfate	**98.7**		**0.500**	**mg/L**	1		10/12/2012 10:05 PM
Surr: Selenate (surr)	*94.0*		*85-115*	*%REC*	10		10/18/2012 08:32 PM
Surr: Selenate (surr)	*107*		*85-115*	*%REC*	1		10/12/2012 10:05 PM
ALKALINITY-SM2320B			**SM2320B**				Analyst: **DM**
Alkalinity, Bicarbonate (As CaCO3	**147**		**5.00**	**mg/L**	1		10/18/2012 10:19 AM
Alkalinity, Carbonate (As CaCO3)	U		5.00	mg/L	1		10/18/2012 10:19 AM
Alkalinity, Hydroxide (As CaCO3)	U		5.00	mg/L	1		10/18/2012 10:19 AM
Alkalinity, Total (As CaCO3)	**147**		**5.00**	**mg/L**	1		10/18/2012 10:19 AM
TOTAL DISSOLVED SOLIDS			**M2540C**				Analyst: **KAH**
Total Dissolved Solids (Residue, Filterable)	**644**		**10.0**	**mg/L**	1		10/17/2012 02:30 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *19-Oct-12*

Client: Conestoga-Rovers & Associates

Project: CEMC Cooper-JAL - SSOW - 039123 **Work Order:** 1210491

Sample ID: MW 9A 101112 **Lab ID:** 1210491-17

Collection Date: 10/11/2012 01:50 PM **Matrix:** WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Prep	Date Analyzed
DISSOLVED METALS			**SW6020**				Analyst: **IGF**
Calcium	**235**		**2.50**	**mg/L**	5	10/15/2012	10/17/2012 05:39 PM
Magnesium	**60.4**		**1.00**	**mg/L**	5	10/15/2012	10/17/2012 05:39 PM
Potassium	**6.72**		**1.00**	**mg/L**	5	10/15/2012	10/17/2012 05:39 PM
Sodium	**94.0**		**1.00**	**mg/L**	5	10/15/2012	10/17/2012 05:39 PM
ANIONS - EPA 300.0 (1993)			**E300**				Analyst: **JKP**
Chloride	**628**		**5.00**	**mg/L**	10		10/18/2012 08:54 PM
Fluoride	**0.366**		**0.100**	**mg/L**	1		10/12/2012 10:26 PM
Nitrogen, Nitrate (As N)	**1.70**		**0.100**	**mg/L**	1		10/12/2012 10:26 PM
Sulfate	**121**		**5.00**	**mg/L**	10		10/18/2012 08:54 PM
Surr: Selenate (surr)	*94.4*		*85-115*	*%REC*	10		10/18/2012 08:54 PM
Surr: Selenate (surr)	*104*		*85-115*	*%REC*	1		10/12/2012 10:26 PM
ALKALINITY-SM2320B			**SM2320B**				Analyst: **DM**
Alkalinity, Bicarbonate (As CaCO3	**125**		**5.00**	**mg/L**	1		10/18/2012 10:19 AM
Alkalinity, Carbonate (As CaCO3)	U		5.00	mg/L	1		10/18/2012 10:19 AM
Alkalinity, Hydroxide (As CaCO3)	U		5.00	mg/L	1		10/18/2012 10:19 AM
Alkalinity, Total (As CaCO3)	**125**		**5.00**	**mg/L**	1		10/18/2012 10:19 AM
TOTAL DISSOLVED SOLIDS			**M2540C**				Analyst: **KAH**
Total Dissolved Solids (Residue, Filterable)	**1,810**		**10.0**	**mg/L**	1		10/17/2012 02:30 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *19-Oct-12*

Client: Conestoga-Rovers & Associates

Project: CEMC Cooper-JAL - SSOW - 039123 **Work Order:** 1210491

Sample ID: Dup 1 101112 **Lab ID:** 1210491-18

Collection Date: 10/11/2012 **Matrix:** WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Prep	Date Analyzed
DISSOLVED METALS			**SW6020**				Analyst: **SKS**
Calcium	**1,090**		**10.0**	**mg/L**	20	10/15/2012	10/19/2012 03:53 PM
Magnesium	**2.42**		**1.00**	**mg/L**	5	10/15/2012	10/17/2012 05:44 PM
Potassium	**10.5**		**1.00**	**mg/L**	5	10/15/2012	10/17/2012 05:44 PM
Sodium	**430**		**1.00**	**mg/L**	5	10/15/2012	10/17/2012 05:44 PM
ANIONS - EPA 300.0 (1993)			**E300**				Analyst: **JKP**
Chloride	**2,310**		**50.0**	**mg/L**	100		10/18/2012 09:15 PM
Fluoride	U		0.500	mg/L	5		10/12/2012 11:30 PM
Nitrogen, Nitrate (As N)	**1.98**		**0.500**	**mg/L**	5		10/12/2012 11:30 PM
Sulfate	**228**		**2.50**	**mg/L**	5		10/12/2012 11:30 PM
Surr: Selenate (surr)	*91.1*		*85-115*	*%REC*	100		10/18/2012 09:15 PM
Surr: Selenate (surr)	*108*		*85-115*	*%REC*	5		10/12/2012 11:30 PM
ALKALINITY-SM2320B			**SM2320B**				Analyst: **DM**
Alkalinity, Bicarbonate (As CaCO3)	U		5.00	mg/L	1		10/18/2012 10:19 AM
Alkalinity, Carbonate (As CaCO3)	**31.9**		**5.00**	**mg/L**	1		10/18/2012 10:19 AM
Alkalinity, Hydroxide (As CaCO3)	**174**		**5.00**	**mg/L**	1		10/18/2012 10:19 AM
Alkalinity, Total (As CaCO3)	**206**		**5.00**	**mg/L**	1		10/18/2012 10:19 AM
TOTAL DISSOLVED SOLIDS			**M2540C**				Analyst: **KAH**
Total Dissolved Solids (Residue, Filterable)	**5,250**		**10.0**	**mg/L**	1		10/17/2012 02:30 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *19-Oct-12*

Client: Conestoga-Rovers & Associates

Project: CEMC Cooper-JAL - SSOW - 039123 **Work Order:** 1210491

Sample ID: MW 8 101112 **Lab ID:** 1210491-19

Collection Date: 10/11/2012 02:25 PM **Matrix:** WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Prep	Date Analyzed
DISSOLVED METALS			**SW6020**				Analyst: **IGF**
Calcium	**49.0**		**2.50**	**mg/L**	5	10/15/2012	10/17/2012 05:48 PM
Magnesium	**16.6**		**1.00**	**mg/L**	5	10/15/2012	10/17/2012 05:48 PM
Potassium	**4.30**		**1.00**	**mg/L**	5	10/15/2012	10/17/2012 05:48 PM
Sodium	**49.0**		**1.00**	**mg/L**	5	10/15/2012	10/17/2012 05:48 PM
ANIONS - EPA 300.0 (1993)			**E300**				Analyst: **JKP**
Chloride	**39.9**		**0.500**	**mg/L**	1		10/12/2012 11:51 PM
Fluoride	**1.29**		**0.100**	**mg/L**	1		10/12/2012 11:51 PM
Nitrogen, Nitrate (As N)	**1.83**		**0.100**	**mg/L**	1		10/12/2012 11:51 PM
Sulfate	**103**		**0.500**	**mg/L**	1		10/12/2012 11:51 PM
Surr: Selenate (surr)	*109*		*85-115*	*%REC*	1		10/12/2012 11:51 PM
ALKALINITY-SM2320B			**SM2320B**				Analyst: **DM**
Alkalinity, Bicarbonate (As CaCO3	**158**		**5.00**	**mg/L**	1		10/18/2012 10:19 AM
Alkalinity, Carbonate (As CaCO3)	U		5.00	mg/L	1		10/18/2012 10:19 AM
Alkalinity, Hydroxide (As CaCO3)	U		5.00	mg/L	1		10/18/2012 10:19 AM
Alkalinity, Total (As CaCO3)	**158**		**5.00**	**mg/L**	1		10/18/2012 10:19 AM
TOTAL DISSOLVED SOLIDS			**M2540C**				Analyst: **KAH**
Total Dissolved Solids (Residue, Filterable)	**444**		**10.0**	**mg/L**	1		10/17/2012 02:30 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *19-Oct-12*

Client: Conestoga-Rovers & Associates

Project: CEMC Cooper-JAL - SSOW - 039123 **Work Order:** 1210491

Sample ID: Dup 2 101112 **Lab ID:** 1210491-20

Collection Date: 10/11/2012 **Matrix:** WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Prep	Date Analyzed
DISSOLVED METALS			**SW6020**				Analyst: **IGF**
Calcium	**128**		**2.50**	**mg/L**	5	10/15/2012	10/17/2012 05:54 PM
Magnesium	**156**		**1.00**	**mg/L**	5	10/15/2012	10/17/2012 05:54 PM
Potassium	**18.6**		**1.00**	**mg/L**	5	10/15/2012	10/17/2012 05:54 PM
Sodium	**1,260**		**10.0**	**mg/L**	50	10/15/2012	10/17/2012 09:11 PM
ANIONS - EPA 300.0 (1993)			**E300**				Analyst: **JKP**
Chloride	**2,440**		**50.0**	**mg/L**	100		10/18/2012 09:37 PM
Fluoride	**0.308**		**0.100**	**mg/L**	1		10/13/2012 12:12 AM
Nitrogen, Nitrate (As N)	**1.23**		**0.100**	**mg/L**	1		10/13/2012 12:12 AM
Sulfate	**194**		**50.0**	**mg/L**	100		10/18/2012 09:37 PM
Surr: Selenate (surr)	*93.7*		*85-115*	*%REC*	100		10/18/2012 09:37 PM
Surr: Selenate (surr)	*105*		*85-115*	*%REC*	1		10/13/2012 12:12 AM
ALKALINITY-SM2320B			**SM2320B**				Analyst: **DM**
Alkalinity, Bicarbonate (As CaCO3	**286**		**5.00**	**mg/L**	1		10/18/2012 10:19 AM
Alkalinity, Carbonate (As CaCO3)	U		5.00	mg/L	1		10/18/2012 10:19 AM
Alkalinity, Hydroxide (As CaCO3)	U		5.00	mg/L	1		10/18/2012 10:19 AM
Alkalinity, Total (As CaCO3)	**286**		**5.00**	**mg/L**	1		10/18/2012 10:19 AM
TOTAL DISSOLVED SOLIDS			**M2540C**				Analyst: **KAH**
Total Dissolved Solids (Residue, Filterable)	**17,000**		**10.0**	**mg/L**	1		10/17/2012 02:30 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

QC BATCH REPORT

Batch ID: **65006** Instrument ID **ICPMS03** Method: **SW6020** **(Dissolve)**

MBLK Sample ID: **MBLKW2-101512-65006** Units: **mg/L** Analysis Date: **10/17/2012 03:23 PM**

Client ID: Run ID: **ICPMS03_121017A** SeqNo: **2986612** Prep Date: **10/15/2012** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	U	0.50								
Magnesium	U	0.20								
Potassium	U	0.20								
Sodium	U	0.20								

LCS Sample ID: **MLCSW2-101512-65006** Units: **mg/L** Analysis Date: **10/17/2012 03:29 PM**

Client ID: Run ID: **ICPMS03_121017A** SeqNo: **2986613** Prep Date: **10/15/2012** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	5.121	0.50	5	0	102	80-120	0			
Magnesium	5.191	0.20	5	0	104	80-120	0			
Potassium	5.241	0.20	5	0	105	80-120	0			
Sodium	5.182	0.20	5	0	104	80-120	0			

MS Sample ID: **1210491-11AMS** Units: **mg/L** Analysis Date: **10/17/2012 03:43 PM**

Client ID: **MW 5 101112** Run ID: **ICPMS03_121017A** SeqNo: **2986617** Prep Date: **10/15/2012** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	675.1	0.50	5	689.8	-294	75-125	0			SEO
Magnesium	245.9	0.20	5	248.3	-48	75-125	0			SEO
Potassium	21.66	0.20	5	16.96	94	75-125	0			
Sodium	U	0.20	5	0	0	75-125	0			SX

MSD Sample ID: **1210491-11AMSD** Units: **mg/L** Analysis Date: **10/17/2012 03:48 PM**

Client ID: **MW 5 101112** Run ID: **ICPMS03_121017A** SeqNo: **2986618** Prep Date: **10/15/2012** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	658.9	0.50	5	689.8	-618	75-125	675.1	2.43	25	SEO
Magnesium	245.7	0.20	5	248.3	-52	75-125	245.9	0.0814	25	SEO
Potassium	21.75	0.20	5	16.96	95.8	75-125	21.66	0.415	25	
Sodium	U	0.20	5	0	0	75-125	0	0	25	SX

DUP Sample ID: **1210491-11ADUP** Units: **mg/L** Analysis Date: **10/17/2012 03:38 PM**

Client ID: **MW 5 101112** Run ID: **ICPMS03_121017A** SeqNo: **2986616** Prep Date: **10/15/2012** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Potassium	16.51	0.20	0	0	0	0-0	16.96	2.69	25	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Conestoga-Rovers & Associates
Work Order: 1210491
Project: CEMC Cooper-JAL - SSOW - 039123

QC BATCH REPORT

Batch ID: **65006** Instrument ID **ICPMS03** Method: **SW6020** **(Dissolve)**

DUP Sample ID: **1210491-11ADUP** Units: **mg/L** Analysis Date: **10/17/2012 08:22 PM**

Client ID: **MW 5 101112** Run ID: **ICPMS03_121017A** SeqNo: **2987351** Prep Date: **10/15/2012** DF: **20**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Magnesium	246.2	4.0	0	0	0	0-0	238.8	3.05	25	
Sodium	1402	4.0	0	0	0	0-0	1359	3.12	25	

DUP Sample ID: **1210491-11ADUP** Units: **mg/L** Analysis Date: **10/19/2012 03:46 PM**

Client ID: **MW 5 101112** Run ID: **ICPMS05_121019A** SeqNo: **2990051** Prep Date: **10/15/2012** DF: **20**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	704.4	10	0	0	0	0-0	671	4.87	25	

The following samples were analyzed in this batch:

1210491-01A	1210491-02A	1210491-03A
1210491-04A	1210491-05A	1210491-06A
1210491-07A	1210491-08A	1210491-09A
1210491-10A	1210491-11A	1210491-12A
1210491-13A	1210491-14A	1210491-15A
1210491-16A	1210491-17A	1210491-18A
1210491-19A	1210491-20A	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Conestoga-Rovers & Associates
Work Order: 1210491
Project: CEMC Cooper-JAL - SSOW - 039123

QC BATCH REPORT

Batch ID: **R136774** Instrument ID **ICS3000** Method: **E300** **(Dissolve)**

MBLK Sample ID: **WBLKW1-R136774** Units: **mg/L** Analysis Date: **10/12/2012 03:20 PM**
Client ID: Run ID: **ICS3000_121012A** SeqNo: **2982445** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	U	0.50								
Fluoride	U	0.10								
Nitrogen, Nitrate (As N)	U	0.10								
Sulfate	U	0.50								
Surr: Selenate (surr)	*5.28*	0.10	*5*	0	*106*	*85-115*	0			

LCS Sample ID: **WLCSW1-R136774** Units: **mg/L** Analysis Date: **10/12/2012 03:42 PM**
Client ID: Run ID: **ICS3000_121012A** SeqNo: **2982446** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	21.5	0.50	20	0	107	90-110	0			
Fluoride	4.207	0.10	4	0	105	90-110	0			
Nitrogen, Nitrate (As N)	4.045	0.10	4	0	101	90-110	0			
Sulfate	20.23	0.50	20	0	101	90-110	0			
Surr: Selenate (surr)	*5.243*	0.10	*5*	0	*105*	*85-115*	0			

MS Sample ID: **1210491-20BMS** Units: **mg/L** Analysis Date: **10/13/2012 12:34 AM**
Client ID: **Dup 2 101112** Run ID: **ICS3000_121012A** SeqNo: **2982472** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	1773	0.50	10	1794	-208	80-120	0			SEO
Fluoride	2.355	0.10	2	0.3084	102	80-120	0			
Nitrogen, Nitrate (As N)	3.407	0.10	2	1.232	109	80-120	0			
Sulfate	184.4	0.50	10	177.1	72.8	80-120	0			SEO
Surr: Selenate (surr)	*5.204*	0.10	*5*	0	*104*	*85-115*	0			

MSD Sample ID: **1210491-20BMSD** Units: **mg/L** Analysis Date: **10/13/2012 12:55 AM**
Client ID: **Dup 2 101112** Run ID: **ICS3000_121012A** SeqNo: **2982473** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	1784	0.50	10	1794	-101	80-120	0			SEO
Fluoride	2.359	0.10	2	0.3084	103	80-120	0			
Nitrogen, Nitrate (As N)	3.446	0.10	2	1.232	111	80-120	0			
Sulfate	185.6	0.50	10	177.1	85.3	80-120	0			EO
Surr: Selenate (surr)	*5.245*	0.10	*5*	0	*105*	*85-115*	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Conestoga-Rovers & Associates
Work Order: 1210491
Project: CEMC Cooper-JAL - SSOW - 039123

QC BATCH REPORT

Batch ID: **R136774** Instrument ID **ICS3000** Method: **E300** **(Dissolve)**

The following samples were analyzed in this batch:

1210491-01B	1210491-02B	1210491-03B
1210491-04B	1210491-05B	1210491-06B
1210491-07B	1210491-08B	1210491-09B
1210491-10B	1210491-11B	1210491-12B
1210491-13B	1210491-14B	1210491-15B
1210491-16B	1210491-17B	1210491-18B
1210491-19B	1210491-20B	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Conestoga-Rovers & Associates
Work Order: 1210491
Project: CEMC Cooper-JAL - SSOW - 039123

QC BATCH REPORT

Batch ID: **R137023** Instrument ID **WetChem** Method: **SM2320B** **(Dissolve)**

MBLK Sample ID: **WBLKW1-101812-R137023** Units: **mg/L** Analysis Date: **10/18/2012 10:19 AM**
Client ID: Run ID: **WETCHEM_121018F** SeqNo: **2988067** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Bicarbonate (As CaCO3)	U	5.0								
Alkalinity, Carbonate (As CaCO3)	U	5.0								
Alkalinity, Hydroxide (As CaCO3)	U	5.0								
Alkalinity, Total (As CaCO3)	U	5.0								

LCS Sample ID: **WLCSW1-101812-R137023** Units: **mg/L** Analysis Date: **10/18/2012 10:19 AM**
Client ID: Run ID: **WETCHEM_121018F** SeqNo: **2988068** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Total (As CaCO3)	985.2	5.0	1000	0	98.5	80-120	0			

DUP Sample ID: **1210491-02BDUP** Units: **mg/L** Analysis Date: **10/18/2012 10:19 AM**
Client ID: **MW 12 101112** Run ID: **WETCHEM_121018F** SeqNo: **2988090** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Bicarbonate (As CaCO3)	144	5.0	0	0	0	0-0	144.5	0.374	0	
Alkalinity, Carbonate (As CaCO3)	U	5.0	0	0	0	0-0	0	0	0	
Alkalinity, Hydroxide (As CaCO3)	U	5.0	0	0	0	0-0	0	0	0	
Alkalinity, Total (As CaCO3)	144	5.0	0	0	0	0-0	144.5	0.374	20	

The following samples were analyzed in this batch:

1210491-01B	1210491-02B	1210491-03B
1210491-04B	1210491-05B	1210491-06B
1210491-07B	1210491-08B	1210491-09B
1210491-10B	1210491-11B	1210491-12B
1210491-13B	1210491-14B	1210491-15B
1210491-16B	1210491-17B	1210491-18B
1210491-19B	1210491-20B	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Conestoga-Rovers & Associates
Work Order: 1210491
Project: CEMC Cooper-JAL - SSOW - 039123

QC BATCH REPORT

Batch ID: **R137059** Instrument ID **ICS3K2** Method: **E300** **(Dissolve)**

MBLK Sample ID: **WBLKW1-R137059** Units: **mg/L** Analysis Date: **10/18/2012 02:45 PM**
Client ID: Run ID: **ICS3K2_121018A** SeqNo: **2989255** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	U	0.50								
Sulfate	U	0.50								
Surr: Selenate (surr)	*4.756*	0.10	*5*	0	*95.1*	*85-115*	0			

LCS Sample ID: **WLCSW1-R137059** Units: **mg/L** Analysis Date: **10/18/2012 03:06 PM**
Client ID: Run ID: **ICS3K2_121018A** SeqNo: **2989256** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	20.1	0.50	20	0	100	90-110	0			
Sulfate	20	0.50	20	0	100	90-110	0			
Surr: Selenate (surr)	*4.844*	0.10	*5*	0	*96.9*	*85-115*	0			

MS Sample ID: **1210520-05CMS** Units: **mg/L** Analysis Date: **10/19/2012 12:52 AM**
Client ID: Run ID: **ICS3K2_121018A** SeqNo: **2989283** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	47.39	0.50	10	37.2	102	80-120	0			
Sulfate	58.6	0.50	10	48.1	105	80-120	0			O
Surr: Selenate (surr)	*4.693*	0.10	*5*	0	*93.9*	*85-115*	0			

MSD Sample ID: **1210520-05CMSD** Units: **mg/L** Analysis Date: **10/19/2012 01:14 AM**
Client ID: Run ID: **ICS3K2_121018A** SeqNo: **2989284** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	47.71	0.50	10	37.2	105	80-120	47.39	0.662	20	
Sulfate	59.12	0.50	10	48.1	110	80-120	58.6	0.887	20	O
Surr: Selenate (surr)	*4.749*	0.10	*5*	0	*95*	*85-115*	4.693	*1.19*	*20*	

The following samples were analyzed in this batch:

1210491-01B	1210491-02B	1210491-04B
1210491-05B	1210491-07B	1210491-09B
1210491-10B	1210491-11B	1210491-13B
1210491-14B	1210491-15B	1210491-16B
1210491-17B	1210491-18B	1210491-20B

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Conestoga-Rovers & Associates
Work Order: 1210491
Project: CEMC Cooper-JAL - SSOW - 039123

QC BATCH REPORT

Batch ID: **R137067** Instrument ID **Balance1** Method: **M2540C** **(Dissolve)**

MBLK Sample ID: **WBLK-101712-R137067** Units: **mg/L** Analysis Date: **10/17/2012 02:30 PM**
Client ID: Run ID: **BALANCE1_121017J** SeqNo: **2989477** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Fil	U	10								

LCS Sample ID: **WLCS-101712-R137067** Units: **mg/L** Analysis Date: **10/17/2012 02:30 PM**
Client ID: Run ID: **BALANCE1_121017J** SeqNo: **2989478** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Fil	964	10	1000	0	96.4	85-115	0			

DUP Sample ID: **1210491-01CDUP** Units: **mg/L** Analysis Date: **10/17/2012 02:30 PM**
Client ID: **MW 13 101112** Run ID: **BALANCE1_121017J** SeqNo: **2989456** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Fil	6440	10	0	0	0	0-0	6288	2.39	20	

DUP Sample ID: **1210491-20CDUP** Units: **mg/L** Analysis Date: **10/17/2012 02:30 PM**
Client ID: **Dup 2 101112** Run ID: **BALANCE1_121017J** SeqNo: **2989476** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Fil	18120	10	0	0	0	0-0	17020	6.26	20	

The following samples were analyzed in this batch:

1210491-01C	1210491-02C	1210491-03C
1210491-04C	1210491-05C	1210491-06C
1210491-07C	1210491-08C	1210491-09C
1210491-10C	1210491-11C	1210491-12C
1210491-13C	1210491-14C	1210491-15C
1210491-16C	1210491-17C	1210491-18C
1210491-19C	1210491-20C	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Conestoga-Rovers & Associates
Project: CEMC Cooper-JAL - SSOW - 039123
WorkOrder: **1210491**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
M	Manually integrated, see raw data for justification
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL

Acronym	Description
DCS	Detectability Check Study
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitation Limit
SD	Serial Dilution
SDL	Sample Detection Limit
TRRP	Texas Risk Reduction Program

Units Reported	Description
mg/L	Milligrams per Liter

ALS Environmental

Sample Receipt Checklist

Client Name: **CRA-MID** Date/Time Received: **12-Oct-12 09:20**

Work Order: **1210491** Received by: **RNG**

Checklist completed by Robert D. Harris (eSignature) 12-Oct-12 (Date) Reviewed by: Sonia West (eSignature) 13-Oct-12 (Date)

Matrices: Waters
Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☐	No ☑	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	3.4c,2.7c,3.2c c/u	005	
Cooler(s)/Kit(s):	4124,3101,3102		
Date/Time sample(s) sent to storage:	10/12/12 11:20		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☑	No ☐	N/A ☐
pH adjusted?	Yes ☐	No ☐	N/A ☑
pH adjusted by:			

Login Notes: Had to split from 1LPNEAT into 250PNEAT for Dissolved Metals.

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

SRC Page 1 of 1

ALS Laboratory Group
10450 Stancliff Rd., Suite 210
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5887

Chain of Custody Form

1210491

Page 1 of 2

CRA-MID: Conestoga-Rovers & Associates

Project: CEMC Cooper-JAL - SSOW - 039123

ALS Project Manager:

Customer Information		Project Information			
Purchase Order		Project Name	Cooper Jal	A	Dissolved metals (6020/7470A) Mg, Na, K
Work Order		Project Number	039123	B	Anions (300) Cl, SO4 F
Company Name	CRA	Bill To Company	CRA	C	Alkalinity
Send Report To	Todd Wells	Invoice Attn	Todd Wells	D	TDS
Address	2135 SLoop 250W	Address	Jal, NM	E	Nitrate (300)
				F	
City/State/Zip	Midland, TX 79703	City/State/Zip	Jal, NM	G	
Phone	(432) 686-0086	Phone		H	
Fax	(432)686-0186	Fax		I	
e-Mail Address	Twells@cramidland.com	e-Mail Address		J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	mw3 101112	10-11-12	0915	H_2O	none	2	X	X	X	X	X						
2	mw2 101112		0935														
3	mw3 101112		1005														
4	mw1 101112		1020														
5	mw2 101112		1030														
6	mw2A 101112		1040														
7	RW1 101112		1115														
8	mw11 101112		1400														
9	mw4 101112		1140														
10	mw4A 101112		1200														

Sampler(s) Please Print & Sign: Justin Nixon

Shipment Method: Fedex

Required Turnaround Time: (Check Box) ☐ Other ____ ☒ STD 10 Wk Days ☐ 5 Wk Days ☐ 2 Wk Days ~~☐ 24 Hour~~ 4 hr

Results Due Date:

Relinquished by:	Date:	Time:	Received by:
	10-11-12	1715	
Relinquished by:	Date:	Time:	Received by (Laboratory): 10/12/12 09:20
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):

Notes: Lab to filter dissolved metals

Cooler ID	Cooler Temp

QC Package: (Check One Box Below)
- ☒ Level II Std QC
- ☐ Level III Std QC/Raw Date
- ☐ Level IV SW846/CLP
- ☐ Other ____
- ☐ TRRP Checklist
- ☐ TRRP Level IV

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

ote: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Laboratory Group.
2. Unless otherwise agreed in a formal contract, services provided by ALS Laboratory Group are expressly limited to the terms and conditions stated on the reverse.
3. The Chain of Custody is a legal document. All information must be completed accurately.

Cincinnati, OH +1 513 733 5336
Fort Collins, CO +1 970 490 1511
Houston, TX +1 281 530 5656
Spring City, PA +1 610 948 4903
South Charleston, WV +1 304 356 3168
Everett, WA +1 425 356 2600
Holland, MI +1 616 399 6070
Middletown, PA +1 717 944 5541
Salt Lake City, UT +1 801 266 7700
York, PA +1 717 505 5280

ALS Environmental

Chain of Custody Form

Page 2 of 2

COC ID: 61981

ALS Project Manager: | ALS Work Order #: 1210191

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order		Project Name	CEMC Cooper-Jal	A	Dissolved Metals (6020/7000) Ca, Mg, Na, K
Work Order		Project Number	039123	B	Anions (300) Cl, SO4, F
Company Name	Conestoga-Rovers & Associates	Bill To Company	Conestoga-Rovers & Associates	C	Alkalinity
Send Report To	Todd Wells	Invoice Attn	Todd Wells	D	TDS
Address	2135 S Loop 250 West	Address	2135 S Loop 250 West	E	Nitrate (300)
				F	
City/State/Zip	Midland, TX 79703	City/State/Zip	Midland, TX 79703	G	
Phone	(432) 686-0086	Phone	(432) 686-0086	H	
Fax	(432) 686-0186	Fax	(432) 686-0186	I	
e-Mail Address	Twells@ Cnwald.com	e-Mail Address		J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	MW5 101112	10/11/12	1215	H_2O	none	2	X	X	X	X	X						
2	MW5A 101112		1225														
3	RW2 101112		1230														
4	MW10 101112		1300														
5	MW7 101112		1320														
6	MW9 10 1112		1335														
7	MW9A 101112		1350														
8	~~Trip Blank~~ Dup1 101112		—														
9	MW8 101112		1425														
10	Dup2 101112		—														

34 of 35

Sampler(s) Please Print & Sign: Justin Nixon

Shipment Method: FedEx

Required Turnaround Time: (Check Box) ☑ Std 10 WK Days ☐ 5 WK Days ☐ Other ☐ 2 WK Days ☐ 24 Hour

Results Due Date:

Relinquished by:	Date:	Time:	Received by:
	10/11/12	1715	
Relinquished by:	Date:	Time:	Received by (Laboratory): 10/12/12 8:20
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):

Notes: 10 Day TAT. Labto filter dissolved metals

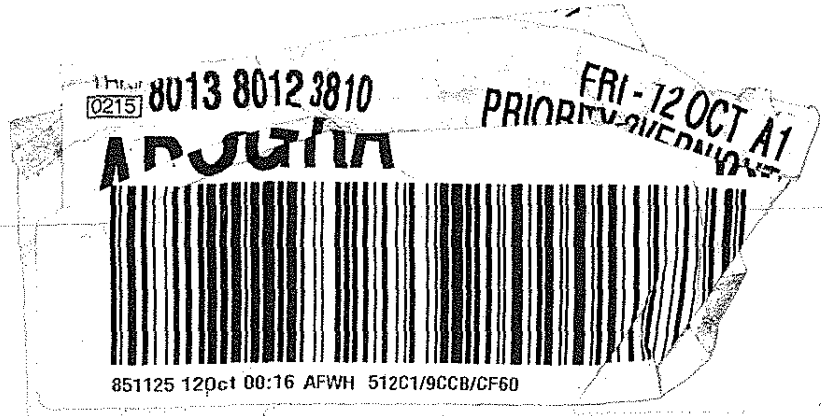
Cooler ID	Cooler Temp.

QC Package: (Check One Box Below)
☑ Level II Std QC ☐ TRRP CheckList
☐ Level III Std QC/Raw Data ☐ TRRP Level IV
☐ Level IV SW846/CLP
☐ Other / EDD

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
3. The Chain of Custody is a legal document. All information must be completed accurately.

121044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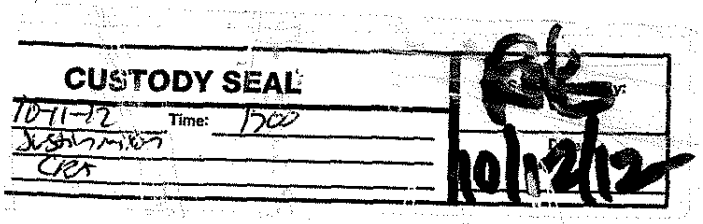
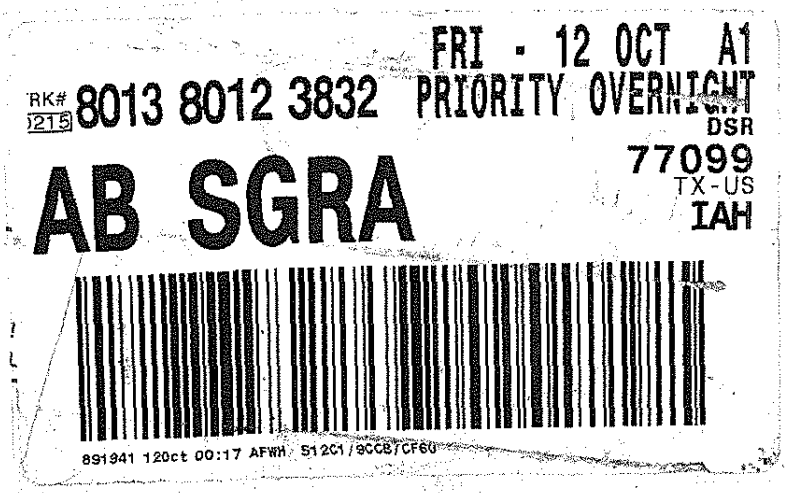
FRI - 12 OCT A1
PRIORITY OVERNIGHT
851125 120ct 00:16 AFWH 512C1/9CCB/CF60


ALS Environmental
10450 Stancliff Rd., Suite 210
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5887
Date:
Name:
Company:


CUSTODY SEAL
Time: 1500
10/12/12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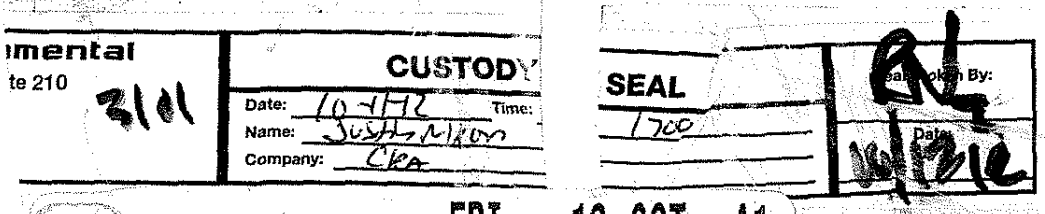
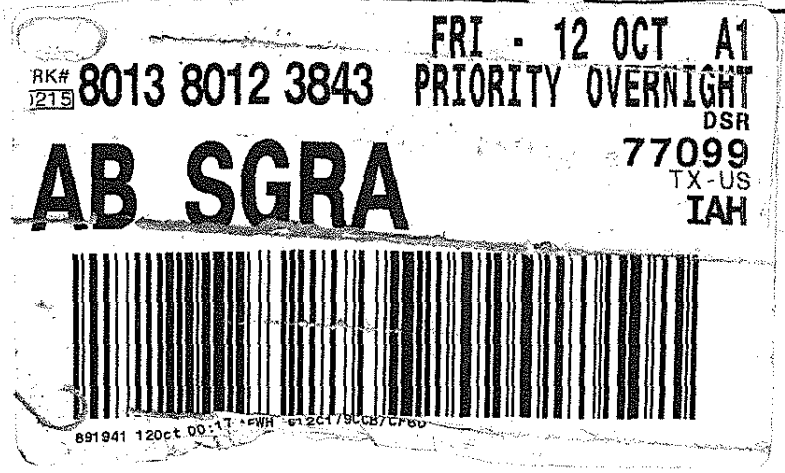
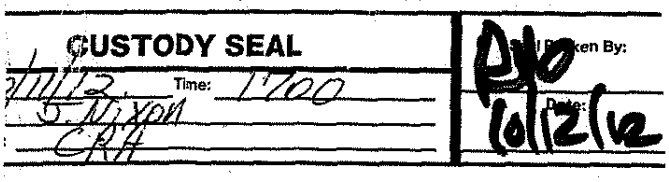
TX-US
IAH
AB SGRA
891941 120ct 00:17 AFWH 512C1/9CCB/CF60


CUSTODY SEAL
Date: 10-12-12
Time: 1700
Name: Justin Tyson
Company: CRA
10/12/12


FRI - 12 OCT A1
PRIORITY OVERNIGHT
DSR
77099
TX-US
IAH
AB SGRA
891941 120ct 00:17 AFWH 512C1/9CCB/CF60


ALS Environmental
10450 Stancliff Rd. Suite 21
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5887
Date:
Name:


CUSTODY SEAL
Time: 1700
10/12/12

ALS Laboratory Group
10450 Stancliff Rd., Suite 210
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5887

Chain of Custody Form

Page 1 of 2

1210491

CRA-MID: Conestoga-Rovers & Associates

Project: CEMC Cooper-JAL - SSOW - 039123

ALS Project Manager:

Customer Information		Project Information			
Purchase Order		Project Name	Cooper Jal	A	Dissolved metals (6020/7000 Ca, Mg, Na, K)
Work Order		Project Number	039123	B	Anions (300) Cl, SO4 F
Company Name	CRA	Bill To Company	CRA	C	Alkalinity
Send Report To	Todd wells	Invoice Attn	Todd wells	D	TDS
Address	2135 S Loop 250 W	Address	Jal, NM	E	Nitrate (300)
				F	
City/State/Zip	Midland, TX 79703	City/State/Zip	Jal, NM	G	
Phone	(432) 686-0086	Phone		H	
Fax	(432) 686-0186	Fax		I	
e-Mail Address	Twells@craworld.com	e-Mail Address		J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	mw13 101112	10-11-12	0915	H_2O	none	2	X	X	X	X	X						
2	mw12 101112		0935														
3	mw3 101112		1005														
4	mw1 101112		1020														
5	mw2 101112		1030														
6	mw2A 101112		1040														
7	rw1 101112		1115														
8	mw11 101112		1400														
9	mw4 101112		1140														
10	mw4A 101112		1200														

(Date, Matrix, Pres., # Bottles and A–E marked with ditto lines down through row 10.)

Sampler(s) Please Print & Sign: Justin Nixon [signature]

Shipment Method: Fedex

Required Turnaround Time: (Check Box) ☐ Other ____ ☒ STD 10 Wk Days ☐ 5 Wk Days ☐ 2 Wk Days ☐ 24 Hour

Results Due Date:

Relinquished by:	Date:	Time:	Received by:
[signature]	10-11-12	1715	
Relinquished by:	Date:	Time:	Received by (Laboratory): [signature] 10/12/12 09:20
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):

Notes: Lab to filter dissolved metals

Cooler ID	Cooler Temp

QC Package: (Check One Box Below)
- ☒ Level II Std QC
- ☐ Level III Std QC/Raw Date
- ☐ Level IV SW846/CLP
- ☐ Other ____
- ☐ TRRP Checklist
- ☐ TRRP Level IV

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

ote: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Laboratory Group.
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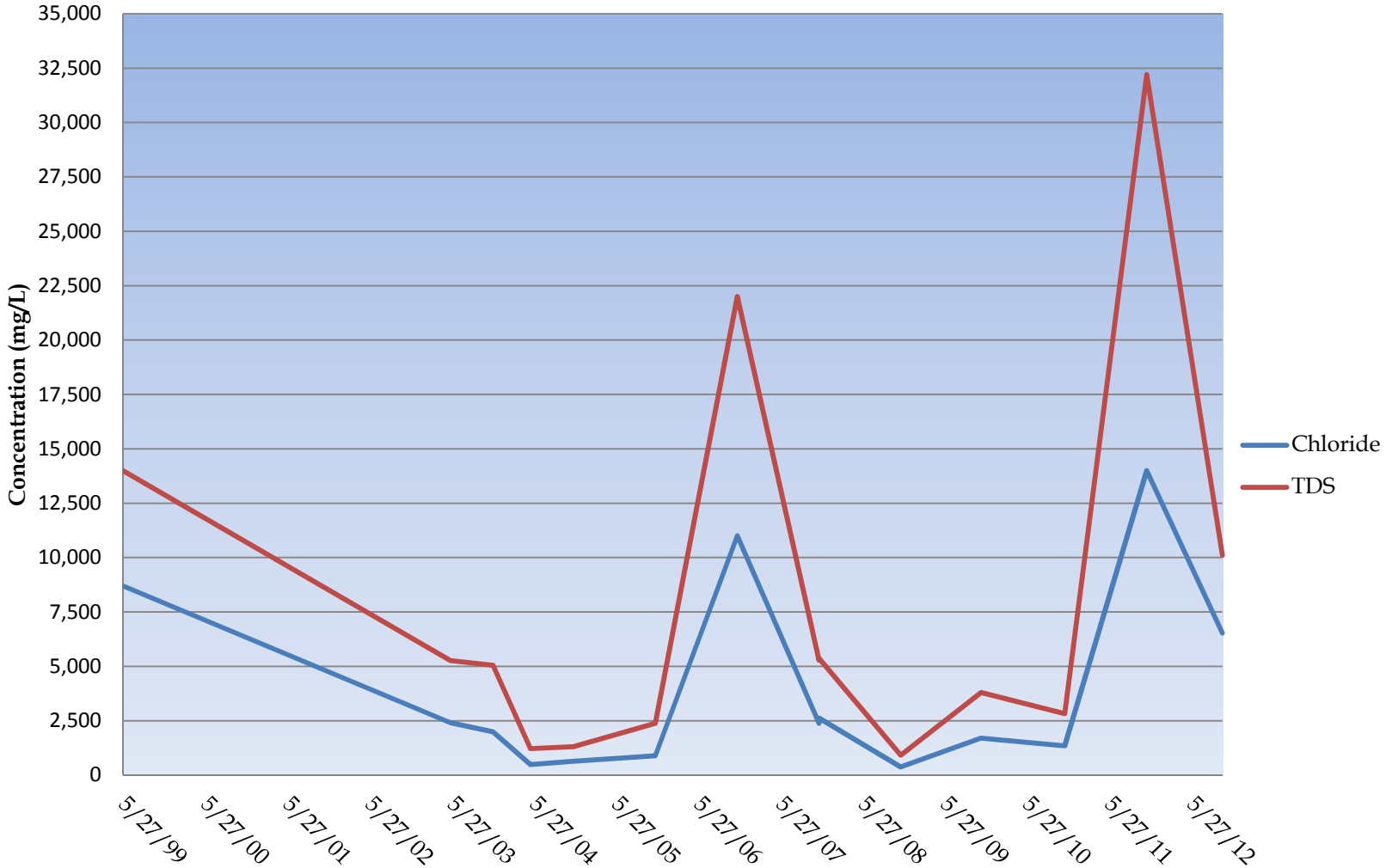
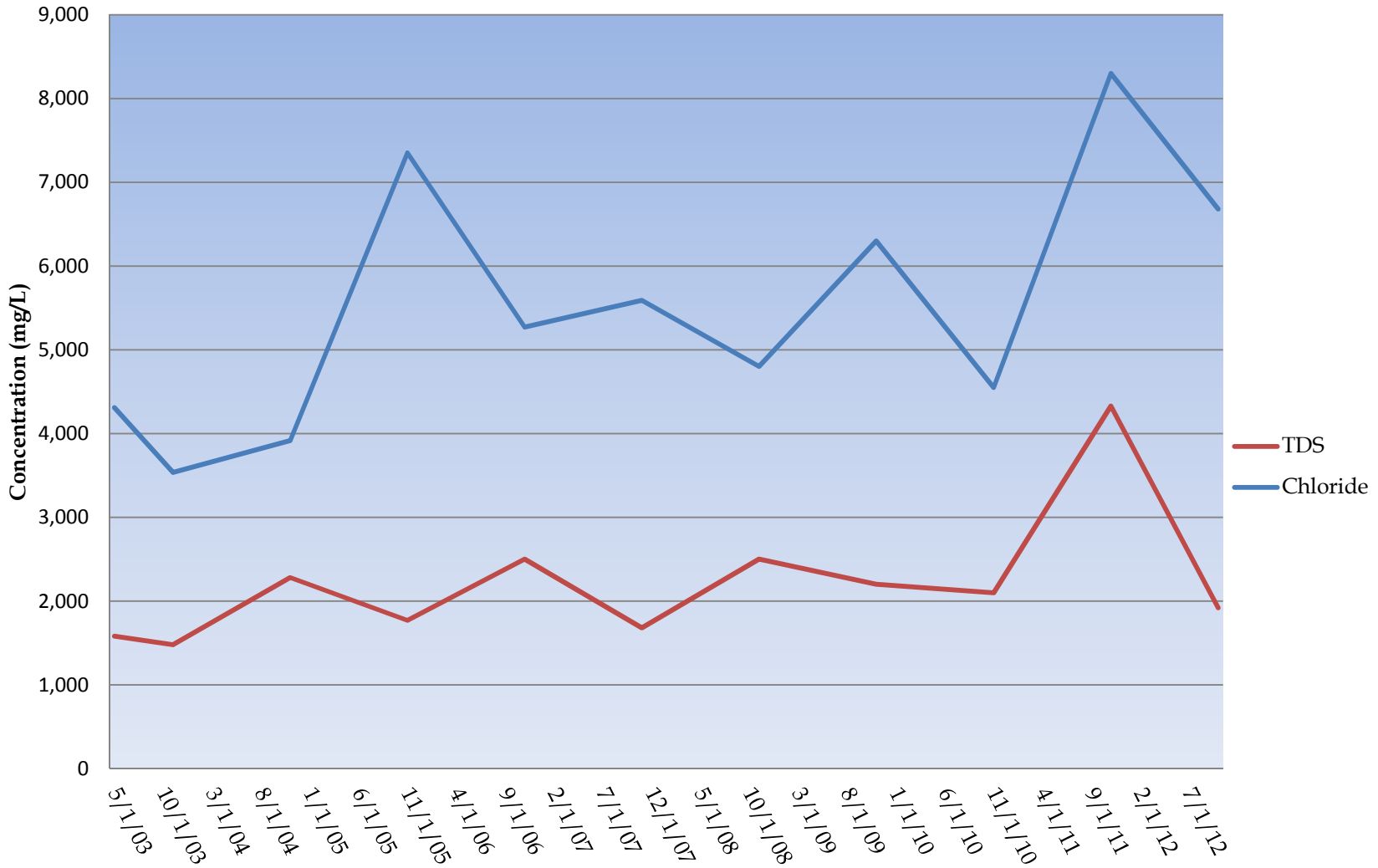
APPENDIX B

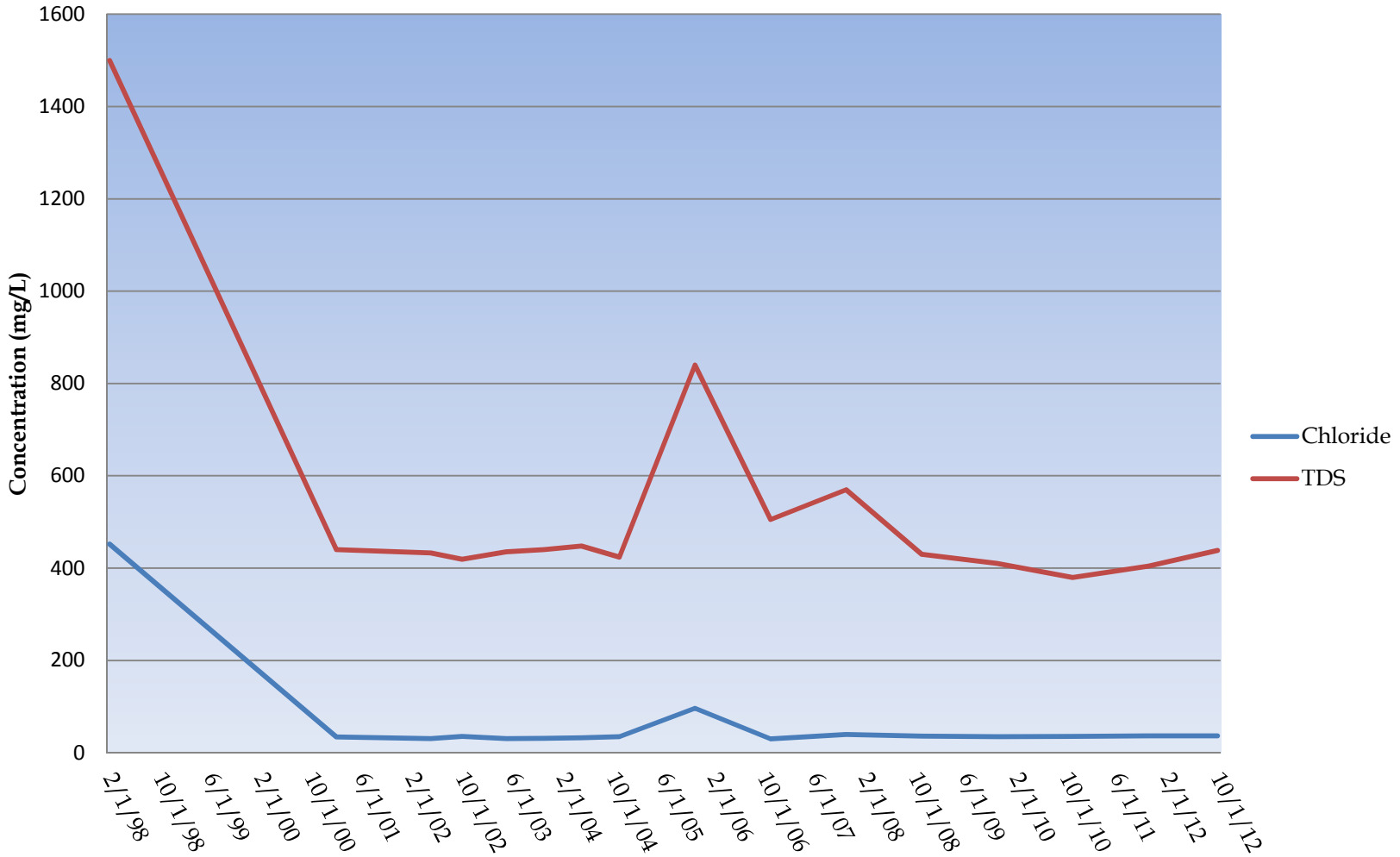
COOPER JAL UNIT SOUTH INJECTION STATION
LEA COUNTY, NEW MEXICO
NW/4, NW/4, SE/4, SECTION 24, T 24 S, R 36 E
RECOVERY WELL (RW-1)



COOPER JAL UNIT SOUTH INJECTION STATION
LEA COUNTY, NEW MEXICO
NW/4, NW/4, SE/4, SECTION 24, T 24 S, R 36 E
RECOVERY WELL (RW-2)



COOPER JAL UNIT SOUTH INJECTION STATION
LEA COUNTY, NEW MEXICO
NW/4, NW/4, SE/4, SECTION 24, T 24 S, R 36 E
UPGRADIENT WELL (MW-3)



COOPER JAL UNIT SOUTH INJECTION STATION
NW/4, NW/4, SE/4, SECTION 24, T 24 S, R 36 E
LEA COUNTY, NEW MEXICO
DOWNGRADIENT WELL (MW-4)