1R - 255

AGWMR

03/15/2012

Daniel D. Snyder
Remediation Project
Manager

Upstream Business Unit
Chevron Environmental
Management Company
1400 Smith St
Houston, TX 77002
Tel 713 372 1055
Daniel.Snyder@chevron.com

March 15, 2012

Mr. Glenn von Gonten
Oil Conservation Division
New Mexico Energy, Minerals and Natural Resources Department
Santa Fe, New Mexico 87505

RE: 2011 Annual Groundwater Monitoring Report
J.R. Phillips Tank Battery No.2
OGRID No. 4323/NMOCD Case No. 1R-255
Lea County, New Mexico

Dear Glenn:

Enclosed is one bound copy and one electronic CD copy of the 2011 Annual Groundwater Monitoring Report for the J.R. Phillips Tank Battery No. 2 site located in Lea County, New Mexico, prepared by Conestonga-Rovers & Associates (CRA). If you have any questions regarding this correspondence, please contact me at (713) 372-1055.

Sincerely,

CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY

Daniel D. Snyder

Encl. 2011 Annual Groundwater Monitoring Report
J.R. Phillips Tank Battery No. 2
OGRID No. 4323/NMOCD Case No. 1r-255
SE/4, NW/4, Section 6, T-20-S, R-37-E
Latitude: N32° 36' 22.3" Longitude: W103° 17' 41.5"
Lea County, New Mexico

CONESTOGA-ROVERS
& ASSOCIATES

2011 ANNUAL GROUNDWATER MONITORING REPORT

J.R. PHILLIPS TANK BATTERY NO. 2
OGRID NO. 4323/CASE NO. 1R255
SE/4, NW/4, SECTION 6, T-20-S, R-37-E
LATITUDE: N 32° 36′ 22.3″ LONGITUDE: W 103° 17′ 41.5″
LEA COUNTY, NEW MEXICO

Prepared For:
Mr. Daniel Snyder
CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY
Upstream Business Unit
1400 Smith Street
Room 07063
Houston, Texas 77002

Prepared by:
Conestoga-Rovers & Associates

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Midland, Texas 79703
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web: www.CRAworld.com

MARCH 2012
REF. NO. 039126 (7)

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1.0 INTRODUCTION

This Annual Groundwater Monitoring Report presents groundwater monitoring data collected at the J.R. Phillips Tank Battery No. 2 (hereafter referred to as the "Site") by Conestoga-Rovers & Associates (CRA) on behalf of Chevron Environmental Management Company (CEMC). Annual groundwater monitoring activities were performed on May 18 - 19, 2011.

The Site is located approximately three miles southwest of Monument, New Mexico and situated in Unit Letter F in the southeast quarter (SE/4) of the northwest quarter (NW/4) of Section 6, Township 20 South, Range 37 East, Lea County, New Mexico. The Site is a former emergency pit used for temporary containment of produced fluids associated with the tank battery. Land use in the vicinity of the Site is undeveloped rangeland vegetated with indigenous grass, livestock ranching and oil and gas production. A Site Location Map is presented as FIGURE 1.

Site assessment activities were initiated in 1999 when Environmental Plus, Inc. (EPI) of Eunice, New Mexico performed a subsurface assessment of the emergency produced water overflow pit located east of the tank battery and a small burn pit located south-southeast of the emergency pit. The investigation revealed the presence of hydrocarbon affected soil. Approximately 33,500 cubic yards of hydrocarbon-affected material were excavated at the Site between December 1999 and October 2000. The soil was transported to the Texaco Exploration and Production, Inc. (Texaco) centralized treatment facility located northwest of Jal, New Mexico. The emergency pit was excavated to approximately 25 to 30 feet below ground surface (bgs) and the burn pit was excavated to approximately 12 to 15 feet bgs. The remedial excavations were subsequently backfilled and closed during December 2000 and January 2001. Site assessment and remediation activities were presented in the *Comprehensive Report and Proposed Investigation Plan* (Larson & Associates, Inc. [LA], November 28, 2000).

In March 2000, EPI installed two monitor wells (MW-1 and MW-2) to evaluate background chloride concentrations in groundwater at the Site. In April 2001, LA supervised the installation of six monitor wells (MW-3 through MW-8) to assess groundwater quality upgradient, downgradient and crossgradient of the Site. Details of that investigation were submitted to the New Mexico Oil Conservation Division (NMOCD) in a *Groundwater Assessment Report* (LA, May 24, 2001). In that report, semi-annual groundwater monitoring was proposed for two years, with groundwater samples to be analyzed for major cations, anions and total dissolved solids (TDS).

The proposed activities were approved by the NMOCD in a correspondence dated December 27, 2001, with the condition that groundwater also be analyzed for benzene, toluene, ethylbenzene and xylene (BTEX). The NMOCD agreed to allow Texaco to monitor groundwater at the Site, with consideration relating to regional groundwater impacts from chloride that has affected groundwater at the Site, as well as upgradient, crossgradient and downgradient of the Site. An *Annual Groundwater Monitoring Report* (LA, May 10, 2004) presented the results of activities performed in 2003, which fulfilled the two-year monitoring schedule approved by the NMOCD. CEMC proposed a modification to the groundwater monitoring schedule from semi-annual to annual,

analyzing groundwater samples only for major cations, anions and TDS. The groundwater monitoring modifications were approved by the NMOCD in a correspondence dated October 1, 2004. Annual groundwater monitoring results for activities performed in May 2004 and May 2005 are presented in the *Annual Groundwater Monitoring Report* (LA, August 15, 2005). CRA has performed annual groundwater monitoring and reporting activities since 2006.

2.0 REGULATORY FRAMEWORK

The NMOCD guidelines require groundwater to be analyzed for potential contaminants as defined by the New Mexico Water Quality Control Commission (NMWQCC) regulations. In addition, the NMWQCC regulations present the Human Health Standards for Groundwater. The constituent of concern in affected groundwater at the Site is chloride. 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

3.0 GROUNDWATER SAMPLING AND ANALYSIS

Groundwater at the Site is monitored annually with a network of eight monitor wells and one water well (FIGURE 2). CRA performed groundwater sampling activities on May 18 - 19, 2011.

Prior to purging the wells, static fluid levels were measured with an electric interface probe to the nearest hundredth of a foot. After recording fluid levels, the wells were purged of a minimum of three casing volumes of groundwater. Geochemical field parameters including pH, temperature and conductivity were collected during the purging/sampling 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, groundwater samples were collected using clean, disposable PVC bailers. Laboratory supplied sample containers were then filled directly from the disposable PVC bailers.

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 the laboratory (ALS Laboratory Group (ALS) located in Houston, Texas) for analysis of major cations, anions and TDS by Environmental Protection Agency (EPA) Methods 6020, 2320B, 300.0 and 2540C. The fluids recovered and generated during the sampling event were containerized in sealed, 55-gallon drums located onsite and subsequently managed at an NMOCD-permitted and Chevron-approved salt water disposal (SWD) facility operated by Nabors Well Services LTD (Nabors).

3.1 POTENTIOMETRIC SURFACE AND GRADIENT

Groundwater elevation data are presented in TABLE I. A groundwater gradient map for May 2011 is presented as FIGURE 3. Depth to groundwater ranged from 30.63 feet (WW-1) to 36.68 feet (MW-4) below top of casing on May 18, 2011. Groundwater flow at the Site is to the southeast at a gradient of approximately 0.007 feet/foot.

3.2 ANALYTICAL RESULTS

The 2011 analytical results generally fall within historical ranges and are summarized in TABLE II. Isopleth maps of the chloride, sulfate and TDS concentrations for the May 2011 groundwater monitoring event are presented as FIGURES 4, 5 and 6 respectfully.

All nine wells sampled exceeded the NMWQCC groundwater standards for chloride and TDS for this event. All wells excluding MW-8 exceed the NMWQCC groundwater standards for sulfate. In addition, five monitor wells (MW-1, MW-2, MW-4, MW-6 and MW-8) exceeded the NMWQCC groundwater standard for fluoride. Copies of the certified analytical reports and chain-of-custody documentation are attached in APPENDIX A.

4.0 PLANNED ACTIVITIES

Annual groundwater monitoring will continue at the Site in 2012, with submission of an annual report to the NMOCD detailing the results of activities.

5.0 SUMMARY

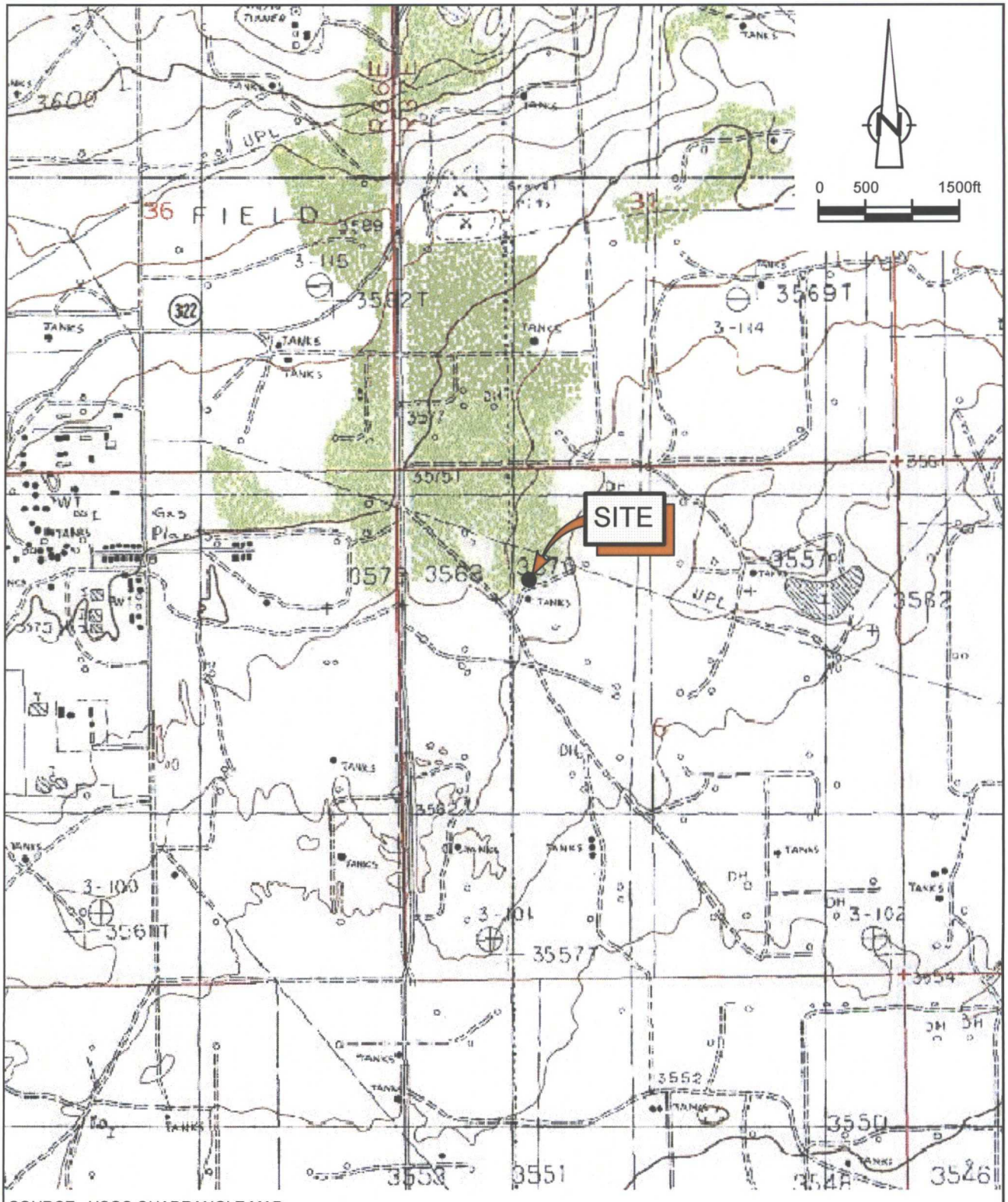
Based on historical data review and groundwater monitoring activities performed at the Site, CRA presents the following summary:

- Groundwater at the Site is monitored annually with a network of eight monitor wells and one water well;
- Depth to groundwater ranged from 30.63 feet to 36.68 feet below top of casing on May 18, 2011. Groundwater flow at the Site is to the southeast at a gradient of approximately 0.007 feet/foot;
- The 2011 analytical results generally fall within historical ranges. All nine wells sampled exceeded the NMWQCC groundwater standards for chloride and TDS. All wells excluding MW-8 exceeded the NMWQCC groundwater standards for sulfate. In addition, five monitor wells (MW-1, MW-2, MW-4, MW-6 and MW-8) exceeded the NMWQCC groundwater standard for fluoride. Nitrate concentrations were below NMWQCC standards during the 2011 sampling event for all wells;
- The 2012 groundwater monitoring event is scheduled to begin May 7, 2012.

All of Which is Respectfully Submitted,
CONESTOGA-ROVERS & ASSOCIATES

Todd Wells
Project Manager

Thomas C. Larson
Operations Manager



SOURCE: USGS QUADRANGLE MAP;
MONUMENT SOUTH, NEW MEXICO (1985)
32° 36' 22.3" N, 103° 17' 41.5" W

figure 1

SITE LOCATION MAP
J. R. PHILLIPS NO. 2 TANK BATTERY
LEA COUNTY, NEW MEXICO
Chevron Environmental Management Company

039126-10(007)GN-BR001 AUG 17/2011

NOTES:
USDA NAIP 2009 AERIAL PHOTOGRAPH.
MAP BASED ON APRIL 15, 2008 SURVEY PERFORMED BY
WEST COMPANY OF MIDLAND, INC.

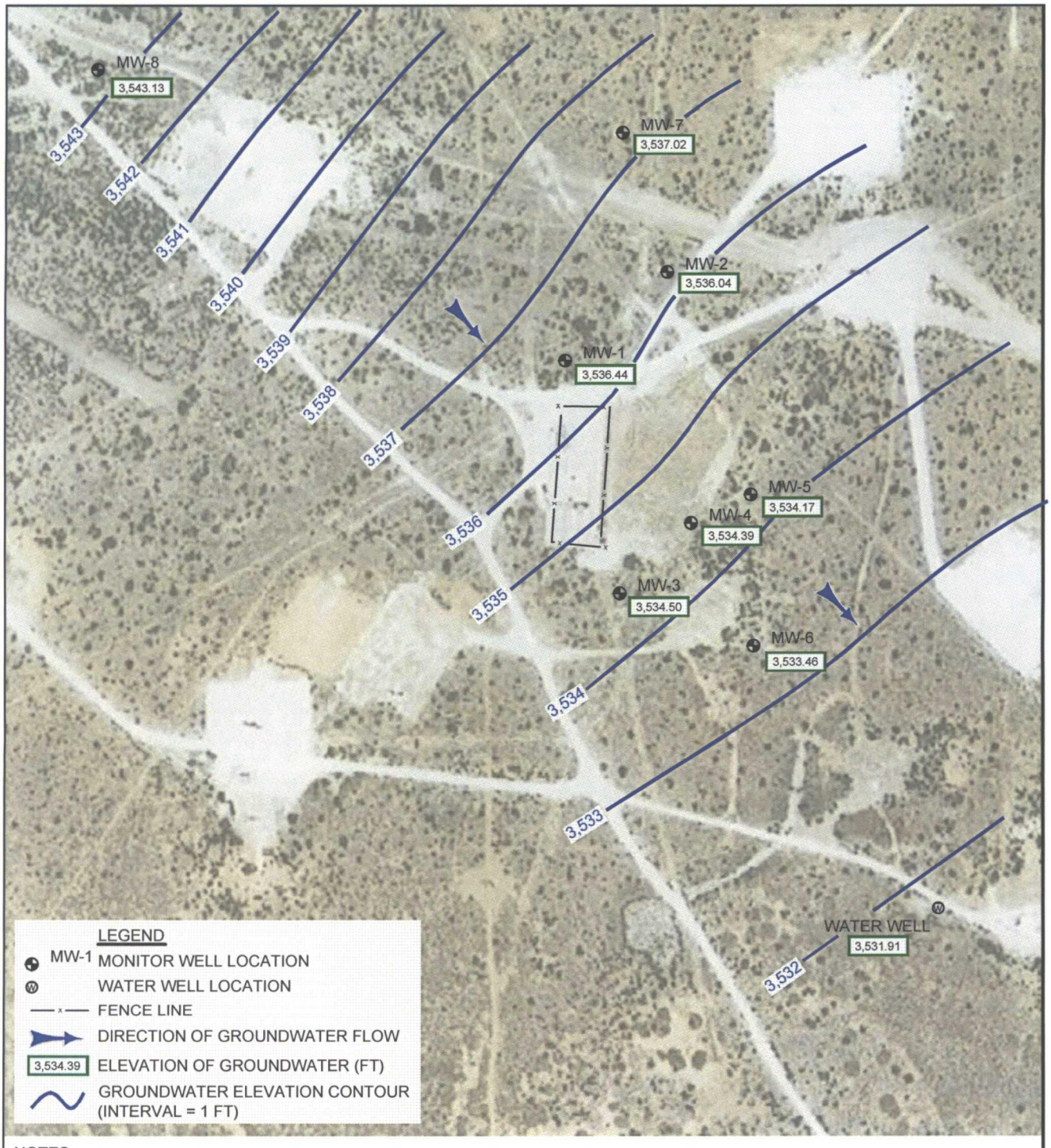
LEGEND
MW-1 MONITOR WELL LOCATION
WATER WELL LOCATION
FENCE LINE

0 100 300ft

figure 2

SITE DETAILS MAP
J. R. PHILLIPS NO. 2 TANK BATTERY
LEA COUNTY, NEW MEXICO
Chevron Environmental Management Company

039126-10(007)GN-BR003 AUG 19/2011



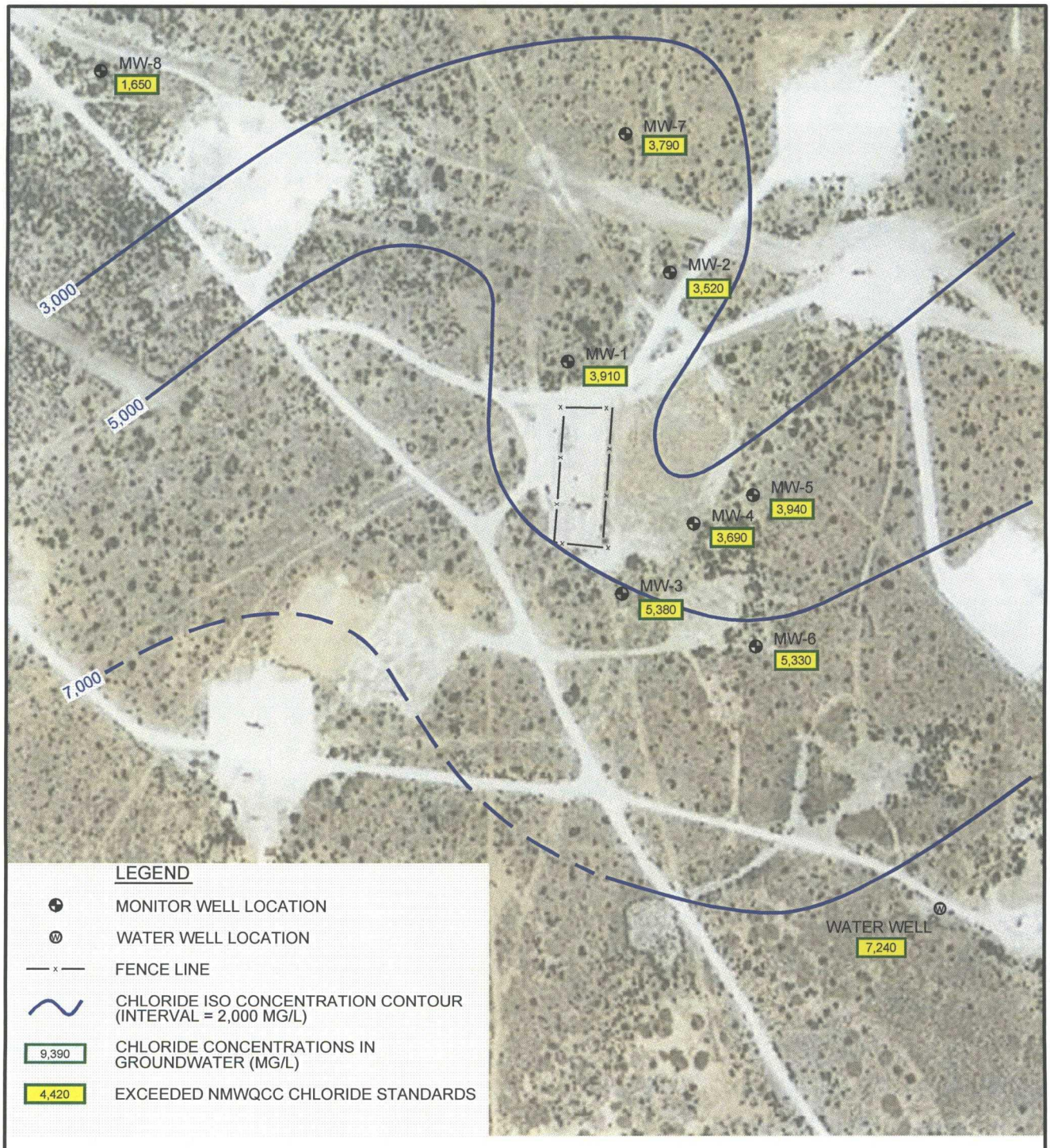
NOTES:
USDA NAIP 2009 AERIAL PHOTOGRAPH.
GROUNDWATER ELEVATIONS COLLECTED ON MAY 3, 2011.

0 100 300ft

figure 3

GROUNDWATER GRADIENT MAP - MAY 2011
J. R. PHILLIPS NO. 2 TANK BATTERY
LEA COUNTY, NEW MEXICO
Chevron Environmental Management Company

039126-10(007)GN-BR002 AUG 22/2011



NOTES:
USDA NAIP 2009 AERIAL PHOTOGRAPH.
GROUNDWATER SAMPLES COLLECTED ON MAY 19, 2011.

N

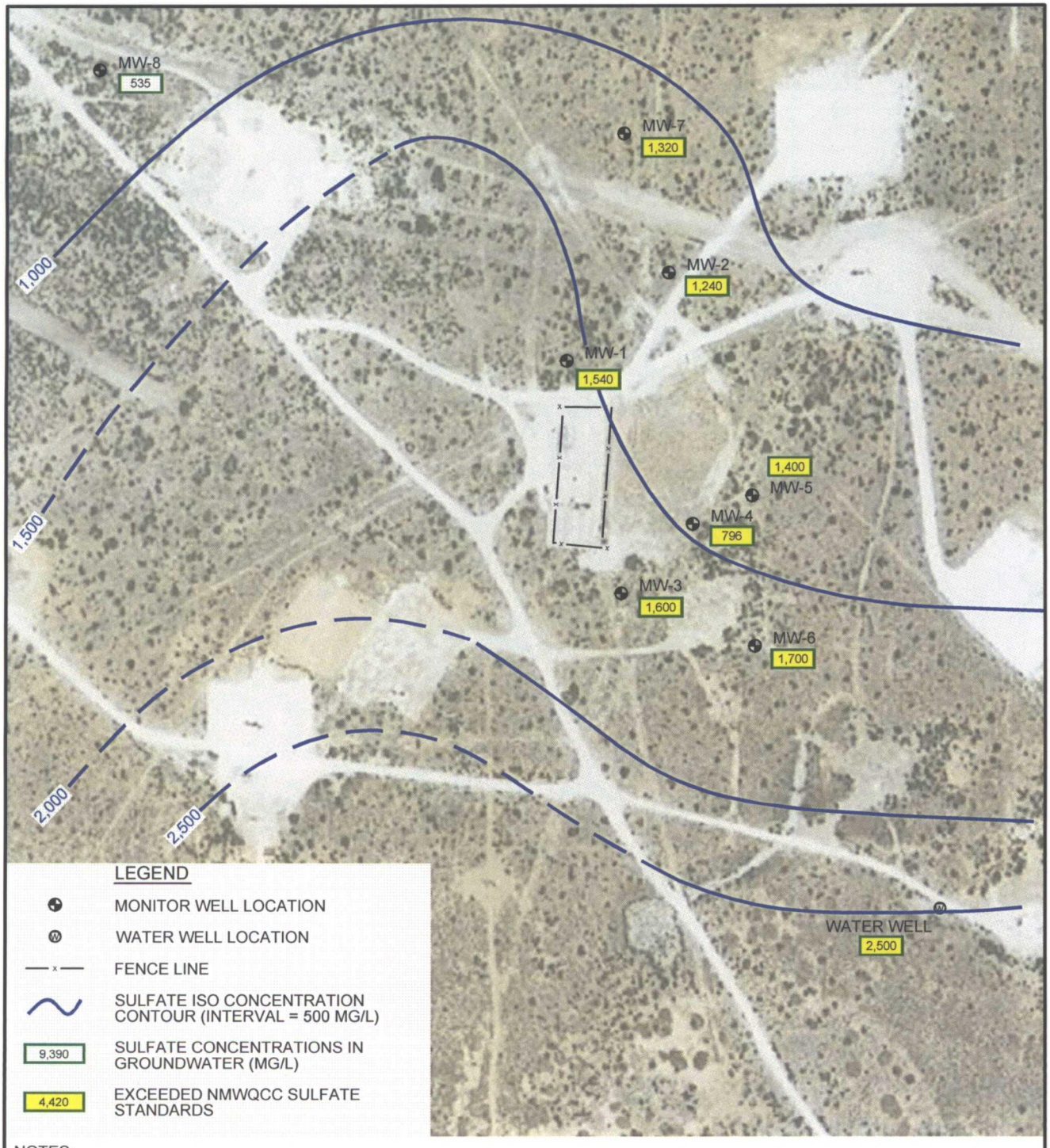
0 100 300ft

figure 4

CHLORIDE ISOCONCENTRATION MAP - MAY 2011
J. R. PHILLIPS NO. 2 TANK BATTERY
LEA COUNTY, NEW MEXICO

Chevron Environmental Management Company

039126-10(007)GN-BR002 FEB 7/2012



NOTES:
USDA NAIP 2009 AERIAL PHOTOGRAPH.
GROUNDWATER SAMPLES COLLECTED ON MAY 19, 2011.
MW-4 WAS NOT HONORED IN ISOCONCENTRATION MAP.

N

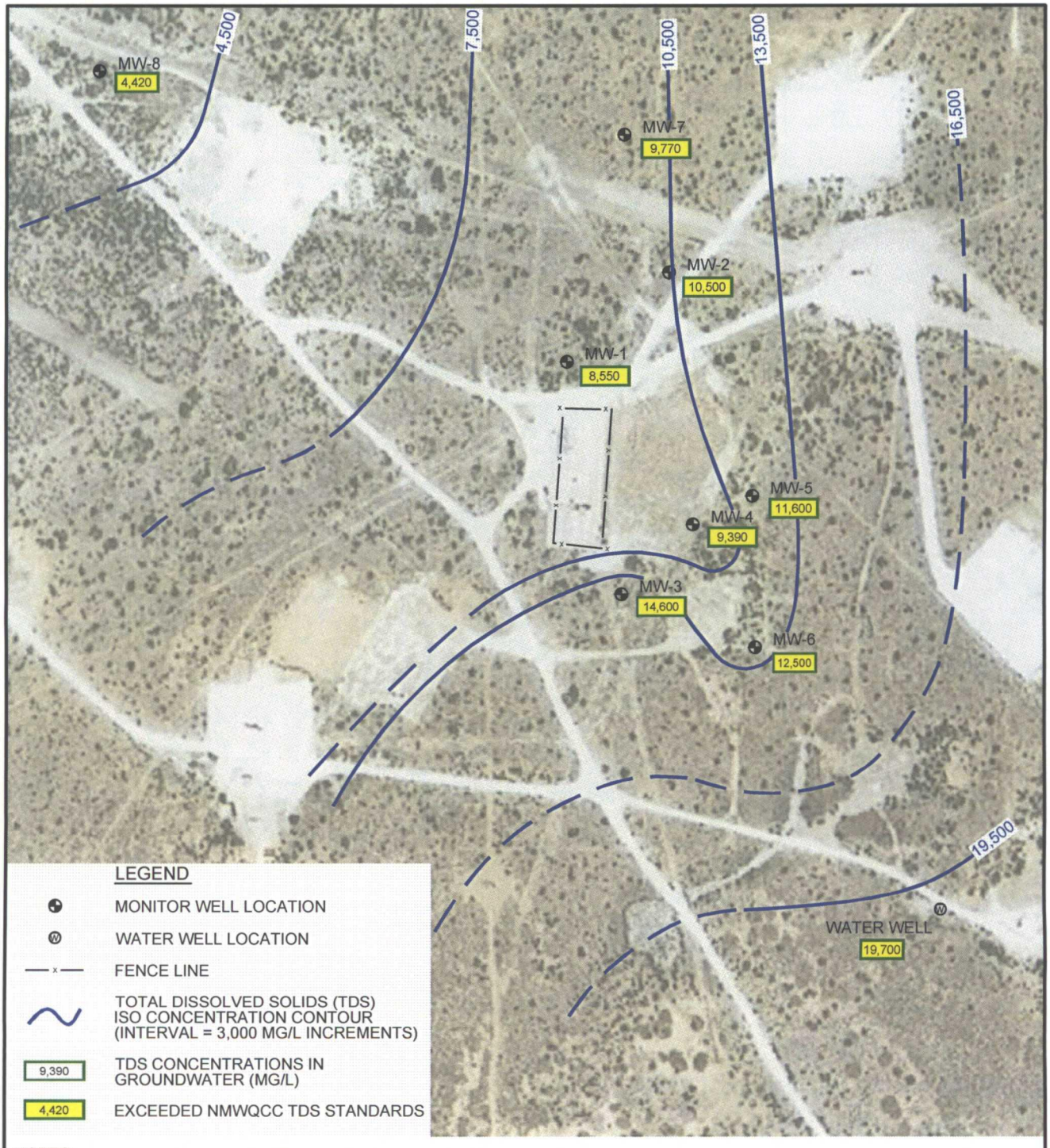
0 100 300ft

figure 5

SULFATE ISOCONCENTRATION MAP - MAY 2011
J. R. PHILLIPS NO. 2 TANK BATTERY
LEA COUNTY, NEW MEXICO

Chevron Environmental Management Company

039126-10(007)GN-BR002 FEB 7/2012



NOTES:
USDA NAIP 2009 AERIAL PHOTOGRAPH.
GROUNDWATER SAMPLES COLLECTED ON MAY 19, 2011.
MW-4 WAS NOT HONORED IN ISOCONCENTRATION MAP.

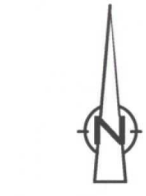


figure 6

TDS ISOCONCENTRATION MAP - MAY 2011
J. R. PHILLIPS NO. 2 TANK BATTERY
LEA COUNTY, NEW MEXICO

Chevron Environmental Management Company

039126-10(007)GN-BR002 FEB 7/2012

TABLE I
GROUNDWATER GAUGING SUMMARY
CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY
J.R. PHILLIPS TANK BATTERY #2
LEA COUNTY, NEW MEXICO

Well ID *TOC Elevation*	Collection Date	Depth to Groundwater (ft TOC)	Casing Diameter (in)	Groundwater Elevation (ft)	Well Depth (ft TOC)	Well Screen Interval (ft bgs)
MW-1	5/2/01	39.33	2	3532.28	45.10	27-42
3571.61	05/21/02	40.37	---	3531.24	---	---
	11/12/02	40.92	---	3530.69	---	---
	05/15/03	41.11	---	3530.50	---	---
	09/03/03	41.54	---	3530.07	---	---
	11/20/03	41.65	---	3529.96	---	---
	05/03/04	41.40	---	3530.21	---	---
	05/10/05	38.86	---	3532.75	---	---
	05/15/06	34.70	---	3536.91	---	---
	05/30/07	34.12	---	3537.49	---	---
	05/12/08	35.28	---	3536.33	45.10	---
	05/27/09	36.13	---	3535.48	45.14	---
	05/03/10	36.24	---	3535.37	45.15	---
	05/18/11	35.17	---	3536.44	45.02	---
MW-2	5/2/01	39.15	2	3531.97	45.12	27-42
3571.12	05/21/02	40.14	---	3530.98	---	---
	11/12/02	40.69	---	3530.43	---	---
	05/15/03	40.89	---	3530.23	---	---
	09/03/03	41.33	---	3529.79	---	---
	11/20/03	41.42	---	3529.70	---	---
	05/03/04	41.11	---	3530.01	---	---
	05/10/05	35.78	---	3535.34	---	---
	05/15/06	34.63	---	3536.49	---	---
	05/30/07	33.96	---	3537.16	---	---
	05/12/08	35.08	---	3536.04	45.25	---
	05/27/09	35.96	---	3535.16	45.25	---
	05/03/10	36.02	---	3535.10	45.23	---
	05/18/11	35.08	---	3536.04	44.39	---
MW-3	5/2/01	39.30	2	3531.40	56.50	34-54
3570.70	05/21/02	40.57	---	3530.13	---	---
	11/12/02	41.09	---	3529.61	---	---
	05/15/03	41.26	---	3529.44	---	---
	09/03/03	41.61	---	3529.09	---	---
	11/20/03	41.73	---	3528.97	---	---
	05/03/04	41.60	---	3529.10	---	---
	05/10/05	36.89	---	3533.81	---	---

TABLE I
GROUNDWATER GAUGING SUMMARY
CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY
J.R. PHILLIPS TANK BATTERY #2
LEA COUNTY, NEW MEXICO

Well ID *TOC Elevation*	Collection Date	Depth to Groundwater (ft TOC)	Casing Diameter (in)	Groundwater Elevation (ft)	Well Depth (ft TOC)	Well Screen Interval (ft bgs)
MW-3 (Cont)	05/15/06	35.70	---	3535.00	---	---
	05/30/07	35.11	---	3535.59	---	---
	05/12/08	36.03	---	3534.67	56.60	---
	05/27/09	36.82	---	3533.88	56.60	---
	05/03/10	36.96	---	3533.74	56.60	---
	05/18/11	36.20	---	3534.50	56.12	---
MW-4	5/2/01	40.24	2	3530.83	57.12	34-54
3571.07	05/21/02	41.09	---	3529.98	---	---
	11/12/02	41.59	---	3529.48	---	---
	05/15/03	41.77	---	3529.30	---	---
	09/03/03	42.19	---	3528.88	---	---
	11/20/03	42.27	---	3528.80	---	---
	05/03/04	42.03	---	3529.04	---	---
	05/10/05	37.15	---	3533.92	---	---
	05/15/06	36.15	---	3534.92	---	---
	05/30/07	35.50	---	3535.57	---	---
	05/12/08	36.46	---	3534.61	56.90	---
	05/27/09	37.30	---	3533.77	56.90	---
	05/03/10	37.41	---	3533.66	56.90	---
	05/18/11	36.68	---	3534.39	53.60	---
MW-5	5/2/01	38.37	2	3530.94	57.75	34-54
3569.31	05/21/02	39.53	---	3529.78	---	---
	11/12/02	40.02	---	3529.29	---	---
	05/15/03	40.21	---	3529.10	---	---
	09/03/03	42.21	---	3527.10	---	---
	11/20/03	40.71	---	3528.60	---	---
	05/03/04	40.39	---	3528.92	---	---
	05/10/05	35.48	---	3533.83	---	---
	05/15/06	34.65	---	3534.66	---	---
	05/30/07	33.94	---	3535.37	---	---
	05/12/08	34.93	---	3534.38	57.90	---
	05/27/09	35.76	---	3533.55	57.90	---
	05/03/10	35.79	---	3533.52	57.88	---
	05/18/11	35.14	---	3534.17	57.73	---

TABLE I
GROUNDWATER GAUGING SUMMARY
CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY
J.R. PHILLIPS TANK BATTERY #2
LEA COUNTY, NEW MEXICO

Well ID *TOC Elevation*	Collection Date	Depth to Groundwater (ft TOC)	Casing Diameter (in)	Groundwater Elevation (ft)	Well Depth (ft TOC)	Well Screen Interval (ft bgs)
MW-6	5/2/01	39.40	2	3530.13	57.30	34-54
3569.53	05/21/02	40.22	---	3529.31	---	---
	11/12/02	40.72	---	3528.81	---	---
	05/15/03	40.88	---	3528.65	---	---
	09/03/03	41.92	---	3527.61	---	---
	11/20/03	41.33	---	3528.20	---	---
	05/03/04	41.12	---	3528.41	---	---
	05/10/05	36.56	---	3532.97	---	---
	05/15/06	35.65	---	3533.88	---	---
	05/30/07	34.93	---	3534.60	---	---
	05/12/08	35.79	---	3533.74	57.30	---
	05/27/09	36.56	---	3532.97	57.30	---
	05/03/10	36.82	---	3532.71	57.27	---
	05/18/11	36.07	---	3533.46	56.61	---
MW-7	5/2/01	39.76	2	3532.70	57.85	36-56
3572.46	05/21/02	40.85	---	3531.61	---	---
	11/12/02	41.47	---	3530.99	---	---
	05/15/03	41.65	---	3530.81	---	---
	09/03/03	42.13	---	3530.33	---	---
	11/20/03	42.25	---	3530.21	---	---
	05/03/04	41.92	---	3530.54	---	---
	05/10/05	36.43	---	3536.03	---	---
	05/15/06	35.08	---	3537.38	---	---
	05/30/07	34.37	---	3538.09	---	---
	05/12/08	35.56	---	3536.90	57.85	---
	05/27/09	36.48	---	3535.98	57.85	---
	05/03/10	36.51	---	3535.95	57.83	---
	05/18/11	35.44	---	3537.02	57.69	---
MW-8	5/2/01	40.35	2	3537.31	65.20	47-62
3577.66	05/21/02	49.27	---	3528.39	---	---
	11/12/02	43.15	---	3534.51	---	---
	05/15/03	43.30	---	3534.36	---	---
	09/03/03	43.52	---	3534.14	---	---
	11/20/03	43.87	---	3533.79	---	---
	05/03/04	44.07	---	3533.59	---	---
	05/10/05	32.30	---	3545.36	---	---

TABLE I
GROUNDWATER GAUGING SUMMARY
CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY
J.R. PHILLIPS TANK BATTERY #2
LEA COUNTY, NEW MEXICO

Well ID *TOC Elevation*	Collection Date	Depth to Groundwater (ft TOC)	Casing Diameter (in)	Groundwater Elevation (ft)	Well Depth (ft TOC)	Well Screen Interval (ft bgs)
MW-8 (Cont)	05/15/06	33.45	---	3544.21	---	---
	05/30/07	33.17	---	3544.49	---	---
	05/12/08	35.66	---	3542.00	65.35	---
	05/27/09	36.66	---	3541.00	65.35	---
	05/03/10	36.69	---	3540.97	65.37	---
	05/18/11	34.53	---	3543.13	65.09	---
WW-1	5/2/01	33.93	5	3528.61	69.35	Unknown
3562.54	05/21/02	34.60	---	3527.94	---	---
	11/12/02	35.03	---	3527.51	---	---
	09/03/03	35.51	---	3527.03	---	---
	11/20/03	35.56	---	3526.98	---	---
	05/03/04	35.49	---	3527.05	---	---
	05/10/05	30.58	---	3531.96	---	---
	05/15/06	30.05	---	3532.49	---	---
	05/30/07	29.47	---	3533.07	---	---
	05/12/08	30.50	---	3532.04	69.65	---
	05/27/09	31.19	---	3531.35	69.65	---
	05/03/10	32.01	---	3530.53	69.69	---
	05/18/11	30.63	---	3531.91	69.55	---

Notes:

1. TOC - Top of Casing.
2. bgs - below ground surface.

TABLE II
GROUNDWATER ANALYTICAL SUMMARY
CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY
J.R. PHILLIPS TANK BATTERY #2
LEA COUNTY, NEW MEXICO

Sample ID	Sample Date	Carbonate Alkalinity	Bicarbonate Alkalinity	Total Alkalinity	Chloride[2]	Fluoride[1]	Nitrate - (NO_3 as N)[1]	Sulfate (SO_4)[2]	Calcium	Magnesium	Potassium	Sodium	TDS[2]
New Mexico Water Quality Control Commission Groundwater Standard					250	1.60	10	600					1,000
MW-1	4/10/01	0.00	556	556	7,300	--	--	2,061	445	175	44.00	5,058	15,816
	5/3/01	<2.00	500	500	6,913	--	--	2,020	323.4	172.5	52.11	3,756	14,501
	5/23/02	<1.00	494	494	6,060	--	--	1,850	361	154	66.40	3,750	13,300
	11/12/02	<0.10	456	456	6,030	--	--	1,400	235	143	67.40	3,060	12,800
	5/15/03	<1.00	430	430	5,150	--	--	1,710	312	121	42.80	3,970	5,990
	9/9/03	---	---	---	5,320	--	--	---	---	---	---	---	---
	11/21/03	<1.00	460	460	4,910	--	--	1,730	302	121	54.6	3,360	11,540
	5/4/04	<1.00	438	438	5,280	<4.00	<4.00	1,620	272	115	49.10	3,030	11,260
	5/10/05	<1.00	412	412	7,000	<2.00	<2.00	2,360	453	211	94.50	3,780	16,250
	5/16/06	<10	410	410	6,700	1.3	<0.40	1,700	403.000 D2	182.000 D2	38.400 D2	4,080.000 D1	16,600
	5/31/07	<10	378	378	7,000	<50	<0.100	1,900	461	200	<50	4,150	15,600
	5/13/08	1.53	534	534	6,670	2.13	0.95	1,960	427	192	53.60	3,520	14,700
	5/28/09	<5.0	690	690	5,500	2.0	<0.50	2,000	300	140	43	3,300	12,000
	5/19/11	<5.00	459	459	3,910	1.79	<0.500	1,540	269	107	26.1	2,800	8,550
MW-2	4/10/01	0.00	566	566	8,704	--	--	2,611	569	296	31.00	5,871	19,312
	5/3/01	<2.00	516	516	7,799	--	--	2,670	412.4	221.7	30.31	4,424	16,857
	5/22/02	<1.00	530	530	7,320	--	--	2,150	471	204	42.20	4,200	15,700
	11/12/02	<0.10	482	482	6,740	--	--	1,780	352	187	48.70	3,640	14,300
	5/15/03	<1.00	498	498	5,850	--	--	1,990	312	150	31.30	4,670	14,000
	9/9/03	---	---	---	6,470	--	--	---	---	---	---	---	---
	11/21/03	<1.00	510	510	5,790	--	--	2,100	378	158	52.1	3,770	14,080
	5/4/04	<1.00	530	530	6,040	<4.00	<4.00	1,950	326	136	43.80	3,300	12,520
	5/10/05	<1.00	502	502	8,080	5.57	<2.00	2,090	385	171	52.90	4,310	17,050
	5/16/06	<10	890	890	6,300	2.1	<0.40	1,600	375.000 D2	168.000 D2	9.330 D2	4,330.000 D1	14,200
	5/31/07	<10	1370	1370	6,700	<50	<0.100	1,700	417	183	<50	4,000	14,900
	5/13/08	1.53	736	736	6,440	6.93	0.95	1,690	410	184	29.10	3,530	14,000
	5/28/09	<5.0	760	760	6,100	2.4	<0.50	1,900	340	160	22	3,700	13,000
	5/19/11	<5.00	471	471	3,520	1.77	<0.500	1,240	356	137	19.8	3,160	10,500
MW-3	5/3/01	<2.00	458	458	11,078	---	---	3,525	984	431.9	38.89	6,114	24,135
	5/23/02	<1.00	512	512	10,800	---	---	3,920	999	350	56.50	6,210	24,200
	11/13/02	<0.10	456	456	11,400	---	---	3,670	863	371	59.30	5,680	23,600
	5/15/03	<1.00	462	462	10,700	---	---	4,220	921	315	34.10	5,870	24,200
	9/9/03	---	---	---	10,300	---	---	---	---	---	---	---	---
	11/21/03	<1.00	464	464	10,500	---	---	4,480	972	333	47.50	7,540	23,100
	5/4/04	<1.00	478	478	11,400	<8.00	<8.00	4,750	808	291	54.10	5,290	22,500

TABLE II
GROUNDWATER ANALYTICAL SUMMARY
CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY
J.R. PHILLIPS TANK BATTERY #2
LEA COUNTY, NEW MEXICO

Sample ID	Sample Date	Carbonate Alkalinity	Bicarbonate Alkalinity	Total Alkalinity	Chloride[2]	Fluoride[1]	Nitrate - (NO_3 as N)[1]	Sulfate (SO_4)[2]	Calcium	Magnesium	Potassium	Sodium	TDS[2]
New Mexico Water Quality Control Commission Groundwater Standard					250	1.60	10	600					1,000
MW-3 (cont)	5/10/05	<1.00	472	472	11,900	<2.00	<2.00	4,190	965	356	86.70	7,320	26,750
	5/16/06	<10	550	550	8,600	0.76	<0.40	3,100	642.000 D2	243.000 D2	24.100 D2	6,040.000 D1	23,200
	5/31/07	<10	520	520	7,700	<50	<0.100	2,900	591	213	<50	4,760	14,100
	5/13/08	1.53	491	491	7,500	7.19	0.95	2,590	578	202	25.50	4,440	17,200
	5/28/09	<5.0	510	510	8,500	1.6	<0.50	2,600	460	190	23	4,700	17,000
	5/19/11	<5.00	441	441	5,380	1.34	<0.150	1,600	620	220	16.1	5,110	14,600
MW-4	5/3/01	<2.00	618	618	9,572	---	---	2,755	467.7	299.8	49.25	5,435	20,118
	5/22/02	<1.00	814	814	8,170	---	---	1,940	389	220	45.30	5,100	18,200
	11/13/02	<0.10	1020	1020	7,890	---	---	1,020	47.1	202	21.60	3,980	14,800
	5/15/03	<1.00	1050	1050	7,140	---	---	1,210	185	179	14.80	5,250	15,200
	9/9/03	---	---	---	7,800	---	---	---	---	---	---	---	---
	11/21/03	<1.00	770	770	7,500	---	---	2,720	334	198	39.70	4,760	17,350
	5/4/04	<1.00	900	900	8,740	<6.00	<6.00	3,170	240	191	25.80	3,660	15,800
	5/10/05	<1.00	708	708	7,750	2.73	<2.00	2,010	330	186	50.40	4,400	26,700
	5/16/06	<10	750	750	6,400	0.81	<0.40	1,900	253.000 D2	146.000 D2	<5.000 D2	4,120.000 D1	11,100
	5/31/07	<10	624	624	5,500	<50	<0.100	1,500	272	126	<50	3,550	13,700
	5/13/08	1.53	627	627	5,550	6.64	0.95	1,430	280	129	31.60	3,270	12,400
	5/28/09	<5.0	560	560	6,500	2.2	<0.50	1,600	280	140	36	3,800	13,000
	5/19/11	<5.00	964	964	3,690	3.72	<0.150	796	164	102	6.36	3,830	9,390
MW-5	5/3/01	<2.00	416	416	8,685	---	---	3,045	430.9	237.1	44.36	4,651	18,846
	5/23/02	<1.00	496	496	6,970	---	---	2,510	394	200	44.00	4,680	16,900
	11/13/02	<0.10	640	640	7,270	---	---	1,790	266	172	43.80	3,880	14,900
	5/15/03	<1.00	562	562	6,800	---	---	2,320	383	167	30.90	5,300	16,000
	9/9/03	---	---	---	7,090	---	---	---	---	---	---	---	---
	11/21/03	<1.00	522	522	7,010	---	---	3,170	434	178	54.90	4,300	16,850
	5/4/04	<1.00	534	534	6,630	<4.00	<4.00	2,310	365	152	47.80	3,850	16,800
	5/10/05	<1.00	536	536	23,300	<2.00	<2.00	2,380	362	151	68.30	4,400	17,400
	5/16/06	<10	530	530	5,800	1.4	<0.40	1,600	335.000 D2	143.000 D2	23.900 D2	4,110.000 D1	14,100
	5/31/07	<10	426	426	6,400	<50	<0.100	1,500	372	154	<50	3,910	14,400
	5/13/08	1.53	410	410	6,720	6.87	0.95	1,590	413	180	32.20	3,580	14,700
	5/28/09	<5.0	670	670	6,900	1.8	<0.50	1,900	370	170	30	4,000	14,000
	5/19/11	<5.00	475	475	3,940	1.59	<0.150	1,400	447	147	20.5	4,040	11,600

TABLE II
GROUNDWATER ANALYTICAL SUMMARY
CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY
J.R. PHILLIPS TANK BATTERY #2
LEA COUNTY, NEW MEXICO

Sample ID	Sample Date	Carbonate Alkalinity	Bicarbonate Alkalinity	Total Alkalinity	Chloride	Fluoride[1]	Nitrate - (NO_3 as N)[1]	Sulfate (SO_4)[2]	Calcium	Magnesium	Potassium	Sodium	TDS[2]
New Mexico Water Quality Control Commission Groundwater Standard					250	1.60	10	600					1,000
MW-6	5/3/01	<2.00	460	460	11,876	--	--	4,380	1,004	429.9	52.27	6,281	25,288
	5/23/02	<1.00	474	474	11,000	--	--	4,300	1,130	483	53.00	6,060	25,500
	11/13/02	<0.10	416	416	10,800	--	--	3,660	936	486	57.60	5,470	23,400
	5/15/03	<1.00	470	470	10,700	--	--	4,310	1,000	388	34.10	5,760	23,800
	9/9/03	---	---	---	10,300	--	--	---	---	---	---	---	---
	11/20/03	<1.00	480	480	10,000	--	--	4,410	904	399	42.50	5,610	23,500
	5/4/04	<1.00	466	466	11,400	<8.00	<8.00	4,310	869	350	49.00	5,590	23,850
	5/10/05	<1.00	476	476	11,000	3.48	<2.00	4,050	801	331	52.20	6,090	24,200
	5/16/06	<10	750	750	8,700	1.0	<0.40	3,200	620.000 D2	268.000 D2	24.200 D2	5,980.000 D1	18,900
	5/31/07	<10	776	776	7,800	<50	<0.100	3,100	600	226	<50	5,200	18,700
	5/13/08	1.53	672	672	7,230	7.3	0.95	2,870	425	179	24.70	4,470	16,900
	5/28/09	<50	1700	1700	7,700	1.8	<0.50	2,900	350	160	21	4,700	17,000
	5/19/11	<5.00	533	533	5,330	1.84	<0.150	1,700	396	155	13.5	4,440	12,500
MW-7	5/2/01	<2.00	436	436	8,154	--	--	2,430	599.5	289.8	34.57	4,578	18,578
	5/22/02	<1.00	440	440	7,420	--	--	2,280	630	264	48.50	4,390	16,900
	11/12/02	<0.10	412	412	7,530	--	--	1,800	512	244	55.00	3,950	15,700
	5/15/03	<1.00	438	438	7,180	--	--	2,350	583	220	33.30	4,970	16,800
	9/9/03	---	---	---	6,910	--	--	---	---	---	---	---	---
	11/20/03	<1.00	434	434	6,360	--	--	2,110	532	204	52.70	3,770	14,500
	5/4/04	<1.00	418	418	6,610	<4.00	<4.00	1,930	527	188	47.10	3,460	16,600
	5/10/05	<1.00	450	450	8,210	2.14	<2.00	1,810	506	188	62.80	3,860	14,600
	5/16/06	<10	480	480	6,500	1.1	<0.40	1,700	530.000 D2	200.000 D2	15.600 D2	4,020.000 D1	18,100
	5/31/07	<10	397	397	6,800	<50	<0.100	1,800	496	187	<50	3,730	14,900
	5/13/08	1.53	417	417	6,070	6.80	0.95	1,920	484	194	31.70	3,430	14,200
	5/28/09	<5.0	450	450	7,200	1.7	<0.50	2,200	410	180	50	3,900	14,000
	5/19/11	<5.00	435	435	3,790	1.56	<0.150	1,320	416	147	17.9	3,270	9,770
MW-8	5/2/01	<2.00	426	426	7,445	--	--	1,213	766.7	295.7	52.68	2,999	16,325
	5/23/02	<1.00	430	430	6,680	--	--	1,260	701	237	75.90	3,420	13,300
	11/12/02	<0.10	444	444	7,270	--	--	1,220	591	254	88.00	3,150	14,000
	5/15/03	<1.00	468	468	7,300	--	--	1,690	777	265	55.10	4,580	15,700
	9/9/03	--	--	--	7,270	--	--	--	--	--	--	--	--
	11/20/03	<1.00	438	438	8,190	--	--	2,570	881	280	64.5	3,560	14,040
	5/4/04	<1.00	380	380	7,960	<6.00	<6.00	1,370	912	321	60.10	2,970	12,750
	5/10/05	<1.00	446	446	2,590	4.12	<1.00	936	228	84.40	46.30	1,740	5,635

TABLE II
GROUNDWATER ANALYTICAL SUMMARY
CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY
J.R. PHILLIPS TANK BATTERY #2
LEA COUNTY, NEW MEXICO

Sample ID	Sample Date	Carbonate Alkalinity	Bicarbonate Alkalinity	Total Alkalinity	Chloride[2]	Fluoride[1]	Nitrate - (NO_3 as N)[1]	Sulfate (SO_4)[2]	Calcium	Magnesium	Potassium	Sodium	TDS[2]
New Mexico Water Quality Control Commission Groundwater Standard					250	1.60	10	600					1,000
MW-8 (Cont)	5/16/06	<10	480	480	2,600	3.1	<0.40	960	327.000 D2	117.000 D2	21.000 D2	1,680.000 D1	6,620
	5/31/07	<10	378	378	3,200	<50	<0.100	960	394	133	<50	1,830	8,080
	5/13/08	1.53	472	472	3,160	2.94	0.95	762	354	132	28.90	1,770	7,280
	5/28/09	<5.0	360	360	6,500	2.5	<0.50	1,000	950	280	38	2,600	14,000
	5/19/11	<5.00	433	433	1,650	2.90	<0.150	535	313	98.2	18.9	1,360	4,420
WW-1	--	--	--	--	13,152	--	--	--	--	--	--	--	--
	5/3/01	<2.00	<2.00	<2.00	12,053	--	--	629	1,419	387.3	38.95	1,486	22,571
	11/12/02	<0.10	<2.0	<2.0	<5.0	--	--	998	1,120	361	38.30	2,260	15,800
	5/15/03	<1.00	<4.00	<4.00	11,800	--	--	1,780	1,490	403	28.90	3,360	21,400
	9/9/03	--	--	--	<5.00	--	--	--	--	--	--	--	--
	11/21/03	<1.00	<4.00	<4.00	10,000	--	--	2,180	1,650	461	52.7	3,630	18,900
	5/4/04	<1.00	<4.00	<4.00	12,500	<8.00	<8.00	1,880	1,540	450	47.00	3,470	23,400
	5/10/05	<1.00	<4.00	<4.00	121	<1.00	<1.00	63.40	39.8	12.2	3.05	10.20	336
	5/16/06	<10	67	67	1,300	<0.50	1.9	110	155.000 D2	34.500 D2	<5.000 D2	186.000 D1	4,180
	5/31/07	<10	<10	<10	2,400	<25	<0.100	300	645	167	<50	1,830	5,340
	5/13/08	1.53	1.53	1.53	10,200	1.00	1.90	1,770	1,400	364	8.121	3,320	22,700
	5/28/09	<2.5	37	37	9,200	<1.0	<0.50	2,100	920	280	21	3,400	18,000
	5/19/11	<5.00	202	202	7,240	0.692	<0.150	2,500	658	310	21.8	5,850	19,700

Notes:

1. Shaded cells indicate New Mexico Water Quality Control Commission (NMWQCC) exceedance.
2. **Bold** results indicate laboratory detection.
3. Results shown in mg/L.
4. Analytical data prior to 2006 was provided to CRA by Larson & Associates.
5. D1 - The analysis was performed at a dilution due to the high analyte concentration.
6. D2 - The analysis was performed at a dilution due to the presence of matrix interferences.
7. [1]Human Health Standard for Groundwater
8. [2]Other Standard for Domestic Water Supply.

ALS Environmental

06-Jun-2011

Todd Wells
Conestoga-Rovers & Associates
6320 Rothway, Suite 100
Houston, TX 77040

Tel: (713) 734-3090
Fax: (713) 734-3391

Re: JR Phillips - 039126 Work Order: **1105705**

Dear Todd,

ALS Environmental received 10 samples on 20-May-2011 09:10 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 26.

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

Sincerely,

Patricia L. Lynch

Electronically approved by: Makenzie L. Henderson

Patricia L. Lynch
Project Manager

ACCREDITED IN ACCORDANCE WITH nelac

Certificate No: T104704231-09A-TX

ALS Environmental

Date: 06-Jun-11

Client: Conestoga-Rovers & Associates
Project: JR Phillips - 039126
Work Order: **1105705**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
1105705-01	MW-1 051911	Liquid		5/19/2011 11:15	5/20/2011 09:10	☐
1105705-02	MW-2 051911	Liquid		5/19/2011 11:40	5/20/2011 09:10	☐
1105705-03	MW-3 051911	Liquid		5/19/2011 12:00	5/20/2011 09:10	☐
1105705-04	MW-4 051911	Liquid		5/19/2011 12:20	5/20/2011 09:10	☐
1105705-05	MW-5 051911	Liquid		5/19/2011 12:40	5/20/2011 09:10	☐
1105705-06	MW-6 051911	Liquid		5/19/2011 13:40	5/20/2011 09:10	☐
1105705-07	MW-7 051911	Liquid		5/19/2011 13:15	5/20/2011 09:10	☐
1105705-08	MW-8 051911	Liquid		5/19/2011 14:00	5/20/2011 09:10	☐
1105705-09	WW-1 051911	Liquid		5/19/2011 10:30	5/20/2011 09:10	☐
1105705-10	Dup-1 051911	Liquid		5/19/2011	5/20/2011 09:10	☐

Client:	Conestoga-Rovers & Associates
Project:	JR Phillips - 039126
Work Order:	1105705

Case Narrative

Batch 52787, Dissolved Metals, Sample 1105830-06 : MS/MSD is for an unrelated sample.

ALS Environmental

Date: *06-Jun-11*

Client: Conestoga-Rovers & Associates
Project: JR Phillips - 039126
Sample ID: MW-1 051911
Collection Date: 5/19/2011 11:15 AM

Work Order: 1105705
Lab ID: 1105705-01
Matrix: LIQUID

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
DISSOLVED METALS		Method: **SW6020**		Prep: SW3010A / 5/27/11			Analyst: **ALR**
Calcium	**269**		**2.5**	**25.0**	**mg/L**	50	6/2/2011 17:23
Magnesium	**107**		**0.039**	**0.200**	**mg/L**	1	6/2/2011 08:12
Potassium	**26.1**		**0.10**	**0.200**	**mg/L**	1	6/2/2011 08:12
Sodium	**2,800**		**5.0**	**10.0**	**mg/L**	50	6/2/2011 17:23
ANIONS		Method: **E300**					Analyst: **TDW**
Chloride	**3,910**		**20.0**	**50.0**	**mg/L**	100	6/1/2011 21:17
Fluoride	**1.79**		**0.0500**	**0.100**	**mg/L**	1	6/1/2011 18:22
Sulfate	**1,540**		**20.0**	**50.0**	**mg/L**	100	6/1/2011 21:17
Nitrate/Nitrite (as N)	ND		0.150	0.500	mg/L	5	5/23/2011 17:54
Surr: Selenate (surr)	*94.4*			*85-115*	*%REC*	5	5/23/2011 17:54
Surr: Selenate (surr)	*108*			*85-115*	*%REC*	1	6/1/2011 18:22
Surr: Selenate (surr)	*114*			*85-115*	*%REC*	100	6/1/2011 21:17
ALKALINITY		Method: **SM2320B**					Analyst: **DM**
Alkalinity, Bicarbonate (As CaCO3)	**459**		**2.0**	**5.00**	**mg/L**	1	5/31/2011 14:30
Alkalinity, Carbonate (As CaCO3)	ND		2.0	5.00	mg/L	1	5/31/2011 14:30
Alkalinity, Total (As CaCO3)	**459**		**2.0**	**5.00**	**mg/L**	1	5/31/2011 14:30
TOTAL DISSOLVED SOLIDS		Method: **M2540C**					Analyst: **JKP**
Total Dissolved Solids (Residue, Filterable)	**8,550**		**5.0**	**10.0**	**mg/L**	1	5/25/2011 14:50

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

ALS Environmental

Date: *06-Jun-11*

Client: Conestoga-Rovers & Associates
Project: JR Phillips - 039126
Sample ID: MW-2 051911
Collection Date: 5/19/2011 11:40 AM

Work Order: 1105705
Lab ID: 1105705-02
Matrix: LIQUID

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
DISSOLVED METALS		Method: **SW6020**		Prep: SW3010A / 5/27/11			Analyst: **ALR**
Calcium	**356**		**2.5**	**25.0**	**mg/L**	50	6/2/2011 17:29
Magnesium	**137**		**0.039**	**0.200**	**mg/L**	1	6/2/2011 08:18
Potassium	**19.8**		**0.10**	**0.200**	**mg/L**	1	6/2/2011 08:18
Sodium	**3,160**		**5.0**	**10.0**	**mg/L**	50	6/2/2011 17:29
ANIONS		Method: **E300**					Analyst: **TDW**
Chloride	**3,520**		**20.0**	**50.0**	**mg/L**	100	6/1/2011 21:31
Fluoride	**1.77**		**0.0500**	**0.100**	**mg/L**	1	6/1/2011 18:37
Sulfate	**1,240**		**20.0**	**50.0**	**mg/L**	100	6/1/2011 21:31
Nitrate/Nitrite (as N)	ND		0.150	0.500	mg/L	5	5/23/2011 18:09
Surr: Selenate (surr)	*96.8*			*85-115*	*%REC*	5	5/23/2011 18:09
Surr: Selenate (surr)	*107*			*85-115*	*%REC*	1	6/1/2011 18:37
Surr: Selenate (surr)	*98.5*			*85-115*	*%REC*	100	6/1/2011 21:31
ALKALINITY		Method: **SM2320B**					Analyst: **DM**
Alkalinity, Bicarbonate (As CaCO3)	**471**		**2.0**	**5.00**	**mg/L**	1	5/31/2011 14:30
Alkalinity, Carbonate (As CaCO3)	ND		2.0	5.00	mg/L	1	5/31/2011 14:30
Alkalinity, Total (As CaCO3)	**471**		**2.0**	**5.00**	**mg/L**	1	5/31/2011 14:30
TOTAL DISSOLVED SOLIDS		Method: **M2540C**					Analyst: **JKP**
Total Dissolved Solids (Residue, Filterable)	**10,500**		**5.0**	**10.0**	**mg/L**	1	5/25/2011 14:50

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

ALS Environmental

Date: *06-Jun-11*

Client: Conestoga-Rovers & Associates
Project: JR Phillips - 039126
Sample ID: MW-3 051911
Collection Date: 5/19/2011 12:00 PM

Work Order: 1105705
Lab ID: 1105705-03
Matrix: LIQUID

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
DISSOLVED METALS			Method: **SW6020**		Prep: SW3010A / 5/27/11		Analyst: **ALR**
Calcium	**620**		**2.5**	**25.0**	**mg/L**	50	6/2/2011 17:34
Magnesium	**220**		**2.0**	**10.0**	**mg/L**	50	6/2/2011 17:34
Potassium	**16.1**		**0.10**	**0.200**	**mg/L**	1	6/2/2011 08:24
Sodium	**5,110**		**5.0**	**10.0**	**mg/L**	50	6/2/2011 17:34
ANIONS			Method: **E300**				Analyst: **TDW**
Chloride	**5,380**		**20.0**	**50.0**	**mg/L**	100	6/1/2011 21:46
Fluoride	**1.34**		**0.0500**	**0.100**	**mg/L**	1	6/1/2011 18:51
Sulfate	**1,600**		**20.0**	**50.0**	**mg/L**	100	6/1/2011 21:46
Nitrate/Nitrite (as N)	ND		0.150	0.500	mg/L	5	5/23/2011 18:23
Surr: Selenate (surr)	*96.0*			*85-115*	*%REC*	5	5/23/2011 18:23
Surr: Selenate (surr)	*102*			*85-115*	*%REC*	1	6/1/2011 18:51
Surr: Selenate (surr)	*101*			*85-115*	*%REC*	100	6/1/2011 21:46
ALKALINITY			Method: **SM2320B**				Analyst: **DM**
Alkalinity, Bicarbonate (As CaCO3)	**441**		**2.0**	**5.00**	**mg/L**	1	5/31/2011 14:30
Alkalinity, Carbonate (As CaCO3)	ND		2.0	5.00	mg/L	1	5/31/2011 14:30
Alkalinity, Total (As CaCO3)	**441**		**2.0**	**5.00**	**mg/L**	1	5/31/2011 14:30
TOTAL DISSOLVED SOLIDS			Method: **M2540C**				Analyst: **JKP**
Total Dissolved Solids (Residue, Filterable)	**14,600**		**5.0**	**10.0**	**mg/L**	1	5/25/2011 14:50

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

ALS Environmental

Date: *06-Jun-11*

Client: Conestoga-Rovers & Associates
Project: JR Phillips - 039126
Sample ID: MW-4 051911
Collection Date: 5/19/2011 12:20 PM

Work Order: 1105705
Lab ID: 1105705-04
Matrix: LIQUID

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
DISSOLVED METALS		Method: **SW6020**		Prep: SW3010A / 5/27/11			Analyst: **ALR**
Calcium	**164**		**2.5**	**25.0**	**mg/L**	50	6/2/2011 18:15
Magnesium	**102**		**0.039**	**0.200**	**mg/L**	1	6/2/2011 08:29
Potassium	**6.36**		**0.10**	**0.200**	**mg/L**	1	6/2/2011 08:29
Sodium	**3,830**		**5.0**	**10.0**	**mg/L**	50	6/2/2011 18:15
ANIONS		Method: **E300**					Analyst: **TDW**
Chloride	**3,690**		**20.0**	**50.0**	**mg/L**	100	6/1/2011 22:00
Fluoride	**3.72**		**0.0500**	**0.100**	**mg/L**	1	6/1/2011 19:06
Sulfate	**796**		**20.0**	**50.0**	**mg/L**	100	6/1/2011 22:00
Nitrate/Nitrite (as N)	ND		0.150	0.500	mg/L	5	5/23/2011 18:38
Surr: Selenate (surr)	*95.5*			*85-115*	*%REC*	5	5/23/2011 18:38
Surr: Selenate (surr)	*111*			*85-115*	*%REC*	1	6/1/2011 19:06
Surr: Selenate (surr)	*106*			*85-115*	*%REC*	100	6/1/2011 22:00
ALKALINITY		Method: **SM2320B**					Analyst: **DM**
Alkalinity, Bicarbonate (As CaCO3)	**964**		**2.0**	**5.00**	**mg/L**	1	5/31/2011 14:30
Alkalinity, Carbonate (As CaCO3)	ND		2.0	5.00	mg/L	1	5/31/2011 14:30
Alkalinity, Total (As CaCO3)	**964**		**2.0**	**5.00**	**mg/L**	1	5/31/2011 14:30
TOTAL DISSOLVED SOLIDS		Method: **M2540C**					Analyst: **JKP**
Total Dissolved Solids (Residue, Filterable)	**9,390**		**5.0**	**10.0**	**mg/L**	1	5/25/2011 14:50

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

ALS Environmental

Date: *06-Jun-11*

Client: Conestoga-Rovers & Associates
Project: JR Phillips - 039126
Sample ID: MW-5 051911
Collection Date: 5/19/2011 12:40 PM

Work Order: 1105705
Lab ID: 1105705-05
Matrix: LIQUID

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
DISSOLVED METALS		Method: **SW6020**		Prep: SW3010A / 5/27/11			Analyst: **ALR**
Calcium	**447**		**2.5**	**25.0**	**mg/L**	50	6/2/2011 18:20
Magnesium	**147**		**0.039**	**0.200**	**mg/L**	1	6/2/2011 08:35
Potassium	**20.5**		**0.10**	**0.200**	**mg/L**	1	6/2/2011 08:35
Sodium	**4,040**		**5.0**	**10.0**	**mg/L**	50	6/2/2011 18:20
ANIONS		Method: **E300**					Analyst: **TDW**
Chloride	**3,940**		**20.0**	**50.0**	**mg/L**	100	6/1/2011 22:15
Fluoride	**1.59**		**0.0500**	**0.100**	**mg/L**	1	6/1/2011 19:20
Sulfate	**1,400**		**20.0**	**50.0**	**mg/L**	100	6/1/2011 22:15
Nitrate/Nitrite (as N)	ND		0.150	0.500	mg/L	5	5/23/2011 18:52
Surr: Selenate (surr)	*97.7*			*85-115*	*%REC*	5	5/23/2011 18:52
Surr: Selenate (surr)	*103*			*85-115*	*%REC*	1	6/1/2011 19:20
Surr: Selenate (surr)	*101*			*85-115*	*%REC*	100	6/1/2011 22:15
ALKALINITY		Method: **SM2320B**					Analyst: **DM**
Alkalinity, Bicarbonate (As CaCO3)	**475**		**2.0**	**5.00**	**mg/L**	1	5/31/2011 14:30
Alkalinity, Carbonate (As CaCO3)	ND		2.0	5.00	mg/L	1	5/31/2011 14:30
Alkalinity, Total (As CaCO3)	**475**		**2.0**	**5.00**	**mg/L**	1	5/31/2011 14:30
TOTAL DISSOLVED SOLIDS		Method: **M2540C**					Analyst: **JKP**
Total Dissolved Solids (Residue, Filterable)	**11,600**		**5.0**	**10.0**	**mg/L**	1	5/25/2011 14:50

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

ALS Environmental

Date: *06-Jun-11*

Client: Conestoga-Rovers & Associates
Project: JR Phillips - 039126
Sample ID: MW-6 051911
Collection Date: 5/19/2011 01:40 PM

Work Order: 1105705
Lab ID: 1105705-06
Matrix: LIQUID

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
DISSOLVED METALS		Method: **SW6020**			Prep: SW3010A / 5/27/11		Analyst: **ALR**
Calcium	**396**		**2.5**	**25.0**	**mg/L**	50	6/2/2011 18:37
Magnesium	**155**		**2.0**	**10.0**	**mg/L**	50	6/2/2011 18:37
Potassium	**13.5**		**5.0**	**10.0**	**mg/L**	50	6/2/2011 18:37
Sodium	**4,440**		**5.0**	**10.0**	**mg/L**	50	6/2/2011 18:37
ANIONS		Method: **E300**					Analyst: **TDW**
Chloride	**5,330**		**20.0**	**50.0**	**mg/L**	100	6/1/2011 22:29
Fluoride	**1.84**		**0.0500**	**0.100**	**mg/L**	1	6/1/2011 19:35
Sulfate	**1,700**		**20.0**	**50.0**	**mg/L**	100	6/1/2011 22:29
Nitrate/Nitrite (as N)	ND		0.150	0.500	mg/L	5	5/23/2011 19:07
Surr: Selenate (surr)	*99.6*			*85-115*	*%REC*	5	5/23/2011 19:07
Surr: Selenate (surr)	*102*			*85-115*	*%REC*	1	6/1/2011 19:35
Surr: Selenate (surr)	*103*			*85-115*	*%REC*	100	6/1/2011 22:29
ALKALINITY		Method: **SM2320B**					Analyst: **DM**
Alkalinity, Bicarbonate (As CaCO3)	**533**		**2.0**	**5.00**	**mg/L**	1	5/31/2011 14:30
Alkalinity, Carbonate (As CaCO3)	ND		2.0	5.00	mg/L	1	5/31/2011 14:30
Alkalinity, Total (As CaCO3)	**533**		**2.0**	**5.00**	**mg/L**	1	5/31/2011 14:30
TOTAL DISSOLVED SOLIDS		Method: **M2540C**					Analyst: **JKP**
Total Dissolved Solids (Residue, Filterable)	**12,500**		**5.0**	**10.0**	**mg/L**	1	5/26/2011 12:20

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

ALS Environmental

Date: *06-Jun-11*

Client: Conestoga-Rovers & Associates
Project: JR Phillips - 039126
Sample ID: MW-7 051911
Collection Date: 5/19/2011 01:15 PM

Work Order: 1105705
Lab ID: 1105705-07
Matrix: LIQUID

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
DISSOLVED METALS		Method: **SW6020**		Prep: SW3010A / 5/27/11			Analyst: **ALR**
Calcium	**416**		**2.5**	**25.0**	**mg/L**	50	6/2/2011 18:43
Magnesium	**147**		**2.0**	**10.0**	**mg/L**	50	6/2/2011 18:43
Potassium	**17.9**		**5.0**	**10.0**	**mg/L**	50	6/2/2011 18:43
Sodium	**3,270**		**5.0**	**10.0**	**mg/L**	50	6/2/2011 18:43
ANIONS		Method: **E300**					Analyst: **TDW**
Chloride	**3,790**		**20.0**	**50.0**	**mg/L**	100	6/1/2011 22:44
Fluoride	**1.56**		**0.0500**	**0.100**	**mg/L**	1	6/1/2011 19:49
Sulfate	**1,320**		**20.0**	**50.0**	**mg/L**	100	6/1/2011 22:44
Nitrate/Nitrite (as N)	ND		0.150	0.500	mg/L	5	5/23/2011 19:22
Surr: Selenate (surr)	*99.3*			*85-115*	*%REC*	5	5/23/2011 19:22
Surr: Selenate (surr)	*108*			*85-115*	*%REC*	1	6/1/2011 19:49
Surr: Selenate (surr)	*105*			*85-115*	*%REC*	100	6/1/2011 22:44
ALKALINITY		Method: **SM2320B**					Analyst: **DM**
Alkalinity, Bicarbonate (As CaCO3)	**435**		**2.0**	**5.00**	**mg/L**	1	5/31/2011 14:30
Alkalinity, Carbonate (As CaCO3)	ND		2.0	5.00	mg/L	1	5/31/2011 14:30
Alkalinity, Total (As CaCO3)	**435**		**2.0**	**5.00**	**mg/L**	1	5/31/2011 14:30
TOTAL DISSOLVED SOLIDS		Method: **M2540C**					Analyst: **JKP**
Total Dissolved Solids (Residue, Filterable)	**9,770**		**5.0**	**10.0**	**mg/L**	1	5/26/2011 12:20

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

ALS Environmental

Date: *06-Jun-11*

Client: Conestoga-Rovers & Associates
Project: JR Phillips - 039126
Sample ID: MW-8 051911
Collection Date: 5/19/2011 02:00 PM

Work Order: 1105705
Lab ID: 1105705-08
Matrix: LIQUID

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
DISSOLVED METALS		Method: **SW6020**		Prep: SW3010A / 5/27/11			Analyst: **ALR**
Calcium	**313**		**2.5**	**25.0**	**mg/L**	50	6/2/2011 18:49
Magnesium	**98.2**		**2.0**	**10.0**	**mg/L**	50	6/2/2011 18:49
Potassium	**18.9**		**5.0**	**10.0**	**mg/L**	50	6/2/2011 18:49
Sodium	**1,360**		**5.0**	**10.0**	**mg/L**	50	6/2/2011 18:49
ANIONS		Method: **E300**					Analyst: **TDW**
Chloride	**1,650**		**20.0**	**50.0**	**mg/L**	100	6/1/2011 23:28
Fluoride	**2.90**		**0.0500**	**0.100**	**mg/L**	1	6/1/2011 20:33
Sulfate	**535**		**20.0**	**50.0**	**mg/L**	100	6/1/2011 23:28
Nitrate/Nitrite (as N)	ND		0.150	0.500	mg/L	5	5/23/2011 19:36
Surr: Selenate (surr)	*95.6*			*85-115*	*%REC*	5	5/23/2011 19:36
Surr: Selenate (surr)	*112*			*85-115*	*%REC*	1	6/1/2011 20:33
Surr: Selenate (surr)	*102*			*85-115*	*%REC*	100	6/1/2011 23:28
ALKALINITY		Method: **SM2320B**					Analyst: **DM**
Alkalinity, Bicarbonate (As CaCO3)	**433**		**2.0**	**5.00**	**mg/L**	1	5/31/2011 14:30
Alkalinity, Carbonate (As CaCO3)	ND		2.0	5.00	mg/L	1	5/31/2011 14:30
Alkalinity, Total (As CaCO3)	**433**		**2.0**	**5.00**	**mg/L**	1	5/31/2011 14:30
TOTAL DISSOLVED SOLIDS		Method: **M2540C**					Analyst: **JKP**
Total Dissolved Solids (Residue, Filterable)	**4,420**		**5.0**	**10.0**	**mg/L**	1	5/26/2011 12:20

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

ALS Environmental

Date: *06-Jun-11*

Client: Conestoga-Rovers & Associates
Project: JR Phillips - 039126
Sample ID: WW-1 051911
Collection Date: 5/19/2011 10:30 AM

Work Order: 1105705
Lab ID: 1105705-09
Matrix: LIQUID

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
DISSOLVED METALS		Method: **SW6020**		Prep: SW3010A / 5/27/11			Analyst: **ALR**
Calcium	**658**		**2.5**	**25.0**	**mg/L**	50	6/2/2011 18:55
Magnesium	**310**		**2.0**	**10.0**	**mg/L**	50	6/2/2011 18:55
Potassium	**21.8**		**5.0**	**10.0**	**mg/L**	50	6/2/2011 18:55
Sodium	**5,850**		**5.0**	**10.0**	**mg/L**	50	6/2/2011 18:55
ANIONS		Method: **E300**					Analyst: **TDW**
Chloride	**7,240**		**20.0**	**50.0**	**mg/L**	100	6/1/2011 23:42
Fluoride	**0.692**		**0.0500**	**0.100**	**mg/L**	1	6/1/2011 20:48
Sulfate	**2,500**		**20.0**	**50.0**	**mg/L**	100	6/1/2011 23:42
Nitrate/Nitrite (as N)	ND		0.150	0.500	mg/L	5	5/23/2011 19:51
Surr: Selenate (surr)	*96.2*			*85-115*	*%REC*	5	5/23/2011 19:51
Surr: Selenate (surr)	*93.1*			*85-115*	*%REC*	1	6/1/2011 20:48
Surr: Selenate (surr)	*103*			*85-115*	*%REC*	100	6/1/2011 23:42
ALKALINITY		Method: **SM2320B**					Analyst: **DM**
Alkalinity, Bicarbonate (As CaCO3)	**202**		**2.0**	**5.00**	**mg/L**	1	5/31/2011 14:30
Alkalinity, Carbonate (As CaCO3)	ND		2.0	5.00	mg/L	1	5/31/2011 14:30
Alkalinity, Total (As CaCO3)	**202**		**2.0**	**5.00**	**mg/L**	1	5/31/2011 14:30
TOTAL DISSOLVED SOLIDS		Method: **M2540C**					Analyst: **JKP**
Total Dissolved Solids (Residue, Filterable)	**19,700**		**5.0**	**10.0**	**mg/L**	1	5/25/2011 14:50

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

ALS Environmental

Date: *06-Jun-11*

Client: Conestoga-Rovers & Associates
Project: JR Phillips - 039126
Sample ID: Dup-1 051911
Collection Date: 5/19/2011

Work Order: 1105705
Lab ID: 1105705-10
Matrix: LIQUID

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
DISSOLVED METALS		Method: **SW6020**		Prep: SW3010A / 5/27/11			Analyst: **ALR**
Calcium	**738**		**2.5**	**25.0**	**mg/L**	50	6/2/2011 19:00
Magnesium	**355**		**2.0**	**10.0**	**mg/L**	50	6/2/2011 19:00
Potassium	**25.1**		**5.0**	**10.0**	**mg/L**	50	6/2/2011 19:00
Sodium	**6,740**		**5.0**	**10.0**	**mg/L**	50	6/2/2011 19:00
ANIONS		Method: **E300**					Analyst: **TDW**
Chloride	**7,030**		**20.0**	**50.0**	**mg/L**	100	6/1/2011 23:57
Fluoride	**0.695**		**0.0500**	**0.100**	**mg/L**	1	6/1/2011 21:02
Sulfate	**2,430**		**20.0**	**50.0**	**mg/L**	100	6/1/2011 23:57
Nitrate/Nitrite (as N)	ND		0.150	0.500	mg/L	5	5/23/2011 20:34
Surr: Selenate (surr)	*97.3*			*85-115*	*%REC*	5	5/23/2011 20:34
Surr: Selenate (surr)	*93.6*			*85-115*	*%REC*	1	6/1/2011 21:02
Surr: Selenate (surr)	*98.7*			*85-115*	*%REC*	100	6/1/2011 23:57
ALKALINITY		Method: **SM2320B**					Analyst: **DM**
Alkalinity, Bicarbonate (As CaCO3)	**202**		**2.0**	**5.00**	**mg/L**	1	5/31/2011 14:30
Alkalinity, Carbonate (As CaCO3)	ND		2.0	5.00	mg/L	1	5/31/2011 14:30
Alkalinity, Total (As CaCO3)	**202**		**2.0**	**5.00**	**mg/L**	1	5/31/2011 14:30
TOTAL DISSOLVED SOLIDS		Method: **M2540C**					Analyst: **JKP**
Total Dissolved Solids (Residue, Filterable)	**20,800**		**5.0**	**10.0**	**mg/L**	1	5/25/2011 14:50

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

ALS Environmental

Date: 06-Jun-11

Client: Conestoga-Rovers & Associates

Work Order: 1105705

Project: JR Phillips - 039126

QC BATCH REPORT

Batch ID: **52787** Instrument ID **ICPMS03** Method: **SW6020** **(Dissolve)**

MBLK Sample ID: **MBLKW4-052711-52787** Units: **mg/L** Analysis Date: **6/2/2011 07:04 AM**

Client ID: Run ID: **ICPMS03_110531A** SeqNo: **2410020** Prep Date: **5/27/2011** DF: **1**

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

LCS Sample ID: **MLCSW4-052711-52787** Units: **mg/L** Analysis Date: **6/2/2011 07:10 AM**

Client ID: Run ID: **ICPMS03_110531A** SeqNo: **2410021** Prep Date: **5/27/2011** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	5.275	0.50	5	0	106	80-120	0			
Magnesium	5.133	0.20	5	0	103	80-120	0			
Potassium	5.119	0.20	5	0	102	80-120	0			
Sodium	5.07	0.20	5	0	101	80-120	0			

MS Sample ID: **1105830-06BMS** Units: **mg/L** Analysis Date: **6/2/2011 07:33 AM**

Client ID: Run ID: **ICPMS03_110531A** SeqNo: **2410025** Prep Date: **5/27/2011** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	315.2	0.50	5	293.2	440	75-125	0			SEO
Magnesium	175.1	0.20	5	162.6	250	75-125	0			SO
Potassium	10.9	0.20	5	5.758	103	75-125	0			
Sodium	ND	0.20	5	0	0	75-125	0			SX

MSD Sample ID: **1105830-06BMSD** Units: **mg/L** Analysis Date: **6/2/2011 07:38 AM**

Client ID: Run ID: **ICPMS03_110531A** SeqNo: **2410026** Prep Date: **5/27/2011** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	291.9	0.50	5	293.2	-26	75-125	315.2	7.68	25	SEO
Magnesium	158.1	0.20	5	162.6	-90	75-125	175.1	10.2	25	SO
Potassium	10.13	0.20	5	5.758	87.4	75-125	10.9	7.32	25	
Sodium	ND	0.20	5	0	0	75-125	0	0	25	SX

DUP Sample ID: **1105830-06BDUP** Units: **mg/L** Analysis Date: **6/2/2011 07:22 AM**

Client ID: Run ID: **ICPMS03_110531A** SeqNo: **2410023** Prep Date: **5/27/2011** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Magnesium	164	0.20	0	0	0	0-0	162.6	0.857	25	
Potassium	5.88	0.20	0	0	0	0-0	5.758	2.1	25	

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

Client: Conestoga-Rovers & Associates
Work Order: 1105705
Project: JR Phillips - 039126

QC BATCH REPORT

Batch ID: **52787** Instrument ID **ICPMS03** Method: **SW6020** **(Dissolve)**

DUP Sample ID: **1105830-06BDUP** Units: **mg/L** Analysis Date: **6/2/2011 05:06 PM**

Client ID: Run ID: **ICPMS03_110602A** SeqNo: **2410702** Prep Date: **5/27/2011** DF: **50**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	407	25	0	0	0	0-0	406.4	0.123	25	
Sodium	569	10	0	0	0	0-0	557	2.13	25	

The following samples were analyzed in this batch:

1105705-01A	1105705-02A	1105705-03A
1105705-04A	1105705-05A	1105705-06A
1105705-07A	1105705-08A	1105705-09A
1105705-10A		

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

Client: Conestoga-Rovers & Associates
Work Order: 1105705
Project: JR Phillips - 039126

QC BATCH REPORT

Batch ID: **R110311** Instrument ID **ICS2100** Method: **E300**

MBLK Sample ID: **WBLKW3-052311-R110311** Units: **mg/L** Analysis Date: **5/23/2011 02:36 PM**
Client ID: Run ID: **ICS2100_110523A** SeqNo: **2397671** Prep Date: DF: **5**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrate/Nitrite (as N)	ND	0.50								
Surr: Selenate (surr)	*24.23*	0.50	*25*	0	*96.9*	*85-115*	0			

LCS Sample ID: **WLCSW3-052311-R110311** Units: **mg/L** Analysis Date: **5/23/2011 02:51 PM**
Client ID: Run ID: **ICS2100_110523A** SeqNo: **2397672** Prep Date: DF: **5**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrate/Nitrite (as N)	38.71	0.50	40	0	96.8	90-110	0			
Surr: Selenate (surr)	*24.47*	0.50	*25*	0	*97.9*	*85-115*	0			

LCSD Sample ID: **WLCSDW3-052311-R110311** Units: **mg/L** Analysis Date: **5/23/2011 03:05 PM**
Client ID: Run ID: **ICS2100_110523A** SeqNo: **2397673** Prep Date: DF: **5**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrate/Nitrite (as N)	41.08	0.50	40	0	103	90-110	38.71	5.94	20	
Surr: Selenate (surr)	*26.1*	0.50	*25*	0	*104*	*85-115*	24.47	*6.45*	*20*	

MS Sample ID: **1105531-03AMS** Units: **mg/L** Analysis Date: **5/23/2011 04:18 PM**
Client ID: Run ID: **ICS2100_110523A** SeqNo: **2397678** Prep Date: DF: **5**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrate/Nitrite (as N)	21.01	0.50	20	0.872	101	80-120	0			
Surr: Selenate (surr)	*24.35*	0.50	*25*	0	*97.4*	*85-115*	0			

MS Sample ID: **1105705-10BMS** Units: **mg/L** Analysis Date: **5/23/2011 08:49 PM**
Client ID: **Dup-1 051911** Run ID: **ICS2100_110523A** SeqNo: **2397877** Prep Date: DF: **5**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrate/Nitrite (as N)	17.35	0.50	20	0	86.8	80-120	0			
Surr: Selenate (surr)	*25.13*	0.50	*25*	0	*101*	*85-115*	0			

MSD Sample ID: **1105531-03AMSD** Units: **mg/L** Analysis Date: **5/23/2011 04:33 PM**
Client ID: Run ID: **ICS2100_110523A** SeqNo: **2397690** Prep Date: DF: **5**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrate/Nitrite (as N)	20	0.50	20	0.872	95.6	80-120	21.01	4.97	20	
Surr: Selenate (surr)	*23.82*	0.50	*25*	0	*95.3*	*85-115*	24.35	*2.18*	*20*	

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

Client: Conestoga-Rovers & Associates
Work Order: 1105705
Project: JR Phillips - 039126

QC BATCH REPORT

Batch ID: **R110311** Instrument ID **ICS2100** Method: **E300**

MSD Sample ID: **1105705-10BMSD** Units: **mg/L** Analysis Date: **5/23/2011 09:03 PM**

Client ID: **Dup-1 051911** Run ID: **ICS2100_110523A** SeqNo: **2397881** Prep Date: DF: **5**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrate/Nitrite (as N)	17.28	0.50	20	0	86.4	80-120	17.35	0.387	20	
Surr: Selenate (surr)	*25.4*	0.50	*25*	0	*102*	*85-115*	25.13	*1.05*	*20*	

The following samples were analyzed in this batch:

1105705-01B	1105705-02B	1105705-03B
1105705-04B	1105705-05B	1105705-06B
1105705-07B	1105705-08B	1105705-09B
1105705-10B		

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

Client: Conestoga-Rovers & Associates
Work Order: 1105705
Project: JR Phillips - 039126

QC BATCH REPORT

Batch ID: **R110541** Instrument ID **Balance1** Method: **M2540C**

MBLK Sample ID: **BLANK-R110541** Units: **mg/L** Analysis Date: **5/25/2011 02:50 PM**
Client ID: Run ID: **BALANCE1_110525L** SeqNo: **2403474** 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, Filt	ND	10								

LCS Sample ID: **LCS-R110541** Units: **mg/L** Analysis Date: **5/25/2011 02:50 PM**
Client ID: Run ID: **BALANCE1_110525L** SeqNo: **2403480** 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, Filt	1092	10	1000	0	109	85-115	0			

DUP Sample ID: **1105687-07CDUP** Units: **mg/L** Analysis Date: **5/25/2011 02:50 PM**
Client ID: Run ID: **BALANCE1_110525L** SeqNo: **2403429** 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, Filt	26650	10	0	0	0	0-0	27600	3.52	20	

DUP Sample ID: **1105702-09CDUP** Units: **mg/L** Analysis Date: **5/25/2011 02:50 PM**
Client ID: Run ID: **BALANCE1_110525L** SeqNo: **2403435** 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, Filt	436	10	0	0	0	0-0	498	13.3	20	

The following samples were analyzed in this batch:

1105705-01C	1105705-02C	1105705-03C
1105705-04C	1105705-05C	1105705-09C
1105705-10C		

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

Client: Conestoga-Rovers & Associates
Work Order: 1105705
Project: JR Phillips - 039126

QC BATCH REPORT

Batch ID: **R110595** Instrument ID **Balance1** Method: **M2540C**

MBLK Sample ID: **BLANK-R110595** Units: **mg/L** Analysis Date: **5/26/2011 12:20 PM**
Client ID: Run ID: **BALANCE1_110526E** SeqNo: **2404898** 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, Filt	ND	10								

LCS Sample ID: **LCS-R110595** Units: **mg/L** Analysis Date: **5/26/2011 12:20 PM**
Client ID: Run ID: **BALANCE1_110526E** SeqNo: **2404904** 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, Filt	1032	10	1000	0	103	85-115	0			

DUP Sample ID: **1105702-03CDUP** Units: **mg/L** Analysis Date: **5/26/2011 12:20 PM**
Client ID: Run ID: **BALANCE1_110526E** SeqNo: **2404864** 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, Filt	710	10	0	0	0	0-0	722	1.68	20	

DUP Sample ID: **1105704-15BDUP** Units: **mg/L** Analysis Date: **5/26/2011 12:20 PM**
Client ID: Run ID: **BALANCE1_110526E** SeqNo: **2404890** 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, Filt	74	10	0	0	0	0-0	64	14.5	20	

The following samples were analyzed in this batch: 1105705-06C 1105705-07C 1105705-08C

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

Client: Conestoga-Rovers & Associates
Work Order: 1105705
Project: JR Phillips - 039126

QC BATCH REPORT

Batch ID: **R110694** Instrument ID **WetChem** Method: **SM2320B**

MBLK Sample ID: **WBLKW1-053111-R110694** Units: **mg/L** Analysis Date: **5/31/2011 02:30 PM**
Client ID: Run ID: **WETCHEM_110531I** SeqNo: **2407693** 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)	ND	5.0								
Alkalinity, Carbonate (As CaCO3)	ND	5.0								
Alkalinity, Total (As CaCO3)	ND	5.0								

LCS Sample ID: **WLCSW1-053111-R110694** Units: **mg/L** Analysis Date: **5/31/2011 02:30 PM**
Client ID: Run ID: **WETCHEM_110531I** SeqNo: **2407694** 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)	989.7	5.0	1000	0	99	80-120	0			
Alkalinity, Total (As CaCO3)	989.7	5.0	1000	0	99	80-120	0			

DUP Sample ID: **1105705-10CDUP** Units: **mg/L** Analysis Date: **5/31/2011 02:30 PM**
Client ID: **Dup-1 051911** Run ID: **WETCHEM_110531I** SeqNo: **2407713** 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)	200.9	5.0	0	0	0	0-0	201.9	0.492	20	
Alkalinity, Carbonate (As CaCO3)	ND	5.0	0	0	0	0-0	0	0	20	
Alkalinity, Total (As CaCO3)	200.9	5.0	0	0	0	0-0	201.9	0.492	20	

The following samples were analyzed in this batch:

1105705-01C	1105705-02C	1105705-03C
1105705-04C	1105705-05C	1105705-06C
1105705-07C	1105705-08C	1105705-09C
1105705-10C		

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

Client: Conestoga-Rovers & Associates
Work Order: 1105705
Project: JR Phillips - 039126

QC BATCH REPORT

Batch ID: **R110760** Instrument ID **ICS2100** Method: **E300**

MBLK Sample ID: **WBLKW3-060111-R110760** Units: **mg/L** Analysis Date: **6/1/2011 05:39 PM**
Client ID: Run ID: **ICS2100_110601B** SeqNo: **2409568** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	ND	0.50								
Fluoride	ND	0.10								
Sulfate	ND	0.50								
Surr: Selenate (surr)	*5.012*	0.10	*5*	0	*100*	*85-115*	0			

LCS Sample ID: **WLCSW3-060111-R110760** Units: **mg/L** Analysis Date: **6/1/2011 05:53 PM**
Client ID: Run ID: **ICS2100_110601B** SeqNo: **2409569** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	21.57	0.50	20	0	108	90-110	0			
Fluoride	4.257	0.10	4	0	106	90-110	0			
Sulfate	21.44	0.50	20	0	107	90-110	0			
Surr: Selenate (surr)	*5.324*	0.10	*5*	0	*106*	*85-115*	0			

LCSD Sample ID: **WLCSDW3-060111-R110760** Units: **mg/L** Analysis Date: **6/1/2011 06:08 PM**
Client ID: Run ID: **ICS2100_110601B** SeqNo: **2409570** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	21.04	0.50	20	0	105	90-110	21.57	2.47	20	
Fluoride	4.148	0.10	4	0	104	90-110	4.257	2.59	20	
Sulfate	21.1	0.50	20	0	105	90-110	21.44	1.62	20	
Surr: Selenate (surr)	*5.052*	0.10	*5*	0	*101*	*85-115*	5.324	*5.24*	*20*	

MS Sample ID: **1106034-06AMS** Units: **mg/L** Analysis Date: **6/2/2011 01:39 AM**
Client ID: Run ID: **ICS2100_110601B** SeqNo: **2409601** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	87.17	0.50	10	77.1	101	80-120	0			O
Fluoride	2.471	0.10	2	0.448	101	80-120	0			
Sulfate	37.69	0.50	10	27.24	104	80-120	0			
Surr: Selenate (surr)	*5.148*	0.10	*5*	0	*103*	*85-115*	0			

MS Sample ID: **1106034-07AMS** Units: **mg/L** Analysis Date: **6/2/2011 02:51 AM**
Client ID: Run ID: **ICS2100_110601B** SeqNo: **2409606** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	69.08	0.50	10	59.52	95.7	80-120	0			O
Fluoride	2.168	0.10	2	0.289	94	80-120	0			
Sulfate	25.19	0.50	10	15.38	98.1	80-120	0			
Surr: Selenate (surr)	*5.047*	0.10	*5*	0	*101*	*85-115*	0			

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

Client: Conestoga-Rovers & Associates
Work Order: 1105705
Project: JR Phillips - 039126

QC BATCH REPORT

Batch ID: **R110760** Instrument ID **ICS2100** Method: **E300**

MSD Sample ID: **1106034-06AMSD** Units: **mg/L** Analysis Date: **6/2/2011 02:22 AM**
Client ID: Run ID: **ICS2100_110601B** SeqNo: **2409604** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	85.16	0.50	10	77.1	80.6	80-120	87.17	2.33	20	O
Fluoride	2.428	0.10	2	0.448	99	80-120	2.471	1.76	20	
Sulfate	36.9	0.50	10	27.24	96.6	80-120	37.69	2.13	20	
Surr: Selenate (surr)	*5.038*	0.10	*5*	0	*101*	*85-115*	5.148	*2.16*	*20*	

MSD Sample ID: **1106034-07AMSD** Units: **mg/L** Analysis Date: **6/2/2011 03:06 AM**
Client ID: Run ID: **ICS2100_110601B** SeqNo: **2409607** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	68.1	0.50	10	59.52	85.8	80-120	69.08	1.44	20	O
Fluoride	2.125	0.10	2	0.289	91.8	80-120	2.168	2	20	
Sulfate	24.84	0.50	10	15.38	94.6	80-120	25.19	1.38	20	
Surr: Selenate (surr)	*4.954*	0.10	*5*	0	*99.1*	*85-115*	5.047	*1.86*	*20*	

The following samples were analyzed in this batch:

1105705-01C	1105705-02C	1105705-03C
1105705-04C	1105705-05C	1105705-06C
1105705-07C	1105705-08C	1105705-09C
1105705-10C		

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

ALS Environmental

Date: 06-Jun-11

Client: Conestoga-Rovers & Associates
Project: JR Phillips - 039126
WorkOrder: 1105705

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
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

COC ID: 33325

1105105

CRA-HOU:

Project: JR Phillips - 039126

ALS Project Manager:

Customer Information		Project Information			
Purchase Order		Project Name	~~Chapparal~~ JR Phillips	A	Dissolved Metals(6020/7000) Ca, Mg, Na, K
Work Order		Project Number	~~PO#~~ 039126	B	Anions(300) Cl, F, SO4
Company Name	Conestoga-Rovers & Associates	Bill To Company	Conestoga-Rovers & Associates	C	Nitrate/ Nitrite
Send Report To	Todd Wells	Invoice Attn	Todd Wells	D	Alkalinity
Address	6320 Rothway, Suite 100	Address	6320 Rothway, Suite 100	E	TDS
				F	
City/State/Zip	Houston, TX 77040	City/State/Zip	Houston, TX 77040	G	
Phone	(713) 734-3090	Phone	(713) 734-3090	H	
Fax	(713) 734-3391	Fax	(713) 734-3391	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-1 051911	5-19-11	1115	L	2,3	3	X	X	X	X	X						
2	MW-2 051911	5-19-11	1140	L	2,3	3	X	X	X	X	X						
3	MW-3 051911	5-19-11	1200	L	2,3	3	X	X	X	X	X						
4	MW-4 051911	5-19-11	1220	L	2,3	3	X	X	X	X	X						
5	MW-5 051911	5-19-11	1240	L	2,3	3	X	X	X	X	X						
6	MW-6 051911	5-19-11	1340	L	2,3	3	X	X	X	X	X						
7	MW-7 051911	5-19-11	1315	L	2,3	3	X	X	X	X	X						
8	MW-8 05191	5-19-11	1400	L	2,3	3	X	X	X	X	X						
9	WW-1 051911	5-19-11	1030	L	2,3	3	X	X	X	X	X						
10	DUP-1 051911	5-19-11		L	2,3	3	X	X	X	X	X						

Sampler(s) Please Print & Sign: Glenn Quinney

Shipment Method: FED-EX

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:
	5-19-11	1730	
Relinquished by:	Date:	Time:	Received by (Laboratory):
			5-20-11 0910
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):

Notes: 10 Day TAT

Cooler ID	Cooler Temp.
4123.	
4122.	

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.

☐ 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 2 of 2

☐ ALS Laboratory Group
3352 128th Ave.
Holland, MI 49424-9263
Tel: +1 616 399 6070
Fax: +1 616 399 6185

ALS Project Manager:		ALS Work Order #:	1105705

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order		Project Name	JR Phillips	A	
Work Order		Project Number	039126	B	
Company Name	Conestoga-Rovers & A	Bill To Company	Conestoga-Rovers & Associates	C	
Send Report To	Todd Wells	Invoice Attn	Todd Wells	D	
Address	6320 Rothway, Suite 100	Address	6320 Rothway, Suite 100	E	
				F	
City/State/Zip	Houston, TX 77040	City/State/Zip	Houston TX 77040	G	
Phone	713 734-3090	Phone	713 734-3090	H	
Fax	713 734-3391	Fax	713 734-3391	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	Temp Blank			L		1											
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	

Sampler(s) Please Print & Sign	Shipment Method	Required Turnaround Time: (Check Box)	Results Due Date:
Glenn Quinney	FED EX	☒ STD 10 Wk Days ☐ 5 Wk Days ☐ 2 Wk Days ☐ 24 Hour ☐ Other	

Relinquished by:	Date:	Time:	Received by:
	5-19-11	1730	
Relinquished by:	Date:	Time:	Received by (Laboratory):
			5:20:11 0910.
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):

Notes:

Cooler ID	Cooler Temp
4123.	
4123	

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

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ALS Environmental

Sample Receipt Checklist

Client Name: **CRA-HOU** Date/Time Received: **20-May-11 09:10**

Work Order: **1105705** Received by: **PMG**

Checklist completed by Paresh M. Gjga (eSignature) 21-May-11 (Date) Reviewed by: Patricia L. Lynch (eSignature) 23-May-11 (Date)

Matrices: Liquid
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):	1.6, 1.8	002	
Cooler(s)/Kit(s):	4123, 4122		
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:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction: