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2013 AGWMR

05 / 30 / 2014

CONESTOGA-ROVERS & ASSOCIATES

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Final Report

2013 Annual Groundwater Monitoring and Closure Report

J.R. Phillips No. 2 Tank Battery
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: Chevron Environmental Management Company

Conestoga-Rovers & Associates
2270 Springlake Road, Suite 800
Dallas, Texas 75234

March 2014 • 039126 • Report No. 9

Partners in Sustainability

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Section 1.0 Introduction

This Annual Groundwater Monitoring Report presents groundwater data collected during the 2013 reporting period at the J.R. Phillips Tank Battery No. 2 (hereafter referred to as the "Site"). On May 14-15, 2013, Conestoga-Rovers & Associates (CRA) conducted an annual groundwater monitoring event on behalf of Chevron Environmental Management Company (CEMC).

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. A Site Location Map is presented as Figure 1. 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.

Site assessment activities were initiated in 1999 when Environmental Plus, Inc. (EPI) of Eunice, New Mexico performed a subsurface assessment of the emergency 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 soils were 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 feet to 30 feet below ground surface (bgs) and the burn pit was excavated to approximately 12 feet 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 up-gradient, down-gradient, and cross-gradient 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 2 years, with groundwater samples to be analyzed for major anions, cations, and total dissolved solids (TDS).

The proposed semi-annual groundwater sampling 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). 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 for major cations,

anions, and TDS. The groundwater monitoring modifications were approved by the NMOCD in a correspondence dated October 1, 2004. Since 2006, annual groundwater monitoring and reporting activities have been conducted by CRA on behalf of CEMC.

Section 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	1.6[1]
Nitrate (NO_3 as N)	10[1]
Chloride	250[2]
Sulfate (SO_4) [2]	600[2]
Total Dissolved Solids (TDS)	1,000[2]

Notes:

1) NMWQCC Human Health Standards per NMAC 20.6.2.3103A

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

Section 3.0 Groundwater Sampling and Analysis

The Site is monitored annually with a network of eight monitor wells and one water well (Figure 2). Prior to collecting groundwater samples, the depth to groundwater in each monitoring well was measured with an electronic interface probe to the nearest hundredth of a foot. Measurements were referenced to a surveyed point on each well casing to determine a relative elevation. After recording fluid levels, the wells were purged of a minimum of three casing volumes of groundwater with disposable PVC bailers. Purge waters were labeled and containerized on-Site for transportation and disposal at an NMOCD-permitted and Chevron-approved salt water disposal (SWD) facility by a third party contractor. Water quality parameters (pH, temperature, and conductivity) were monitored during purging to evaluate the correlations of conductivity levels and chloride concentrations in the groundwater. Subsequent to purging, groundwater samples were collected directly into laboratory-supplied sample containers and labeled. All non-disposable groundwater sampling equipment were decontaminated with a solution of Alconox™ and distilled water, followed by a rinse with distilled water before each use.

Groundwater samples collected on May 15, 2013 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 delivered under chain-of-custody to ALS Environmental in Houston, Texas for analysis of major cations (SW6020), anions (E300), alkalinity (SM2320B), and TDS (M2540C).

3.1 Potentiometric Surface and Gradient

All wells were gauged and sampled during the 2013 groundwater monitoring event, except for Monitor Well MW-1 which was dry. Depth to groundwater ranged from 44.53 feet (MW-2) to 74.10 feet (WW-1) below top of casing (TOC) on May 14, 2013. Groundwater flow at the Site is to the southeast with a gradient of approximately 0.004 feet/foot. Groundwater elevation data is presented in Table 1. A groundwater gradient map for May 2013 is presented as Figure 3.

3.2 Analytical Results

Each of the eight wells sampled exceeded the NMWQCC groundwater standards for chloride, sulfate, and TDS for this event. In addition, one monitor well (MW-8) exceeded the NMWQCC groundwater standard for fluoride. Maps depicting chloride, sulfate, and TDS concentrations for the May 2013 groundwater monitoring event are presented as Figures 4, 5, and 6. Analytical results are summarized in Table 2. Copies of the certified analytical reports and chain-of-custody documentation are attached in Appendix A.

Section 4.0 Summary of Findings

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

- Depth to groundwater ranged from 44.53 feet (MW-2) to 74.10 feet (WW-1) below top of casing (TOC) on May 14, 2013. Groundwater flow at the Site is to the southeast at a gradient of approximately 0.004 feet/foot.
- Each of the eight monitoring wells sampled exceeded the NMWQCC groundwater standards for chloride, sulfate, and TDS.
- One monitor well (MW-8) exceeded the NMWQCC groundwater standard for fluoride.
- All wells were below NMWQCC groundwater standard for nitrate.

Section 5.0 Closure Request

CRA corresponded with the NMOCD regarding elevated up-gradient chloride concentrations at the CEMC Site. NMOCD provided information regarding the historical Climax Chemical facility located approximately 2.25 miles northwest (up-gradient) of the CEMC Site. A review of groundwater chloride analytical results and information indicated that Climax Chemicals used high chloride concentration water in a pivot irrigation system. The duration of the activity and groundwater gradient direction resulted in a large chloride plume in the region which encompasses the aquifer beneath the CEMC Site. The Climax Chemicals facility and associated chloride plume is currently regulated by the New Mexico Environmental Department Groundwater Quality Bureau. A concentration map of the chloride plume resulting from historic Climax Chemical activities in relation to the location of the CEMC Site is provide in Figure 7. As noted in Figure 7, the Climax Chemical chloride plume has migrated down-gradient and affected groundwater beneath the CEMC Site. Currently, the three highest chloride concentrations at the CEMC Site are; 8,340, 5,600 and 5,380 mg/L.

In addition, a Rice Operation Company's (Rice) remediation site, identified as EME Jct A-2-1 (Case No. 1R427-177), was granted site closure in September 2012 by the NMOCD following a review of the large chloride plume resulting from the historical operations of Climax Chemical and site-specific chloride concentrations. As part of Rice's assessment activities, three groundwater monitor wells were drilled to a depth of approximately 47 feet to 53 feet bgs. At the time of closure, chloride concentrations in groundwater wells at the EME Jct A-2-1 site, were; 6,500, 7,100, and 5,900 mg/L. In a Corrective Action Plan submitted to the NMOCD in May 2007 (and again in a Groundwater Chloride Remediation Report and Termination Request submitted in September 2012), Rice accredited these elevated concentrations to the historical operations of Climax Chemical.

> "A likely source for the elevated regional chloride concentrations is the up gradient abandoned Climax Chemical facility located approximately 2,600 feet north of the site. The site has had verified elevated chloride impacts to the groundwater since 1981."

Due to the information provided above including:

1. Climax Chemicals regional chloride groundwater plume encompasses the CEMC Site with chloride concentrations equal to or greater than concentrations historically observed at the CEMC Site.
2. Hydrologically up-gradient wells, which are outside the area of potential impact from historic CEMC Site operations, exhibiting elevated chlorides exceeding the NMOCD Standards are likely related to the Climax Chemical historic operations.
3. Similar sites affected by the Climax Chemicals regional chloride plume exhibiting comparable chloride concentrations to the CEMC Site obtaining regulatory closure.

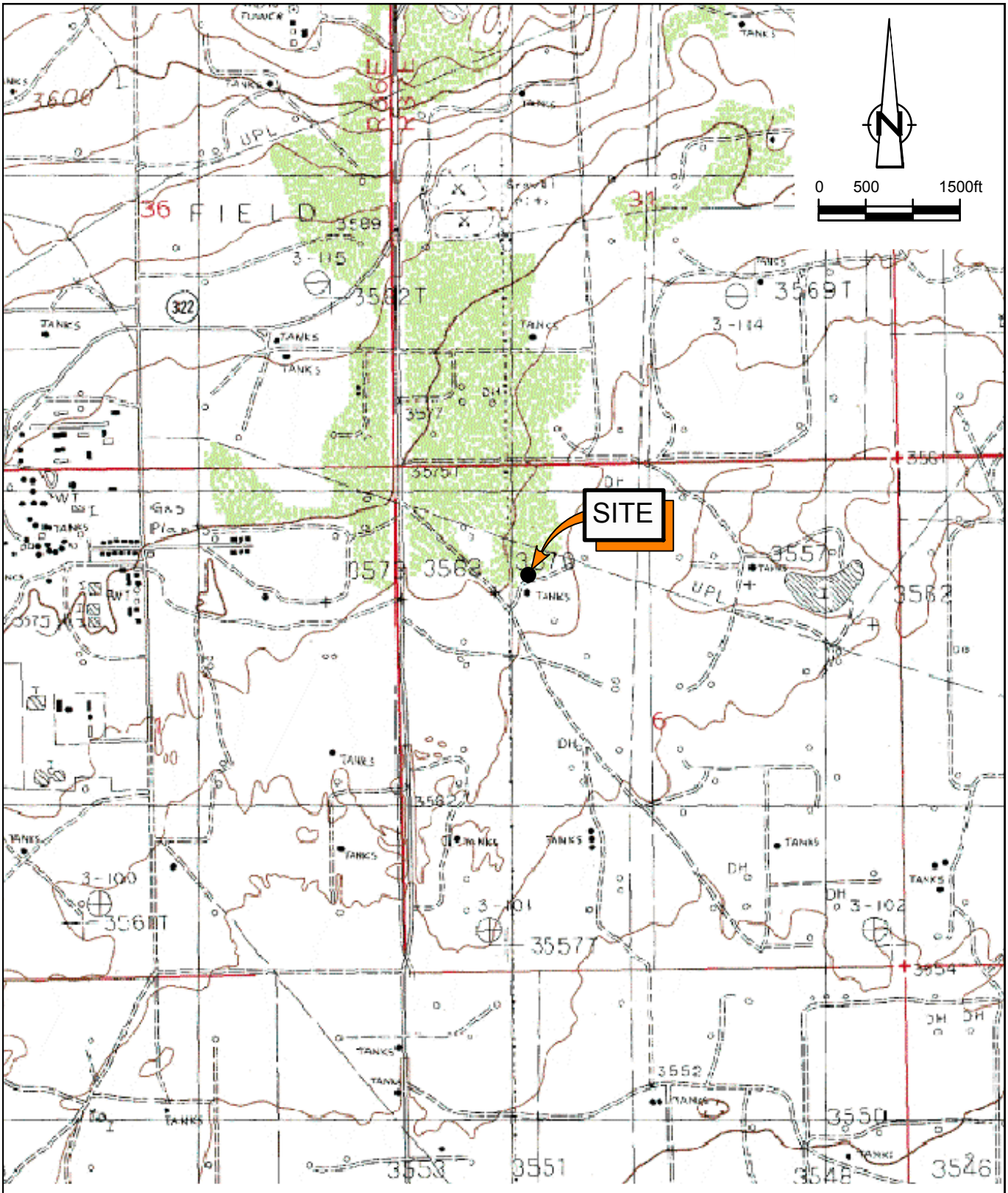
Therefore, based on the information provided herein, CRA on behalf of CEMC submits this 2013 Annual Groundwater Monitoring Report and requests NMOCD concurrence for no further action status regarding the J.R. Phillips No. 2 Tank Battery.

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

Brittany Ford
Project Manager

Phil Hurley
Senior Project Manager

Figures



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

039126-00(009)GN-DL001 AUG 23/2013

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

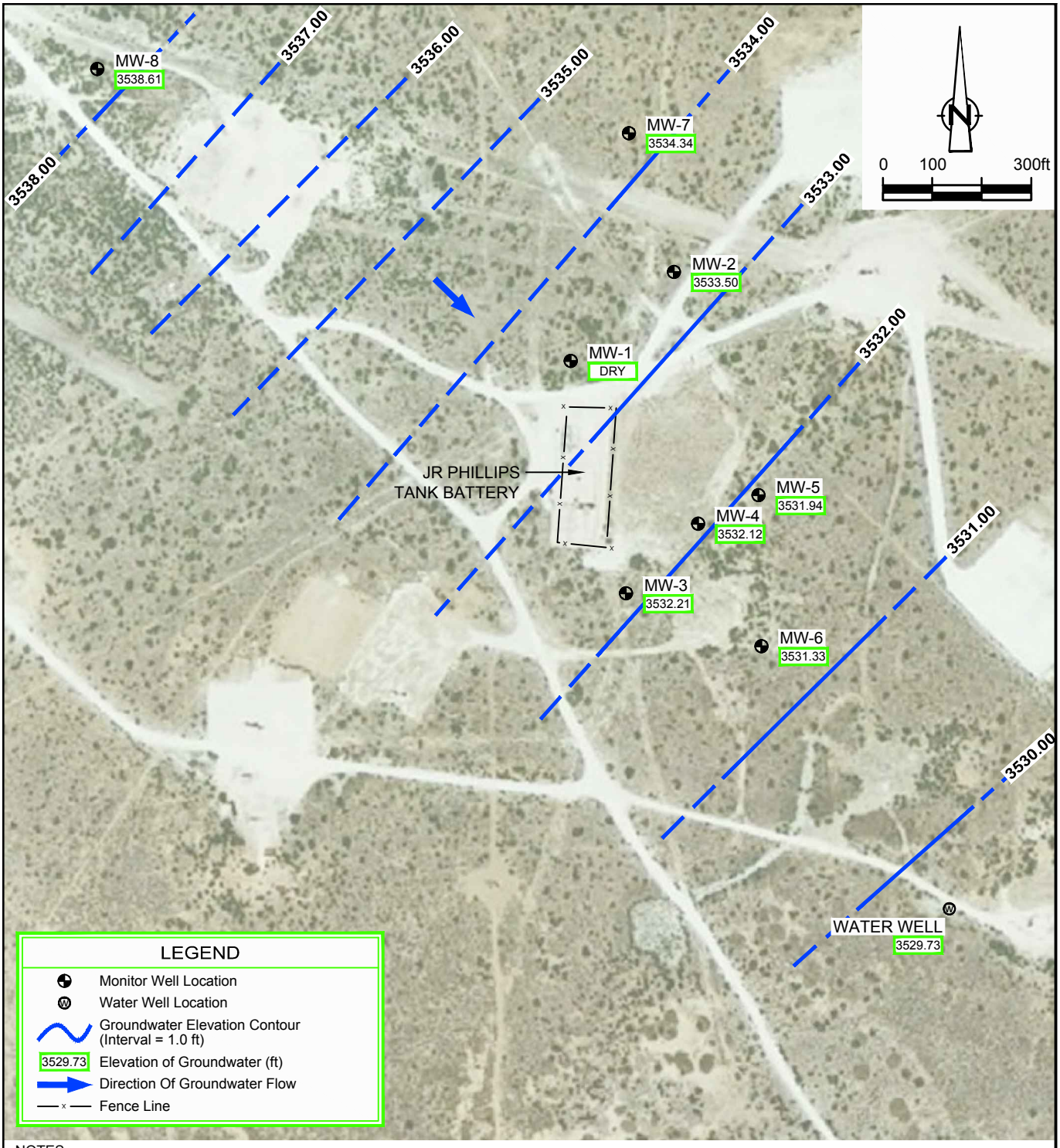
LEGEND

- MONITOR WELL LOCATION
- WATER WELL LOCATION
- FENCE LINE

Figure 2

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

039126-00(009)GN-DL002 MAR 3/2014



NOTES:

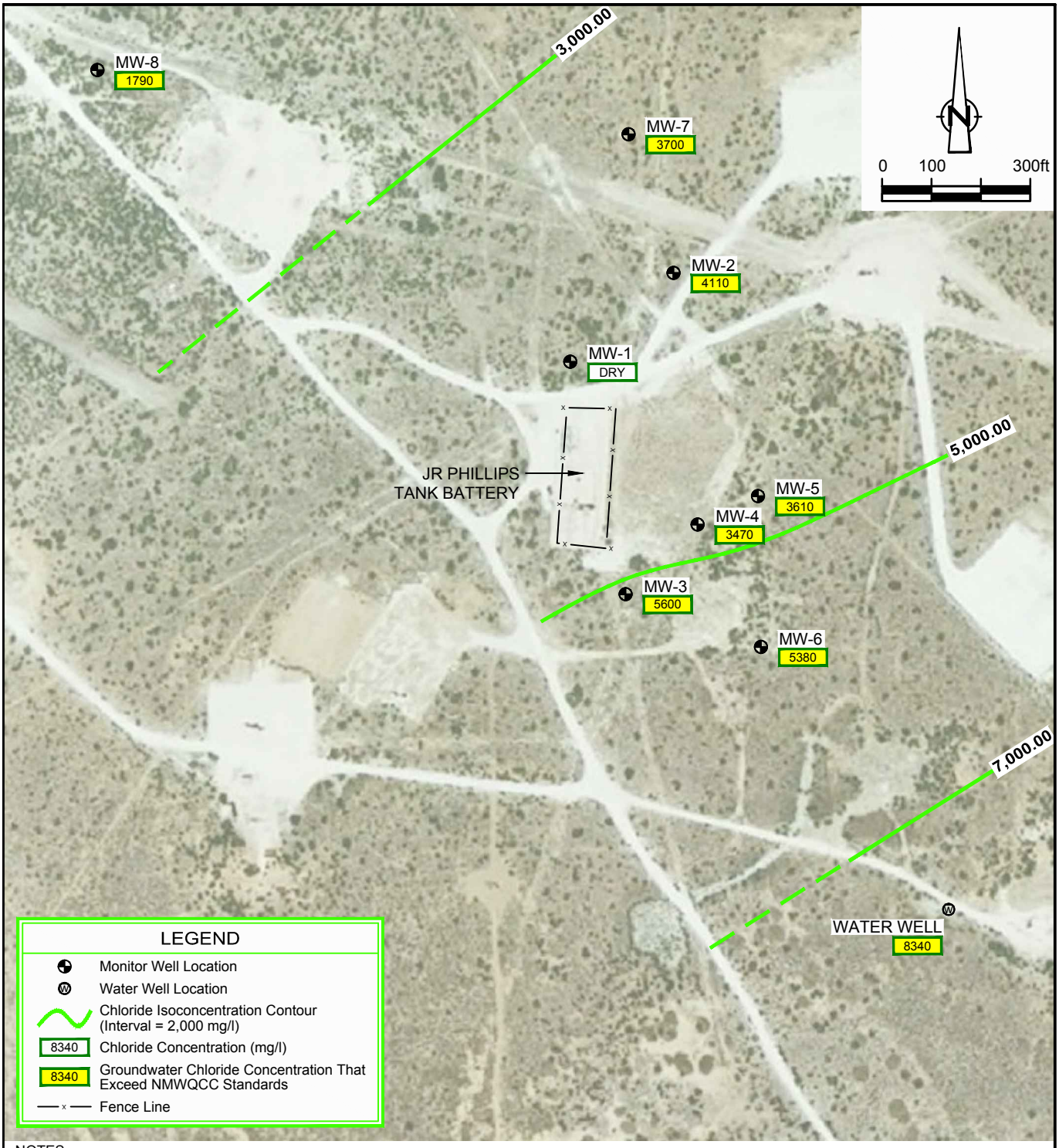
1. USDA NAIP 2009 AERIAL PHOTOGRAPH.
2. MAP BASED ON APRIL 15, 2008 SURVEY PERFORMED BY WEST COMPANY OF MIDLAND, INC.
3. MW-1 CASING POSSIBLY DAMAGED.
4. DEPTH TO GROUNDWATER WAS COLLECTED ON MAY 14, 2013.

Figure 3

GROUNDWATER GRADIENT MAP - MAY 2013
J. R. PHILLIPS NO. 2 TANK BATTERY
LEA COUNTY, NEW MEXICO
Chevron Environmental Management Company

CRA

039126-00(009)GN-DL002 MAR 6/2014



NOTES:

1. USDA NAIP 2009 AERIAL PHOTOGRAPH.
2. MAP BASED ON APRIL 15, 2008 SURVEY PERFORMED BY WEST COMPANY OF MIDLAND, INC.
3. MW-1 CASING POSSIBLY DAMAGED.
4. GROUNDWATER SAMPLE WAS COLLECTED ON MAY 15, 2013.

Figure 4

CHLORIDE ISOCONCENTRATION MAP - MAY 2013
J. R. PHILLIPS NO. 2 TANK BATTERY
LEA COUNTY, NEW MEXICO
Chevron Environmental Management Company

CPA

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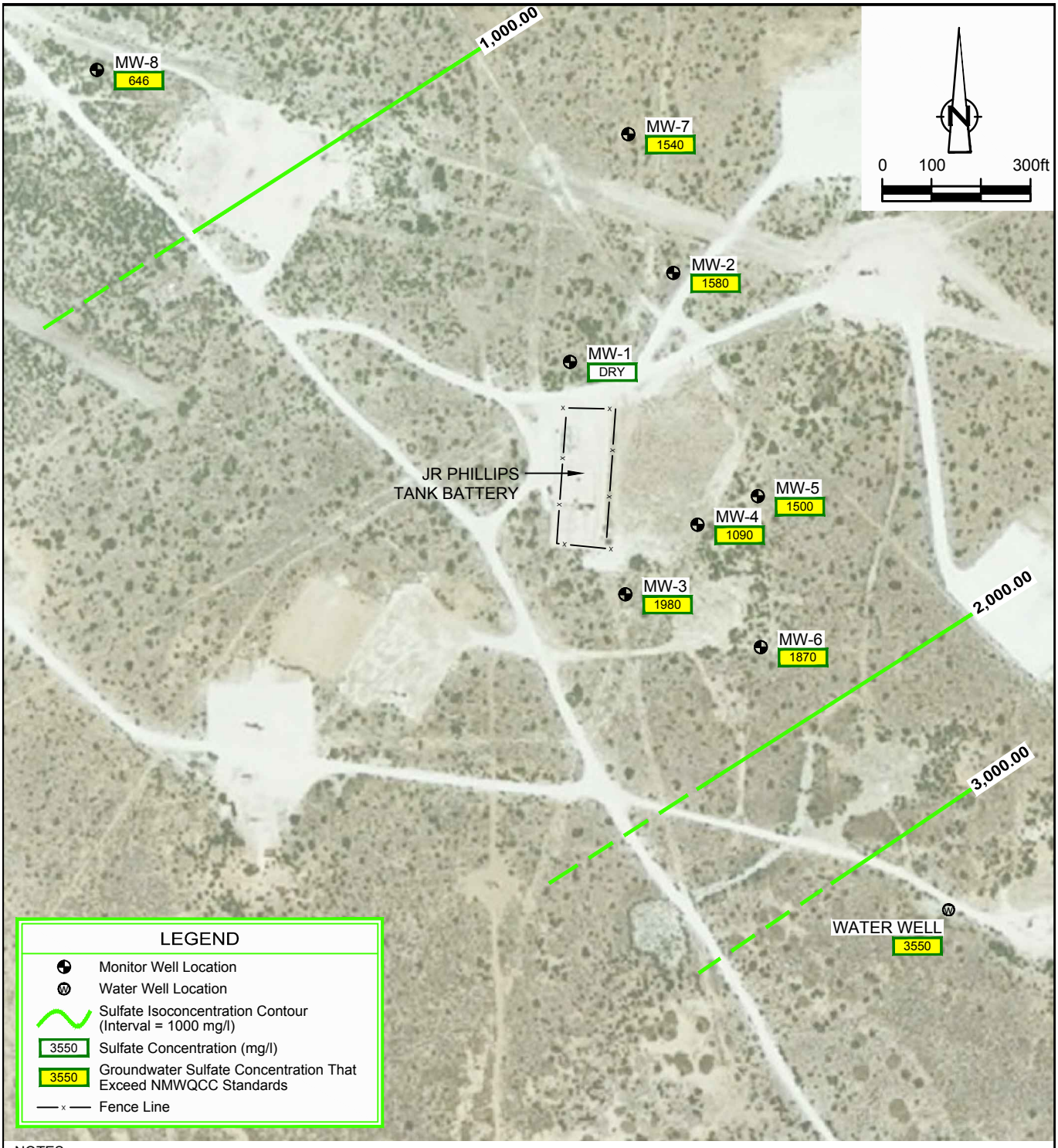

NOTES:

1. USDA NAIP 2009 AERIAL PHOTOGRAPH.
2. MAP BASED ON APRIL 15, 2008 SURVEY PERFORMED BY WEST COMPANY OF MIDLAND, INC.
3. MW-1 CASING POSSIBLY DAMAGED.
4. GROUNDWATER SAMPLES WERE COLLECTED ON MAY 15, 2013.

Figure 5

SULFATE ISOCONCENTRATION MAP - MAY 2013
J. R. PHILLIPS NO. 2 TANK BATTERY
LEA COUNTY, NEW MEXICO
Chevron Environmental Management Company

CRA

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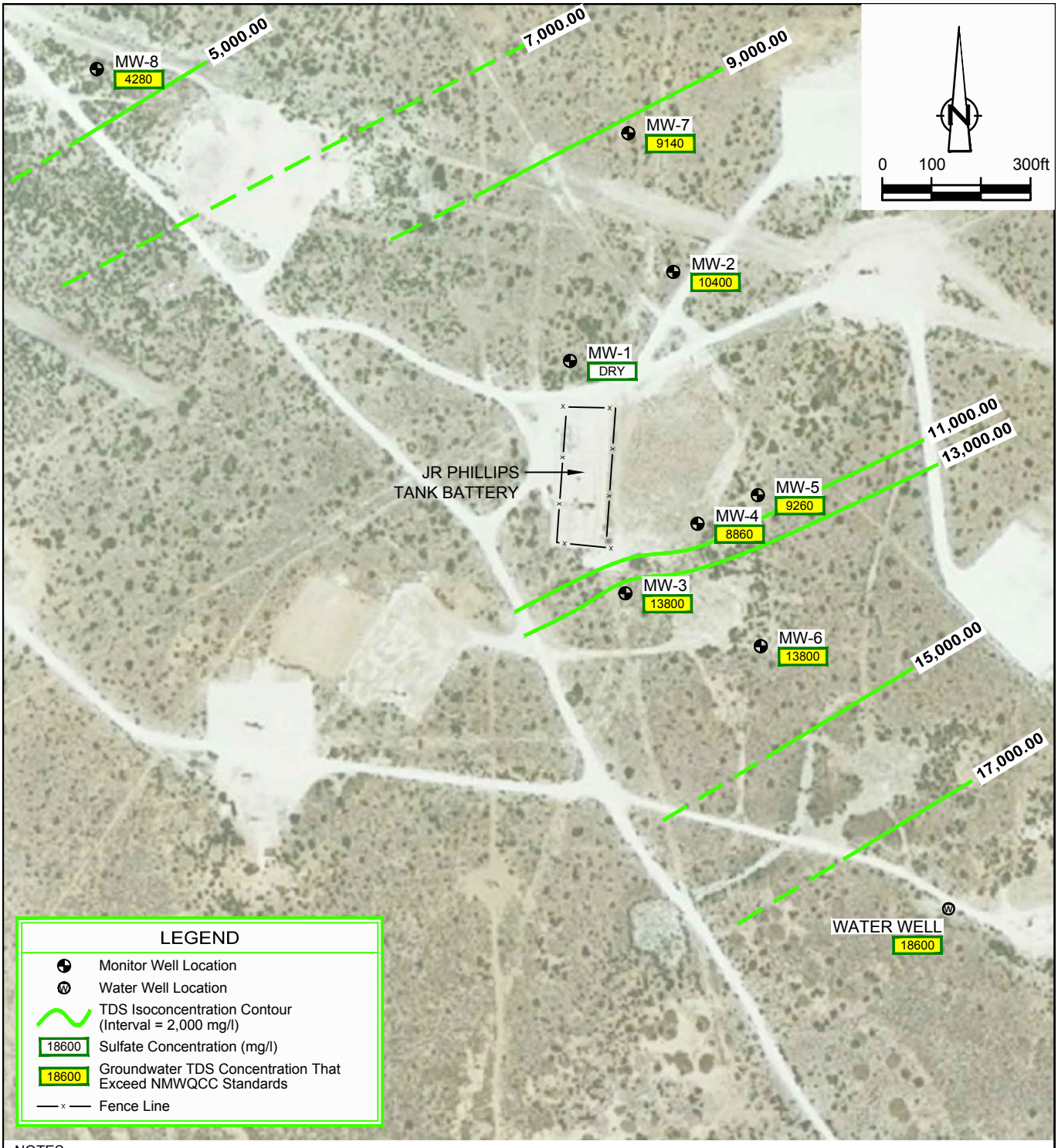


NOTES:

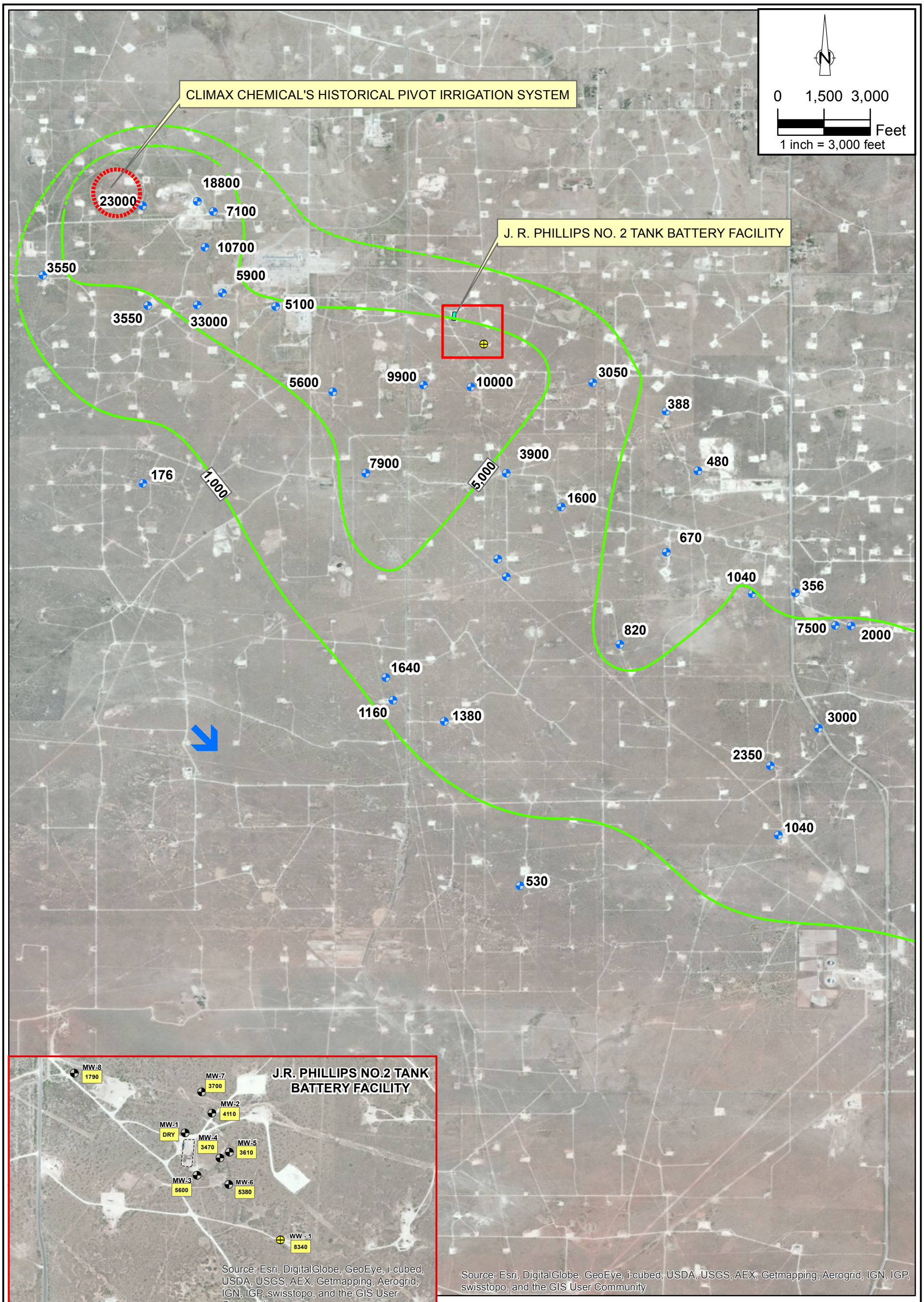
1. USDA NAIP 2009 AERIAL PHOTOGRAPH.
2. MAP BASED ON APRIL 15, 2008 SURVEY PERFORMED BY WEST COMPANY OF MIDLAND, INC.
3. MW-1 CASING POSSIBLY DAMAGED.
4. GROUNDWATER SAMPLES WERE COLLECTED ON MAY 15, 2013.

Figure 6

TDS ISOCONCENTRATION MAP - MAY 2013
J. R. PHILLIPS NO. 2 TANK BATTERY
LEA COUNTY, NEW MEXICO
Chevron Environmental Management Company

CRA

039126-00(009)GN-DL002 MAR 6/2014



Legend

- Climax Chloride Chemical Plume
- Water Well Location (Part of CRA's Network of Monitor Wells)
- Monitor Well Location & Provided Chloride Groundwater Concentration (mg / L) for Climax Chemical
- Montor Well Location and Chloride Groundwater Concentration (mg / L) for Chevron
- Groundwater Direction

NOTES:

1. Climax Chemical Chloride groundwater Concentrations Provided by Glenn VonGonten of the NMOCD.
2. CRA Chloride Groundwater Concentrations Sampled on May 15, 2013.
3. Chloride concentrations are in mg/L.

Figure 7
REGIONAL CHLORIDE PLUME
J. R. PHILLIPS NO. 2 TANK BATTERY
LEA COUNTY, NEW MEXICO
Chevron Environmental Management Company

Tables

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 (feet BTOC)*	*Groundwater Elevation (feet AMSL)*	*Well Depth (feet BTOC)*	*Well Screen Interval (feet BGS) Diameter (in)*
MW-1	05/02/01	39.33	3532.28	45.10	27-42
3571.61	05/21/02	40.37	3531.24	---	*2*
	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	---
	05/09/12	36.70	3534.91	45.04	---
	05/14/13	DRY	DRY	37.15	---
MW-2	05/02/01	39.15	3531.97	45.12	27-42
3571.12	05/21/02	40.14	3530.98	---	*2*
	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	---
	05/09/12	36.50	3534.62	44.43	---
	05/14/13	37.62	3533.50	44.53	---
MW-3	05/02/01	39.30	3531.40	56.50	34-54
3570.70	05/21/02	40.57	3530.13	---	*2*
	11/12/02	41.09	3529.61	---	---
	05/15/03	41.26	3529.44	---	---
	09/03/03	41.61	3529.09	---	---

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 (feet BTOC)*	*Groundwater Elevation (feet AMSL)*	*Well Depth (feet BTOC)*	*Well Screen Interval (feet BGS) Diameter (in)*
MW-3 (Cont)	11/20/03	41.73	3528.97	---	---
	05/03/04	41.60	3529.10	---	---
	05/10/05	36.89	3533.81	---	---
	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	---
	05/09/12	37.56	3533.14	56.19	---
	05/14/13	38.49	3532.21	56.20	---
MW-4	05/02/01	40.24	3530.83	57.12	34-54
3571.07	05/21/02	41.09	3529.98	---	*2*
	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	---
	05/09/12	38.02	3533.05	53.63	---
	05/14/13	38.95	3532.12	53.71	---
MW-5	05/02/01	38.37	3530.94	57.75	34-54
3569.31	05/21/02	39.53	3529.78	---	*2*
	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	---

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CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY
J.R. PHILLIPS TANK BATTERY #2
LEA COUNTY, NEW MEXICO

Well ID *TOC Elevation*	*Collection Date*	*Depth to Groundwater (feet BTOC)*	*Groundwater Elevation (feet AMSL)*	*Well Depth (feet BTOC)*	*Well Screen Interval (feet BGS) Diameter (in)*
MW-5 (cont)	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	---
	05/09/12	36.47	3532.84	57.78	---
	05/14/13	37.37	3531.94	57.90	---
MW-6	05/02/01	39.40	3530.13	57.30	34-54
3569.53	05/21/02	40.22	3529.31	---	*2*
	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	---
	05/09/12	37.35	3532.18	56.58	---
	05/14/13	38.20	3531.33	56.75	---
MW-7	05/02/01	39.76	3532.70	57.85	36-56
3572.46	05/21/02	40.85	3531.61	---	*2*
	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	---
	05/09/12	36.93	3535.53	57.72	---
MW-7	05/14/13	38.12	3534.34	57.80	---

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 (feet BTOC)*	*Groundwater Elevation (feet AMSL)*	*Well Depth (feet BTOC)*	*Well Screen Interval (feet BGS) Diameter (in)*
MW-8	05/02/01	40.35	3537.31	65.20	47-62
3577.66	05/21/02	49.27	3528.39	---	*2*
	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	---	---
	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	---
	05/09/12	37.07	3540.59	65.18	---
	05/14/13	39.05	3538.61	65.31	---
WW-1	05/02/01	33.93	3528.61	69.35	Unknown
3562.54	05/21/02	34.60	3527.94	---	*5*
	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	---
	05/09/12	32.10	3530.44	69.55	---
	05/14/13	32.81	3529.73	74.10	---

Notes:

AMSL - Above Mean Sea Level

BGS - below ground surface

BTOC - below top of casing

TABLE 2

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	Nitrate - (NO_3 as N)	Sulfate (SO_4)	Calcium	Magnesium	Potassium	Sodium	TDS
New Mexico Water Quality Control Commission Groundwater Standard					250[2]	1.6[1]	10[1]	600[2]					1000[2]
MW-1	04/10/01	**0.00**	**556**	**556**	**7,300**	---	---	**2,061**	**445**	**175**	**44.00**	**5,058**	**15,816**
	05/03/01	<2.00	**500**	**500**	**6,913**	---	---	**2,020**	**323.4**	**172.5**	**52.11**	**3,756**	**14,501**
	05/23/02	<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**
	05/15/03	<1.00	**430**	**430**	**5,150**	---	---	**1,710**	**312**	**121**	**42.80**	**3,970**	**5,990**
	09/09/03	---	---	---	**5,320**	---	---	---	---	---	---	---	---
	11/21/03	<1.00	**460**	**460**	**4,910**	---	---	**1,730**	**302**	**121**	**54.6**	**3,360**	**11,540**
	05/04/04	<1.00	**438**	**438**	**5,280**	<4.00	<4.00	**1,620**	**272**	**115**	**49.10**	**3,030**	**11,260**
	05/10/05	<1.00	**412**	**412**	**7,000**	<2.00	<2.00	**2,360**	**453**	**211**	**94.50**	**3,780**	**16,250**
	05/16/06	<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**
	05/31/07	<10	**378**	**378**	**7,000**	<50	<0.100	**1,900**	**461**	**200**	<50	**4,150**	**15,600**
	05/13/08	**1.53**	**534**	**534**	**6,670**	**2.13**	**0.95**	**1,960**	**427**	**192**	**53.60**	**3,520**	**14,700**
	05/28/09	<5.0	**690**	**690**	**5,500**	**2.0**	<0.50	**2,000**	**300**	**140**	**43**	**3,300**	**12,000**
	05/19/11	<5.00	**459**	**459**	**3,910**	**1.79**	<0.500	**1,540**	**269**	**107**	**26.1**	**2,800**	**8,550**
	05/15/12	<5.00	**472**	**472**	**3,700**	**1.84**	<0.100	**1,240**	**253**	**105**	**26.2**	**2,860**	**7,500**
	05/15/13	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-2	04/10/01	**0.00**	**566**	**566**	**8,704**	---	---	**2,611**	**569**	**296**	**31.00**	**5,871**	**19,312**
	05/03/01	<2.00	**516**	**516**	**7,799**	---	---	**2,670**	**412.4**	**221.7**	**30.31**	**4,424**	**16,857**
	05/22/02	<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**
	05/15/03	<1.00	**498**	**498**	**5,850**	---	---	**1,990**	**312**	**150**	**31.30**	**4,670**	**14,000**
	09/09/03	---	---	---	**6,470**	---	---	---	---	---	---	---	---
	11/21/03	<1.00	**510**	**510**	**5,790**	---	---	**2,100**	**378**	**158**	**52.1**	**3,770**	**14,080**
	05/04/04	<1.00	**530**	**530**	**6,040**	<4.00	<4.00	**1,950**	**326**	**136**	**43.80**	**3,300**	**12,520**
	05/10/05	<1.00	**502**	**502**	**8,080**	**5.57**	<2.00	**2,090**	**385**	**171**	**52.90**	**4,310**	**17,050**
	05/16/06	<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**
	05/31/07	<10	**1,370**	**1,370**	**6,700**	<50	<0.100	**1,700**	**417**	**183**	<50	**4,000**	**14,900**
	05/13/08	**1.53**	**736**	**736**	**6,440**	**6.93**	**0.95**	**1,690**	**410**	**184**	**29.10**	**3,530**	**14,000**
	05/28/09	<5.0	**760**	**760**	**6,100**	**2.4**	<0.50	**1,900**	**340**	**160**	**22**	**3,700**	**13,000**
	05/19/11	<5.00	**471**	**471**	**3,520**	**1.77**	<0.500	**1,240**	**356**	**137**	**19.8**	**3,160**	**10,500**
	05/15/12	<5.00	**493**	**493**	**4,450**	**1.72**	<0.100	**1,380**	**320**	**130**	**18.9**	**3,030**	**9,040**
	05/15/13	<20.0	**640**	**640**	**4,110**	**1.2**	<0.10	**1,580**	**308**	**139**	**14.4**	**3,680**	**10,400**
MW-3	05/03/01	<2.00	**458**	**458**	**11,078**	---	---	**3,525**	**984**	**431.9**	**38.89**	**6,114**	**24,135**
	05/23/02	<1.00	**512**	**512**	**10,800**	---	---	**3,920**	**999**	**350**	**56.50**	**6,210**	**24,200**

TABLE 2

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	Nitrate - (NO_3 as N)	Sulfate (SO_4)	Calcium	Magnesium	Potassium	Sodium	TDS
New Mexico Water Quality Control Commission Groundwater Standard					250[2]	1.6[1]	10[1]	600[2]					1000[2]
MW-3 (Cont)	11/13/02	<0.10	456	456	11,400	---	---	3,670	863	371	59.30	5,680	23,600
	05/15/03	<1.00	462	462	10,700	---	---	4,220	921	315	34.10	5,870	24,200
	09/09/03	---	---	---	10,300	---	---	---	---	---	---	---	---
	11/21/03	<1.00	464	464	10,500	---	---	4,480	972	333	47.50	7,540	23,100
	05/04/04	<1.00	478	478	11,400	<8.00	<8.00	4,750	808	291	54.10	5,290	22,500
	05/10/05	<1.00	472	472	11,900	<2.00	<2.00	4,190	965	356	86.70	7,320	26,750
	05/16/06	<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
	05/31/07	<10	520	520	7,700	<50	<0.100	2,900	591	213	<50	4,760	14,100
	05/13/08	1.53	491	491	7,500	7.19	0.95	2,590	578	202	25.50	4,440	17,200
	05/28/09	<5.0	510	510	8,500	1.6	<0.50	2,600	460	190	23	4,700	17,000
	05/19/11	<5.00	441	441	5,380	1.34	<0.150	1,600	620	220	16.1	5,110	14,600
	05/15/12	<5.00	487	487	7,240	1.19	<0.100	1,930	474	178	13.1	3,990	12,600
	05/15/13	<20.0	464	464	5,600	0.73	<0.10	1,980	459	186	13.9	4,660	13,800
MW-4	05/03/01	<2.00	618	618	9,572	---	---	2,755	467.7	299.8	49.25	5,435	20,118
	05/22/02	<1.00	814	814	8,170	---	---	1,940	389	220	45.30	5,100	18,200
	11/13/02	<0.10	1,020	1,020	7,890	---	---	1,020	47.1	202	21.60	3,980	14,800
	05/15/03	<1.00	1,050	1,050	7,140	---	---	1,210	185	179	14.80	5,250	15,200
	09/09/03	---	---	---	7,800	---	---	---	---	---	---	---	---
	11/21/03	<1.00	770	770	7,500	---	---	2,720	334	198	39.70	4,760	17,350
	05/04/04	<1.00	900	900	8,740	<6.00	<6.00	3,170	240	191	25.80	3,660	15,800
	05/10/05	<1.00	708	708	7,750	2.73	<2.00	2,010	330	186	50.40	4,400	26,700
	05/16/06	<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
	05/31/07	<10	624	624	5,500	<50	<0.100	1,500	272	126	<50	3,550	13,700
	05/13/08	1.53	627	627	5,550	6.64	0.95	1,430	280	129	31.60	3,270	12,400
	05/28/09	<5.0	560	560	6,500	2.2	<0.50	1,600	280	140	36	3,800	13,000
	05/19/11	<5.00	964	964	3,690	3.72	<0.150	796	164	102	6.36	3,830	9,390
	05/15/12	<5.00	593	593	5,060	1.93	<0.100	1,460	167	108	7.13	3,330	9,520
	05/15/13	<20.0	1060	1060	3,470	1.5	<0.10	1,090	158	106	8.9	3,370	8,860
MW-5	05/03/01	<2.00	416	416	8,685	---	---	3,045	430.9	237.1	44.36	4,651	18,846
	05/23/02	<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
	05/15/03	<1.00	562	562	6,800	---	---	2,320	383	167	30.90	5,300	16,000
	09/09/03	---	---	---	7,090	---	---	---	---	---	---	---	---
	11/21/03	<1.00	522	522	7,010	---	---	3,170	434	178	54.90	4,300	16,850
	05/04/04	<1.00	534	534	6,630	<4.00	<4.00	2,310	365	152	47.80	3,850	16,800

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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	Nitrate - (NO_3 as N)	Sulfate (SO_4)	Calcium	Magnesium	Potassium	Sodium	TDS
New Mexico Water Quality Control Commission Groundwater Standard					250[2]	1.6[1]	10[1]	600[2]					1000[2]
MW-5 (Cont)	05/10/05	<1.00	536	536	23,300	<2.00	<2.00	2,380	362	151	68.30	4,400	17,400
	05/16/06	<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
	05/31/07	<10	426	426	6,400	<50	<0.100	1,500	372	154	<50	3,910	14,400
	05/13/08	1.53	410	410	6,720	6.87	0.95	1,590	413	180	32.20	3,580	14,700
	05/28/09	<5.0	670	670	6,900	1.8	<0.50	1,900	370	170	30	4,000	14,000
	05/19/11	<5.00	475	475	3,940	1.59	<0.150	1,400	447	147	20.5	4,040	11,600
	05/15/12	<5.00	492	492	4,710	1.60	<0.100	1,530	315	128	18.8	3,380	9,120
	05/15/13	<20.0	510	510	3,610	0.94	<0.10	1,500	289	116	20.0	3,080	9,260
MW-6	05/03/01	<2.00	460	460	11,876	---	---	4,380	1,004	429.9	52.27	6,281	25,288
	05/23/02	<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
	05/15/03	<1.00	470	470	10,700	---	---	4,310	1,000	388	34.10	5,760	23,800
	09/09/03	---	---	---	10,300	---	---	---	---	---	---	---	---
	11/20/03	<1.00	480	480	10,000	---	---	4,410	904	399	42.50	5,610	23,500
	05/04/04	<1.00	466	466	11,400	<8.00	<8.00	4,310	869	350	49.00	5,590	23,850
	05/10/05	<1.00	476	476	11,000	3.48	<2.00	4,050	801	331	52.20	6,090	24,200
	05/16/06	<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
	05/31/07	<10	776	776	7,800	<50	<0.100	3,100	600	226	<50	5,200	18,700
	05/13/08	1.53	672	672	7,230	7.3	0.95	2,870	425	179	24.70	4,470	16,900
	05/28/09	<50	1,700	1,700	7,700	1.8	<0.50	2,900	350	160	21	4,700	17,000
	05/19/11	<5.00	533	533	5,330	1.84	<0.150	1,700	396	155	13.5	4,440	12,500
	05/15/12	<5.00	548	548	7,020	1.62	<0.100	1,870	378	159	13.2	4,280	12,600
	05/15/13	<20.0	586	586	5,380	0.78	<0.10	1,870	374	158	14.7	4,620	13,800
MW-7	05/02/01	<2.00	436	436	8,154	---	---	2,430	599.5	289.8	34.57	4,578	18,578
	05/22/02	<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
	05/15/03	<1.00	438	438	7,180	---	---	2,350	583	220	33.30	4,970	16,800
	09/09/03	---	---	---	6,910	---	---	---	---	---	---	---	---
	11/20/03	<1.00	434	434	6,360	---	---	2,110	532	204	52.70	3,770	14,500
	05/04/04	<1.00	418	418	6,610	<4.00	<4.00	1,930	527	188	47.10	3,460	16,600
	05/10/05	<1.00	450	450	8,210	2.14	<2.00	1,810	506	188	62.80	3,860	14,600
	05/16/06	<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
	05/31/07	<10	397	397	6,800	<50	<0.100	1,800	496	187	<50	3,730	14,900
	05/13/08	1.53	417	417	6,070	6.80	0.95	1,920	484	194	31.70	3,430	14,200
	05/28/09	<5.0	450	450	7,200	1.7	<0.50	2,200	410	180	50	3,900	14,000

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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	Nitrate - (NO_3 as N)	Sulfate (SO_4)	Calcium	Magnesium	Potassium	Sodium	TDS
New Mexico Water Quality Control Commission Groundwater Standard					250[2]	1.6[1]	10[1]	600[2]					1000[2]
MW-7 (cont)	05/19/11	<5.00	435	435	3,790	1.56	<0.150	1,320	416	147	17.9	3,270	9,770
	05/15/12	<5.00	470	470	5,210	1.22	<0.100	1,570	383	143	17.1	3,210	9,900
	05/15/13	<20.0	444	444	3,700	1.0	<0.10	1,540	359	139	19.0	3,120	9,380
DUP 1	05/15/13	<20.0	490	490	3,660	1.0	<0.10	1,470	346	132	17.6	2,980	9,140
MW-8	05/02/01	<2.00	426	426	7,445	---	---	1,213	766.7	295.7	52.68	2,999	16,325
	05/23/02	<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
	05/15/03	<1.00	468	468	7,300	---	---	1,690	777	265	55.10	4,580	15,700
	09/09/03	--	--	--	7,270	---	---	---	---	---	---	---	---
	11/20/03	<1.00	438	438	8,190	---	---	2,570	881	280	64.5	3,560	14,040
	05/04/04	<1.00	380	380	7,960	<6.00	<6.00	1,370	912	321	60.10	2,970	12,750
	05/10/05	<1.00	446	446	2,590	4.12	<1.00	936	228	84.40	46.30	1,740	5,635
	05/16/06	<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
	05/31/07	<10	378	378	3,200	<50	<0.100	960	394	133	<50	1,830	8,080
	05/13/08	1.53	472	472	3,160	2.94	0.95	762	354	132	28.90	1,770	7,280
	05/28/09	<5.0	360	360	6,500	2.5	<0.50	1,000	950	280	38	2,600	14,000
	05/19/11	<5.00	433	433	1,650	2.90	<0.150	535	313	98.2	18.9	1,360	4,420
	05/15/12	<5.00	245	2,445	11,000	0.862	<0.100	933	282	91.7	17.5	1,350	24,000
	05/15/13	<20.0	484	484	1,790	2.5	<0.10	646	263	90.0	20.0	1,430	4,280
WW-1	05/03/01	<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
	05/15/03	<1.00	<4.00	<4.00	11,800	---	---	1,780	1,490	403	28.90	3,360	21,400
	09/09/03	---	---	---	<5.00	---	---	---	---	---	---	---	---
	11/21/03	<1.00	<4.00	<4.00	10,000	---	---	2,180	1,650	461	52.7	3,630	18,900
	05/04/04	<1.00	<4.00	<4.00	12,500	<8.00	<8.00	1,880	1,540	450	47.00	3,470	23,400
	05/10/05	<1.00	<4.00	<4.00	121	<1.00	<1.00	63.40	39.8	12.2	3.05	10.20	336
	05/16/06	<10	67	67	1,300	<0.50	1.9	110	155.000 D2	34.500 D2	<5.000 D2	186.000 D1	4,180
	05/31/07	<10	<10	<10	2,400	<25	<0.100	300	645	167	<50	1,830	5,340
	05/13/08	1.53	1.53	1.53	10,200	1.00	1.90	1,770	1,400	364	8.121	3,320	22,700
	05/28/09	<2.5	37	37	9,200	<1.0	<0.50	2,100	920	280	21	3,400	18,000
	05/19/11	<5.00	202	202	7,240	0.692	<0.150	2,500	658	310	21.8	5,850	19,700
	05/15/12	<5.00	21.0	21.0	9,620	0.601	<0.100	2,570	532	255	21.0	4,760	17,300
	05/15/13	<20.0	<20.0	<20.0	8,340	0.31	<0.10	3,550	715	311	23.1	5,860	18,600

Notes:

1. Bold results indicate laboratory detection.
2. Shaded cells indicate New Mexico Water Quality Control Commission (NMWQCC) exceedance.
3. All 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 Limits.
8. [2]Other Standard for Domestic Water Supply Limits.
9. NA - Not Analyzed

Appendix A

Certified Laboratory Report and Chain-of-Custody

Pace Analytical Services, Inc.
400 West Bethany Drive - Suite 190
Allen, TX 75013
(972)727-1123

May 28, 2013

Brittany Ford
Conestoga-Rovers
2270 Springlake Road
Suite 800
Dallas, TX 75234

RE: Project: 039126 2013.2 01/JR Phillips
Pace Project No.: 755229

Dear Brittany Ford:
Enclosed are the analytical results for sample(s) received by the laboratory on May 16, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Shelly Connelly

Shelly Connelly

shelly.connelly@pacelabs.com
Project Manager

Enclosures

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CERTIFICATIONS

Project: 039126 2013.2 01/JR Phillips
Pace Project No.: 755229

Dallas Certification IDs
400 West Bethany Dr Suite 190 75013 Allen TX 75013
Texas Certification #: T104704232-12-4
Kansas Certification #: E-10388
Arkansas Certification #: 88-0647
Oklahoma Certification #: 2012-080
Louisiana Certification #: 02007

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SAMPLE SUMMARY

Project: 039126 2013.2 01/JR Phillips
Pace Project No.: 755229

Lab ID	Sample ID	Matrix	Date Collected	Date Received
755229001	**WW 1-15 May 13**	Water	05/15/13 10:30	05/16/13 09:03
755229002	**MW 6-15 May 13**	Water	05/15/13 11:00	05/16/13 09:03
755229003	**MW 3-15 May 13**	Water	05/15/13 11:15	05/16/13 09:03
755229004	**MW 4-15 May 13**	Water	05/15/13 11:30	05/16/13 09:03
755229005	**MW 5-15 May 13**	Water	05/15/13 11:40	05/16/13 09:03
755229006	**MW 2-15 May 13**	Water	05/15/13 11:55	05/16/13 09:03
755229007	**MW 7-15 May 13**	Water	05/15/13 12:05	05/16/13 09:03
755229008	**MW 8-15 May 13**	Water	05/15/13 12:15	05/16/13 09:03
755229009	**DUP-15 May 13**	Water	05/15/13 00:00	05/16/13 09:03
755229010	**Trip Blank**	Water		05/16/13 09:03

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SAMPLE ANALYTE COUNT

Project: 039126 2013.2 01/JR Phillips
Pace Project No.: 755229

Lab ID	Sample ID	Method	Analysts	Analytes Reported
755229001	**WW 1-15 May 13**	EPA 6020	SPS	4
		SM 2320B	MCP	3
		SM 2540C	MCP	1
		EPA 300.0	MDG	1
		EPA 300.0	MDG	3
755229002	**MW 6-15 May 13**	EPA 6020	SPS	4
		SM 2320B	MCP	3
		SM 2540C	MCP	1
		EPA 300.0	MDG	1
		EPA 300.0	MDG	3
755229003	**MW 3-15 May 13**	EPA 6020	SPS	4
		SM 2320B	MCP	3
		SM 2540C	MCP	1
		EPA 300.0	MDG	1
		EPA 300.0	MDG	3
755229004	**MW 4-15 May 13**	EPA 6020	SPS	4
		SM 2320B	MCP	3
		SM 2540C	MCP	1
		EPA 300.0	MDG	1
		EPA 300.0	MDG	3
755229005	**MW 5-15 May 13**	EPA 6020	SPS	4
		SM 2320B	MCP	3
		SM 2540C	MCP	1
		EPA 300.0	MDG	1
		EPA 300.0	MDG	3
755229006	**MW 2-15 May 13**	EPA 6020	SPS	4
		SM 2320B	MCP	3
		SM 2540C	MCP	1
		EPA 300.0	MDG	1
		EPA 300.0	MDG	3
755229007	**MW 7-15 May 13**	EPA 6020	SPS	4
		SM 2320B	MCP	3
		SM 2540C	MCP	1
		EPA 300.0	MDG	1
		EPA 300.0	MDG	3
755229008	**MW 8-15 May 13**	EPA 6020	SPS	4
		SM 2320B	MCP	3

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SAMPLE ANALYTE COUNT

Project: 039126 2013.2 01/JR Phillips
Pace Project No.: 755229

Lab ID	Sample ID	Method	Analysts	Analytes Reported
		SM 2540C	MCP	1
		EPA 300.0	MDG	1
		EPA 300.0	MDG	3
755229009	**DUP-15 May 13**	EPA 6020	SPS	4
		SM 2320B	MCP	3
		SM 2540C	MCP	1
		EPA 300.0	MDG	1
		EPA 300.0	MDG	3
755229010	**Trip Blank**	EPA 6020	SPS	4

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ANALYTICAL RESULTS

Project: 039126 2013.2 01/JR Phillips
Pace Project No.: 755229

Sample: WW 1-15 May 13 **Lab ID: 755229001** Collected: 05/15/13 10:30 Received: 05/16/13 09:03 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS, Dissolved	Analytical Method: EPA 6020 Preparation Method: EPA 3005A							
Calcium, Dissolved	**715**	mg/L	5.0	10	05/17/13 08:26	05/20/13 23:39	7440-70-2	M6
Magnesium, Dissolved	**311**	mg/L	50.0	100	05/17/13 08:26	05/21/13 16:25	7439-95-4	M6
Potassium, Dissolved	**23.1**	mg/L	5.0	10	05/17/13 08:26	05/20/13 23:39	7440-09-7	M6
Sodium, Dissolved	**5860**	mg/L	50.0	100	05/17/13 08:26	05/21/13 16:25	7440-23-5	M6
2320B Alkalinity	Analytical Method: SM 2320B							
Alkalinity, Total as CaCO3	ND	mg/L	20.0	1		05/28/13 10:03		
Alkalinity,Bicarbonate (CaCO3)	ND	mg/L	20.0	1		05/28/13 10:03		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	20.0	1		05/28/13 10:03		
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**18600**	mg/L	500	1		05/20/13 15:41		
300.0 IC Anions	Analytical Method: EPA 300.0							
Nitrate as N	ND	mg/L	0.10	1		05/17/13 08:38	14797-55-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Chloride	**8340**	mg/L	100	1000		05/22/13 22:45	16887-00-6	M1
Fluoride	**0.31**	mg/L	0.10	1		05/23/13 02:55	16984-48-8	M1
Sulfate	**3550**	mg/L	100	1000		05/22/13 22:45	14808-79-8	M1

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ANALYTICAL RESULTS

Project: 039126 2013.2 01/JR Phillips
Pace Project No.: 755229

Sample: MW 6-15 May 13 **Lab ID: 755229002** Collected: 05/15/13 11:00 Received: 05/16/13 09:03 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS, Dissolved	Analytical Method: EPA 6020 Preparation Method: EPA 3005A							
Calcium, Dissolved	**374**	mg/L	50.0	100	05/17/13 08:26	05/21/13 17:17	7440-70-2	
Magnesium, Dissolved	**158**	mg/L	50.0	100	05/17/13 08:26	05/21/13 17:17	7439-95-4	
Potassium, Dissolved	**14.7**	mg/L	5.0	10	05/17/13 08:26	05/22/13 11:23	7440-09-7	
Sodium, Dissolved	**4620**	mg/L	50.0	100	05/17/13 08:26	05/21/13 17:17	7440-23-5	
2320B Alkalinity	Analytical Method: SM 2320B							
Alkalinity, Total as CaCO3	**586**	mg/L	20.0	1		05/28/13 10:08		
Alkalinity,Bicarbonate (CaCO3)	**586**	mg/L	20.0	1		05/28/13 10:08		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	20.0	1		05/28/13 10:08		
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**13800**	mg/L	500	1		05/20/13 15:42		
300.0 IC Anions	Analytical Method: EPA 300.0							
Nitrate as N	ND	mg/L	0.10	1		05/17/13 08:56	14797-55-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Chloride	**5380**	mg/L	100	1000		05/22/13 23:39	16887-00-6	
Fluoride	**0.78**	mg/L	0.10	1		05/23/13 04:42	16984-48-8	
Sulfate	**1870**	mg/L	100	1000		05/22/13 23:39	14808-79-8	

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ANALYTICAL RESULTS

Project: 039126 2013.2 01/JR Phillips
Pace Project No.: 755229

Sample: MW 3-15 May 13 **Lab ID: 755229003** Collected: 05/15/13 11:15 Received: 05/16/13 09:03 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS, Dissolved	Analytical Method: EPA 6020 Preparation Method: EPA 3005A							
Calcium, Dissolved	**459**	mg/L	50.0	100	05/17/13 08:26	05/21/13 17:24	7440-70-2	
Magnesium, Dissolved	**186**	mg/L	50.0	100	05/17/13 08:26	05/21/13 17:24	7439-95-4	
Potassium, Dissolved	**13.9**	mg/L	5.0	10	05/17/13 08:26	05/22/13 11:29	7440-09-7	
Sodium, Dissolved	**4660**	mg/L	50.0	100	05/17/13 08:26	05/21/13 17:24	7440-23-5	
2320B Alkalinity	Analytical Method: SM 2320B							
Alkalinity, Total as CaCO3	**464**	mg/L	20.0	1		05/28/13 10:16		
Alkalinity,Bicarbonate (CaCO3)	**464**	mg/L	20.0	1		05/28/13 10:16		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	20.0	1		05/28/13 10:16		
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**13800**	mg/L	500	1		05/20/13 15:42		
300.0 IC Anions	Analytical Method: EPA 300.0							
Nitrate as N	ND	mg/L	0.10	1		05/17/13 09:14	14797-55-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Chloride	**5600**	mg/L	100	1000		05/22/13 23:56	16887-00-6	
Fluoride	**0.73**	mg/L	0.10	1		05/23/13 05:18	16984-48-8	
Sulfate	**1980**	mg/L	100	1000		05/22/13 23:56	14808-79-8	

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ANALYTICAL RESULTS

Project: 039126 2013.2 01/JR Phillips
Pace Project No.: 755229

Sample: MW 4-15 May 13 **Lab ID: 755229004** Collected: 05/15/13 11:30 Received: 05/16/13 09:03 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS, Dissolved	Analytical Method: EPA 6020 Preparation Method: EPA 3005A							
Calcium, Dissolved	**158**	mg/L	50.0	100	05/17/13 08:26	05/21/13 17:30	7440-70-2	
Magnesium, Dissolved	**106**	mg/L	50.0	100	05/17/13 08:26	05/21/13 17:30	7439-95-4	
Potassium, Dissolved	**8.9**	mg/L	5.0	10	05/17/13 08:26	05/22/13 11:36	7440-09-7	
Sodium, Dissolved	**3370**	mg/L	50.0	100	05/17/13 08:26	05/21/13 17:30	7440-23-5	
2320B Alkalinity	Analytical Method: SM 2320B							
Alkalinity, Total as CaCO3	**1060**	mg/L	20.0	1		05/28/13 10:20		M1
Alkalinity,Bicarbonate (CaCO3)	**1060**	mg/L	20.0	1		05/28/13 10:20		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	20.0	1		05/28/13 10:20		
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**8860**	mg/L	500	1		05/20/13 15:43		
300.0 IC Anions	Analytical Method: EPA 300.0							
Nitrate as N	ND	mg/L	0.10	1		05/17/13 09:32	14797-55-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Chloride	**3470**	mg/L	100	1000		05/23/13 00:14	16887-00-6	
Fluoride	**1.5**	mg/L	0.10	1		05/23/13 08:16	16984-48-8	
Sulfate	**1090**	mg/L	100	1000		05/23/13 00:14	14808-79-8	

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ANALYTICAL RESULTS

Project: 039126 2013.2 01/JR Phillips
Pace Project No.: 755229

Sample: MW 5-15 May 13 **Lab ID: 755229005** Collected: 05/15/13 11:40 Received: 05/16/13 09:03 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS, Dissolved	Analytical Method: EPA 6020 Preparation Method: EPA 3005A							
Calcium, Dissolved	**289**	mg/L	50.0	100	05/17/13 08:26	05/21/13 17:37	7440-70-2	
Magnesium, Dissolved	**116**	mg/L	50.0	100	05/17/13 08:26	05/21/13 17:37	7439-95-4	
Potassium, Dissolved	**20.0**	mg/L	5.0	10	05/17/13 08:26	05/22/13 11:42	7440-09-7	
Sodium, Dissolved	**3080**	mg/L	50.0	100	05/17/13 08:26	05/21/13 17:37	7440-23-5	
2320B Alkalinity	Analytical Method: SM 2320B							
Alkalinity, Total as CaCO3	**510**	mg/L	20.0	1		05/28/13 10:56		
Alkalinity,Bicarbonate (CaCO3)	**510**	mg/L	20.0	1		05/28/13 10:56		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	20.0	1		05/28/13 10:56		
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**9260**	mg/L	500	1		05/20/13 15:44		
300.0 IC Anions	Analytical Method: EPA 300.0							
Nitrate as N	ND	mg/L	0.10	1		05/17/13 09:49	14797-55-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Chloride	**3610**	mg/L	100	1000		05/23/13 01:26	16887-00-6	
Fluoride	**0.94**	mg/L	0.10	1		05/23/13 08:51	16984-48-8	
Sulfate	**1500**	mg/L	100	1000		05/23/13 12:44	14808-79-8	

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ANALYTICAL RESULTS

Project: 039126 2013.2 01/JR Phillips
Pace Project No.: 755229

Sample: MW 2-15 May 13 **Lab ID: 755229006** Collected: 05/15/13 11:55 Received: 05/16/13 09:03 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS, Dissolved	Analytical Method: EPA 6020 Preparation Method: EPA 3005A							
Calcium, Dissolved	**308**	mg/L	50.0	100	05/17/13 08:26	05/21/13 17:44	7440-70-2	
Magnesium, Dissolved	**139**	mg/L	50.0	100	05/17/13 08:26	05/21/13 17:44	7439-95-4	
Potassium, Dissolved	**14.4**	mg/L	5.0	10	05/17/13 08:26	05/22/13 11:49	7440-09-7	
Sodium, Dissolved	**3680**	mg/L	50.0	100	05/17/13 08:26	05/21/13 17:44	7440-23-5	
2320B Alkalinity	Analytical Method: SM 2320B							
Alkalinity, Total as CaCO3	**640**	mg/L	20.0	1		05/28/13 11:00		
Alkalinity,Bicarbonate (CaCO3)	**640**	mg/L	20.0	1		05/28/13 11:00		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	20.0	1		05/28/13 11:00		
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**10400**	mg/L	500	1		05/20/13 15:44		
300.0 IC Anions	Analytical Method: EPA 300.0							
Nitrate as N	ND	mg/L	0.10	1		05/16/13 22:38	14797-55-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Chloride	**4110**	mg/L	100	1000		05/23/13 01:44	16887-00-6	
Fluoride	**1.2**	mg/L	0.10	1		05/23/13 09:27	16984-48-8	
Sulfate	**1580**	mg/L	100	1000		05/23/13 13:01	14808-79-8	

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ANALYTICAL RESULTS

Project: 039126 2013.2 01/JR Phillips
Pace Project No.: 755229

Sample: MW 7-15 May 13 **Lab ID: 755229007** Collected: 05/15/13 12:05 Received: 05/16/13 09:03 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS, Dissolved	Analytical Method: EPA 6020 Preparation Method: EPA 3005A							
Calcium, Dissolved	**359**	mg/L	50.0	100	05/17/13 08:26	05/21/13 17:50	7440-70-2	
Magnesium, Dissolved	**139**	mg/L	50.0	100	05/17/13 08:26	05/21/13 17:50	7439-95-4	
Potassium, Dissolved	**19.0**	mg/L	5.0	10	05/17/13 08:26	05/22/13 11:56	7440-09-7	
Sodium, Dissolved	**3120**	mg/L	50.0	100	05/17/13 08:26	05/21/13 17:50	7440-23-5	
2320B Alkalinity	Analytical Method: SM 2320B							
Alkalinity, Total as CaCO3	**444**	mg/L	20.0	1		05/28/13 11:25		
Alkalinity,Bicarbonate (CaCO3)	**444**	mg/L	20.0	1		05/28/13 11:25		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	20.0	1		05/28/13 11:25		
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**9380**	mg/L	500	1		05/20/13 15:45		
300.0 IC Anions	Analytical Method: EPA 300.0							
Nitrate as N	ND	mg/L	0.10	1		05/16/13 22:56	14797-55-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Chloride	**3700**	mg/L	100	1000		05/23/13 02:01	16887-00-6	
Fluoride	**1.0**	mg/L	0.10	1		05/23/13 10:03	16984-48-8	
Sulfate	**1540**	mg/L	100	1000		05/23/13 13:19	14808-79-8	

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ANALYTICAL RESULTS

Project: 039126 2013.2 01/JR Phillips
Pace Project No.: 755229

Sample: MW 8-15 May 13 **Lab ID: 755229008** Collected: 05/15/13 12:15 Received: 05/16/13 09:03 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS, Dissolved	Analytical Method: EPA 6020 Preparation Method: EPA 3005A							
Calcium, Dissolved	**263**	mg/L	50.0	100	05/17/13 08:26	05/21/13 17:57	7440-70-2	
Magnesium, Dissolved	**90.0**	mg/L	50.0	100	05/17/13 08:26	05/21/13 17:57	7439-95-4	
Potassium, Dissolved	**20.0**	mg/L	5.0	10	05/17/13 08:26	05/22/13 12:02	7440-09-7	
Sodium, Dissolved	**1430**	mg/L	50.0	100	05/17/13 08:26	05/21/13 17:57	7440-23-5	
2320B Alkalinity	Analytical Method: SM 2320B							
Alkalinity, Total as CaCO3	**484**	mg/L	20.0	1		05/28/13 11:28		
Alkalinity,Bicarbonate (CaCO3)	**484**	mg/L	20.0	1		05/28/13 11:28		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	20.0	1		05/28/13 11:28		
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**4280**	mg/L	250	1		05/22/13 11:45		
300.0 IC Anions	Analytical Method: EPA 300.0							
Nitrate as N	ND	mg/L	0.10	1		05/16/13 23:14	14797-55-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Chloride	**1790**	mg/L	100	1000		05/23/13 02:19	16887-00-6	
Fluoride	**2.5**	mg/L	0.10	1		05/23/13 10:39	16984-48-8	
Sulfate	**646**	mg/L	100	1000		05/23/13 13:37	14808-79-8	

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ANALYTICAL RESULTS

Project: 039126 2013.2 01/JR Phillips
Pace Project No.: 755229

Sample: DUP-15 May 13 **Lab ID: 755229009** Collected: 05/15/13 00:00 Received: 05/16/13 09:03 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS, Dissolved	Analytical Method: EPA 6020 Preparation Method: EPA 3005A							
Calcium, Dissolved	**346**	mg/L	50.0	100	05/17/13 08:26	05/21/13 18:03	7440-70-2	
Magnesium, Dissolved	**132**	mg/L	50.0	100	05/17/13 08:26	05/21/13 18:03	7439-95-4	
Potassium, Dissolved	**17.6**	mg/L	5.0	10	05/17/13 08:26	05/22/13 12:09	7440-09-7	
Sodium, Dissolved	**2980**	mg/L	50.0	100	05/17/13 08:26	05/21/13 18:03	7440-23-5	
2320B Alkalinity	Analytical Method: SM 2320B							
Alkalinity, Total as CaCO3	**490**	mg/L	20.0	1		05/28/13 11:31		
Alkalinity,Bicarbonate (CaCO3)	**490**	mg/L	20.0	1		05/28/13 11:31		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	20.0	1		05/28/13 11:31		
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**9140**	mg/L	500	1		05/22/13 11:46		
300.0 IC Anions	Analytical Method: EPA 300.0							
Nitrate as N	ND	mg/L	0.10	1		05/17/13 10:07	14797-55-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Chloride	**3660**	mg/L	100	1000		05/23/13 02:37	16887-00-6	
Fluoride	**1.0**	mg/L	0.10	1		05/23/13 11:14	16984-48-8	
Sulfate	**1470**	mg/L	100	1000		05/23/13 13:55	14808-79-8	

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ANALYTICAL RESULTS

Project: 039126 2013.2 01/JR Phillips
Pace Project No.: 755229

Sample: Trip Blank **Lab ID: 755229010** Collected: Received: 05/16/13 09:03 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS, Dissolved	Analytical Method: EPA 6020 Preparation Method: EPA 3005A							
Calcium, Dissolved	ND	mg/L	0.50	1	05/17/13 08:26	05/22/13 12:15	7440-70-2	
Magnesium, Dissolved	ND	mg/L	0.50	1	05/17/13 08:26	05/22/13 12:15	7439-95-4	
Potassium, Dissolved	ND	mg/L	0.50	1	05/17/13 08:26	05/22/13 12:15	7440-09-7	
Sodium, Dissolved	ND	mg/L	0.50	1	05/17/13 08:26	05/22/13 12:15	7440-23-5	

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QUALITY CONTROL DATA

Project: 039126 2013.2 01/JR Phillips
Pace Project No.: 755229

QC Batch: MPRP/1356 Analysis Method: EPA 6020
QC Batch Method: EPA 3005A Analysis Description: 6020 MET Dissolved
Associated Lab Samples: 755229001, 755229002, 755229003, 755229004, 755229005, 755229006, 755229007, 755229008, 755229009, 755229010

METHOD BLANK: 22641 Matrix: Water
Associated Lab Samples: 755229001, 755229002, 755229003, 755229004, 755229005, 755229006, 755229007, 755229008, 755229009, 755229010

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Calcium, Dissolved	mg/L	ND	0.50	05/20/13 23:13	
Magnesium, Dissolved	mg/L	ND	0.50	05/21/13 15:20	
Potassium, Dissolved	mg/L	ND	0.50	05/20/13 23:13	
Sodium, Dissolved	mg/L	ND	0.50	05/21/13 15:20	

LABORATORY CONTROL SAMPLE: 22642

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium, Dissolved	mg/L	1	1.2	118	80-120	
Magnesium, Dissolved	mg/L	1	1.1	110	80-120	
Potassium, Dissolved	mg/L	1	1.1	108	80-120	
Sodium, Dissolved	mg/L	1	1.1	115	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 22643 22644

Parameter	Units	755229001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Calcium, Dissolved	mg/L	715	1	1	777	720	6140	450	75-125	8	20	M6
Magnesium, Dissolved	mg/L	311	1	1	327	312	1610	90	75-125	5	20	M6
Potassium, Dissolved	mg/L	23.1	1	1	26.3	24.2	324	114	75-125	8	20	M6
Sodium, Dissolved	mg/L	5860	1	1	6040	5780	18500	-7400	75-125	4	20	M6

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QUALITY CONTROL DATA

Project: 039126 2013.2 01/JR Phillips
Pace Project No.: 755229

QC Batch: WET/1943 Analysis Method: SM 2320B
QC Batch Method: SM 2320B Analysis Description: 2320B Alkalinity
Associated Lab Samples: 755229001, 755229002, 755229003, 755229004, 755229005, 755229006, 755229007, 755229008, 755229009

METHOD BLANK: 24133 Matrix: Water
Associated Lab Samples: 755229001, 755229002, 755229003, 755229004, 755229005, 755229006, 755229007, 755229008, 755229009

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	ND	20.0	05/28/13 08:56	

LABORATORY CONTROL SAMPLE: 24134

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	250	240	96	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 24135 24136

Parameter	Units	755412001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	224	250	250	476	468	101	98	90-110	2	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 24137 24138

Parameter	Units	755229004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	1060	250	250	1530	1520	189	186	90-110	1	20	M1

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QUALITY CONTROL DATA

Project: 039126 2013.2 01/JR Phillips
Pace Project No.: 755229

QC Batch: WET/1896 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 755229001, 755229002, 755229003, 755229004, 755229005, 755229006, 755229007

METHOD BLANK: 23034 Matrix: Water
Associated Lab Samples: 755229001, 755229002, 755229003, 755229004, 755229005, 755229006, 755229007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	25.0	05/20/13 15:31	

LABORATORY CONTROL SAMPLE: 23035

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	250	222	89	80-120	

SAMPLE DUPLICATE: 23066

Parameter	Units	755158002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1900	1880	1	20	

SAMPLE DUPLICATE: 23067

Parameter	Units	755229001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	18600	18600	0	20	

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QUALITY CONTROL DATA

Project: 039126 2013.2 01/JR Phillips
Pace Project No.: 755229

QC Batch: WET/1904 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 755229008, 755229009

METHOD BLANK: 23091 Matrix: Water
Associated Lab Samples: 755229008, 755229009

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	25.0	05/22/13 11:44	

LABORATORY CONTROL SAMPLE: 23092

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	250	228	91	80-120	

SAMPLE DUPLICATE: 23093

Parameter	Units	755229008 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	4280	4300	0	20	

SAMPLE DUPLICATE: 23379

Parameter	Units	755240001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	512	500	2	20	

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QUALITY CONTROL DATA

Project: 039126 2013.2 01/JR Phillips
Pace Project No.: 755229

QC Batch: WETA/2132 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 755229001, 755229002, 755229003, 755229004, 755229005, 755229006, 755229007, 755229008, 755229009

METHOD BLANK: 22593 Matrix: Water
Associated Lab Samples: 755229001, 755229002, 755229003, 755229004, 755229005, 755229006, 755229007, 755229008, 755229009

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrate as N	mg/L	ND	0.10	05/17/13 11:01	

LABORATORY CONTROL SAMPLE: 22594

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrate as N	mg/L	5	4.7	94	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 22595 22596

Parameter	Units	755229009 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrate as N	mg/L	ND	5.6	5.6	5.2	5.2	94	94	90-110	0	20	

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QUALITY CONTROL DATA

Project: 039126 2013.2 01/JR Phillips
Pace Project No.: 755229

QC Batch: WETA/2173 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 755229001, 755229002, 755229003, 755229004, 755229005, 755229006, 755229007, 755229008, 755229009

METHOD BLANK: 23375 Matrix: Water
Associated Lab Samples: 755229001, 755229002, 755229003, 755229004, 755229005, 755229006, 755229007, 755229008, 755229009

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	0.10	05/22/13 11:08	
Fluoride	mg/L	ND	0.10	05/22/13 11:08	
Sulfate	mg/L	ND	0.10	05/22/13 11:08	

LABORATORY CONTROL SAMPLE: 23376

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.9	97	90-110	
Fluoride	mg/L	5	4.8	96	90-110	
Sulfate	mg/L	5	5.0	100	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 23377 23378

Parameter	Units	755229001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	8340	5000	5000	14000	14000	112	114	90-110	1	20	M1
Fluoride	mg/L	0.31	5.6	5.6	1.7	1.9	25	29	90-110	12	20	M1
Sulfate	mg/L	3550	5000	5000	7460	7570	78	80	90-110	1	20	M1

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QUALIFIERS

Project: 039126 2013.2 01/JR Phillips
Pace Project No.: 755229

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The Nelac Institute

ANALYTE QUALIFIERS

M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
M6	Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 039126 2013.2 01/JR Phillips
Pace Project No.: 755229

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
755229001	**WW 1-15 May 13**	EPA 3005A	MPRP/1356	EPA 6020	ICPM/1097
755229002	**MW 6-15 May 13**	EPA 3005A	MPRP/1356	EPA 6020	ICPM/1097
755229003	**MW 3-15 May 13**	EPA 3005A	MPRP/1356	EPA 6020	ICPM/1097
755229004	**MW 4-15 May 13**	EPA 3005A	MPRP/1356	EPA 6020	ICPM/1097
755229005	**MW 5-15 May 13**	EPA 3005A	MPRP/1356	EPA 6020	ICPM/1097
755229006	**MW 2-15 May 13**	EPA 3005A	MPRP/1356	EPA 6020	ICPM/1097
755229007	**MW 7-15 May 13**	EPA 3005A	MPRP/1356	EPA 6020	ICPM/1097
755229008	**MW 8-15 May 13**	EPA 3005A	MPRP/1356	EPA 6020	ICPM/1097
755229009	**DUP-15 May 13**	EPA 3005A	MPRP/1356	EPA 6020	ICPM/1097
755229010	**Trip Blank**	EPA 3005A	MPRP/1356	EPA 6020	ICPM/1097
755229001	**WW 1-15 May 13**	SM 2320B	WET/1943		
755229002	**MW 6-15 May 13**	SM 2320B	WET/1943		
755229003	**MW 3-15 May 13**	SM 2320B	WET/1943		
755229004	**MW 4-15 May 13**	SM 2320B	WET/1943		
755229005	**MW 5-15 May 13**	SM 2320B	WET/1943		
755229006	**MW 2-15 May 13**	SM 2320B	WET/1943		
755229007	**MW 7-15 May 13**	SM 2320B	WET/1943		
755229008	**MW 8-15 May 13**	SM 2320B	WET/1943		
755229009	**DUP-15 May 13**	SM 2320B	WET/1943		
755229001	**WW 1-15 May 13**	SM 2540C	WET/1896		
755229002	**MW 6-15 May 13**	SM 2540C	WET/1896		
755229003	**MW 3-15 May 13**	SM 2540C	WET/1896		
755229004	**MW 4-15 May 13**	SM 2540C	WET/1896		
755229005	**MW 5-15 May 13**	SM 2540C	WET/1896		
755229006	**MW 2-15 May 13**	SM 2540C	WET/1896		
755229007	**MW 7-15 May 13**	SM 2540C	WET/1896		
755229008	**MW 8-15 May 13**	SM 2540C	WET/1904		
755229009	**DUP-15 May 13**	SM 2540C	WET/1904		
755229001	**WW 1-15 May 13**	EPA 300.0	WETA/2132		
755229002	**MW 6-15 May 13**	EPA 300.0	WETA/2132		
755229003	**MW 3-15 May 13**	EPA 300.0	WETA/2132		
755229004	**MW 4-15 May 13**	EPA 300.0	WETA/2132		
755229005	**MW 5-15 May 13**	EPA 300.0	WETA/2132		
755229006	**MW 2-15 May 13**	EPA 300.0	WETA/2132		
755229007	**MW 7-15 May 13**	EPA 300.0	WETA/2132		
755229008	**MW 8-15 May 13**	EPA 300.0	WETA/2132		
755229009	**DUP-15 May 13**	EPA 300.0	WETA/2132		
755229001	**WW 1-15 May 13**	EPA 300.0	WETA/2173		
755229002	**MW 6-15 May 13**	EPA 300.0	WETA/2173		
755229003	**MW 3-15 May 13**	EPA 300.0	WETA/2173		
755229004	**MW 4-15 May 13**	EPA 300.0	WETA/2173		
755229005	**MW 5-15 May 13**	EPA 300.0	WETA/2173		
755229006	**MW 2-15 May 13**	EPA 300.0	WETA/2173		
755229007	**MW 7-15 May 13**	EPA 300.0	WETA/2173		
755229008	**MW 8-15 May 13**	EPA 300.0	WETA/2173		
755229009	**DUP-15 May 13**	EPA 300.0	WETA/2173		