1R – 1614

2013 AGWMR

04 / 21 / 2014

TETRA TECH

April 21, 2014

Mr. Glenn von Gonten
New Mexico Energy, Minerals, & Natural Resources
Oil Conservation Division, Environmental Bureau
1220 S. St. Francis Drive
Santa Fe, New Mexico 87504

Re: 2013 Groundwater Sampling Report for the Celero Energy II, LP, Rock Queen Unit Tract 13 Tank Battery, Located in Unit Letter G, Section 36, Township 13 South, Range 31 East, Chaves County, New Mexico (NMOCD 1RP#1614).

Mr. Von Gonten:

This report details the results of the groundwater sampling events performed at the Celero Energy II, LP (Celero), Rock Queen Unit Tract 13 Tank Battery (Site) in 2013. The Site is located approximately 21 1/2 miles north of Maljamar, New Mexico. The Site location is shown on Figures 1 and 2.

FACILITY BACKGROUND

Pit Closure

On September 21, 2007, Highlander (Tetra Tech) submitted an Investigation and Characterization work plan (ICP) for an open pit at the Site. The ICP was subsequently approved by the New Mexico Oil Conservation Division (NMOCD).

The Tract 13 Tank Battery pit was dewatered and the residual sludge, tank bottom materials, and liner were removed in late July to early August 2007. Removed fluids were placed into an existing SWD system or taken for disposal, while the sludge, tank bottom materials, and liner were disposed of at Gandy-Marley, Inc.'s landfill site in Lovington, New Mexico. Upon completion of the removal of the fluids, sludge, and liner, the underlying soils were visually inspected for signs of impact. Approximately 400 cubic yards of soil were excavated and transported to Gandy-Marley, Inc. for disposal. The pit was excavated to a point where the subsoil would support a soil boring rig.

On October 12, 2009, a report entitled *Assessment Report and Work plan*

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for a Pit located at the Rock Queen Unit Track 13 Tank Battery was submitted to the NMOCD. The report detailed the closure of the former pit area with proposed extension of the liner at the facility.

Groundwater Investigation

Between May 2007 and December 2010, Celero installed six 2-inch monitor wells (MW-1 through MW-6) to assess the groundwater quality at the Site. The lithology at the Site was relatively consistent, with limestone encountered to approximately 20 feet below ground surface (bgs) and very fine grain calcareous sands extending to approximately 45 feet bgs. From approximately 45 to 145 feet the soils are fine grain sands. From 145 to the terminus of the borings (approximately 160 to 180 feet) the soils are red cherty sand to red sandstone. One boring (MW-5) was extended to 180 feet with brown clay encountered at approximately 170 feet.

During the investigation, groundwater was encountered at depths of approximately 147 to 154 feet bgs. Monitor Well MW-1 was drilled to a depth of 162 feet bgs and installed with 60 feet of 0.02 inch slotted screen. Monitoring wells MW-2, MW-3, MW-4, and MW-6 were drilled to depths ranging from 160 to 165 and installed with 30 feet of 0.02 inch slotted screen. Monitor well MW-5 was installed into the underlying clay to a depth of 180 feet bgs and installed with 40 feet of 0.02 inch slotted screen. From the top of the screens to the surface of the boring, the wells were completed with blank schedule 40 PVC casing.

During the investigation and subsequent sampling, the only constituents of concern detected in the groundwater above New Mexico Water Quality Control Commission (NMWQCC) standards was chlorides, Total Dissolved Solids (TDS), and Sulfates (SO4). No Phase Separated Hydrocarbons (PSH) or dissolved phase separated hydrocarbons have been measured or detected in any of the onsite monitor wells above NMWQCC standards. See Figure 3 detailing the monitor well locations.

Historic Gauging and Monitor Well Sampling

On June 1, 2007, initial sampling began at the site. During 2010, additional monitor wells were installed and quarterly sampling initiated. During the sampling events, all monitor wells were gauged and sampled with no PSH measured. Utilizing the water level elevation calculations, groundwater gradient maps were generated for all but the June 1, 2007 sampling event. The hydraulic gradient indicates a southeasterly direction.

Historically, each of the wells has been sampled for BTEX utilizing Method SW8021B, chlorides and sulfates utilizing Method E 300.0, TDS utilizing Method SM2540C and periodically for general chemistry using Methods SM2320B,

SW6010B, SM4500-H+. The samples were properly preserved and submitted under proper chain-of-custody control to Trace Analysis Inc. (Trace) of Midland, Texas. Water samples for monitor wells MW-1 (except June 1, 2007), MW-3, and MW-4 were below the NMWQCC standard of 250 milligrams per Liter (mg/L) chlorides. Chlorides for the sampling period ranged from 38.3 mg/L in monitor well MW-1 on July 12, 2010 to 17,700 mg/L in monitor well MW-5 on April 13, 2011. With the exception of monitor well MW-1, MW-3, and MW-4, all additional monitor wells exceeded the NMWQCC standard of 250 mg/L chlorides.

2013 GROUNDWATER SAMPLING RESULTS

Tetra Tech, Inc. (Tetra Tech) was onsite January 29, April 22, July 24, and October 30, 2013 to gauge all monitor wells. No PSH was measured in any of the monitor/recovery wells. Utilizing the water level elevation calculations, groundwater gradient maps were generated for each of the sampling events with a hydraulic gradient consistently to the southeast. Groundwater gradient maps for the sampling events are included as Figures 4 through 7. Gauging data is summarized in Table 1.

On January 30, April 24, July 24, and October 30, 2012, each of the wells was sampled for BTEX utilizing Method SW8021B, chlorides and sulfates utilizing Method E 300.0, TDS utilizing Method SM2540C and periodically for general chemistry. The samples were collected and submitted to Trace of Midland, Texas. All samples collected and analyzed were below detection limit and hence below the NMWQCC standard of 0.01 mg/L of benzene. Chlorides for the sampling period ranged from 51.2 mg/L in monitor well MW-1 on April 24, 2013 to 12,800 mg/L in monitor well MW-2 on April 24, 2013. With the exception of MW-1, MW-3, and MW-4, all additional monitor wells exceeded the NMWQCC standard of 250 mg/L chlorides. The general chemistry and BTEX analyses are shown in Tables 2 and 3, respectively. Chloride concentration maps for the sampling events are included as Figures 8 through 11. Copies of the laboratory analyses report are enclosed in Appendix A.

During the purging activities, it was noted that all six monitor wells did not pump dry.

CONCLUSIONS

1. Sampling occurred on January 30, April 24, July 24, and October 30, 2013. During the sampling events all monitor wells were gauged, purged and sampled. The samples were preserved, delivered to Trace of Midland, Texas and analyzed for BTEX utilizing Method SW8021B, chlorides and sulfates utilizing Method E 300.0, TDS utilizing Method

SM2540C and periodically for general chemistry.

2. The hydraulic gradient is consistent in a southeasterly direction.

3. All samples collected and analyzed were below the NMWQCC standard of 0.01 mg/L of benzene.

4. Water samples for monitor wells MW-1, MW-3, and MW-4 were below the NMWQCC standard of 250 mg/L chlorides. Chlorides for the sampling period ranged from 51.2 mg/L in monitor well MW-1 on April 24, 2013 to 12,800 mg/L in monitor well MW-2 on April 24, 2013.

RECOMMENDATIONS

1. Quarterly groundwater monitoring and gauging will be continued throughout the year.

2. Additional monitor wells will be installed in order to further delineate the chloride plume at the site. In addition a recovery well maybe installed in the vicinity of the chloride plume if underlying water is found to have aquifer characteristics.

3. Perform slug tests on the underlying groundwater to determine if it meets the criteria of an aquifer system. Determination of either pursuing closure or remediation on the site will be based on the results of the testing of the underlying groundwater.

4. If slug testing verifies that the underlying water is an aquifer system, a recovery well along with a remediation system will be installed at the site.

If you have any questions or comments concerning the assessment or the activities performed at the Site, please call me at (432) 682-4559.

Respectfully submitted,
Tetra Tech, Inc.

Jeffrey Kindley, P.G.
Senior Environmental Geologist

cc: Bruce Woodard – Celero Energy II, LP

FIGURES

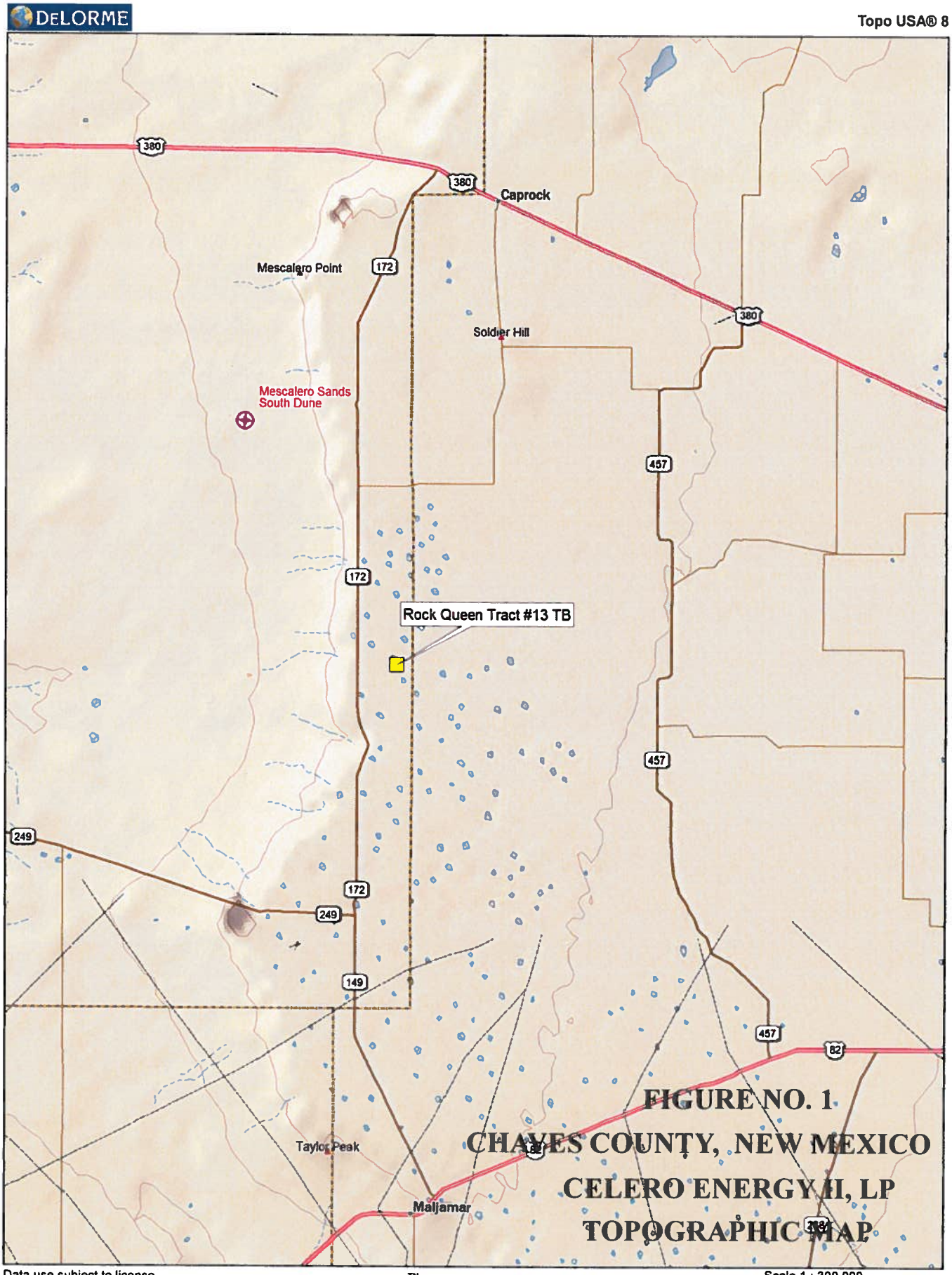


FIGURE NO. 1

CHAVES COUNTY, NEW MEXICO

CELERO ENERGY II, LP

TOPOGRAPHIC MAP

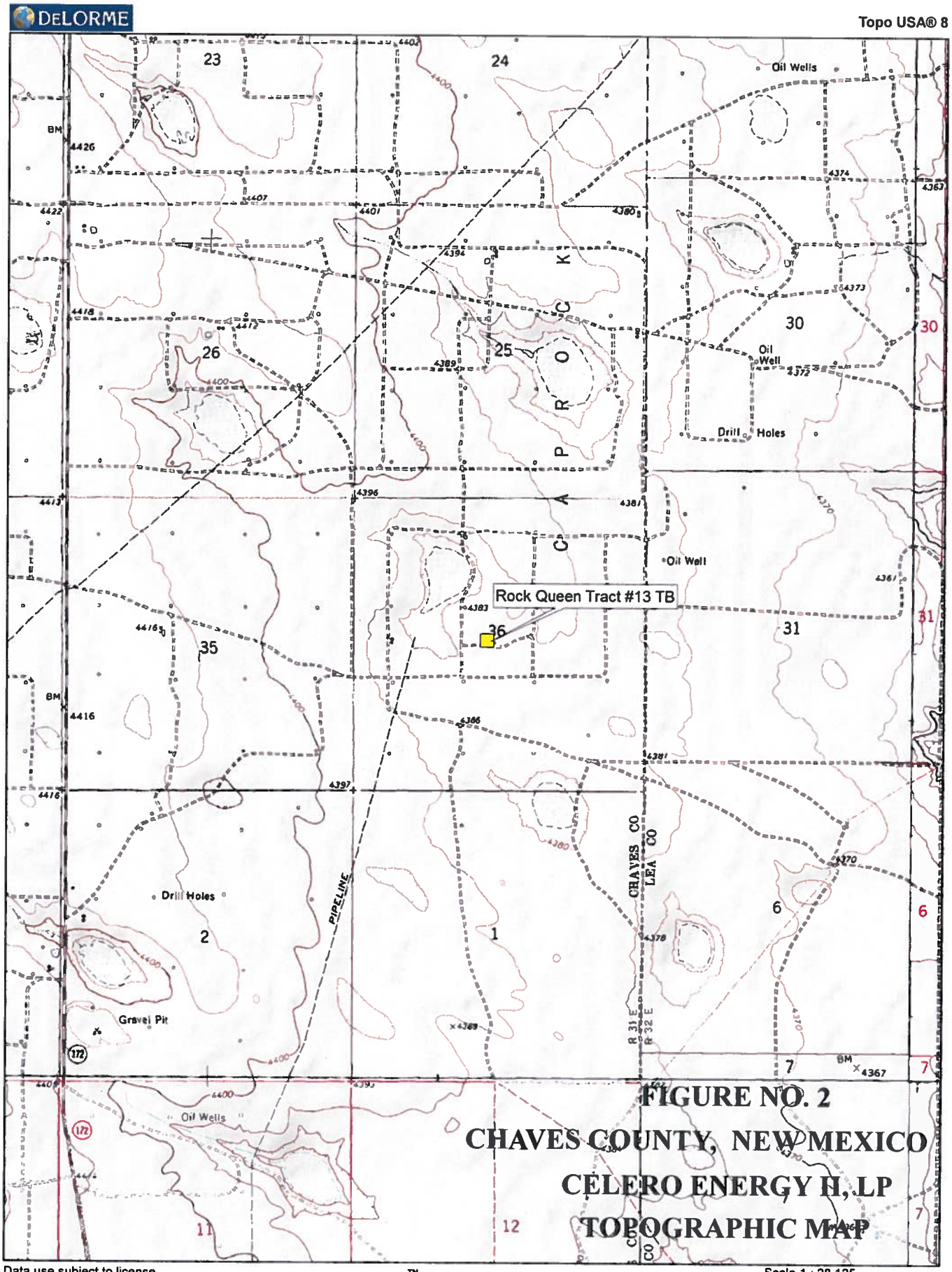
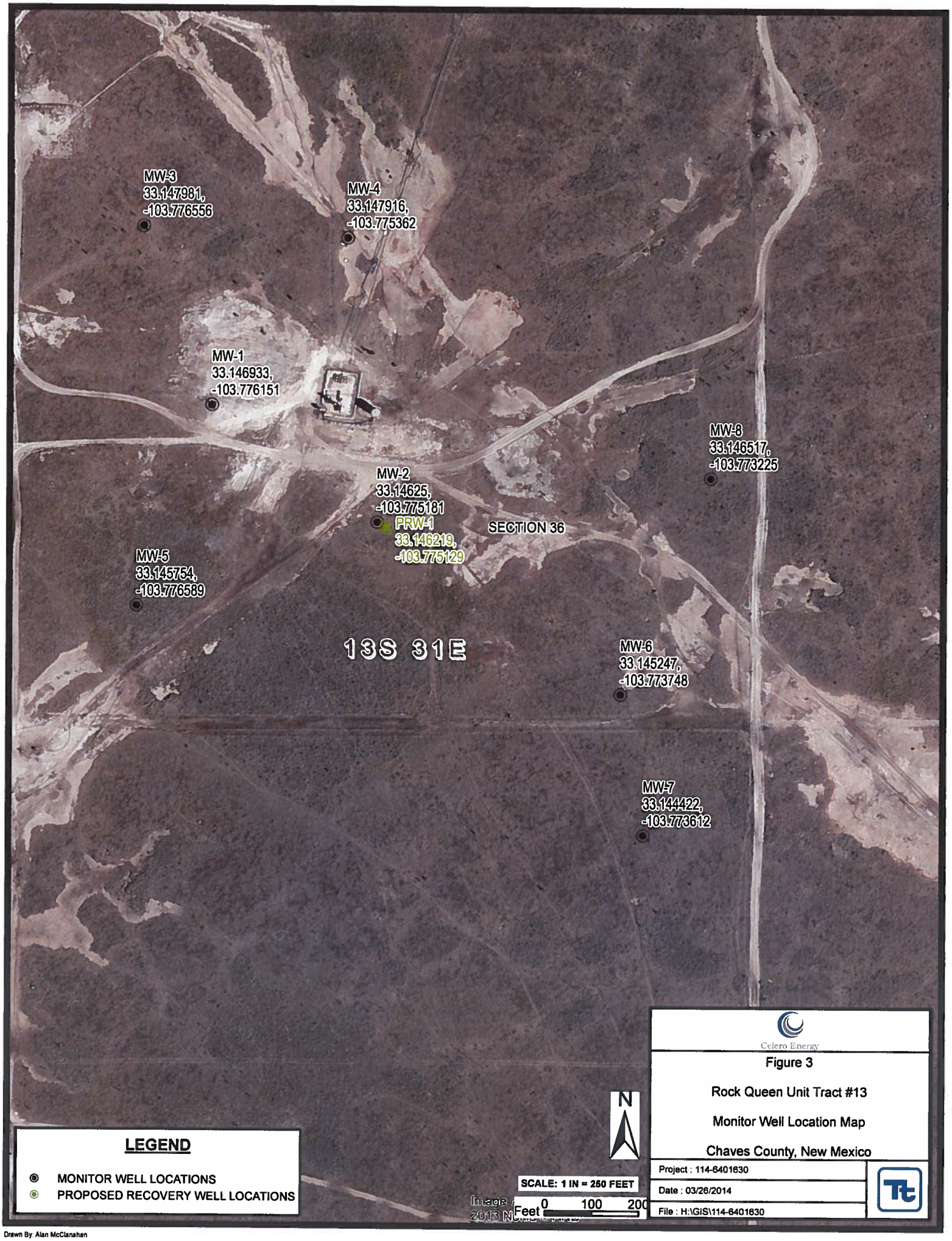


FIGURE NO. 2
CHAVES COUNTY, NEW MEXICO
CELERO ENERGY II, LP
TOPOGRAPHIC MAP



Drawn By: Alan McClanahan

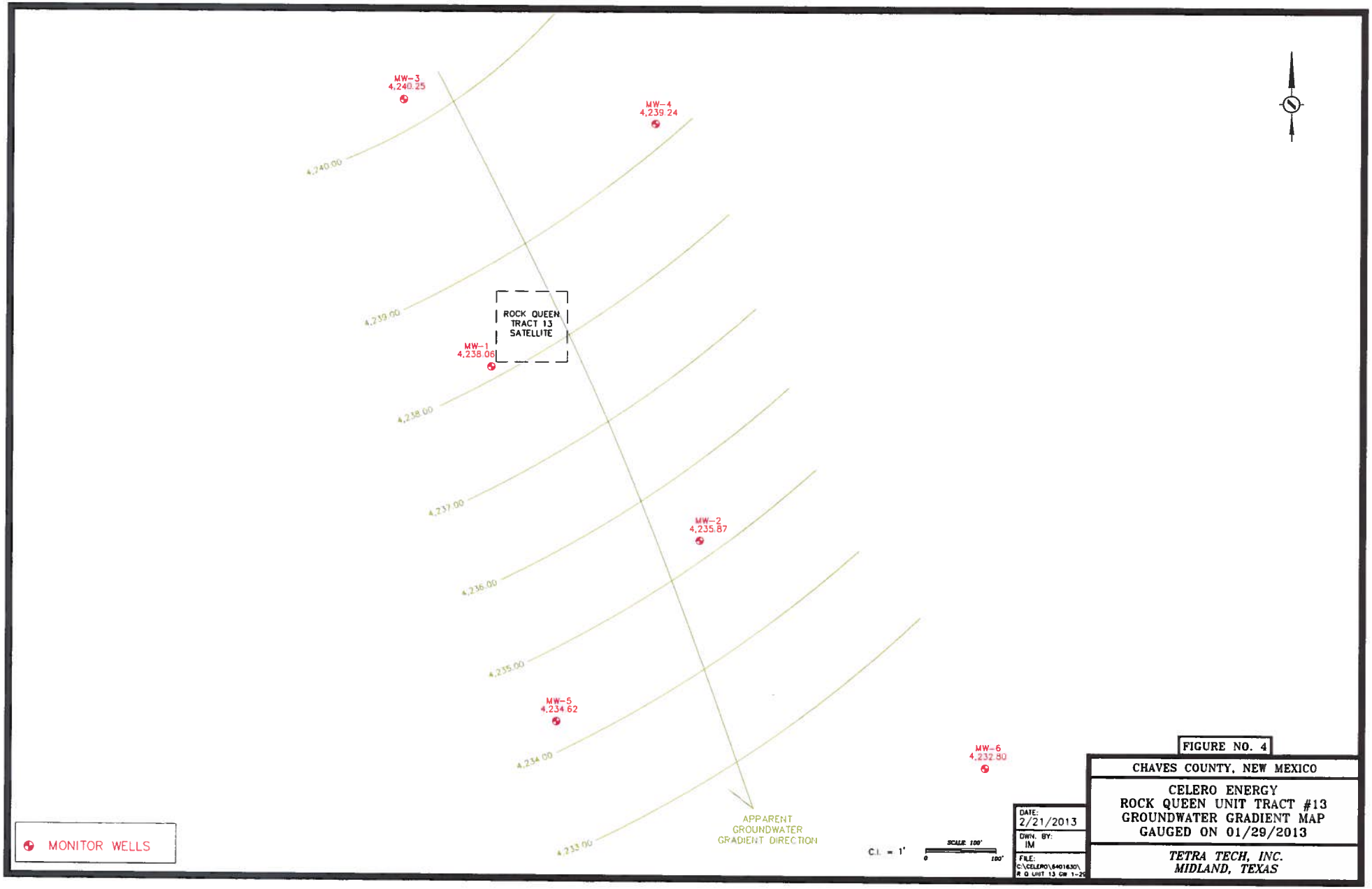
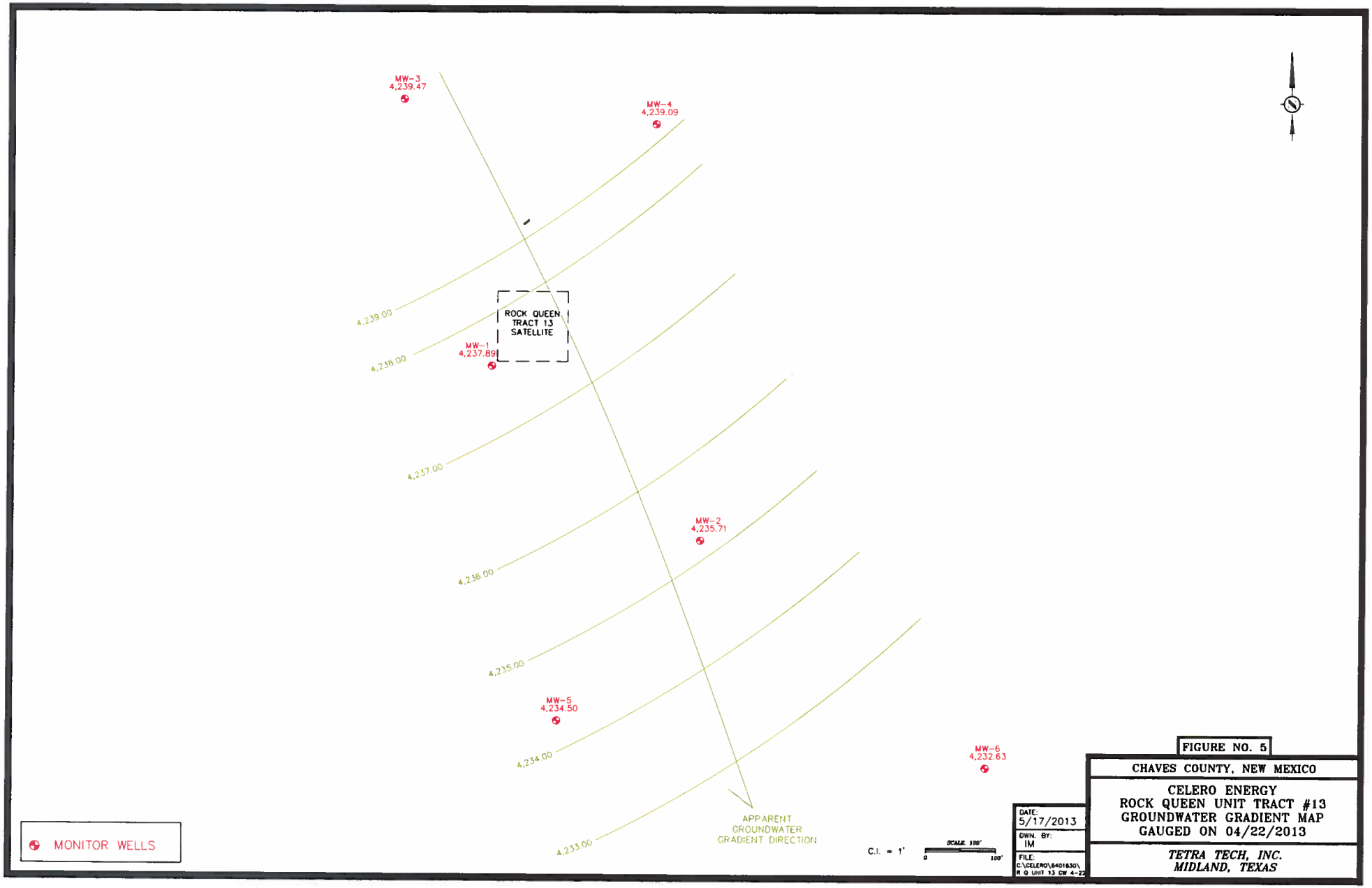


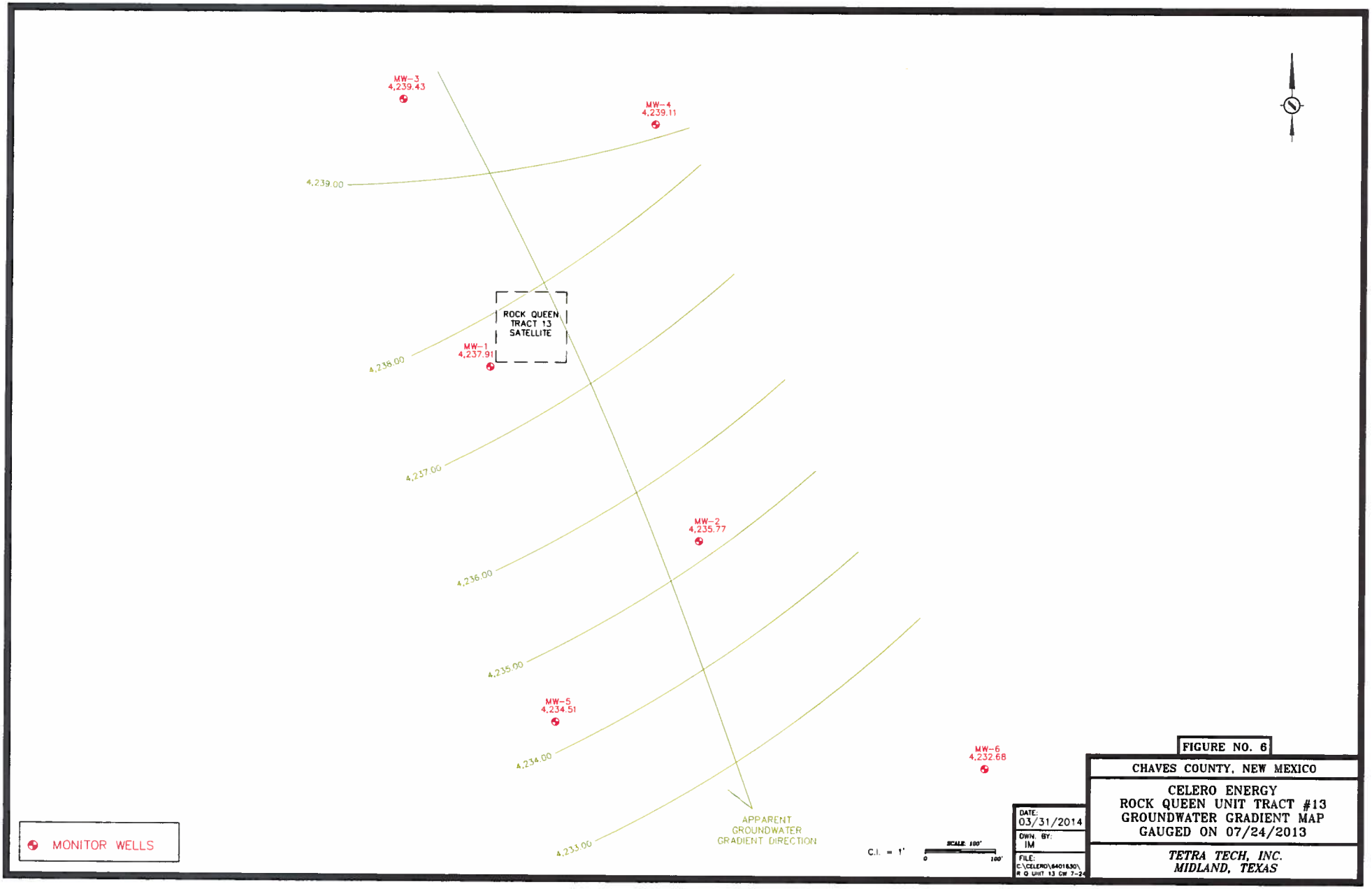
FIGURE NO. 4

CHAVES COUNTY, NEW MEXICO

CELERO ENERGY
ROCK QUEEN UNIT TRACT #13
GROUNDWATER GRADIENT MAP
GAUGED ON 01/29/2013

TETRA TECH, INC.
MIDLAND, TEXAS


MW-3
4,239.47
MW-4
4,239.09
MW-1
4,237.89
ROCK QUEEN
TRACT 13
SATELLITE
MW-2
4,235.71
MW-5
4,234.50
MW-6
4,232.63
4,239.00
4,238.00
4,237.00
4,236.00
4,235.00
4,234.00
4,233.00
APPARENT
GROUNDWATER
GRADIENT DIRECTION
MONITOR WELLS
C.I. = 1'
SCALE 100'
0
100'
DATE:
5/17/2013
DWN. BY:
IM
FILE:
C:\CELERO\640163O\
R Q UNIT 13 GW 4-22
FIGURE NO. 5
CHAVES COUNTY, NEW MEXICO
CELERO ENERGY
ROCK QUEEN UNIT TRACT #13
GROUNDWATER GRADIENT MAP
GAUGED ON 04/22/2013
TETRA TECH, INC.
MIDLAND, TEXAS


MW-3
4,239.43
MW-4
4,239.11
4,239.00
ROCK QUEEN
TRACT 13
SATELLITE
MW-1
4,237.91
4,238.00
4,237.00
MW-2
4,235.77
4,236.00
4,235.00
MW-5
4,234.51
4,234.00
MW-6
4,232.68
4,233.00
APPARENT
GROUNDWATER
GRADIENT DIRECTION
MONITOR WELLS
C.I. = 1'
SCALE: 100'
0
100'
DATE:
03/31/2014
DWN. BY:
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FILE:
C:\CELERO\640163O\
R Q UNIT 13 GW 7-24
FIGURE NO. 6
CHAVES COUNTY, NEW MEXICO
CELERO ENERGY
ROCK QUEEN UNIT TRACT #13
GROUNDWATER GRADIENT MAP
GAUGED ON 07/24/2013
TETRA TECH, INC.
MIDLAND, TEXAS

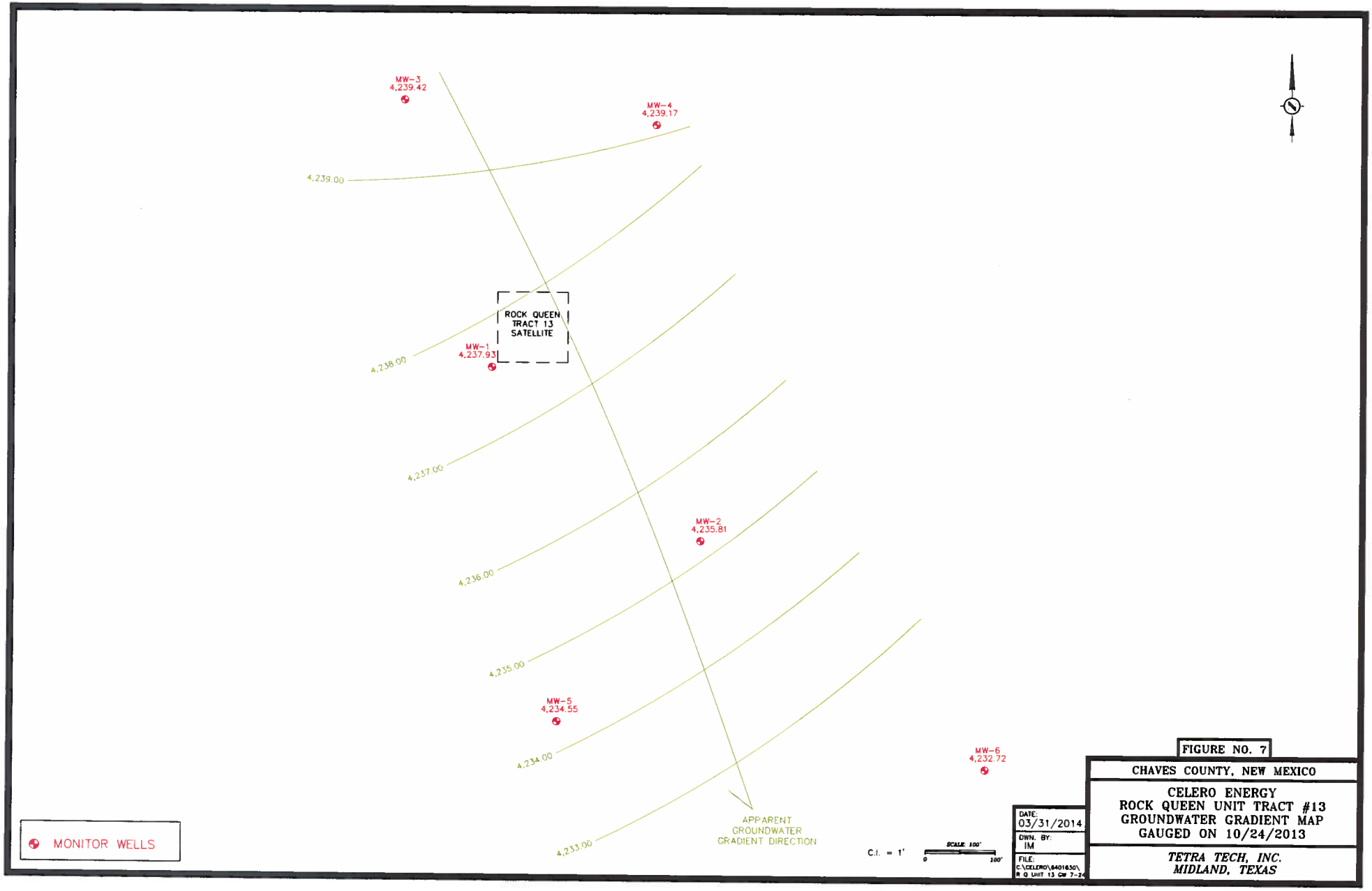

FIGURE NO. 7

CHAVES COUNTY, NEW MEXICO

CELERO ENERGY
ROCK QUEEN UNIT TRACT #13
GROUNDWATER GRADIENT MAP
GAUGED ON 10/24/2013

TETRA TECH, INC.
MIDLAND, TEXAS

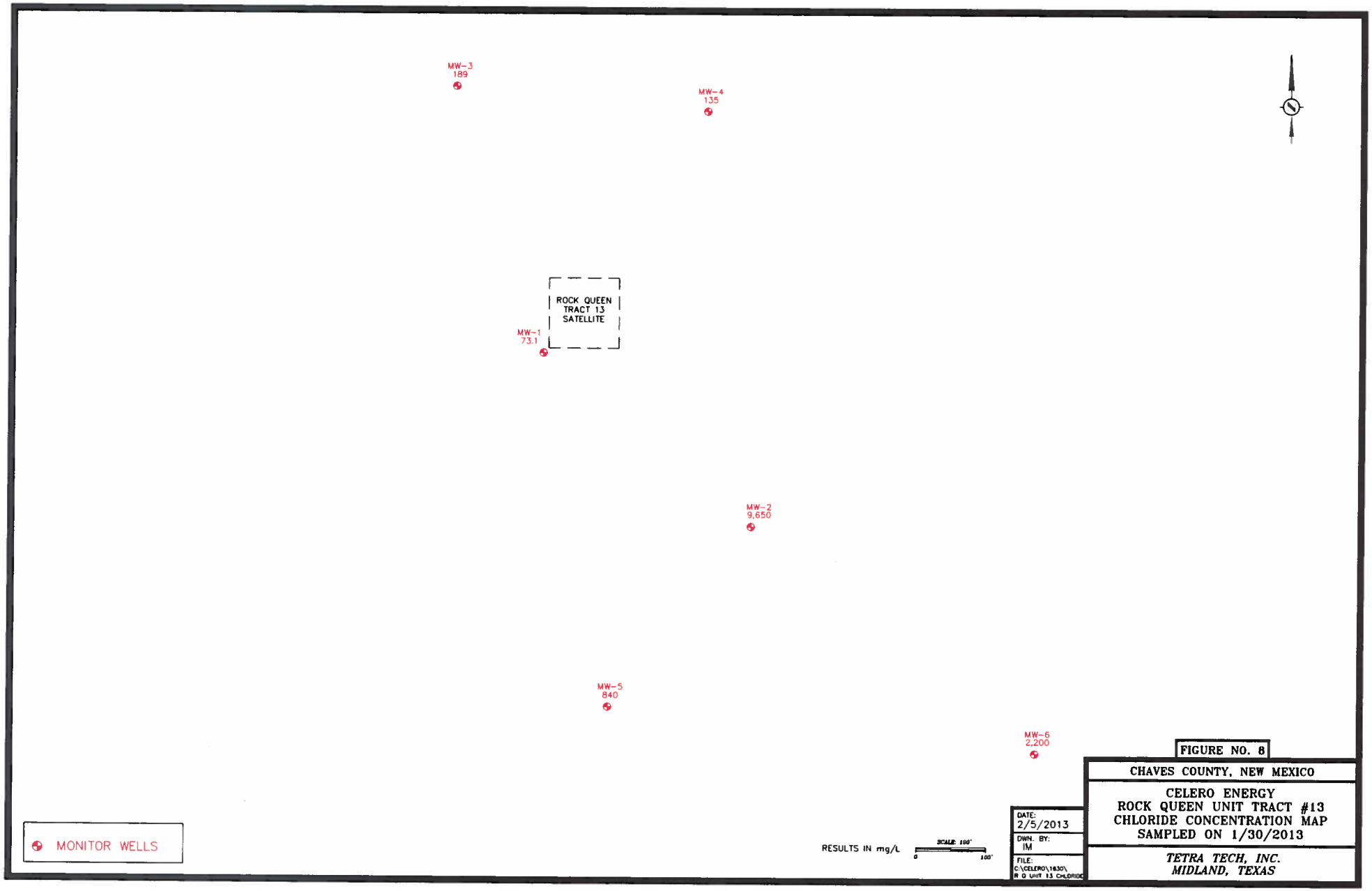

FIGURE NO. 8

CHAVES COUNTY, NEW MEXICO

CELERO ENERGY
ROCK QUEEN UNIT TRACT #13
CHLORIDE CONCENTRATION MAP
SAMPLED ON 1/30/2013

TETRA TECH, INC.
MIDLAND, TEXAS

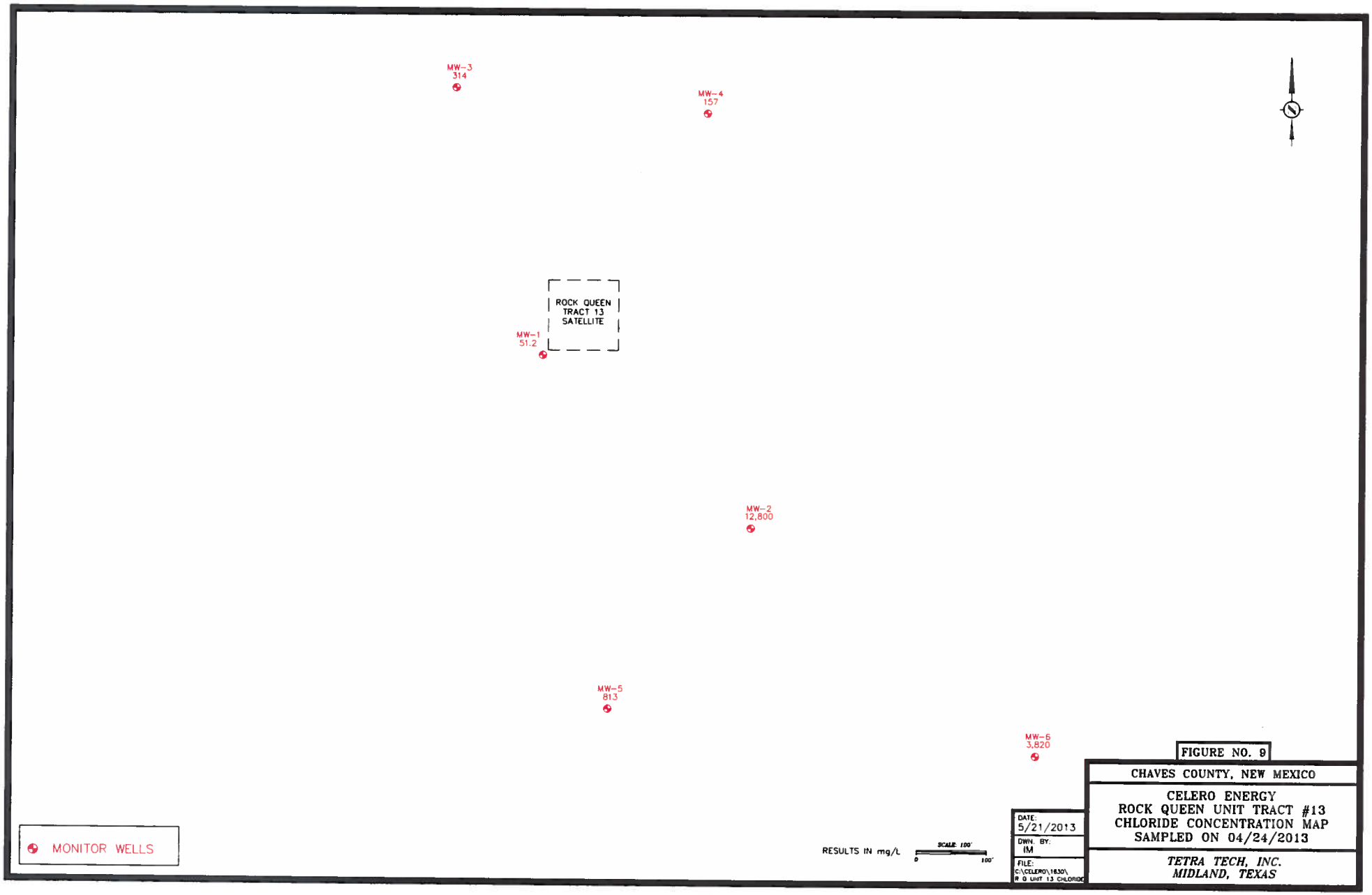

FIGURE NO. 9

CHAVES COUNTY, NEW MEXICO

CELERO ENERGY
ROCK QUEEN UNIT TRACT #13
CHLORIDE CONCENTRATION MAP
SAMPLED ON 04/24/2013

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TETRA TECH, INC.
MIDLAND, TEXAS

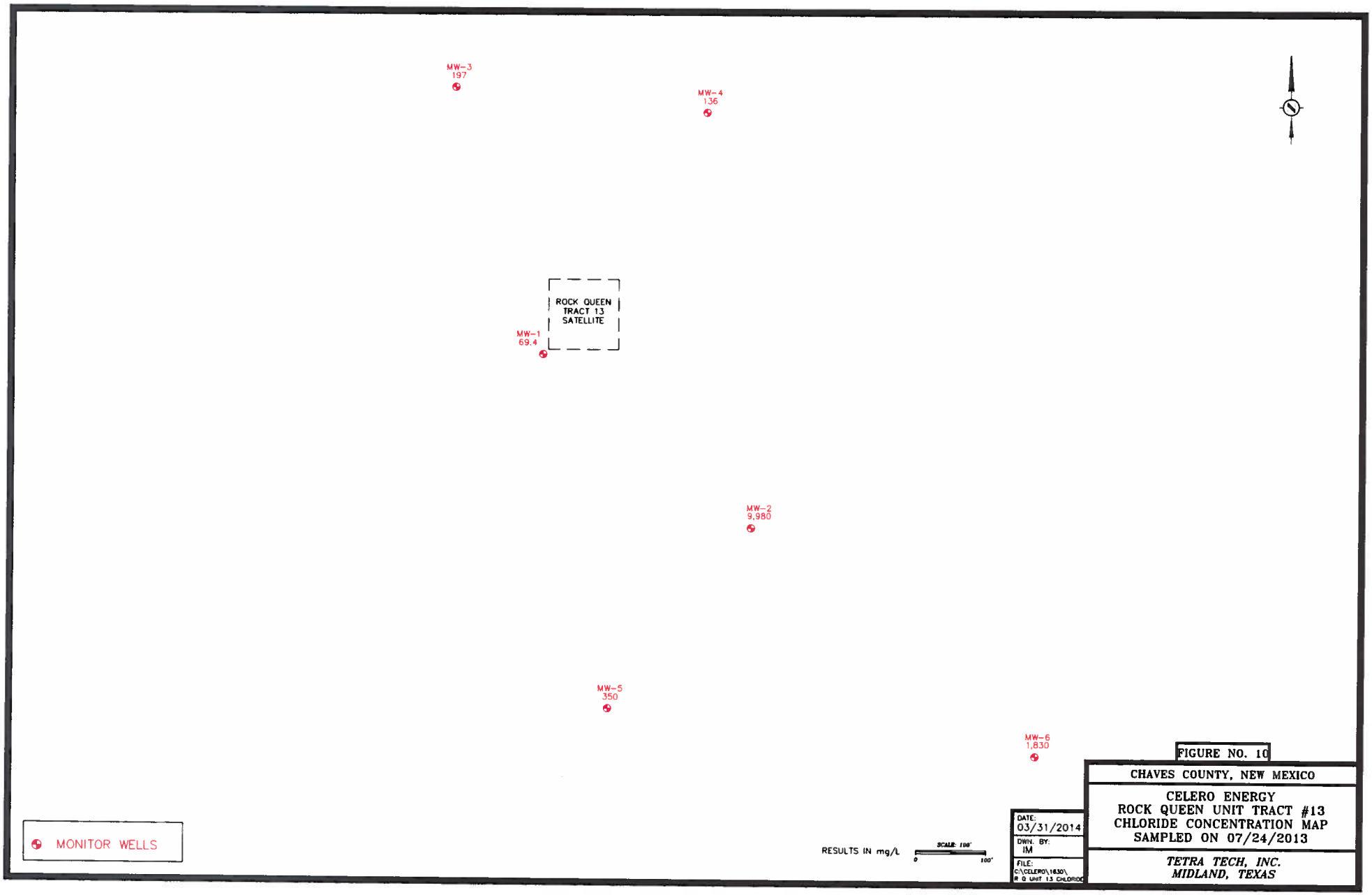

FIGURE NO. 10

CHAVES COUNTY, NEW MEXICO

CELERO ENERGY
ROCK QUEEN UNIT TRACT #13
CHLORIDE CONCENTRATION MAP
SAMPLED ON 07/24/2013

TETRA TECH, INC.
MIDLAND, TEXAS

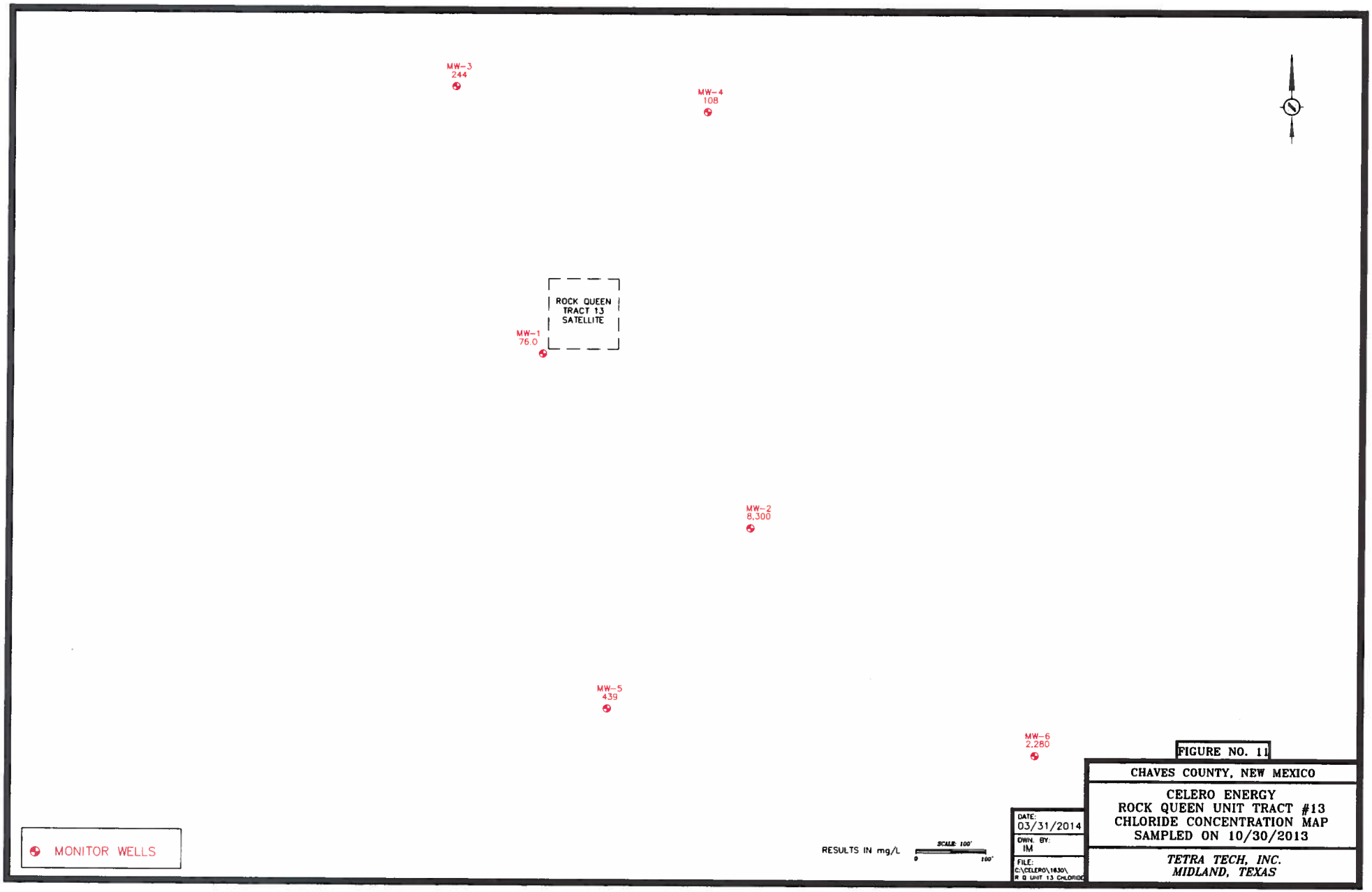

FIGURE NO. 11

CHAVES COUNTY, NEW MEXICO

CELERO ENERGY
ROCK QUEEN UNIT TRACT #13
CHLORIDE CONCENTRATION MAP
SAMPLED ON 10/30/2013

TETRA TECH, INC.
MIDLAND, TEXAS

DATE: 03/31/2014
DWN. BY: IM
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TABLES

Table 1
Celero Energy II, LP
Groundwater Gauging Data
Rock Queen Unit Tract 13 Tank Battery
Chaves County, New Mexico

Monitor Well	Date Gauged	of Well Installation	Elevation (ft)	Depth of Well (bgs in ft)	Depth to Groundwater (ft)	Elevation (ft)
MW-1	05/30/07	05/25/07	4,388.74	161.50	117.52	4,271.22
	05/31/07				127.74	4,261.00
	02/05/08				150.41	4,238.33
	04/06/10				150.36	4,238.38
	07/12/10				150.42	4,238.32
	10/11/10				150.43	4,238.31
	01/17/11				150.40	4,238.34
	04/12/11				150.46	4,238.28
	07/28/11				151.32	4,237.42
	10/24/11				150.61	4,238.13
	01/03/12				150.70	4,238.04
	04/09/12				150.65	4,238.09
	07/25/12				150.64	4,238.10
	10/24/12				150.77	4,237.97
	01/29/13				150.68	4,238.06
	04/22/13				150.85	4,237.89
	07/24/13				150.83	4,237.91
	10/30/13				150.81	4,237.93
MW-2	04/06/10	03/30/10	4,386.04	161.60	147.98	4,238.06
	07/12/10				150.00	4,236.04
	10/11/10				149.80	4,236.24
	01/17/11				149.96	4,236.08
	04/12/11				149.98	4,236.06
	07/28/11				150.91	4,235.13
	10/24/11				150.08	4,235.96
	01/03/12				150.21	4,235.83
	04/09/12				150.14	4,235.90
	07/25/12				150.18	4,235.86
	10/24/12				150.24	4,235.80
	01/29/13				150.17	4,235.87
	04/22/13				150.33	4,235.71
	07/24/13				150.27	4,235.77
	10/30/13				150.23	4,235.81
MW-3	04/06/10	03/31/10	4,388.48	161.90	147.78	4,240.70
	07/12/10				147.79	4,240.69

Table 1
Celero Energy II, LP
Groundwater Gauging Data
Rock Queen Unit Tract 13 Tank Battery
Chaves County, New Mexico

Monitor Well	Date Gauged	of Well Installation	Elevation (ft)	Depth of Well (bgs in ft)	Depth to Groundwater (ft)	Elevation (ft)
MW-3	10/11/10				147.89	4,240.59
	01/17/11				147.89	4,240.59
	04/12/11				147.96	4,240.52
	07/28/11				148.87	4,239.61
	10/24/11				148.13	4,240.35
	01/03/12				148.25	4,240.23
	04/09/12				148.20	4,240.28
	07/25/12				148.18	4,240.30
	10/24/12				148.32	4,240.16
	01/29/13				148.23	4,240.25
	04/22/13				149.01	4,239.47
	07/24/13				149.05	4,239.43
	10/30/13				149.06	4,239.42
MW-4	04/06/10	03/31/10	4,388.12	161.85	148.59	4,239.53
	07/12/10				148.62	4,239.50
	10/11/10				148.63	4,239.49
	01/17/11				148.56	4,239.56
	04/12/11				148.63	4,239.49
	07/28/11				149.59	4,238.53
	10/24/11				148.77	4,239.35
	01/03/12				148.91	4,239.21
	04/09/12				148.83	4,239.29
	07/25/12				148.84	4,239.28
	10/24/12				148.97	4,239.15
	01/29/13				148.88	4,239.24
	04/22/13				149.03	4,239.09
	07/24/13				149.01	4,239.11
	10/30/13				148.95	4,239.17
MW-5	01/17/11	12/02/10	4,383.81	177.60	148.91	4,234.90
	04/12/11				148.98	4,234.83
	07/28/11				149.90	4,233.91
	10/24/11				149.09	4,234.72
	01/03/12				149.25	4,234.56
	04/09/12				149.14	4,234.67
	07/25/12				149.17	4,234.64

Table 1
Celero Energy II, LP
Groundwater Gauging Data
Rock Queen Unit Tract 13 Tank Battery
Chaves County, New Mexico

Monitor Well	Date Gauged	of Well Installation	Elevation (ft)	Depth of Well (bgs in ft)	Depth to Groundwater (ft)	Elevation (ft)
MW-5	10/24/12				149.23	4,234.58
	01/29/13				149.19	4,234.62
	04/22/13				149.31	4,234.50
	07/24/13				149.30	4,234.51
	10/30/13				149.26	4,234.55
MW-6	01/17/11	12/03/10	4,387.81	169.65	154.88	4,232.93
	04/12/11				154.86	4,232.95
	07/28/11				155.79	4,232.02
	10/24/11				154.93	4,232.88
	01/03/12				155.10	4,232.71
	04/09/12				155.00	4,232.81
	07/25/12				155.00	4,232.81
	10/24/12				155.12	4,232.69
	01/29/13				155.01	4,232.80
	04/22/13				155.18	4,232.63
	07/24/13				155.13	4,232.68
	10/30/13				155.09	4,232.72

Table 2
Celero Energy II, LP
Groundwater Analytical Results
Rock Queen Unit Tract 13 Tank Battery
Chaves County, New Mexico

Monitor Well	Date Sampled	Dissolved Calcium (mg/L)	Dissolved Magnesium (mg/L)	Dissolved Sodium (mg/L)	Dissolved Potassium (mg/L)	Hydroxide Alkalinity (mg/L)	Carbonate Alkalinity (mg/L)	Bicarbonate Alkalinity (mg/L)	Total Alkalinity (mg/L)	Sulfate (mg/L)	Chloride (mg/L)	TDS (mg/L)	Hardness (mg/L)	pH
MW-1	06/01/07	282	24.4	2,020	20.1	<1.00	8.00	652	660	91.1	3,270	7,245	804	7.02
	04/06/10	130	7.61	11.40	5.96	<1.00	<1.00	226	226	42.7	43.6	699	356	8.28
	07/12/10	-	-	-	-	-	-	-	-	37.2	38.8	1,130	-	-
	10/11/10	-	-	-	-	-	-		-	49.6	52.3	445	-	-
	01/20/11	-	-	-	-	-	-	-	-	48.8	44.5	447	-	-
	04/13/11	-	-	-	-	-	-	-	-	52.4	52.7	481	-	-
	08/01/11	-	-	-	-	-	-	-	-	68.4	64.1	465	-	-
	10/26/11	-	-	-	-	-	-	-	-	55.4	63.3	492	-	-
	01/05/12	-	-	-	-	-	-	-	-	63.1	46.9	636	-	-
	04/12/12	-	-	-	-	-	-	-	-	45.3	49.6	443	-	-
	07/26/12	-	-	-	-	-	-	-	-	-	59.2	-	-	-
	10/25/12	-	-	-	-	-	-	-	-	65.3	60.2	466	-	-
	01/30/13	-	-	-	-	-	-	-	-	53.2	73.1	464	-	-
	04/24/13	132	4.02	16.8	4.83	<1.00	<1.00	225	225	60.4	51.2	614	345	7.53
	07/24/13	138	1.50	16.0	7.00	<1.00	<1.00	223	223	56.6	69.4	533	350	7.47
	10/30/13	122	<10.0	61.5	<10.0	<20.0	<20.0	214	214	52.4	76.0	942	317	7.51
MW-2	04/06/10	520	73.0	925	15.5	<1.00	<1.00	125	125	133.0	2,250	5,890	1,600	7.70
	07/12/10	-	-	-	-	-	-	-	-	189.0	9,870	27,200	-	-
	10/11/10	-	-	-	-	-	-	-	-	203.0	7,750	15,300	-	-
	01/20/11	-	-	-	-	-	-	-	-	202.0	9,070	15,200	-	-
	04/13/11	-	-	-	-	-	-	-	-	193.0	9,380	16,900	-	-
	08/01/11	-	-	-	-	-	-	-	-	148.0	8,450	9,760	-	-
	10/26/11	-	-	-	-	-	-	-	-	<292	8,870	18,700	-	-
	01/05/12	-	-	-	-	-	-	-	-	177	8,950	14,000	-	-
	04/12/12	-	-	-	-	-	-	-	-	184	9,990	19,400	-	-
	07/26/12	-	-	-	-	-	-	-	-	-	9,400	-	-	-
	10/25/12	-	-	-	-	-	-	-	-	184	8,830	11,500	-	-
	01/30/13	-	-	-	-	-	-	-	-	191	9,650	15,600	-	-
	04/24/13	2,270	369	4,840	30.2	<1.00	<1.00	133	133	219	12,800	23,000	7,190	6.66
	07/24/13	1,550	243	3,320	44.6	<20.0	<20.0	125	125	<2500	9,980	20,900	4,870	6.62
	10/30/13	1,150	174	2,550	26.2	<20.0	<20.0	132	132	155	8,300	17,200	3,590	6.96

Table 2
Celero Energy II, LP
Groundwater Analytical Results
Rock Queen Unit Tract 13 Tank Battery
Chaves County, New Mexico

Monitor Well	Date Sampled	Dissolved Calcium (mg/L)	Dissolved Magnesium (mg/L)	Dissolved Sodium (mg/L)	Dissolved Potassium (mg/L)	Hydroxide Alkalinity (mg/L)	Carbonate Alkalinity (mg/L)	Bicarbonate Alkalinity (mg/L)	Total Alkalinity (mg/L)	Sulfate (mg/L)	Chloride (mg/L)	TDS (mg/L)	Hardness (mg/L)	pH
MW-3	04/06/10	76.1	10.3	78.7	4.33	<1.00	<1.00	183	183	116.0	58.4	696	232	8.26
	07/12/10	-	-	-	-	-	-	-	-	64.0	83.6	562	-	-
	10/11/10	-	-	-	-	-	-	-	-	84.5	170.0	608	-	-
	01/20/11	-	-	-	-	-	-	-	-	62.0	133.0	535	-	-
	04/13/11	-	-	-	-	-	-	-	-	84.1	148.0	630	-	-
	08/01/11	-	-	-	-	-	-	-	-	61.5	166.0	812	-	-
	10/26/11	-	-	-	-	-	-	-	-	65.5	225	1,110	-	-
	01/05/12	-	-	-	-	-	-	-	-	62.1	210	678	-	-
	04/12/12	-	-	-	-	-	-	-	-	45.4	124	519	-	-
	07/26/12	-	-	-	-	-	-	-	-	-	169	-	-	-
	10/25/12	-	-	-	-	-	-	-	-	64.7	163	518	-	-
	01/30/13	-	-	-	-	-	-	-	-	58.0	189	1,530	-	-
	04/24/13	135	6.25	153	6.26	<1.00	<1.00	215	215	61.7	314	724	363	7.49
	07/24/13	145	4.31	71.5	8.57	<20.0	<20.0	188	188	47.1	197	710	380	7.59
	10/30/13	132	<10.0	69.7	<10.0	<20.0	<20.0	194	194	51.6	244	834	345	7.50
MW-4	04/06/10	89.5	11.5	40.5	3.34	<1.00	<1.00	145	145	116.0	58.2	506	270	8.35
	07/12/10	-	-	-	-	-	-	-	-	48.5	147.0	630	-	-
	10/11/10	-	-	-	-	-	-	-	-	56.4	163.0	616	-	-
	01/20/11	-	-	-	-	-	-	-	-	50.8	210.0	534	-	-
	04/13/11	-	-	-	-	-	-	-	-	49.4	174.0	604	-	-
	08/01/11	-	-	-	-	-	-	-	-	48.7	224	690	-	-
	10/26/11	-	-	-	-	-	-	-	-	50.2	188	626	-	-
	01/05/12	-	-	-	-	-	-	-	-	47.8	194	556	-	-
	04/12/12	-	-	-	-	-	-	-	-	46.8	169	555	-	-
	07/26/12	-	-	-	-	-	-	-	-	-	178	-	-	-
	10/25/12	-	-	-	-	-	-	-	-	54.0	165	530	-	-
	01/30/13	-	-	-	-	-	-	-	-	48.1	135	616	-	-
	04/24/13	127	10.5	76.1	0.570	<1.00	<1.00	208	208	47.6	157	672	360	7.41
	07/24/13	133	4.61	58.5	5.37	<20.0	<20.0	194	194	45.8	136	702	350	7.01
	10/30/13	99.3	<10.0	42.7	<10.0	<20.0	<20.0	199	199	46.0	108	608	257	7.36

Table 2

Celero Energy II, LP

Groundwater Analytical Results

Rock Queen Unit Tract 13 Tank Battery

Chaves County, New Mexico

Monitor Well	Date Sampled	Dissolved Calcium (mg/L)	Dissolved Magnesium (mg/L)	Dissolved Sodium (mg/L)	Dissolved Potassium (mg/L)	Hydroxide Alkalinity (mg/L)	Carbonate Alkalinity (mg/L)	Bicarbonate Alkalinity (mg/L)	Total Alkalinity (mg/L)	Sulfate (mg/L)	Chloride (mg/L)	TDS (mg/L)	Hardness (mg/L)	pH
MW-5	01/20/11	-	-	-	-	-	-	-	-	128.0	5,690	7,890	-	-
	04/13/11	-	-	-	-	-	-	-	-	336.0	17,700	27,000	-	-
	08/01/11	-	-	-	-	-	-	-	-	77.2	2,800	4,140	-	-
	10/26/11	-	-	-	-	-	-	-	-	63.0	481	1,220	-	-
	01/05/12	-	-	-	-	-	-	-	-	46.6	1,200	2,060	-	-
	04/12/12	-	-	-	-	-	-	-	-	44.3	2,000	3,820	-	-
	07/26/12	-	-	-	-	-	-	-	-	-	753	-	-	-
	10/25/12	-	-	-	-	-	-	-	-	37.9	723	1,210	-	-
	01/30/13	-	-	-	-	-	-	-	-	32.9	840	1,780	-	-
	04/24/13	398	30.4	104	1.57	<1.00	<1.00	166	166	42.4	813	2,320	1,120	6.68
	07/24/13	246	14.7	78.9	9.87	<20.0	<20.0	176	176	<125	350	1,420	675	6.90
	10/30/13	231	13.8	76.9	<10.0	<20.0	<20.0	183	183	36.7	439	1,410	634	7.17
MW-6	01/20/11	-	-	-	-	-	-	-	-	<250	2,880	4,690	-	-
	04/13/11	-	-	-	-	-	-	-	-	85.2	3,010	4,890	-	-
	08/01/11	-	-	-	-	-	-	-	-	59.3	2,130	2,930	-	-
	10/26/11	-	-	-	-	-	-	-	-	68.0	2,550	4,940	-	-
	01/05/12	-	-	-	-	-	-	-	-	70.4	2,960	4,610	-	-
	04/12/12	-	-	-	-	-	-	-	-	64.0	3,260	5,500	-	-
	07/26/12	-	-	-	-	-	-	-	-	-	2,570	-	-	-
	10/25/12	-	-	-	-	-	-	-	-	90.2	2,040	3,240	-	-
	01/30/13	-	-	-	-	-	-	-	-	75.0	2,200	3,820	-	-
	04/24/13	23.6	69.6	2,360	86.9	<1.00	<1.00	196	196	116	3,820	5,860	346	7.72
	07/24/13	26.5	5.97	1,440	34.6	<20.0	<20.0	201	201	61.1	1,830	4,030	91	7.95
	10/30/13	20.5	<10.0	1,250	26.8	<20.0	<20.0	217	217	88	2,280	3,580	62	8.16

NS - Not sampled

(-) Not Analyzed

Table 3
Celero Energy II, LP
Groundwater Analytical Results
Rock Queen Unit Tract 13 Tank Battery
Chaves County, New Mexico

Monitor Well	Date Sampled	Benzene in (mg/L)	Toluene in (mg/L)	Ethyl-Benzene (mg/L)	Xylene in (mg/L)	Total BTEX (mg/L)
MW-1	04/06/10	<0.001	<0.001	<0.001	<0.001	<0.001
	07/12/10	<0.001	<0.001	<0.001	<0.001	<0.001
	10/11/10	<0.001	<0.001	<0.001	<0.001	<0.001
	01/20/11	<0.001	<0.001	<0.001	<0.001	<0.001
	04/13/11	<0.001	<0.001	<0.001	<0.001	<0.001
	08/01/11	<0.001	<0.001	<0.001	<0.001	<0.001
	10/26/11	<0.001	<0.001	<0.001	<0.001	<0.001
	01/05/12	<0.001	<0.001	<0.001	<0.001	<0.001
	04/12/12	<0.001	<0.001	<0.001	<0.001	<0.001
	07/26/12	<0.001	<0.001	<0.001	<0.001	<0.001
	10/25/12	<0.001	<0.001	<0.001	<0.001	<0.001
	01/30/13	<0.001	<0.001	<0.001	<0.001	<0.001
	04/24/13	<0.001	<0.001	<0.001	<0.001	<0.001
	07/24/13	<0.001	<0.001	<0.001	<0.001	<0.001
	10/30/13	<0.001	<0.001	<0.001	<0.001	<0.003
MW-2	04/06/10	<0.001	<0.001	<0.001	<0.001	<0.001
	07/12/10	<0.001	<0.001	<0.001	<0.001	<0.001
	10/11/10	<0.001	<0.001	<0.001	<0.001	<0.001
	01/20/11	<0.001	<0.001	<0.001	<0.001	<0.001
	04/13/11	<0.001	<0.001	<0.001	<0.001	<0.001
	08/01/11	<0.001	<0.001	<0.001	<0.001	<0.001
	10/26/11	<0.001	<0.001	<0.001	<0.001	<0.001
	01/05/12	<0.001	<0.001	<0.001	<0.001	<0.001
	04/12/12	<0.001	<0.001	<0.001	<0.001	<0.001
	07/26/12	<0.001	<0.001	<0.001	<0.001	<0.001
	10/25/12	<0.001	<0.001	<0.001	0.00290	0.00290
	01/30/13	<0.001	<0.001	<0.001	<0.001	<0.001
	04/24/13	<0.001	<0.001	<0.001	<0.001	<0.001
	07/24/13	<0.001	<0.001	<0.001	<0.001	<0.001
	10/30/13	<0.001	<0.001	<0.001	<0.001	<0.003
MW-3	04/06/10	<0.001	<0.001	<0.001	<0.001	<0.001
	07/12/10	<0.001	<0.001	<0.001	<0.001	<0.001
	10/11/10	<0.001	<0.001	<0.001	<0.001	<0.001
	01/20/11	<0.001	<0.001	<0.001	<0.001	<0.001
	04/13/11	<0.001	<0.001	<0.001	<0.001	<0.001
	08/01/11	<0.001	<0.001	<0.001	<0.001	<0.001
	10/26/11	<0.001	<0.001	<0.001	<0.001	<0.001
	01/05/12	<0.001	<0.001	<0.001	<0.001	<0.001
	04/12/12	<0.001	<0.001	<0.001	<0.001	<0.001
	07/26/12	<0.001	<0.001	<0.001	<0.001	<0.001
	10/25/12	<0.001	<0.001	<0.001	<0.001	<0.001
	01/30/13	<0.001	<0.001	<0.001	<0.001	<0.001

Table 3
Celero Energy II, LP
Groundwater Analytical Results
Rock Queen Unit Tract 13 Tank Battery
Chaves County, New Mexico

Monitor Well	Date Sampled	Benzene in (mg/L)	Toluene in (mg/L)	Ethyl-Benzene (mg/L)	Xylene in (mg/L)	Total BTEX (mg/L)
MW-3	04/24/13	<0.001	<0.001	<0.001	<0.001	<0.001
	07/24/13	<0.001	<0.001	<0.001	<0.001	<0.001
	10/30/13	<0.001	<0.001	<0.001	<0.001	<0.003
MW-4	04/06/10	<0.001	<0.001	<0.001	<0.001	<0.001
	07/12/10	<0.001	<0.001	<0.001	<0.001	<0.001
	10/11/10	<0.001	<0.001	<0.001	<0.001	<0.001
	01/20/11	<0.001	<0.001	<0.001	<0.001	<0.001
	04/13/11	<0.001	<0.001	<0.001	<0.001	<0.001
	08/01/11	<0.001	<0.001	<0.001	<0.001	<0.001
	10/26/11	<0.001	<0.001	<0.001	<0.001	<0.001
	01/05/12	<0.001	<0.001	<0.001	<0.001	<0.001
	04/12/12	<0.001	<0.001	<0.001	<0.001	<0.001
	07/26/12	<0.001	<0.001	<0.001	<0.001	<0.001
	10/25/12	<0.001	<0.001	<0.001	<0.001	<0.001
	01/30/13	<0.001	<0.001	<0.001	<0.001	<0.001
	04/24/13	<0.001	<0.001	<0.001	<0.001	<0.001
	07/24/13	<0.001	<0.001	<0.001	<0.001	<0.001
	10/30/13	<0.001	<0.001	<0.001	<0.001	<0.003
MW-5	01/20/11	<0.001	<0.001	<0.001	<0.001	<0.001
	04/13/11	<0.001	<0.001	<0.001	<0.001	<0.001
	08/01/11	<0.001	<0.001	<0.001	<0.001	<0.001
	10/26/11	<0.001	<0.001	<0.001	<0.001	<0.001
	01/05/12	<0.001	<0.001	<0.001	<0.001	<0.001
	04/12/12	<0.001	<0.001	<0.001	<0.001	<0.001
	07/26/12	<0.001	<0.001	<0.001	<0.001	<0.001
	10/25/12	<0.001	<0.001	<0.001	<0.001	<0.001
	01/30/13	<0.001	<0.001	<0.001	<0.001	<0.001
	04/24/13	<0.001	<0.001	<0.001	<0.001	<0.001
	07/24/13	<0.001	<0.001	<0.001	<0.001	<0.001
	10/30/13	<0.001	<0.001	<0.001	<0.001	<0.003
MW-6	01/20/11	<0.001	<0.001	<0.001	<0.001	<0.001
	04/13/11	<0.001	<0.001	<0.001	<0.001	<0.001
	08/01/11	<0.001	<0.001	<0.001	<0.001	<0.001
	10/26/11	<0.001	<0.001	<0.001	<0.001	<0.001
	01/05/12	<0.001	<0.001	<0.001	<0.001	<0.001
	04/12/12	<0.001	<0.001	<0.001	<0.001	<0.001
	07/26/12	<0.001	<0.001	<0.001	<0.001	<0.001
	10/25/12	<0.001	<0.001	<0.001	<0.001	<0.001
	01/30/13	<0.001	<0.001	<0.001	<0.001	<0.001
	04/24/13	<0.001	<0.001	<0.001	<0.001	<0.001
	07/24/13	<0.001	<0.001	<0.001	<0.001	<0.001
	10/30/13	<0.001	<0.001	<0.001	<0.001	<0.003

APPENDIX A
LABORATORY ANALYTICAL

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800-378-1296 806-794-1296 FAX 806-794-1298
200 East Sunset Road, Suite E El Paso, Texas 79922 915-585-3443 FAX 915-585-4944
5002 Basin Street, Suite A1 Midland, Texas 79703 432-689-6301 FAX 432-689-6313
(BioAquatic) 2501 Mayes Rd., Suite 100 Carrollton, Texas 75006 972-242-7750
E-Mail: lab@traceanalysis.com WEB: www.traceanalysis.com

Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

Analytical and Quality Control Report

(Corrected Report)

Jeff Kindley
Tetra Tech
1910 N. Big Spring Street
Midland, TX, 79705

Report Date: February 15, 2013

Work Order: 13020140

Project Location: Chavez Co., NM
Project Name: Celero/Rock Queen Unit Tract #13
Project Number: 114-6401630

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
320215	MW-1	water	2013-01-30	13:35	2013-02-01
320216	MW-2	water	2013-01-30	13:40	2013-02-01
320217	MW-3	water	2013-01-30	13:25	2013-02-01
320218	MW-4	water	2013-01-30	13:15	2013-02-01
320219	MW-5	water	2013-01-30	13:45	2013-02-01
320220	MW-6	water	2013-01-30	13:50	2013-02-01

Report Corrections (Work Order 13020140)

- 2/14/13: Include Chloride results for sample 320216.

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

Dr. Blair Leftwich, Director
Dr. Michael Abel, Project Manager

Report Contents

Case Narrative

Samples for project Celero/Rock Queen Unit Tract #13 were received by TraceAnalysis, Inc. on 2013-02-01 and assigned to work order 13020140. Samples for work order 13020140 were received intact without headspace and at a temperature of -2.1 C.

Samples were analyzed for the following tests using their respective methods.

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
BTEX	S 8021B	83715	2013-02-08 at 12:00	98791	2013-02-08 at 12:00
BTEX	S 8021B	83745	2013-02-11 at 12:00	98837	2013-02-11 at 12:00
Chloride (IC)	E 300.0	83645	2013-02-06 at 09:48	98822	2013-02-06 at 14:18
Chloride (IC)	E 300.0	83645	2013-02-06 at 09:48	98823	2013-02-06 at 14:22
Chloride (IC)	E 300.0	83862	2013-02-14 at 13:54	98980	2013-02-15 at 16:54
SO4 (IC)	E 300.0	83645	2013-02-06 at 09:48	98822	2013-02-06 at 14:18
SO4 (IC)	E 300.0	83645	2013-02-06 at 09:48	98823	2013-02-06 at 14:22
TDS	SM 2540C	83642	2013-02-05 at 09:17	98845	2013-02-06 at 16:08
TDS	SM 2540C	83642	2013-02-05 at 09:17	98846	2013-02-06 at 16:09

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 13020140 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

Analytical Report

Sample: 320215 - MW-1

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	98791	Date Analyzed:	2013-02-08	Analyzed By:	YG
Prep Batch:	83715	Sample Preparation:	2013-02-08	Prepared By:	YG

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	U	1	<0.00100	mg/L	1	0.00100
Toluene	U	1	<0.00100	mg/L	1	0.00100
Ethylbenzene	U	1	<0.00100	mg/L	1	0.00100
Xylene	U	1	<0.00100	mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	Q-sr	Q-sr	0.119	mg/L	1	0.100	119	75.7 - 109
4-Bromofluorobenzene (4-BFB)			0.102	mg/L	1	0.100	102	68.1 - 109

Sample: 320215 - MW-1

Laboratory:	Midland				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	98822	Date Analyzed:	2013-02-06	Analyzed By:	AR
Prep Batch:	83645	Sample Preparation:	2013-02-06	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1	**73.1**	mg/L	5	2.50

Sample: 320215 - MW-1

Laboratory:	Midland				
Analysis:	SO4 (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	98822	Date Analyzed:	2013-02-06	Analyzed By:	AR
Prep Batch:	83645	Sample Preparation:	2013-02-06	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Sulfate		1	**53.2**	mg/L	5	2.50

Sample: 320215 - MW-1

Laboratory:	Midland				
Analysis:	TDS	Analytical Method:	SM 2540C	Prep Method:	N/A
QC Batch:	98845	Date Analyzed:	2013-02-06	Analyzed By:	AR
Prep Batch:	83642	Sample Preparation:	2013-02-06	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		1	**464**	mg/L	2	10.0

Sample: 320216 - MW-2

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	98791	Date Analyzed:	2013-02-08	Analyzed By:	YG
Prep Batch:	83715	Sample Preparation:	2013-02-08	Prepared By:	YG

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	U	1	<0.00100	mg/L	1	0.00100
Toluene	U	1	<0.00100	mg/L	1	0.00100
Ethylbenzene	U	1	<0.00100	mg/L	1	0.00100
Xylene	U	1	<0.00100	mg/L	1	0.00100

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	Qsr	Qsr		0.116	mg/L	1	0.100	116	75.7 - 109
4-Bromofluorobenzene (4-BFB)				0.103	mg/L	1	0.100	103	68.1 - 109

Sample: 320216 - MW-2

Laboratory:	Midland				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	98980	Date Analyzed:	2013-02-15	Analyzed By:	AR
Prep Batch:	83862	Sample Preparation:	2013-02-14	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1	**9650**	mg/L	500	2.50

Sample: 320216 - MW-2

Laboratory:	Midland				
Analysis:	SO4 (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	98822	Date Analyzed:	2013-02-06	Analyzed By:	AR
Prep Batch:	83645	Sample Preparation:	2013-02-06	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Sulfate		1	**191**	mg/L	5	2.50

Sample: 320216 - MW-2

Laboratory:	Midland				
Analysis:	TDS	Analytical Method:	SM 2540C	Prep Method:	N/A
QC Batch:	98846	Date Analyzed:	2013-02-06	Analyzed By:	AR
Prep Batch:	83642	Sample Preparation:	2013-02-06	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		1	**15600**	mg/L	20	10.0

Sample: 320217 - MW-3

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	98837	Date Analyzed:	2013-02-11	Analyzed By:	YG
Prep Batch:	83745	Sample Preparation:	2013-02-11	Prepared By:	YG

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	U	1	<0.00100	mg/L	1	0.00100
Toluene	U	1	<0.00100	mg/L	1	0.00100
Ethylbenzene	U	1	<0.00100	mg/L	1	0.00100
Xylene	U	1	<0.00100	mg/L	1	0.00100

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	Q-F1	Q-F1		0.117	mg/L	1	0.100	117	75.7 - 109
4-Bromofluorobenzene (4-BFB)				0.102	mg/L	1	0.100	102	68.1 - 109

Sample: 320217 - MW-3

Laboratory:	Midland				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	98822	Date Analyzed:	2013-02-06	Analyzed By:	AR
Prep Batch:	83645	Sample Preparation:	2013-02-06	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1	**189**	mg/L	5	2.50

Sample: 320217 - MW-3

Laboratory:	Midland				
Analysis:	SO4 (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	98822	Date Analyzed:	2013-02-06	Analyzed By:	AR
Prep Batch:	83645	Sample Preparation:	2013-02-06	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Sulfate		1	**58.0**	mg/L	5	2.50

Sample: 320217 - MW-3

Laboratory:	Midland				
Analysis:	TDS	Analytical Method:	SM 2540C	Prep Method:	N/A
QC Batch:	98846	Date Analyzed:	2013-02-06	Analyzed By:	AR
Prep Batch:	83642	Sample Preparation:	2013-02-06	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		1	**1530**	mg/L	2	10.0

Sample: 320218 - MW-4

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	98837	Date Analyzed:	2013-02-11	Analyzed By:	YG
Prep Batch:	83745	Sample Preparation:	2013-02-11	Prepared By:	YG

continued . . .

sample 320218 continued ...

Parameter	Flag	Cert	RL Result	Units	Dilution	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	U	1	<0.00100	mg/L	1	0.00100
Toluene	U	1	<0.00100	mg/L	1	0.00100
Ethylbenzene	U	1	<0.00100	mg/L	1	0.00100
Xylene	U	1	<0.00100	mg/L	1	0.00100

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	Qsr	Qsr		0.119	mg/L	1	0.100	119	75.7 - 109
4-Bromofluorobenzene (4-BFB)				0.104	mg/L	1	0.100	104	68.1 - 109

Sample: 320218 - MW-4

Laboratory:	Midland				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	98822	Date Analyzed:	2013-02-06	Analyzed By:	AR
Prep Batch:	83645	Sample Preparation:	2013-02-06	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1	**135**	mg/L	5	2.50

Sample: 320218 - MW-4

Laboratory:	Midland				
Analysis:	SO4 (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	98822	Date Analyzed:	2013-02-06	Analyzed By:	AR
Prep Batch:	83645	Sample Preparation:	2013-02-06	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Sulfate		1	**48.1**	mg/L	5	2.50

Sample: 320218 - MW-4

Laboratory: Midland
Analysis: TDS
QC Batch: 98846
Prep Batch: 83642
Analytical Method: SM 2540C
Date Analyzed: 2013-02-06
Sample Preparation: 2013-02-06
Prep Method: N/A
Analyzed By: AR
Prepared By: AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		1	**616**	mg/L	2	10.0

Sample: 320219 - MW-5

Laboratory: Midland
Analysis: BTEX
QC Batch: 98837
Prep Batch: 83745
Analytical Method: S 8021B
Date Analyzed: 2013-02-11
Sample Preparation: 2013-02-11
Prep Method: S 5030B
Analyzed By: YG
Prepared By: YG

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	U	1	<0.00100	mg/L	1	0.00100
Toluene	U	1	<0.00100	mg/L	1	0.00100
Ethylbenzene	U	1	<0.00100	mg/L	1	0.00100
Xylene	U	1	<0.00100	mg/L	1	0.00100

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	Q=r	Q=r		0.118	mg/L	1	0.100	118	75.7 - 109
4-Bromofluorobenzene (4-BFB)				0.102	mg/L	1	0.100	102	68.1 - 109

Sample: 320219 - MW-5

Laboratory: Midland
Analysis: Chloride (IC)
QC Batch: 98822
Prep Batch: 83645
Analytical Method: E 300.0
Date Analyzed: 2013-02-06
Sample Preparation: 2013-02-06
Prep Method: N/A
Analyzed By: AR
Prepared By: AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1	**840**	mg/L	50	2.50

Sample: 320219 - MW-5

Laboratory:	Midland				
Analysis:	SO4 (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	98822	Date Analyzed:	2013-02-06	Analyzed By:	AR
Prep Batch:	83645	Sample Preparation:	2013-02-06	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Sulfate		1	**32.9**	mg/L	5	2.50

Sample: 320219 - MW-5

Laboratory:	Midland				
Analysis:	TDS	Analytical Method:	SM 2540C	Prep Method:	N/A
QC Batch:	98846	Date Analyzed:	2013-02-06	Analyzed By:	AR
Prep Batch:	83642	Sample Preparation:	2013-02-06	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		1	**1780**	mg/L	2	10.0

Sample: 320220 - MW-6

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	98837	Date Analyzed:	2013-02-11	Analyzed By:	YG
Prep Batch:	83745	Sample Preparation:	2013-02-11	Prepared By:	YG

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	U	1	<0.00100	mg/L	1	0.00100
Toluene	U	1	<0.00100	mg/L	1	0.00100
Ethylbenzene	U	1	<0.00100	mg/L	1	0.00100
Xylene	U	1	<0.00100	mg/L	1	0.00100

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	Qsr	Qsr		0.117	mg/L	1	0.100	117	75.7 - 109
4-Bromofluorobenzene (4-BFB)				0.102	mg/L	1	0.100	102	68.1 - 109

Sample: 320220 - MW-6

Laboratory:	Midland				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	98823	Date Analyzed:	2013-02-06	Analyzed By:	AR
Prep Batch:	83645	Sample Preparation:	2013-02-06	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1	**2200**	mg/L	100	2.50

Sample: 320220 - MW-6

Laboratory:	Midland				
Analysis:	SO4 (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	98823	Date Analyzed:	2013-02-06	Analyzed By:	AR
Prep Batch:	83645	Sample Preparation:	2013-02-06	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Sulfate		1	**75.0**	mg/L	10	2.50

Sample: 320220 - MW-6

Laboratory:	Midland				
Analysis:	TDS	Analytical Method:	SM 2540C	Prep Method:	N/A
QC Batch:	98846	Date Analyzed:	2013-02-06	Analyzed By:	AR
Prep Batch:	83642	Sample Preparation:	2013-02-06	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		1	**3820**	mg/L	5	10.0

Method Blanks

Method Blank (1) QC Batch: 98791

QC Batch: 98791
Prep Batch: 83715

Date Analyzed: 2013-02-08
QC Preparation: 2013-02-08

Analyzed By: YG
Prepared By: YG

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		1	<0.000200	mg/L	0.001
Toluene		1	<0.000300	mg/L	0.001
Ethylbenzene		1	<0.000400	mg/L	0.001
Xylene		1	<0.00120	mg/L	0.001

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	QSR	QSR		0.116	mg/L	1	0.100	116	75.7 - 109
4-Bromofluorobenzene (4-BFB)				0.0990	mg/L	1	0.100	99	68.1 - 109

Method Blank (1) QC Batch: 98822

QC Batch: 98822
Prep Batch: 83645

Date Analyzed: 2013-02-06
QC Preparation: 2013-02-06

Analyzed By: AR
Prepared By: AR

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride		1	0.972	mg/L	2.5

Method Blank (1) QC Batch: 98822

QC Batch: 98822
Prep Batch: 83645

Date Analyzed: 2013-02-06
QC Preparation: 2013-02-06

Analyzed By: AR
Prepared By: AR

Parameter	Flag	Cert	MDL Result	Units	RL
Sulfate		1	<0.177	mg/L	2.5

Method Blank (1) QC Batch: 98823

QC Batch: 98823
Prep Batch: 83645

Date Analyzed: 2013-02-06
QC Preparation: 2013-02-06

Analyzed By: AR
Prepared By: AR

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride		1	0.941	mg/L	2.5

Method Blank (1) QC Batch: 98823

QC Batch: 98823
Prep Batch: 83645

Date Analyzed: 2013-02-06
QC Preparation: 2013-02-06

Analyzed By: AR
Prepared By: AR

Parameter	Flag	Cert	MDL Result	Units	RL
Sulfate		1	<0.177	mg/L	2.5

Method Blank (1) QC Batch: 98837

QC Batch: 98837
Prep Batch: 83745

Date Analyzed: 2013-02-11
QC Preparation: 2013-02-11

Analyzed By: YG
Prepared By: YG

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		1	<0.000200	mg/L	0.001
Toluene		1	<0.000300	mg/L	0.001
Ethylbenzene		1	<0.000400	mg/L	0.001
Xylene		1	<0.00120	mg/L	0.001

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	Qsr	Qsr	0.120	mg/L	1	0.100	120	75.7 - 109
4-Bromofluorobenzene (4-BFB)			0.103	mg/L	1	0.100	103	68.1 - 109

Method Blank (1) QC Batch: 98845

QC Batch: 98845
Prep Batch: 83642

Date Analyzed: 2013-02-06
QC Preparation: 2013-02-05

Analyzed By: AR
Prepared By: AR

Parameter	Flag	Cert	MDL Result	Units	RL
Total Dissolved Solids		1	<9.75	mg/L	10

Method Blank (1) QC Batch: 98846

QC Batch: 98846 Date Analyzed: 2013-02-06 Analyzed By: AR
Prep Batch: 83642 QC Preparation: 2013-02-05 Prepared By: AR

Parameter	Flag	Cert	MDL Result	Units	RL
Total Dissolved Solids		1	<9.75	mg/L	10

Method Blank (1) QC Batch: 98980

QC Batch: 98980 Date Analyzed: 2013-02-15 Analyzed By: AR
Prep Batch: 83862 QC Preparation: 2013-02-14 Prepared By: AR

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride		1	1.09	mg/L	2.5

Duplicates (1) Duplicated Sample: 320206

QC Batch: 98845 Date Analyzed: 2013-02-06 Analyzed By: AR
Prep Batch: 83642 QC Preparation: 2013-02-05 Prepared By: AR

Param		Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
Total Dissolved Solids	1	11600	11600	mg/L	20	0	10

Duplicates (1) Duplicated Sample: 320220

QC Batch: 98846 Date Analyzed: 2013-02-06 Analyzed By: AR
Prep Batch: 83642 QC Preparation: 2013-02-05 Prepared By: AR

Param		Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
Total Dissolved Solids	1	3970	3820	mg/L	5	4	10

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 98791
Prep Batch: 83715

Date Analyzed: 2013-02-08
QC Preparation: 2013-02-08

Analyzed By: YG
Prepared By: YG

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	0.107	mg/L	1	0.100	<0.000200	107	80 - 120
Toluene		1	0.108	mg/L	1	0.100	<0.000300	108	80 - 120
Ethylbenzene		1	0.112	mg/L	1	0.100	<0.000400	112	70.6 - 120
Xylene		1	0.346	mg/L	1	0.300	<0.00120	115	79.2 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	0.105	mg/L	1	0.100	<0.000200	105	80 - 120	2	20
Toluene		1	0.106	mg/L	1	0.100	<0.000300	106	80 - 120	2	20
Ethylbenzene		1	0.110	mg/L	1	0.100	<0.000400	110	70.6 - 120	2	20
Xylene		1	0.340	mg/L	1	0.300	<0.00120	113	79.2 - 120	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate			LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	Qsr	Qsr	0.116	0.116	mg/L	1	0.100	116	116	75.7 - 109
4-Bromofluorobenzene (4-BFB)			0.104	0.102	mg/L	1	0.100	104	102	68.1 - 109

Laboratory Control Spike (LCS-1)

QC Batch: 98822
Prep Batch: 83645

Date Analyzed: 2013-02-06
QC Preparation: 2013-02-06

Analyzed By: AR
Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	23.9	mg/L	1	25.0	<0.265	96	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

continued ...

control spikes continued ...

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		1	24.0	mg/L	1	25.0	<0.265	96	90 - 110	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: 98822
Prep Batch: 83645

Date Analyzed: 2013-02-06
QC Preparation: 2013-02-06

Analyzed By: AR
Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate		1	25.8	mg/L	1	25.0	<0.177	103	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Sulfate		1	25.8	mg/L	1	25.0	<0.177	103	90 - 110	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: 98823
Prep Batch: 83645

Date Analyzed: 2013-02-06
QC Preparation: 2013-02-06

Analyzed By: AR
Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	24.3	mg/L	1	25.0	<0.265	97	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		1	24.3	mg/L	1	25.0	<0.265	97	90 - 110	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: 98823
Prep Batch: 83645

Date Analyzed: 2013-02-06
QC Preparation: 2013-02-06

Analyzed By: AR
Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate		1	25.9	mg/L	1	25.0	<0.177	104	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Sulfate		1	26.2	mg/L	1	25.0	<0.177	105	90 - 110	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: 98837
Prep Batch: 83745

Date Analyzed: 2013-02-11
QC Preparation: 2013-02-11

Analyzed By: YG
Prepared By: YG

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	0.108	mg/L	1	0.100	<0.000200	108	80 - 120
Toluene		1	0.109	mg/L	1	0.100	<0.000300	109	80 - 120
Ethylbenzene		1	0.113	mg/L	1	0.100	<0.000400	113	70.6 - 120
Xylene		1	0.349	mg/L	1	0.300	<0.00120	116	79.2 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	0.106	mg/L	1	0.100	<0.000200	106	80 - 120	2	20
Toluene		1	0.108	mg/L	1	0.100	<0.000300	108	80 - 120	1	20
Ethylbenzene		1	0.112	mg/L	1	0.100	<0.000400	112	70.6 - 120	1	20
Xylene		1	0.345	mg/L	1	0.300	<0.00120	115	79.2 - 120	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate			LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	[illegible]	[illegible]	0.119	0.119	mg/L	1	0.100	119	119	75.7 - 109
4-Bromofluorobenzene (4-BFB)			0.106	0.106	mg/L	1	0.100	106	106	68.1 - 109

Laboratory Control Spike (LCS-1)

QC Batch: 98845
Prep Batch: 83642

Date Analyzed: 2013-02-06
QC Preparation: 2013-02-05

Analyzed By: AR
Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Total Dissolved Solids		1	962	mg/L	1	1000	<9.75	96	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Total Dissolved Solids		1	948	mg/L	1	1000	<9.75	95	90 - 110	2	10

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: 98846
Prep Batch: 83642

Date Analyzed: 2013-02-06
QC Preparation: 2013-02-05

Analyzed By: AR
Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Total Dissolved Solids		1	987	mg/L	1	1000	<9.75	99	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Total Dissolved Solids		1	992	mg/L	1	1000	<9.75	99	90 - 110	0	10

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: 98980
Prep Batch: 83862

Date Analyzed: 2013-02-15
QC Preparation: 2013-02-14

Analyzed By: AR
Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	25.0	mg/L	1	25.0	<0.265	100	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		1	24.9	mg/L	1	25.0	<0.265	100	90 - 110	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 320204

QC Batch: 98791
Prep Batch: 83715

Date Analyzed: 2013-02-08
QC Preparation: 2013-02-08

Analyzed By: YG
Prepared By: YG

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	0.106	mg/L	1	0.100	0.0045	102	25.7 - 139
Toluene		1	0.0953	mg/L	1	0.100	<0.000300	95	32.7 - 134
Ethylbenzene		1	0.0906	mg/L	1	0.100	<0.000400	91	45.9 - 120
Xylene		1	0.302	mg/L	1	0.300	<0.00120	101	34.9 - 128

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	0.110	mg/L	1	0.100	0.0045	106	25.7 - 139	4	20
Toluene		1	0.0970	mg/L	1	0.100	<0.000300	97	32.7 - 134	2	20
Ethylbenzene		1	0.0921	mg/L	1	0.100	<0.000400	92	45.9 - 120	2	20
Xylene		1	0.306	mg/L	1	0.300	<0.00120	102	34.9 - 128	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate			MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	Qsr	Qsr	0.215	0.215	mg/L	1	0.1	215	215	75.7 - 109
4-Bromofluorobenzene (4-BFB)			0.0800	0.0810	mg/L	1	0.1	80	81	68.1 - 109

Matrix Spike (MS-1) Spiked Sample: 320214

QC Batch: 98822
Prep Batch: 83645

Date Analyzed: 2013-02-06
QC Preparation: 2013-02-06

Analyzed By: AR
Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	4480	mg/L	100	3000	1380	103	80 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		1	4450	mg/L	100	3000	1380	102	80 - 120	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 320214

QC Batch: 98822
Prep Batch: 83645

Date Analyzed: 2013-02-06
QC Preparation: 2013-02-06

Analyzed By: AR
Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate		1	2780	mg/L	100	3000	24.5	92	80 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Sulfate		1	2760	mg/L	100	3000	24.5	91	80 - 120	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 320220

QC Batch: 98823
Prep Batch: 83645

Date Analyzed: 2013-02-06
QC Preparation: 2013-02-06

Analyzed By: AR
Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	5650	mg/L	100	3000	2200	115	80 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		1	5690	mg/L	100	3000	2200	116	80 - 120	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 320220

QC Batch: 98823
Prep Batch: 83645

Date Analyzed: 2013-02-06
QC Preparation: 2013-02-06

Analyzed By: AR
Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate		1	2870	mg/L	100	3000	29.4	95	80 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Sulfate		1	2890	mg/L	100	3000	29.4	95	80 - 120	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 320217

QC Batch: 98837
Prep Batch: 83745

Date Analyzed: 2013-02-11
QC Preparation: 2013-02-11

Analyzed By: YG
Prepared By: YG

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	0.107	mg/L	1	0.100	<0.000200	107	25.7 - 139
Toluene		1	0.108	mg/L	1	0.100	<0.000300	108	32.7 - 134
Ethylbenzene		1	0.113	mg/L	1	0.100	<0.000400	113	45.9 - 120
Xylene		1	0.346	mg/L	1	0.300	<0.00120	115	34.9 - 128

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	0.108	mg/L	1	0.100	<0.000200	108	25.7 - 139	1	20
Toluene		1	0.109	mg/L	1	0.100	<0.000300	109	32.7 - 134	1	20
Ethylbenzene		1	0.114	mg/L	1	0.100	<0.000400	114	45.9 - 120	1	20
Xylene		1	0.354	mg/L	1	0.300	<0.00120	118	34.9 - 128	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate			MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	Q=r	Q=r	0.118	0.119	mg/L	1	0.1	118	119	75.7 - 109
4-Bromofluorobenzene (4-BFB)			0.104	0.105	mg/L	1	0.1	104	105	68.1 - 109

Matrix Spike (MS-1) Spiked Sample: 321149

QC Batch: 98980
Prep Batch: 83862

Date Analyzed: 2013-02-15
QC Preparation: 2013-02-14

Analyzed By: AR
Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	4170	mg/L	100	3000	609	119	80 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		1	4120	mg/L	100	3000	609	117	80 - 120	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Calibration Standards

Standard (CCV-1)

QC Batch: 98791 Date Analyzed: 2013-02-08 Analyzed By: YG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.107	107	80 - 120	2013-02-08
Toluene		1	mg/L	0.100	0.109	109	80 - 120	2013-02-08
Ethylbenzene		1	mg/L	0.100	0.113	113	80 - 120	2013-02-08
Xylene		1	mg/L	0.300	0.348	116	80 - 120	2013-02-08

Standard (CCV-2)

QC Batch: 98791 Date Analyzed: 2013-02-08 Analyzed By: YG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.104	104	80 - 120	2013-02-08
Toluene		1	mg/L	0.100	0.105	105	80 - 120	2013-02-08
Ethylbenzene		1	mg/L	0.100	0.109	109	80 - 120	2013-02-08
Xylene		1	mg/L	0.300	0.336	112	80 - 120	2013-02-08

Standard (CCV-3)

QC Batch: 98791 Date Analyzed: 2013-02-08 Analyzed By: YG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.107	107	80 - 120	2013-02-08
Toluene		1	mg/L	0.100	0.108	108	80 - 120	2013-02-08
Ethylbenzene		1	mg/L	0.100	0.112	112	80 - 120	2013-02-08
Xylene		1	mg/L	0.300	0.347	116	80 - 120	2013-02-08

Standard (CCV-1)

QC Batch: 98822 Date Analyzed: 2013-02-06 Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1	mg/L	25.0	24.0	96	90 - 110	2013-02-06

Standard (CCV-1)

QC Batch: 98822 Date Analyzed: 2013-02-06 Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Sulfate		1	mg/L	25.0	25.4	102	90 - 110	2013-02-06

Standard (CCV-2)

QC Batch: 98822 Date Analyzed: 2013-02-06 Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1	mg/L	25.0	24.6	98	90 - 110	2013-02-06

Standard (CCV-2)

QC Batch: 98822 Date Analyzed: 2013-02-06 Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Sulfate		1	mg/L	25.0	25.5	102	90 - 110	2013-02-06

Standard (CCV-1)

QC Batch: 98823 Date Analyzed: 2013-02-06 Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1	mg/L	25.0	24.6	98	90 - 110	2013-02-06

Standard (CCV-1)

QC Batch: 98823 Date Analyzed: 2013-02-06 Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Sulfate		1	mg/L	25.0	25.5	102	90 - 110	2013-02-06

Standard (CCV-2)

QC Batch: 98823 Date Analyzed: 2013-02-06 Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1	mg/L	25.0	24.2	97	90 - 110	2013-02-06

Standard (CCV-2)

QC Batch: 98823 Date Analyzed: 2013-02-06 Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Sulfate		1	mg/L	25.0	25.8	103	90 - 110	2013-02-06

Standard (CCV-1)

QC Batch: 98837 Date Analyzed: 2013-02-11 Analyzed By: YG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.105	105	80 - 120	2013-02-11
Toluene		1	mg/L	0.100	0.107	107	80 - 120	2013-02-11
Ethylbenzene		1	mg/L	0.100	0.111	111	80 - 120	2013-02-11
Xylene		1	mg/L	0.300	0.343	114	80 - 120	2013-02-11

Standard (CCV-2)

QC Batch: 98837 Date Analyzed: 2013-02-11 Analyzed By: YG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.105	105	80 - 120	2013-02-11
Toluene		1	mg/L	0.100	0.106	106	80 - 120	2013-02-11
Ethylbenzene		1	mg/L	0.100	0.110	110	80 - 120	2013-02-11
Xylene		1	mg/L	0.300	0.339	113	80 - 120	2013-02-11

Standard (CCV-3)

QC Batch: 98837 Date Analyzed: 2013-02-11 Analyzed By: YG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.106	106	80 - 120	2013-02-11
Toluene		1	mg/L	0.100	0.107	107	80 - 120	2013-02-11
Ethylbenzene		1	mg/L	0.100	0.110	110	80 - 120	2013-02-11
Xylene		1	mg/L	0.300	0.345	115	80 - 120	2013-02-11

Standard (CCV-1)

QC Batch: 98980 Date Analyzed: 2013-02-15 Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1	mg/L	25.0	25.1	100	90 - 110	2013-02-15

Standard (CCV-2)

QC Batch: 98980

Date Analyzed: 2013-02-15

Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1	mg/L	25.0	24.6	98	90 - 110	2013-02-15

Appendix

Report Definitions

Name	Definition
MDL	Method Detection Limit
MQL	Minimum Quantitation Limit
SDL	Sample Detection Limit

Laboratory Certifications

C	Certifying Authority	Certification Number	Laboratory Location
-	NCTRCA	WFWB384444Y0909	TraceAnalysis
-	DBE	VN 20657	TraceAnalysis
-	HUB	1752439743100-86536	TraceAnalysis
-	WBE	237019	TraceAnalysis
1	NELAP	T104704392-12-4	Midland

Standard Flags

F	Description
B	Analyte detected in the corresponding method blank above the method detection limit
H	Analyzed out of hold time
J	Estimated concentration
Jb	The analyte is positively identified and the value is approximated between the SDL and MQL. Sample contains less then ten times the concentration found in the method blank. The result should be considered non-detect to the SDL.
Je	Estimated concentration exceeding calibration range.
MI1	Split peak or shoulder peak
MI2	Instrument software did not integrate
MI3	Instrument software misidentified the peak
MI4	Instrument software integrated improperly
MI5	Baseline correction
Qc	Calibration check outside of laboratory limits.
Qr	RPD outside of laboratory limits
Qs	Spike recovery outside of laboratory limits.
Qsr	Surrogate recovery outside of laboratory limits.
U	The analyte is not detected above the SDL

Attachments

The scanned attachments will follow this page.
Please note, each attachment may consist of more than one page.

13030140

Analysis Request of Chain of Custody Record

PAGE: 1 OF: 1

TETRA TECH
1910 N. Big Spring St.
Midland, Texas 79705
(432) 682-4559 • Fax (432) 682-3946

114-6401630

CLIENT NAME: Celero Energy

SITE MANAGER: Jeff Kindley

PROJECT NO.: ~~[illegible]~~ (JMS)

PROJECT NAME: Rock Queen Unit tract #13

ANALYSIS REQUEST (Circle or Specify Method No.)

LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015 MOD. TX1005 (Ext. to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS (SO4/Cl)
326215	1/30	1335	W		X	mw-1	4		X	X			X												X				X
216	↓	1340	↓		↓	mw-2	4		X	X			X												X				X
217	↓	1325	↓		↓	mw-3	4		X	X			X												X				X
218	↓	1315	↓		↓	mw-4	4		X	X			X												X				X
219	↓	1345	↓		↓	mw-5	4		X	X			X												X				X
220	↓	1350	↓		↓	mw-6	4		X	X			X												X				X

RELINQUISHED BY: (Signature) [signature] Date: 2-1-14 Time: 1415
RECEIVED BY: (Signature) [signature] Date: 2/4/13 Time: 14:15

RELINQUISHED BY: (Signature) Date: Time:
RECEIVED BY: (Signature) Date: Time:

RELINQUISHED BY: (Signature) Date: Time:
RECEIVED BY: (Signature) Date: Time:

RECEIVING LABORATORY: Trace
ADDRESS:
CITY: Midland STATE: TX ZIP:
CONTACT: PHONE:
RECEIVED BY: (Signature)
DATE: TIME:

SAMPLED BY: (Print & Initial) Marcus Kuznetz / Ryan Reich Date: Time:

SAMPLE SHIPPED BY: (Circle) FEDEX BUS HAND DELIVERED UPS AIRBILL #: OTHER:

TETRA TECH CONTACT PERSON: Jeff Kindley

Results by:

RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: -2.1

REMARKS: BTEX, Cl, SO4, TDS
MW-1 one VOA frozen [illegible] Midland all

Please fill out all copies - Laboratory retains Yellow copy - Return Orginal copy to Tetra Tech - Project Manager retains Pink copy - Accounting receives Gold copy.

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800-378-1296 806-794-1296 FAX 806-794-1296
200 East Sunset Road, Suite E El Paso, Texas 79922 915-585-3443 FAX 915-585-4944
5002 Basin Street, Suite A1 Midland, Texas 79703 432-689-6301 FAX 432-689-6313
(BioAquatic) 2501 Mayes Rd., Suite 100 Carrollton, Texas 75006 972-242-7750
E-Mail: lab@traceanalysis.com WEB: www.traceanalysis.com

Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

Analytical and Quality Control Report

Jeff Kindley
Tetra Tech
1910 N. Big Spring Street
Midland, TX, 79705

Report Date: May 15, 2013

Work Order: 13042623

Project Location: Chavez Co., NM
Project Name: Celero/Rock Queen Unit Tract #13
Project Number: 114-6401630

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
327418	MW-1	water	2013-04-24	09:25	2013-04-25
327419	MW-2	water	2013-04-24	09:45	2013-04-25
327420	MW-3	water	2013-04-24	09:15	2013-04-25
327421	MW-4	water	2013-04-24	09:00	2013-04-25
327422	MW-5	water	2013-04-24	09:30	2013-04-25
327423	MW-6	water	2013-04-24	09:55	2013-04-25

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

This report consists of a total of 55 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

Notes:
For inorganic analyses, the term MQL should actually read PQL.

Dr. Blair Leftwich, Director
Dr. Michael Abel, Project Manager

Report Contents

Case Narrative

Samples for project Celero/Rock Queen Unit Tract #13 were received by TraceAnalysis, Inc. on 2013-04-25 and assigned to work order 13042623. Samples for work order 13042623 were received intact without headspace and at a temperature of 5.9 C.

Samples were analyzed for the following tests using their respective methods.

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
Alkalinity	SM 2320B	85801	2013-05-09 at 14:00	101237	2013-05-09 at 14:15
BTEX	S 8021B	85619	2013-05-02 at 13:34	101013	2013-05-02 at 13:36
Ca, Dissolved	S 6010C	85572	2013-05-01 at 12:02	101121	2013-05-07 at 09:03
Ca, Dissolved	S 6010C	85572	2013-05-01 at 12:02	101129	2013-05-07 at 10:03
Chloride (IC)	E 300.0	85707	2013-05-06 at 14:00	101127	2013-05-06 at 15:55
Chloride (IC)	E 300.0	85713	2013-05-07 at 08:00	101154	2013-05-07 at 08:37
Chloride (IC)	E 300.0	85924	2013-05-11 at 08:30	101411	2013-05-11 at 09:13
Hardness	S 6010C	85572	2013-05-01 at 12:02	101121	2013-05-07 at 09:03
Hardness	S 6010C	85572	2013-05-01 at 12:02	101129	2013-05-07 at 10:03
K, Dissolved	S 6010C	85572	2013-05-01 at 12:02	101121	2013-05-07 at 09:03
K, Dissolved	S 6010C	85572	2013-05-01 at 12:02	101129	2013-05-07 at 10:03
Mg, Dissolved	S 6010C	85572	2013-05-01 at 12:02	101121	2013-05-07 at 09:03
Mg, Dissolved	S 6010C	85572	2013-05-01 at 12:02	101129	2013-05-07 at 10:03
Na, Dissolved	S 6010C	85572	2013-05-01 at 12:02	101121	2013-05-07 at 09:03
Na, Dissolved	S 6010C	85572	2013-05-01 at 12:02	101129	2013-05-07 at 10:03
pH	SM 4500-H+	85498	2013-04-26 at 16:03	100885	2013-04-26 at 17:09
pH	SM 4500-H+	85498	2013-04-26 at 16:03	100886	2013-04-26 at 17:10
SO4 (IC)	E 300.0	85707	2013-05-06 at 14:00	101127	2013-05-06 at 15:55
SO4 (IC)	E 300.0	85713	2013-05-07 at 08:00	101154	2013-05-07 at 08:37
TDS	SM 2540C	85528	2013-04-27 at 13:21	100915	2013-04-29 at 16:21

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 13042623 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

Analytical Report

Sample: 327418 - MW-1

Laboratory:	Lubbock				
Analysis:	Alkalinity	Analytical Method:	SM 2320B	Prep Method:	N/A
QC Batch:	101237	Date Analyzed:	2013-05-09	Analyzed By:	LM
Prep Batch:	85801	Sample Preparation:	2013-05-09	Prepared By:	LM

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Hydroxide Alkalinity	U	1	<1.00	<1.00	<1.00	mg/L as CaCo3	1	1.00	1	1
Carbonate Alkalinity	U	1	<1.00	<1.00	<1.00	mg/L as CaCo3	1	1.00	1	1
Bicarbonate Alkalinity		1	**225**	**225**	<1.00	mg/L as CaCo3	1	1.00	1	1
Total Alkalinity		1	**225**	**225**	<20.0	mg/L as CaCo3	1	20.0	20	20

Sample: 327418 - MW-1

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	101013	Date Analyzed:	2013-05-02	Analyzed By:	AH
Prep Batch:	85619	Sample Preparation:	2013-05-01	Prepared By:	AH

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Benzene	U	2	<0.000200	<0.00100	<0.000200	mg/L	1	0.000200	0.001	0.0002
Toluene	U	2	<0.000300	<0.00100	<0.000300	mg/L	1	0.000300	0.001	0.0003
Ethylbenzene	U	2	<0.000400	<0.00100	<0.000400	mg/L	1	0.000400	0.001	0.0004
Xylene	U	2	<0.00120	<0.00100	<0.00120	mg/L	1	0.00120	0.001	0.0012

Surrogate	F	C	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0994	mg/L	1	0.100	99	70 - 130
4-Bromofluorobenzene (4-BFB)			0.0981	mg/L	1	0.100	98	70 - 130

Sample: 327418 - MW-1

Laboratory:	Lubbock				
Analysis:	Ca, Dissolved	Analytical Method:	S 6010C	Prep Method:	S 3005A
QC Batch:	101121	Date Analyzed:	2013-05-07	Analyzed By:	RR
Prep Batch:	85572	Sample Preparation:	2013-05-01	Prepared By:	KV

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Dissolved Calcium		1	**132**	**132**	<0.0441	mg/L	1	0.0441	1	0.0441

Sample: 327418 - MW-1

Laboratory: Lubbock
Analysis: Chloride (IC)
QC Batch: 101127
Prep Batch: 85707

Analytical Method: E 300.0
Date Analyzed: 2013-05-06
Sample Preparation: 2013-05-06

Prep Method: N/A
Analyzed By: RL
Prepared By: RL

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Chloride		1	**51.2**	**51.2**	<0.845	mg/L	5	0.845	2.5	0.169

Sample: 327418 - MW-1

Laboratory: Lubbock
Analysis: Hardness
QC Batch: 101121
Prep Batch: 85572

Analytical Method: S 6010C
Date Analyzed: 2013-05-07
Sample Preparation: 2013-05-01

Prep Method: N/A
Analyzed By: RR
Prepared By: KV

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Hardness (by ICP)			**345**	**345**	0.00	mg eq CaCO3/L	1	0.00		

Sample: 327418 - MW-1

Laboratory: Lubbock
Analysis: K, Dissolved
QC Batch: 101121
Prep Batch: 85572

Analytical Method: S 6010C
Date Analyzed: 2013-05-07
Sample Preparation: 2013-05-01

Prep Method: S 3005A
Analyzed By: RR
Prepared By: KV

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Dissolved Potassium		1	**4.83**	**4.83**	<0.0443	mg/L	1	0.0443	1	0.0443

Sample: 327418 - MW-1

Laboratory: Lubbock
Analysis: Mg, Dissolved

Analytical Method: S 6010C

Prep Method: S 3005A

QC Batch: 101121 | Date Analyzed: 2013-05-07 | Analyzed By: RR
Prep Batch: 85572 | Sample Preparation: 2013-05-01 | Prepared By: KV

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Dissolved Magnesium		1	**4.02**	**4.02**	<0.0296	mg/L	1	0.0296	1	0.0296

Sample: 327418 - MW-1

Laboratory: Lubbock
Analysis: Na, Dissolved | Analytical Method: S 6010C | Prep Method: S 3005A
QC Batch: 101121 | Date Analyzed: 2013-05-07 | Analyzed By: RR
Prep Batch: 85572 | Sample Preparation: 2013-05-01 | Prepared By: KV

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Dissolved Sodium		1	**16.8**	**16.8**	<0.172	mg/L	1	0.172	1	0.172

Sample: 327418 - MW-1

Laboratory: Midland
Analysis: pH | Analytical Method: SM 4500-H+ | Prep Method: N/A
QC Batch: 100885 | Date Analyzed: 2013-04-26 | Analyzed By: AR
Prep Batch: 85498 | Sample Preparation: 2013-04-26 | Prepared By: AR

Parameter	F	C	RL Result	Units	Dilution	RL
pH		2	7.53	s.u.	1	0

Sample: 327418 - MW-1

Laboratory: Lubbock
Analysis: SO4 (IC) | Analytical Method: E 300.0 | Prep Method: N/A
QC Batch: 101127 | Date Analyzed: 2013-05-06 | Analyzed By: RL
Prep Batch: 85707 | Sample Preparation: 2013-05-06 | Prepared By: RL

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Sulfate		1	**60.4**	**60.4**	<1.12	mg/L	5	1.12	2.5	0.224

Sample: 327418 - MW-1

Laboratory: Midland
Analysis: TDS | Analytical Method: SM 2540C | Prep Method: N/A
QC Batch: 100915 | Date Analyzed: 2013-04-29 | Analyzed By: AR
Prep Batch: 85528 | Sample Preparation: 2013-04-27 | Prepared By: AR

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Total Dissolved Solids		2	**614**	**614**	<19.5	mg/L	2	19.5	10	9.75

Sample: 327419 - MW-2

Laboratory: Lubbock
Analysis: Alkalinity | Analytical Method: SM 2320B | Prep Method: N/A
QC Batch: 101237 | Date Analyzed: 2013-05-09 | Analyzed By: LM
Prep Batch: 85801 | Sample Preparation: 2013-05-09 | Prepared By: LM

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Hydroxide Alkalinity	U	1	<1.00	<1.00	<1.00	mg/L as CaCo3	1	1.00	1	1
Carbonate Alkalinity	U	1	<1.00	<1.00	<1.00	mg/L as CaCo3	1	1.00	1	1
Bicarbonate Alkalinity		1	**133**	**133**	<1.00	mg/L as CaCo3	1	1.00	1	1
Total Alkalinity		1	**133**	**133**	<20.0	mg/L as CaCo3	1	20.0	20	20

Sample: 327419 - MW-2

Laboratory: Midland
Analysis: BTEX | Analytical Method: S 8021B | Prep Method: S 5030B
QC Batch: 101013 | Date Analyzed: 2013-05-02 | Analyzed By: AH
Prep Batch: 85619 | Sample Preparation: 2013-05-01 | Prepared By: AH

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Benzene	U	2	<0.000200	<0.00100	<0.000200	mg/L	1	0.000200	0.001	0.0002
Toluene	U	2	<0.000300	<0.00100	<0.000300	mg/L	1	0.000300	0.001	0.0003
Ethylbenzene	U	2	<0.000400	<0.00100	<0.000400	mg/L	1	0.000400	0.001	0.0004
Xylene	U	2	<0.00120	<0.00100	<0.00120	mg/L	1	0.00120	0.001	0.0012

Surrogate	F	C	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0970	mg/L	1	0.100	97	70 - 130
4-Bromofluorobenzene (4-BFB)			0.0954	mg/L	1	0.100	95	70 - 130

Sample: 327419 - MW-2

Laboratory:	Lubbock				
Analysis:	Ca, Dissolved	Analytical Method:	S 6010C	Prep Method:	S 3005A
QC Batch:	101129	Date Analyzed:	2013-05-07	Analyzed By:	RR
Prep Batch:	85572	Sample Preparation:	2013-05-01	Prepared By:	KV

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Dissolved Calcium		1	**2270**	**2270**	<4.41	mg/L	100	4.41	1	0.0441

Sample: 327419 - MW-2

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	101127	Date Analyzed:	2013-05-06	Analyzed By:	RL
Prep Batch:	85707	Sample Preparation:	2013-05-06	Prepared By:	RL

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Chloride		1	**12800**	**12800**	<84.5	mg/L	500	84.5	2.5	0.169

Sample: 327419 - MW-2

Laboratory:	Lubbock				
Analysis:	Hardness	Analytical Method:	S 6010C	Prep Method:	N/A
QC Batch:	101129	Date Analyzed:	2013-05-07	Analyzed By:	RR
Prep Batch:	85572	Sample Preparation:	2013-05-01	Prepared By:	KV

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Hardness (by ICP)			**7190**	**7190**	0.00	mg eq CaCO3/L	1	0.00		

Sample: 327419 - MW-2

Laboratory:	Lubbock				
Analysis:	K, Dissolved	Analytical Method:	S 6010C	Prep Method:	S 3005A
QC Batch:	101129	Date Analyzed:	2013-05-07	Analyzed By:	RR
Prep Batch:	85572	Sample Preparation:	2013-05-01	Prepared By:	KV

continued ...

sample 327419 continued ...

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Dissolved Potassium		1	**30.2**	**30.2**	<0.443	mg/L	10	0.443	1	0.0443

Sample: 327419 - MW-2

Laboratory:	Lubbock				
Analysis:	Mg, Dissolved	Analytical Method:	S 6010C	Prep Method:	S 3005A
QC Batch:	101129	Date Analyzed:	2013-05-07	Analyzed By:	RR
Prep Batch:	85572	Sample Preparation:	2013-05-01	Prepared By:	KV

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Dissolved Magnesium		1	**369**	**369**	<2.96	mg/L	100	2.96	1	0.0296

Sample: 327419 - MW-2

Laboratory:	Lubbock				
Analysis:	Na, Dissolved	Analytical Method:	S 6010C	Prep Method:	S 3005A
QC Batch:	101129	Date Analyzed:	2013-05-07	Analyzed By:	RR
Prep Batch:	85572	Sample Preparation:	2013-05-01	Prepared By:	KV

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Dissolved Sodium		1	**4840**	**4840**	<17.2	mg/L	100	17.2	1	0.172

Sample: 327419 - MW-2

Laboratory:	Midland				
Analysis:	pH	Analytical Method:	SM 4500-H+	Prep Method:	N/A
QC Batch:	100885	Date Analyzed:	2013-04-26	Analyzed By:	AR
Prep Batch:	85498	Sample Preparation:	2013-04-26	Prepared By:	AR

Parameter	F	C	RL Result	Units	Dilution	RL
pH		2	6.66	s.u.	1	0

Sample: 327419 - MW-2

Laboratory:	Lubbock				
Analysis:	SO4 (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	101127	Date Analyzed:	2013-05-06	Analyzed By:	RL
Prep Batch:	85707	Sample Preparation:	2013-05-06	Prepared By:	RL

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Sulfate	J	1	**219**	<1250	<112	mg/L	500	112	2.5	0.224

Sample: 327419 - MW-2

Laboratory:	Midland				
Analysis:	TDS	Analytical Method:	SM 2540C	Prep Method:	N/A
QC Batch:	100915	Date Analyzed:	2013-04-29	Analyzed By:	AR
Prep Batch:	85528	Sample Preparation:	2013-04-27	Prepared By:	AR

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Total Dissolved Solids		2	**23000**	**23000**	<975	mg/L	100	975	10	9.75

Sample: 327420 - MW-3

Laboratory:	Lubbock				
Analysis:	Alkalinity	Analytical Method:	SM 2320B	Prep Method:	N/A
QC Batch:	101237	Date Analyzed:	2013-05-09	Analyzed By:	LM
Prep Batch:	85801	Sample Preparation:	2013-05-09	Prepared By:	LM

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Hydroxide Alkalinity	U	1	<1.00	<1.00	<1.00	mg/L as CaCo3	1	1.00	1	1
Carbonate Alkalinity	U	1	<1.00	<1.00	<1.00	mg/L as CaCo3	1	1.00	1	1
Bicarbonate Alkalinity		1	**215**	**215**	<1.00	mg/L as CaCo3	1	1.00	1	1
Total Alkalinity		1	**215**	**215**	<20.0	mg/L as CaCo3	1	20.0	20	20

Sample: 327420 - MW-3

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	101013	Date Analyzed:	2013-05-02	Analyzed By:	AH
Prep Batch:	85619	Sample Preparation:	2013-05-01	Prepared By:	AH

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Benzene	U	2	<0.000200	<0.00100	<0.000200	mg/L	1	0.000200	0.001	0.0002
Toluene	U	2	<0.000300	<0.00100	<0.000300	mg/L	1	0.000300	0.001	0.0003
Ethylbenzene	U	2	<0.000400	<0.00100	<0.000400	mg/L	1	0.000400	0.001	0.0004
Xylene	U	2	<0.00120	<0.00100	<0.00120	mg/L	1	0.00120	0.001	0.0012

Surrogate	F	C	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0974	mg/L	1	0.100	97	70 - 130
4-Bromofluorobenzene (4-BFB)			0.0967	mg/L	1	0.100	97	70 - 130

Sample: 327420 - MW-3

Laboratory: Lubbock
Analysis: Ca, Dissolved | Analytical Method: S 6010C | Prep Method: S 3005A
QC Batch: 101129 | Date Analyzed: 2013-05-07 | Analyzed By: RR
Prep Batch: 85572 | Sample Preparation: 2013-05-01 | Prepared By: KV

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Dissolved Calcium		1	**135**	**135**	<0.0441	mg/L	1	0.0441	1	0.0441

Sample: 327420 - MW-3

Laboratory: Lubbock
Analysis: Chloride (IC) | Analytical Method: E 300.0 | Prep Method: N/A
QC Batch: 101154 | Date Analyzed: 2013-05-07 | Analyzed By: RL
Prep Batch: 85713 | Sample Preparation: 2013-05-07 | Prepared By: RL

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Chloride		1	**314**	**314**	<1.69	mg/L	10	1.69	2.5	0.169

Sample: 327420 - MW-3

Laboratory: Lubbock
Analysis: Hardness | Analytical Method: S 6010C | Prep Method: N/A
QC Batch: 101129 | Date Analyzed: 2013-05-07 | Analyzed By: RR
Prep Batch: 85572 | Sample Preparation: 2013-05-01 | Prepared By: KV

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Hardness (by ICP)			**363**	**363**	0.00	mg eq CaCO3/L	1	0.00		

Sample: 327420 - MW-3

Laboratory: Lubbock
Analysis: K, Dissolved — Analytical Method: S 6010C — Prep Method: S 3005A
QC Batch: 101129 — Date Analyzed: 2013-05-07 — Analyzed By: RR
Prep Batch: 85572 — Sample Preparation: 2013-05-01 — Prepared By: KV

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Dissolved Potassium		1	**6.26**	**6.26**	<0.0443	mg/L	1	0.0443	1	0.0443

Sample: 327420 - MW-3

Laboratory: Lubbock
Analysis: Mg, Dissolved — Analytical Method: S 6010C — Prep Method: S 3005A
QC Batch: 101129 — Date Analyzed: 2013-05-07 — Analyzed By: RR
Prep Batch: 85572 — Sample Preparation: 2013-05-01 — Prepared By: KV

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Dissolved Magnesium		1	**6.25**	**6.25**	<0.0296	mg/L	1	0.0296	1	0.0296

Sample: 327420 - MW-3

Laboratory: Lubbock
Analysis: Na, Dissolved — Analytical Method: S 6010C — Prep Method: S 3005A
QC Batch: 101129 — Date Analyzed: 2013-05-07 — Analyzed By: RR
Prep Batch: 85572 — Sample Preparation: 2013-05-01 — Prepared By: KV

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Dissolved Sodium		1	**153**	**153**	<0.172	mg/L	1	0.172	1	0.172

Sample: 327420 - MW-3

Laboratory: Midland
Analysis: pH — Analytical Method: SM 4500-H+ — Prep Method: N/A

QC Batch: 100885 | Date Analyzed: 2013-04-26 | Analyzed By: AR
Prep Batch: 85498 | Sample Preparation: 2013-04-26 | Prepared By: AR

Parameter	F	C	RL Result	Units	Dilution	RL
pH		2	7.49	s.u.	1	0

Sample: 327420 - MW-3

Laboratory: Lubbock
Analysis: SO4 (IC) | Analytical Method: E 300.0 | Prep Method: N/A
QC Batch: 101154 | Date Analyzed: 2013-05-07 | Analyzed By: RL
Prep Batch: 85713 | Sample Preparation: 2013-05-07 | Prepared By: RL

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Sulfate		1	**61.7**	**61.7**	<2.24	mg/L	10	2.24	2.5	0.224

Sample: 327420 - MW-3

Laboratory: Midland
Analysis: TDS | Analytical Method: SM 2540C | Prep Method: N/A
QC Batch: 100915 | Date Analyzed: 2013-04-29 | Analyzed By: AR
Prep Batch: 85528 | Sample Preparation: 2013-04-27 | Prepared By: AR

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Total Dissolved Solids		2	**724**	**724**	<19.5	mg/L	2	19.5	10	9.75

Sample: 327421 - MW-4

Laboratory: Lubbock
Analysis: Alkalinity | Analytical Method: SM 2320B | Prep Method: N/A
QC Batch: 101237 | Date Analyzed: 2013-05-09 | Analyzed By: LM
Prep Batch: 85801 | Sample Preparation: 2013-05-09 | Prepared By: LM

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Hydroxide Alkalinity	U	1	<1.00	<1.00	<1.00	mg/L as CaCo3	1	1.00	1	1
Carbonate Alkalinity	U	1	<1.00	<1.00	<1.00	mg/L as CaCo3	1	1.00	1	1
Bicarbonate Alkalinity		1	**208**	**208**	<1.00	mg/L as CaCo3	1	1.00	1	1

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sample 327421 continued ...

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Total Alkalinity		1	**208**	**208**	<20.0	mg/L as CaCo3	1	20.0	20	20

Sample: 327421 - MW-4

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	101013	Date Analyzed:	2013-05-02	Analyzed By:	AH
Prep Batch:	85619	Sample Preparation:	2013-05-01	Prepared By:	AH

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Benzene	U	2	<0.000200	<0.00100	<0.000200	mg/L	1	0.000200	0.001	0.0002
Toluene	U	2	<0.000300	<0.00100	<0.000300	mg/L	1	0.000300	0.001	0.0003
Ethylbenzene	U	2	<0.000400	<0.00100	<0.000400	mg/L	1	0.000400	0.001	0.0004
Xylene	U	2	<0.00120	<0.00100	<0.00120	mg/L	1	0.00120	0.001	0.0012

Surrogate	F	C	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0978	mg/L	1	0.100	98	70 - 130
4-Bromofluorobenzene (4-BFB)			0.0956	mg/L	1	0.100	96	70 - 130

Sample: 327421 - MW-4

Laboratory:	Lubbock				
Analysis:	Ca, Dissolved	Analytical Method:	S 6010C	Prep Method:	S 3005A
QC Batch:	101129	Date Analyzed:	2013-05-07	Analyzed By:	RR
Prep Batch:	85572	Sample Preparation:	2013-05-01	Prepared By:	KV

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Dissolved Calcium		1	**127**	**127**	<0.0441	mg/L	1	0.0441	1	0.0441

Sample: 327421 - MW-4

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	101154	Date Analyzed:	2013-05-07	Analyzed By:	RL
Prep Batch:	85713	Sample Preparation:	2013-05-07	Prepared By:	RL

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Chloride		1	**157**	**157**	<0.845	mg/L	5	0.845	2.5	0.169

Sample: 327421 - MW-4

Laboratory: Lubbock
Analysis: Hardness — Analytical Method: S 6010C — Prep Method: N/A
QC Batch: 101129 — Date Analyzed: 2013-05-07 — Analyzed By: RR
Prep Batch: 85572 — Sample Preparation: 2013-05-01 — Prepared By: KV

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Hardness (by ICP)			**360**	**360**	0.00	mg eq CaCO3/L	1	0.00		

Sample: 327421 - MW-4

Laboratory: Lubbock
Analysis: K, Dissolved — Analytical Method: S 6010C — Prep Method: S 3005A
QC Batch: 101129 — Date Analyzed: 2013-05-07 — Analyzed By: RR
Prep Batch: 85572 — Sample Preparation: 2013-05-01 — Prepared By: KV

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Dissolved Potassium	J	1	**0.570**	<1.00	<0.0443	mg/L	1	0.0443	1	0.0443

Sample: 327421 - MW-4

Laboratory: Lubbock
Analysis: Mg, Dissolved — Analytical Method: S 6010C — Prep Method: S 3005A
QC Batch: 101129 — Date Analyzed: 2013-05-07 — Analyzed By: RR
Prep Batch: 85572 — Sample Preparation: 2013-05-01 — Prepared By: KV

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Dissolved Magnesium		1	**10.5**	**10.5**	<0.0296	mg/L	1	0.0296	1	0.0296

Sample: 327421 - MW-4

Laboratory: Lubbock
Analysis: Na, Dissolved — Analytical Method: S 6010C — Prep Method: S 3005A

QC Batch: 101129 | Date Analyzed: 2013-05-07 | Analyzed By: RR
Prep Batch: 85572 | Sample Preparation: 2013-05-01 | Prepared By: KV

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Dissolved Sodium		1	**76.1**	**76.1**	<0.172	mg/L	1	0.172	1	0.172

Sample: 327421 - MW-4

Laboratory: Midland
Analysis: pH | Analytical Method: SM 4500-H+ | Prep Method: N/A
QC Batch: 100885 | Date Analyzed: 2013-04-26 | Analyzed By: AR
Prep Batch: 85498 | Sample Preparation: 2013-04-26 | Prepared By: AR

Parameter	F	C	RL Result	Units	Dilution	RL
pH		2	7.41	s.u.	1	0

Sample: 327421 - MW-4

Laboratory: Lubbock
Analysis: SO4 (IC) | Analytical Method: E 300.0 | Prep Method: N/A
QC Batch: 101154 | Date Analyzed: 2013-05-07 | Analyzed By: RL
Prep Batch: 85713 | Sample Preparation: 2013-05-07 | Prepared By: RL

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Sulfate		1	**47.6**	**47.6**	<1.12	mg/L	5	1.12	2.5	0.224

Sample: 327421 - MW-4

Laboratory: Midland
Analysis: TDS | Analytical Method: SM 2540C | Prep Method: N/A
QC Batch: 100915 | Date Analyzed: 2013-04-29 | Analyzed By: AR
Prep Batch: 85528 | Sample Preparation: 2013-04-27 | Prepared By: AR

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Total Dissolved Solids		2	**672**	**672**	<19.5	mg/L	2	19.5	10	9.75

Sample: 327422 - MW-5

Laboratory:	Lubbock				
Analysis:	Alkalinity	Analytical Method:	SM 2320B	Prep Method:	N/A
QC Batch:	101237	Date Analyzed:	2013-05-09	Analyzed By:	LM
Prep Batch:	85801	Sample Preparation:	2013-05-09	Prepared By:	LM

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Hydroxide Alkalinity	U	1	<1.00	<1.00	<1.00	mg/L as CaCo3	1	1.00	1	1
Carbonate Alkalinity	U	1	<1.00	<1.00	<1.00	mg/L as CaCo3	1	1.00	1	1
Bicarbonate Alkalinity		1	**166**	**166**	<1.00	mg/L as CaCo3	1	1.00	1	1
Total Alkalinity		1	**166**	**166**	<20.0	mg/L as CaCo3	1	20.0	20	20

Sample: 327422 - MW-5

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	101013	Date Analyzed:	2013-05-02	Analyzed By:	AH
Prep Batch:	85619	Sample Preparation:	2013-05-01	Prepared By:	AH

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Benzene	U	2	<0.000200	<0.00100	<0.000200	mg/L	1	0.000200	0.001	0.0002
Toluene	U	2	<0.000300	<0.00100	<0.000300	mg/L	1	0.000300	0.001	0.0003
Ethylbenzene	U	2	<0.000400	<0.00100	<0.000400	mg/L	1	0.000400	0.001	0.0004
Xylene	U	2	<0.00120	<0.00100	<0.00120	mg/L	1	0.00120	0.001	0.0012

Surrogate	F	C	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0986	mg/L	1	0.100	99	70 - 130
4-Bromofluorobenzene (4-BFB)			0.0954	mg/L	1	0.100	95	70 - 130

Sample: 327422 - MW-5

Laboratory:	Lubbock				
Analysis:	Ca, Dissolved	Analytical Method:	S 6010C	Prep Method:	S 3005A
QC Batch:	101129	Date Analyzed:	2013-05-07	Analyzed By:	RR
Prep Batch:	85572	Sample Preparation:	2013-05-01	Prepared By:	KV

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Dissolved Calcium		1	**398**	**398**	<0.0441	mg/L	1	0.0441	1	0.0441

Sample: 327422 - MW-5

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	101154	Date Analyzed:	2013-05-07	Analyzed By:	RL
Prep Batch:	85713	Sample Preparation:	2013-05-07	Prepared By:	RL

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Chloride		1	**813**	**813**	<8.45	mg/L	50	8.45	2.5	0.169

Sample: 327422 - MW-5

Laboratory:	Lubbock				
Analysis:	Hardness	Analytical Method:	S 6010C	Prep Method:	N/A
QC Batch:	101129	Date Analyzed:	2013-05-07	Analyzed By:	RR
Prep Batch:	85572	Sample Preparation:	2013-05-01	Prepared By:	KV

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Hardness (by ICP)			**1120**	**1120**	0.00	mg eq CaCO3/L	1	0.00		

Sample: 327422 - MW-5

Laboratory:	Lubbock				
Analysis:	K, Dissolved	Analytical Method:	S 6010C	Prep Method:	S 3005A
QC Batch:	101129	Date Analyzed:	2013-05-07	Analyzed By:	RR
Prep Batch:	85572	Sample Preparation:	2013-05-01	Prepared By:	KV

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Dissolved Potassium		1	**1.57**	**1.57**	<0.0443	mg/L	1	0.0443	1	0.0443

Sample: 327422 - MW-5

Laboratory:	Lubbock				
Analysis:	Mg, Dissolved	Analytical Method:	S 6010C	Prep Method:	S 3005A
QC Batch:	101129	Date Analyzed:	2013-05-07	Analyzed By:	RR
Prep Batch:	85572	Sample Preparation:	2013-05-01	Prepared By:	KV

continued . . .

sample 327422 continued ...

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Dissolved Magnesium		1	**30.4**	**30.4**	<0.0296	mg/L	1	0.0296	1	0.0296

Sample: 327422 - MW-5

Laboratory:	Lubbock				
Analysis:	Na, Dissolved	Analytical Method:	S 6010C	Prep Method:	S 3005A
QC Batch:	101129	Date Analyzed:	2013-05-07	Analyzed By:	RR
Prep Batch:	85572	Sample Preparation:	2013-05-01	Prepared By:	KV

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Dissolved Sodium		1	**104**	**104**	<0.172	mg/L	1	0.172	1	0.172

Sample: 327422 - MW-5

Laboratory:	Midland				
Analysis:	pH	Analytical Method:	SM 4500-H+	Prep Method:	N/A
QC Batch:	100886	Date Analyzed:	2013-04-26	Analyzed By:	AR
Prep Batch:	85498	Sample Preparation:	2013-04-26	Prepared By:	AR

Parameter	F	C	RL Result	Units	Dilution	RL
pH		2	6.68	s.u.	1	0

Sample: 327422 - MW-5

Laboratory:	Lubbock				
Analysis:	SO4 (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	101154	Date Analyzed:	2013-05-07	Analyzed By:	RL
Prep Batch:	85713	Sample Preparation:	2013-05-07	Prepared By:	RL

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Sulfate	J	1	**42.4**	<125	<11.2	mg/L	50	11.2	2.5	0.224

Sample: 327422 - MW-5

Laboratory:	Midland				
Analysis:	TDS	Analytical Method:	SM 2540C	Prep Method:	N/A
QC Batch:	100915	Date Analyzed:	2013-04-29	Analyzed By:	AR
Prep Batch:	85528	Sample Preparation:	2013-04-27	Prepared By:	AR

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Total Dissolved Solids		2	**2320**	**2320**	<19.5	mg/L	2	19.5	10	9.75

Sample: 327423 - MW-6

Laboratory:	Lubbock				
Analysis:	Alkalinity	Analytical Method:	SM 2320B	Prep Method:	N/A
QC Batch:	101237	Date Analyzed:	2013-05-09	Analyzed By:	LM
Prep Batch:	85801	Sample Preparation:	2013-05-09	Prepared By:	LM

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Hydroxide Alkalinity	U	1	<1.00	<1.00	<1.00	mg/L as CaCo3	1	1.00	1	1
Carbonate Alkalinity	U	1	<1.00	<1.00	<1.00	mg/L as CaCo3	1	1.00	1	1
Bicarbonate Alkalinity		1	**196**	**196**	<1.00	mg/L as CaCo3	1	1.00	1	1
Total Alkalinity		1	**196**	**196**	<20.0	mg/L as CaCo3	1	20.0	20	20

Sample: 327423 - MW-6

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	101013	Date Analyzed:	2013-05-02	Analyzed By:	AH
Prep Batch:	85619	Sample Preparation:	2013-05-01	Prepared By:	AH

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Benzene	U	2	<0.000200	<0.00100	<0.000200	mg/L	1	0.000200	0.001	0.0002
Toluene	U	2	<0.000300	<0.00100	<0.000300	mg/L	1	0.000300	0.001	0.0003
Ethylbenzene	U	2	<0.000400	<0.00100	<0.000400	mg/L	1	0.000400	0.001	0.0004
Xylene	U	2	<0.00120	<0.00100	<0.00120	mg/L	1	0.00120	0.001	0.0012

Surrogate	F	C	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0988	mg/L	1	0.100	99	70 - 130
4-Bromofluorobenzene (4-BFB)			0.0979	mg/L	1	0.100	98	70 - 130

Sample: 327423 - MW-6

Laboratory:	Lubbock				
Analysis:	Ca, Dissolved	Analytical Method:	S 6010C	Prep Method:	S 3005A
QC Batch:	101129	Date Analyzed:	2013-05-07	Analyzed By:	RR
Prep Batch:	85572	Sample Preparation:	2013-05-01	Prepared By:	KV

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Dissolved Calcium		1	**23.6**	**23.6**	<0.441	mg/L	10	0.441	1	0.0441

Sample: 327423 - MW-6

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	101411	Date Analyzed:	2013-05-11	Analyzed By:	RL
Prep Batch:	85924	Sample Preparation:	2013-05-11	Prepared By:	RL

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Chloride		1	**3820**	**3820**	<84.5	mg/L	500	84.5	2.5	0.169

Sample: 327423 - MW-6

Laboratory:	Lubbock				
Analysis:	Hardness	Analytical Method:	S 6010C	Prep Method:	N/A
QC Batch:	101129	Date Analyzed:	2013-05-07	Analyzed By:	RR
Prep Batch:	85572	Sample Preparation:	2013-05-01	Prepared By:	KV

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Hardness (by ICP)			**346**	**346**	0.00	mg eq CaCO3/L	1	0.00		

Sample: 327423 - MW-6

Laboratory:	Lubbock				
Analysis:	K, Dissolved	Analytical Method:	S 6010C	Prep Method:	S 3005A
QC Batch:	101129	Date Analyzed:	2013-05-07	Analyzed By:	RR
Prep Batch:	85572	Sample Preparation:	2013-05-01	Prepared By:	KV

continued ...

sample 327423 continued ...

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Dissolved Potassium		1	**86.9**	**86.9**	<0.443	mg/L	10	0.443	1	0.0443

Sample: 327423 - MW-6

Laboratory:	Lubbock				
Analysis:	Mg, Dissolved	Analytical Method:	S 6010C	Prep Method:	S 3005A
QC Batch:	101129	Date Analyzed:	2013-05-07	Analyzed By:	RR
Prep Batch:	85572	Sample Preparation:	2013-05-01	Prepared By:	KV

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Dissolved Magnesium		1	**69.6**	**69.6**	<0.296	mg/L	10	0.296	1	0.0296

Sample: 327423 - MW-6

Laboratory:	Lubbock				
Analysis:	Na, Dissolved	Analytical Method:	S 6010C	Prep Method:	S 3005A
QC Batch:	101129	Date Analyzed:	2013-05-07	Analyzed By:	RR
Prep Batch:	85572	Sample Preparation:	2013-05-01	Prepared By:	KV

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Dissolved Sodium		1	**2360**	**2360**	<1.72	mg/L	10	1.72	1	0.172

Sample: 327423 - MW-6

Laboratory:	Midland				
Analysis:	pH	Analytical Method:	SM 4500-H+	Prep Method:	N/A
QC Batch:	100886	Date Analyzed:	2013-04-26	Analyzed By:	AR
Prep Batch:	85498	Sample Preparation:	2013-04-26	Prepared By:	AR

Parameter	F	C	RL Result	Units	Dilution	RL
pH		2	7.72	s.u.	1	0

Sample: 327423 - MW-6

Laboratory:	Lubbock				
Analysis:	SO4 (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	101154	Date Analyzed:	2013-05-07	Analyzed By:	RL
Prep Batch:	85713	Sample Preparation:	2013-05-07	Prepared By:	RL

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Sulfate		1	**116**	<1250	<112	mg/L	500	112	2.5	0.224

Sample: 327423 - MW-6

Laboratory:	Midland				
Analysis:	TDS	Analytical Method:	SM 2540C	Prep Method:	N/A
QC Batch:	100915	Date Analyzed:	2013-04-29	Analyzed By:	AR
Prep Batch:	85528	Sample Preparation:	2013-04-27	Prepared By:	AR

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Total Dissolved Solids		2	**5860**	**5860**	<48.8	mg/L	5	48.8	10	9.75

Method Blanks

Method Blank (1)

QC Batch: 100915 | Date Analyzed: 2013-04-29 | Analyzed By: AR
Prep Batch: 85528 | QC Preparation: 2013-04-27 | Prepared By: AR

Parameter	F	C	Result	Units	Reporting Limits
Total Dissolved Solids		2	<9.75	mg/L	9.75

Method Blank (1)

QC Batch: 101013 | Date Analyzed: 2013-05-02 | Analyzed By: AH
Prep Batch: 85619 | QC Preparation: 2013-05-02 | Prepared By: AH

Parameter	F	C	Result	Units	Reporting Limits
Benzene		2	<0.000200	mg/L	0.0002
Toluene		2	<0.000300	mg/L	0.0003
Ethylbenzene		2	<0.000400	mg/L	0.0004
Xylene		2	<0.00120	mg/L	0.0012

Surrogate	F	C	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0995	mg/L	1	0.100	100	70 - 130
4-Bromofluorobenzene (4-BFB)			0.0973	mg/L	1	0.100	97	70 - 130

Method Blank (1)

QC Batch: 101121 | Date Analyzed: 2013-05-07 | Analyzed By: RR
Prep Batch: 85572 | QC Preparation: 2013-05-01 | Prepared By: KV

Parameter	F	C	Result	Units	Reporting Limits
Dissolved Calcium		1	<0.0441	mg/L	0.0441

Method Blank (1)

QC Batch: 101121
Prep Batch: 85572

Date Analyzed: 2013-05-07
QC Preparation: 2013-05-01

Analyzed By: RR
Prepared By: KV

Parameter	F	C	Result	Units	Reporting Limits
Dissolved Potassium		1	<0.0443	mg/L	0.0443

Method Blank (1)

QC Batch: 101121
Prep Batch: 85572

Date Analyzed: 2013-05-07
QC Preparation: 2013-05-01

Analyzed By: RR
Prepared By: KV

Parameter	F	C	Result	Units	Reporting Limits
Dissolved Magnesium		1	<0.0296	mg/L	0.0296

Method Blank (1)

QC Batch: 101121
Prep Batch: 85572

Date Analyzed: 2013-05-07
QC Preparation: 2013-05-01

Analyzed By: RR
Prepared By: KV

Parameter	F	C	Result	Units	Reporting Limits
Dissolved Sodium		1	<0.172	mg/L	0.172

Method Blank (1)

QC Batch: 101127
Prep Batch: 85707

Date Analyzed: 2013-05-06
QC Preparation: 2013-05-06

Analyzed By: RL
Prepared By: RL

Parameter	F	C	Result	Units	Reporting Limits
Chloride		1	<0.169	mg/L	0.169

Method Blank (1)

QC Batch: 101127
Prep Batch: 85707

Date Analyzed: 2013-05-06
QC Preparation: 2013-05-06

Analyzed By: RL
Prepared By: RL

Parameter	F	C	Result	Units	Reporting Limits
Sulfate		1	<0.224	mg/L	0.224

Method Blank (1)

QC Batch: 101129
Prep Batch: 85572

Date Analyzed: 2013-05-07
QC Preparation: 2013-05-01

Analyzed By: RR
Prepared By: KV

Parameter	F	C	Result	Units	Reporting Limits
Dissolved Calcium		1	<0.0441	mg/L	0.0441

Method Blank (1)

QC Batch: 101129
Prep Batch: 85572

Date Analyzed: 2013-05-07
QC Preparation: 2013-05-01

Analyzed By: RR
Prepared By: KV

Parameter	F	C	Result	Units	Reporting Limits
Dissolved Potassium		1	<0.0443	mg/L	0.0443

Method Blank (1)

QC Batch: 101129
Prep Batch: 85572

Date Analyzed: 2013-05-07
QC Preparation: 2013-05-01

Analyzed By: RR
Prepared By: KV

Parameter	F	C	Result	Units	Reporting Limits
Dissolved Magnesium		1	<0.0296	mg/L	0.0296

Method Blank (1)

QC Batch: 101129
Prep Batch: 85572
Date Analyzed: 2013-05-07
QC Preparation: 2013-05-01
Analyzed By: RR
Prepared By: KV

Parameter	F	C	Result	Units	Reporting Limits
Dissolved Sodium		1	<0.172	mg/L	0.172

Method Blank (1)

QC Batch: 101154
Prep Batch: 85713
Date Analyzed: 2013-05-07
QC Preparation: 2013-05-07
Analyzed By: RL
Prepared By: RL

Parameter	F	C	Result	Units	Reporting Limits
Chloride		1	0.644	mg/L	0.169

Method Blank (1)

QC Batch: 101154
Prep Batch: 85713
Date Analyzed: 2013-05-07
QC Preparation: 2013-05-07
Analyzed By: RL
Prepared By: RL

Parameter	F	C	Result	Units	Reporting Limits
Sulfate		1	<0.224	mg/L	0.224

Method Blank (1)

QC Batch: 101237
Prep Batch: 85801
Date Analyzed: 2013-05-09
QC Preparation: 2013-05-09
Analyzed By: LM
Prepared By: LM

Parameter	F	C	Result	Units	Reporting Limits
Hydroxide Alkalinity		1	<1.00	mg/L as CaCo3	1
Carbonate Alkalinity		1	<1.00	mg/L as CaCo3	1
Bicarbonate Alkalinity		1	3.00	mg/L as CaCo3	1
Total Alkalinity		1	<20.0	mg/L as CaCo3	20

Method Blank (1)

QC Batch: 101411
Prep Batch: 85924

Date Analyzed: 2013-05-11
QC Preparation: 2013-05-11

Analyzed By: RL
Prepared By: RL

Parameter	F	C	Result	Units	Reporting Limits
Chloride		1	0.222	mg/L	0.169

Duplicate (1) Duplicated Sample: 327412

QC Batch: 100885
Prep Batch: 85498

Date Analyzed: 2013-04-26
QC Preparation: 2013-04-26

Analyzed By: AR
Prepared By: AR

Param	F	C	Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
pH		2	6.49	6.46	s.u.	1	0	10

Duplicate (1) Duplicated Sample: 327422

QC Batch: 100886
Prep Batch: 85498

Date Analyzed: 2013-04-26
QC Preparation: 2013-04-26

Analyzed By: AR
Prepared By: AR

Param	F	C	Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
pH		2	6.73	6.68	s.u.	1	1	10

Duplicate (2) Duplicated Sample: 327422

QC Batch: 100915
Prep Batch: 85528

Date Analyzed: 2013-04-29
QC Preparation: 2013-04-27

Analyzed By: AR
Prepared By: AR

Param	F	C	Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
Total Dissolved Solids		2	2230	2320	mg/L	2	4	10

Duplicate (1) Duplicated Sample: 327450

QC Batch: 101237
Prep Batch: 85801

Date Analyzed: 2013-05-09
QC Preparation: 2013-05-09

Analyzed By: LM
Prepared By: LM

Param	F	C	Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
Hydroxide Alkalinity		1	<1.00	<1.00	mg/L as CaCo3	1	0	20
Carbonate Alkalinity		1	12.0	14.0	mg/L as CaCo3	1	15	20
Bicarbonate Alkalinity		1	240	239	mg/L as CaCo3	1	0	20
Total Alkalinity		1	252	253	mg/L as CaCo3	1	0	20

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 100915
Prep Batch: 85528
Date Analyzed: 2013-04-29
QC Preparation: 2013-04-27
Analyzed By: AR
Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Total Dissolved Solids		2	1020	mg/L	1	1000	<9.75	102	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Total Dissolved Solids		2	1020	mg/L	1	1000	<9.75	102	90 - 110	0	10

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-2)

QC Batch: 100915
Prep Batch: 85528
Date Analyzed: 2013-04-29
QC Preparation: 2013-04-27
Analyzed By: AR
Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Total Dissolved Solids		2	1070	mg/L	1	1000	<9.75	107	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Total Dissolved Solids		2	1050	mg/L	1	1000	<9.75	105	90 - 110	2	10

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: 101013
Prep Batch: 85619
Date Analyzed: 2013-05-02
QC Preparation: 2013-05-02
Analyzed By: AH
Prepared By: AH

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		2	0.0990	mg/L	1	0.100	<0.000200	99	70 - 130

continued ...

control spikes continued ...

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Toluene		2	0.0969	mg/L	1	0.100	<0.000300	97	70 - 130
Ethylbenzene		2	0.0953	mg/L	1	0.100	<0.000400	95	70 - 130
Xylene		2	0.277	mg/L	1	0.300	<0.00120	92	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		2	0.100	mg/L	1	0.100	<0.000200	100	70 - 130	1	20
Toluene		2	0.0989	mg/L	1	0.100	<0.000300	99	70 - 130	2	20
Ethylbenzene		2	0.0976	mg/L	1	0.100	<0.000400	98	70 - 130	2	20
Xylene		2	0.283	mg/L	1	0.300	<0.00120	94	70 - 130	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	F	C	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)			0.0995	0.0978	mg/L	1	0.100	100	98	70 - 130
4-Bromofluorobenzene (4-BFB)			0.0998	0.0980	mg/L	1	0.100	100	98	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 101121
Prep Batch: 85572

Date Analyzed: 2013-05-07
QC Preparation: 2013-05-01

Analyzed By: RR
Prepared By: KV

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Dissolved Calcium		1	52.9	mg/L	1	50.0	<0.0441	106	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Dissolved Calcium		1	54.5	mg/L	1	50.0	<0.0441	109	85 - 115	3	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: 101121
Prep Batch: 85572

Date Analyzed: 2013-05-07
QC Preparation: 2013-05-01

Analyzed By: RR
Prepared By: KV

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Dissolved Potassium		1	50.1	mg/L	1	50.0	<0.0443	100	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Dissolved Potassium		1	52.5	mg/L	1	50.0	<0.0443	105	85 - 115	5	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: 101121 | Date Analyzed: 2013-05-07 | Analyzed By: RR
Prep Batch: 85572 | QC Preparation: 2013-05-01 | Prepared By: KV

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Dissolved Magnesium		1	50.1	mg/L	1	50.0	<0.0296	100	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Dissolved Magnesium		1	52.2	mg/L	1	50.0	<0.0296	104	85 - 115	4	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: 101121 | Date Analyzed: 2013-05-07 | Analyzed By: RR
Prep Batch: 85572 | QC Preparation: 2013-05-01 | Prepared By: KV

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Dissolved Sodium		1	51.1	mg/L	1	50.0	<0.172	102	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Dissolved Sodium		1	53.0	mg/L	1	50.0	<0.172	106	85 - 115	4	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: 101127 | Date Analyzed: 2013-05-06 | Analyzed By: RL
Prep Batch: 85707 | QC Preparation: 2013-05-06 | Prepared By: RL

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	24.7	mg/L	1	25.0	<0.169	99	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		1	24.6	mg/L	1	25.0	<0.169	98	90 - 110	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: 101127 | Date Analyzed: 2013-05-06 | Analyzed By: RL
Prep Batch: 85707 | QC Preparation: 2013-05-06 | Prepared By: RL

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate		1	25.7	mg/L	1	25.0	<0.224	103	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Sulfate		1	25.4	mg/L	1	25.0	<0.224	102	90 - 110	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: 101129 | Date Analyzed: 2013-05-07 | Analyzed By: RR
Prep Batch: 85572 | QC Preparation: 2013-05-01 | Prepared By: KV

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Dissolved Calcium		1	52.9	mg/L	1	50.0	<0.0441	106	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Dissolved Calcium		1	54.5	mg/L	1	50.0	<0.0441	109	85 - 115	3	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: 101129 | Date Analyzed: 2013-05-07 | Analyzed By: RR
Prep Batch: 85572 | QC Preparation: 2013-05-01 | Prepared By: KV

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Dissolved Potassium		1	50.1	mg/L	1	50.0	<0.0443	100	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Dissolved Potassium		1	52.5	mg/L	1	50.0	<0.0443	105	85 - 115	5	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: 101129 | Date Analyzed: 2013-05-07 | Analyzed By: RR
Prep Batch: 85572 | QC Preparation: 2013-05-01 | Prepared By: KV

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Dissolved Magnesium		1	50.1	mg/L	1	50.0	<0.0296	100	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Dissolved Magnesium		1	52.2	mg/L	1	50.0	<0.0296	104	85 - 115	4	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: 101129 | Date Analyzed: 2013-05-07 | Analyzed By: RR
Prep Batch: 85572 | QC Preparation: 2013-05-01 | Prepared By: KV

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Dissolved Sodium		1	51.1	mg/L	1	50.0	<0.172	102	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Dissolved Sodium		1	53.0	mg/L	1	50.0	<0.172	106	85 - 115	4	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: 101154 | Date Analyzed: 2013-05-07 | Analyzed By: RL
Prep Batch: 85713 | QC Preparation: 2013-05-07 | Prepared By: RL

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	24.8	mg/L	1	25.0	<0.169	99	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		1	25.0	mg/L	1	25.0	<0.169	100	90 - 110	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: 101154 | Date Analyzed: 2013-05-07 | Analyzed By: RL
Prep Batch: 85713 | QC Preparation: 2013-05-07 | Prepared By: RL

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate		1	25.6	mg/L	1	25.0	<0.224	102	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Sulfate		1	26.2	mg/L	1	25.0	<0.224	105	90 - 110	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: 101411 | Date Analyzed: 2013-05-11 | Analyzed By: RL
Prep Batch: 85924 | QC Preparation: 2013-05-11 | Prepared By: RL

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	24.4	mg/L	1	25.0	<0.169	98	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		1	24.9	mg/L	1	25.0	<0.169	100	90 - 110	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 327428

QC Batch: 101013 | Date Analyzed: 2013-05-02 | Analyzed By: AH
Prep Batch: 85619 | QC Preparation: 2013-05-02 | Prepared By: AH

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		2	0.0982	mg/L	1	0.100	<0.000200	98	70 - 130
Toluene		2	0.0944	mg/L	1	0.100	<0.000300	94	70 - 130
Ethylbenzene		2	0.0905	mg/L	1	0.100	<0.000400	90	70 - 130
Xylene		2	0.261	mg/L	1	0.300	<0.00120	87	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		2	0.0988	mg/L	1	0.100	<0.000200	99	70 - 130	1	20
Toluene		2	0.0954	mg/L	1	0.100	<0.000300	95	70 - 130	1	20
Ethylbenzene		2	0.0919	mg/L	1	0.100	<0.000400	92	70 - 130	2	20
Xylene		2	0.266	mg/L	1	0.300	<0.00120	89	70 - 130	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	F	C	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)			0.0965	0.0970	mg/L	1	0.1	96	97	70 - 130
4-Bromofluorobenzene (4-BFB)			0.0969	0.0964	mg/L	1	0.1	97	96	70 - 130

Matrix Spike (MS-1) Spiked Sample: 327406

QC Batch: 101121 | Date Analyzed: 2013-05-07 | Analyzed By: RR
Prep Batch: 85572 | QC Preparation: 2013-05-01 | Prepared By: KV

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Dissolved Calcium		1	610	mg/L	1	500	86.4	105	75 - 125

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Dissolved Calcium		1	619	mg/L	1	500	86.4	106	75 - 125	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 327406

QC Batch: 101121 | Date Analyzed: 2013-05-07 | Analyzed By: RR
Prep Batch: 85572 | QC Preparation: 2013-05-01 | Prepared By: KV

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Dissolved Potassium		1	510	mg/L	1	500	2.33	102	75 - 125

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Dissolved Potassium		1	518	mg/L	1	500	2.33	103	75 - 125	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 327406

QC Batch: 101121 | Date Analyzed: 2013-05-07 | Analyzed By: RR
Prep Batch: 85572 | QC Preparation: 2013-05-01 | Prepared By: KV

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Dissolved Magnesium		1	524	mg/L	1	500	18.8	101	75 - 125

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Dissolved Magnesium		1	531	mg/L	1	500	18.8	102	75 - 125	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 327406

QC Batch: 101121 | Date Analyzed: 2013-05-07 | Analyzed By: RR
Prep Batch: 85572 | QC Preparation: 2013-05-01 | Prepared By: KV

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Dissolved Sodium		1	571	mg/L	1	500	61.3	102	75 - 125

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Dissolved Sodium		1	579	mg/L	1	500	61.3	104	75 - 125	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 327418

QC Batch: 101127
Prep Batch: 85707
Date Analyzed: 2013-05-06
QC Preparation: 2013-05-06
Analyzed By: RL
Prepared By: RL

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	186	mg/L	5	125	51.2	108	80 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		1	195	mg/L	5	125	51.2	115	80 - 120	5	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 327418

QC Batch: 101127
Prep Batch: 85707
Date Analyzed: 2013-05-06
QC Preparation: 2013-05-06
Analyzed By: RL
Prepared By: RL

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate		1	195	mg/L	5	125	60.4	108	80 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Sulfate		1	202	mg/L	5	125	60.4	113	80 - 120	4	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 327419

QC Batch: 101129
Prep Batch: 85572
Date Analyzed: 2013-05-07
QC Preparation: 2013-05-01
Analyzed By: RR
Prepared By: KV

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Dissolved Calcium		1	2680	mg/L	1	500	2270	82	75 - 125

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Dissolved Calcium		1	2680	mg/L	1	500	2270	82	75 - 125	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 327419

QC Batch: 101129 | Date Analyzed: 2013-05-07 | Analyzed By: RR
Prep Batch: 85572 | QC Preparation: 2013-05-01 | Prepared By: KV

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Dissolved Potassium		1	606	mg/L	1	500	30.2	115	75 - 125

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Dissolved Potassium		1	585	mg/L	1	500	30.2	111	75 - 125	4	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 327419

QC Batch: 101129 | Date Analyzed: 2013-05-07 | Analyzed By: RR
Prep Batch: 85572 | QC Preparation: 2013-05-01 | Prepared By: KV

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Dissolved Magnesium		1	912	mg/L	1	500	369	109	75 - 125

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Dissolved Magnesium		1	884	mg/L	1	500	369	103	75 - 125	3	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 327419

QC Batch: 101129 | Date Analyzed: 2013-05-07 | Analyzed By: RR
Prep Batch: 85572 | QC Preparation: 2013-05-01 | Prepared By: KV

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Dissolved Sodium		1	5240	mg/L	1	500	4840	80	75 - 125

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Dissolved Sodium		1	5250	mg/L	1	500	4840	82	75 - 125	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 327426

QC Batch: 101154 | Date Analyzed: 2013-05-07 | Analyzed By: RL
Prep Batch: 85713 | QC Preparation: 2013-05-07 | Prepared By: RL

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	169	mg/L	5	125	38.1	105	80 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		1	171	mg/L	5	125	38.1	106	80 - 120	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 327426

QC Batch: 101154 | Date Analyzed: 2013-05-07 | Analyzed By: RL
Prep Batch: 85713 | QC Preparation: 2013-05-07 | Prepared By: RL

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate		1	325	mg/L	5	125	180	116	80 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Sulfate		1	327	mg/L	5	125	180	118	80 - 120	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 328942

QC Batch: 101411 | Date Analyzed: 2013-05-11 | Analyzed By: RL
Prep Batch: 85924 | QC Preparation: 2013-05-11 | Prepared By: RL

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	4810	mg/L	100	2500	1855	118	80 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		1	4860	mg/L	100	2500	1855	120	80 - 120	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Calibration Standards

Standard (ICV-1)

QC Batch: 100885 Date Analyzed: 2013-04-26 Analyzed By: AR

Param	F	C	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
pH		2	s.u.	7.00	7.07	101	98 - 102	2013-04-26

Standard (CCV-1)

QC Batch: 100885 Date Analyzed: 2013-04-26 Analyzed By: AR

Param	F	C	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
pH		2	s.u.	7.00	7.05	101	98 - 102	2013-04-26

Standard (ICV-1)

QC Batch: 100886 Date Analyzed: 2013-04-26 Analyzed By: AR

Param	F	C	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
pH		2	s.u.	7.00	7.02	100	98 - 102	2013-04-26

Standard (CCV-1)

QC Batch: 100886 Date Analyzed: 2013-04-26 Analyzed By: AR

Param	F	C	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
pH		2	s.u.	7.00	7.05	101	98 - 102	2013-04-26

Standard (CCV-1)

QC Batch: 101013 Date Analyzed: 2013-05-02 Analyzed By: AH

Param	F	C	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		2	mg/L	0.100	0.102	102	80 - 120	2013-05-02
Toluene		2	mg/L	0.100	0.100	100	80 - 120	2013-05-02
Ethylbenzene		2	mg/L	0.100	0.0991	99	80 - 120	2013-05-02
Xylene		2	mg/L	0.300	0.288	96	80 - 120	2013-05-02

Standard (CCV-2)

QC Batch: 101013 Date Analyzed: 2013-05-02 Analyzed By: AH

Param	F	C	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		2	mg/L	0.100	0.105	105	80 - 120	2013-05-02
Toluene		2	mg/L	0.100	0.103	103	80 - 120	2013-05-02
Ethylbenzene		2	mg/L	0.100	0.101	101	80 - 120	2013-05-02
Xylene		2	mg/L	0.300	0.293	98	80 - 120	2013-05-02

Standard (CCV-3)

QC Batch: 101013 Date Analyzed: 2013-05-02 Analyzed By: AH

Param	F	C	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		2	mg/L	0.100	0.0982	98	80 - 120	2013-05-02
Toluene		2	mg/L	0.100	0.0962	96	80 - 120	2013-05-02
Ethylbenzene		2	mg/L	0.100	0.0943	94	80 - 120	2013-05-02
Xylene		2	mg/L	0.300	0.274	91	80 - 120	2013-05-02

Standard (ICV-1)

QC Batch: 101121 Date Analyzed: 2013-05-07 Analyzed By: RR

Param	F	C	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dissolved Calcium		1	mg/L	51.0	52.1	102	90 - 110	2013-05-07

Standard (ICV-1)

QC Batch: 101121 Date Analyzed: 2013-05-07 Analyzed By: RR

Param	F	C	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dissolved Potassium		1	mg/L	55.0	55.7	101	90 - 110	2013-05-07

Standard (ICV-1)

QC Batch: 101121 Date Analyzed: 2013-05-07 Analyzed By: RR

Param	F	C	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dissolved Magnesium		1	mg/L	51.0	51.3	100	90 - 110	2013-05-07

Standard (ICV-1)

QC Batch: 101121 Date Analyzed: 2013-05-07 Analyzed By: RR

Param	F	C	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dissolved Sodium		1	mg/L	51.0	51.8	102	90 - 110	2013-05-07

Standard (CCV-1)

QC Batch: 101121 Date Analyzed: 2013-05-07 Analyzed By: RR

Param	F	C	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dissolved Calcium		1	mg/L	51.0	54.4	107	90 - 110	2013-05-07

Standard (CCV-1)

QC Batch: 101121 Date Analyzed: 2013-05-07 Analyzed By: RR

Param	F	C	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dissolved Potassium		1	mg/L	55.0	56.5	103	90 - 110	2013-05-07

Standard (CCV-1)

QC Batch: 101121 Date Analyzed: 2013-05-07 Analyzed By: RR

Param	F	C	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dissolved Magnesium		1	mg/L	51.0	52.6	103	90 - 110	2013-05-07

Standard (CCV-1)

QC Batch: 101121 Date Analyzed: 2013-05-07 Analyzed By: RR

Param	F	C	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dissolved Sodium		1	mg/L	51.0	52.2	102	90 - 110	2013-05-07

Standard (CCV-1)

QC Batch: 101127 Date Analyzed: 2013-05-06 Analyzed By: RL

Param	F	C	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1	mg/L	25.0	24.7	99	90 - 110	2013-05-06

Standard (CCV-1)

QC Batch: 101127 Date Analyzed: 2013-05-06 Analyzed By: RL

Param	F	C	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Sulfate		1	mg/L	25.0	25.7	103	90 - 110	2013-05-06

Standard (CCV-2)

QC Batch: 101127 Date Analyzed: 2013-05-06 Analyzed By: RL

Param	F	C	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1	mg/L	25.0	25.0	100	90 - 110	2013-05-06

Standard (CCV-2)

QC Batch: 101127 Date Analyzed: 2013-05-06 Analyzed By: RL

Param	F	C	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Sulfate		1	mg/L	25.0	25.9	104	90 - 110	2013-05-06

Standard (ICV-1)

QC Batch: 101129 Date Analyzed: 2013-05-07 Analyzed By: RR

Param	F	C	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dissolved Calcium		1	mg/L	51.0	52.1	102	90 - 110	2013-05-07

Standard (ICV-1)

QC Batch: 101129 Date Analyzed: 2013-05-07 Analyzed By: RR

Param	F	C	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dissolved Potassium		1	mg/L	55.0	55.7	101	90 - 110	2013-05-07

Standard (ICV-1)

QC Batch: 101129 Date Analyzed: 2013-05-07 Analyzed By: RR

Param	F	C	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dissolved Magnesium		1	mg/L	51.0	51.3	100	90 - 110	2013-05-07

Standard (ICV-1)

QC Batch: 101129 Date Analyzed: 2013-05-07 Analyzed By: RR

Param	F	C	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dissolved Sodium		1	mg/L	51.0	51.8	102	90 - 110	2013-05-07

Standard (CCV-1)

QC Batch: 101129 Date Analyzed: 2013-05-07 Analyzed By: RR

Param	F	C	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dissolved Calcium		1	mg/L	51.0	54.4	107	90 - 110	2013-05-07

Standard (CCV-1)

QC Batch: 101129 Date Analyzed: 2013-05-07 Analyzed By: RR

Param	F	C	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dissolved Potassium		1	mg/L	55.0	56.5	103	90 - 110	2013-05-07

Standard (CCV-1)

QC Batch: 101129 Date Analyzed: 2013-05-07 Analyzed By: RR

Param	F	C	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dissolved Magnesium		1	mg/L	51.0	53.6	105	90 - 110	2013-05-07

Standard (CCV-1)

QC Batch: 101129 Date Analyzed: 2013-05-07 Analyzed By: RR

Param	F	C	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dissolved Sodium		1	mg/L	51.0	52.2	102	90 - 110	2013-05-07

Standard (CCV-1)

QC Batch: 101154 Date Analyzed: 2013-05-07 Analyzed By: RL

Param	F	C	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1	mg/L	25.0	24.6	98	90 - 110	2013-05-07

Standard (CCV-1)

QC Batch: 101154 Date Analyzed: 2013-05-07 Analyzed By: RL

Param	F	C	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Sulfate		1	mg/L	25.0	25.6	102	90 - 110	2013-05-07

Standard (CCV-2)

QC Batch: 101154 Date Analyzed: 2013-05-07 Analyzed By: RL

Param	F	C	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1	mg/L	25.0	24.7	99	90 - 110	2013-05-07

Standard (CCV-2)

QC Batch: 101154 Date Analyzed: 2013-05-07 Analyzed By: RL

Param	F	C	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Sulfate		1	mg/L	25.0	25.5	102	90 - 110	2013-05-07

Standard (ICV-1)

QC Batch: 101237 Date Analyzed: 2013-05-09 Analyzed By: LM

Param	F	C	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Hydroxide Alkalinity		1	mg/L as CaCo3	0.00	<20.0		-	2013-05-09
Carbonate Alkalinity		1	mg/L as CaCo3	0.00	236		-	2013-05-09
Bicarbonate Alkalinity		1	mg/L as CaCo3	0.00	<20.0		-	2013-05-09
Total Alkalinity		1	mg/L as CaCo3	250	242	97	90 - 110	2013-05-09

Standard (CCV-1)

QC Batch: 101237 Date Analyzed: 2013-05-09 Analyzed By: LM

Param	F	C	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Hydroxide Alkalinity		1	mg/L as CaCo3	0.00	<20.0		-	2013-05-09
Carbonate Alkalinity		1	mg/L as CaCo3	0.00	232		-	2013-05-09
Bicarbonate Alkalinity		1	mg/L as CaCo3	0.00	<20.0		-	2013-05-09
Total Alkalinity		1	mg/L as CaCo3	250	244	98	90 - 110	2013-05-09

Standard (CCV-1)

QC Batch: 101411 Date Analyzed: 2013-05-11 Analyzed By: RL

Param	F	C	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1	mg/L	25.0	25.6	102	90 - 110	2013-05-11

Standard (CCV-2)

QC Batch: 101411 Date Analyzed: 2013-05-11 Analyzed By: RL

Param	F	C	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1	mg/L	25.0	24.8	99	90 - 110	2013-05-11

Limits of Detection (LOD)

Test	Method	Matrix	Instrument	Analyte	Spike Amount	Pass
Alkalinity	SM 2320B	water	N/A	Hydroxide Alkalinity	0.00	-
Alkalinity	SM 2320B	water	N/A	Carbonate Alkalinity	0.00	-
Alkalinity	SM 2320B	water	N/A	Bicarbonate Alkalinity	0.00	-
Alkalinity	SM 2320B	water	N/A	Total Alkalinity	0.00	-
BTEX	S 8021B	water	BTEX-2	Benzene	0.00100	Pass
BTEX	S 8021B	water	BTEX-2	Toluene	0.00100	Pass
BTEX	S 8021B	water	BTEX-2	Ethylbenzene	0.00100	Pass
BTEX	S 8021B	water	BTEX-2	Xylene	0.00100	Pass
Ca, Dissolved	S 6010C	water	PE 8300	Dissolved Calcium	0.250	Pass
Chloride (IC)	E 300.0	water	Dionex IC	Chloride	0.400	Pass
Hardness	S 6010C	water	PE 8300	Hardness (by ICP)	0.00	-
K, Dissolved	S 6010C	water	PE 8300	Dissolved Potassium	0.250	Pass
Mg, Dissolved	S 6010C	water	PE 8300	Dissolved Magnesium	0.200	Pass
Na, Dissolved	S 6010C	water	PE 8300	Dissolved Sodium	0.250	Pass
pH	SM 4500-H+	water	pH Meter	pH	0.00	-
SO4 (IC)	E 300.0	water	Dionex IC	Sulfate	0.600	Pass
TDS	SM 2540C	water	N/A	Total Dissolved Solids	0.00	-

Appendix

Report Definitions

Name	Definition
MDL	Method Detection Limit
MQL	Minimum Quantitation Limit
SDL	Sample Detection Limit

Laboratory Certifications

C	Certifying Authority	Certification Number	Laboratory Location
-	NCTRCA	WFWB384444Y0909	TraceAnalysis
-	DBE	VN 20657	TraceAnalysis
-	HUB	1752439743100-86536	TraceAnalysis
-	WBE	237019	TraceAnalysis
1	NELAP	T104704219-13-9	Lubbock
2	NELAP	T104704392-12-4	Midland

Standard Flags

F	Description
B	Analyte detected in the corresponding method blank above the method detection limit
H	Analyzed out of hold time
J	Estimated concentration
Jb	The analyte is positively identified and the value is approximated between the SDL and MQL. Sample contains less then ten times the concentration found in the method blank. The result should be considered non-detect to the SDL.
Je	Estimated concentration exceeding calibration range.
MI1	Split peak or shoulder peak
MI2	Instrument software did not integrate
MI3	Instrument software misidentified the peak
MI4	Instrument software integrated improperly
MI5	Baseline correction
Qc	Calibration check outside of laboratory limits.
Qr	RPD outside of laboratory limits
Qs	Spike recovery outside of laboratory limits.
Qsr	Surrogate recovery outside of laboratory limits.
U	The analyte is not detected above the SDL

Attachments

The scanned attachments will follow this page.
Please note, each attachment may consist of more than one page.

13042623

Analysis Request of Chain of Custody Record

PAGE: 1 OF: 1

TETRA TECH
1910 N. Big Spring St.
Midland, Texas 79705
(432) 682-4559 • Fax (432) 682-3946

CLIENT NAME: Celero Energy

SITE MANAGER: Jeff Kindley

PROJECT NO.: 114-640163

PROJECT NAME: Celero / Rock Queen #13

LAB I.D. NUMBER	DATE 2013	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015 MOD. TX1005 (Ext. to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS	
327418	4-24-13	0925	W		X	mw-1	4	N	X		X		X											X				X	
327419		0945				mw-2																							
327420		0915				mw-3																							
327421		0900				mw-4																							
327422		0930				mw-5																							
327423		0955				mw-6																							

ANALYSIS REQUEST (Circle or Specify Method No.)

RELINQUISHED BY: (Signature)	Date: 4-25-13 Time: 1645	RECEIVED BY: (Signature)	Date: 4/26/13 Time: 6:45
RELINQUISHED BY: (Signature)	Date: 4/29/13 Time: 15:30	RECEIVED BY: (Signature)	Date: Time:
RELINQUISHED BY: (Signature)	Date: Time:	RECEIVED BY: (Signature)	Date: Time:
RECEIVING LABORATORY: Trace ADDRESS: CITY: Midland STATE: ZIP: CONTACT: PHONE:		RECEIVED BY: (Signature) Brenda Ward DATE: 4/30/13 TIME: 9:05	

SAMPLED BY: (Print & Initial) PR/RD — Date: 4-25-13 Time: 1645

SAMPLE SHIPPED BY: (Circle) FEDEX BUS HAND DELIVERED UPS — AIRBILL #: — OTHER:

TETRA TECH CONTACT PERSON: Jeff Kindley

Results by:

RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: 59°

REMARKS: LS ZP 895950 3.8/4.1

Please fill out all copies - Laboratory retains Yellow copy - Return Orginal copy to Tetra Tech - Project Manager retains Pink copy - Accounting receives Gold copy.

Midland-BTEX, pH + TDS
Lubbock all others

13042623

Analysis Request of Chain of Custody Record

TETRA TECH
1910 N. Big Spring St.
Midland, Texas 79705
(432) 682-4559 • Fax (432) 682-3946

CLIENT NAME: Celero Energy
SITE MANAGER: Jeff Kindley
PROJECT NO.: 114-6402630
PROJECT NAME: Celero / Rock Queen #13

ANALYSIS REQUEST (Circle or Specify Method No.)

LAB I.D. NUMBER	DATE 2013	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	HCL	HNO3	ICE	NONE	(BTEX 8021B)	TPH 8015 MOD. TX1005 (Ext. to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	(Chloride)	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, (TDS, salts)	pH, TDS	Cl, SO4	Salts, hardness
327418	4-24-13	0925	W		X	MW-1	4	N	X		X		X												X				X			
327419		0945				MW-2																										
327420		0915				MW-3																										
327421		0900				MW-4																										
327422		0930				MW-5																										
327423		0955				MW-6																										

RELINQUISHED BY: (Signature) [signature] Date: 4.25.13 Time: 1645
RECEIVED BY: (Signature) [signature] Date: 4/25/13 Time: 16:45
RELINQUISHED BY: (Signature) [signature] Date: 4/29/13 Time: 15:30
RECEIVED BY: (Signature) Date: Time:
RELINQUISHED BY: (Signature) Date: Time:
RECEIVED BY: (Signature) Date: Time:

SAMPLED BY: (Print & Initial) PR/RP Date: 4.25.13 Time: 1645
SAMPLE SHIPPED BY: (Circle) FEDEX BUS (HAND DELIVERED) UPS AIRBILL #: OTHER:
TETRA TECH CONTACT PERSON: Jeff Kindley
Results by:
RUSH Charges Authorized: Yes No

RECEIVING LABORATORY: Trace
ADDRESS:
CITY: Midland STATE: Z.P.
CONTACT: PHONE:
RECEIVED BY: (Signature) Brenda Ward
DATE: 4/30/13 TIME: 9:05

SAMPLE CONDITION WHEN RECEIVED: 5.9°
REMARKS: LS ZP 895950 3.8/4.1 AR

Please fill out all copies - Laboratory retains Yellow copy - Return Orginal copy to Tetra Tech - Project Manager retains Pink copy - Accounting receives Gold copy.

Midland - BTEX, pH + TDS
Lubbock - all others

Cation-Anion Balance Sheet

DATE: 5/15/2013

Sample #	Calcium ppm	Magnesium ppm	Sodium ppm	Potassium ppm	Alkalinity ppm	Sulfate ppm	Chloride ppm	Nitrate-N ppm	Fluoride ppm	Bromide ppm	TDS ppm	EC µMHOs/cm
327418	132	4.02	16.8	4.83	225.00	60.4	51.2				614	
327419	2270	369	4840	30.2	133.00	219	12800				23000	
327420	135	6.25	153	6.26	215.00	61.7	314				724	
327421	127	10.5	76.1	0.57	208.00	47.6	157				672	
327422	398	30.4	104	1.57	166.00	42.4	813				2320	
327423	23.6	69.6	2360	86.9	196.00	116	3820				5860	

Sample #	Calcium in meq/L	Magnesium in meq/L	Sodium in meq/L	Potassium in meq/L	Alkalinity in meq/L	Sulfate in meq/L	Chloride in meq/L	Nitrate-N in meq/L	Fluoride in meq/L	Bromide in meq/L	**Total Cations in meq/L**	**Total Anions in meq/L**	**% Difference***
327418	6.59	0.33	0.73	0.12	4.50	1.26	1.44	0.00	0.00	0.00	7.77	7.20	3.807155056
327419	113.27	30.37	210.54	0.77	2.66	4.56	361.09	0.00	0.00	0.00	354.95	368.31	1.846789395
327420	6.74	0.51	6.66	0.16	4.30	1.28	8.86	0.00	0.00	0.00	14.07	14.44	1.319200952
327421	6.34	0.86	3.31	0.01	4.16	0.99	4.43	0.00	0.00	0.00	10.53	9.58	4.706358973
327422	19.86	2.50	4.52	0.04	3.32	0.88	22.93	0.00	0.00	0.00	26.93	27.14	0.391246404
327423	1.18	5.73	102.66	2.22	3.92	2.42	107.76	0.00	0.00	0.00	111.79	114.10	1.022374874

	EC/Cation	EC/Anion				
327418	777.19572	720.188	range	0	to	0
327419	35495.0526	36830.758	range	0	to	0
327420	1406.64433	1444.2534	range	0	to	0
327421	1052.62756	958.0002	range	0	to	0
327422	2692.59766	2713.7498	range	0	to	0
327423	11178.7926	11409.732	range	0	to	0

TDS/EC	TDS/Cat		TDS/Anion	
#DIV/0!	0.79		0.85	needs to be 0.55-0.77
#DIV/0!	0.65		0.62	needs to be 0.55-0.77
#DIV/0!	0.51		0.50	needs to be 0.55-0.77
#DIV/0!	0.64		0.70	needs to be 0.55-0.77
#DIV/0!	0.86		0.85	needs to be 0.55-0.77
#DIV/0!	0.52		0.51	needs to be 0.55-0.77

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800-378-1296 806-794-1296 FAX 806-794-1296
200 East Sunset Road, Suite E El Paso, Texas 79922 915-585-3443 FAX 915-585-4944
5002 Basin Street, Suite A1 Midland, Texas 79703 432-689-6301 FAX 432-689-6313
(BioAquatic) 2501 Mayes Rd., Suite 100 Carrollton, Texas 75006 972-242-7750
E-Mail: lab@traceanalysis.com WEB: www.traceanalysis.com

Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

Analytical and Quality Control Report

Greg Pope
Tetra Tech
1910 N. Big Spring Street
Midland, TX, 79705

Report Date: August 13, 2013

Work Order: 13072613

Project Location: Chavez Co., NM
Project Name: Celero/Rock Queen Unit Tract #13
Project Number: 114-6401630

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
336634	MW-1	water	2013-07-24	16:15	2013-07-26
336635	MW-2	water	2013-07-24	15:50	2013-07-26
336636	MW-3	water	2013-07-24	16:30	2013-07-26
336637	MW-4	water	2013-07-24	16:50	2013-07-26
336638	MW-5	water	2013-07-24	16:00	2013-07-26
336639	MW-6	water	2013-07-24	15:40	2013-07-26

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

Michael Abel

Dr. Blair Leftwich, Director
Dr. Michael Abel, Project Manager

Report Contents

Case Narrative

Samples for project Celero/Rock Queen Unit Tract #13 were received by TraceAnalysis, Inc. on 2013-07-26 and assigned to work order 13072613. Samples for work order 13072613 were received intact without headspace and at a temperature of 3.3 C.

Samples were analyzed for the following tests using their respective methods.

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
Alkalinity	SM 2320B	87699	2013-07-29 at 15:01	103653	2013-07-29 at 15:41
Alkalinity	SM 2320B	87699	2013-07-29 at 15:01	103654	2013-07-30 at 14:50
BTEX	S 8021B	87705	2013-07-29 at 15:10	103610	2013-08-01 at 10:18
Ca, Dissolved	S 6010C	87738	2013-07-30 at 16:21	103949	2013-08-12 at 16:26
Ca, Dissolved	S 6010C	87738	2013-07-30 at 16:21	103950	2013-08-12 at 16:30
Chloride (IC)	E 300.0	87894	2013-08-05 at 09:00	103739	2013-08-05 at 09:51
Chloride (IC)	E 300.0	87895	2013-08-05 at 09:00	103740	2013-08-05 at 09:51
Hardness	S 6010C	87738	2013-07-30 at 16:21	103949	2013-08-12 at 16:26
Hardness	S 6010C	87738	2013-07-30 at 16:21	103950	2013-08-12 at 16:30
K, Dissolved	S 6010C	87738	2013-07-30 at 16:21	103949	2013-08-12 at 16:26
K, Dissolved	S 6010C	87738	2013-07-30 at 16:21	103950	2013-08-12 at 16:30
Mg, Dissolved	S 6010C	87738	2013-07-30 at 16:21	103949	2013-08-12 at 16:26
Mg, Dissolved	S 6010C	87738	2013-07-30 at 16:21	103950	2013-08-12 at 16:30
Na, Dissolved	S 6010C	87738	2013-07-30 at 16:21	103949	2013-08-12 at 16:26
Na, Dissolved	S 6010C	87738	2013-07-30 at 16:21	103950	2013-08-12 at 16:30
pH	SM 4500-H+	87639	2013-07-26 at 10:44	103498	2013-07-26 at 15:30
pH	SM 4500-H+	87639	2013-07-26 at 10:44	103499	2013-07-26 at 15:31
SO4 (IC)	E 300.0	87894	2013-08-05 at 09:00	103739	2013-08-05 at 09:51
SO4 (IC)	E 300.0	87895	2013-08-05 at 09:00	103740	2013-08-05 at 09:51
TDS	SM 2540C	87794	2013-07-25 at 11:48	103618	2013-07-26 at 16:50

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 13072613 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

Analytical Report

Sample: 336634 - MW-1

Laboratory:	Midland				
Analysis:	Alkalinity	Analytical Method:	SM 2320B	Prep Method:	N/A
QC Batch:	103653	Date Analyzed:	2013-07-29	Analyzed By:	AR
Prep Batch:	87699	Sample Preparation:	2013-07-29	Prepared By:	AR

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
Hydroxide Alkalinity	U	2	<20.0		mg/L as CaCo3	1	20.0
Carbonate Alkalinity	U	2	<20.0		mg/L as CaCo3	1	20.0
Bicarbonate Alkalinity		2	**223**		mg/L as CaCo3	1	20.0
Total Alkalinity		2	**223**		mg/L as CaCo3	1	20.0

Sample: 336634 - MW-1

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	103610	Date Analyzed:	2013-08-01	Analyzed By:	AH
Prep Batch:	87705	Sample Preparation:	2013-07-29	Prepared By:	AH

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
Benzene	U	2	<0.00100		mg/L	1	0.00100
Toluene	U	2	<0.00100		mg/L	1	0.00100
Ethylbenzene	U	2	<0.00100		mg/L	1	0.00100
Xylene	U	2	<0.00100		mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0919	mg/L	1	0.100	92	70 - 130
4-Bromofluorobenzene (4-BFB)			0.0871	mg/L	1	0.100	87	70 - 130

Sample: 336634 - MW-1

Laboratory:	Lubbock				
Analysis:	Cations	Analytical Method:	S 6010C	Prep Method:	S 3005A
QC Batch:	103949	Date Analyzed:	2013-08-12	Analyzed By:	RR
Prep Batch:	87738	Sample Preparation:	2013-07-30	Prepared By:	PM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Dissolved Calcium		1	**138**	mg/L	1	1.00
Dissolved Potassium		1	**7.00**	mg/L	1	1.00
Dissolved Magnesium		1	**1.50**	mg/L	1	1.00
Dissolved Sodium		1	**16.0**	mg/L	1	1.00

Sample: 336634 - MW-1

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	103739	Date Analyzed:	2013-08-05	Analyzed By:	RL
Prep Batch:	87894	Sample Preparation:	2013-08-05	Prepared By:	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	Q-	1	**69.4**	mg/L	5	2.50

Sample: 336634 - MW-1

Laboratory:	Lubbock				
Analysis:	Hardness	Analytical Method:	S 6010C	Prep Method:	N/A
QC Batch:	103949	Date Analyzed:	2013-08-12	Analyzed By:	RR
Prep Batch:	87738	Sample Preparation:	2013-07-30	Prepared By:	PM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Hardness (by ICP)			**350**	mg eq CaCO3/L	1	0.00

Sample: 336634 - MW-1

Laboratory:	Midland				
Analysis:	pH	Analytical Method:	SM 4500-H+	Prep Method:	N/A
QC Batch:	103498	Date Analyzed:	2013-07-26	Analyzed By:	AR
Prep Batch:	87639	Sample Preparation:	2013-07-26	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
pH		2	**7.47**	s.u.	1	0.00

Sample: 336634 - MW-1

Laboratory:	Lubbock				
Analysis:	SO4 (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	103739	Date Analyzed:	2013-08-05	Analyzed By:	RL
Prep Batch:	87894	Sample Preparation:	2013-08-05	Prepared By:	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Sulfate		1	**56.6**	mg/L	5	2.50

Sample: 336634 - MW-1

Laboratory:	Midland				
Analysis:	TDS	Analytical Method:	SM 2540C	Prep Method:	N/A
QC Batch:	103618	Date Analyzed:	2013-07-26	Analyzed By:	AR
Prep Batch:	87794	Sample Preparation:	2013-07-25	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		2	**533**	mg/L	1	2.50

Sample: 336635 - MW-2

Laboratory:	Midland				
Analysis:	Alkalinity	Analytical Method:	SM 2320B	Prep Method:	N/A
QC Batch:	103653	Date Analyzed:	2013-07-29	Analyzed By:	AR
Prep Batch:	87699	Sample Preparation:	2013-07-29	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Hydroxide Alkalinity	U	2	<20.0	mg/L as CaCo3	1	20.0
Carbonate Alkalinity	U	2	<20.0	mg/L as CaCo3	1	20.0
Bicarbonate Alkalinity		2	**125**	mg/L as CaCo3	1	20.0
Total Alkalinity		2	**125**	mg/L as CaCo3	1	20.0

Sample: 336635 - MW-2

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	103610	Date Analyzed:	2013-08-01	Analyzed By:	AH
Prep Batch:	87705	Sample Preparation:	2013-07-29	Prepared By:	AH

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	U	2	<0.00100	mg/L	1	0.00100
Toluene	U	2	<0.00100	mg/L	1	0.00100
Ethylbenzene	U	2	<0.00100	mg/L	1	0.00100
Xylene	U	2	<0.00100	mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.100	mg/L	1	0.100	100	70 - 130
4-Bromofluorobenzene (4-BFB)			0.0947	mg/L	1	0.100	95	70 - 130

Sample: 336635 - MW-2

Laboratory:	Lubbock				
Analysis:	Cations	Analytical Method:	S 6010C	Prep Method:	S 3005A
QC Batch:	103949	Date Analyzed:	2013-08-12	Analyzed By:	RR
Prep Batch:	87738	Sample Preparation:	2013-07-30	Prepared By:	PM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Dissolved Calcium		1	**1550**	mg/L	100	1.00
Dissolved Potassium		1	**44.6**	mg/L	1	1.00
Dissolved Magnesium		1	**243**	mg/L	1	1.00
Dissolved Sodium		1	**3320**	mg/L	100	1.00

Sample: 336635 - MW-2

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	103739	Date Analyzed:	2013-08-05	Analyzed By:	RL
Prep Batch:	87894	Sample Preparation:	2013-08-05	Prepared By:	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	Q*	1	**9980**	mg/L	1000	2.50

Sample: 336635 - MW-2

Laboratory:	Lubbock				
Analysis:	Hardness	Analytical Method:	S 6010C	Prep Method:	N/A
QC Batch:	103949	Date Analyzed:	2013-08-12	Analyzed By:	RR
Prep Batch:	87738	Sample Preparation:	2013-07-30	Prepared By:	PM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Hardness (by ICP)			**4870**	mg eq CaCO3/L	1	0.00

Sample: 336635 - MW-2

Laboratory:	Midland				
Analysis:	pH	Analytical Method:	SM 4500-H+	Prep Method:	N/A
QC Batch:	103498	Date Analyzed:	2013-07-26	Analyzed By:	AR
Prep Batch:	87639	Sample Preparation:	2013-07-26	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
pH		2	**6.62**	s.u.	1	0.00

Sample: 336635 - MW-2

Laboratory:	Lubbock				
Analysis:	SO4 (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	103739	Date Analyzed:	2013-08-05	Analyzed By:	RL
Prep Batch:	87894	Sample Preparation:	2013-08-05	Prepared By:	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Sulfate	U	1	<2500	mg/L	1000	2.50

Sample: 336635 - MW-2

Laboratory:	Midland				
Analysis:	TDS	Analytical Method:	SM 2540C	Prep Method:	N/A
QC Batch:	103618	Date Analyzed:	2013-07-26	Analyzed By:	AR
Prep Batch:	87794	Sample Preparation:	2013-07-25	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		2	**20900**	mg/L	50	2.50

Sample: 336636 - MW-3

Laboratory:	Midland				
Analysis:	Alkalinity	Analytical Method:	SM 2320B	Prep Method:	N/A
QC Batch:	103653	Date Analyzed:	2013-07-29	Analyzed By:	AR
Prep Batch:	87699	Sample Preparation:	2013-07-29	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Hydroxide Alkalinity	U	2	<20.0	mg/L as CaCo3	1	20.0
Carbonate Alkalinity	U	2	<20.0	mg/L as CaCo3	1	20.0
Bicarbonate Alkalinity		2	**188**	mg/L as CaCo3	1	20.0
Total Alkalinity		2	**188**	mg/L as CaCo3	1	20.0

Sample: 336636 - MW-3

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	103610	Date Analyzed:	2013-08-01	Analyzed By:	AH
Prep Batch:	87705	Sample Preparation:	2013-07-29	Prepared By:	AH

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	U	2	<0.00100	mg/L	1	0.00100
Toluene	U	2	<0.00100	mg/L	1	0.00100
Ethylbenzene	U	2	<0.00100	mg/L	1	0.00100
Xylene	U	2	<0.00100	mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0973	mg/L	1	0.100	97	70 - 130
4-Bromofluorobenzene (4-BFB)			0.0924	mg/L	1	0.100	92	70 - 130

Sample: 336636 - MW-3

Laboratory:	Lubbock				
Analysis:	Cations	Analytical Method:	S 6010C	Prep Method:	S 3005A
QC Batch:	103949	Date Analyzed:	2013-08-12	Analyzed By:	RR
Prep Batch:	87738	Sample Preparation:	2013-07-30	Prepared By:	PM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Dissolved Calcium		1	**145**	mg/L	1	1.00
Dissolved Potassium		1	**8.57**	mg/L	1	1.00
Dissolved Magnesium		1	**4.31**	mg/L	1	1.00

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sample 336636 continued ...

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Dissolved Sodium		1	**71.5**	mg/L	1	1.00

Sample: 336636 - MW-3

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	103739	Date Analyzed:	2013-08-05	Analyzed By:	RL
Prep Batch:	87894	Sample Preparation:	2013-08-05	Prepared By:	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	Q*	1	**197**	mg/L	5	2.50

Sample: 336636 - MW-3

Laboratory:	Lubbock				
Analysis:	Hardness	Analytical Method:	S 6010C	Prep Method:	N/A
QC Batch:	103949	Date Analyzed:	2013-08-12	Analyzed By:	RR
Prep Batch:	87738	Sample Preparation:	2013-07-30	Prepared By:	PM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Hardness (by ICP)			**380**	mg eq CaCO3/L	1	0.00

Sample: 336636 - MW-3

Laboratory:	Midland				
Analysis:	pH	Analytical Method:	SM 4500-H+	Prep Method:	N/A
QC Batch:	103498	Date Analyzed:	2013-07-26	Analyzed By:	AR
Prep Batch:	87639	Sample Preparation:	2013-07-26	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
pH		2	**7.59**	s.u.	1	0.00

Sample: 336636 - MW-3

Laboratory:	Lubbock				
Analysis:	SO4 (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	103739	Date Analyzed:	2013-08-05	Analyzed By:	RL
Prep Batch:	87894	Sample Preparation:	2013-08-05	Prepared By:	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Sulfate		1	**47.1**	mg/L	5	2.50

Sample: 336636 - MW-3

Laboratory:	Midland				
Analysis:	TDS	Analytical Method:	SM 2540C	Prep Method:	N/A
QC Batch:	103618	Date Analyzed:	2013-07-26	Analyzed By:	AR
Prep Batch:	87794	Sample Preparation:	2013-07-25	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		2	**710**	mg/L	2	2.50

Sample: 336637 - MW-4

Laboratory:	Midland				
Analysis:	Alkalinity	Analytical Method:	SM 2320B	Prep Method:	N/A
QC Batch:	103654	Date Analyzed:	2013-07-30	Analyzed By:	AR
Prep Batch:	87699	Sample Preparation:	2013-07-29	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Hydroxide Alkalinity	U	2	<20.0	mg/L as CaCo3	1	20.0
Carbonate Alkalinity	U	2	<20.0	mg/L as CaCo3	1	20.0
Bicarbonate Alkalinity		2	**194**	mg/L as CaCo3	1	20.0
Total Alkalinity		2	**194**	mg/L as CaCo3	1	20.0

Sample: 336637 - MW-4

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	103610	Date Analyzed:	2013-08-01	Analyzed By:	AH
Prep Batch:	87705	Sample Preparation:	2013-07-29	Prepared By:	AH

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
Benzene	U	2	<0.00100		mg/L	1	0.00100
Toluene	U	2	<0.00100		mg/L	1	0.00100
Ethylbenzene	U	2	<0.00100		mg/L	1	0.00100
Xylene	U	2	<0.00100		mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0993	mg/L	1	0.100	99	70 - 130
4-Bromofluorobenzene (4-BFB)			0.0944	mg/L	1	0.100	94	70 - 130

Sample: 336637 - MW-4

Laboratory:	Lubbock				
Analysis:	Cations	Analytical Method:	S 6010C	Prep Method:	S 3005A
QC Batch:	103950	Date Analyzed:	2013-08-12	Analyzed By:	RR
Prep Batch:	87738	Sample Preparation:	2013-07-30	Prepared By:	PM

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
Dissolved Calcium		1	**133**		mg/L	1	1.00
Dissolved Potassium		1	**5.37**		mg/L	1	1.00
Dissolved Magnesium		1	**4.61**		mg/L	1	1.00
Dissolved Sodium		1	**58.5**		mg/L	1	1.00

Sample: 336637 - MW-4

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	103739	Date Analyzed:	2013-08-05	Analyzed By:	RL
Prep Batch:	87894	Sample Preparation:	2013-08-05	Prepared By:	RL

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
Chloride	Q*	1	**136**		mg/L	5	2.50

Sample: 336637 - MW-4

Laboratory:	Lubbock				
Analysis:	Hardness	Analytical Method:	S 6010C	Prep Method:	N/A
QC Batch:	103950	Date Analyzed:	2013-08-12	Analyzed By:	RR
Prep Batch:	87738	Sample Preparation:	2013-07-30	Prepared By:	PM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Hardness (by ICP)			**350**	mg eq CaCO3/L	1	0.00

Sample: 336637 - MW-4

Laboratory:	Midland				
Analysis:	pH	Analytical Method:	SM 4500-H+	Prep Method:	N/A
QC Batch:	103499	Date Analyzed:	2013-07-26	Analyzed By:	AR
Prep Batch:	87639	Sample Preparation:	2013-07-26	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
pH		2	**7.01**	s.u.	1	0.00

Sample: 336637 - MW-4

Laboratory:	Lubbock				
Analysis:	SO4 (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	103739	Date Analyzed:	2013-08-05	Analyzed By:	RL
Prep Batch:	87894	Sample Preparation:	2013-08-05	Prepared By:	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Sulfate		1	**45.8**	mg/L	5	2.50

Sample: 336637 - MW-4

Laboratory:	Midland				
Analysis:	TDS	Analytical Method:	SM 2540C	Prep Method:	N/A
QC Batch:	103618	Date Analyzed:	2013-07-26	Analyzed By:	AR
Prep Batch:	87794	Sample Preparation:	2013-07-25	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		2	**702**	mg/L	2	2.50

Sample: 336638 - MW-5

Laboratory:	Midland				
Analysis:	Alkalinity	Analytical Method:	SM 2320B	Prep Method:	N/A
QC Batch:	103654	Date Analyzed:	2013-07-30	Analyzed By:	AR
Prep Batch:	87699	Sample Preparation:	2013-07-29	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Hydroxide Alkalinity	U	2	<20.0	mg/L as CaCo3	1	20.0
Carbonate Alkalinity	U	2	<20.0	mg/L as CaCo3	1	20.0
Bicarbonate Alkalinity		2	**176**	mg/L as CaCo3	1	20.0
Total Alkalinity		2	**176**	mg/L as CaCo3	1	20.0

Sample: 336638 - MW-5

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	103610	Date Analyzed:	2013-08-01	Analyzed By:	AH
Prep Batch:	87705	Sample Preparation:	2013-07-29	Prepared By:	AH

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	U	2	<0.00100	mg/L	1	0.00100
Toluene	U	2	<0.00100	mg/L	1	0.00100
Ethylbenzene	U	2	<0.00100	mg/L	1	0.00100
Xylene	U	2	<0.00100	mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0961	mg/L	1	0.100	96	70 - 130
4-Bromofluorobenzene (4-BFB)			0.0924	mg/L	1	0.100	92	70 - 130

Sample: 336638 - MW-5

Laboratory:	Lubbock				
Analysis:	Cations	Analytical Method:	S 6010C	Prep Method:	S 3005A
QC Batch:	103950	Date Analyzed:	2013-08-12	Analyzed By:	RR
Prep Batch:	87738	Sample Preparation:	2013-07-30	Prepared By:	PM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Dissolved Calcium		1	**246**	mg/L	1	1.00
Dissolved Potassium		1	**9.87**	mg/L	1	1.00
Dissolved Magnesium		1	**14.7**	mg/L	1	1.00

continued ...

sample 336638 continued ...

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Dissolved Sodium		1	**78.9**	mg/L	1	1.00

Sample: 336638 - MW-5

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	103740	Date Analyzed:	2013-08-05	Analyzed By:	RL
Prep Batch:	87895	Sample Preparation:	2013-08-05	Prepared By:	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1	**350**	mg/L	50	2.50

Sample: 336638 - MW-5

Laboratory:	Lubbock				
Analysis:	Hardness	Analytical Method:	S 6010C	Prep Method:	N/A
QC Batch:	103950	Date Analyzed:	2013-08-12	Analyzed By:	RR
Prep Batch:	87738	Sample Preparation:	2013-07-30	Prepared By:	PM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Hardness (by ICP)			**675**	mg eq CaCO3/L	1	0.00

Sample: 336638 - MW-5

Laboratory:	Midland				
Analysis:	pH	Analytical Method:	SM 4500-H+	Prep Method:	N/A
QC Batch:	103499	Date Analyzed:	2013-07-26	Analyzed By:	AR
Prep Batch:	87639	Sample Preparation:	2013-07-26	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
pH		2	**6.90**	s.u.	1	0.00

Sample: 336638 - MW-5

Laboratory:	Lubbock				
Analysis:	SO4 (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	103740	Date Analyzed:	2013-08-05	Analyzed By:	RL
Prep Batch:	87895	Sample Preparation:	2013-08-05	Prepared By:	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Sulfate		1	<125	mg/L	50	2.50

Sample: 336638 - MW-5

Laboratory:	Midland				
Analysis:	TDS	Analytical Method:	SM 2540C	Prep Method:	N/A
QC Batch:	103618	Date Analyzed:	2013-07-26	Analyzed By:	AR
Prep Batch:	87794	Sample Preparation:	2013-07-25	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		2	**1420**	mg/L	2	2.50

Sample: 336639 - MW-6

Laboratory:	Midland				
Analysis:	Alkalinity	Analytical Method:	SM 2320B	Prep Method:	N/A
QC Batch:	103654	Date Analyzed:	2013-07-30	Analyzed By:	AR
Prep Batch:	87699	Sample Preparation:	2013-07-29	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Hydroxide Alkalinity	U	2	<20.0	mg/L as CaCo3	1	20.0
Carbonate Alkalinity	U	2	<20.0	mg/L as CaCo3	1	20.0
Bicarbonate Alkalinity		2	**201**	mg/L as CaCo3	1	20.0
Total Alkalinity		2	**201**	mg/L as CaCo3	1	20.0

Sample: 336639 - MW-6

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	103610	Date Analyzed:	2013-08-01	Analyzed By:	AH
Prep Batch:	87705	Sample Preparation:	2013-07-29	Prepared By:	AH

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
Benzene	U	2	<0.00100		mg/L	1	0.00100
Toluene	U	2	<0.00100		mg/L	1	0.00100
Ethylbenzene	U	2	<0.00100		mg/L	1	0.00100
Xylene	U	2	<0.00100		mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0945	mg/L	1	0.100	94	70 - 130
4-Bromofluorobenzene (4-BFB)			0.0894	mg/L	1	0.100	89	70 - 130

Sample: 336639 - MW-6

Laboratory:	Lubbock				
Analysis:	Cations	Analytical Method:	S 6010C	Prep Method:	S 3005A
QC Batch:	103950	Date Analyzed:	2013-08-12	Analyzed By:	RR
Prep Batch:	87738	Sample Preparation:	2013-07-30	Prepared By:	PM

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
Dissolved Calcium		1	**26.5**		mg/L	1	1.00
Dissolved Potassium		1	**34.6**		mg/L	1	1.00
Dissolved Magnesium		1	**5.97**		mg/L	1	1.00
Dissolved Sodium		1	**1440**		mg/L	100	1.00

Sample: 336639 - MW-6

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	103740	Date Analyzed:	2013-08-05	Analyzed By:	RL
Prep Batch:	87895	Sample Preparation:	2013-08-05	Prepared By:	RL

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
Chloride		1	**1830**		mg/L	1	2.50

Sample: 336639 - MW-6

Laboratory:	Lubbock				
Analysis:	Hardness	Analytical Method:	S 6010C	Prep Method:	N/A
QC Batch:	103950	Date Analyzed:	2013-08-12	Analyzed By:	RR
Prep Batch:	87738	Sample Preparation:	2013-07-30	Prepared By:	PM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Hardness (by ICP)			**91.0**	mg eq CaCO3/L	1	0.00

Sample: 336639 - MW-6

Laboratory:	Midland				
Analysis:	pH	Analytical Method:	SM 4500-H+	Prep Method:	N/A
QC Batch:	103499	Date Analyzed:	2013-07-26	Analyzed By:	AR
Prep Batch:	87639	Sample Preparation:	2013-07-26	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
pH		2	**7.95**	s.u.	1	0.00

Sample: 336639 - MW-6

Laboratory:	Lubbock				
Analysis:	SO4 (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	103740	Date Analyzed:	2013-08-05	Analyzed By:	RL
Prep Batch:	87895	Sample Preparation:	2013-08-05	Prepared By:	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Sulfate		1	**61.1**	mg/L	1	2.50

Sample: 336639 - MW-6

Laboratory:	Midland				
Analysis:	TDS	Analytical Method:	SM 2540C	Prep Method:	N/A
QC Batch:	103618	Date Analyzed:	2013-07-26	Analyzed By:	AR
Prep Batch:	87794	Sample Preparation:	2013-07-25	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		2	**4030**	mg/L	5	2.50

Method Blanks

Method Blank (1) QC Batch: 103610

QC Batch: 103610 | Date Analyzed: 2013-08-01 | Analyzed By: AH
Prep Batch: 87705 | QC Preparation: 2013-07-29 | Prepared By: AH

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		2	<0.000200	mg/L	0.001
Toluene		2	<0.000300	mg/L	0.001
Ethylbenzene		2	<0.000400	mg/L	0.001
Xylene		2	<0.00120	mg/L	0.001

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.101	mg/L	1	0.100	101	70 - 130
4-Bromofluorobenzene (4-BFB)			0.0956	mg/L	1	0.100	96	70 - 130

Method Blank (1) QC Batch: 103618

QC Batch: 103618 | Date Analyzed: 2013-07-26 | Analyzed By: AR
Prep Batch: 87794 | QC Preparation: 2013-07-25 | Prepared By: AR

Parameter	Flag	Cert	MDL Result	Units	RL
Total Dissolved Solids		2	<2.50	mg/L	2.5

Method Blank (1) QC Batch: 103653

QC Batch: 103653 | Date Analyzed: 2013-07-29 | Analyzed By: AR
Prep Batch: 87699 | QC Preparation: 2013-07-29 | Prepared By: AR

Parameter	Flag	Cert	MDL Result	Units	RL
Hydroxide Alkalinity		2	<20.0	mg/L as CaCo3	20
Carbonate Alkalinity		2	<20.0	mg/L as CaCo3	20
Bicarbonate Alkalinity		2	<20.0	mg/L as CaCo3	20

continued ...

method blank continued ...

Parameter	Flag	Cert	MDL Result	Units	RL
Total Alkalinity		2	<20.0	mg/L as CaCo3	20

Method Blank (1) QC Batch: 103654

QC Batch: 103654 Date Analyzed: 2013-07-30 Analyzed By: AR
Prep Batch: 87699 QC Preparation: 2013-07-29 Prepared By: AR

Parameter	Flag	Cert	MDL Result	Units	RL
Hydroxide Alkalinity		2	<20.0	mg/L as CaCo3	20
Carbonate Alkalinity		2	<20.0	mg/L as CaCo3	20
Bicarbonate Alkalinity		2	<20.0	mg/L as CaCo3	20
Total Alkalinity		2	<20.0	mg/L as CaCo3	20

Method Blank (1) QC Batch: 103739

QC Batch: 103739 Date Analyzed: 2013-08-05 Analyzed By: RL
Prep Batch: 87894 QC Preparation: 2013-08-05 Prepared By: RL

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride		1	0.416	mg/L	2.5

Method Blank (1) QC Batch: 103739

QC Batch: 103739 Date Analyzed: 2013-08-05 Analyzed By: RL
Prep Batch: 87894 QC Preparation: 2013-08-05 Prepared By: RL

Parameter	Flag	Cert	MDL Result	Units	RL
Sulfate		1	<0.224	mg/L	2.5

Method Blank (1) QC Batch: 103740

QC Batch:	103740	Date Analyzed:	2013-08-05	Analyzed By:	RL
Prep Batch:	87895	QC Preparation:	2013-08-05	Prepared By:	RL

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride		1	<0.169	mg/L	2.5

Method Blank (1) QC Batch: 103740

QC Batch:	103740	Date Analyzed:	2013-08-05	Analyzed By:	RL
Prep Batch:	87895	QC Preparation:	2013-08-05	Prepared By:	RL

Parameter	Flag	Cert	MDL Result	Units	RL
Sulfate		1	<0.224	mg/L	2.5

Method Blank (1) QC Batch: 103949

QC Batch:	103949	Date Analyzed:	2013-08-12	Analyzed By:	RR
Prep Batch:	87738	QC Preparation:	2013-07-30	Prepared By:	PM

Parameter	Flag	Cert	MDL Result	Units	RL
Dissolved Calcium		1	<0.0441	mg/L	1
Dissolved Potassium		1	<0.0443	mg/L	1
Dissolved Magnesium		1	<0.0296	mg/L	1
Dissolved Sodium		1	<0.172	mg/L	1

Method Blank (1) QC Batch: 103950

QC Batch:	103950	Date Analyzed:	2013-08-12	Analyzed By:	RR
Prep Batch:	87738	QC Preparation:	2013-07-30	Prepared By:	PM

Parameter	Flag	Cert	MDL Result	Units	RL
Dissolved Calcium		1	<0.0441	mg/L	1

continued ...

method blank continued ...

Parameter	Flag	Cert	MDL Result	Units	RL
Dissolved Potassium		1	<0.0443	mg/L	1
Dissolved Magnesium		1	<0.0296	mg/L	1
Dissolved Sodium		1	<0.172	mg/L	1

Duplicates (2) Duplicated Sample: 336649

QC Batch: 103618 | Date Analyzed: 2013-07-26 | Analyzed By: AR
Prep Batch: 87794 | QC Preparation: 2013-07-25 | Prepared By: AR

Param		Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
Total Dissolved Solids	2	137000	124000	mg/L	100	10	10

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 103610 | Date Analyzed: 2013-08-01 | Analyzed By: AH
Prep Batch: 87705 | QC Preparation: 2013-07-29 | Prepared By: AH

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		2	0.101	mg/L	1	0.100	<0.000200	101	70 - 130
Toluene		2	0.100	mg/L	1	0.100	<0.000300	100	70 - 130
Ethylbenzene		2	0.101	mg/L	1	0.100	<0.000400	101	70 - 130
Xylene		2	0.300	mg/L	1	0.300	<0.00120	100	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		2	0.105	mg/L	1	0.100	<0.000200	105	70 - 130	4	20
Toluene		2	0.104	mg/L	1	0.100	<0.000300	104	70 - 130	4	20
Ethylbenzene		2	0.104	mg/L	1	0.100	<0.000400	104	70 - 130	3	20
Xylene		2	0.312	mg/L	1	0.300	<0.00120	104	70 - 130	4	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.0991	0.0936	mg/L	1	0.100	99	94	70 - 130
4-Bromofluorobenzene (4-BFB)	0.102	0.0971	mg/L	1	0.100	102	97	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 103618 | Date Analyzed: 2013-07-26 | Analyzed By: AR
Prep Batch: 87794 | QC Preparation: 2013-07-25 | Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Total Dissolved Solids		2	1000	mg/L	1	1000	<2.50	100	87.8 - 109.1

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

continued ...

control spikes continued ...

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Total Dissolved Solids		2	969	mg/L	1	1000	<2.50	97	87.8 - 109.1	3	10

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-2)

QC Batch: 103618 | Date Analyzed: 2013-07-26 | Analyzed By: AR
Prep Batch: 87794 | QC Preparation: 2013-07-25 | Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Total Dissolved Solids		2	1030	mg/L	1	1000	<2.50	103	87.8 - 109.1

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Total Dissolved Solids		2	1010	mg/L	1	1000	<2.50	101	87.8 - 109.1	2	10

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: 103739 | Date Analyzed: 2013-08-05 | Analyzed By: RL
Prep Batch: 87894 | QC Preparation: 2013-08-05 | Prepared By: RL

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	24.7	mg/L	1	25.0	<0.169	99	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		1	25.1	mg/L	1	25.0	<0.169	100	90 - 110	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: 103739 | Date Analyzed: 2013-08-05 | Analyzed By: RL
Prep Batch: 87894 | QC Preparation: 2013-08-05 | Prepared By: RL

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate		1	25.2	mg/L	1	25.0	<0.224	101	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Sulfate		1	26.0	mg/L	1	25.0	<0.224	104	90 - 110	3	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: 103740 | Date Analyzed: 2013-08-05 | Analyzed By: RL
Prep Batch: 87895 | QC Preparation: 2013-08-05 | Prepared By: RL

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	25.0	mg/L	1	25.0	<0.169	100	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		1	25.0	mg/L	1	25.0	<0.169	100	90 - 110	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: 103740 | Date Analyzed: 2013-08-05 | Analyzed By: RL
Prep Batch: 87895 | QC Preparation: 2013-08-05 | Prepared By: RL

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate		1	25.7	mg/L	1	25.0	<0.224	103	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Sulfate		1	25.5	mg/L	1	25.0	<0.224	102	90 - 110	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: 103949 | Date Analyzed: 2013-08-12 | Analyzed By: RR
Prep Batch: 87738 | QC Preparation: 2013-07-30 | Prepared By: PM

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Dissolved Calcium		1	52.1	mg/L	1	50.0	<0.0441	104	85 - 115
Dissolved Potassium		1	51.6	mg/L	1	50.0	<0.0443	103	85 - 115
Dissolved Magnesium		1	53.3	mg/L	1	50.0	<0.0296	107	85 - 115
Dissolved Sodium		1	53.1	mg/L	1	50.0	<0.172	106	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Dissolved Calcium		1	52.2	mg/L	1	50.0	<0.0441	104	85 - 115	0	20
Dissolved Potassium		1	51.9	mg/L	1	50.0	<0.0443	104	85 - 115	1	20
Dissolved Magnesium		1	51.7	mg/L	1	50.0	<0.0296	103	85 - 115	3	20
Dissolved Sodium		1	52.9	mg/L	1	50.0	<0.172	106	85 - 115	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: 103950 | Date Analyzed: 2013-08-12 | Analyzed By: RR
Prep Batch: 87738 | QC Preparation: 2013-07-30 | Prepared By: PM

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Dissolved Calcium		1	52.1	mg/L	1	50.0	<0.0441	104	85 - 115
Dissolved Potassium		1	51.6	mg/L	1	50.0	<0.0443	103	85 - 115
Dissolved Magnesium		1	53.3	mg/L	1	50.0	<0.0296	107	85 - 115
Dissolved Sodium		1	53.1	mg/L	1	50.0	<0.172	106	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Dissolved Calcium		1	52.2	mg/L	1	50.0	<0.0441	104	85 - 115	0	20
Dissolved Potassium		1	51.9	mg/L	1	50.0	<0.0443	104	85 - 115	1	20
Dissolved Magnesium		1	51.7	mg/L	1	50.0	<0.0296	103	85 - 115	3	20
Dissolved Sodium		1	52.9	mg/L	1	50.0	<0.172	106	85 - 115	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 336651

QC Batch: 103610 | Date Analyzed: 2013-08-01 | Analyzed By: AH
Prep Batch: 87705 | QC Preparation: 2013-07-29 | Prepared By: AH

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		2	0.101	mg/L	1	0.100	<0.000200	101	70 - 130
Toluene		2	0.0997	mg/L	1	0.100	<0.000300	100	70 - 130
Ethylbenzene		2	0.0981	mg/L	1	0.100	<0.000400	98	70 - 130
Xylene		2	0.291	mg/L	1	0.300	<0.00120	97	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		2	0.105	mg/L	1	0.100	<0.000200	105	70 - 130	4	20
Toluene		2	0.104	mg/L	1	0.100	<0.000300	104	70 - 130	4	20
Ethylbenzene		2	0.102	mg/L	1	0.100	<0.000400	102	70 - 130	4	20
Xylene		2	0.304	mg/L	1	0.300	<0.00120	101	70 - 130	4	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.0958	0.0981	mg/L	1	0.1	96	98	70 - 130
4-Bromofluorobenzene (4-BFB)	0.100	0.101	mg/L	1	0.1	100	101	70 - 130

Matrix Spike (MS-1) Spiked Sample: 336637

QC Batch: 103739 | Date Analyzed: 2013-08-05 | Analyzed By: RL
Prep Batch: 87894 | QC Preparation: 2013-08-05 | Prepared By: RL

Param		F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	Q*	Q*	1	293	mg/L	5	125	136	126	80 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param		F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	Q*	Q*	1	294	mg/L	5	125	136	126	80 - 120	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 336637

QC Batch: 103739 | Date Analyzed: 2013-08-05 | Analyzed By: RL
Prep Batch: 87894 | QC Preparation: 2013-08-05 | Prepared By: RL

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate		1	193	mg/L	5	125	45.8	118	80 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Sulfate		1	189	mg/L	5	125	45.8	114	80 - 120	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 336650

QC Batch: 103740 | Date Analyzed: 2013-08-05 | Analyzed By: RL
Prep Batch: 87895 | QC Preparation: 2013-08-05 | Prepared By: RL

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	54000	mg/L	1000	25000	23900	120	80 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		1	54000	mg/L	1000	25000	23900	120	80 - 120	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 336650

QC Batch: 103740 | Date Analyzed: 2013-08-05 | Analyzed By: RL
Prep Batch: 87895 | QC Preparation: 2013-08-05 | Prepared By: RL

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate		1	27500	mg/L	1000	25000	365	108	80 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Sulfate		1	27200	mg/L	1000	25000	365	107	80 - 120	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 336634

QC Batch: 103949 | Date Analyzed: 2013-08-12 | Analyzed By: RR
Prep Batch: 87738 | QC Preparation: 2013-07-30 | Prepared By: PM

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Dissolved Calcium		1	649	mg/L	1	500	138	102	75 - 125
Dissolved Potassium		1	524	mg/L	1	500	7	103	75 - 125
Dissolved Magnesium		1	533	mg/L	1	500	1.5	106	75 - 125
Dissolved Sodium		1	543	mg/L	1	500	16	105	75 - 125

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Dissolved Calcium		1	679	mg/L	1	500	138	108	75 - 125	4	20
Dissolved Potassium		1	555	mg/L	1	500	7	110	75 - 125	6	20
Dissolved Magnesium		1	570	mg/L	1	500	1.5	114	75 - 125	7	20
Dissolved Sodium		1	575	mg/L	1	500	16	112	75 - 125	6	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 336637

QC Batch: 103950 | Date Analyzed: 2013-08-12 | Analyzed By: RR
Prep Batch: 87738 | QC Preparation: 2013-07-30 | Prepared By: PM

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Dissolved Calcium		1	664	mg/L	1	500	133	106	75 - 125
Dissolved Potassium		1	540	mg/L	1	500	5.37	107	75 - 125
Dissolved Magnesium		1	560	mg/L	1	500	4.61	111	75 - 125
Dissolved Sodium		1	554	mg/L	1	500	58.5	99	75 - 125

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Dissolved Calcium		1	721	mg/L	1	500	133	118	75 - 125	8	20
Dissolved Potassium		1	585	mg/L	1	500	5.37	116	75 - 125	8	20
Dissolved Magnesium		1	585	mg/L	1	500	4.61	116	75 - 125	4	20
Dissolved Sodium		1	631	mg/L	1	500	58.5	114	75 - 125	13	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Calibration Standards

Standard (ICV-1)

QC Batch: 103498 Date Analyzed: 2013-07-26 Analyzed By: AR

Param	Flag	Cert	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
pH		2	s.u.	7.00	7.03	100	98 - 102	2013-07-26

Standard (CCV-1)

QC Batch: 103498 Date Analyzed: 2013-07-26 Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
pH		2	s.u.	7.00	7.10	101	98 - 102	2013-07-26

Standard (ICV-1)

QC Batch: 103499 Date Analyzed: 2013-07-26 Analyzed By: AR

Param	Flag	Cert	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
pH		2	s.u.	7.00	7.10	101	98 - 102	2013-07-26

Standard (CCV-1)

QC Batch: 103499 Date Analyzed: 2013-07-26 Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
pH		2	s.u.	7.00	7.04	100	98 - 102	2013-07-26

Standard (CCV-1)

QC Batch: 103610 Date Analyzed: 2013-08-01 Analyzed By: AH

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		2	mg/L	0.100	0.107	107	80 - 120	2013-08-01
Toluene		2	mg/L	0.100	0.107	107	80 - 120	2013-08-01
Ethylbenzene		2	mg/L	0.100	0.108	108	80 - 120	2013-08-01
Xylene		2	mg/L	0.300	0.320	107	80 - 120	2013-08-01

Standard (CCV-2)

QC Batch: 103610 Date Analyzed: 2013-08-01 Analyzed By: AH

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		2	mg/L	0.100	0.105	105	80 - 120	2013-08-01
Toluene		2	mg/L	0.100	0.104	104	80 - 120	2013-08-01
Ethylbenzene		2	mg/L	0.100	0.104	104	80 - 120	2013-08-01
Xylene		2	mg/L	0.300	0.311	104	80 - 120	2013-08-01

Standard (CCV-3)

QC Batch: 103610 Date Analyzed: 2013-08-01 Analyzed By: AH

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		2	mg/L	0.100	0.104	104	80 - 120	2013-08-01
Toluene		2	mg/L	0.100	0.105	105	80 - 120	2013-08-01
Ethylbenzene		2	mg/L	0.100	0.106	106	80 - 120	2013-08-01
Xylene		2	mg/L	0.300	0.315	105	80 - 120	2013-08-01

Standard (ICV-1)

QC Batch: 103653 Date Analyzed: 2013-07-29 Analyzed By: AR

Param	Flag	Cert	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Hydroxide Alkalinity		2	mg/L as CaCo3	0.00	<20.0		-	2013-07-29
Carbonate Alkalinity		2	mg/L as CaCo3	0.00	248		-	2013-07-29
Bicarbonate Alkalinity		2	mg/L as CaCo3	0.00	<20.0		-	2013-07-29
Total Alkalinity		2	mg/L as CaCo3	250	259	104	90 - 110	2013-07-29

Standard (CCV-1)

QC Batch: 103653 Date Analyzed: 2013-07-29 Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Hydroxide Alkalinity		2	mg/L as CaCo3	0.00	11.0		-	2013-07-29
Carbonate Alkalinity		2	mg/L as CaCo3	0.00	222		-	2013-07-29
Bicarbonate Alkalinity		2	mg/L as CaCo3	0.00	<4.00		-	2013-07-29
Total Alkalinity		2	mg/L as CaCo3	250	233	93	90 - 110	2013-07-29

Standard (ICV-1)

QC Batch: 103654 Date Analyzed: 2013-07-30 Analyzed By: AR

Param	Flag	Cert	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Hydroxide Alkalinity		2	mg/L as CaCo3	0.00	<20.0		-	2013-07-30
Carbonate Alkalinity		2	mg/L as CaCo3	0.00	242		-	2013-07-30
Bicarbonate Alkalinity		2	mg/L as CaCo3	0.00	<20.0		-	2013-07-30
Total Alkalinity		2	mg/L as CaCo3	250	244	98	90 - 110	2013-07-30

Standard (CCV-1)

QC Batch: 103654 Date Analyzed: 2013-07-30 Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Hydroxide Alkalinity		2	mg/L as CaCo3	0.00	39.0		-	2013-07-30

continued ...

standard continued ...

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Carbonate Alkalinity		2	mg/L as CaCo3	0.00	190		-	2013-07-30
Bicarbonate Alkalinity		2	mg/L as CaCo3	0.00	<4.00		-	2013-07-30
Total Alkalinity		2	mg/L as CaCo3	250	229	92	90 - 110	2013-07-30

Standard (CCV-1)

QC Batch: 103739 Date Analyzed: 2013-08-05 Analyzed By: RL

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1	mg/L	25.0	25.3	101	90 - 110	2013-08-05

Standard (CCV-1)

QC Batch: 103739 Date Analyzed: 2013-08-05 Analyzed By: RL

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Sulfate		1	mg/L	25.0	25.8	103	90 - 110	2013-08-05

Standard (CCV-2)

QC Batch: 103739 Date Analyzed: 2013-08-05 Analyzed By: RL

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1	mg/L	25.0	25.1	100	90 - 110	2013-08-05

Standard (CCV-2)

QC Batch: 103739 Date Analyzed: 2013-08-05 Analyzed By: RL

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Sulfate		1	mg/L	25.0	25.9	104	90 - 110	2013-08-05

Standard (CCV-1)

QC Batch: 103740 Date Analyzed: 2013-08-05 Analyzed By: RL

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1	mg/L	25.0	25.1	100	90 - 110	2013-08-05

Standard (CCV-1)

QC Batch: 103740 Date Analyzed: 2013-08-05 Analyzed By: RL

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Sulfate		1	mg/L	25.0	25.9	104	90 - 110	2013-08-05

Standard (CCV-2)

QC Batch: 103740 Date Analyzed: 2013-08-05 Analyzed By: RL

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1	mg/L	25.0	24.8	99	90 - 110	2013-08-05

Standard (CCV-2)

QC Batch: 103740 Date Analyzed: 2013-08-05 Analyzed By: RL

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Sulfate		1	mg/L	25.0	25.6	102	90 - 110	2013-08-05

Standard (ICV-1)

QC Batch: 103949 Date Analyzed: 2013-08-12 Analyzed By: RR

Param	Flag	Cert	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dissolved Calcium		1	mg/L	51.0	48.3	95	90 - 110	2013-08-12
Dissolved Potassium		1	mg/L	55.0	52.4	95	90 - 110	2013-08-12
Dissolved Magnesium		1	mg/L	51.0	51.5	101	90 - 110	2013-08-12
Dissolved Sodium		1	mg/L	51.0	50.1	98	90 - 110	2013-08-12

Standard (CCV-1)

QC Batch: 103949 Date Analyzed: 2013-08-12 Analyzed By: RR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dissolved Calcium		1	mg/L	51.0	53.3	104	90 - 110	2013-08-12
Dissolved Potassium		1	mg/L	55.0	56.9	103	90 - 110	2013-08-12
Dissolved Magnesium		1	mg/L	51.0	53.3	104	90 - 110	2013-08-12
Dissolved Sodium		1	mg/L	51.0	53.4	105	90 - 110	2013-08-12

Standard (ICV-1)

QC Batch: 103950 Date Analyzed: 2013-08-12 Analyzed By: RR

Param	Flag	Cert	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dissolved Calcium		1	mg/L	51.0	48.3	95	90 - 110	2013-08-12
Dissolved Potassium		1	mg/L	55.0	52.4	95	90 - 110	2013-08-12
Dissolved Magnesium		1	mg/L	51.0	51.5	101	90 - 110	2013-08-12
Dissolved Sodium		1	mg/L	51.0	50.1	98	90 - 110	2013-08-12

Standard (CCV-1)

QC Batch: 103950 | Date Analyzed: 2013-08-12 | Analyzed By: RR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dissolved Calcium		1	mg/L	51.0	54.1	106	90 - 110	2013-08-12
Dissolved Potassium		1	mg/L	55.0	57.2	104	90 - 110	2013-08-12
Dissolved Magnesium		1	mg/L	51.0	52.8	104	90 - 110	2013-08-12
Dissolved Sodium		1	mg/L	51.0	53.0	104	90 - 110	2013-08-12

Appendix

Report Definitions

Name	Definition
MDL	Method Detection Limit
MQL	Minimum Quantitation Limit
SDL	Sample Detection Limit

Laboratory Certifications

C	Certifying Authority	Certification Number	Laboratory Location
-	NCTRCA	WFWB384444Y0909	TraceAnalysis
-	DBE	VN 20657	TraceAnalysis
-	HUB	1752439743100-86536	TraceAnalysis
-	WBE	237019	TraceAnalysis
1	NELAP	T104704219-13-9	Lubbock
2	NELAP	T104704392-12-4	Midland

Standard Flags

F	Description
B	Analyte detected in the corresponding method blank above the method detection limit
H	Analyzed out of hold time
J	Estimated concentration
Jb	The analyte is positively identified and the value is approximated between the SDL and MQL. Sample contains less then ten times the concentration found in the method blank. The result should be considered non-detect to the SDL.
Je	Estimated concentration exceeding calibration range.
MI1	Split peak or shoulder peak
MI2	Instrument software did not integrate
MI3	Instrument software misidentified the peak
MI4	Instrument software integrated improperly
MI5	Baseline correction
Qc	Calibration check outside of laboratory limits.
Qr	RPD outside of laboratory limits
Qs	Spike recovery outside of laboratory limits.
Qsr	Surrogate recovery outside of laboratory limits.
U	The analyte is not detected above the SDL

Attachments

The scanned attachments will follow this page.
Please note, each attachment may consist of more than one page.

1307 2613

Analysis Request of Chain of Custody Record

PAGE: OF:

ANALYSIS REQUEST
(Circle or Specify Method No.)

TETRA TECH
1910 N. Big Spring St.
Midland, Texas 79705
(432) 682-4559 • Fax (432) 682-3946

CLIENT NAME: Celero Energy
SITE MANAGER: Greg Pope
PROJECT NO.: 114-6401630
PROJECT NAME: Rock Queen Tract #13

LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015 MOD. TX1005 (Ext. to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS Sulfates	pH/alk/TDS	Cl/SO4/Carbonates/Na/Ca/K/Mg
336634	7/24/13	1615	W		X	MW-1	5	N	X		X		X												X				X		
635	↓	1550	↓		↓	MW-2	↓	↓	↓		↓		↓												↓				↓		
636	↓	1630	↓		↓	MW-3	↓	↓	↓		↓		↓												↓				↓		
637	↓	1650	↓		↓	MW-4	↓	↓	↓		↓		↓												↓				↓		
638	↓	1600	↓		↓	MW-5	↓	↓	↓		↓		↓												↓				↓		
639	↓	1540	↓		↓	MW-6	↓	↓	↓		↓		↓												↓				↓		

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RECEIVED BY: (Signature) [signature] Date: 7-26-13 Time: 830

RELINQUISHED BY: (Signature) [signature] Date: 7-26-13 Time: 830
RECEIVED BY: (Signature) [signature] Date: 7/26/13 Time: 8:30

RELINQUISHED BY: (Signature) Date: Time:
RECEIVED BY: (Signature) Date: Time:

RECEIVING LABORATORY:
ADDRESS:
CITY: STATE: ZIP:
CONTACT: PHONE:
RECEIVED BY: (Signature)
DATE: TIME:

SAMPLED BY: (Print & Initial) G/RD Date: Time:

SAMPLE SHIPPED BY: (Circle)
FEDEX BUS
HAND DELIVERED UPS
AIRBILL #:
OTHER:

TETRA TECH CONTACT PERSON: AH
Results by:
RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: 3.3°
REMARKS:

13072613

Analysis Request of Chain of Custody Record

TETRA TECH
1910 N. Big Spring St.
Midland, Texas 79705
(432) 682-4559 • Fax (432) 682-3946

PAGE: OF:

ANALYSIS REQUEST (Circle or Specify Method No.)

CLIENT NAME: Celero Energy
SITE MANAGER: Greg Pope
PROJECT NO.: 114-6401630
PROJECT NAME: Rock Queen Tract #13

LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015 MOD. TX1005 (Ext. to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS su RBels	pH/alk/TDS	Cl/SO4/Na/Ca/K/Mg
336634	7/24/13	1165	W		X	MW-1	5	N	X		X		X												X				X		
635	↓	1550	↓		↓	MW-2	↓	↓	↓		↓		↓												↓				↓		
636	↓	1630	↓		↓	MW-3	↓	↓	↓		↓		↓												↓				↓		
637	↓	1650	↓		↓	MW-4	↓	↓	↓		↓		↓												↓				↓		
638	↓	1600	↓		↓	MW-5	↓	↓	↓		↓		↓												↓				↓		
639	↓	1540	↓		↓	MW-6	↓	↓	↓		↓		↓												↓				↓		

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RECEIVED BY: (Signature) [signature] Date: 7/26/13 Time: 8:30

RELINQUISHED BY: (Signature) [signature] Date: 7/29/13 Time: 15:30
RECEIVED BY: (Signature) Date: Time:

RECEIVING LABORATORY:
ADDRESS:
CITY: STATE: ZIP:
CONTACT: PHONE:

RECEIVED BY: (Signature) Brenda Ward - TA LUBBOCK
DATE: 7/30/13 TIME: 8:45

SAMPLED BY: (Print & Initial) GP/RD Date: Time:

SAMPLE SHIPPED BY: (Circle) FEDEX BUS HAND DELIVERED UPS AIRBILL #: OTHER:

TETRA TECH CONTACT PERSON: LS 3.3/3.6 AH 20198879

Results by:

RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: 3.3°

REMARKS: Midland - BTEX/alk/pH/TDS Lubbock - all others

Cation-Anion Balance Sheet

DATE: 8/13/2012

Sample #	Calcium ppm	Magnesium ppm	Sodium ppm	Potassium ppm	Alkalinity ppm	Sulfate ppm	Chloride ppm	Nitrate-N ppm	Fluoride ppm	Bromide ppm	TDS ppm	EC µMHOs/cm
336634	138	1.5	16	7	223.00	56.6	69.4				533	
336635	1550	243	3320	44.6	125.00	0	9980				20900	
336636	145	4.31	71.5	8.57	188.00	47.1	197				710	
336637	133	4.61	58.5	5.37	194.00	45.8	136				702	
336638	246	14.7	78.9	9.87	176.00	33	350				1420	
336639	26.5	5.97	1440	34.6	201.00	61.1	1830				4030	

Sample #	Calcium in meq/L	Magnesium in meq/L	Sodium in meq/L	Potassium in meq/L	Alkalinity in meq/L	Sulfate in meq/L	Chloride in meq/L	Nitrate-N in meq/L	Fluoride in meq/L	Bromide in meq/L	Total Cations in meq/L	Total Anions in meq/L	% Difference*
336634	6.89	0.12	0.70	0.18	4.46	1.18	1.96	0.00	0.00	0.00	7.88	7.60	1.863647166
336635	77.35	20.00	144.42	1.14	2.50	0.00	281.54	0.00	0.00	0.00	242.90	284.04	7.80612733
336636	7.24	0.35	3.11	0.22	3.76	0.98	5.56	0.00	0.00	0.00	10.92	10.30	2.929867411
336637	6.64	0.38	2.54	0.14	3.88	0.95	3.84	0.00	0.00	0.00	9.70	8.67	5.596904447
336638	12.28	1.21	3.43	0.25	3.52	0.69	9.87	0.00	0.00	0.00	17.17	14.08	9.885129998
336639	1.32	0.49	62.64	0.89	4.02	1.27	51.62	0.00	0.00	0.00	65.34	56.92	6.889109656

	EC/Cation	EC/Anion				
336634	788.4695	759.6186	range	0	to	0
336635	24290.2338	28403.58	range	0	to	0
336636	1091.96405	1029.7992	range	0	to	0
336637	969.81715	867.0116	range	0	to	0
336638	1716.96876	1408.056	range	0	to	0
336639	6533.86893	5691.6402	range	0	to	0

TDS/EC	TDS/Cat		TDS/Anion	
#DIV/0!	0.68		0.70	needs to be 0.55-0.77
#DIV/0!	0.86		0.74	needs to be 0.55-0.77
#DIV/0!	0.65		0.69	needs to be 0.55-0.77
#DIV/0!	0.72		0.81	needs to be 0.55-0.77
#DIV/0!	0.83		1.01	needs to be 0.55-0.77
#DIV/0!	0.62		0.71	needs to be 0.55-0.77

TRACEANALYSIS, INC.

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Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

Analytical and Quality Control Report

(Corrected Report)

Greg Pope
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1910 N. Big Spring Street
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Report Date: November 20, 2013

Work Order: 13103135

Project Location: Chavez Co., NM
Project Name: Celero/Rock Queen Unit Tract #13
Project Number: 114-6401630

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
345385	MW-1	water	2013-10-30	13:10	2013-10-31
345386	MW-2	water	2013-10-30	12:20	2013-10-31
345387	MW-3	water	2013-10-30	13:30	2013-10-31
345388	MW-4	water	2013-10-30	13:45	2013-10-31
345389	MW-5	water	2013-10-30	12:55	2013-10-31
345390	MW-6	water	2013-10-30	12:35	2013-10-31

Report Corrections (Work Order 13103135)

- 11/20/13: Added Sulfate results for samples 345386, 345389, and 345390.

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

Dr. Blair Leftwich, Director
Dr. Michael Abel, Project Manager

Report Contents

Case Narrative

Samples for project Celero/Rock Queen Unit Tract #13 were received by TraceAnalysis, Inc. on 2013-10-31 and assigned to work order 13103135. Samples for work order 13103135 were received intact without headspace and at a temperature of 1.8 C.

Samples were analyzed for the following tests using their respective methods.

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
Alkalinity	SM 2320B	90295	2013-11-03 at 12:14	106621	2013-11-04 at 12:15
BTEX	S 8021B	90156	2013-11-01 at 12:38	106459	2013-11-01 at 15:39
Ca, Dissolved	S 6010C	90268	2013-11-06 at 14:46	106734	2013-11-13 at 10:25
Chloride (IC)	E 300.0	90367	2013-11-08 at 10:30	106707	2013-11-08 at 11:32
Chloride (IC)	E 300.0	90403	2013-11-13 at 09:00	106754	2013-11-13 at 09:41
Hardness	S 6010C	90268	2013-11-06 at 14:46	106734	2013-11-13 at 10:25
K, Dissolved	S 6010C	90268	2013-11-06 at 14:46	106734	2013-11-13 at 10:25
Mg, Dissolved	S 6010C	90268	2013-11-06 at 14:46	106734	2013-11-13 at 10:25
Na, Dissolved	S 6010C	90268	2013-11-06 at 14:46	106734	2013-11-13 at 10:25
pH	SM 4500-H+	90131	2013-10-31 at 13:47	106465	2013-10-31 at 16:47
SO4 (IC)	E 300.0	90367	2013-11-08 at 10:30	106707	2013-11-08 at 11:32
SO4 (IC)	E 300.0	90403	2013-11-13 at 09:00	106754	2013-11-13 at 09:41
SO4 (IC)	E 300.0	90490	2013-11-15 at 14:00	106867	2013-11-15 at 16:41
TDS	SM 2540C	90201	2013-11-02 at 11:09	106606	2013-11-03 at 15:21

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 13103135 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

Analytical Report

Sample: 345385 - MW-1

Laboratory:	Midland				
Analysis:	Alkalinity	Analytical Method:	SM 2320B	Prep Method:	N/A
QC Batch:	106621	Date Analyzed:	2013-11-04	Analyzed By:	AR
Prep Batch:	90295	Sample Preparation:	2013-11-03	Prepared By:	AR

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
Hydroxide Alkalinity	U	2	<20.0		mg/L as CaCo3	1	20.0
Carbonate Alkalinity	U	2	<20.0		mg/L as CaCo3	1	20.0
Bicarbonate Alkalinity		2	**214**		mg/L as CaCo3	1	20.0
Total Alkalinity		2	**214**		mg/L as CaCo3	1	20.0

Sample: 345385 - MW-1

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	106459	Date Analyzed:	2013-11-01	Analyzed By:	AK
Prep Batch:	90156	Sample Preparation:	2013-11-01	Prepared By:	AK

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
Benzene	U	2	<0.00100		mg/L	1	0.00100
Toluene	U	2	<0.00100		mg/L	1	0.00100
Ethylbenzene	Qs, U	2	<0.00100		mg/L	1	0.00100
Xylene	Qs, U	2	<0.00300		mg/L	1	0.00300

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0838	mg/L	1	0.100	84	70 - 130
4-Bromofluorobenzene (4-BFB)			0.0748	mg/L	1	0.100	75	70 - 130

Sample: 345385 - MW-1

Laboratory:	Lubbock				
Analysis:	Cations	Analytical Method:	S 6010C	Prep Method:	S 3005A
QC Batch:	106734	Date Analyzed:	2013-11-13	Analyzed By:	RR
Prep Batch:	90268	Sample Preparation:	2013-11-09	Prepared By:	PM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Dissolved Calcium		1	**122**	mg/L	10	1.00
Dissolved Potassium		1	<10.0	mg/L	10	1.00
Dissolved Magnesium		1	<10.0	mg/L	10	1.00
Dissolved Sodium		1	**61.5**	mg/L	10	1.00

Sample: 345385 - MW-1

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	106707	Date Analyzed:	2013-11-08	Analyzed By:	RL
Prep Batch:	90367	Sample Preparation:	2013-11-08	Prepared By:	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1	**76.0**	mg/L	5	2.50

Sample: 345385 - MW-1

Laboratory:	Lubbock				
Analysis:	Hardness	Analytical Method:	S 6010C	Prep Method:	N/A
QC Batch:	106734	Date Analyzed:	2013-11-13	Analyzed By:	RR
Prep Batch:	90268	Sample Preparation:	2013-11-06	Prepared By:	PM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Hardness (by ICP)			**317**	mg eq CaCO3/L	1	0.00

Sample: 345385 - MW-1

Laboratory:	Midland				
Analysis:	pH	Analytical Method:	SM 4500-H+	Prep Method:	N/A
QC Batch:	106465	Date Analyzed:	2013-10-31	Analyzed By:	AR
Prep Batch:	90131	Sample Preparation:	2013-10-31	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
pH		2	**7.51**	s.u.	1	0.00

Sample: 345385 - MW-1

Laboratory:	Lubbock				
Analysis:	SO4 (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	106707	Date Analyzed:	2013-11-08	Analyzed By:	RL
Prep Batch:	90367	Sample Preparation:	2013-11-08	Prepared By:	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Sulfate		1	**52.4**	mg/L	5	2.50

Sample: 345385 - MW-1

Laboratory:	Midland				
Analysis:	TDS	Analytical Method:	SM 2540C	Prep Method:	N/A
QC Batch:	106606	Date Analyzed:	2013-11-03	Analyzed By:	AR
Prep Batch:	90201	Sample Preparation:	2013-11-02	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		2	**942**	mg/L	2	2.50

Sample: 345386 - MW-2

Laboratory:	Midland				
Analysis:	Alkalinity	Analytical Method:	SM 2320B	Prep Method:	N/A
QC Batch:	106621	Date Analyzed:	2013-11-04	Analyzed By:	AR
Prep Batch:	90295	Sample Preparation:	2013-11-03	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Hydroxide Alkalinity	U	2	<20.0	mg/L as CaCo3	1	20.0
Carbonate Alkalinity	U	2	<20.0	mg/L as CaCo3	1	20.0
Bicarbonate Alkalinity		2	**132**	mg/L as CaCo3	1	20.0
Total Alkalinity		2	**132**	mg/L as CaCo3	1	20.0

Sample: 345386 - MW-2

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	106459	Date Analyzed:	2013-11-01	Analyzed By:	AK
Prep Batch:	90156	Sample Preparation:	2013-11-01	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	U	2	<0.00100	mg/L	1	0.00100
Toluene	U	2	<0.00100	mg/L	1	0.00100
Ethylbenzene	Q#,U	2	<0.00100	mg/L	1	0.00100
Xylene	Q#,U	2	<0.00300	mg/L	1	0.00300

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0793	mg/L	1	0.100	79	70 - 130
4-Bromofluorobenzene (4-BFB)			0.0695	mg/L	1	0.100	70	70 - 130

Sample: 345386 - MW-2

Laboratory:	Lubbock				
Analysis:	Cations	Analytical Method:	S 6010C	Prep Method:	S 3005A
QC Batch:	106734	Date Analyzed:	2013-11-13	Analyzed By:	RR
Prep Batch:	90268	Sample Preparation:	2013-11-09	Prepared By:	PM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Dissolved Calcium		1	**1150**	mg/L	10	1.00
Dissolved Potassium		1	**26.2**	mg/L	10	1.00
Dissolved Magnesium		1	**174**	mg/L	10	1.00
Dissolved Sodium		1	**2550**	mg/L	100	1.00

Sample: 345386 - MW-2

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	106754	Date Analyzed:	2013-11-13	Analyzed By:	RL
Prep Batch:	90403	Sample Preparation:	2013-11-13	Prepared By:	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	Q#	1	**8300**	mg/L	500	2.50

Sample: 345386 - MW-2

Laboratory:	Lubbock				
Analysis:	Hardness	Analytical Method:	S 6010C	Prep Method:	N/A
QC Batch:	106734	Date Analyzed:	2013-11-13	Analyzed By:	RR
Prep Batch:	90268	Sample Preparation:	2013-11-06	Prepared By:	PM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Hardness (by ICP)			**3590**	mg eq CaCO3/L	1	0.00

Sample: 345386 - MW-2

Laboratory:	Midland				
Analysis:	pH	Analytical Method:	SM 4500-H+	Prep Method:	N/A
QC Batch:	106465	Date Analyzed:	2013-10-31	Analyzed By:	AR
Prep Batch:	90131	Sample Preparation:	2013-10-31	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
pH		2	**6.96**	s.u.	1	0.00

Sample: 345386 - MW-2

Laboratory:	Lubbock				
Analysis:	SO4 (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	106867	Date Analyzed:	2013-11-15	Analyzed By:	RL
Prep Batch:	90490	Sample Preparation:	2013-11-15	Prepared By:	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Sulfate		1	**155**	mg/L	50	2.50

Sample: 345386 - MW-2

Laboratory:	Midland				
Analysis:	TDS	Analytical Method:	SM 2540C	Prep Method:	N/A
QC Batch:	106606	Date Analyzed:	2013-11-03	Analyzed By:	AR
Prep Batch:	90201	Sample Preparation:	2013-11-02	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		2	**17200**	mg/L	20	2.50

Sample: 345387 - MW-3

Laboratory:	Midland				
Analysis:	Alkalinity	Analytical Method:	SM 2320B	Prep Method:	N/A
QC Batch:	106621	Date Analyzed:	2013-11-04	Analyzed By:	AR
Prep Batch:	90295	Sample Preparation:	2013-11-03	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Hydroxide Alkalinity	U	2	<20.0	mg/L as CaCo3	1	20.0
Carbonate Alkalinity	U	2	<20.0	mg/L as CaCo3	1	20.0
Bicarbonate Alkalinity		2	**194**	mg/L as CaCo3	1	20.0
Total Alkalinity		2	**194**	mg/L as CaCo3	1	20.0

Sample: 345387 - MW-3

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	106459	Date Analyzed:	2013-11-01	Analyzed By:	AK
Prep Batch:	90156	Sample Preparation:	2013-11-01	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	U	2	<0.00100	mg/L	1	0.00100
Toluene	U	2	<0.00100	mg/L	1	0.00100
Ethylbenzene	Q#,U	2	<0.00100	mg/L	1	0.00100
Xylene	Q#,U	2	<0.00300	mg/L	1	0.00300

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0838	mg/L	1	0.100	84	70 - 130
4-Bromofluorobenzene (4-BFB)			0.0726	mg/L	1	0.100	73	70 - 130

Sample: 345387 - MW-3

Laboratory:	Lubbock				
Analysis:	Cations	Analytical Method:	S 6010C	Prep Method:	S 3005A
QC Batch:	106734	Date Analyzed:	2013-11-13	Analyzed By:	RR
Prep Batch:	90268	Sample Preparation:	2013-11-09	Prepared By:	PM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Dissolved Calcium		1	**132**	mg/L	10	1.00
Dissolved Potassium		1	<10.0	mg/L	10	1.00
Dissolved Magnesium		1	<10.0	mg/L	10	1.00

continued ...

sample 345387 continued ...

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Dissolved Sodium		1	**69.7**	mg/L	10	1.00

Sample: 345387 - MW-3

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	106754	Date Analyzed:	2013-11-13	Analyzed By:	RL
Prep Batch:	90403	Sample Preparation:	2013-11-13	Prepared By:	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	Q8	1	**244**	mg/L	10	2.50

Sample: 345387 - MW-3

Laboratory:	Lubbock				
Analysis:	Hardness	Analytical Method:	S 6010C	Prep Method:	N/A
QC Batch:	106734	Date Analyzed:	2013-11-13	Analyzed By:	RR
Prep Batch:	90268	Sample Preparation:	2013-11-06	Prepared By:	PM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Hardness (by ICP)			**345**	mg eq CaCO3/L	1	0.00

Sample: 345387 - MW-3

Laboratory:	Midland				
Analysis:	pH	Analytical Method:	SM 4500-H+	Prep Method:	N/A
QC Batch:	106465	Date Analyzed:	2013-10-31	Analyzed By:	AR
Prep Batch:	90131	Sample Preparation:	2013-10-31	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
pH		2	**7.50**	s.u.	1	0.00

Sample: 345387 - MW-3

Laboratory:	Lubbock				
Analysis:	SO4 (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	106754	Date Analyzed:	2013-11-13	Analyzed By:	RL
Prep Batch:	90403	Sample Preparation:	2013-11-13	Prepared By:	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Sulfate		1	**51.6**	mg/L	10	2.50

Sample: 345387 - MW-3

Laboratory:	Midland				
Analysis:	TDS	Analytical Method:	SM 2540C	Prep Method:	N/A
QC Batch:	106606	Date Analyzed:	2013-11-03	Analyzed By:	AR
Prep Batch:	90201	Sample Preparation:	2013-11-02	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		2	**834**	mg/L	2	2.50

Sample: 345388 - MW-4

Laboratory:	Midland				
Analysis:	Alkalinity	Analytical Method:	SM 2320B	Prep Method:	N/A
QC Batch:	106621	Date Analyzed:	2013-11-04	Analyzed By:	AR
Prep Batch:	90295	Sample Preparation:	2013-11-03	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Hydroxide Alkalinity	U	2	<20.0	mg/L as CaCo3	1	20.0
Carbonate Alkalinity	U	2	<20.0	mg/L as CaCo3	1	20.0
Bicarbonate Alkalinity		2	**199**	mg/L as CaCo3	1	20.0
Total Alkalinity		2	**199**	mg/L as CaCo3	1	20.0

Sample: 345388 - MW-4

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	106459	Date Analyzed:	2013-11-01	Analyzed By:	AK
Prep Batch:	90156	Sample Preparation:	2013-11-01	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	U	2	<0.00100	mg/L	1	0.00100
Toluene	U	2	<0.00100	mg/L	1	0.00100
Ethylbenzene	Q8,U	2	<0.00100	mg/L	1	0.00100
Xylene	Q8,U	2	<0.00300	mg/L	1	0.00300

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0843	mg/L	1	0.100	84	70 - 130
4-Bromofluorobenzene (4-BFB)			0.0736	mg/L	1	0.100	74	70 - 130

Sample: 345388 - MW-4

Laboratory:	Lubbock				
Analysis:	Cations	Analytical Method:	S 6010C	Prep Method:	S 3005A
QC Batch:	106734	Date Analyzed:	2013-11-13	Analyzed By:	RR
Prep Batch:	90268	Sample Preparation:	2013-11-09	Prepared By:	PM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Dissolved Calcium		1	**99.3**	mg/L	10	1.00
Dissolved Potassium		1	<10.0	mg/L	10	1.00
Dissolved Magnesium		1	<10.0	mg/L	10	1.00
Dissolved Sodium		1	**42.7**	mg/L	10	1.00

Sample: 345388 - MW-4

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	106754	Date Analyzed:	2013-11-13	Analyzed By:	RL
Prep Batch:	90403	Sample Preparation:	2013-11-13	Prepared By:	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	Q8	1	**108**	mg/L	5	2.50

Sample: 345388 - MW-4

Laboratory:	Lubbock				
Analysis:	Hardness	Analytical Method:	S 6010C	Prep Method:	N/A
QC Batch:	106734	Date Analyzed:	2013-11-13	Analyzed By:	RR
Prep Batch:	90268	Sample Preparation:	2013-11-06	Prepared By:	PM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Hardness (by ICP)			**257**	mg eq CaCO3/L	1	0.00

Sample: 345388 - MW-4

Laboratory:	Midland				
Analysis:	pH	Analytical Method:	SM 4500-H+	Prep Method:	N/A
QC Batch:	106465	Date Analyzed:	2013-10-31	Analyzed By:	AR
Prep Batch:	90131	Sample Preparation:	2013-10-31	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
pH		2	**7.36**	s.u.	1	0.00

Sample: 345388 - MW-4

Laboratory:	Lubbock				
Analysis:	SO4 (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	106754	Date Analyzed:	2013-11-13	Analyzed By:	RL
Prep Batch:	90403	Sample Preparation:	2013-11-13	Prepared By:	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Sulfate		1	**46.0**	mg/L	5	2.50

Sample: 345388 - MW-4

Laboratory:	Midland				
Analysis:	TDS	Analytical Method:	SM 2540C	Prep Method:	N/A
QC Batch:	106606	Date Analyzed:	2013-11-03	Analyzed By:	AR
Prep Batch:	90201	Sample Preparation:	2013-11-02	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		2	**608**	mg/L	1	2.50

Sample: 345389 - MW-5

Laboratory:	Midland				
Analysis:	Alkalinity	Analytical Method:	SM 2320B	Prep Method:	N/A
QC Batch:	106621	Date Analyzed:	2013-11-04	Analyzed By:	AR
Prep Batch:	90295	Sample Preparation:	2013-11-03	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Hydroxide Alkalinity	U	2	<20.0	mg/L as CaCo3	1	20.0
Carbonate Alkalinity	U	2	<20.0	mg/L as CaCo3	1	20.0
Bicarbonate Alkalinity		2	**183**	mg/L as CaCo3	1	20.0
Total Alkalinity		2	**183**	mg/L as CaCo3	1	20.0

Sample: 345389 - MW-5

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	106459	Date Analyzed:	2013-11-01	Analyzed By:	AK
Prep Batch:	90156	Sample Preparation:	2013-11-01	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	U	2	<0.00100	mg/L	1	0.00100
Toluene	U	2	<0.00100	mg/L	1	0.00100
Ethylbenzene	Q#,U	2	<0.00100	mg/L	1	0.00100
Xylene	Q#,U	2	<0.00300	mg/L	1	0.00300

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0833	mg/L	1	0.100	83	70 - 130
4-Bromofluorobenzene (4-BFB)			0.0742	mg/L	1	0.100	74	70 - 130

Sample: 345389 - MW-5

Laboratory:	Lubbock				
Analysis:	Cations	Analytical Method:	S 6010C	Prep Method:	S 3005A
QC Batch:	106734	Date Analyzed:	2013-11-13	Analyzed By:	RR
Prep Batch:	90268	Sample Preparation:	2013-11-09	Prepared By:	PM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Dissolved Calcium		1	**231**	mg/L	10	1.00
Dissolved Potassium		1	<10.0	mg/L	10	1.00
Dissolved Magnesium		1	**13.8**	mg/L	10	1.00

continued ...

sample 345389 continued ...

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Dissolved Sodium		1	**76.9**	mg/L	10	1.00

Sample: 345389 - MW-5

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	106754	Date Analyzed:	2013-11-13	Analyzed By:	RL
Prep Batch:	90403	Sample Preparation:	2013-11-13	Prepared By:	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	Q[1]	1	**439**	mg/L	50	2.50

Sample: 345389 - MW-5

Laboratory:	Lubbock				
Analysis:	Hardness	Analytical Method:	S 6010C	Prep Method:	N/A
QC Batch:	106734	Date Analyzed:	2013-11-13	Analyzed By:	RR
Prep Batch:	90268	Sample Preparation:	2013-11-06	Prepared By:	PM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Hardness (by ICP)			**634**	mg eq CaCO3/L	1	0.00

Sample: 345389 - MW-5

Laboratory:	Midland				
Analysis:	pH	Analytical Method:	SM 4500-H+	Prep Method:	N/A
QC Batch:	106465	Date Analyzed:	2013-10-31	Analyzed By:	AR
Prep Batch:	90131	Sample Preparation:	2013-10-31	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
pH		2	**7.17**	s.u.	1	0.00

Sample: 345389 - MW-5

Laboratory:	Lubbock				
Analysis:	SO4 (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	106867	Date Analyzed:	2013-11-15	Analyzed By:	RL
Prep Batch:	90490	Sample Preparation:	2013-11-15	Prepared By:	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Sulfate		1	**36.7**	mg/L	10	2.50

Sample: 345389 - MW-5

Laboratory:	Midland				
Analysis:	TDS	Analytical Method:	SM 2540C	Prep Method:	N/A
QC Batch:	106606	Date Analyzed:	2013-11-03	Analyzed By:	AR
Prep Batch:	90201	Sample Preparation:	2013-11-02	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		2	**1410**	mg/L	2	2.50

Sample: 345390 - MW-6

Laboratory:	Midland				
Analysis:	Alkalinity	Analytical Method:	SM 2320B	Prep Method:	N/A
QC Batch:	106621	Date Analyzed:	2013-11-04	Analyzed By:	AR
Prep Batch:	90295	Sample Preparation:	2013-11-03	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Hydroxide Alkalinity	U	2	<20.0	mg/L as CaCo3	1	20.0
Carbonate Alkalinity	U	2	<20.0	mg/L as CaCo3	1	20.0
Bicarbonate Alkalinity		2	**217**	mg/L as CaCo3	1	20.0
Total Alkalinity		2	**217**	mg/L as CaCo3	1	20.0

Sample: 345390 - MW-6

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	106459	Date Analyzed:	2013-11-01	Analyzed By:	AK
Prep Batch:	90156	Sample Preparation:	2013-11-01	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	U	2	<0.00100	mg/L	1	0.00100
Toluene	U	2	<0.00100	mg/L	1	0.00100
Ethylbenzene	Q#,U	2	<0.00100	mg/L	1	0.00100
Xylene	Q#,U	2	<0.00300	mg/L	1	0.00300

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0843	mg/L	1	0.100	84	70 - 130
4-Bromofluorobenzene (4-BFB)			0.0728	mg/L	1	0.100	73	70 - 130

Sample: 345390 - MW-6

Laboratory:	Lubbock				
Analysis:	Cations	Analytical Method:	S 6010C	Prep Method:	S 3005A
QC Batch:	106734	Date Analyzed:	2013-11-13	Analyzed By:	RR
Prep Batch:	90268	Sample Preparation:	2013-11-09	Prepared By:	PM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Dissolved Calcium		1	**20.5**	mg/L	10	1.00
Dissolved Potassium		1	**26.8**	mg/L	10	1.00
Dissolved Magnesium		1	<10.0	mg/L	10	1.00
Dissolved Sodium		1	**1250**	mg/L	10	1.00

Sample: 345390 - MW-6

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	106754	Date Analyzed:	2013-11-13	Analyzed By:	RL
Prep Batch:	90403	Sample Preparation:	2013-11-13	Prepared By:	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	Q#	1	**2280**	mg/L	100	2.50

Sample: 345390 - MW-6

Laboratory:	Lubbock				
Analysis:	Hardness	Analytical Method:	S 6010C	Prep Method:	N/A
QC Batch:	106734	Date Analyzed:	2013-11-13	Analyzed By:	RR
Prep Batch:	90268	Sample Preparation:	2013-11-06	Prepared By:	PM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Hardness (by ICP)			**62.0**	mg eq CaCO3/L	1	0.00

Sample: 345390 - MW-6

Laboratory:	Midland				
Analysis:	pH	Analytical Method:	SM 4500-H+	Prep Method:	N/A
QC Batch:	106465	Date Analyzed:	2013-10-31	Analyzed By:	AR
Prep Batch:	90131	Sample Preparation:	2013-10-31	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
pH		2	**8.16**	s.u.	1	0.00

Sample: 345390 - MW-6

Laboratory:	Lubbock				
Analysis:	SO4 (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	106867	Date Analyzed:	2013-11-15	Analyzed By:	RL
Prep Batch:	90490	Sample Preparation:	2013-11-15	Prepared By:	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Sulfate		1	**88.0**	mg/L	10	2.50

Sample: 345390 - MW-6

Laboratory:	Midland				
Analysis:	TDS	Analytical Method:	SM 2540C	Prep Method:	N/A
QC Batch:	106606	Date Analyzed:	2013-11-03	Analyzed By:	AR
Prep Batch:	90201	Sample Preparation:	2013-11-02	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		2	**3580**	mg/L	5	2.50

Method Blanks

Method Blank (1) QC Batch: 106459

QC Batch: 106459 | Date Analyzed: 2013-11-01 | Analyzed By: AK
Prep Batch: 90156 | QC Preparation: 2013-11-01 | Prepared By: AK

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		2	<0.000600	mg/L	0.001
Toluene		2	<0.000400	mg/L	0.001
Ethylbenzene		2	<0.000600	mg/L	0.001
Xylene		2	<0.00130	mg/L	0.003

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0881	mg/L	1	0.100	88	70 - 130
4-Bromofluorobenzene (4-BFB)			0.0780	mg/L	1	0.100	78	70 - 130

Method Blank (1) QC Batch: 106606

QC Batch: 106606 | Date Analyzed: 2013-11-03 | Analyzed By: AR
Prep Batch: 90201 | QC Preparation: 2013-11-02 | Prepared By: AR

Parameter	Flag	Cert	MDL Result	Units	RL
Total Dissolved Solids		2	<2.50	mg/L	2.5

Method Blank (1) QC Batch: 106621

QC Batch: 106621 | Date Analyzed: 2013-11-04 | Analyzed By: AR
Prep Batch: 90295 | QC Preparation: 2013-11-03 | Prepared By: AR

Parameter	Flag	Cert	MDL Result	Units	RL
Hydroxide Alkalinity		2	<20.0	mg/L as CaCo3	20
Carbonate Alkalinity		2	<20.0	mg/L as CaCo3	20
Bicarbonate Alkalinity		2	<20.0	mg/L as CaCo3	20

continued ...

method blank continued ...

Parameter	Flag	Cert	MDL Result	Units	RL
Total Alkalinity		2	<20.0	mg/L as CaCo3	20

Method Blank (1) QC Batch: 106707

QC Batch: 106707 Date Analyzed: 2013-11-08 Analyzed By: RL
Prep Batch: 90367 QC Preparation: 2013-11-08 Prepared By: RL

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride		1	<0.254	mg/L	2.5

Method Blank (1) QC Batch: 106707

QC Batch: 106707 Date Analyzed: 2013-11-08 Analyzed By: RL
Prep Batch: 90367 QC Preparation: 2013-11-08 Prepared By: RL

Parameter	Flag	Cert	MDL Result	Units	RL
Sulfate		1	<0.132	mg/L	2.5

Method Blank (1) QC Batch: 106734

QC Batch: 106734 Date Analyzed: 2013-11-13 Analyzed By: RR
Prep Batch: 90268 QC Preparation: 2013-11-06 Prepared By: PM

Parameter	Flag	Cert	MDL Result	Units	RL
Dissolved Calcium		1	<0.0441	mg/L	1
Dissolved Potassium		1	<0.0443	mg/L	1
Dissolved Magnesium		1	<0.0296	mg/L	1
Dissolved Sodium		1	<0.172	mg/L	1

Method Blank (1) QC Batch: 106754

QC Batch: 106754 | Date Analyzed: 2013-11-13 | Analyzed By: RL
Prep Batch: 90403 | QC Preparation: 2013-11-13 | Prepared By: RL

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride		1	<0.254	mg/L	2.5

Method Blank (1) QC Batch: 106754

QC Batch: 106754 | Date Analyzed: 2013-11-13 | Analyzed By: RL
Prep Batch: 90403 | QC Preparation: 2013-11-13 | Prepared By: RL

Parameter	Flag	Cert	MDL Result	Units	RL
Sulfate		1	<0.132	mg/L	2.5

Method Blank (1) QC Batch: 106867

QC Batch: 106867 | Date Analyzed: 2013-11-15 | Analyzed By: RL
Prep Batch: 90490 | QC Preparation: 2013-11-15 | Prepared By: RL

Parameter	Flag	Cert	MDL Result	Units	RL
Sulfate		1	<0.132	mg/L	2.5

Duplicates (1) Duplicated Sample: 345382

QC Batch: 106465 | Date Analyzed: 2013-10-31 | Analyzed By: AR
Prep Batch: 90131 | QC Preparation: 2013-10-31 | Prepared By: AR

Param		Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
pH	2	6.38	6.35	s.u.	1	0	10

Duplicates (1) Duplicated Sample: 345390

QC Batch: 106606 | Date Analyzed: 2013-11-03 | Analyzed By: AR
Prep Batch: 90201 | QC Preparation: 2013-11-02 | Prepared By: AR

Param		Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
Total Dissolved Solids	2	3610	3580	mg/L	5	1	10

Duplicates (1) Duplicated Sample: 345382

QC Batch: 106621 | Date Analyzed: 2013-11-04 | Analyzed By: AR
Prep Batch: 90295 | QC Preparation: 2013-11-03 | Prepared By: AR

Param		Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
Hydroxide Alkalinity	2	<20.0	<20.0	mg/L as CaCo3	1	0	20
Carbonate Alkalinity	2	<20.0	<20.0	mg/L as CaCo3	1	0	20
Bicarbonate Alkalinity	2	184	175	mg/L as CaCo3	1	5	20
Total Alkalinity	2	184	175	mg/L as CaCo3	1	5	20

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 106459 | Date Analyzed: 2013-11-01 | Analyzed By: AK
Prep Batch: 90156 | QC Preparation: 2013-11-01 | Prepared By: AK

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		2	0.0900	mg/L	1	0.100	<0.000600	90	70 - 130
Toluene		2	0.0892	mg/L	1	0.100	<0.000400	89	70 - 130
Ethylbenzene		2	0.0872	mg/L	1	0.100	<0.000600	87	70 - 130
Xylene		2	0.266	mg/L	1	0.300	<0.00130	89	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		2	0.0895	mg/L	1	0.100	<0.000600	90	70 - 130	1	20
Toluene		2	0.0892	mg/L	1	0.100	<0.000400	89	70 - 130	0	20
Ethylbenzene		2	0.0868	mg/L	1	0.100	<0.000600	87	70 - 130	0	20
Xylene		2	0.265	mg/L	1	0.300	<0.00130	88	70 - 130	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.0899	0.0914	mg/L	1	0.100	90	91	70 - 130
4-Bromofluorobenzene (4-BFB)	0.0936	0.0945	mg/L	1	0.100	94	94	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 106606 | Date Analyzed: 2013-11-03 | Analyzed By: AR
Prep Batch: 90201 | QC Preparation: 2013-11-02 | Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Total Dissolved Solids		2	1050	mg/L	1	1000	<2.50	105	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

continued ...

control spikes continued ...

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Total Dissolved Solids		2	960	mg/L	1	1000	<2.50	96	90 - 110	9	10

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: 106707 | Date Analyzed: 2013-11-08 | Analyzed By: RL
Prep Batch: 90367 | QC Preparation: 2013-11-08 | Prepared By: RL

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	25.3	mg/L	1	25.0	<0.254	101	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		1	25.2	mg/L	1	25.0	<0.254	101	90 - 110	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: 106707 | Date Analyzed: 2013-11-08 | Analyzed By: RL
Prep Batch: 90367 | QC Preparation: 2013-11-08 | Prepared By: RL

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate		1	26.4	mg/L	1	25.0	<0.132	106	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Sulfate		1	25.6	mg/L	1	25.0	<0.132	102	90 - 110	3	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: 106734 | Date Analyzed: 2013-11-13 | Analyzed By: RR
Prep Batch: 90268 | QC Preparation: 2013-11-06 | Prepared By: PM

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Dissolved Calcium		1	54.6	mg/L	1	52.5	<0.0441	104	85 - 115
Dissolved Potassium		1	52.3	mg/L	1	52.5	<0.0443	100	85 - 115
Dissolved Magnesium		1	53.7	mg/L	1	52.5	<0.0296	102	85 - 115
Dissolved Sodium		1	53.6	mg/L	1	52.5	<0.172	102	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Dissolved Calcium		1	55.6	mg/L	1	52.5	<0.0441	106	85 - 115	2	20
Dissolved Potassium		1	53.3	mg/L	1	52.5	<0.0443	102	85 - 115	2	20
Dissolved Magnesium		1	54.7	mg/L	1	52.5	<0.0296	104	85 - 115	2	20
Dissolved Sodium		1	54.3	mg/L	1	52.5	<0.172	103	85 - 115	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: 106754 | Date Analyzed: 2013-11-13 | Analyzed By: RL
Prep Batch: 90403 | QC Preparation: 2013-11-13 | Prepared By: RL

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	25.6	mg/L	1	25.0	<0.254	102	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		1	25.8	mg/L	1	25.0	<0.254	103	90 - 110	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: 106754 | Date Analyzed: 2013-11-13 | Analyzed By: RL
Prep Batch: 90403 | QC Preparation: 2013-11-13 | Prepared By: RL

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate		1	26.8	mg/L	1	25.0	<0.132	107	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Sulfate		1	26.9	mg/L	1	25.0	<0.132	108	90 - 110	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: 106867 | Date Analyzed: 2013-11-15 | Analyzed By: RL
Prep Batch: 90490 | QC Preparation: 2013-11-15 | Prepared By: RL

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate		1	27.1	mg/L	1	25.0	<0.132	108	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Sulfate		1	27.0	mg/L	1	25.0	<0.132	108	90 - 110	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 345371

QC Batch: 106459 | Date Analyzed: 2013-11-01 | Analyzed By: AK
Prep Batch: 90156 | QC Preparation: 2013-11-01 | Prepared By: AK

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		2	0.0833	mg/L	1	0.100	<0.000600	83	70 - 130
Toluene		2	0.0783	mg/L	1	0.100	<0.000400	78	70 - 130
Ethylbenzene	Q-	Q-	2	0.0693	mg/L	1	0.100	<0.000600	69	70 - 130
Xylene	Q-	Q-	2	0.207	mg/L	1	0.300	<0.00130	69	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

continued ...

matrix spikes continued ...

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		2	0.0836	mg/L	1	0.100	<0.000600	84	70 - 130	0	20
Toluene		2	0.0793	mg/L	1	0.100	<0.000400	79	70 - 130	1	20
Ethylbenzene	Q3	Q3 2	0.0696	mg/L	1	0.100	<0.000600	70	70 - 130	0	20
Xylene		2	0.211	mg/L	1	0.300	<0.00130	70	70 - 130	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.0833	0.0825	mg/L	1	0.1	83	82	70 - 130
4-Bromofluorobenzene (4-BFB)	0.0863	0.0870	mg/L	1	0.1	86	87	70 - 130

Matrix Spike (MS-1) Spiked Sample: 346046

QC Batch: 106707 | Date Analyzed: 2013-11-08 | Analyzed By: RL
Prep Batch: 90367 | QC Preparation: 2013-11-08 | Prepared By: RL

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	1860	mg/L	50	1250	428	114	80 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		1	1860	mg/L	50	1250	428	114	80 - 120	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 346046

QC Batch: 106707 | Date Analyzed: 2013-11-08 | Analyzed By: RL
Prep Batch: 90367 | QC Preparation: 2013-11-08 | Prepared By: RL

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate		1	1530	mg/L	50	1250	138	111	80 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Sulfate		1	1530	mg/L	50	1250	138	111	80 - 120	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 345371

QC Batch: 106734 | Date Analyzed: 2013-11-13 | Analyzed By: RR
Prep Batch: 90268 | QC Preparation: 2013-11-06 | Prepared By: PM

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Dissolved Calcium		1	6650	mg/L	1	500	6210	88	75 - 125
Dissolved Potassium		1	664	mg/L	1	500	147	103	75 - 125
Dissolved Magnesium		1	3470	mg/L	1	500	3000	94	75 - 125
Dissolved Sodium		1	26800	mg/L	1	500	26300	100	75 - 125

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Dissolved Calcium		1	6700	mg/L	1	500	6210	98	75 - 125	1	20
Dissolved Potassium		1	640	mg/L	1	500	147	99	75 - 125	4	20
Dissolved Magnesium		1	3390	mg/L	1	500	3000	78	75 - 125	2	20
Dissolved Sodium		1	26800	mg/L	1	500	26300	100	75 - 125	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 345393

QC Batch: 106754 | Date Analyzed: 2013-11-13 | Analyzed By: RL
Prep Batch: 90403 | QC Preparation: 2013-11-13 | Prepared By: RL

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	Q*	Q*	5250	mg/L	100	2500	2230	121	80 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	Q*	Q*	5270	mg/L	100	2500	2230	122	80 - 120	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 345393

QC Batch: 106754 | Date Analyzed: 2013-11-13 | Analyzed By: RL
Prep Batch: 90403 | QC Preparation: 2013-11-13 | Prepared By: RL

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate		1	2860	mg/L	100	2500	47.4	112	80 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Sulfate		1	2850	mg/L	100	2500	47.4	112	80 - 120	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 345395

QC Batch: 106867 | Date Analyzed: 2013-11-15 | Analyzed By: RL
Prep Batch: 90490 | QC Preparation: 2013-11-15 | Prepared By: RL

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate		1	141000	mg/L	5000	125000	1056	112	80 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Sulfate		1	139000	mg/L	5000	125000	1056	110	80 - 120	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Calibration Standards

Standard (CCV-1)

QC Batch: 106459 | Date Analyzed: 2013-11-01 | Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		2	mg/L	0.100	0.0895	90	80 - 120	2013-11-01
Toluene		2	mg/L	0.100	0.0887	89	80 - 120	2013-11-01
Ethylbenzene		2	mg/L	0.100	0.0871	87	80 - 120	2013-11-01
Xylene		2	mg/L	0.300	0.264	88	80 - 120	2013-11-01

Standard (CCV-2)

QC Batch: 106459 | Date Analyzed: 2013-11-01 | Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		2	mg/L	0.100	0.0855	86	80 - 120	2013-11-01
Toluene		2	mg/L	0.100	0.0853	85	80 - 120	2013-11-01
Ethylbenzene		2	mg/L	0.100	0.0851	85	80 - 120	2013-11-01
Xylene		2	mg/L	0.300	0.256	85	80 - 120	2013-11-01

Standard (CCV-3)

QC Batch: 106459 | Date Analyzed: 2013-11-01 | Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		2	mg/L	0.100	0.0898	90	80 - 120	2013-11-01
Toluene		2	mg/L	0.100	0.0877	88	80 - 120	2013-11-01
Ethylbenzene		2	mg/L	0.100	0.0871	87	80 - 120	2013-11-01
Xylene		2	mg/L	0.300	0.263	88	80 - 120	2013-11-01

Standard (CCV-4)

QC Batch: 106459 | Date Analyzed: 2013-11-01 | Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		2	mg/L	0.100	0.0905	90	80 - 120	2013-11-01
Toluene		2	mg/L	0.100	0.0889	89	80 - 120	2013-11-01
Ethylbenzene		2	mg/L	0.100	0.0872	87	80 - 120	2013-11-01
Xylene		2	mg/L	0.300	0.263	88	80 - 120	2013-11-01

Standard (ICV-1)

QC Batch: 106465 | Date Analyzed: 2013-10-31 | Analyzed By: AR

Param	Flag	Cert	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
pH		2	s.u.	7.00	7.04	100	98 - 102	2013-10-31

Standard (CCV-1)

QC Batch: 106465 | Date Analyzed: 2013-10-31 | Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
pH		2	s.u.	7.00	7.09	101	98 - 102	2013-10-31

Standard (ICV-1)

QC Batch: 106621 | Date Analyzed: 2013-11-04 | Analyzed By: AR

Param	Flag	Cert	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Hydroxide Alkalinity		2	mg/L as CaCo3	0.00	21.0		-	2013-11-04
Carbonate Alkalinity		2	mg/L as CaCo3	0.00	210		-	2013-11-04
Bicarbonate Alkalinity		2	mg/L as CaCo3	0.00	<20.0		-	2013-11-04
Total Alkalinity		2	mg/L as CaCo3	250	231	92	90 - 110	2013-11-04

Standard (CCV-1)

QC Batch: 106621 Date Analyzed: 2013-11-04 Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Hydroxide Alkalinity		2	mg/L as CaCo3	0.00	32.0		-	2013-11-04
Carbonate Alkalinity		2	mg/L as CaCo3	0.00	198		-	2013-11-04
Bicarbonate Alkalinity		2	mg/L as CaCo3	0.00	<20.0		-	2013-11-04
Total Alkalinity		2	mg/L as CaCo3	250	230	92	90 - 110	2013-11-04

Standard (CCV-1)

QC Batch: 106707 Date Analyzed: 2013-11-08 Analyzed By: RL

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1	mg/L	25.0	25.3	101	90 - 110	2013-11-08

Standard (CCV-1)

QC Batch: 106707 Date Analyzed: 2013-11-08 Analyzed By: RL

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Sulfate		1	mg/L	25.0	26.3	105	90 - 110	2013-11-08

Standard (CCV-2)

QC Batch: 106707 Date Analyzed: 2013-11-08 Analyzed By: RL

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1	mg/L	25.0	25.2	101	90 - 110	2013-11-08

Standard (CCV-2)

QC Batch: 106707 | Date Analyzed: 2013-11-08 | Analyzed By: RL

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Sulfate		1	mg/L	25.0	26.1	104	90 - 110	2013-11-08

Standard (ICV-1)

QC Batch: 106734 | Date Analyzed: 2013-11-13 | Analyzed By: RR

Param	Flag	Cert	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dissolved Calcium		1	mg/L	51.0	52.9	104	90 - 110	2013-11-13
Dissolved Potassium		1	mg/L	55.0	56.3	102	90 - 110	2013-11-13
Dissolved Magnesium		1	mg/L	51.0	52.7	103	90 - 110	2013-11-13
Dissolved Sodium		1	mg/L	51.0	50.8	100	90 - 110	2013-11-13

Standard (CCV-1)

QC Batch: 106734 | Date Analyzed: 2013-11-13 | Analyzed By: RR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dissolved Calcium		1	mg/L	51.0	51.6	101	90 - 110	2013-11-13
Dissolved Potassium		1	mg/L	55.0	54.8	100	90 - 110	2013-11-13
Dissolved Magnesium		1	mg/L	51.0	51.1	100	90 - 110	2013-11-13
Dissolved Sodium		1	mg/L	51.0	50.8	100	90 - 110	2013-11-13

Standard (CCV-1)

QC Batch: 106754 | Date Analyzed: 2013-11-13 | Analyzed By: RL

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1	mg/L	25.0	25.8	103	90 - 110	2013-11-13

Standard (CCV-1)

QC Batch: 106754 Date Analyzed: 2013-11-13 Analyzed By: RL

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Sulfate		1	mg/L	25.0	27.0	108	90 - 110	2013-11-13

Standard (CCV-2)

QC Batch: 106754 Date Analyzed: 2013-11-13 Analyzed By: RL

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1	mg/L	25.0	26.0	104	90 - 110	2013-11-13

Standard (CCV-2)

QC Batch: 106754 Date Analyzed: 2013-11-13 Analyzed By: RL

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Sulfate		1	mg/L	25.0	27.3	109	90 - 110	2013-11-13

Standard (CCV-1)

QC Batch: 106867 Date Analyzed: 2013-11-15 Analyzed By: RL

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Sulfate		1	mg/L	25.0	27.2	109	90 - 110	2013-11-15

Standard (CCV-2)

QC Batch: 106867 Date Analyzed: 2013-11-15 Analyzed By: RL

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Sulfate		1	mg/L	25.0	27.1	108	90 - 110	2013-11-15

Appendix

Report Definitions

Name	Definition
MDL	Method Detection Limit
MQL	Minimum Quantitation Limit
SDL	Sample Detection Limit

Laboratory Certifications

C	Certifying Authority	Certification Number	Laboratory Location
-	NCTRCA	WFWB384444Y0909	TraceAnalysis
-	DBE	VN 20657	TraceAnalysis
-	HUB	1752439743100-86536	TraceAnalysis
-	WBE	237019	TraceAnalysis
1	NELAP	T104704219-13-9	Lubbock
2	NELAP	T104704392-13-7	Midland

Standard Flags

F	Description
B	Analyte detected in the corresponding method blank above the method detection limit
H	Analyzed out of hold time
J	Estimated concentration
Jb	The analyte is positively identified and the value is approximated between the SDL and MQL. Sample contains less then ten times the concentration found in the method blank. The result should be considered non-detect to the SDL.
Je	Estimated concentration exceeding calibration range.
MI1	Split peak or shoulder peak
MI2	Instrument software did not integrate
MI3	Instrument software misidentified the peak
MI4	Instrument software integrated improperly
MI5	Baseline correction
Qc	Calibration check outside of laboratory limits.
Qr	RPD outside of laboratory limits
Qs	Spike recovery outside of laboratory limits.
Qsr	Surrogate recovery outside of laboratory limits.
U	The analyte is not detected above the SDL

Attachments

The scanned attachments will follow this page.
Please note, each attachment may consist of more than one page.

13103135

Analysis Request of Chain of Custody Record

PAGE: OF:

TETRA TECH
1910 N. Big Spring St.
Midland, Texas 79705
(432) 682-4559 • Fax (432) 682-3946

CLIENT NAME: Celero Energy
SITE MANAGER: Greg Pope
PROJECT NO.: 114-640630
PROJECT NAME: Rock Queen Tract #13

LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015 MOD. TX1005 (Ext. to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
345385	10/3/13	1310	W		X	MW-1	5	N	X		X		X											X				X
386		1220				MW-2																						
387		1330				MW-3																						
388		1345				MW-4																						
389		1255				MW-5																						
390		1235				MW-6																						

ANALYSIS REQUEST (Circle or Specify Method No.)

RELINQUISHED BY: (Signature) Date: 10/3/13 Time: 1229
RECEIVED BY: (Signature) Date: 10/3/13 Time: 12:29
SAMPLED BY: (Print & Initial) CFRD Date: Time:

RELINQUISHED BY: (Signature) Date: Time:
RECEIVED BY: (Signature) Date: Time:
SAMPLE SHIPPED BY: (Circle) FEDEX BUS HAND DELIVERED UPS AIRBILL #: 801530293

RELINQUISHED BY: (Signature) Date: Time:
RECEIVED BY: (Signature) Date: Time:
OTHER:

RECEIVING LABORATORY:
ADDRESS:
CITY: STATE: ZIP:
CONTACT: PHONE:
RECEIVED BY: (Signature) TA
DATE: 10/4/13 TIME: 9:40
TETRA TECH CONTACT PERSON:
Results by:
RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: 1.8° IR3 3.2/3.1
REMARKS: Midland BTEX TDS/all pH Lubbock - cations/anions KJ

Please fill out all copies - Laboratory retains Yellow copy - Return Orginal copy to Tetra Tech - Project Manager retains Pink copy - Accounting receives Gold copy.

Cation-Anion Balance Sheet

DATE: 11/15/2013

Sample #	Calcium ppm	Magnesium ppm	Sodium ppm	Potassium ppm	Alkalinity ppm	Sulfate ppm	Chloride ppm	Nitrate-N ppm	Fluoride ppm	Bromide ppm	TDS ppm	EC µMHOs/cm
345385	122	2.93	61.5	5.2	214.00	52.4	76				942	
345386	1150	174	2550	26.2	132.00		8300				17200	
345387	132	3.77	69.7	3.54	194.00	51.6	244				834	
345388	99.3	2.18	42.7	1.87	199.00	46	108				608	
345389	231	13.8	76.9	6.91	183.00		439				1410	
345390	20.5	2.66	1250	26.8	217.00		2280				3580	

Sample #	Calcium in meq/L	Magnesium in meq/L	Sodium in meq/L	Potassium in meq/L	Alkalinity in meq/L	Sulfate in meq/L	Chloride in meq/L	Nitrate-N in meq/L	Fluoride in meq/L	Bromide in meq/L	**Total Cations In meq/L**	**Total Anions in meq/L**	**% Difference***
345385	6.09	0.24	2.68	0.13	4.28	1.09	2.14	0.00	0.00	0.00	9.14	7.51	9.741998544
345386	57.39	14.32	110.93	0.67	2.64	0.00	234.14	0.00	0.00	0.00	183.30	236.78	12.7318923
345387	6.59	0.31	3.03	0.09	3.88	1.07	6.88	0.00	0.00	0.00	10.02	11.84	8.317738659
345388	4.96	0.18	1.86	0.05	3.98	0.96	3.05	0.00	0.00	0.00	7.04	7.98	6.28756636
345389	11.53	1.14	3.35	0.18	3.66	0.00	12.38	0.00	0.00	0.00	16.18	16.04	0.435078784
345390	1.02	0.22	54.38	0.69	4.34	0.00	64.32	0.00	0.00	0.00	56.30	68.66	9.888202133

	EC/Cation	EC/Anion				
345385	913.71757	751.4928	range	0	to	0
345386	18329.8656	23678.3	range	0	to	0
345387	1001.95365	1183.7552	range	0	to	0
345388	703.97468	798.44	range	0	to	0
345389	1618.44098	1604.419	range	0	to	0
345390	5630.23854	6865.88	range	0	to	0

TDS/EC	TDS/Cat		TDS/Anion	
#DIV/0!	1.03		1.25	needs to be 0.55-0.77
#DIV/0!	0.94		0.73	needs to be 0.55-0.77
#DIV/0!	0.83		0.70	needs to be 0.55-0.77
#DIV/0!	0.86		0.76	needs to be 0.55-0.77
#DIV/0!	0.87		0.88	needs to be 0.55-0.77
#DIV/0!	0.64		0.52	needs to be 0.55-0.77