1R – 1595

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 11 Tank Battery, Located in Unit Letter G, Section 26, Township 13 South, Range 31 East, Chaves County, New Mexico (NMOCD 1RP#1595).

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 11 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 20, 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 11 Tank Battery pit was dewatered and the residual sludge, tank bottom materials, and liner were removed in September 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 960 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.

Tetra Tech
1910 North Big Spring, Midland,TX 79705
Tel 432.682.4559 Fax 432.682.3946 www.tetratech.com

On October 12, 2009, a report entitled *Assessment and Closure Report for the Pit located at the Rock Queen Unit Track 11 Tank Battery* was submitted to the NMOCD. The report detailed the closure of the former pit at the facility.

Groundwater Investigation

Between May 2007 and December 2010, Celero installed seven 2-inch monitor wells (MW-1 through MW-7) and one 5-inch recovery well (RW-1) to assess the groundwater quality at the Site. The lithology at the Site was relatively consistent with sandy limestone encountered to approximately 15 to 20 feet below ground surface (bgs) and very fine grain sand extending to approximately 140 to 155 feet bgs. From approximately 140 to 155 feet to the terminus of the borings (approximately 160 to 170 feet) the soils consisted of gray to red clay.

During the investigation, groundwater was encountered at depths of approximately 135 to 140 feet bgs. Monitor Well MW-1 was drilled into the surrounding underlying clay to 160 feet bgs and installed with 50 feet of 0.02 inch slotted screen. The remaining monitor wells were drilled to depths of 160 to 170 feet bgs and installed with 30 feet of 0.02 inch slotted screen. Recovery well RW-1 was drilled to a depth of 160 feet and installed with 30 feet of 0.035 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 constituent of concern detected in the groundwater above New Mexico Water Quality Control Commission (NMWQCC) standards was chlorides. 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 May 25, 2007, initial sampling began at the site. During 2010, additional monitor wells were installed and quarterly sampling was 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 the sampling events with a hydraulic gradient to the southeast.

Historically, each of the wells has been sampled for BTEX utilizing Method SW8021B, chlorides and sulfates utilizing Method E 300.0, total dissolved solids (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. All water samples collected and analyzed were below the NMWQCC standard of 0.01 milligrams per liter (mg/L) of benzene. Chlorides for the sampling period ranged from 391 mg/L in monitor well MW-6 on October 25, 2012 to 174,000 mg/L in monitor well MW-1 on April 11, 2012. All the monitor wells during the sampling events exceeded the NMWQCC standard of 250 mg/L chlorides.

2013 GROUNDWATER SAMPLING RESULTS

Tetra Tech, Inc. (Tetra Tech) was onsite January 28, April 22, July 25, and October 30, 2013 to gauge all monitor/recovery 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 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 25, July 25, and October 30, 2013, 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 in Midland, Texas. All samples collected and analyzed were below the NMWQCC standard of 0.01 mg/L of benzene. Chlorides for the sampling period ranged from 183 mg/L in MW-6 on October 30, 2013 to 70,400 mg/L in MW-5 on January 30, 2013. All monitor wells exceeded the NMWQCC standard of 250 mg/L chlorides throughout the year with the exception of monitor well MW-6 on October 30, 2013. 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 purging activities, it was noted that all six monitor wells and one recovery well did not pump dry.

CONCLUSIONS

1. Sampling occurred on January 30, April 25, July 25, 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.

TETRA TECH

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

3. All wells tested below the NMQQCC standards of 0.01 mg/L for benzene.

4. Chloride concentrations exceed the NMWQCC standards of 250 mg/L in all monitor wells with the exception of monitor well MW-6 on October 30, 2013. The chloride concentrations at the site range from 183 mg/L in monitor well MW-6 on October 30, 2013 to 70,400 mg/L in monitor well MW-5 on January 30, 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.

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 additional remediation on the site will be based on the results of the testing of the underlying groundwater.

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

DELORME

Topo USA® 8

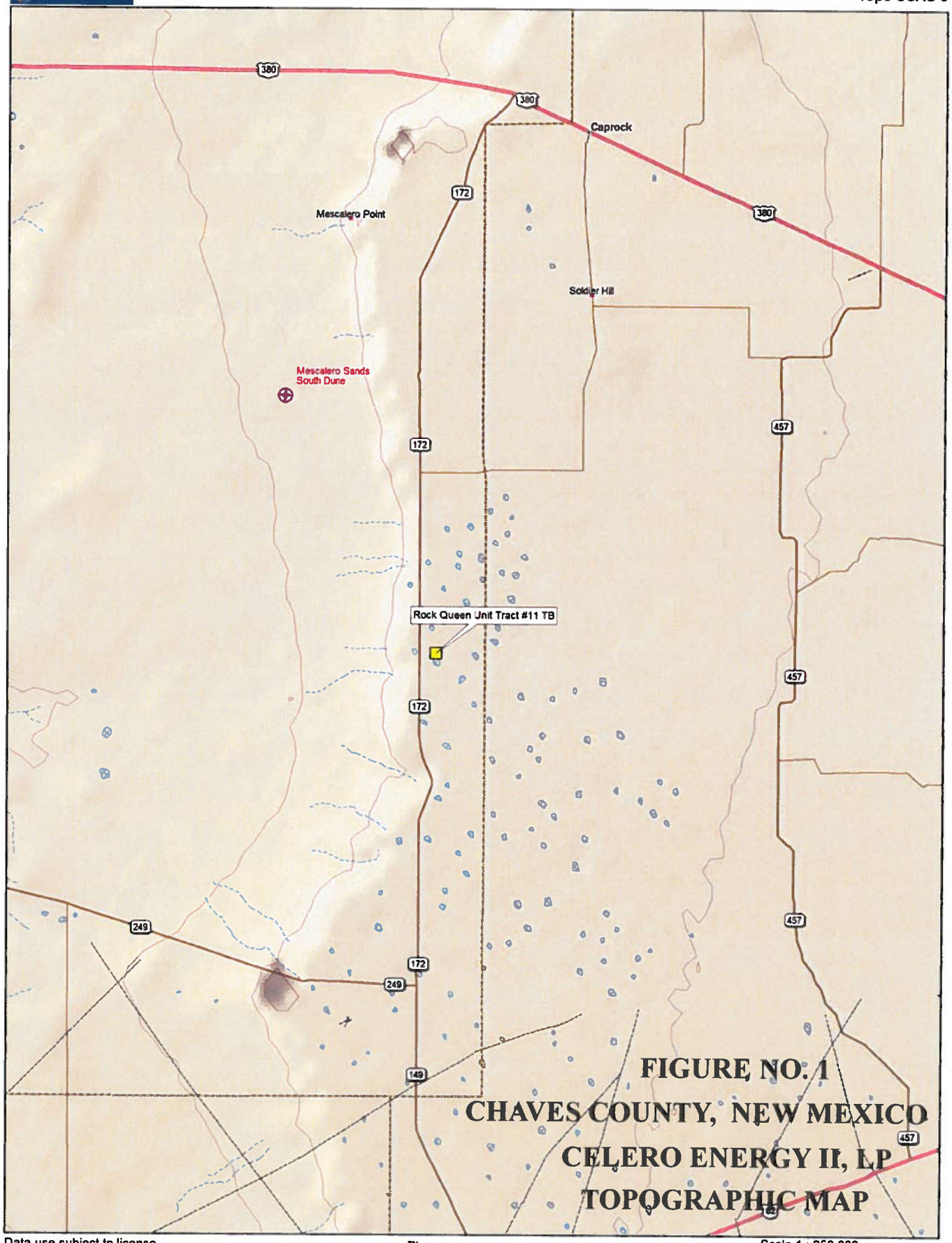


FIGURE NO. 1

CHAVES COUNTY, NEW MEXICO

CELERO ENERGY II, LP

TOPOGRAPHIC MAP

TN

MN (7.7°E)

Scale 1 : 250,000

1" = 3.95 mi

Data Zoom 9-7

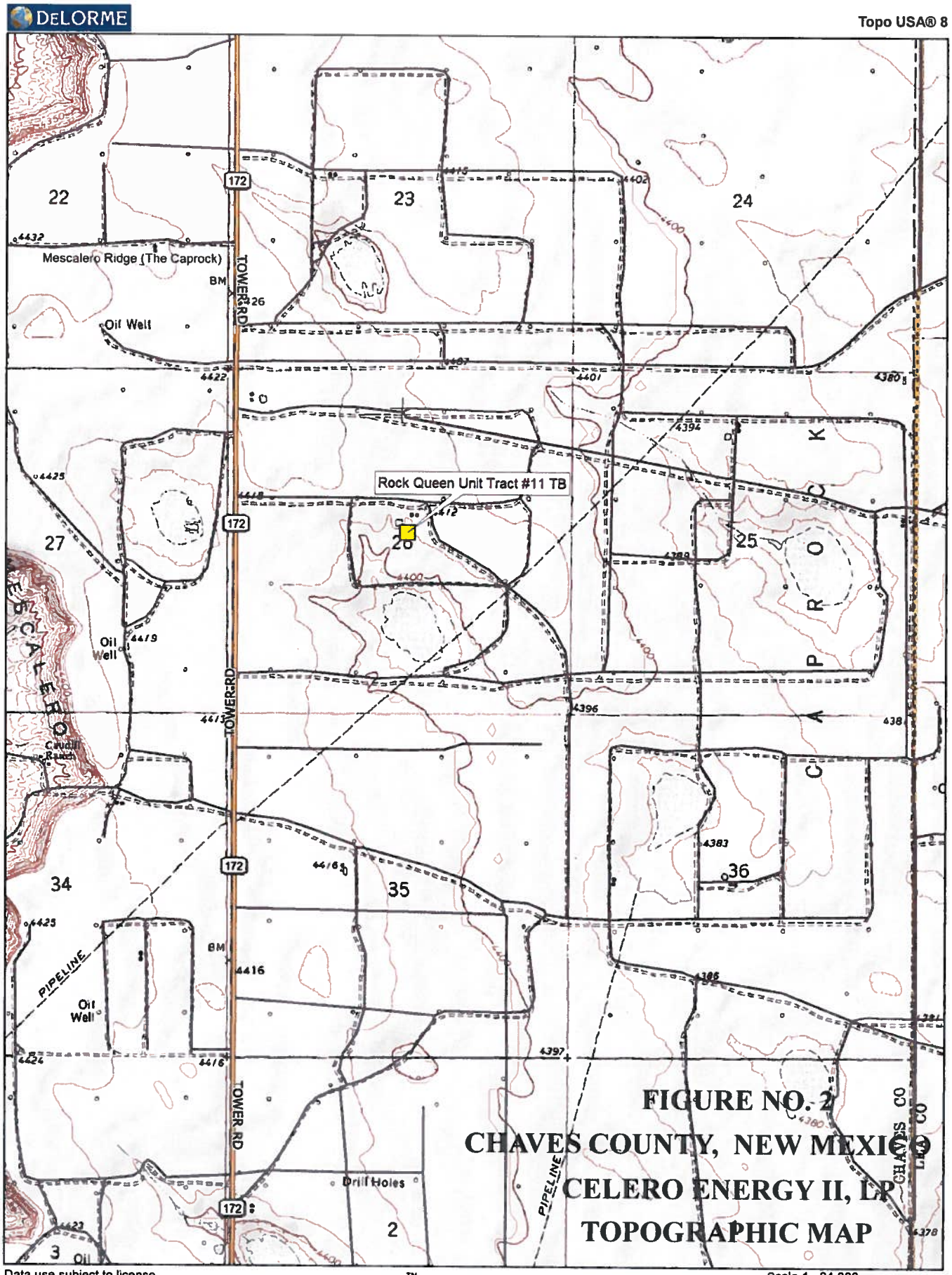


FIGURE NO. 2

CHAVES COUNTY, NEW MEXICO

CELERO ENERGY II, LP

TOPOGRAPHIC MAP

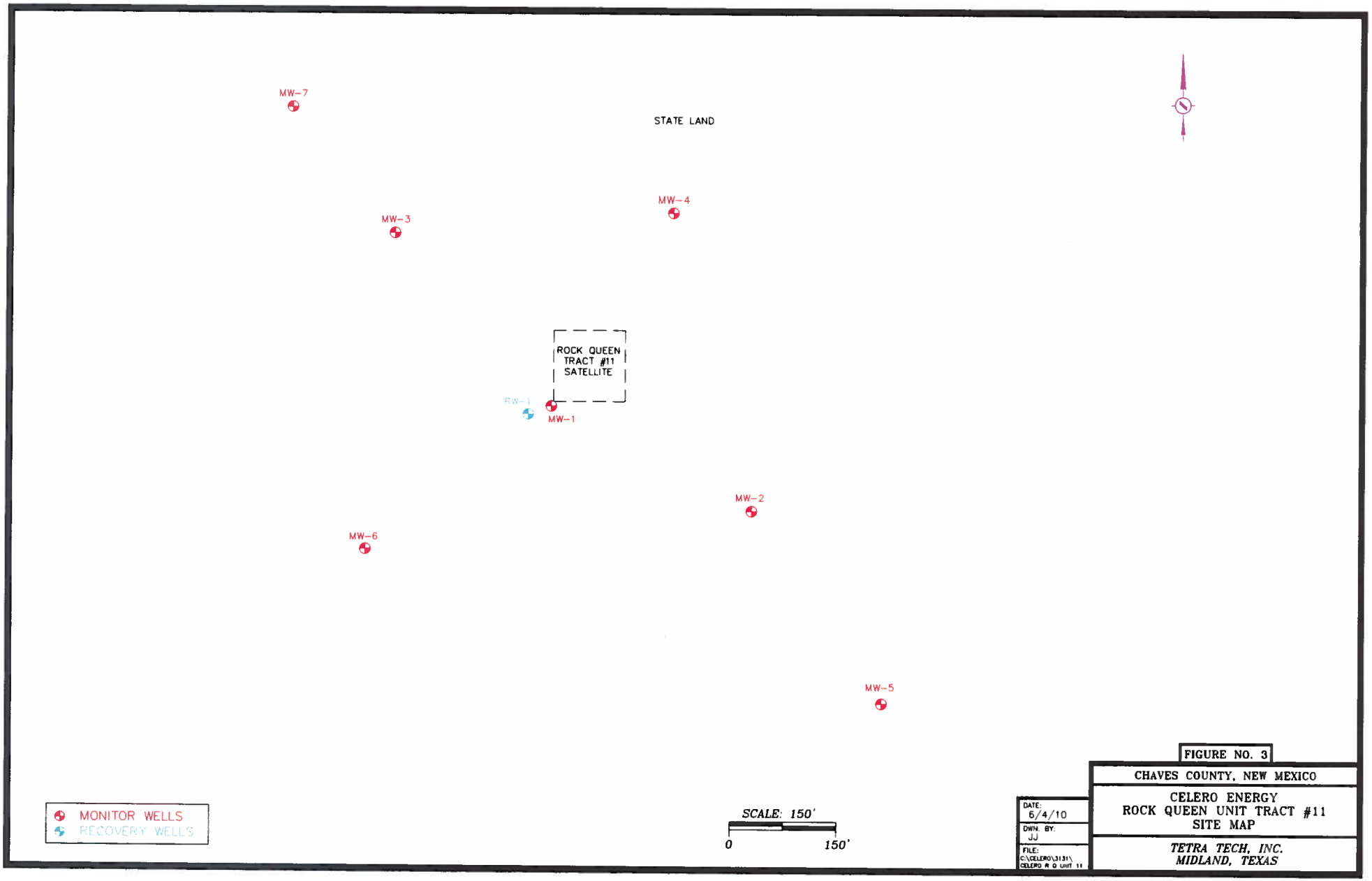


FIGURE NO. 3

CHAVES COUNTY, NEW MEXICO

CELERO ENERGY
ROCK QUEEN UNIT TRACT #11
SITE MAP

TETRA TECH, INC.
MIDLAND, TEXAS

DATE: 6/4/10
DWN. BY: JJ
FILE: C:\CELERO\3131\CELERO R Q UNIT 11

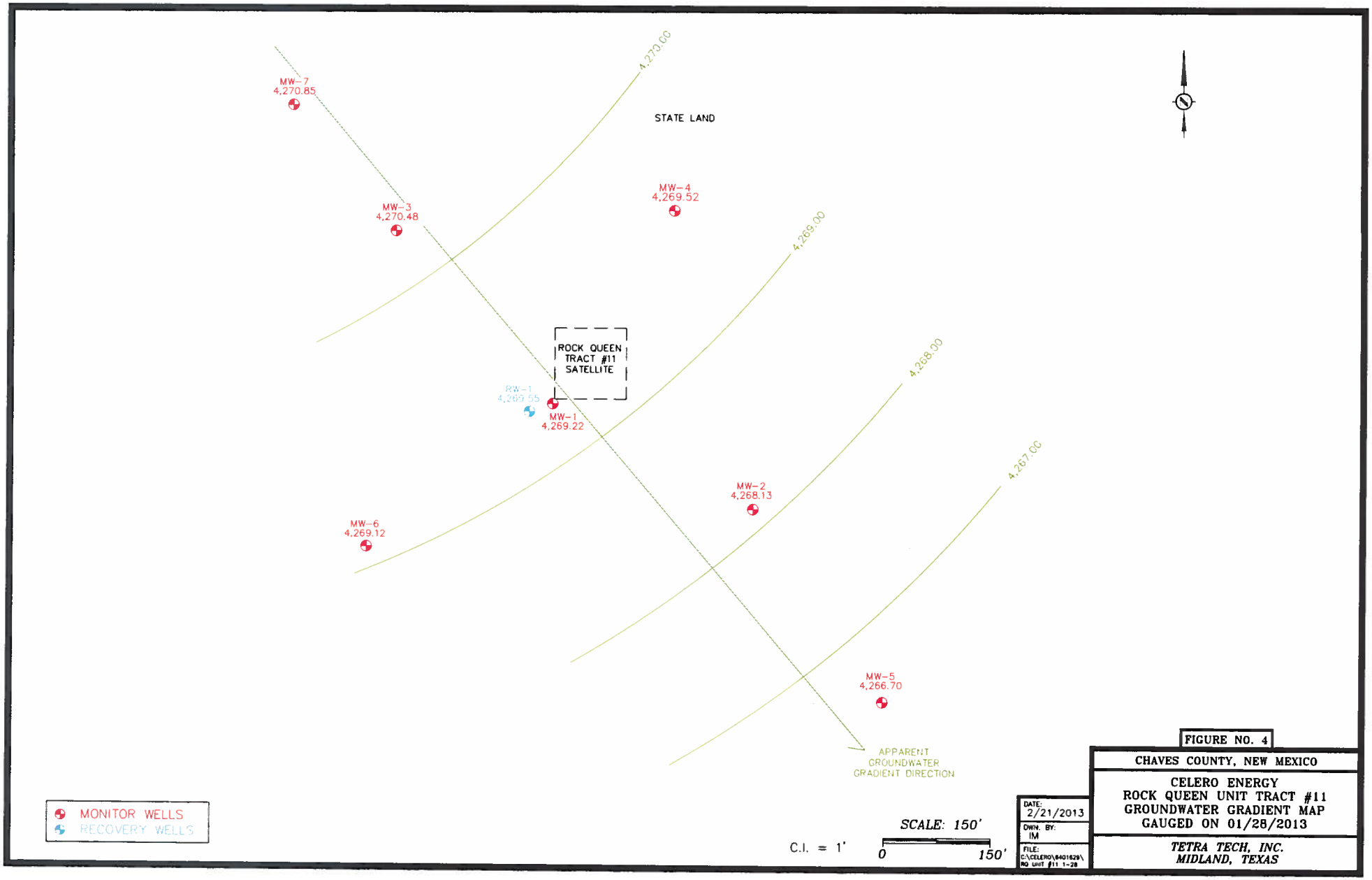
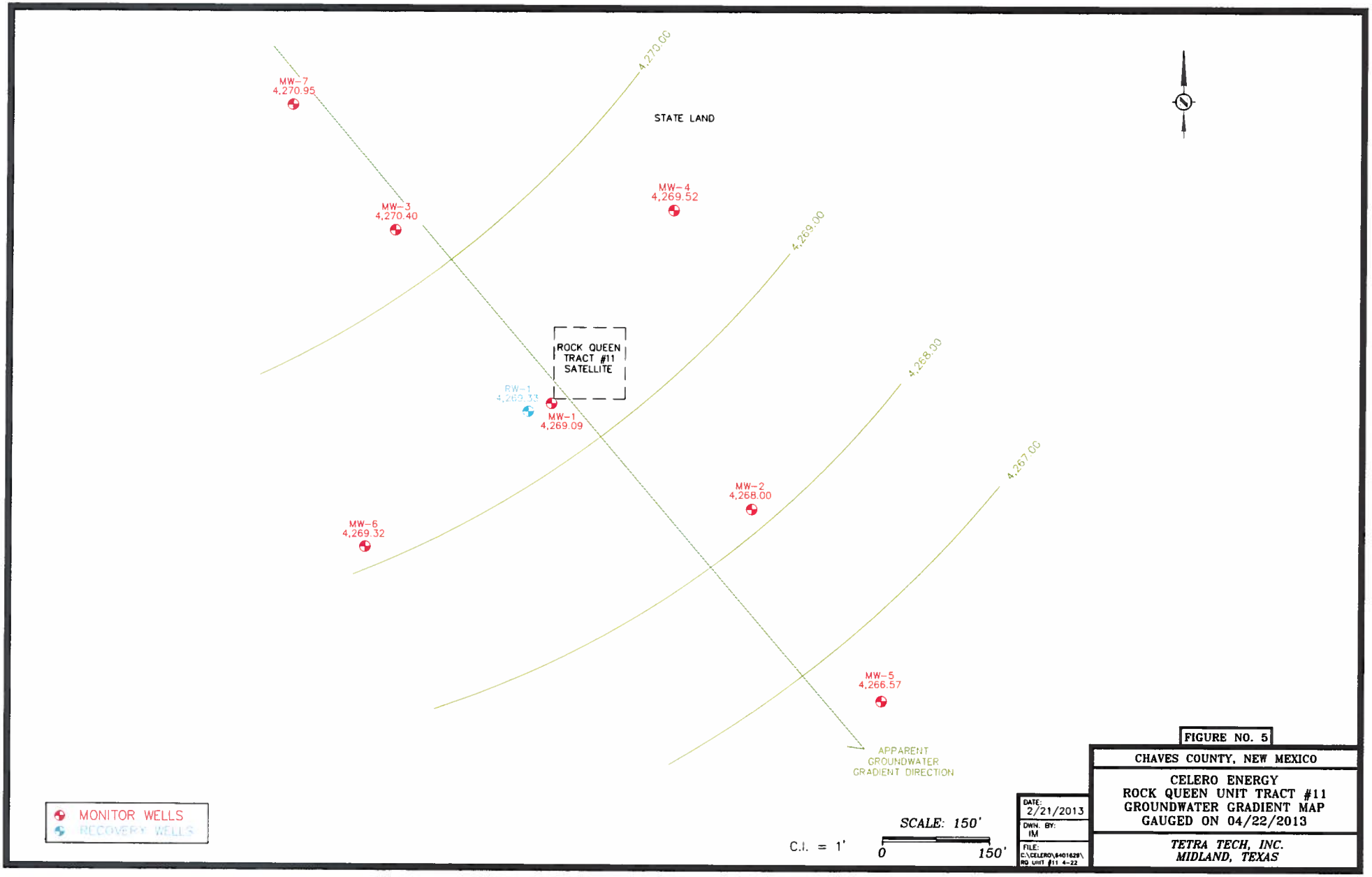


FIGURE NO. 4

CHAVES COUNTY, NEW MEXICO

CELERO ENERGY
ROCK QUEEN UNIT TRACT #11
GROUNDWATER GRADIENT MAP
GAUGED ON 01/28/2013

TETRA TECH, INC.
MIDLAND, TEXAS


4,270.00
MW-7
4,270.95
STATE LAND
MW-4
4,269.52
MW-3
4,270.40
4,269.00
ROCK QUEEN
TRACT #11
SATELLITE
RW-1
4,269.33
MW-1
4,269.09
4,268.00
MW-2
4,268.00
4,267.00
MW-6
4,269.32
MW-5
4,266.57
APPARENT
GROUNDWATER
GRADIENT DIRECTION
MONITOR WELLS
RECOVERY WELLS
C.I. = 1'
SCALE: 150'
0
150'
DATE:
2/21/2013
DWN. BY:
IM
FILE:
C:\CELERO\&401628\
RQ UNIT #11 4-22
FIGURE NO. 5
CHAVES COUNTY, NEW MEXICO
CELERO ENERGY
ROCK QUEEN UNIT TRACT #11
GROUNDWATER GRADIENT MAP
GAUGED ON 04/22/2013
TETRA TECH, INC.
MIDLAND, TEXAS

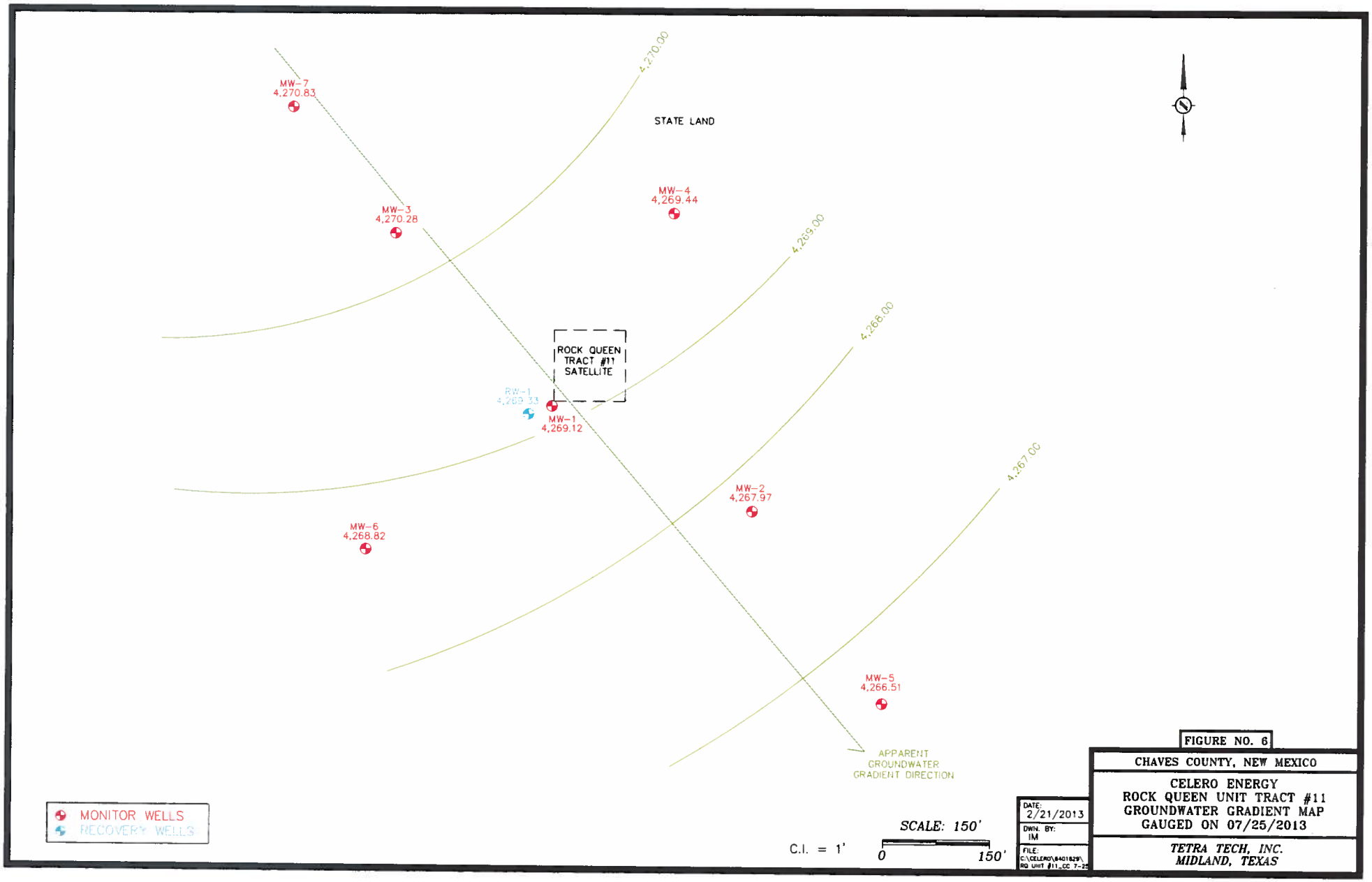


FIGURE NO. 6

CHAVES COUNTY, NEW MEXICO

CELERO ENERGY
ROCK QUEEN UNIT TRACT #11
GROUNDWATER GRADIENT MAP
GAUGED ON 07/25/2013

TETRA TECH, INC.
MIDLAND, TEXAS

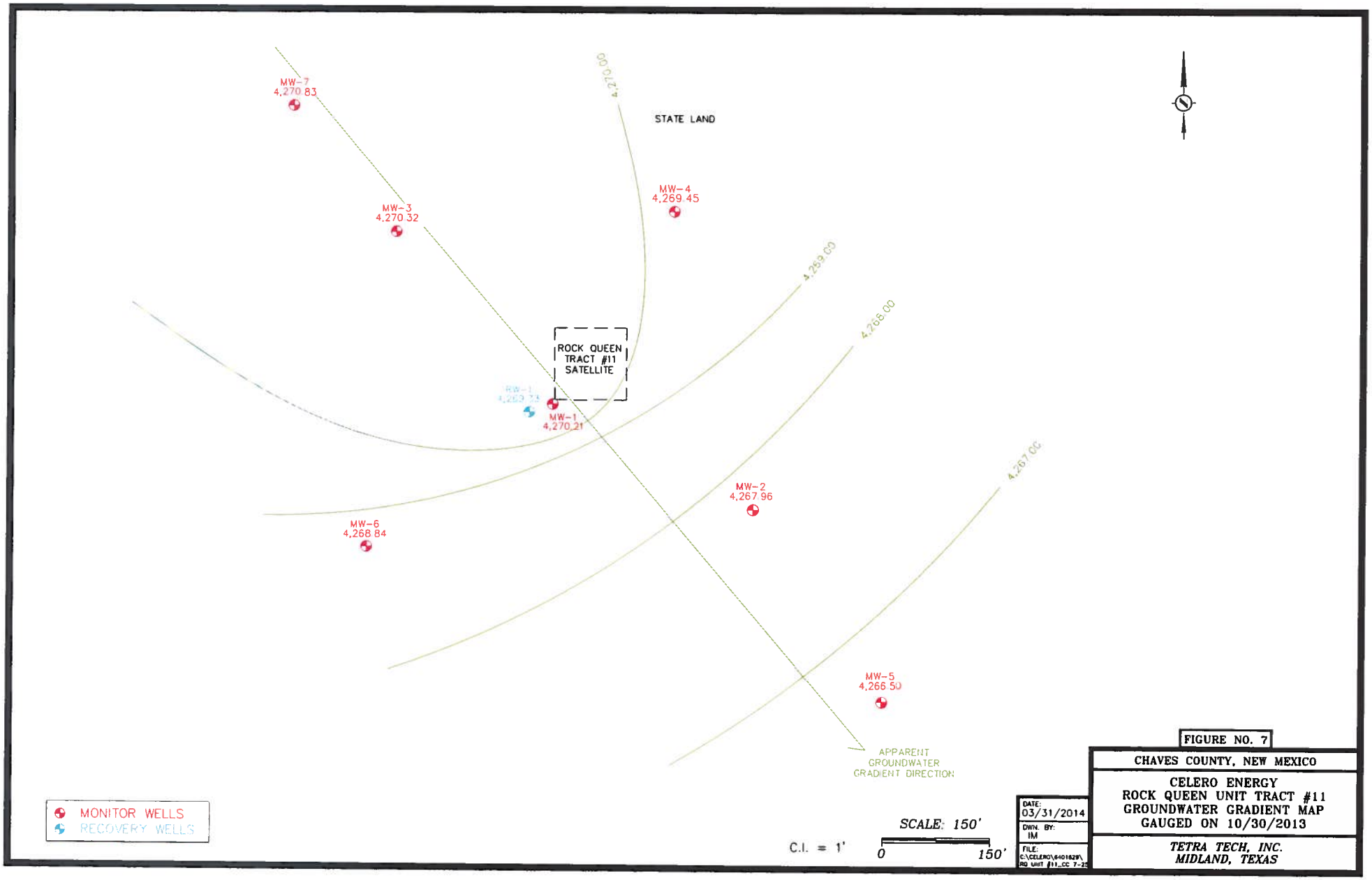


FIGURE NO. 7

CHAVES COUNTY, NEW MEXICO

CELERO ENERGY
ROCK QUEEN UNIT TRACT #11
GROUNDWATER GRADIENT MAP
GAUGED ON 10/30/2013

TETRA TECH, INC.
MIDLAND, TEXAS

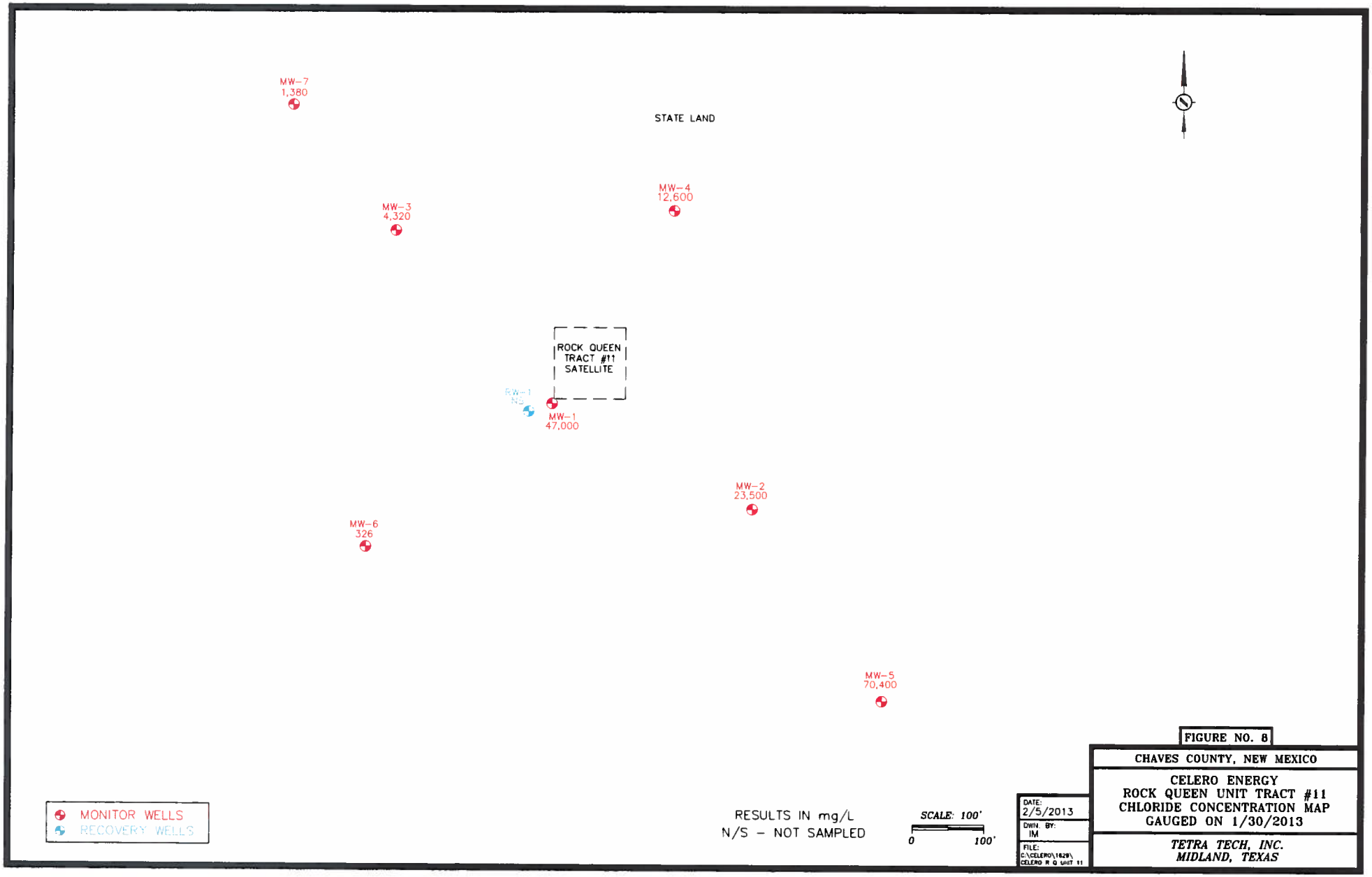


FIGURE NO. 6

CHAVES COUNTY, NEW MEXICO

CELERO ENERGY
ROCK QUEEN UNIT TRACT #11
CHLORIDE CONCENTRATION MAP
GAUGED ON 1/30/2013

TETRA TECH, INC.
MIDLAND, TEXAS

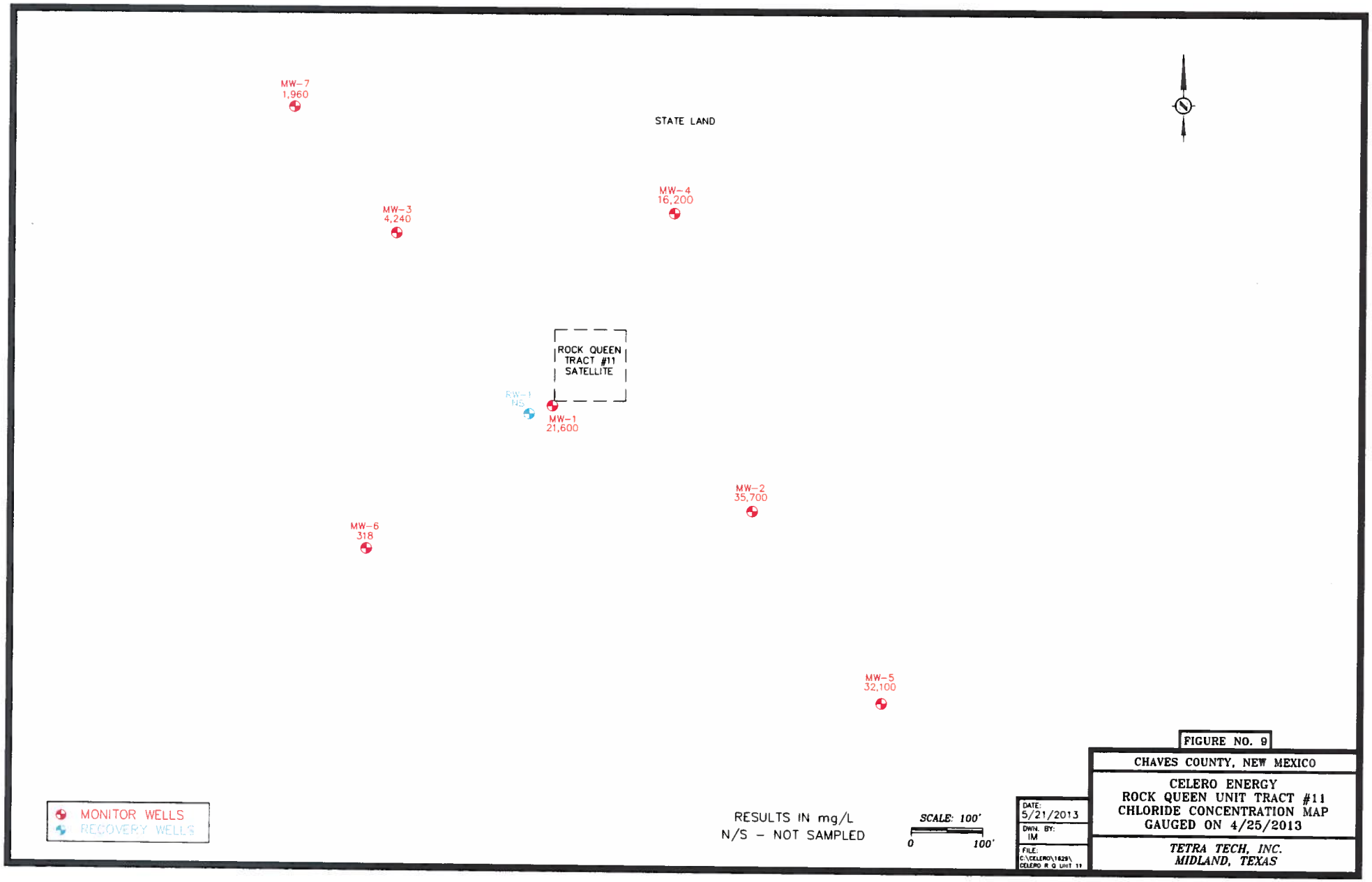


FIGURE NO. 9

CHAVES COUNTY, NEW MEXICO

CELERO ENERGY
ROCK QUEEN UNIT TRACT #11
CHLORIDE CONCENTRATION MAP
GAUGED ON 4/25/2013

TETRA TECH, INC.
MIDLAND, TEXAS

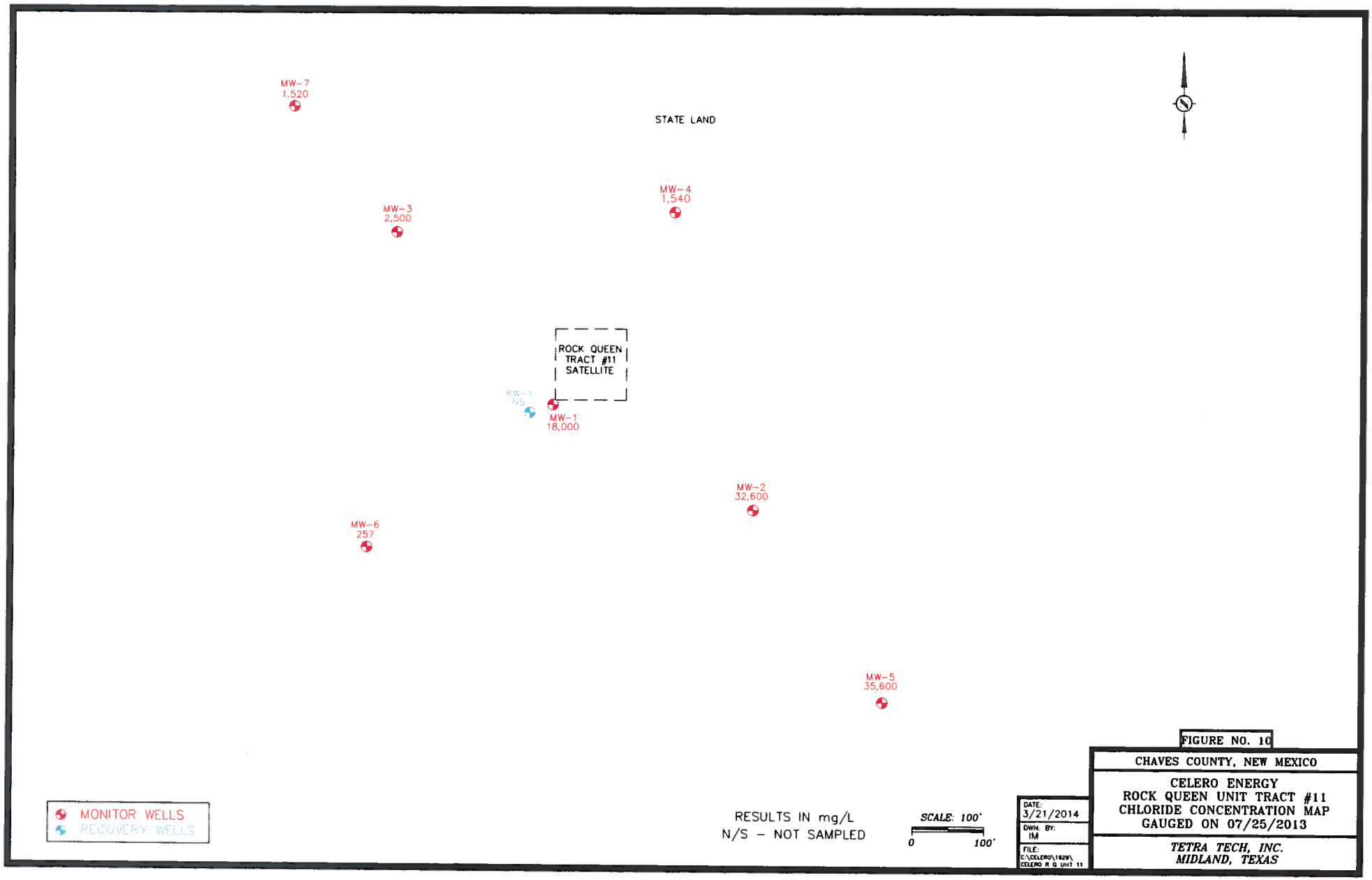


FIGURE NO. 10

CHAVES COUNTY, NEW MEXICO

CELERO ENERGY
ROCK QUEEN UNIT TRACT #11
CHLORIDE CONCENTRATION MAP
GAUGED ON 07/25/2013

TETRA TECH, INC.
MIDLAND, TEXAS

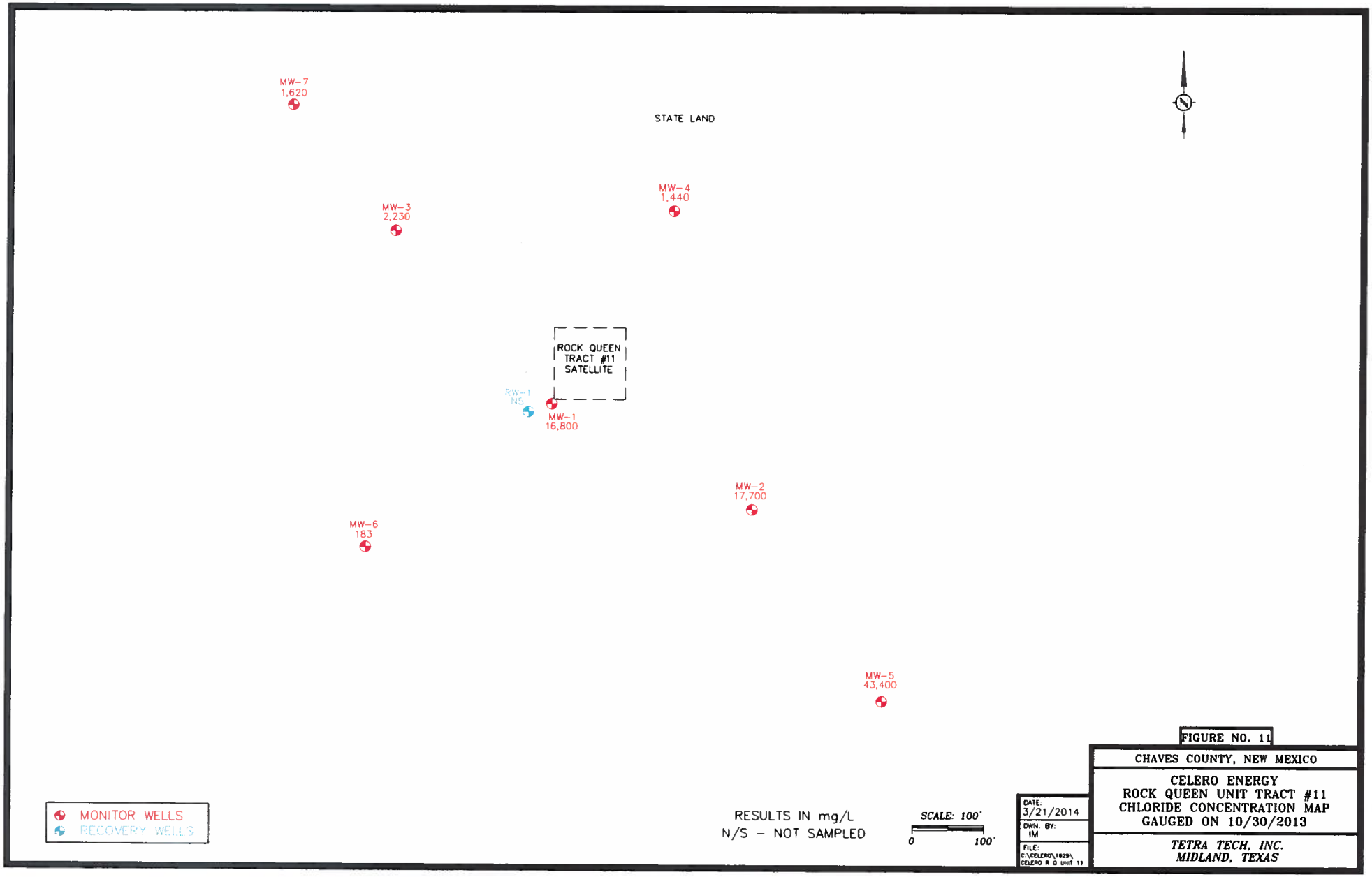


FIGURE NO. 11

CHAVES COUNTY, NEW MEXICO

CELERO ENERGY
ROCK QUEEN UNIT TRACT #11
CHLORIDE CONCENTRATION MAP
GAUGED ON 10/30/2013

TETRA TECH, INC.
MIDLAND, TEXAS

TABLES

Table 1
Celero Energy II, LP
Groundwater Gauging Data
Rock Queen Unit Tract 11 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	05/25/07	05/24/07	4,407.40	161.30	138.60	4,268.80
	02/25/10				138.19	4,269.21
	07/13/10				138.14	4,269.26
	10/11/10				138.25	4,269.15
	01/17/11				138.03	4,269.37
	04/11/11				138.14	4,269.26
	07/26/11				138.92	4,268.48
	10/24/11				138.18	4,269.22
	01/03/12				138.31	4,269.09
	04/09/12				138.19	4,269.21
	07/24/12				138.16	4,269.24
	10/23/12				138.34	4,269.06
	01/28/13				138.18	4,269.22
	04/22/13				138.31	4,269.09
	07/25/13				138.28	4,269.12
	10/29/13				137.19	4,270.21
MW-2	02/25/10	02/17/10	4,408.61	166.18	140.36	4,268.25
	07/13/10				140.28	4,268.33
	10/11/10				140.41	4,268.20
	01/17/11				140.15	4,268.46
	04/11/11				140.19	4,268.42
	07/26/11				141.05	4,267.56
	10/24/11				140.39	4,268.22
	01/03/12				140.49	4,268.12
	04/09/12				140.44	4,268.17
	07/24/12				140.49	4,268.12
	10/23/12				140.58	4,268.03
	01/28/13				140.48	4,268.13
	04/22/13				140.61	4,268.00
	07/25/13				140.64	4,267.97
	10/29/13				140.65	4,267.96
MW-3	02/25/10	02/17/10	4,409.84	169.00	139.49	4,270.35
	07/13/10				139.45	4,270.39
	10/11/10				139.57	4,270.27
	01/17/11				139.43	4,270.41

Table 1
Celero Energy II, LP
Groundwater Gauging Data
Rock Queen Unit Tract 11 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	04/11/11				139.50	4,270.34
	07/26/11				140.25	4,269.59
	10/24/11				139.48	4,270.36
	01/03/12				139.55	4,270.29
	04/09/12				139.44	4,270.40
	07/24/12				139.43	4,270.41
	10/23/12				139.53	4,270.31
	01/28/13				139.36	4,270.48
	04/22/13				139.44	4,270.40
	07/25/13				139.56	4,270.28
	10/30/13				139.52	4,270.32
MW-4	02/25/10	02/17/10	4,411.68	172.90	142.25	4,269.43
	07/13/10				142.23	4,269.45
	10/11/10				142.32	4,269.36
	01/17/11				142.16	4,269.52
	04/11/11				142.24	4,269.44
	07/26/11				143.04	4,268.64
	10/24/11				142.19	4,269.49
	01/03/12				142.33	4,269.35
	04/09/12				142.24	4,269.44
	07/24/12				142.14	4,269.54
	10/23/12				142.33	4,269.35
	01/28/13				142.16	4,269.52
	04/22/13				142.16	4,269.52
	07/25/13				142.24	4,269.44
	10/30/13				142.23	4,269.45
MW-5	01/17/11	12/01/10	4,407.26	160.00	139.99	4,267.27
	04/11/11				140.05	4,267.21
	07/26/11				140.98	4,266.28
	10/24/11				140.30	4,266.96
	01/03/12				140.38	4,266.88
	04/09/12				140.42	4,266.84
	07/24/12				140.55	4,266.71
	10/23/12				140.68	4,266.58
	01/28/13				140.56	4,266.70

Table 1
Celero Energy II, LP
Groundwater Gauging Data
Rock Queen Unit Tract 11 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	04/22/13				140.69	4,266.57
	07/25/13				140.75	4,266.51
	10/30/13				140.76	4,266.50
MW-6	01/17/11	12/01/10	4,404.87	156.42	135.51	4,269.36
	04/11/11				135.58	4,269.29
	07/26/11				136.37	4,268.50
	10/24/11				135.68	4,269.19
	01/03/12				135.81	4,269.06
	04/09/12				135.74	4,269.13
	07/24/12				135.80	4,269.07
	10/23/12				135.91	4,268.96
	01/28/13				135.75	4,269.12
	04/22/13				135.55	4,269.32
	07/25/13				136.05	4,268.82
	10/30/13				136.03	4,268.84
MW-7	01/17/11	12/02/10	4,413.08	161.37	142.22	4,270.86
	04/11/11				142.17	4,270.91
	07/26/11				142.98	4,270.10
	10/24/11				142.19	4,270.89
	01/03/12				142.22	4,270.86
	04/09/12				142.19	4,270.89
	07/24/12				142.16	4,270.92
	10/23/12				142.19	4,270.89
	01/28/13				142.23	4,270.85
	04/22/13				142.13	4,270.95
	07/25/13				142.25	4,270.83
	10/30/13				142.24	4,270.84
RW-1	01/17/11	12/08/10	4,405.75	161.80	136.05	4,269.70
	04/11/11				136.15	4,269.60
	07/26/11				137.03	4,268.72
	10/24/11				136.32	4,269.43
	01/03/12				136.41	4,269.34
	04/09/12				136.20	4,269.55
	07/24/12				136.40	4,269.35
	10/23/12				136.45	4,269.30

Table 1
Celero Energy II, LP
Groundwater Gauging Data
Rock Queen Unit Tract 11 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)
RW-1	01/28/13				136.20	4,269.55
	04/22/13				136.42	4,269.33
	07/25/13				136.48	4,269.27
	10/30/13				136.43	4,269.32

Table 2

Celero Energy II, LP

Groundwater Analytical Results

Rock Queen Unit Tract 11 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	05/31/07	1,300	1,050	19,400	416	<1.00	<1.00	110	110	1,080	37,800	59,400	7,570	7.06
	02/25/10	3,280	2,240	28,500	737	<1.00	<1.00	101	101	1,360	60,700	104,000	17,400	6.24
	07/13/10	-	-	-	-	-	-	-	-	186	12,300	11,600	-	-
	10/11/10	-	-	-	-	-	-	-	-	455	20,400	42,700	-	-
	01/19/11	-	-	-	-	-	-	-	-	2,270	122,000	210,000	-	-
	02/25/11	-	-	-	-	-	-	-	-	2,150	109,000	193,000	-	-
	04/14/11	-	-	-	-	-	-	-	-	1,620	57,400	96,800	-	-
	07/27/11	-	-	-	-	-	-	-	-	625	22,100	56,000	-	-
	10/27/11	-	-	-	-	-	-	-	-	1,740	47,300	73,900	-	-
	01/06/12	-	-	-	-	-	-	-	-	615	29,000	43,800	-	-
	04/11/12	-	-	-	-	-	-	-	-	2,690	110,000	140,000	-	-
	07/25/12	-	-	-	-	-	-	-	-	-	32,900	-	-	-
	10/25/12	-	-	-	-	-	-	-	-	849	36,700	76,400	-	-
	01/30/13	-	-	-	-	-	-	-	-	1,390	47,000	92,600	-	-
	04/25/13	2,920	820	12,800	194	<1.00	<1.00	121	121	401	21,600	37,400	10,700	6.62
	07/25/13	2,620	590	9,130	135	<20.0	<20.0	91	91	<2500	18,000	22,600	8,970	6.68
	10/30/13	1,930	433	6,090	84.5	<20.0	<20.0	112	112	<250	16,800	24,100	6,600	7.00
MW-2	02/25/10	723	265	3,850	47.6	<1.00	<1.00	132	132	176	5,670	17,800	-	7.70
	07/13/10	-	-	-	-	-	-	-	-	355	16,400	31,700	-	-
	10/11/10	-	-	-	-	-	-	-	-	547	24,000	38,400	-	-
	01/19/11	-	-	-	-	-	-	-	-	2,060	118,000	220,000	-	-
	02/25/11	-	-	-	-	-	-	-	-	1,500	67,600	146,000	-	-
	04/14/11	-	-	-	-	-	-	-	-	1,170	53,300	84,500	-	-
	07/27/11	-	-	-	-	-	-	-	-	1,610	91,700	143,000	-	-
	10/27/11	-	-	-	-	-	-	-	-	1,990	68,200	102,000	-	-
	01/06/12	-	-	-	-	-	-	-	-	747	37,400	50,400	-	-
	04/11/12	-	-	-	-	-	-	-	-	2,480	174,000	212,000	-	-
	07/25/12	-	-	-	-	-	-	-	-	-	13,800	-	-	-
	10/25/12	-	-	-	-	-	-	-	-	730	48,300	61,000	-	-
	01/30/13	-	-	-	-	-	-	-	-	588	23,500	41,200	-	-
	04/25/13	4,290	1,050	13,900	115	<1.00	<1.00	291	291	650	35,700	49,200	15,000	6.46

Table 2

Celero Energy II, LP

Groundwater Analytical Results

Rock Queen Unit Tract 11 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-2	07/25/13	3,130	816	11,300	122	<20.0	<20.0	109	109	<2500	32,600	42,100	11,200	6.55
	10/30/13	2,550	483	7,240	54.7	<20.0	<20.0	111	111	407	17,700	31,600	8,360	6.88
MW-3	02/25/10	370	88.4	1,060	14.2	<1.00	<1.00	138	138	120	1,990	3,460	1,290	8.13
	07/13/10	-	-	-	-	-	-	-	-	52.8	3,260	4,190	-	-
	10/11/10	-	-	-	-	-	-	-	-	73.6	2,700	6,290	-	-
	01/19/11	-	-	-	-	-	-	-	-	1,170	50,100	103,000	-	-
	02/25/11	-	-	-	-	-	-	-	-	115	5,190	10,100	-	-
	04/14/11	-	-	-	-	-	-	-	-	73.2	2,880	4,440	-	-
	07/27/11	-	-	-	-	-	-	-	-	881	53,400	74,700	-	-
	10/27/11	-	-	-	-	-	-	-	-	173	12,000	22,800	-	-
	01/06/12	-	-	-	-	-	-	-	-	52.4	2,200	3,400	-	-
	04/11/12	-	-	-	-	-	-	-	-	72.7	4,730	6,440	-	-
	07/25/12	-	-	-	-	-	-	-	-	-	1,690	-	-	-
	10/25/12	-	-	-	-	-	-	-	-	73.2	3,640	6,010	-	-
	01/30/13	-	-	-	-	-	-	-	-	63.7	4,320	6,490	-	-
	04/25/13	1,090	207	479	8.05	<1.00	<1.00	119	119	52.4	4,240	8,860	3,580	7.16
	07/25/13	950	166	328	12.60	<20.0	<20.0	78	78	<250	2,500	6,650	3,050	7.18
	10/30/13	822	136	206	9.04	<20.0	<20.0	75	75	41.6	2,230	4,110	2,610	7.06
MW-4	02/25/10	540	385	4,670	295	<1.00	<1.00	148	148	290	10,700	25,800	2,930	7.37
	07/13/10	-	-	-	-	-	-	-	-	47.4	857	1,610	-	-
	10/11/10	-	-	-	-	-	-	-	-	176.0	7,140	14,500	-	-
	01/19/11	-	-	-	-	-	-	-	-	1,850.0	109,000	194,000	-	-
	02/25/11	-	-	-	-	-	-	-	-	182.0	7,210	14,100	-	-
	04/14/11	-	-	-	-	-	-	-	-	347.0	12,200	26,400	-	-
	07/27/11	-	-	-	-	-	-	-	-	134	5,080	7,980	-	-
	10/26/11	-	-	-	-	-	-	-	-	967	56,400	97,300	-	-
	01/06/12	-	-	-	-	-	-	-	-	144	5,500	8,800	-	-
	04/11/12	-	-	-	-	-	-	-	-	65.3	1,560	2,820	-	-
	07/25/12	-	-	-	-	-	-	-	-	-	2,130	-	-	-
	10/25/12	-	-	-	-	-	-	-	-	134	5,480	10,200	-	-
	01/30/13	-	-	-	-	-	-	-	-	220	12,600	26,700	-	-

Table 2

Celero Energy II, LP

Groundwater Analytical Results

Rock Queen Unit Tract 11 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-4	04/25/13	668	474	10,500	323	<1.00	<1.00	161	161	395	16,200	32,100	3,620	7.21
	07/25/13	84.5	47.8	895	65.3	<20.0	<20.0	170	170	<250	1,540	4,230	408	7.70
	10/30/13	72	42.1	890	65.2	<20.0	<20.0	181	181	92.4	1,440	3,730	354	7.64
MW-5	01/19/11	-	-	-	-	-	-	-	-	939	56,300	109,000	-	-
	02/25/11	-	-	-	-	-	-	-	-	764	49,900	93,000	-	-
	04/14/11	-	-	-	-	-	-	-	-	1,100	67,500	109,000	-	-
	07/27/11	-	-	-	-	-	-	-	-	422	48,500	60,900	-	-
	10/27/11	-	-	-	-	-	-	-	-	1,020	71,600	106,000	-	-
	01/06/12	-	-	-	-	-	-	-	-	<250	21,300	30,700	-	-
	04/11/12	-	-	-	-	-	-	-	-	1,340	94,400	127,000	-	-
	07/25/12	-	-	-	-	-	-	-	-	-	48,500	-	-	-
	10/25/12	-	-	-	-	-	-	-	-	1,180	78,900	144,000	-	-
	01/30/13	-	-	-	-	-	-	-	-	1,080	70,400	120,000	-	-
	04/25/13	8,040	1,990	15,300	40.3	<1.00	<1.00	221	221	334	32,100	58,700	28,300	6.32
	07/25/13	6,570	1,080	6,990	50.1	<20.0	<20.0	83	83	<2500	35,600	87,700	20,800	6.17
	10/30/13	6,520	1,550	12,600	70.3	<20.0	<20.0	70	70	309	43,400	44,000	22,600	6.77
MW-6	01/19/11	-	-	-	-	-	-	-	-	378	25,800	56,700	-	-
	02/25/11	-	-	-	-	-	-	-	-	422	26,600	56,700	-	-
	04/14/11	-	-	-	-	-	-	-	-	77.6	1,800	3,320	-	-
	07/27/11	-	-	-	-	-	-	-	-	80	493	934	-	-
	10/26/11	-	-	-	-	-	-	-	-	378	29,300	73,100	-	-
	01/06/12	-	-	-	-	-	-	-	-	71.0	1,130	2,020	-	-
	04/11/12	-	-	-	-	-	-	-	-	57.7	488	1,210	-	-
	07/25/12	-	-	-	-	-	-	-	-	-	484	-	-	-
	10/25/12	-	-	-	-	-	-	-	-	61.0	391	1,320	-	-
	01/30/13	-	-	-	-	-	-	-	-	63.5	326	756	-	-
	04/25/13	160	28.2	62.4	0.854	<1.00	<1.00	172	172	57.2	318	956	515	7.83
	07/25/13	132	19.7	76.0	6.260	<20.0	<20.0	133	133	56.7	257	748	411	8.00
	10/30/13	102	13.5	58.9	<10.0	<20.0	<20.0	174	174	60.7	183	730	310	7.66
MW-7	01/19/11	-	-	-	-	-	-	-	-	77	994	2,110	-	-
	02/25/11	-	-	-	-	-	-	-	-	79.4	1,230	2,580	-	-

Table 2

Celero Energy II, LP

Groundwater Analytical Results

Rock Queen Unit Tract 11 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-7	04/14/11	-	-	-	-	-	-	-	-	92.2	1,350	2,700	-	-
	07/27/11	-	-	-	-	-	-	-	-	84.1	1,580	2,440	-	-
	10/26/11	-	-	-	-	-	-	-	-	139	1,860	2,910	-	-
	01/06/12	-	-	-	-	-	-	-	-	83.6	1,680	2,080	-	-
	04/11/12	-	-	-	-	-	-	-	-	74.9	1,440	1,780	-	-
	07/25/12	-	-	-	-	-	-	-	-	-	1,660	-	-	-
	10/25/12	-	-	-	-	-	-	-	-	86.2	1,550	3,980	-	-
	01/30/13	-	-	-	-	-	-	-	-	81.7	1,380	2,490	-	-
	04/25/13	688	131	145	4.50	<1.00	<1.00	91.0	91.0	99.3	1,960	3,760	2,260	7.37
	07/25/13	635	115	113	8.88	<20.0	<20.0	108.0	108.0	<250	1,520	3,900	2,060	7.34
	10/30/13	612	115	127	<10.0	<20.0	<20.0	104.0	104.0	81.8	1,620	3,690	2,000	7.18
RW-1	01/19/11	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	02/25/11	-	-	-	-	-	-	-	-	1,690	94,000	174,000	-	-
	04/14/11	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	07/27/11	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	10/26/11	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	01/06/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	04/11/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	07/25/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	10/25/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	01/30/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	04/25/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	07/25/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	10/30/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

NS - Not sampled

(-) Not Analyzed

Table 3
Celero Energy II, LP
Groundwater Analytical Results
Rock Queen Unit Tract #11
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	02/25/10	<0.001	<0.001	<0.001	<0.001	<0.001
	07/13/10	<0.001	<0.001	<0.001	<0.001	<0.001
	10/11/10	<0.001	<0.001	<0.001	<0.001	<0.001
	01/19/11	<0.001	<0.001	<0.001	<0.001	<0.001
	04/14/11	<0.001	<0.001	<0.001	<0.001	<0.001
	07/27/11	<0.001	<0.001	<0.001	0.0185	0.0185
	10/27/11	<0.001	<0.001	<0.001	0.0014	0.0014
	01/06/12	<0.001	<0.001	<0.001	<0.001	<0.001
	04/11/12	<0.001	<0.001	<0.001	<0.001	<0.001
	07/25/12	<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
	04/25/13	<0.001	<0.001	<0.001	<0.001	<0.001
	07/25/13	<0.001	<0.001	<0.001	<0.001	<0.001
	10/30/13	<0.001	<0.001	<0.001	<0.001	<0.001
MW-2	02/25/10	<0.001	<0.001	<0.001	<0.001	<0.001
	07/13/10	<0.001	<0.001	<0.001	<0.001	<0.001
	10/11/10	<0.001	<0.001	<0.001	<0.001	<0.001
	01/19/11	<0.001	<0.001	<0.001	<0.001	<0.001
	04/14/11	<0.001	<0.001	<0.001	<0.001	<0.001
	07/27/11	<0.001	<0.001	<0.001	<0.001	<0.001
	10/27/11	<0.001	<0.001	<0.001	<0.001	<0.001
	01/06/12	<0.001	<0.001	<0.001	<0.001	<0.001
	04/11/12	<0.001	<0.001	<0.001	<0.001	<0.001
	07/25/12	<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
	04/25/13	<0.001	<0.001	<0.001	<0.001	<0.001
	07/25/13	<0.001	<0.001	<0.001	<0.001	<0.001
	10/30/13	<0.001	<0.001	<0.001	<0.001	<0.001
MW-3	02/25/10	<0.001	<0.001	<0.001	<0.001	<0.001
	07/13/10	<0.001	<0.001	<0.001	<0.001	<0.001
	10/11/10	<0.001	<0.001	<0.001	<0.001	<0.001
	01/19/11	<0.001	<0.001	<0.001	<0.001	<0.001
	04/14/11	<0.001	<0.001	<0.001	<0.001	<0.001
	07/27/11	<0.001	<0.001	<0.001	<0.001	<0.001
	10/27/11	<0.001	<0.001	<0.001	<0.001	<0.001
	01/06/12	<0.001	<0.001	<0.001	<0.001	<0.001
	04/11/12	<0.001	<0.001	<0.001	<0.001	<0.001

Table 3
Celero Energy II, LP
Groundwater Analytical Results
Rock Queen Unit Tract #11
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	07/25/12	<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
	04/25/13	<0.001	<0.001	<0.001	<0.001	<0.001
	07/25/13	<0.001	<0.001	<0.001	<0.001	<0.001
	10/30/13	<0.001	<0.001	<0.001	<0.001	<0.001
MW-4	02/25/10	<0.001	<0.001	<0.001	<0.001	<0.001
	07/13/10	<0.001	<0.001	<0.001	<0.001	<0.001
	10/11/10	<0.001	<0.001	<0.001	<0.001	<0.001
	01/19/11	<0.001	<0.001	<0.001	<0.001	<0.001
	04/14/11	<0.001	<0.001	<0.001	<0.001	<0.001
	07/27/11	<0.001	<0.001	<0.001	<0.001	<0.001
	10/26/11	<0.001	<0.001	<0.001	0.0066	0.0066
	01/06/12	<0.001	<0.001	<0.001	<0.001	<0.001
	04/11/12	<0.001	<0.001	<0.001	<0.001	<0.001
	07/25/12	<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
	04/25/13	<0.001	<0.001	<0.001	<0.001	<0.001
	07/25/13	<0.001	<0.001	<0.001	<0.001	<0.001
	10/30/13	<0.001	<0.001	<0.001	<0.001	<0.001
MW-5	01/19/11	<0.001	<0.001	<0.001	<0.001	<0.001
	04/14/11	0.0065	<0.001	<0.001	<0.001	0.0065
	07/27/11	<0.001	<0.001	<0.001	<0.001	<0.001
	10/27/11	<0.001	<0.001	<0.001	0.0010	0.0010
	01/06/12	<0.001	<0.001	<0.001	<0.001	<0.001
	04/11/12	<0.001	<0.001	<0.001	<0.001	<0.001
	07/25/12	<0.001	<0.001	<0.001	<0.001	<0.001
	10/25/12	<0.001	<0.001	<0.001	0.0010	0.0117
	01/30/13	<0.001	<0.001	<0.001	<0.001	<0.001
	04/25/13	<0.001	<0.001	<0.001	<0.001	<0.001
	07/25/13	<0.001	<0.001	<0.001	<0.001	<0.001
	10/30/13	<0.001	<0.001	<0.001	<0.001	<0.001
MW-6	01/19/11	<0.001	<0.001	<0.001	<0.001	<0.001
	04/14/11	<0.001	<0.001	<0.001	<0.001	<0.001
	07/27/11	<0.001	<0.001	<0.001	<0.001	<0.001
	10/26/11	<0.001	<0.001	<0.001	<0.001	<0.001
	01/06/12	<0.001	<0.001	<0.001	<0.001	<0.001
	04/11/12	0.0044	<0.0010	<0.0010	<0.0010	0.0044

Table 3
Celero Energy II, LP
Groundwater Analytical Results
Rock Queen Unit Tract #11
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-6	07/25/12	<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
	04/25/13	<0.001	<0.001	<0.001	<0.001	<0.001
	07/25/13	<0.001	<0.001	<0.001	<0.001	<0.001
	10/30/13	<0.001	<0.001	<0.001	<0.001	<0.001
MW-7	01/19/11	<0.001	<0.001	<0.001	<0.001	<0.001
	04/14/11	<0.001	<0.001	<0.001	<0.001	<0.001
	07/27/11	<0.001	<0.001	<0.001	<0.001	<0.001
	10/26/11	<0.001	<0.001	<0.001	<0.001	<0.001
	01/06/12	<0.001	<0.001	<0.001	<0.001	<0.001
	04/11/12	<0.001	<0.001	<0.001	<0.001	<0.001
	07/25/12	<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
	04/25/13	<0.001	<0.001	<0.001	<0.001	<0.001
	07/25/13	<0.001	<0.001	<0.001	<0.001	<0.001
	10/30/13	<0.001	<0.001	<0.001	<0.001	<0.001
RW-1	01/19/11	NS	NS	NS	NS	NS
	04/14/11	NS	NS	NS	NS	NS
	07/27/11	NS	NS	NS	NS	NS
	10/27/11	NS	NS	NS	NS	NS
	01/06/12	NS	NS	NS	NS	NS
	04/11/12	NS	NS	NS	NS	NS
	07/25/12	NS	NS	NS	NS	NS
	10/25/12	NS	NS	NS	NS	NS
	01/30/13	NS	NS	NS	NS	NS
	04/25/13	NS	NS	NS	NS	NS
	04/25/13	NS	NS	NS	NS	NS
	10/30/13	NS	NS	NS	NS	NS

NS - Not sampled

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: 13020139

Project Location: Chavez Co., NM
Project Name: Celero/Rock Queen #11
Project Number: 114-6401629

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
320208	MW-1	water	2013-01-30	12:10	2013-02-01
320209	MW-2	water	2013-01-30	12:05	2013-02-01
320210	MW-3	water	2013-01-30	12:30	2013-02-01
320211	MW-4	water	2013-01-30	12:45	2013-02-01
320212	MW-5	water	2013-01-30	11:55	2013-02-01
320213	MW-6	water	2013-01-30	12:20	2013-02-01
320214	MW-7	water	2013-01-30	12:40	2013-02-01

Report Corrections (Work Order 13020139)

- 2/15/13: Client requested a j-flag report.

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.

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 #11 were received by TraceAnalysis, Inc. on 2013-02-01 and assigned to work order 13020139. Samples for work order 13020139 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
Chloride (IC)	E 300.0	83645	2013-02-06 at 09:48	98820	2013-02-06 at 14:15
Chloride (IC)	E 300.0	83645	2013-02-06 at 09:48	98821	2013-02-06 at 14:16
Chloride (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	98820	2013-02-06 at 14:15
SO4 (IC)	E 300.0	83645	2013-02-06 at 09:48	98821	2013-02-06 at 14:16
SO4 (IC)	E 300.0	83645	2013-02-06 at 09:48	98822	2013-02-06 at 14:18
SO4 (IC)	E 300.0	83721	2013-02-07 at 11:08	98870	2013-02-11 at 13:42
TDS	SM 2540C	83642	2013-02-05 at 09:17	98845	2013-02-06 at 16:08

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 13020139 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: 320208 - 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	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Benzene	U	1	<0.000200	<0.00100	<0.000200	mg/L	1	0.000200	0.001	0.0002
Toluene	U	1	<0.000300	<0.00100	<0.000300	mg/L	1	0.000300	0.001	0.0003
Ethylbenzene	U	1	<0.000400	<0.00100	<0.000400	mg/L	1	0.000400	0.001	0.0004
Xylene	U	1	<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)	Q#r		0.114	mg/L	1	0.100	114	75.7 - 109
4-Bromofluorobenzene (4-BFB)			0.0921	mg/L	1	0.100	92	68.1 - 109

Sample: 320208 - MW-1

Laboratory:	Midland				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	98820	Date Analyzed:	2013-02-06	Analyzed By:	AR
Prep Batch:	83645	Sample Preparation:	2013-02-06	Prepared By:	AR

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Chloride	Q#	1	**47000**	**47000**	<1320	mg/L	5000	1320	2.5	0.265

Sample: 320208 - MW-1

Laboratory:	Midland				
Analysis:	SO4 (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	98820	Date Analyzed:	2013-02-06	Analyzed By:	AR
Prep Batch:	83645	Sample Preparation:	2013-02-06	Prepared By:	AR

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Sulfate		1	**1390**	**1390**	<88.5	mg/L	500	88.5	2.5	0.177

Sample: 320208 - MW-1

Laboratory: Midland
Analysis: TDS
QC Batch: 98845
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	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Total Dissolved Solids		1	**92600**	**92600**	<1950	mg/L	200	1950	10	9.75

Sample: 320209 - MW-2

Laboratory: Midland
Analysis: BTEX
QC Batch: 98791
Prep Batch: 83715

Analytical Method: S 8021B
Date Analyzed: 2013-02-08
Sample Preparation: 2013-02-08

Prep Method: S 5030B
Analyzed By: YG
Prepared By: YG

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Benzene	U	1	<0.000200	<0.00100	<0.000200	mg/L	1	0.000200	0.001	0.0002
Toluene	U	1	<0.000300	<0.00100	<0.000300	mg/L	1	0.000300	0.001	0.0003
Ethylbenzene	U	1	<0.000400	<0.00100	<0.000400	mg/L	1	0.000400	0.001	0.0004
Xylene	U	1	<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)	Qsr		0.110	mg/L	1	0.100	110	75.7 - 109
4-Bromofluorobenzene (4-BFB)			0.0945	mg/L	1	0.100	94	68.1 - 109

Sample: 320209 - MW-2

Laboratory: Midland
Analysis: Chloride (IC)
QC Batch: 98821
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	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Chloride		1	**23500**	**23500**	<265	mg/L	1000	265	2.5	0.265

Sample: 320209 - MW-2

Laboratory: Midland
Analysis: SO4 (IC) | Analytical Method: E 300.0 | Prep Method: N/A
QC Batch: 98821 | Date Analyzed: 2013-02-06 | Analyzed By: AR
Prep Batch: 83645 | Sample Preparation: 2013-02-06 | Prepared By: AR

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Sulfate		1	**588**	**588**	<17.7	mg/L	100	17.7	2.5	0.177

Sample: 320209 - MW-2

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	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Total Dissolved Solids		1	**41200**	**41200**	<975	mg/L	100	975	10	9.75

Sample: 320210 - MW-3

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	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Benzene	U	1	<0.000200	<0.00100	<0.000200	mg/L	1	0.000200	0.001	0.0002
Toluene	U	1	<0.000300	<0.00100	<0.000300	mg/L	1	0.000300	0.001	0.0003
Ethylbenzene	U	1	<0.000400	<0.00100	<0.000400	mg/L	1	0.000400	0.001	0.0004
Xylene	U	1	<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)	Q-1		0.115	mg/L	1	0.100	115	75.7 - 109
4-Bromofluorobenzene (4-BFB)			0.0973	mg/L	1	0.100	97	68.1 - 109

Sample: 320210 - MW-3

Laboratory: Midland

Analysis: Chloride (IC) | Analytical Method: E 300.0 | Prep Method: N/A
QC Batch: 98821 | Date Analyzed: 2013-02-06 | Analyzed By: AR
Prep Batch: 83645 | Sample Preparation: 2013-02-06 | Prepared By: AR

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Chloride		1	**4320**	**4320**	<132	mg/L	500	132	2.5	0.265

Sample: 320210 - MW-3

Laboratory: Midland
Analysis: SO4 (IC) | Analytical Method: E 300.0 | Prep Method: N/A
QC Batch: 98821 | Date Analyzed: 2013-02-06 | Analyzed By: AR
Prep Batch: 83645 | Sample Preparation: 2013-02-06 | Prepared By: AR

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Sulfate	J	1	**63.7**	<125	<8.85	mg/L	50	8.85	2.5	0.177

Sample: 320210 - MW-3

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	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Total Dissolved Solids		1	**6490**	**6490**	<97.5	mg/L	10	97.5	10	9.75

Sample: 320211 - MW-4

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	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Benzene	U	1	<0.000200	<0.00100	<0.000200	mg/L	1	0.000200	0.001	0.0002

continued ...

sample 320211 continued ...

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Toluene	U	1	<0.000300	<0.00100	<0.000300	mg/L	1	0.000300	0.001	0.0003
Ethylbenzene	U	1	<0.000400	<0.00100	<0.000400	mg/L	1	0.000400	0.001	0.0004
Xylene	U	1	<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)	QM		0.117	mg/L	1	0.100	117	75.7 - 109
4-Bromofluorobenzene (4-BFB)			0.0996	mg/L	1	0.100	100	68.1 - 109

Sample: 320211 - MW-4

Laboratory:	Midland			
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method: N/A
QC Batch:	98821	Date Analyzed:	2013-02-06	Analyzed By: AR
Prep Batch:	83645	Sample Preparation:	2013-02-06	Prepared By: AR

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Chloride		1	**12600**	**12600**	<265	mg/L	1000	265	2.5	0.265

Sample: 320211 - MW-4

Laboratory:	Midland			
Analysis:	SO4 (IC)	Analytical Method:	E 300.0	Prep Method: N/A
QC Batch:	98821	Date Analyzed:	2013-02-06	Analyzed By: AR
Prep Batch:	83645	Sample Preparation:	2013-02-06	Prepared By: AR

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Sulfate	J	1	**220**	<250	<17.7	mg/L	100	17.7	2.5	0.177

Sample: 320211 - MW-4

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	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Total Dissolved Solids		1	**26700**	**26700**	<975	mg/L	100	975	10	9.75

Sample: 320212 - MW-5

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	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Benzene	U	1	<0.000200	<0.00100	<0.000200	mg/L	1	0.000200	0.001	0.0002
Toluene	U	1	<0.000300	<0.00100	<0.000300	mg/L	1	0.000300	0.001	0.0003
Ethylbenzene	U	1	<0.000400	<0.00100	<0.000400	mg/L	1	0.000400	0.001	0.0004
Xylene	U	1	<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)	Qsr		0.144	mg/L	1	0.100	144	75.7 - 109
4-Bromofluorobenzene (4-BFB)			0.0891	mg/L	1	0.100	89	68.1 - 109

Sample: 320212 - MW-5

Laboratory: Midland
Analysis: Chloride (IC) | Analytical Method: E 300.0 | Prep Method: N/A
QC Batch: 98821 | Date Analyzed: 2013-02-06 | Analyzed By: AR
Prep Batch: 83645 | Sample Preparation: 2013-02-06 | Prepared By: AR

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Chloride		1	**70400**	**70400**	<1320	mg/L	5000	1320	2.5	0.265

Sample: 320212 - MW-5

Laboratory: Midland
Analysis: SO4 (IC) | Analytical Method: E 300.0 | Prep Method: N/A
QC Batch: 98870 | Date Analyzed: 2013-02-11 | Analyzed By: AR
Prep Batch: 83721 | Sample Preparation: 2013-02-07 | Prepared By: AR

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Sulfate		1	**1080**	**1080**	<8.85	mg/L	50	8.85	2.5	0.177

Sample: 320212 - MW-5

Laboratory: Midland
Analysis: TDS
QC Batch: 98845
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	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Total Dissolved Solids		1	**120000**	**120000**	<1950	mg/L	200	1950	10	9.75

Sample: 320213 - MW-6

Laboratory: Midland
Analysis: BTEX
QC Batch: 98791
Prep Batch: 83715

Analytical Method: S 8021B
Date Analyzed: 2013-02-08
Sample Preparation: 2013-02-08

Prep Method: S 5030B
Analyzed By: YG
Prepared By: YG

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Benzene	U	1	<0.000200	<0.00100	<0.000200	mg/L	1	0.000200	0.001	0.0002
Toluene	U	1	<0.000300	<0.00100	<0.000300	mg/L	1	0.000300	0.001	0.0003
Ethylbenzene	U	1	<0.000400	<0.00100	<0.000400	mg/L	1	0.000400	0.001	0.0004
Xylene	U	1	<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)	Q#r		0.116	mg/L	1	0.100	116	75.7 - 109
4-Bromofluorobenzene (4-BFB)			0.100	mg/L	1	0.100	100	68.1 - 109

Sample: 320213 - MW-6

Laboratory: Midland
Analysis: Chloride (IC)
QC Batch: 98821
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	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Chloride		1	**326**	**326**	<2.65	mg/L	10	2.65	2.5	0.265

Sample: 320213 - MW-6

Laboratory: Midland
Analysis: SO4 (IC)
QC Batch: 98821
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	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Sulfate		1	**63.5**	**63.5**	<0.885	mg/L	5	0.885	2.5	0.177

Sample: 320213 - MW-6

Laboratory: Midland
Analysis: TDS
QC Batch: 98845
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	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Total Dissolved Solids		1	**756**	**756**	<19.5	mg/L	2	19.5	10	9.75

Sample: 320214 - MW-7

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

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Benzene	U	1	<0.000200	<0.00100	<0.000200	mg/L	1	0.000200	0.001	0.0002
Toluene	U	1	<0.000300	<0.00100	<0.000300	mg/L	1	0.000300	0.001	0.0003
Ethylbenzene	U	1	<0.000400	<0.00100	<0.000400	mg/L	1	0.000400	0.001	0.0004
Xylene	U	1	<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)	Q81		0.118	mg/L	1	0.100	118	75.7 - 109
4-Bromofluorobenzene (4-BFB)			0.105	mg/L	1	0.100	105	68.1 - 109

Sample: 320214 - MW-7

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	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Chloride		1	**1380**	**1380**	<26.5	mg/L	100	26.5	2.5	0.265

Sample: 320214 - MW-7

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	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Sulfate		1	**81.7**	**81.7**	<1.77	mg/L	10	1.77	2.5	0.177

Sample: 320214 - MW-7

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	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Total Dissolved Solids		1	**2490**	**2490**	<48.8	mg/L	5	48.8	10	9.75

Method Blanks

Method Blank (1)

QC Batch: 98791
Prep Batch: 83715

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

Analyzed By: YG
Prepared By: YG

Parameter	F	C	Result	Units	Reporting Limits
Benzene		1	<0.000200	mg/L	0.0002
Toluene		1	<0.000300	mg/L	0.0003
Ethylbenzene		1	<0.000400	mg/L	0.0004
Xylene		1	<0.00120	mg/L	0.0012

Surrogate	F	C	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	QBr		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: 98820
Prep Batch: 83645

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

Analyzed By: AR
Prepared By: AR

Parameter	F	C	Result	Units	Reporting Limits
Chloride		1	0.980	mg/L	0.265

Method Blank (1)

QC Batch: 98820
Prep Batch: 83645

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

Analyzed By: AR
Prepared By: AR

Parameter	F	C	Result	Units	Reporting Limits
Sulfate		1	<0.177	mg/L	0.177

Method Blank (1)

QC Batch: 98821 | Date Analyzed: 2013-02-06 | Analyzed By: AR
Prep Batch: 83645 | QC Preparation: 2013-02-06 | Prepared By: AR

Parameter	F	C	Result	Units	Reporting Limits
Chloride		1	0.966	mg/L	0.265

Method Blank (1)

QC Batch: 98821 | Date Analyzed: 2013-02-06 | Analyzed By: AR
Prep Batch: 83645 | QC Preparation: 2013-02-06 | Prepared By: AR

Parameter	F	C	Result	Units	Reporting Limits
Sulfate		1	<0.177	mg/L	0.177

Method Blank (1)

QC Batch: 98822 | Date Analyzed: 2013-02-06 | Analyzed By: AR
Prep Batch: 83645 | QC Preparation: 2013-02-06 | Prepared By: AR

Parameter	F	C	Result	Units	Reporting Limits
Chloride		1	0.972	mg/L	0.265

Method Blank (1)

QC Batch: 98822 | Date Analyzed: 2013-02-06 | Analyzed By: AR
Prep Batch: 83645 | QC Preparation: 2013-02-06 | Prepared By: AR

Parameter	F	C	Result	Units	Reporting Limits
Sulfate		1	<0.177	mg/L	0.177

Method Blank (1)

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

Parameter	F	C	Result	Units	Reporting Limits
Total Dissolved Solids		1	<9.75	mg/L	9.75

Method Blank (1)

QC Batch: 98870 | Date Analyzed: 2013-02-11 | Analyzed By: AR
Prep Batch: 83721 | QC Preparation: 2013-02-07 | Prepared By: AR

Parameter	F	C	Result	Units	Reporting Limits
Sulfate		1	<0.177	mg/L	0.177

Duplicate (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	F	C	Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
Total Dissolved Solids		1	11600	11600	mg/L	20	0	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	F	C	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	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: 98820
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	24.2	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	23.8	mg/L	1	25.0	<0.265	95	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: 98820 | Date Analyzed: 2013-02-06 | Analyzed By: AR
Prep Batch: 83645 | QC Preparation: 2013-02-06 | Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate		1	25.6	mg/L	1	25.0	<0.177	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	25.8	mg/L	1	25.0	<0.177	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: 98821 | Date Analyzed: 2013-02-06 | Analyzed By: AR
Prep Batch: 83645 | QC Preparation: 2013-02-06 | Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	23.8	mg/L	1	25.0	<0.265	95	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	24.0	mg/L	1	25.0	<0.265	96	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: 98821 | Date Analyzed: 2013-02-06 | Analyzed By: AR
Prep Batch: 83645 | QC Preparation: 2013-02-06 | Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate		1	25.5	mg/L	1	25.0	<0.177	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	25.9	mg/L	1	25.0	<0.177	104	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: 98822 | Date Analyzed: 2013-02-06 | Analyzed By: AR
Prep Batch: 83645 | QC Preparation: 2013-02-06 | 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.

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 | Date Analyzed: 2013-02-06 | Analyzed By: AR
Prep Batch: 83645 | QC Preparation: 2013-02-06 | 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: 98845 | Date Analyzed: 2013-02-06 | Analyzed By: AR
Prep Batch: 83642 | QC Preparation: 2013-02-05 | 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: 98870
Prep Batch: 83721
Date Analyzed: 2013-02-11
QC Preparation: 2013-02-07
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	26.6	mg/L	1	25.0	<0.177	106	90 - 110	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: 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.

continued ...

matrix spikes continued ...

Surrogate	F	C	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Surrogate	F	C	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	Q1		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: 320207

QC Batch: 98820 | Date Analyzed: 2013-02-06 | Analyzed By: AR
Prep Batch: 83645 | QC Preparation: 2013-02-06 | Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	Q1	1	24400	mg/L	500	15000	5740	124	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	Q1	1	24400	mg/L	500	15000	5740	124	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: 320207

QC Batch: 98820 | Date Analyzed: 2013-02-06 | Analyzed By: AR
Prep Batch: 83645 | QC Preparation: 2013-02-06 | Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate		1	15600	mg/L	500	15000	<88.5	104	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	15600	mg/L	500	15000	<88.5	104	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: 320209

QC Batch: 98821 | Date Analyzed: 2013-02-06 | Analyzed By: AR
Prep Batch: 83645 | QC Preparation: 2013-02-06 | Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	58600	mg/L	1000	30000	23500	117	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	58200	mg/L	1000	30000	23500	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: 320209

QC Batch: 98821 | Date Analyzed: 2013-02-06 | Analyzed By: AR
Prep Batch: 83645 | QC Preparation: 2013-02-06 | Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate		1	29500	mg/L	1000	30000	588	96	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	29400	mg/L	1000	30000	588	96	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: 320214

QC Batch: 98822 | Date Analyzed: 2013-02-06 | Analyzed By: AR
Prep Batch: 83645 | QC Preparation: 2013-02-06 | 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 | Date Analyzed: 2013-02-06 | Analyzed By: AR
Prep Batch: 83645 | QC Preparation: 2013-02-06 | 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: 320443

QC Batch: 98870 | Date Analyzed: 2013-02-11 | Analyzed By: AR
Prep Batch: 83721 | QC Preparation: 2013-02-07 | Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate		1	3000	mg/L	100	3000	295	90	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	2950	mg/L	100	3000	295	88	80 - 120	2	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	F	C	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	F	C	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	F	C	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: 98820 Date Analyzed: 2013-02-06 Analyzed By: AR

Param	F	C	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1	mg/L	25.0	23.8	95	90 - 110	2013-02-06

Standard (CCV-1)

QC Batch: 98820 Date Analyzed: 2013-02-06 Analyzed By: AR

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	2013-02-06

Standard (CCV-2)

QC Batch: 98820 Date Analyzed: 2013-02-06 Analyzed By: AR

Param	F	C	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1	mg/L	25.0	23.9	96	90 - 110	2013-02-06

Standard (CCV-2)

QC Batch: 98820 Date Analyzed: 2013-02-06 Analyzed By: AR

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

Standard (CCV-1)

QC Batch: 98821 Date Analyzed: 2013-02-06 Analyzed By: AR

Param	F	C	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1	mg/L	25.0	23.9	96	90 - 110	2013-02-06

Standard (CCV-1)

QC Batch: 98821 Date Analyzed: 2013-02-06 Analyzed By: AR

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

Standard (CCV-2)

QC Batch: 98821 Date Analyzed: 2013-02-06 Analyzed By: AR

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

Standard (CCV-2)

QC Batch: 98821 Date Analyzed: 2013-02-06 Analyzed By: AR

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

Standard (CCV-1)

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

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

Standard (CCV-1)

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

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

Standard (CCV-2)

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

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	2013-02-06

Standard (CCV-2)

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

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	2013-02-06

Standard (CCV-1)

QC Batch: 98870 Date Analyzed: 2013-02-11 Analyzed By: AR

Param	F	C	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	2013-02-11

Standard (CCV-2)

QC Batch: 98870 Date Analyzed: 2013-02-11 Analyzed By: AR

Param	F	C	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Sulfate		1	mg/L	25.0	26.5	106	90 - 110	2013-02-11

Limits of Detection (LOD)

Test	Method	Matrix	Instrument	Analyte	Spike Amount	Pass
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
Chloride (IC)	E 300.0	water	Dionex IC	Chloride	0.625	Pass
SO4 (IC)	E 300.0	water	Dionex IC	Sulfate	0.500	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	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.

1302C139

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

114-6401629

CLIENT NAME: Celero Energy
SITE MANAGER: Jeff Kindley
PROJECT NO.: H5-6405131-A (JMF)
PROJECT NAME: Rock Queen #11

ANALYSIS REQUEST (Circle or Specify Method No.)

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)
32208	1/30	1210	W		X	mw-1	4				X		X												X			X
209		1205				mw-2	4				X		X												X			X
210		1230				mw-3	4				X		X												X			X
211		1245				mw-4	4				X		X												X			X
212		1155				mw-5	4				X		X												X			X
213		1220				mw-6	4				X		X												X			X
214	↓	1240	↓		↓	mw-7	4				X		X												X			X

RELINQUISHED BY: (Signature) Mansur Kuyashi — Date: 2-1-13 Time: 1415
RECEIVED BY: (Signature) — Date: 2/1/13 Time: 1415
SAMPLED BY: (Print & Initial) Mansur Kuyashi / Ryan Kerr — Date: ____ Time: ____
RELINQUISHED BY: (Signature) — Date: ____ Time: ____
RECEIVED BY: (Signature) — Date: ____ Time: ____
SAMPLE SHIPPED BY: (Circle) FEDEX BUS HAND DELIVERED UPS — AIRBILL #: ____ OTHER: ____
RELINQUISHED BY: (Signature) — Date: ____ Time: ____
RECEIVED BY: (Signature) — Date: ____ Time: ____
RECEIVING LABORATORY: Xenco
ADDRESS: ____
CITY: Midland STATE: Tx ZIP: ____
CONTACT: ____ PHONE: ____
RECEIVED BY: (Signature) ____
DATE: ____ TIME: ____
TETRA TECH CONTACT PERSON: Jeff Kindley
Results by: ____
RUSH Charges Authorized: Yes No
SAMPLE CONDITION WHEN RECEIVED: 2.1
REMARKS: BTEX, Cl, SO4, TDS Midland lab

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•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

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

Report Date: May 10, 2013

Work Order: 13042621

Project Location: Chavez Co., NM
Project Name: Celero/Rock Queen #11
Project Number: 114-6401629

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
327411	MW-1	water	2013-04-25	10:35	2013-04-25
327412	MW-2	water	2013-04-25	10:30	2013-04-25
327413	MW-3	water	2013-04-25	10:50	2013-04-25
327414	MW-4	water	2013-04-25	11:05	2013-04-25
327415	MW-5	water	2013-04-25	10:25	2013-04-25
327416	MW-6	water	2013-04-25	10:45	2013-04-25
327417	MW-7	water	2013-04-25	10:55	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.

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 #11 were received by TraceAnalysis, Inc. on 2013-04-25 and assigned to work order 13042621. Samples for work order 13042621 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	85800	2013-05-09 at 09:00	101235	2013-05-09 at 09:15
Alkalinity	SM 2320B	85801	2013-05-09 at 14:00	101237	2013-05-09 at 14:15
BTEX	S 8021B	85587	2013-05-02 at 09:25	100979	2013-05-02 at 09:26
Ca, Dissolved	S 6010C	85572	2013-05-01 at 12:02	101121	2013-05-07 at 09:03
Chloride (IC)	E 300.0	85706	2013-05-06 at 14:00	101126	2013-05-06 at 15:55
Chloride (IC)	E 300.0	85707	2013-05-06 at 14:00	101127	2013-05-06 at 15:55
Hardness	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	101121	2013-05-07 at 09:03
Mg, 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	101121	2013-05-07 at 09:03
pH	SM 4500-H+	85498	2013-04-26 at 16:03	100884	2013-04-26 at 17:08
pH	SM 4500-H+	85498	2013-04-26 at 16:03	100885	2013-04-26 at 17:09
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
SO4 (IC)	E 300.0	85754	2013-05-08 at 08:30	101181	2013-05-08 at 09:27
TDS	SM 2540C	85494	2013-04-26 at 11:39	100878	2013-04-27 at 15:41
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 13042621 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: 327411 - MW-1

Laboratory:	Lubbock				
Analysis:	Alkalinity	Analytical Method:	SM 2320B	Prep Method:	N/A
QC Batch:	101235	Date Analyzed:	2013-05-09	Analyzed By:	LM
Prep Batch:	85800	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	**121**	**121**	<1.00	mg/L as CaCo3	1	1.00	1	1
Total Alkalinity		1	**121**	**121**	<20.0	mg/L as CaCo3	1	20.0	20	20

Sample: 327411 - MW-1

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	100979	Date Analyzed:	2013-05-02	Analyzed By:	AH
Prep Batch:	85587	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	Q#,U	2	<0.000200	<0.00100	<0.000200	mg/L	1	0.000200	0.001	0.0002
Toluene	Q#,U	2	<0.000300	<0.00100	<0.000300	mg/L	1	0.000300	0.001	0.0003
Ethylbenzene	Q#,U	2	<0.000400	<0.00100	<0.000400	mg/L	1	0.000400	0.001	0.0004
Xylene	Q#,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)			0.0981	mg/L	1	0.100	98	70 - 130
4-Bromofluorobenzene (4-BFB)			0.0949	mg/L	1	0.100	95	70 - 130

Sample: 327411 - 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	**2920**	**2920**	<4.41	mg/L	100	4.41	1	0.0441

Sample: 327411 - MW-1

Laboratory:	Lubbock			Prep Method:	N/A
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Analyzed By:	RL
QC Batch:	101126	Date Analyzed:	2013-05-06	Prepared By:	RL
Prep Batch:	85706	Sample Preparation:	2013-05-06		

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Chloride		1	**21600**	**21600**	<845	mg/L	5000	845	2.5	0.169

Sample: 327411 - MW-1

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

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Hardness (by ICP)			**10700**	**10700**	0.00	mg eq CaCO3/L	1	0.00		

Sample: 327411 - MW-1

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

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Dissolved Potassium		1	**194**	**194**	<0.443	mg/L	10	0.443	1	0.0443

Sample: 327411 - 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	**820**	**820**	<2.96	mg/L	100	2.96	1	0.0296

Sample: 327411 - 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	**12800**	**12800**	<172	mg/L	1000	172	1	0.172

Sample: 327411 - MW-1

Laboratory: Midland
Analysis: pH | Analytical Method: SM 4500-H+ | Prep Method: N/A
QC Batch: 100884 | 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	6.62	s.u.	1	0

Sample: 327411 - MW-1

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	1	**401**	<2500	<224	mg/L	1000	224	2.5	0.224

Sample: 327411 - MW-1

Laboratory: Midland
Analysis: TDS | Analytical Method: SM 2540C | Prep Method: N/A
QC Batch: 100878 | Date Analyzed: 2013-04-27 | Analyzed By: AR
Prep Batch: 85494 | Sample Preparation: 2013-04-26 | 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	**37400**	**37400**	<975	mg/L	100	975	10	9.75

Sample: 327412 - MW-2

Laboratory: Lubbock
Analysis: Alkalinity | Analytical Method: SM 2320B | Prep Method: N/A
QC Batch: 101235 | Date Analyzed: 2013-05-09 | Analyzed By: LM
Prep Batch: 85800 | 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	**291**	**291**	<1.00	mg/L as CaCo3	1	1.00	1	1
Total Alkalinity		1	**291**	**291**	<20.0	mg/L as CaCo3	1	20.0	20	20

Sample: 327412 - MW-2

Laboratory: Midland
Analysis: BTEX | Analytical Method: S 8021B | Prep Method: S 5030B
QC Batch: 100979 | Date Analyzed: 2013-05-02 | Analyzed By: AH
Prep Batch: 85587 | 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	Qs,U	2	<0.000200	<0.00100	<0.000200	mg/L	1	0.000200	0.001	0.0002
Toluene	Qs,U	2	<0.000300	<0.00100	<0.000300	mg/L	1	0.000300	0.001	0.0003
Ethylbenzene	Qs,U	2	<0.000400	<0.00100	<0.000400	mg/L	1	0.000400	0.001	0.0004
Xylene	Qs,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)			0.0965	mg/L	1	0.100	96	70 - 130
4-Bromofluorobenzene (4-BFB)			0.0941	mg/L	1	0.100	94	70 - 130

Sample: 327412 - MW-2

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	**4290**	**4290**	<4.41	mg/L	100	4.41	1	0.0441

Sample: 327412 - MW-2

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	101126	Date Analyzed:	2013-05-06	Analyzed By:	RL
Prep Batch:	85706	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	**35700**	**35700**	<845	mg/L	5000	845	2.5	0.169

Sample: 327412 - MW-2

Laboratory:	Lubbock				
Analysis:	Hardness	Analytical Method:	S 6010C	Prep Method:	N/A
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)
Hardness (by ICP)			**15000**	**15000**	0.00	mg eq CaCO3/L	1	0.00		

Sample: 327412 - MW-2

Laboratory:	Lubbock				
Analysis:	K, 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

continued ...

sample 327412 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	**115**	**115**	<0.443	mg/L	10	0.443	1	0.0443

Sample: 327412 - MW-2

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	**1050**	**1050**	<2.96	mg/L	100	2.96	1	0.0296

Sample: 327412 - MW-2

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	**13900**	**13900**	<172	mg/L	1000	172	1	0.172

Sample: 327412 - 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	6.46	s.u.	1	0

Sample: 327412 - MW-2

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	**650**	<2500	<224	mg/L	1000	224	2.5	0.224

Sample: 327412 - 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	**49200**	**49200**	<975	mg/L	100	975	10	9.75

Sample: 327413 - MW-3

Laboratory:	Lubbock				
Analysis:	Alkalinity	Analytical Method:	SM 2320B	Prep Method:	N/A
QC Batch:	101235	Date Analyzed:	2013-05-09	Analyzed By:	LM
Prep Batch:	85800	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	**119**	**119**	<1.00	mg/L as CaCo3	1	1.00	1	1
Total Alkalinity		1	**119**	**119**	<20.0	mg/L as CaCo3	1	20.0	20	20

Sample: 327413 - MW-3

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	100979	Date Analyzed:	2013-05-02	Analyzed By:	AH
Prep Batch:	85587	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	Q[8],U	2	<0.000200	<0.00100	<0.000200	mg/L	1	0.000200	0.001	0.0002
Toluene	Q[8],U	2	<0.000300	<0.00100	<0.000300	mg/L	1	0.000300	0.001	0.0003
Ethylbenzene	Q[8],U	2	<0.000400	<0.00100	<0.000400	mg/L	1	0.000400	0.001	0.0004
Xylene	Q[8],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)			0.0964	mg/L	1	0.100	96	70 - 130

Sample: 327413 - MW-3

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	**1090**	**1090**	<0.0441	mg/L	1	0.0441	1	0.0441

Sample: 327413 - MW-3

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	**4240**	**4240**	<84.5	mg/L	500	84.5	2.5	0.169

Sample: 327413 - MW-3

Laboratory: Lubbock
Analysis: Hardness — Analytical Method: S 6010C — Prep Method: N/A
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)
Hardness (by ICP)			**3580**	**3580**	0.00	mg eq CaCO3/L	1	0.00		

Sample: 327413 - MW-3

Laboratory: Lubbock
Analysis: K, 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 Potassium		1	**8.05**	**8.05**	<0.0443	mg/L	1	0.0443	1	0.0443

Sample: 327413 - MW-3

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	**207**	**207**	<0.0296	mg/L	1	0.0296	1	0.0296

Sample: 327413 - MW-3

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	**479**	**479**	<0.172	mg/L	1	0.172	1	0.172

Sample: 327413 - 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	7.16	s.u.	1	0

Sample: 327413 - MW-3

Laboratory: Lubbock
Analysis: SO4 (IC) | Analytical Method: E 300.0 | Prep Method: N/A
QC Batch: 101181 | Date Analyzed: 2013-05-08 | Analyzed By: RL
Prep Batch: 85754 | Sample Preparation: 2013-05-08 | 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	**52.4**	<250	<22.4	mg/L	100	22.4	2.5	0.224

Sample: 327413 - 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	**8860**	**8860**	<195	mg/L	20	195	10	9.75

Sample: 327414 - MW-4

Laboratory: Lubbock
Analysis: Alkalinity | Analytical Method: SM 2320B | Prep Method: N/A
QC Batch: 101235 | Date Analyzed: 2013-05-09 | Analyzed By: LM
Prep Batch: 85800 | 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	**161**	**161**	<1.00	mg/L as CaCo3	1	1.00	1	1

continued ...

sample 327414 continued ...

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Total Alkalinity		1	**161**	**161**	<20.0	mg/L as CaCo3	1	20.0	20	20

Sample: 327414 - MW-4

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	100979	Date Analyzed:	2013-05-02	Analyzed By:	AH
Prep Batch:	85587	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	QM, U	2	<0.000200	<0.00100	<0.000200	mg/L	1	0.000200	0.001	0.0002
Toluene	QM, U	2	<0.000300	<0.00100	<0.000300	mg/L	1	0.000300	0.001	0.0003
Ethylbenzene	QM, U	2	<0.000400	<0.00100	<0.000400	mg/L	1	0.000400	0.001	0.0004
Xylene	QM, 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)			0.0957	mg/L	1	0.100	96	70 - 130
4-Bromofluorobenzene (4-BFB)			0.0917	mg/L	1	0.100	92	70 - 130

Sample: 327414 - MW-4

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	**668**	**668**	<0.441	mg/L	10	0.441	1	0.0441

Sample: 327414 - MW-4

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	**16200**	**16200**	<845	mg/L	5000	845	2.5	0.169

Sample: 327414 - MW-4

Laboratory: Lubbock
Analysis: Hardness — Analytical Method: S 6010C — Prep Method: N/A
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)
Hardness (by ICP)			**3620**	**3620**	0.00	mg eq CaCO3/L	1	0.00		

Sample: 327414 - MW-4

Laboratory: Lubbock
Analysis: K, 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 Potassium		1	**323**	**323**	<0.443	mg/L	10	0.443	1	0.0443

Sample: 327414 - MW-4

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	**474**	**474**	<0.296	mg/L	10	0.296	1	0.0296

Sample: 327414 - MW-4

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	**10500**	**10500**	<17.2	mg/L	100	17.2	1	0.172

Sample: 327414 - 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	7.21	s.u.	1	0

Sample: 327414 - MW-4

Laboratory: Lubbock
Analysis: SO4 (IC) | Analytical Method: E 300.0 | Prep Method: N/A
QC Batch: 101181 | Date Analyzed: 2013-05-08 | Analyzed By: RL
Prep Batch: 85754 | Sample Preparation: 2013-05-08 | 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	**395**	<2500	<224	mg/L	1000	224	2.5	0.224

Sample: 327414 - 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	**32100**	**32100**	<975	mg/L	100	975	10	9.75

Sample: 327415 - MW-5

Laboratory:	Lubbock				
Analysis:	Alkalinity	Analytical Method:	SM 2320B	Prep Method:	N/A
QC Batch:	101235	Date Analyzed:	2013-05-09	Analyzed By:	LM
Prep Batch:	85800	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	**221**	**221**	<1.00	mg/L as CaCo3	1	1.00	1	1
Total Alkalinity		1	**221**	**221**	<20.0	mg/L as CaCo3	1	20.0	20	20

Sample: 327415 - MW-5

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	100979	Date Analyzed:	2013-05-02	Analyzed By:	AH
Prep Batch:	85587	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	QR,U	2	<0.000200	<0.00100	<0.000200	mg/L	1	0.000200	0.001	0.0002
Toluene	QR,U	2	<0.000300	<0.00100	<0.000300	mg/L	1	0.000300	0.001	0.0003
Ethylbenzene	QR,U	2	<0.000400	<0.00100	<0.000400	mg/L	1	0.000400	0.001	0.0004
Xylene	QR,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)			0.0982	mg/L	1	0.100	98	70 - 130
4-Bromofluorobenzene (4-BFB)			0.0864	mg/L	1	0.100	86	70 - 130

Sample: 327415 - MW-5

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	**8040**	**8040**	<4.41	mg/L	100	4.41	1	0.0441

Sample: 327415 - MW-5

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	**32100**	**32100**	<845	mg/L	5000	845	2.5	0.169

Sample: 327415 - MW-5

Laboratory:	Lubbock				
Analysis:	Hardness	Analytical Method:	S 6010C	Prep Method:	N/A
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)
Hardness (by ICP)			**28300**	**28300**	0.00	mg eq CaCO3/L	1	0.00		

Sample: 327415 - MW-5

Laboratory:	Lubbock				
Analysis:	K, 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 Potassium		1	**40.3**	**40.3**	<0.443	mg/L	10	0.443	1	0.0443

Sample: 327415 - MW-5

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

continued ...

sample 327415 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 Magnesium		1	**1990**	**1990**	<2.96	mg/L	100	2.96	1	0.0296

Sample: 327415 - MW-5

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	**15300**	**15300**	<172	mg/L	1000	172	1	0.172

Sample: 327415 - MW-5

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	6.32	s.u.	1	0

Sample: 327415 - MW-5

Laboratory:	Lubbock				
Analysis:	SO4 (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	101181	Date Analyzed:	2013-05-08	Analyzed By:	RL
Prep Batch:	85754	Sample Preparation:	2013-05-08	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	**334**	<2500	<224	mg/L	1000	224	2.5	0.224

Sample: 327415 - 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	**58700**	**58700**	<975	mg/L	100	975	10	9.75

Sample: 327416 - MW-6

Laboratory: Lubbock
Analysis: Alkalinity | Analytical Method: SM 2320B | Prep Method: N/A
QC Batch: 101235 | Date Analyzed: 2013-05-09 | Analyzed By: LM
Prep Batch: 85800 | 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	**172**	**172**	<1.00	mg/L as CaCo3	1	1.00	1	1
Total Alkalinity		1	**172**	**172**	<20.0	mg/L as CaCo3	1	20.0	20	20

Sample: 327416 - MW-6

Laboratory: Midland
Analysis: BTEX | Analytical Method: S 8021B | Prep Method: S 5030B
QC Batch: 100979 | Date Analyzed: 2013-05-02 | Analyzed By: AH
Prep Batch: 85587 | 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	QM-07, U	2	<0.000200	<0.00100	<0.000200	mg/L	1	0.000200	0.001	0.0002
Toluene	QM-07, U	2	<0.000300	<0.00100	<0.000300	mg/L	1	0.000300	0.001	0.0003
Ethylbenzene	QM-07, U	2	<0.000400	<0.00100	<0.000400	mg/L	1	0.000400	0.001	0.0004
Xylene	QM-07, 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)			0.0976	mg/L	1	0.100	98	70 - 130
4-Bromofluorobenzene (4-BFB)			0.0958	mg/L	1	0.100	96	70 - 130

Sample: 327416 - MW-6

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	**160**	**160**	<0.0441	mg/L	1	0.0441	1	0.0441

Sample: 327416 - MW-6

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	**318**	**318**	<1.69	mg/L	10	1.69	2.5	0.169

Sample: 327416 - MW-6

Laboratory:	Lubbock				
Analysis:	Hardness	Analytical Method:	S 6010C	Prep Method:	N/A
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)
Hardness (by ICP)			**515**	**515**	0.00	mg eq CaCO3/L	1	0.00		

Sample: 327416 - MW-6

Laboratory:	Lubbock				
Analysis:	K, 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

continued ...

sample 327416 continued ...

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Dissolved Potassium	J	1	**0.854**	<1.00	<0.0443	mg/L	1	0.0443	1	0.0443

Sample: 327416 - MW-6

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	**28.2**	**28.2**	<0.0296	mg/L	1	0.0296	1	0.0296

Sample: 327416 - MW-6

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	**62.4**	**62.4**	<0.172	mg/L	1	0.172	1	0.172

Sample: 327416 - MW-6

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	7.83	s.u.	1	0

Sample: 327416 - MW-6

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	**57.2**	**57.2**	<2.24	mg/L	10	2.24	2.5	0.224

Sample: 327416 - 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	**956**	**956**	<19.5	mg/L	2	19.5	10	9.75

Sample: 327417 - MW-7

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	**91.0**	**91.0**	<1.00	mg/L as CaCo3	1	1.00	1	1
Total Alkalinity		1	**91.0**	**91.0**	<20.0	mg/L as CaCo3	1	20.0	20	20

Sample: 327417 - MW-7

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	100979	Date Analyzed:	2013-05-02	Analyzed By:	AH
Prep Batch:	85587	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	Q-,U	2	<0.000200	<0.00100	<0.000200	mg/L	1	0.000200	0.001	0.0002
Toluene	Q-,U	2	<0.000300	<0.00100	<0.000300	mg/L	1	0.000300	0.001	0.0003
Ethylbenzene	Q-,U	2	<0.000400	<0.00100	<0.000400	mg/L	1	0.000400	0.001	0.0004
Xylene	Q-,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)			0.0965	mg/L	1	0.100	96	70 - 130

Sample: 327417 - MW-7

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	**688**	**688**	<0.0441	mg/L	1	0.0441	1	0.0441

Sample: 327417 - MW-7

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	**1960**	**1960**	<16.9	mg/L	100	16.9	2.5	0.169

Sample: 327417 - MW-7

Laboratory: Lubbock
Analysis: Hardness | Analytical Method: S 6010C | Prep Method: N/A
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)
Hardness (by ICP)			**2260**	**2260**	0.00	mg eq CaCO3/L	1	0.00		

Sample: 327417 - MW-7

Laboratory: Lubbock
Analysis: K, 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 Potassium		1	**4.50**	**4.50**	<0.0443	mg/L	1	0.0443	1	0.0443

Sample: 327417 - MW-7

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	**131**	**131**	<0.0296	mg/L	1	0.0296	1	0.0296

Sample: 327417 - MW-7

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	**145**	**145**	<0.172	mg/L	1	0.172	1	0.172

Sample: 327417 - MW-7

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	7.37	s.u.	1	0

Sample: 327417 - MW-7

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	**99.3**	<250	<22.4	mg/L	100	22.4	2.5	0.224

Sample: 327417 - MW-7

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	**3760**	**3760**	<48.8	mg/L	5	48.8	10	9.75

Method Blanks

Method Blank (1)

QC Batch: 100878 | Date Analyzed: 2013-04-27 | Analyzed By: AR
Prep Batch: 85494 | QC Preparation: 2013-04-26 | 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: 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: 100979 | Date Analyzed: 2013-05-02 | Analyzed By: AH
Prep Batch: 85587 | 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)			0.0988	mg/L	1	0.100	99	70 - 130
4-Bromofluorobenzene (4-BFB)			0.0962	mg/L	1	0.100	96	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 | 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 Potassium		1	<0.0443	mg/L	0.0443

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 Magnesium		1	<0.0296	mg/L	0.0296

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 Sodium		1	<0.172	mg/L	0.172

Method Blank (1)

QC Batch: 101126 | Date Analyzed: 2013-05-06 | Analyzed By: RL
Prep Batch: 85706 | QC Preparation: 2013-05-06 | Prepared By: RL

Parameter	F	C	Result	Units	Reporting Limits
Chloride		1	0.182	mg/L	0.169

Method Blank (1)

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

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

Method Blank (1)

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

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

Method Blank (1)

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

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

Method Blank (1)

QC Batch: 101181 | Date Analyzed: 2013-05-08 | Analyzed By: RL
Prep Batch: 85754 | QC Preparation: 2013-05-08 | Prepared By: RL

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

Method Blank (1)

QC Batch: 101235 | Date Analyzed: 2013-05-09 | Analyzed By: LM
Prep Batch: 85800 | QC Preparation: 2013-05-09 | 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	1.00	mg/L as CaCo3	1
Total Alkalinity		1	<20.0	mg/L as CaCo3	20

Method Blank (1)

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

Duplicate (2) Duplicated Sample: 327401

QC Batch: 100878 | Date Analyzed: 2013-04-27 | Analyzed By: AR
Prep Batch: 85494 | QC Preparation: 2013-04-26 | Prepared By: AR

continued ...

duplicate continued . . .

Param	F	C	Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
Param	F	C	Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
Total Dissolved Solids		2	93100	98000	mg/L	100	5	10

Duplicate (1) Duplicated Sample: 327401

QC Batch: 100884 | Date Analyzed: 2013-04-26 | Analyzed By: AR
Prep Batch: 85498 | QC Preparation: 2013-04-26 | Prepared By: AR

Param	F	C	Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
pH		2	6.38	6.38	s.u.	1	0	10

Duplicate (1) Duplicated Sample: 327412

QC Batch: 100885 | Date Analyzed: 2013-04-26 | Analyzed By: AR
Prep Batch: 85498 | QC Preparation: 2013-04-26 | 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 (2) Duplicated Sample: 327422

QC Batch: 100915 | Date Analyzed: 2013-04-29 | Analyzed By: AR
Prep Batch: 85528 | QC Preparation: 2013-04-27 | 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 | Date Analyzed: 2013-05-09 | Analyzed By: LM
Prep Batch: 85801 | QC Preparation: 2013-05-09 | 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-2)

QC Batch: 100878 | Date Analyzed: 2013-04-27 | Analyzed By: AR
Prep Batch: 85494 | QC Preparation: 2013-04-26 | Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Total Dissolved Solids		2	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		2	1010	mg/L	1	1000	<9.75	101	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: 100915 | Date Analyzed: 2013-04-29 | Analyzed By: AR
Prep Batch: 85528 | QC Preparation: 2013-04-27 | 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-1)

QC Batch: 100979 | Date Analyzed: 2013-05-02 | Analyzed By: AH
Prep Batch: 85587 | QC Preparation: 2013-05-02 | Prepared By: AH

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		2	0.0986	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	0.0962	mg/L	1	0.100	<0.000400	96	70 - 130
Xylene		2	0.280	mg/L	1	0.300	<0.00120	93	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	0.102	mg/L	1	0.100	<0.000200	102	70 - 130	3	20
Toluene		2	0.100	mg/L	1	0.100	<0.000300	100	70 - 130	3	20
Ethylbenzene		2	0.0990	mg/L	1	0.100	<0.000400	99	70 - 130	3	20
Xylene		2	0.287	mg/L	1	0.300	<0.00120	96	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)			0.0972	0.0977	mg/L	1	0.100	97	98	70 - 130
4-Bromofluorobenzene (4-BFB)			0.0968	0.0976	mg/L	1	0.100	97	98	70 - 130

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 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 | 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: 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: 101126 | Date Analyzed: 2013-05-06 | Analyzed By: RL
Prep Batch: 85706 | QC Preparation: 2013-05-06 | Prepared By: RL

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	24.9	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	24.8	mg/L	1	25.0	<0.169	99	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
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: 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: 101181 | Date Analyzed: 2013-05-08 | Analyzed By: RL
Prep Batch: 85754 | QC Preparation: 2013-05-08 | 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	26.0	mg/L	1	25.0	<0.224	104	90 - 110	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: 100979 | Date Analyzed: 2013-05-02 | Analyzed By: AH
Prep Batch: 85587 | QC Preparation: 2013-05-02 | Prepared By: AH

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	Q3	2	0.179	mg/L	1	0.100	<0.000200	179	70 - 130
Toluene	Q3	2	0.174	mg/L	1	0.100	<0.000300	174	70 - 130
Ethylbenzene	Q3	2	0.171	mg/L	1	0.100	<0.000400	171	70 - 130
Xylene	Q3	2	0.495	mg/L	1	0.300	<0.00120	165	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	Q-	2	0.147	mg/L	1	0.100	<0.000200	147	70 - 130	20	20
Toluene	Q-	2	0.143	mg/L	1	0.100	<0.000300	143	70 - 130	20	20
Ethylbenzene	Q-	2	0.140	mg/L	1	0.100	<0.000400	140	70 - 130	20	20
Xylene	Q-	2	0.405	mg/L	1	0.300	<0.00120	135	70 - 130	20	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)			0.0974	0.0968	mg/L	1	0.1	97	97	70 - 130
4-Bromofluorobenzene (4-BFB)			0.0981	0.0960	mg/L	1	0.1	98	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: 327406

QC Batch: 101126 | Date Analyzed: 2013-05-06 | Analyzed By: RL
Prep Batch: 85706 | QC Preparation: 2013-05-06 | Prepared By: RL

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	231	mg/L	5	125	89.8	113	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	231	mg/L	5	125	89.8	113	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: 327418

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	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 | Date Analyzed: 2013-05-06 | Analyzed By: RL
Prep Batch: 85707 | QC Preparation: 2013-05-06 | 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: 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: 327221

QC Batch: 101181
Prep Batch: 85754

Date Analyzed: 2013-05-08
QC Preparation: 2013-05-08

Analyzed By: RL
Prepared By: RL

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate		1	14100	mg/L	500	12500	1513	101	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	14600	mg/L	500	12500	1513	105	80 - 120	4	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: 100884 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	7.08	101	98 - 102	2013-04-26

Standard (CCV-1)

QC Batch: 100884 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	7.09	101	98 - 102	2013-04-26

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 (CCV-1)

QC Batch: 100979 | 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	0.0943	94	80 - 120	2013-05-02
Toluene		2	mg/L	0.100	0.0918	92	80 - 120	2013-05-02
Ethylbenzene		2	mg/L	0.100	0.0901	90	80 - 120	2013-05-02
Xylene		2	mg/L	0.300	0.261	87	80 - 120	2013-05-02

Standard (CCV-2)

QC Batch: 100979 | 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	0.100	100	80 - 120	2013-05-02
Toluene		2	mg/L	0.100	0.0981	98	80 - 120	2013-05-02
Ethylbenzene		2	mg/L	0.100	0.0966	97	80 - 120	2013-05-02
Xylene		2	mg/L	0.300	0.280	93	80 - 120	2013-05-02

Standard (CCV-3)

QC Batch: 100979 | 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	0.0993	99	80 - 120	2013-05-02
Toluene		2	mg/L	0.100	0.0969	97	80 - 120	2013-05-02
Ethylbenzene		2	mg/L	0.100	0.0953	95	80 - 120	2013-05-02
Xylene		2	mg/L	0.300	0.276	92	80 - 120	2013-05-02

Standard (CCV-4)

QC Batch: 100979 | 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	0.101	101	80 - 120	2013-05-02

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Param	F	C	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Toluene		2	mg/L	0.100	0.0994	99	80 - 120	2013-05-02
Ethylbenzene		2	mg/L	0.100	0.0985	98	80 - 120	2013-05-02
Xylene		2	mg/L	0.300	0.286	95	80 - 120	2013-05-02

Standard (CCV-5)

QC Batch: 100979 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	0.101	101	80 - 120	2013-05-02
Ethylbenzene		2	mg/L	0.100	0.0997	100	80 - 120	2013-05-02
Xylene		2	mg/L	0.300	0.289	96	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: 101126 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	24.8	99	90 - 110	2013-05-06

Standard (CCV-2)

QC Batch: 101126 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
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 (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
Sulfate		1	mg/L	25.0	25.5	102	90 - 110	2013-05-07

Standard (CCV-1)

QC Batch: 101181 Date Analyzed: 2013-05-08 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	24.8	99	90 - 110	2013-05-08

Standard (CCV-2)

QC Batch: 101181 Date Analyzed: 2013-05-08 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	26.1	104	90 - 110	2013-05-08

Standard (ICV-1)

QC Batch: 101235 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	238		-	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: 101235 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	220		-	2013-05-09
Bicarbonate Alkalinity		1	mg/L as CaCo3	0.00	24.0		-	2013-05-09
Total Alkalinity		1	mg/L as CaCo3	250	244	98	90 - 110	2013-05-09

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

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.

130726Z1

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: 1 OF: 1

CLIENT NAME: Celero Energy

SITE MANAGER: Jeff Kindley

PROJECT NO.: 114-6402629

PROJECT NAME: Celero / Rock Queen #11

LAB I.D. NUMBER	DATE 2013	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE
327411	4/25	1035	W		X	MW-1	4	N	X		X	
327412		1030				MW-2						
327413		1050				MW-3						
327414		1105				MW-4						
327415		1025				MW-5						
327416		1045				MW-6						
327417		1055				MW-7						

ANALYSIS REQUEST (Circle or Specify Method No.)

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
X												X				✓	✓

RELINQUISHED BY: (Signature) — Date: 4-25-13 Time: 16:45
RECEIVED BY: (Signature) — Date: 4/25/13 Time: 16:45

RELINQUISHED BY: (Signature) — Date: 4/25/13 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

SAMPLE CONDITION WHEN RECEIVED: 5.9°

REMARKS: 3.2/3.5 LS ZP896047

SAMPLED BY: (Print & Initial) BR/RD — Date: 4-25-13 Time: 1625

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

TETRA TECH CONTACT PERSON: Jeff Kindley

Results by:

RUSH Charges Authorized: Yes No

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 other tests

1304726621

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.: 114-6401629

PROJECT NAME: Celero / Rock Queen #11

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	pH	TDS, Cl	SO4, soft by Hardness
327411	4/25	1035	W		X	MW-1	4	N	X		X		X												X				X			
327412		1030				MW-2																										
327413		1050				MW-3																										
327414		1105				MW-4																										
327415		1025				MW-5																										
327416		1045				MW-6																										
327417		1055				MW-7																										

ANALYSIS REQUEST (Circle or Specify Method No.)

TDS, Cl, SO4, soft by Hardness

RELINQUISHED BY: (Signature) — Date: 4.25.13 Time: 16:45

RECEIVED BY: (Signature) — Date: 4/25/13 Time: 16:45

SAMPLED BY: (Print & Initial) BR/RD — Date: 4.25.13 Time: 1645

RELINQUISHED BY: (Signature) — Date: 4/29/13 Time: 15:30

RECEIVED BY: (Signature) — Date: Time:

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

RELINQUISHED BY: (Signature) — Date: Time:

RECEIVED BY: (Signature) — Date: Time:

TETRA TECH CONTACT PERSON: Jeff Kindley — Results by:

RECEIVING LABORATORY: Trace
ADDRESS:
CITY: Midland STATE: ZIP:
CONTACT: PHONE:

RECEIVED BY: (Signature) Brenda Ward
DATE: 4/30/13 TIME: 9:05

RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: 5.9°

REMARKS: 3.2/3.5 LS ZP896047

AK

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
2 tests

Cation-Anion Balance Sheet

DATE: 5/10/2013

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
327411	2920	820	12800	194	121.00	401	21600				37400	
327412	4290	1050	13900	115	291.00	650	35700				49200	
327413	1090	207	479	8.05	119.00	52.4	4240				8860	
327414	668	474	10500	323	161.00	395	16200				32100	
327415	8040	1990	15300	40.3	221.00	334	32100				58700	
327416	160	28.2	62.4	0.854	172.00	57.2	318				956	
327417	688	131	145	4.5	91.00	99.3	1960				3760	

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***
327411	145.71	67.48	556.80	4.96	2.42	8.35	609.34	0.00	0.00	0.00	774.95	620.10	11.09946966
327412	214.07	86.40	604.65	2.94	5.82	13.53	1007.10	0.00	0.00	0.00	908.07	1026.45	6.119501031
327413	54.39	17.03	20.84	0.21	2.38	1.09	119.61	0.00	0.00	0.00	92.47	123.08	14.20277755
327414	33.33	39.01	456.75	8.26	3.22	8.22	457.00	0.00	0.00	0.00	537.35	468.45	6.850796617
327415	401.20	163.76	665.55	1.03	4.42	6.95	905.54	0.00	0.00	0.00	1231.53	916.91	14.64401135
327416	7.98	2.32	2.71	0.02	3.44	1.19	8.97	0.00	0.00	0.00	13.04	13.60	2.105134751
327417	34.33	10.78	6.31	0.12	1.82	2.07	55.29	0.00	0.00	0.00	51.53	59.18	6.905456464

	EC/Cation	EC/Anion
327411	77494.832	62010.482
327412	90806.72	102645
327413	9246.7449	12308.1368
327414	53735.1	46844.59
327415	123153.3974	91691.488
327416	1304.082332	1360.1684
327417	5153.38	5917.9026

range	0	to	0	
range	0	to	0	
range	0	to	0	
range	0	to	0	
range	0	to	0	
range	0	to	0	
range	0	to	0	

TDS/EC	TDS/Cat		TDS/Anion	
#DIV/0!	0.48		0.60	needs to be 0.55-0.77
#DIV/0!	0.54		0.48	needs to be 0.55-0.77
#DIV/0!	0.96		0.72	needs to be 0.55-0.77
#DIV/0!	0.60		0.69	needs to be 0.55-0.77
#DIV/0!	0.48		0.64	needs to be 0.55-0.77
#DIV/0!	0.73		0.70	needs to be 0.55-0.77
#DIV/0!	0.73		0.64	needs to be 0.55-0.77

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800-378-1296 806-794-1296 FAX 806-794-1298
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)

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

Report Date: August 20, 2013

Work Order: 13072612

Project Location: Chavez Co., NM
Project Name: Celero/Rock Queen #11
Project Number: 114-6401629

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
336627	MW-1	water	2013-07-25	11:25	2013-07-26
336628	MW-2	water	2013-07-25	11:40	2013-07-26
336629	MW-3	water	2013-07-25	11:10	2013-07-26
336630	MW-4	water	2013-07-25	12:15	2013-07-26
336631	MW-5	water	2013-07-25	12:00	2013-07-26
336632	MW-6	water	2013-07-25	12:35	2013-07-26
336633	MW-7	water	2013-07-25	12:55	2013-07-26

Report Corrections (Work Order 13072612)

- 8/20/13: Re-ran SO4 and Cl for samples 336628, 336631, and 336633.
- 8/20/13: Re-ran TDS for samples 336627, 336629, 336630, 336631, and 336633.

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 46 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

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

Report Contents

Case Narrative

Samples for project Celero/Rock Queen #11 were received by TraceAnalysis, Inc. on 2013-07-26 and assigned to work order 13072612. Samples for work order 13072612 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
BTEX	S 8021B	87704	2013-07-29 at 14:10	103581	2013-07-31 at 13:34
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
Chloride (IC)	E 300.0	87892	2013-08-02 at 09:00	103736	2013-08-02 at 09:51
Chloride (IC)	E 300.0	87894	2013-08-05 at 09:00	103739	2013-08-05 at 09:51
Chloride (IC)	E 300.0	88241	2013-08-16 at 08:30	104141	2013-08-16 at 09:05
Hardness	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	103949	2013-08-12 at 16:26
Mg, 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	103949	2013-08-12 at 16:26
pH	SM 4500-H+	87639	2013-07-26 at 10:44	103498	2013-07-26 at 15:30
SO4 (IC)	E 300.0	87892	2013-08-02 at 09:00	103736	2013-08-02 at 09:51
SO4 (IC)	E 300.0	87894	2013-08-05 at 09:00	103739	2013-08-05 at 09:51
SO4 (IC)	E 300.0	88241	2013-08-16 at 08:30	104141	2013-08-16 at 09:05
TDS	SM 2540C	87794	2013-07-25 at 11:48	103618	2013-07-26 at 16:50
TDS	SM 2540C	88264	2013-08-15 at 10:38	104170	2013-08-16 at 16:38

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 13072612 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: 336627 - 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	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	**91.0**	mg/L as CaCo3	1	20.0
Total Alkalinity		2	**91.0**	mg/L as CaCo3	1	20.0

Sample: 336627 - MW-1

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	103581	Date Analyzed:	2013-07-31	Analyzed By:	AH
Prep Batch:	87704	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)			0.0874	mg/L	1	0.100	87	70 - 130
4-Bromofluorobenzene (4-BFB)			0.0846	mg/L	1	0.100	85	70 - 130

Sample: 336627 - 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	**2620**	mg/L	100	1.00
Dissolved Potassium		1	**135**	mg/L	1	1.00
Dissolved Magnesium		1	**590**	mg/L	1	1.00
Dissolved Sodium		1	**9130**	mg/L	100	1.00

Sample: 336627 - MW-1

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	103736	Date Analyzed:	2013-08-02	Analyzed By:	RL
Prep Batch:	87892	Sample Preparation:	2013-08-02	Prepared By:	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1	**18000**	mg/L	1000	2.50

Sample: 336627 - 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)			**8970**	mg eq CaCO3/L	1	0.00

Sample: 336627 - 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	**6.68**	s.u.	1	0.00

Sample: 336627 - MW-1

Laboratory:	Lubbock				
Analysis:	SO4 (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	103736	Date Analyzed:	2013-08-02	Analyzed By:	RL
Prep Batch:	87892	Sample Preparation:	2013-08-02	Prepared By:	RL

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

Sample: 336627 - MW-1

Laboratory:	Midland				
Analysis:	TDS	Analytical Method:	SM 2540C	Prep Method:	N/A
QC Batch:	104170	Date Analyzed:	2013-08-16	Analyzed By:	AR
Prep Batch:	88264	Sample Preparation:	2013-08-15	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		2	**22600**	mg/L	50	2.50

Sample: 336628 - 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	**109**	mg/L as CaCo3	1	20.0
Total Alkalinity		2	**109**	mg/L as CaCo3	1	20.0

Sample: 336628 - MW-2

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	103581	Date Analyzed:	2013-07-31	Analyzed By:	AH
Prep Batch:	87704	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)			0.0902	mg/L	1	0.100	90	70 - 130
4-Bromofluorobenzene (4-BFB)			0.0860	mg/L	1	0.100	86	70 - 130

Sample: 336628 - 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	**3130**	mg/L	100	1.00
Dissolved Potassium		1	**122**	mg/L	1	1.00
Dissolved Magnesium		1	**816**	mg/L	1	1.00
Dissolved Sodium		1	**11300**	mg/L	100	1.00

Sample: 336628 - MW-2

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	104141	Date Analyzed:	2013-08-16	Analyzed By:	RL
Prep Batch:	88241	Sample Preparation:	2013-08-16	Prepared By:	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1	**32600**	mg/L	1000	2.50

Sample: 336628 - 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)			**11200**	mg eq CaCO3/L	1	0.00

Sample: 336628 - 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	**6.55**	s.u.	1	0.00

Sample: 336628 - MW-2

Laboratory:	Lubbock				
Analysis:	SO4 (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	104141	Date Analyzed:	2013-08-16	Analyzed By:	RL
Prep Batch:	88241	Sample Preparation:	2013-08-16	Prepared By:	RL

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

Sample: 336628 - 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	**42100**	mg/L	100	2.50

Sample: 336629 - 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	**78.0**	mg/L as CaCo3	1	20.0
Total Alkalinity		2	**78.0**	mg/L as CaCo3	1	20.0

Sample: 336629 - 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)			0.100	mg/L	1	0.100	100	70 - 130
4-Bromofluorobenzene (4-BFB)			0.0954	mg/L	1	0.100	95	70 - 130

Sample: 336629 - 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	**950**	mg/L	1	1.00
Dissolved Potassium		1	**12.6**	mg/L	1	1.00
Dissolved Magnesium		1	**166**	mg/L	1	1.00

continued ...

sample 336629 continued . . .

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Dissolved Sodium		1	**328**	mg/L	1	1.00

Sample: 336629 - 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	**2500**	mg/L	100	2.50

Sample: 336629 - 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)			**3050**	mg eq CaCO3/L	1	0.00

Sample: 336629 - 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	**7.18**	s.u.	1	0.00

Sample: 336629 - 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	<250	mg/L	100	2.50

Sample: 336629 - MW-3

Laboratory:	Midland				
Analysis:	TDS	Analytical Method:	SM 2540C	Prep Method:	N/A
QC Batch:	104170	Date Analyzed:	2013-08-16	Analyzed By:	AR
Prep Batch:	88264	Sample Preparation:	2013-08-15	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		2	**6650**	mg/L	5	2.50

Sample: 336630 - MW-4

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	**170**	mg/L as CaCo3	1	20.0
Total Alkalinity		2	**170**	mg/L as CaCo3	1	20.0

Sample: 336630 - 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	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)			0.0999	mg/L	1	0.100	100	70 - 130
4-Bromofluorobenzene (4-BFB)			0.0950	mg/L	1	0.100	95	70 - 130

Sample: 336630 - MW-4

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	**84.5**	mg/L	1	1.00
Dissolved Potassium		1	**65.3**	mg/L	1	1.00
Dissolved Magnesium		1	**47.8**	mg/L	1	1.00
Dissolved Sodium		1	**895**	mg/L	1	1.00

Sample: 336630 - 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	RL Result	Units	Dilution	RL
Chloride	Qs	1	**1540**	mg/L	100	2.50

Sample: 336630 - MW-4

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)			**408**	mg eq CaCO3/L	1	0.00

Sample: 336630 - MW-4

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	**7.70**	s.u.	1	0.00

Sample: 336630 - 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	<250	mg/L	100	2.50

Sample: 336630 - MW-4

Laboratory:	Midland				
Analysis:	TDS	Analytical Method:	SM 2540C	Prep Method:	N/A
QC Batch:	104170	Date Analyzed:	2013-08-16	Analyzed By:	AR
Prep Batch:	88264	Sample Preparation:	2013-08-15	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		2	**4230**	mg/L	5	2.50

Sample: 336631 - MW-5

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	**83.0**	mg/L as CaCo3	1	20.0
Total Alkalinity		2	**83.0**	mg/L as CaCo3	1	20.0

Sample: 336631 - 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)			0.0942	mg/L	1	0.100	94	70 - 130
4-Bromofluorobenzene (4-BFB)			0.0888	mg/L	1	0.100	89	70 - 130

Sample: 336631 - MW-5

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	**6570**	mg/L	100	1.00
Dissolved Potassium		1	**50.1**	mg/L	1	1.00
Dissolved Magnesium		1	**1080**	mg/L	100	1.00

continued ...

sample 336631 continued ...

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Dissolved Sodium		1	**6990**	mg/L	100	1.00

Sample: 336631 - MW-5

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	**35600**	mg/L	1000	2.50

Sample: 336631 - MW-5

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)			**20800**	mg eq CaCO3/L	1	0.00

Sample: 336631 - MW-5

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	**6.17**	s.u.	1	0.00

Sample: 336631 - MW-5

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: 336631 - MW-5

Laboratory:	Midland				
Analysis:	TDS	Analytical Method:	SM 2540C	Prep Method:	N/A
QC Batch:	104170	Date Analyzed:	2013-08-16	Analyzed By:	AR
Prep Batch:	88264	Sample Preparation:	2013-08-15	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		2	**87700**	mg/L	100	2.50

Sample: 336632 - MW-6

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	**133**	mg/L as CaCo3	1	20.0
Total Alkalinity		2	**133**	mg/L as CaCo3	1	20.0

Sample: 336632 - 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	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)			0.0978	mg/L	1	0.100	98	70 - 130
4-Bromofluorobenzene (4-BFB)			0.0921	mg/L	1	0.100	92	70 - 130

Sample: 336632 - MW-6

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	**132**	mg/L	1	1.00
Dissolved Potassium		1	**6.26**	mg/L	1	1.00
Dissolved Magnesium		1	**19.7**	mg/L	1	1.00
Dissolved Sodium		1	**76.0**	mg/L	1	1.00

Sample: 336632 - MW-6

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	Q8	1	**257**	mg/L	10	2.50

Sample: 336632 - MW-6

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)			**411**	mg eq CaCO3/L	1	0.00

Sample: 336632 - MW-6

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	**8.00**	s.u.	1	0.00

Sample: 336632 - MW-6

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	**56.7**	mg/L	10	2.50

Sample: 336632 - 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	**748**	mg/L	2	2.50

Sample: 336633 - MW-7

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	**108**	mg/L as CaCo3	1	20.0
Total Alkalinity		2	**108**	mg/L as CaCo3	1	20.0

Sample: 336633 - MW-7

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)			0.0921	mg/L	1	0.100	92	70 - 130

Sample: 336633 - MW-7

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	**635**	mg/L	1	1.00
Dissolved Potassium		1	**8.88**	mg/L	1	1.00
Dissolved Magnesium		1	**115**	mg/L	1	1.00

continued ...

sample 336633 continued ...

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Dissolved Sodium		1	**113**	mg/L	1	1.00

Sample: 336633 - MW-7

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	104141	Date Analyzed:	2013-08-16	Analyzed By:	RL
Prep Batch:	88241	Sample Preparation:	2013-08-16	Prepared By:	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1	**1520**	mg/L	100	2.50

Sample: 336633 - MW-7

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)			**2060**	mg eq CaCO3/L	1	0.00

Sample: 336633 - MW-7

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	**7.34**	s.u.	1	0.00

Sample: 336633 - MW-7

Laboratory:	Lubbock				
Analysis:	SO4 (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	104141	Date Analyzed:	2013-08-16	Analyzed By:	RL
Prep Batch:	88241	Sample Preparation:	2013-08-16	Prepared By:	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Sulfate		1	<250	mg/L	100	2.50

Sample: 336633 - MW-7

Laboratory:	Midland				
Analysis:	TDS	Analytical Method:	SM 2540C	Prep Method:	N/A
QC Batch:	104170	Date Analyzed:	2013-08-16	Analyzed By:	AR
Prep Batch:	88264	Sample Preparation:	2013-08-15	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		2	**3900**	mg/L	5	2.50

Method Blanks

Method Blank (1) QC Batch: 103581

QC Batch: 103581 | Date Analyzed: 2013-07-31 | Analyzed By: AH
Prep Batch: 87704 | 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)			0.103	mg/L	1	0.100	103	70 - 130
4-Bromofluorobenzene (4-BFB)			0.0984	mg/L	1	0.100	98	70 - 130

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
Total Alkalinity		2	<20.0	mg/L as CaCo3	20

Method Blank (1) QC Batch: 103736

QC Batch: 103736 | Date Analyzed: 2013-08-02 | Analyzed By: RL
Prep Batch: 87892 | QC Preparation: 2013-08-02 | Prepared By: RL

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride		1	<0.169	mg/L	2.5

Method Blank (1) QC Batch: 103736

QC Batch: 103736 | Date Analyzed: 2013-08-02 | Analyzed By: RL
Prep Batch: 87892 | QC Preparation: 2013-08-02 | Prepared By: RL

Parameter	Flag	Cert	MDL Result	Units	RL
Sulfate		1	<0.224	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
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: 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: 104141

QC Batch:	104141	Date Analyzed:	2013-08-16	Analyzed By:	RL
Prep Batch:	88241	QC Preparation:	2013-08-16	Prepared By:	RL

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride		1	0.175	mg/L	2.5

Method Blank (1) QC Batch: 104141

QC Batch: 104141 | Date Analyzed: 2013-08-16 | Analyzed By: RL
Prep Batch: 88241 | QC Preparation: 2013-08-16 | Prepared By: RL

Parameter	Flag	Cert	MDL Result	Units	RL
Sulfate		1	<0.224	mg/L	2.5

Method Blank (1) QC Batch: 104170

QC Batch: 104170 | Date Analyzed: 2013-08-16 | Analyzed By: AR
Prep Batch: 88264 | QC Preparation: 2013-08-15 | Prepared By: AR

Parameter	Flag	Cert	MDL Result	Units	RL
Total Dissolved Solids		2	<2.50	mg/L	2.5

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

Duplicates (1) Duplicated Sample: 336633

QC Batch: 104170 | Date Analyzed: 2013-08-16 | Analyzed By: AR
Prep Batch: 88264 | QC Preparation: 2013-08-15 | Prepared By: AR

Param		Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
Total Dissolved Solids	2	3720	3900	mg/L	5	5	10

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 103581 | Date Analyzed: 2013-07-31 | Analyzed By: AH
Prep Batch: 87704 | QC Preparation: 2013-07-29 | Prepared By: AH

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		2	0.107	mg/L	1	0.100	<0.000200	107	70 - 130
Toluene		2	0.107	mg/L	1	0.100	<0.000300	107	70 - 130
Ethylbenzene		2	0.106	mg/L	1	0.100	<0.000400	106	70 - 130
Xylene		2	0.316	mg/L	1	0.300	<0.00120	105	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	0.103	mg/L	1	0.100	<0.000200	103	70 - 130	4	20
Toluene		2	0.103	mg/L	1	0.100	<0.000300	103	70 - 130	4	20
Ethylbenzene		2	0.104	mg/L	1	0.100	<0.000400	104	70 - 130	2	20
Xylene		2	0.310	mg/L	1	0.300	<0.00120	103	70 - 130	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)	0.101	0.100	mg/L	1	0.100	101	100	70 - 130
4-Bromofluorobenzene (4-BFB)	0.106	0.105	mg/L	1	0.100	106	105	70 - 130

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.

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-1)

QC Batch: 103736 | Date Analyzed: 2013-08-02 | Analyzed By: RL
Prep Batch: 87892 | QC Preparation: 2013-08-02 | Prepared By: RL

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	24.5	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.

Laboratory Control Spike (LCS-1)

QC Batch: 103736 | Date Analyzed: 2013-08-02 | Analyzed By: RL
Prep Batch: 87892 | QC Preparation: 2013-08-02 | Prepared By: RL

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate		1	24.9	mg/L	1	25.0	<0.224	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
Sulfate		1	25.6	mg/L	1	25.0	<0.224	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: 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: 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: 104141 | Date Analyzed: 2013-08-16 | Analyzed By: RL
Prep Batch: 88241 | QC Preparation: 2013-08-16 | 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	25.8	mg/L	1	25.0	<0.169	103	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: 104141 | Date Analyzed: 2013-08-16 | Analyzed By: RL
Prep Batch: 88241 | QC Preparation: 2013-08-16 | Prepared By: RL

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate		1	25.1	mg/L	1	25.0	<0.224	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
Sulfate		1	26.3	mg/L	1	25.0	<0.224	105	90 - 110	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: 104170 | Date Analyzed: 2013-08-16 | Analyzed By: AR
Prep Batch: 88264 | QC Preparation: 2013-08-15 | Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Total Dissolved Solids		2	1010	mg/L	1	1000	<2.50	101	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	1020	mg/L	1	1000	<2.50	102	87.8 - 109.1	1	10

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

Matrix Spike (MS-1) Spiked Sample: 336628

QC Batch: 103581 | Date Analyzed: 2013-07-31 | Analyzed By: AH
Prep Batch: 87704 | QC Preparation: 2013-07-29 | Prepared By: AH

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		2	0.0878	mg/L	1	0.100	<0.000200	88	70 - 130
Toluene		2	0.0845	mg/L	1	0.100	<0.000300	84	70 - 130
Ethylbenzene		2	0.0787	mg/L	1	0.100	<0.000400	79	70 - 130
Xylene		2	0.234	mg/L	1	0.300	<0.00120	78	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	0.0968	mg/L	1	0.100	<0.000200	97	70 - 130	10	20
Toluene		2	0.0937	mg/L	1	0.100	<0.000300	94	70 - 130	10	20
Ethylbenzene		2	0.0905	mg/L	1	0.100	<0.000400	90	70 - 130	14	20
Xylene		2	0.272	mg/L	1	0.300	<0.00120	91	70 - 130	15	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)	0.0881	0.0957	mg/L	1	0.1	88	96	70 - 130
4-Bromofluorobenzene (4-BFB)	0.0876	0.0991	mg/L	1	0.1	88	99	70 - 130

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.

continued ...

matrix spikes continued ...

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
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: 336627

QC Batch: 103736 | Date Analyzed: 2013-08-02 | Analyzed By: RL
Prep Batch: 87892 | QC Preparation: 2013-08-02 | Prepared By: RL

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	47800	mg/L	1000	25000	18000	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	47500	mg/L	1000	25000	18000	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: 336627

QC Batch: 103736 | Date Analyzed: 2013-08-02 | Analyzed By: RL
Prep Batch: 87892 | QC Preparation: 2013-08-02 | Prepared By: RL

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate		1	27000	mg/L	1000	25000	337	107	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	27000	mg/L	1000	25000	337	107	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
Chloride	Q8	Q8	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	Q8	Q8	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: 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

continued ...

matrix spikes continued ...

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
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: 336633

QC Batch: 104141 | Date Analyzed: 2013-08-16 | Analyzed By: RL
Prep Batch: 88241 | QC Preparation: 2013-08-16 | Prepared By: RL

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	4330	mg/L	100	2500	1520	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
Chloride		1	4320	mg/L	100	2500	1520	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: 336633

QC Batch: 104141 | Date Analyzed: 2013-08-16 | Analyzed By: RL
Prep Batch: 88241 | QC Preparation: 2013-08-16 | Prepared By: RL

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate		1	2690	mg/L	100	2500	82.7	104	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	2630	mg/L	100	2500	82.7	102	80 - 120	2	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 (CCV-1)

QC Batch: 103581 Date Analyzed: 2013-07-31 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	0.103	103	80 - 120	2013-07-31
Toluene		2	mg/L	0.100	0.104	104	80 - 120	2013-07-31
Ethylbenzene		2	mg/L	0.100	0.105	105	80 - 120	2013-07-31
Xylene		2	mg/L	0.300	0.312	104	80 - 120	2013-07-31

Standard (CCV-2)

QC Batch: 103581 Date Analyzed: 2013-07-31 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	0.101	101	80 - 120	2013-07-31
Toluene		2	mg/L	0.100	0.101	101	80 - 120	2013-07-31
Ethylbenzene		2	mg/L	0.100	0.101	101	80 - 120	2013-07-31
Xylene		2	mg/L	0.300	0.300	100	80 - 120	2013-07-31

Standard (CCV-3)

QC Batch: 103581 Date Analyzed: 2013-07-31 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	0.103	103	80 - 120	2013-07-31
Toluene		2	mg/L	0.100	0.103	103	80 - 120	2013-07-31
Ethylbenzene		2	mg/L	0.100	0.103	103	80 - 120	2013-07-31
Xylene		2	mg/L	0.300	0.305	102	80 - 120	2013-07-31

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

continued ...

standard continued . . .

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
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

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	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 (CCV-1)

QC Batch: 103736 Date Analyzed: 2013-08-02 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	24.2	97	90 - 110	2013-08-02

Standard (CCV-1)

QC Batch: 103736 Date Analyzed: 2013-08-02 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	25.1	100	90 - 110	2013-08-02

Standard (CCV-2)

QC Batch: 103736 Date Analyzed: 2013-08-02 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	2013-08-02

Standard (CCV-2)

QC Batch: 103736 Date Analyzed: 2013-08-02 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	2013-08-02

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 (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 (CCV-1)

QC Batch: 104141 Date Analyzed: 2013-08-16 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	25.7	103	90 - 110	2013-08-16

Standard (CCV-1)

QC Batch: 104141 Date Analyzed: 2013-08-16 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	26.0	104	90 - 110	2013-08-16

Standard (CCV-2)

QC Batch: 104141 Date Analyzed: 2013-08-16 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	25.9	104	90 - 110	2013-08-16

Standard (CCV-2)

QC Batch: 104141 Date Analyzed: 2013-08-16 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	2013-08-16

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.

13072612

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

ANALYSIS REQUEST
(Circle or Specify Method No.)

CLIENT NAME: Celero Energy
SITE MANAGER: Greg Pope
PROJECT NO.: 114-640/629 ~~115-640/629~~
PROJECT NAME: Rock Queen TB#11

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 sulfides (Ca/Mg/Na/K/Cl/SO4/hardness alk, pH/TDS
336627	7/25/13	1125	W		X	MW-1	5	N	X		X		X											X				X	
628		1140				MW-2																						
629		1110				MW-3																						
630		1215				MW-4																						
631		1200				MW-5																						
632		1235				MW-6																						
633	↓	1255	↓		↓	MW-7	↓	↓	↓		↓		↓											↓				↓	

RELINQUISHED BY: (Signature)	Date: / Time:	RECEIVED BY: (Signature)	Date: 7-26-13 / Time: 1830
RELINQUISHED BY: (Signature)	Date: 7-26-13 / Time: 830	RECEIVED BY: (Signature)	Date: 7/26/13 / Time: 8:30
RELINQUISHED BY: (Signature)	Date: / Time:	RECEIVED BY: (Signature)	Date: / Time:

SAMPLED BY: (Print & Initial) CF/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

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

SAMPLE CONDITION WHEN RECEIVED: 3.3°

REMARKS: MW-2 500 mL labeled for TB#1 time matches TB#11 MW-3 11 11 11

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

13072612

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: 1 OF: 1

CLIENT NAME: Celero Energy
SITE MANAGER: Greg Pope
PROJECT NO.: 114-640162 ~~115-640/129A~~
PROJECT NAME: Rock Queen TB #11

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 (Ca/Mg/Na/K/Cl/SO4/Hardness calc TDS)
336627	7/25/13	1125	w		X	MW-1	5	N	X		X		X											X				X
628		1140				MW-2																						
629		1110				MW-3																						
630		1215				MW-4																						
631		1200				MW-5																						
632		1235				MW-6																						
633	↓	1255	↓		↓	MW-7	↓	↓	↓		↓		↓											↓				↓

ANALYSIS REQUEST (Circle or Specify Method No.)

RELINQUISHED BY: (Signature) Date: Time:
RECEIVED BY: (Signature) Date: 7-26-13 Time: 830

RELINQUISHED BY: (Signature) Date: 7-26-13 Time: 830
RECEIVED BY: (Signature) Date: 7/26/13 Time: 8:30

RELINQUISHED BY: (Signature) Date: 7/29/13 Time: 15:30
RECEIVED BY: (Signature) Date: Time:

SAMPLED BY: (Print & Initial) CF/RD Date: Time:

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

RECEIVING LABORATORY:
ADDRESS:
CITY: STATE: ZIP:
CONTACT: PHONE:

RECEIVED BY: (Signature) Brenda Ward TA LYBBOCK
DATE: 7/30/13 TIME: 8:45

TETRA TECH CONTACT PERSON: LS 3.3/3.6 ZQ 198879 AH

Results by:

RUSH Charges Authorized: Yes N

SAMPLE CONDITION WHEN RECEIVED: 3.3°

REMARKS: MW-2 500 mL labeled as TB#1 time matches TB#11 Midland - BTEX/TPH/TDS
MW-3 " " " Lubbock - All Other

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: 8/20/2013

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
336627	2620	590	9130	135	91.00	337	18000				22600	
336628	3130	816	11300	122	109.00	750	32600				42100	
336629	950	166	328	12.6	78.00	49	2500				6650	
336630	84.5	47.8	895	65.3	170.00	63	1540				4230	
336631	6570	1080	6990	50.1	83.00	0	35600				87700	
336632	132	19.7	76	6.26	133.00	56.7	257				748	
336633	635	115	113	8.88	108.00	82.7	1520				3900	

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***
336627	130.74	48.55	397.16	3.45	1.82	7.02	507.78	0.00	0.00	0.00	579.90	516.62	5.771114186
336628	156.19	67.15	491.55	3.12	2.18	15.62	919.65	0.00	0.00	0.00	718.01	937.44	13.25530488
336629	47.41	13.66	14.27	0.32	1.56	1.02	70.53	0.00	0.00	0.00	75.66	73.11	1.714343395
336630	4.22	3.93	38.93	1.67	3.40	1.31	43.44	0.00	0.00	0.00	48.75	48.16	0.616900909
336631	327.84	88.87	304.07	1.28	1.66	0.00	1004.28	0.00	0.00	0.00	722.06	1005.94	16.42786146
336632	6.59	1.62	3.31	0.16	2.66	1.18	7.25	0.00	0.00	0.00	11.67	11.09	2.563551143
336633	31.69	9.46	4.92	0.23	2.16	1.72	42.88	0.00	0.00	0.00	46.29	46.76	0.503488345

	EC/Cation	EC/Anion				
336627	57989.74	51661.634	range	0	to	0
336628	71800.64	93744.1	range	0	to	0
336629	7565.5448	7310.518	range	0	to	0
336630	4875.2886	4815.506	range	0	to	0
336631	72206.2758	100593.6	range	0	to	0
336632	1167.40438	1109.0464	range	0	to	0
336633	4629.25004	4676.1014	range	0	to	0

TDS/EC	TDS/Cat		TDS/Anion	
#DIV/0!	0.39		0.44	needs to be 0.55-0.77
#DIV/0!	0.59		0.45	needs to be 0.55-0.77
#DIV/0!	0.88		0.91	needs to be 0.55-0.77
#DIV/0!	0.87		0.88	needs to be 0.55-0.77
#DIV/0!	1.21		0.87	needs to be 0.55-0.77
#DIV/0!	0.64		0.67	needs to be 0.55-0.77
#DIV/0!	0.84		0.83	needs to be 0.55-0.77

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800-378-1296 806-794-1296 FAX 806-794-1298
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

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

Report Date: November 21, 2013

Work Order: 13103136

Project Location: Chavez Co., NM
Project Name: Celero/Rock Queen #11
Project Number: 114-6401629

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
345391	MW-1	water	2013-10-30	15:16	2013-10-31
345392	MW-2	water	2013-10-30	14:35	2013-10-31
345393	MW-3	water	2013-10-30	15:50	2013-10-31
345394	MW-4	water	2013-10-30	14:20	2013-10-31
345395	MW-5	water	2013-10-30	14:50	2013-10-31
345396	MW-6	water	2013-10-30	15:25	2013-10-31
345397	MW-7	water	2013-10-30	16:00	2013-10-31

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 #11 were received by TraceAnalysis, Inc. on 2013-10-31 and assigned to work order 13103136. Samples for work order 13103136 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
Alkalinity	SM 2320B	90295	2013-11-03 at 12:14	106628	2013-11-05 at 13:15
BTEX	S 8021B	90166	2013-11-01 at 14:16	106532	2013-11-05 at 12:41
Ca, Dissolved	S 6010C	90268	2013-11-06 at 14:46	106734	2013-11-13 at 10:25
Ca, Dissolved	S 6010C	90324	2013-11-08 at 10:57	106733	2013-11-13 at 10:09
Chloride (IC)	E 300.0	90403	2013-11-13 at 09:00	106754	2013-11-13 at 09:41
Chloride (IC)	E 300.0	90412	2013-11-13 at 14:00	106762	2013-11-13 at 15:58
Chloride (IC)	E 300.0	90490	2013-11-15 at 14:00	106867	2013-11-15 at 16:41
Chloride (IC)	E 300.0	90525	2013-11-19 at 14:00	106908	2013-11-19 at 16:14
Hardness	S 6010C	90268	2013-11-06 at 14:46	106734	2013-11-13 at 10:25
Hardness	S 6010C	90324	2013-11-08 at 10:57	106733	2013-11-13 at 10:09
K, Dissolved	S 6010C	90268	2013-11-06 at 14:46	106734	2013-11-13 at 10:25
K, Dissolved	S 6010C	90324	2013-11-08 at 10:57	106733	2013-11-13 at 10:09
Mg, Dissolved	S 6010C	90268	2013-11-06 at 14:46	106734	2013-11-13 at 10:25
Mg, Dissolved	S 6010C	90324	2013-11-08 at 10:57	106733	2013-11-13 at 10:09
Na, Dissolved	S 6010C	90268	2013-11-06 at 14:46	106734	2013-11-13 at 10:25
Na, Dissolved	S 6010C	90324	2013-11-08 at 10:57	106733	2013-11-13 at 10:09
pH	SM 4500-H+	90131	2013-10-31 at 13:47	106465	2013-10-31 at 16:47
pH	SM 4500-H+	90131	2013-10-31 at 13:47	106466	2013-10-31 at 16:51
SO4 (IC)	E 300.0	90412	2013-11-13 at 14:00	106762	2013-11-13 at 15:58
SO4 (IC)	E 300.0	90490	2013-11-15 at 14:00	106867	2013-11-15 at 16:41
SO4 (IC)	E 300.0	90492	2013-11-15 at 14:00	106869	2013-11-15 at 16:41
TDS	SM 2540C	90201	2013-11-02 at 11:09	106606	2013-11-03 at 15:21
TDS	SM 2540C	90202	2013-11-03 at 11:09	106607	2013-11-04 at 17:33
TDS	SM 2540C	90563	2013-11-20 at 11:22	106955	2013-11-21 at 11:56

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 13103136 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: 345391 - 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	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	**112**	mg/L as CaCo3	1	20.0
Total Alkalinity		2	**112**	mg/L as CaCo3	1	20.0

Sample: 345391 - MW-1

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	106532	Date Analyzed:	2013-11-05	Analyzed By:	AK
Prep Batch:	90166	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	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)			0.0839	mg/L	1	0.100	84	70 - 130
4-Bromofluorobenzene (4-BFB)			0.0749	mg/L	1	0.100	75	70 - 130

Sample: 345391 - 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	Result	RL	Units	Dilution	RL
Dissolved Calcium		1	**1930**		mg/L	100	1.00
Dissolved Potassium		1	**84.5**		mg/L	10	1.00
Dissolved Magnesium		1	**433**		mg/L	10	1.00
Dissolved Sodium		1	**6090**		mg/L	100	1.00

Sample: 345391 - MW-1

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	106908	Date Analyzed:	2013-11-19	Analyzed By:	RL
Prep Batch:	90525	Sample Preparation:	2013-11-19	Prepared By:	RL

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
Chloride	Q8	1	**16800**		mg/L	1000	2.50

Sample: 345391 - 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	Result	RL	Units	Dilution	RL
Hardness (by ICP)			**6600**		mg eq CaCO3/L	1	0.00

Sample: 345391 - 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	Result	RL	Units	Dilution	RL
pH		2	**7.00**		s.u.	1	0.00

Sample: 345391 - MW-1

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	<250	mg/L	100	2.50

Sample: 345391 - MW-1

Laboratory:	Midland				
Analysis:	TDS	Analytical Method:	SM 2540C	Prep Method:	N/A
QC Batch:	106955	Date Analyzed:	2013-11-21	Analyzed By:	AR
Prep Batch:	90563	Sample Preparation:	2013-11-20	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		2	**24100**	mg/L	20	2.50

Sample: 345392 - 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	**111**	mg/L as CaCo3	1	20.0
Total Alkalinity		2	**111**	mg/L as CaCo3	1	20.0

Sample: 345392 - MW-2

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	106532	Date Analyzed:	2013-11-05	Analyzed By:	AK
Prep Batch:	90166	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	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)			0.0856	mg/L	1	0.100	86	70 - 130
4-Bromofluorobenzene (4-BFB)			0.0782	mg/L	1	0.100	78	70 - 130

Sample: 345392 - 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	**2550**	mg/L	100	1.00
Dissolved Potassium		1	**54.7**	mg/L	10	1.00
Dissolved Magnesium		1	**483**	mg/L	10	1.00
Dissolved Sodium		1	**7240**	mg/L	100	1.00

Sample: 345392 - MW-2

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	106908	Date Analyzed:	2013-11-19	Analyzed By:	RL
Prep Batch:	90525	Sample Preparation:	2013-11-19	Prepared By:	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	Q*	1	**17700**	mg/L	1000	2.50

Sample: 345392 - 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)			**8360**	mg eq CaCO3/L	1	0.00

Sample: 345392 - 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	**6.88**	s.u.	1	0.00

Sample: 345392 - 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	**407**	mg/L	100	2.50

Sample: 345392 - 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	**31600**	mg/L	50	2.50

Sample: 345393 - MW-3

Laboratory:	Midland				
Analysis:	Alkalinity	Analytical Method:	SM 2320B	Prep Method:	N/A
QC Batch:	106628	Date Analyzed:	2013-11-05	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	**75.0**	mg/L as CaCo3	1	20.0
Total Alkalinity		2	**75.0**	mg/L as CaCo3	1	20.0

Sample: 345393 - MW-3

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	106532	Date Analyzed:	2013-11-05	Analyzed By:	AK
Prep Batch:	90166	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	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)			0.0828	mg/L	1	0.100	83	70 - 130
4-Bromofluorobenzene (4-BFB)			0.0755	mg/L	1	0.100	76	70 - 130

Sample: 345393 - MW-3

Laboratory:	Lubbock				
Analysis:	Cations	Analytical Method:	S 6010C	Prep Method:	S 3005A
QC Batch:	106733	Date Analyzed:	2013-11-13	Analyzed By:	RR
Prep Batch:	90324	Sample Preparation:	2013-11-08	Prepared By:	PM

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Dissolved Calcium		1	**822**	mg/L	1	1.00
Dissolved Potassium		1	**9.04**	mg/L	1	1.00
Dissolved Magnesium		1	**136**	mg/L	1	1.00

continued ...

sample 345393 continued ...

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Dissolved Sodium		1	**206**	mg/L	1	1.00

Sample: 345393 - 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	Q=	1	**2230**	mg/L	100	2.50

Sample: 345393 - MW-3

Laboratory:	Lubbock				
Analysis:	Hardness	Analytical Method:	S 6010C	Prep Method:	N/A
QC Batch:	106733	Date Analyzed:	2013-11-13	Analyzed By:	RR
Prep Batch:	90324	Sample Preparation:	2013-11-08	Prepared By:	PM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Hardness (by ICP)			**2610**	mg eq CaCO3/L	1	0.00

Sample: 345393 - MW-3

Laboratory:	Midland				
Analysis:	pH	Analytical Method:	SM 4500-H+	Prep Method:	N/A
QC Batch:	106466	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	**7.06**	s.u.	1	0.00

Sample: 345393 - MW-3

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	**41.6**	mg/L	10	2.50

Sample: 345393 - MW-3

Laboratory:	Midland				
Analysis:	TDS	Analytical Method:	SM 2540C	Prep Method:	N/A
QC Batch:	106607	Date Analyzed:	2013-11-04	Analyzed By:	AR
Prep Batch:	90202	Sample Preparation:	2013-11-03	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		2	**4110**	mg/L	5	2.50

Sample: 345394 - MW-4

Laboratory:	Midland				
Analysis:	Alkalinity	Analytical Method:	SM 2320B	Prep Method:	N/A
QC Batch:	106628	Date Analyzed:	2013-11-05	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	**181**	mg/L as CaCo3	1	20.0
Total Alkalinity		2	**181**	mg/L as CaCo3	1	20.0

Sample: 345394 - MW-4

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	106532	Date Analyzed:	2013-11-05	Analyzed By:	AK
Prep Batch:	90166	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	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)			0.0829	mg/L	1	0.100	83	70 - 130
4-Bromofluorobenzene (4-BFB)			0.0762	mg/L	1	0.100	76	70 - 130

Sample: 345394 - MW-4

Laboratory:	Lubbock				
Analysis:	Cations	Analytical Method:	S 6010C	Prep Method:	S 3005A
QC Batch:	106733	Date Analyzed:	2013-11-13	Analyzed By:	RR
Prep Batch:	90324	Sample Preparation:	2013-11-08	Prepared By:	PM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Dissolved Calcium		1	**72.0**	mg/L	10	1.00
Dissolved Potassium		1	**65.2**	mg/L	10	1.00
Dissolved Magnesium		1	**42.1**	mg/L	10	1.00
Dissolved Sodium		1	**890**	mg/L	10	1.00

Sample: 345394 - MW-4

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	106762	Date Analyzed:	2013-11-13	Analyzed By:	RL
Prep Batch:	90412	Sample Preparation:	2013-11-13	Prepared By:	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	Q*	1	**1440**	mg/L	100	2.50

Sample: 345394 - MW-4

Laboratory:	Lubbock				
Analysis:	Hardness	Analytical Method:	S 6010C	Prep Method:	N/A
QC Batch:	106733	Date Analyzed:	2013-11-13	Analyzed By:	RR
Prep Batch:	90324	Sample Preparation:	2013-11-08	Prepared By:	PM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Hardness (by ICP)			**354**	mg eq CaCO3/L	1	0.00

Sample: 345394 - MW-4

Laboratory:	Midland				
Analysis:	pH	Analytical Method:	SM 4500-H+	Prep Method:	N/A
QC Batch:	106466	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	**7.64**	s.u.	1	0.00

Sample: 345394 - MW-4

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	**92.4**	mg/L	10	2.50

Sample: 345394 - MW-4

Laboratory:	Midland				
Analysis:	TDS	Analytical Method:	SM 2540C	Prep Method:	N/A
QC Batch:	106607	Date Analyzed:	2013-11-04	Analyzed By:	AR
Prep Batch:	90202	Sample Preparation:	2013-11-03	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		2	**3730**	mg/L	5	2.50

Sample: 345395 - MW-5

Laboratory:	Midland				
Analysis:	Alkalinity	Analytical Method:	SM 2320B	Prep Method:	N/A
QC Batch:	106628	Date Analyzed:	2013-11-05	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	**70.0**	mg/L as CaCo3	1	20.0
Total Alkalinity		2	**70.0**	mg/L as CaCo3	1	20.0

Sample: 345395 - MW-5

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	106532	Date Analyzed:	2013-11-05	Analyzed By:	AK
Prep Batch:	90166	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	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)			0.0787	mg/L	1	0.100	79	70 - 130
4-Bromofluorobenzene (4-BFB)			0.0738	mg/L	1	0.100	74	70 - 130

Sample: 345395 - MW-5

Laboratory:	Lubbock				
Analysis:	Cations	Analytical Method:	S 6010C	Prep Method:	S 3005A
QC Batch:	106733	Date Analyzed:	2013-11-13	Analyzed By:	RR
Prep Batch:	90324	Sample Preparation:	2013-11-08	Prepared By:	PM

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Dissolved Calcium		1	**6520**	mg/L	100	1.00
Dissolved Potassium		1	**70.3**	mg/L	10	1.00
Dissolved Magnesium		1	**1550**	mg/L	100	1.00

continued ...

sample 345395 continued ...

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Dissolved Sodium		1	**12600**	mg/L	1000	1.00

Sample: 345395 - MW-5

Laboratory:	Lubbock				
Analysis:	Chloride (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
Chloride		1	**43400**	mg/L	5000	2.50

Sample: 345395 - MW-5

Laboratory:	Lubbock				
Analysis:	Hardness	Analytical Method:	S 6010C	Prep Method:	N/A
QC Batch:	106733	Date Analyzed:	2013-11-13	Analyzed By:	RR
Prep Batch:	90324	Sample Preparation:	2013-11-08	Prepared By:	PM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Hardness (by ICP)			**22600**	mg eq CaCO3/L	10	0.00

Sample: 345395 - MW-5

Laboratory:	Midland				
Analysis:	pH	Analytical Method:	SM 4500-H+	Prep Method:	N/A
QC Batch:	106466	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	**6.77**	s.u.	1	0.00

Sample: 345395 - 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	**309**	mg/L	100	2.50

Sample: 345395 - MW-5

Laboratory:	Midland				
Analysis:	TDS	Analytical Method:	SM 2540C	Prep Method:	N/A
QC Batch:	106955	Date Analyzed:	2013-11-21	Analyzed By:	AR
Prep Batch:	90563	Sample Preparation:	2013-11-20	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		2	**44000**	mg/L	20	2.50

Sample: 345396 - MW-6

Laboratory:	Midland				
Analysis:	Alkalinity	Analytical Method:	SM 2320B	Prep Method:	N/A
QC Batch:	106628	Date Analyzed:	2013-11-05	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	**174**	mg/L as CaCo3	1	20.0
Total Alkalinity		2	**174**	mg/L as CaCo3	1	20.0

Sample: 345396 - MW-6

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	106532	Date Analyzed:	2013-11-05	Analyzed By:	AK
Prep Batch:	90166	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	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)			0.0862	mg/L	1	0.100	86	70 - 130
4-Bromofluorobenzene (4-BFB)			0.0760	mg/L	1	0.100	76	70 - 130

Sample: 345396 - MW-6

Laboratory:	Lubbock				
Analysis:	Cations	Analytical Method:	S 6010C	Prep Method:	S 3005A
QC Batch:	106733	Date Analyzed:	2013-11-13	Analyzed By:	RR
Prep Batch:	90324	Sample Preparation:	2013-11-08	Prepared By:	PM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Dissolved Calcium		1	**102**	mg/L	10	1.00
Dissolved Potassium		1	<10.0	mg/L	10	1.00
Dissolved Magnesium		1	**13.5**	mg/L	10	1.00
Dissolved Sodium		1	**58.9**	mg/L	10	1.00

Sample: 345396 - MW-6

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	106762	Date Analyzed:	2013-11-13	Analyzed By:	RL
Prep Batch:	90412	Sample Preparation:	2013-11-13	Prepared By:	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	Q-	1	**183**	mg/L	5	2.50

Sample: 345396 - MW-6

Laboratory:	Lubbock				
Analysis:	Hardness	Analytical Method:	S 6010C	Prep Method:	N/A
QC Batch:	106733	Date Analyzed:	2013-11-13	Analyzed By:	RR
Prep Batch:	90324	Sample Preparation:	2013-11-08	Prepared By:	PM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Hardness (by ICP)			**310**	mg eq CaCO3/L	1	0.00

Sample: 345396 - MW-6

Laboratory:	Midland				
Analysis:	pH	Analytical Method:	SM 4500-H+	Prep Method:	N/A
QC Batch:	106466	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	**7.66**	s.u.	1	0.00

Sample: 345396 - MW-6

Laboratory:	Lubbock				
Analysis:	SO4 (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	106762	Date Analyzed:	2013-11-13	Analyzed By:	RL
Prep Batch:	90412	Sample Preparation:	2013-11-13	Prepared By:	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Sulfate		1	**60.7**	mg/L	5	2.50

Sample: 345396 - MW-6

Laboratory:	Midland				
Analysis:	TDS	Analytical Method:	SM 2540C	Prep Method:	N/A
QC Batch:	106607	Date Analyzed:	2013-11-04	Analyzed By:	AR
Prep Batch:	90202	Sample Preparation:	2013-11-03	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		2	**730**	mg/L	2	2.50

Sample: 345397 - MW-7

Laboratory:	Midland				
Analysis:	Alkalinity	Analytical Method:	SM 2320B	Prep Method:	N/A
QC Batch:	106628	Date Analyzed:	2013-11-05	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	**104**	mg/L as CaCo3	1	20.0
Total Alkalinity		2	**104**	mg/L as CaCo3	1	20.0

Sample: 345397 - MW-7

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	106532	Date Analyzed:	2013-11-05	Analyzed By:	AK
Prep Batch:	90166	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	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)			0.0827	mg/L	1	0.100	83	70 - 130
4-Bromofluorobenzene (4-BFB)			0.0757	mg/L	1	0.100	76	70 - 130

Sample: 345397 - MW-7

Laboratory:	Lubbock				
Analysis:	Cations	Analytical Method:	S 6010C	Prep Method:	S 3005A
QC Batch:	106733	Date Analyzed:	2013-11-13	Analyzed By:	RR
Prep Batch:	90324	Sample Preparation:	2013-11-08	Prepared By:	PM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Dissolved Calcium		1	**612**	mg/L	10	1.00
Dissolved Potassium		1	<10.0	mg/L	10	1.00
Dissolved Magnesium		1	**115**	mg/L	10	1.00

continued ...

sample 345397 continued ...

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Dissolved Sodium		1	**127**	mg/L	10	1.00

Sample: 345397 - MW-7

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	106762	Date Analyzed:	2013-11-13	Analyzed By:	RL
Prep Batch:	90412	Sample Preparation:	2013-11-13	Prepared By:	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	Q#	1	**1620**	mg/L	100	2.50

Sample: 345397 - MW-7

Laboratory:	Lubbock				
Analysis:	Hardness	Analytical Method:	S 6010C	Prep Method:	N/A
QC Batch:	106733	Date Analyzed:	2013-11-13	Analyzed By:	RR
Prep Batch:	90324	Sample Preparation:	2013-11-08	Prepared By:	PM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Hardness (by ICP)			**2000**	mg eq CaCO3/L	1	0.00

Sample: 345397 - MW-7

Laboratory:	Midland				
Analysis:	pH	Analytical Method:	SM 4500-H+	Prep Method:	N/A
QC Batch:	106466	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	**7.18**	s.u.	1	0.00

Sample: 345397 - MW-7

Laboratory:	Lubbock				
Analysis:	SO4 (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	106869	Date Analyzed:	2013-11-15	Analyzed By:	RL
Prep Batch:	90492	Sample Preparation:	2013-11-15	Prepared By:	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Sulfate		1	**81.8**	mg/L	10	2.50

Sample: 345397 - MW-7

Laboratory:	Midland				
Analysis:	TDS	Analytical Method:	SM 2540C	Prep Method:	N/A
QC Batch:	106607	Date Analyzed:	2013-11-04	Analyzed By:	AR
Prep Batch:	90202	Sample Preparation:	2013-11-03	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		2	**3690**	mg/L	2	2.50

Method Blanks

Method Blank (1) QC Batch: 106532

QC Batch: 106532 | Date Analyzed: 2013-11-05 | Analyzed By: AK
Prep Batch: 90166 | QC Preparation: 2013-11-01 | Prepared By: AK

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)			0.0848	mg/L	1	0.100	85	70 - 130
4-Bromofluorobenzene (4-BFB)			0.0757	mg/L	1	0.100	76	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: 106607

QC Batch: 106607 | Date Analyzed: 2013-11-04 | Analyzed By: AR
Prep Batch: 90202 | QC Preparation: 2013-11-03 | Prepared By: AR

Parameter	Flag	Cert	MDL Result	Units	RL
Total Dissolved Solids		2	3.00	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
Total Alkalinity		2	<20.0	mg/L as CaCo3	20

Method Blank (1) QC Batch: 106628

QC Batch: 106628 | Date Analyzed: 2013-11-05 | 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
Total Alkalinity		2	<20.0	mg/L as CaCo3	20

Method Blank (1) QC Batch: 106733

QC Batch: 106733 | Date Analyzed: 2013-11-13 | Analyzed By: RR
Prep Batch: 90324 | QC Preparation: 2013-11-08 | 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: 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: 106762

QC Batch: 106762 | Date Analyzed: 2013-11-13 | Analyzed By: RL
Prep Batch: 90412 | 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: 106762

QC Batch: 106762 | Date Analyzed: 2013-11-13 | Analyzed By: RL
Prep Batch: 90412 | 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
Chloride		1	0.288	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

Method Blank (1) QC Batch: 106869

QC Batch: 106869 | Date Analyzed: 2013-11-15 | Analyzed By: RL
Prep Batch: 90492 | QC Preparation: 2013-11-15 | Prepared By: RL

Parameter	Flag	Cert	MDL Result	Units	RL
Sulfate		1	<0.132	mg/L	2.5

Method Blank (1) QC Batch: 106908

QC Batch: 106908 | Date Analyzed: 2013-11-19 | Analyzed By: RL
Prep Batch: 90525 | QC Preparation: 2013-11-19 | Prepared By: RL

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride		1	<0.254	mg/L	2.5

Method Blank (1) QC Batch: 106955

QC Batch: 106955 | Date Analyzed: 2013-11-21 | Analyzed By: AR
Prep Batch: 90563 | QC Preparation: 2013-11-20 | Prepared By: AR

Parameter	Flag	Cert	MDL Result	Units	RL
Total Dissolved Solids		2	5.00	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: 345393

QC Batch: 106466 | 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	7.14	7.06	s.u.	1	1	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: 345394

QC Batch: 106607 | Date Analyzed: 2013-11-04 | Analyzed By: AR
Prep Batch: 90202 | QC Preparation: 2013-11-03 | Prepared By: AR

Param		Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
Total Dissolved Solids	2	3560	3730	mg/L	5	5	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

Duplicates (1) Duplicated Sample: 345393

QC Batch: 106628 | Date Analyzed: 2013-11-05 | 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	82.0	75.0	mg/L as CaCo3	1	9	20
Total Alkalinity	2	82.0	75.0	mg/L as CaCo3	1	9	20

Duplicates (2) Duplicated Sample: 347094

QC Batch: 106955 | Date Analyzed: 2013-11-21 | Analyzed By: AR
Prep Batch: 90563 | QC Preparation: 2013-11-20 | Prepared By: AR

Param		Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
Total Dissolved Solids	2	34500	35800	mg/L	50	4	10

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 106532 | Date Analyzed: 2013-11-05 | Analyzed By: AK
Prep Batch: 90166 | QC Preparation: 2013-11-01 | Prepared By: AK

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		2	0.0848	mg/L	1	0.100	<0.000200	85	70 - 130
Toluene		2	0.0831	mg/L	1	0.100	<0.000300	83	70 - 130
Ethylbenzene		2	0.0812	mg/L	1	0.100	<0.000400	81	70 - 130
Xylene		2	0.244	mg/L	1	0.300	<0.00120	81	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	0.0829	mg/L	1	0.100	<0.000200	83	70 - 130	2	20
Toluene		2	0.0822	mg/L	1	0.100	<0.000300	82	70 - 130	1	20
Ethylbenzene		2	0.0801	mg/L	1	0.100	<0.000400	80	70 - 130	1	20
Xylene		2	0.241	mg/L	1	0.300	<0.00120	80	70 - 130	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)	0.0877	0.0871	mg/L	1	0.100	88	87	70 - 130
4-Bromofluorobenzene (4-BFB)	0.0924	0.0911	mg/L	1	0.100	92	91	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: 106607 | Date Analyzed: 2013-11-04 | Analyzed By: AR
Prep Batch: 90202 | QC Preparation: 2013-11-03 | Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Total Dissolved Solids		2	980	mg/L	1	1000	<2.50	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
Total Dissolved Solids		2	1060	mg/L	1	1000	<2.50	106	90 - 110	8	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: 106733 | Date Analyzed: 2013-11-13 | Analyzed By: RR
Prep Batch: 90324 | QC Preparation: 2013-11-08 | Prepared By: PM

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Dissolved Calcium		1	55.3	mg/L	1	52.5	<0.0441	105	85 - 115
Dissolved Potassium		1	54.9	mg/L	1	52.5	<0.0443	104	85 - 115
Dissolved Magnesium		1	56.4	mg/L	1	52.5	<0.0296	107	85 - 115
Dissolved Sodium		1	56.2	mg/L	1	52.5	<0.172	107	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	54.9	mg/L	1	52.5	<0.0441	104	85 - 115	1	20
Dissolved Potassium		1	54.9	mg/L	1	52.5	<0.0443	104	85 - 115	0	20

continued ...

control spikes continued ...

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Dissolved Magnesium		1	56.4	mg/L	1	52.5	<0.0296	107	85 - 115	0	20
Dissolved Sodium		1	55.4	mg/L	1	52.5	<0.172	106	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: 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.

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	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: 106762 | Date Analyzed: 2013-11-13 | Analyzed By: RL
Prep Batch: 90412 | QC Preparation: 2013-11-13 | Prepared By: RL

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	25.8	mg/L	1	25.0	<0.254	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
Chloride		1	25.9	mg/L	1	25.0	<0.254	104	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: 106762 | Date Analyzed: 2013-11-13 | Analyzed By: RL
Prep Batch: 90412 | QC Preparation: 2013-11-13 | Prepared By: RL

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate		1	27.2	mg/L	1	25.0	<0.132	109	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	27.1	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
Chloride		1	26.3	mg/L	1	25.0	0.288	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
Chloride		1	26.2	mg/L	1	25.0	0.288	104	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.

Laboratory Control Spike (LCS-1)

QC Batch: 106869 | Date Analyzed: 2013-11-15 | Analyzed By: RL
Prep Batch: 90492 | QC Preparation: 2013-11-15 | Prepared By: RL

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate		1	26.9	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	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: 106908 | Date Analyzed: 2013-11-19 | Analyzed By: RL
Prep Batch: 90525 | QC Preparation: 2013-11-19 | Prepared By: RL

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	25.1	mg/L	1	25.0	<0.254	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	27.2	mg/L	1	25.0	<0.254	109	90 - 110	8	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: 106955 | Date Analyzed: 2013-11-21 | Analyzed By: AR
Prep Batch: 90563 | QC Preparation: 2013-11-20 | Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Total Dissolved Solids		2	993	mg/L	1	1000	<2.50	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		2	1010	mg/L	1	1000	<2.50	101	90 - 110	2	10

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

Matrix Spike (MS-1) Spiked Sample: 345391

QC Batch: 106532 | Date Analyzed: 2013-11-05 | Analyzed By: AK
Prep Batch: 90166 | QC Preparation: 2013-11-01 | Prepared By: AK

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		2	0.0861	mg/L	1	0.100	<0.000200	86	70 - 130
Toluene		2	0.0843	mg/L	1	0.100	<0.000300	84	70 - 130
Ethylbenzene		2	0.0803	mg/L	1	0.100	<0.000400	80	70 - 130
Xylene		2	0.244	mg/L	1	0.300	<0.00120	81	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	0.0865	mg/L	1	0.100	<0.000200	86	70 - 130	0	20
Toluene		2	0.0863	mg/L	1	0.100	<0.000300	86	70 - 130	2	20
Ethylbenzene		2	0.0837	mg/L	1	0.100	<0.000400	84	70 - 130	4	20
Xylene		2	0.252	mg/L	1	0.300	<0.00120	84	70 - 130	3	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)	0.0869	0.0876	mg/L	1	0.1	87	88	70 - 130
4-Bromofluorobenzene (4-BFB)	0.0921	0.0933	mg/L	1	0.1	92	93	70 - 130

Matrix Spike (MS-1) Spiked Sample: 345393

QC Batch: 106733 | Date Analyzed: 2013-11-13 | Analyzed By: RR
Prep Batch: 90324 | QC Preparation: 2013-11-08 | Prepared By: PM

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Dissolved Calcium		1	1290	mg/L	1	525	822	89	75 - 125
Dissolved Potassium		1	548	mg/L	1	525	9.04	103	75 - 125
Dissolved Magnesium		1	670	mg/L	1	525	136	102	75 - 125
Dissolved Sodium		1	745	mg/L	1	525	206	103	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	1250	mg/L	1	525	822	82	75 - 125	3	20
Dissolved Potassium		1	560	mg/L	1	525	9.04	105	75 - 125	2	20
Dissolved Magnesium		1	670	mg/L	1	525	136	102	75 - 125	0	20
Dissolved Sodium		1	733	mg/L	1	525	206	100	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: 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#	1	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#	1	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: 345409

QC Batch: 106762 | Date Analyzed: 2013-11-13 | Analyzed By: RL
Prep Batch: 90412 | 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=	1	338000	mg/L	5000	125000	187000	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=	1	338000	mg/L	5000	125000	187000	121	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: 345409

QC Batch: 106762 | Date Analyzed: 2013-11-13 | Analyzed By: RL
Prep Batch: 90412 | QC Preparation: 2013-11-13 | Prepared By: RL

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate		1	145000	mg/L	5000	125000	1869	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
Sulfate		1	142000	mg/L	5000	125000	1869	112	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: 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
Chloride		1	182000	mg/L	5000	125000	43400	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
Chloride		1	179000	mg/L	5000	125000	43400	108	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: 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.

Matrix Spike (MS-1) Spiked Sample: 345403

QC Batch: 106869 | Date Analyzed: 2013-11-15 | Analyzed By: RL
Prep Batch: 90492 | QC Preparation: 2013-11-15 | Prepared By: RL

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate		1	14700	mg/L	500	12500	262	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	14300	mg/L	500	12500	262	112	80 - 120	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: 345775

QC Batch: 106908 | Date Analyzed: 2013-11-19 | Analyzed By: RL
Prep Batch: 90525 | QC Preparation: 2013-11-19 | Prepared By: RL

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	Q8	Q8	5760	mg/L	100	2500	2740	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		1	5580	mg/L	100	2500	2740	114	80 - 120	3	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: 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: 106466 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	7.10	101	98 - 102	2013-10-31

Standard (CCV-1)

QC Batch: 106466 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	7.10	101	98 - 102	2013-10-31

Standard (CCV-1)

QC Batch: 106532 | Date Analyzed: 2013-11-05 | 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	2013-11-05
Toluene		2	mg/L	0.100	0.0889	89	80 - 120	2013-11-05
Ethylbenzene		2	mg/L	0.100	0.0872	87	80 - 120	2013-11-05
Xylene		2	mg/L	0.300	0.263	88	80 - 120	2013-11-05

Standard (CCV-2)

QC Batch: 106532 | Date Analyzed: 2013-11-05 | 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	0.0815	82	80 - 120	2013-11-05
Toluene		2	mg/L	0.100	0.0827	83	80 - 120	2013-11-05
Ethylbenzene		2	mg/L	0.100	0.0815	82	80 - 120	2013-11-05
Xylene		2	mg/L	0.300	0.247	82	80 - 120	2013-11-05

Standard (CCV-3)

QC Batch: 106532 | Date Analyzed: 2013-11-05 | 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	0.0911	91	80 - 120	2013-11-05
Toluene		2	mg/L	0.100	0.0904	90	80 - 120	2013-11-05
Ethylbenzene		2	mg/L	0.100	0.0895	90	80 - 120	2013-11-05
Xylene		2	mg/L	0.300	0.271	90	80 - 120	2013-11-05

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 (ICV-1)

QC Batch: 106628 Date Analyzed: 2013-11-05 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		-	2013-11-05
Carbonate Alkalinity		2	mg/L as CaCo3	0.00	230		-	2013-11-05
Bicarbonate Alkalinity		2	mg/L as CaCo3	0.00	38.0		-	2013-11-05
Total Alkalinity		2	mg/L as CaCo3	250	268	107	90 - 110	2013-11-05

Standard (CCV-1)

QC Batch: 106628 Date Analyzed: 2013-11-05 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	<20.0		-	2013-11-05

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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	246		-	2013-11-05
Bicarbonate Alkalinity		2	mg/L as CaCo3	0.00	<20.0		-	2013-11-05
Total Alkalinity		2	mg/L as CaCo3	250	258	103	90 - 110	2013-11-05

Standard (ICV-1)

QC Batch: 106733 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: 106733 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	54.9	108	90 - 110	2013-11-13
Dissolved Potassium		1	mg/L	55.0	57.4	104	90 - 110	2013-11-13
Dissolved Magnesium		1	mg/L	51.0	54.0	106	90 - 110	2013-11-13
Dissolved Sodium		1	mg/L	51.0	51.1	100	90 - 110	2013-11-13

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

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standard continued . . .

Param	Flag	Cert	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
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-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-1)

QC Batch: 106762 | 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-1)

QC Batch: 106762 | 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	27.4	110	90 - 110	2013-11-13

Standard (CCV-2)

QC Batch: 106762 | 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: 106762 | 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	27.4	110	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
Chloride		1	mg/L	25.0	26.1	104	90 - 110	2013-11-15

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
Chloride		1	mg/L	25.0	26.1	104	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

Standard (CCV-1)

QC Batch: 106869 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

Standard (CCV-2)

QC Batch: 106869 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

Standard (CCV-1)

QC Batch: 106908 Date Analyzed: 2013-11-19 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	2013-11-19

Standard (CCV-2)

QC Batch: 106908 Date Analyzed: 2013-11-19 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	25.9	104	90 - 110	2013-11-19

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.

13103136

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:

CLIENT NAME: Celero Energy

SITE MANAGER: Greg Pope

PROJECT NO.: 114-06401629

PROJECT NAME: Rock Queen #11

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. 8081/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS sulfides
545391	10/30/13	1516	W		X	MW-1	5	N	X		X		X											X				X
392		1435				MW-2																						
393		1550				MW-3																						
394		1420				MW-4																						
395		1450				MW-5																						
396		1525				MW-6																						
397	↓	1600	↓		↓	MW-7																						

ANALYSIS REQUEST
(Circle or Specify Method No.)

RELINQUISHED BY: (Signature)	Date: 10/31/13 Time: 1539	RECEIVED BY: (Signature)	Date: 10/31/13 Time: 12:29
RELINQUISHED BY: (Signature)	Date: Time:	RECEIVED BY: (Signature)	Date: Time:
RELINQUISHED BY: (Signature)	Date: Time:	RECEIVED BY: (Signature)	Date: Time:
RECEIVING LABORATORY: ADDRESS: CITY: STATE: ZIP: CONTACT: PHONE:		RECEIVED BY: (Signature) TA DATE: 11/1/13 TIME: 9:40	

SAMPLED BY: (Print & Initial) CRD Date: Time:

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

AIRBILL #: 782530293

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/PH/Cl Lubbock cations/anions AJ

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