1R – 1645

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 7 Tank Battery, Located in Unit Letter I, Section 22, Township 13 South, Range 31 East, Chaves County, New Mexico (NMOCD 1RP#1645).

Mr. Von Gonten:

This report details the results of the quarterly groundwater sampling events performed at the Celero Energy II, LP (Celero), Rock Queen Unit Tract 7 Tank Battery (Site) in 2013. The Site is located approximately 22 miles north of Maljamar, New Mexico. The Site location is shown on Figures 1 and 2.

FACILITY BACKGROUND

Pit Closure

On October 8, 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 7 Tank Battery pit was dewatered and the residual sludge, tank bottom materials, and liner were removed in October 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 440 cubic yards of soil were excavated and transported to Gandy-Marley, Inc. for disposal. The pit was excavated to a point where the subsoil would support a soil boring rig.

On October 12, 2009, a report entitled *Assessment and Closure Report for*

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Tel 432.682.4559 Fax 432.682.3946 www.tetratech.com

the Pit located at the Rock Queen Unit Track 7 Tank Battery was submitted to the NMOCD. The report detailed the closure of the former pit at the facility.

Groundwater Investigation

Between November 2009 and December 2010, Celero installed four 2-inch monitor wells (MW-1 through MW-4) 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 limestone encountered to approximately 15 feet below ground surface (bgs) and very fine grain sands extending to approximately 150 to 160 feet bgs. From approximately 150 to 160 feet to the terminus of the borings (approximately 155 to 180 feet) the soils consisted of gray to red clay.

During the investigation, groundwater was encountered at depths of approximately 149 to 155 feet bgs. Monitor Well MW-1 was drilled into the surrounding underlying clay to 170 feet bgs and installed with 60 feet of 0.02 inch slotted screen. The remaining monitor wells were drilled to depths of 175 to 180 feet bgs and installed with 40 feet of 0.02 inch slotted screen. Recovery well RW-1 was drilled to a depth of 155 feet and installed with 20 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 constituents of concern detected in the groundwater above New Mexico Water Quality Control Commission (NMWQCC) standards was chlorides, Total Dissolved Solids (TDS), and sulfate (SO4). No Phase Separated Hydrocarbons (PSH) or dissolved phase separated hydrocarbons have been measured or detected in any of the onsite monitor wells above NMWQCC standards. See Figure 3 detailing the monitor well locations.

Historic Gauging and Monitor Well Sampling

On November 24, 2009, initial sampling began at the site. During 2010, additional monitor wells were installed and quarterly sampling initiated. During the sampling events, all monitor wells were gauged, purged 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 consistently to the west.

Historically, each of the wells has been sampled for BTEX utilizing Method SW8021B, chlorides and sulfates utilizing Method E 300.0, TDS utilizing Method SM2540C and periodically for general chemistry using Methods SM2320B, SW6010B, SM4500-H+. 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 87.5 mg/L in up gradient monitor well MW-4

on April 12, 2012, to 57,200 mg/L in down gradient monitor well MW-3 on October 25, 2012. With the exception of MW-4, all additional monitor wells exceeded the NMWQCC standard of 250 mg/L chlorides.

2013 GROUNDWATER SAMPLING RESULTS

Tetra Tech, Inc. (Tetra Tech) was onsite January 30, April 24, 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 showing a hydraulic gradient consistently to the west. Groundwater gradient maps for the sampling events are included as Figures 4 through 7. Gauging data is summarized in Table 1.

On January 30, April 24, July 25, and October 30, 2013, each of the wells were sampled for BTEX utilizing Method SW8021B, chlorides and sulfates utilizing Method E 300.0, TDS utilizing Method SM2540C, and periodically for general chemistry using methods SM2320B, SW6010B, SW6010B, SM4500. The samples were collected and submitted to Trace Analysis Inc. (Trace) of Lubbock, Texas. All samples collected and analyzed were below the detection limit and hence below the NMWQCC standard of 0.01 mg/L of benzene. Chlorides for the sampling period ranged from 89.4 mg/L in monitor well MW-4 on October 30, 2013, to 49,600 mg/L in monitor well MW-2 on April 24, 2013. With the exception of MW-4, all additional monitor wells exceeded the NMWQCC standard of 250 mg/L chlorides. The general chemistry and BTEX analyses are shown in Tables 2 and 3, respectively. Chloride concentration maps for the sampling events are included as Figures 8 through 11. Copies of the laboratory analyses reports are enclosed in Appendix A.

During the purging activities, it was noted that all four monitor wells and one recovery well did not pump dry.

CONCLUSIONS

1. Sampling occurred on January 30, April 24, 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 using methods SM2320B, SW6010B, SM4500.

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

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3. All wells tested below the NMQQCC standards of 0.01 mg/L for benzene throughout 2013.

4. Chloride concentrations exceed the NMWQCC standards of 250 mg/L in all monitor wells with the exception of up gradient MW-4. The chloride concentrations at the site range from 89.4 mg/L in up gradient MW-4 on October 30, 2013, to 49,600 mg/L in monitor well MW-2 on April 24, 2013.

RECOMMENDATIONS

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

2. Additional monitor wells will be installed in order to further delineate the chloride plume at the site.

3. Perform slug testing 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

FIGURES

DeLORME

Topo USA® 8

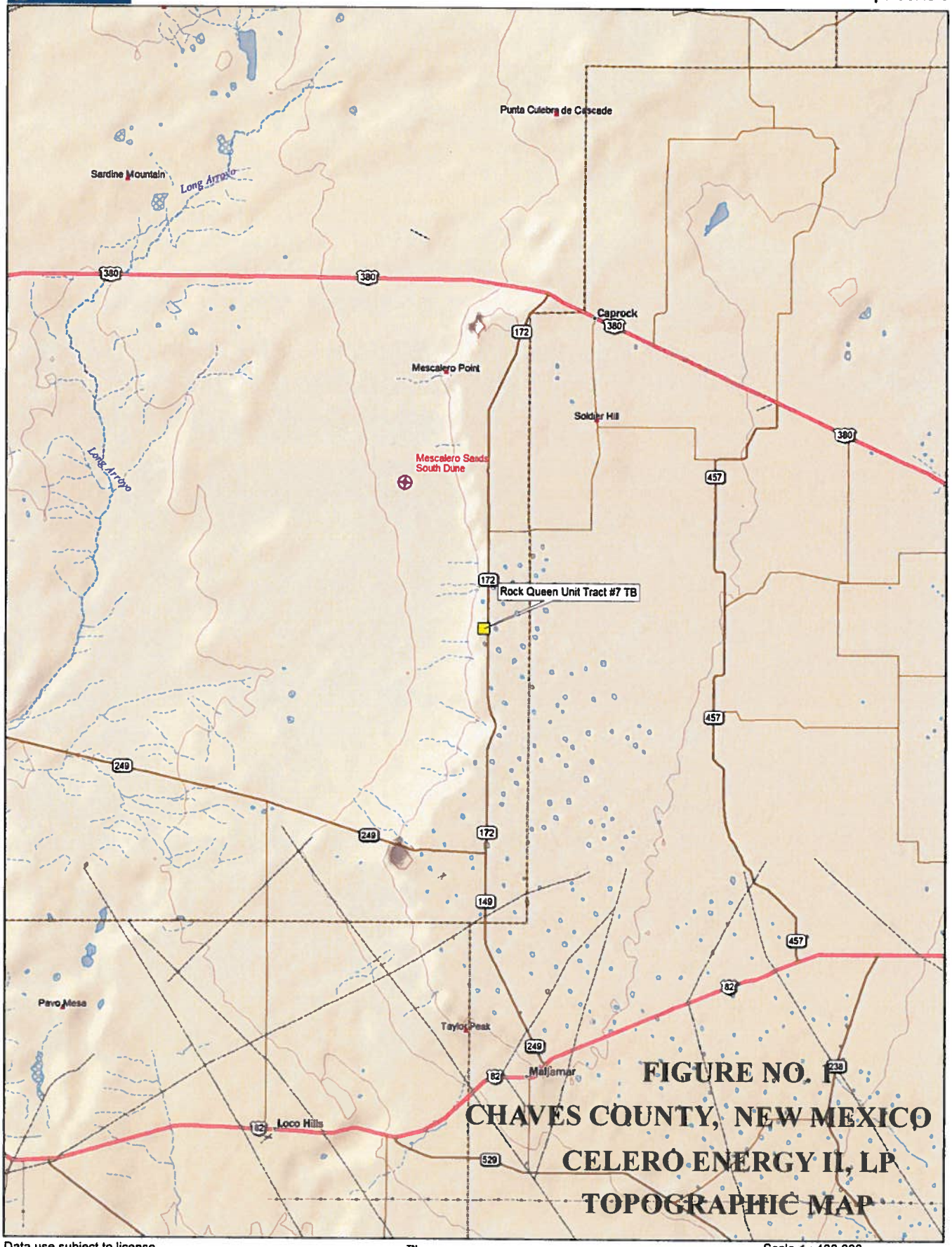


FIGURE NO. F
CHAVES COUNTY, NEW MEXICO
CELERO ENERGY II, LP
TOPOGRAPHIC MAP

TN
MN (7.8°E)

Scale 1 : 400,000

1" = 6.31 mi

Data Zoom 9-2

DeLORME

Topo USA® 8

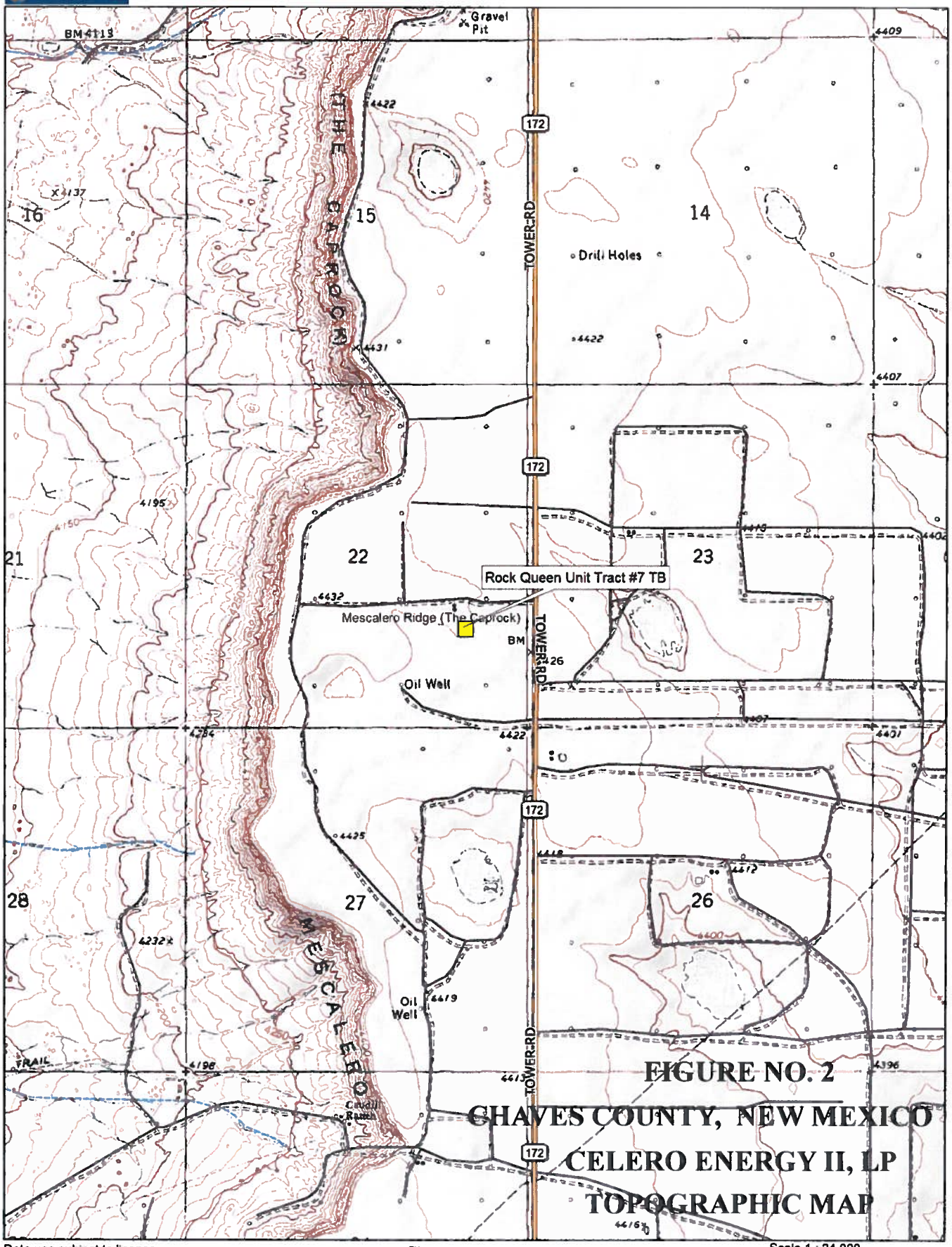


FIGURE NO. 2

CHAVES COUNTY, NEW MEXICO

CELERO ENERGY II, LP

TOPOGRAPHIC MAP

TN

MN (7.7°E)

Scale 1 : 24,000

0 600 1200 1800 2400 3000 ft

0 200 400 600 800 1000 m

1" = 2,000 0 ft

Data Zoom 12-7

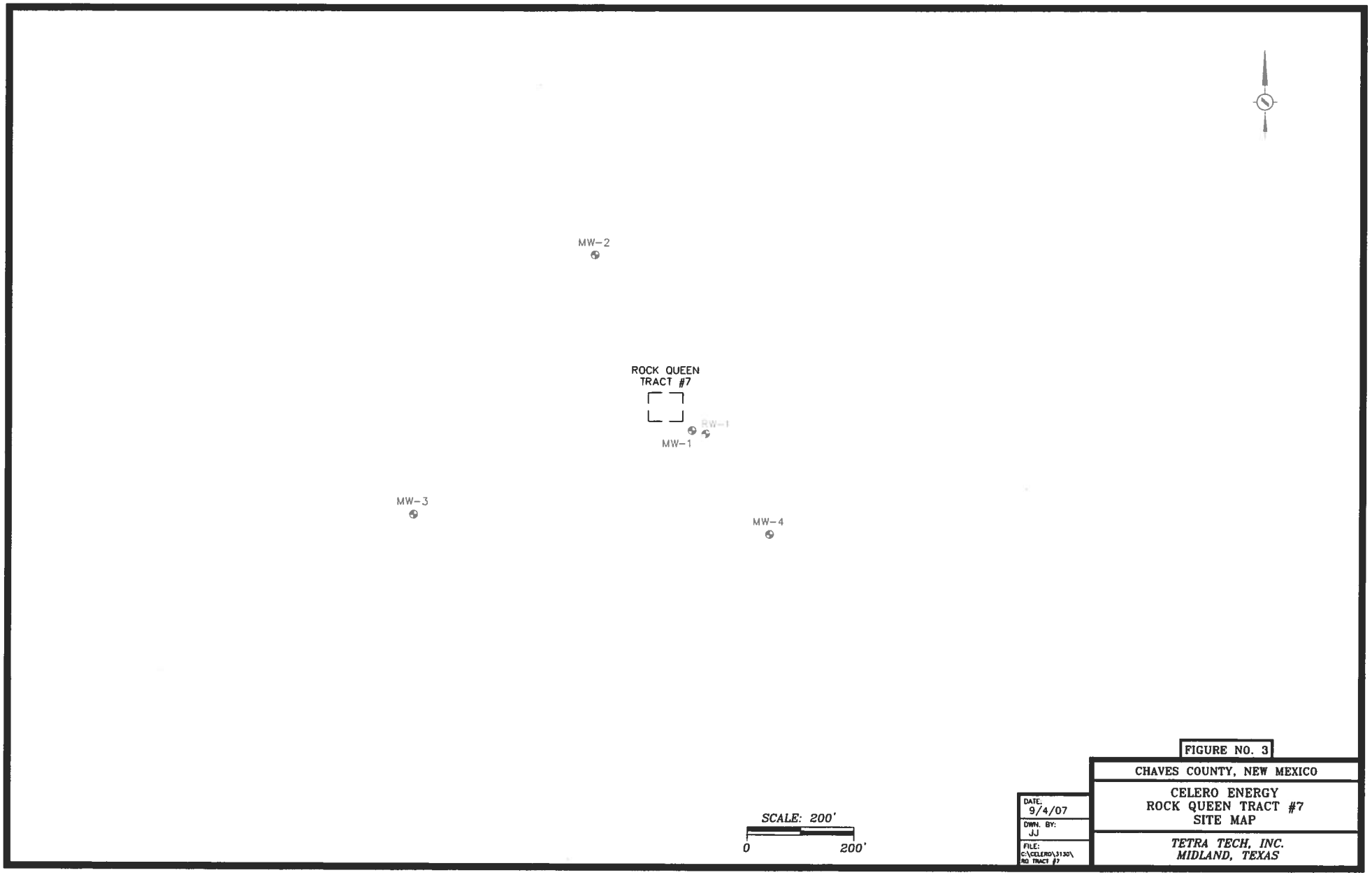


FIGURE NO. 3

CHAVES COUNTY, NEW MEXICO

CELERO ENERGY
ROCK QUEEN TRACT #7
SITE MAP

DATE: 9/4/07
DWN. BY: JJ
FILE: C:\CELERO\3130\RQ TRACT #7

TETRA TECH, INC.
MIDLAND, TEXAS

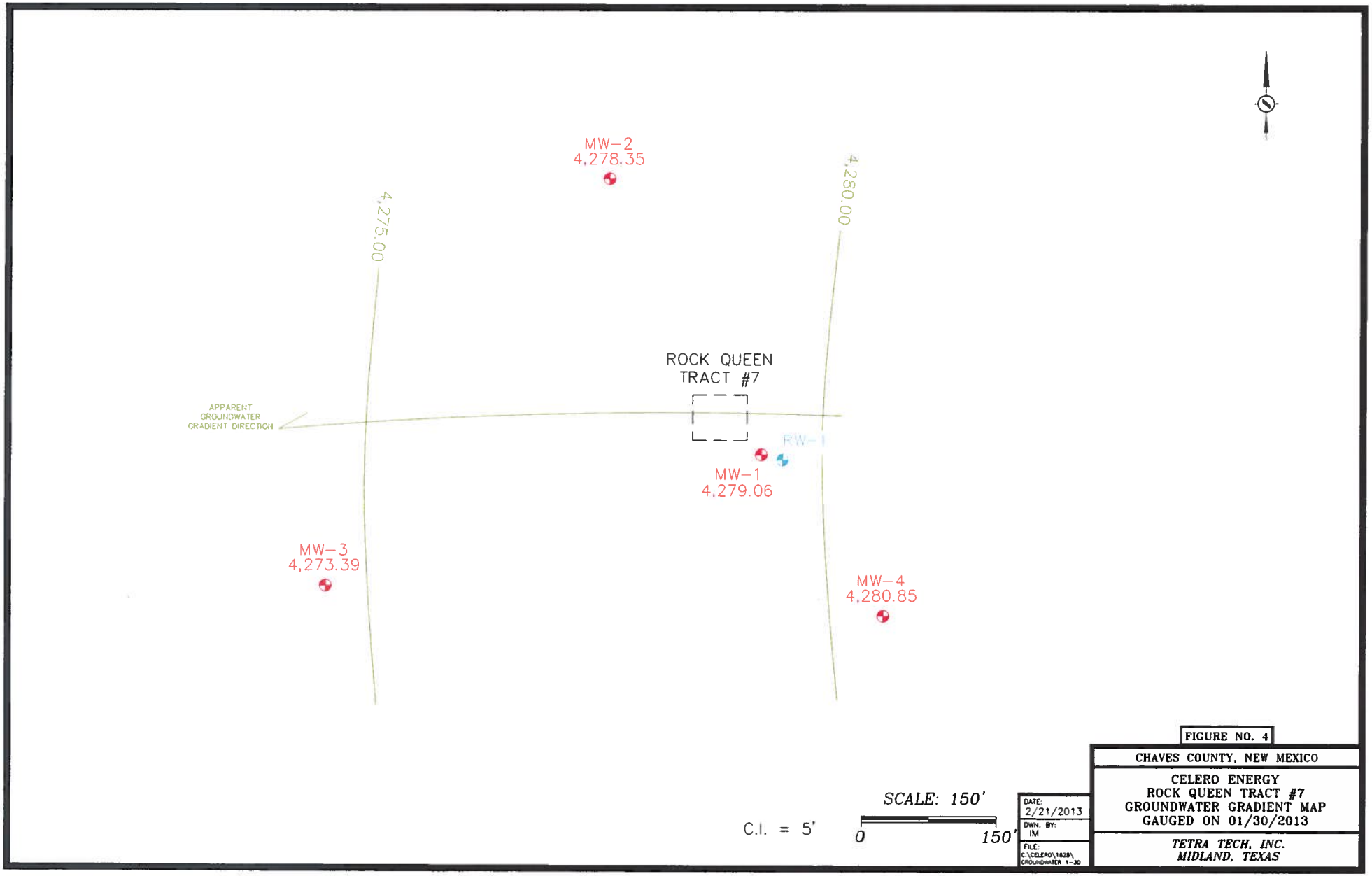


FIGURE NO. 4

CHAVES COUNTY, NEW MEXICO

CELERO ENERGY
ROCK QUEEN TRACT #7
GROUNDWATER GRADIENT MAP
GAUGED ON 01/30/2013

TETRA TECH, INC.
MIDLAND, TEXAS

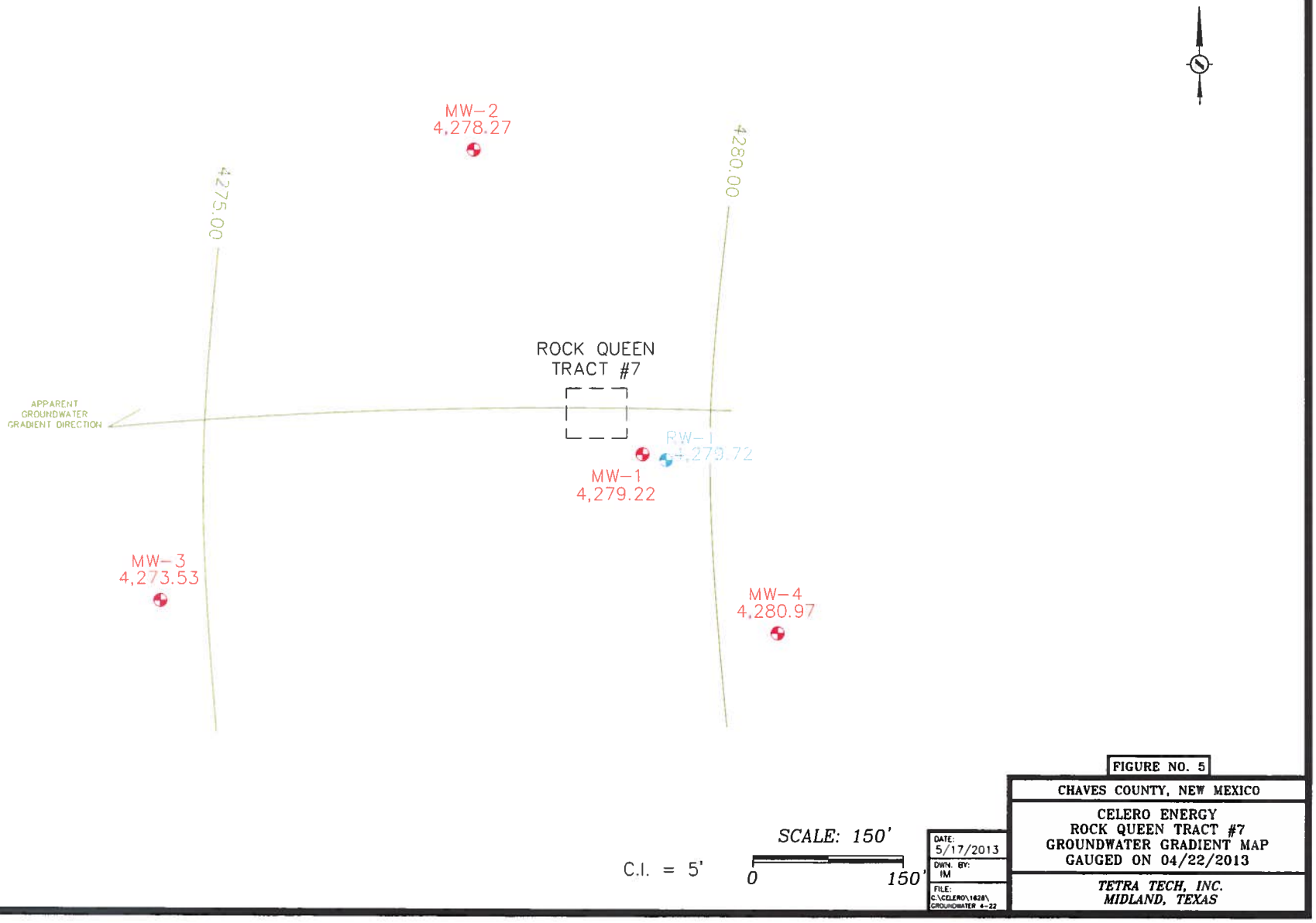


FIGURE NO. 5

CHAVES COUNTY, NEW MEXICO

CELERO ENERGY
ROCK QUEEN TRACT #7
GROUNDWATER GRADIENT MAP
GAUGED ON 04/22/2013

TETRA TECH, INC.
MIDLAND, TEXAS

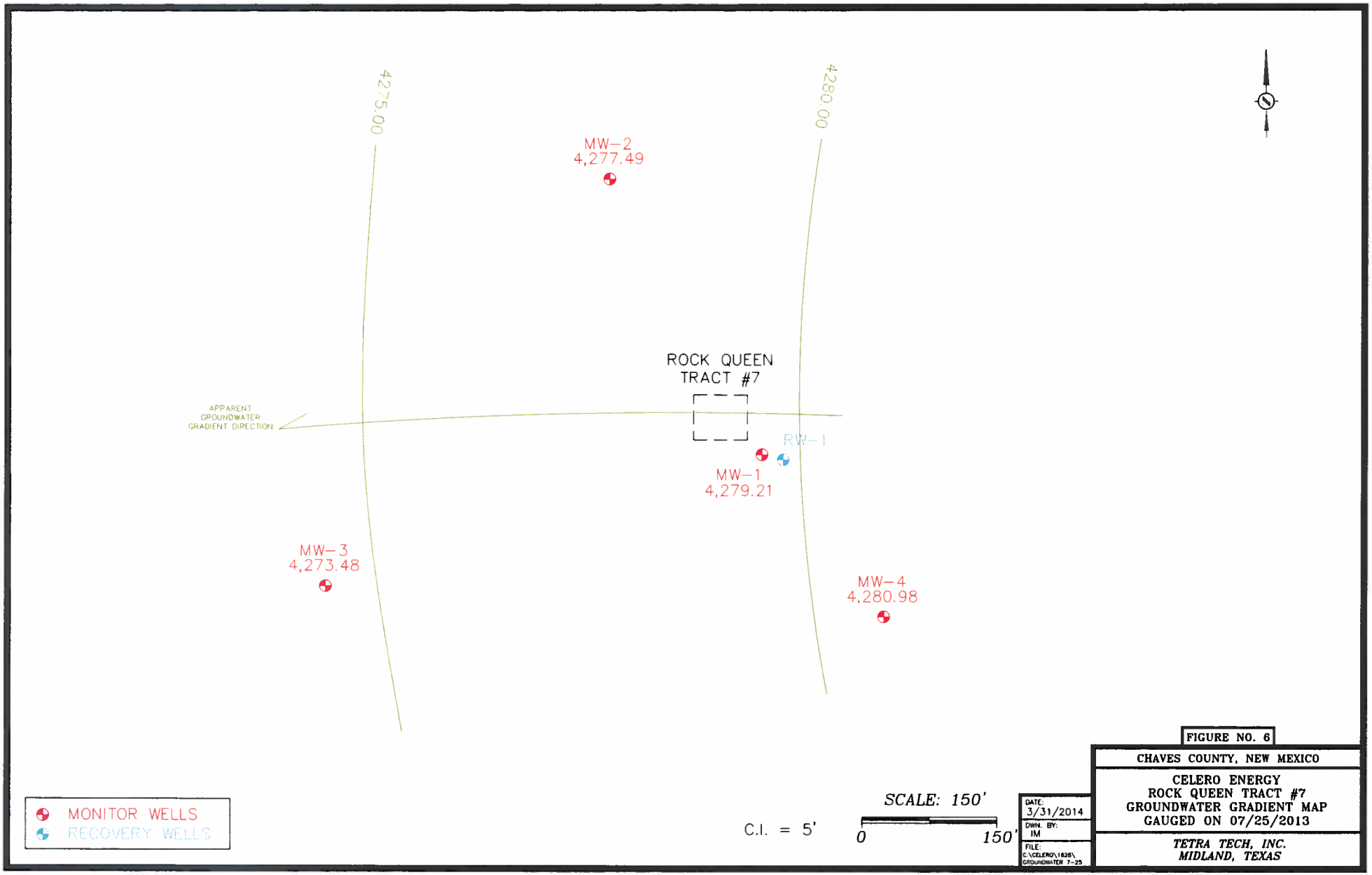


FIGURE NO. 6

CHAVES COUNTY, NEW MEXICO

CELERO ENERGY
ROCK QUEEN TRACT #7
GROUNDWATER GRADIENT MAP
GAUGED ON 07/25/2013

TETRA TECH, INC.
MIDLAND, TEXAS

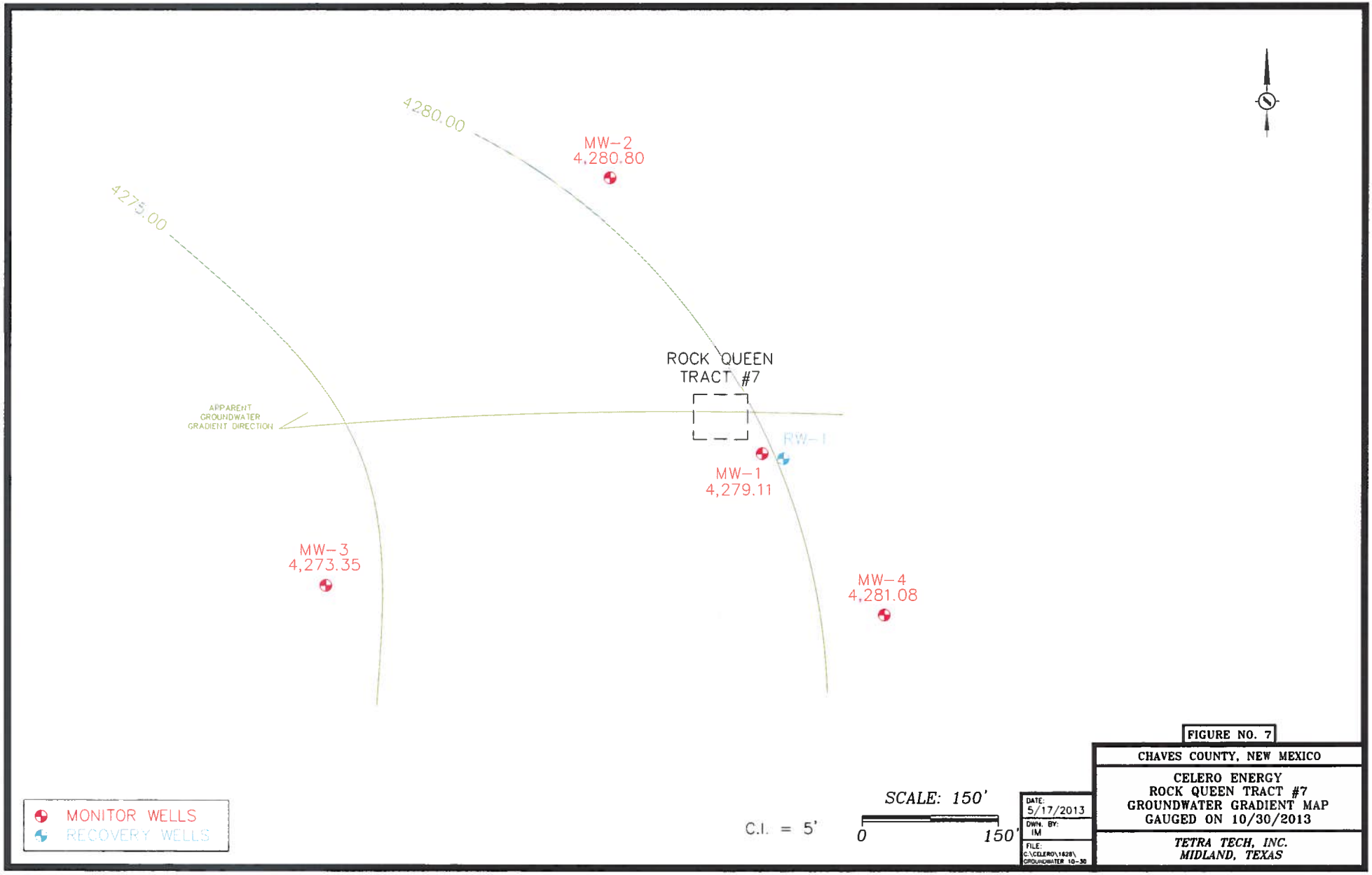


FIGURE NO. 7

CHAVES COUNTY, NEW MEXICO

CELERO ENERGY
ROCK QUEEN TRACT #7
GROUNDWATER GRADIENT MAP
GAUGED ON 10/30/2013

TETRA TECH, INC.
MIDLAND, TEXAS

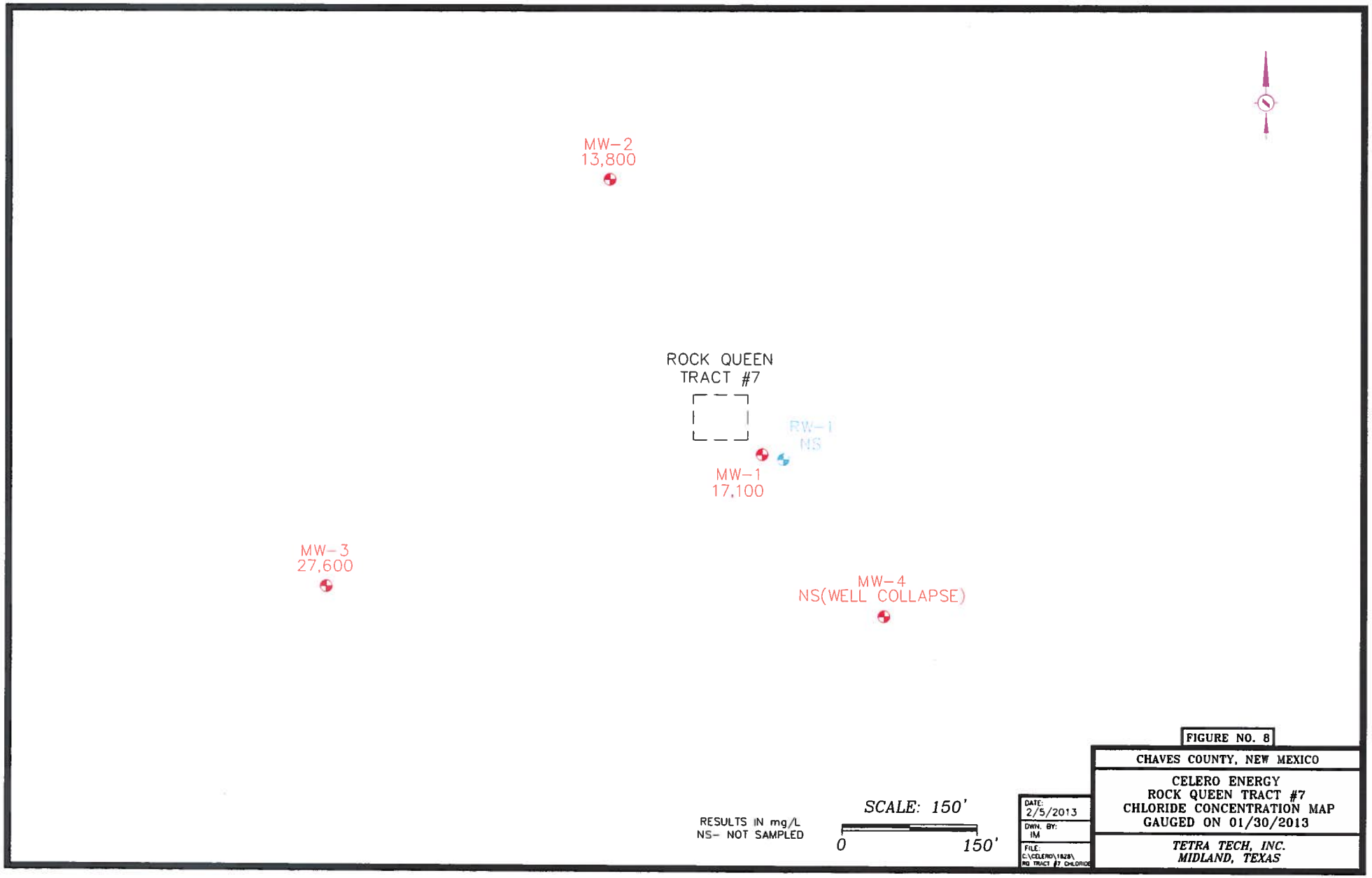
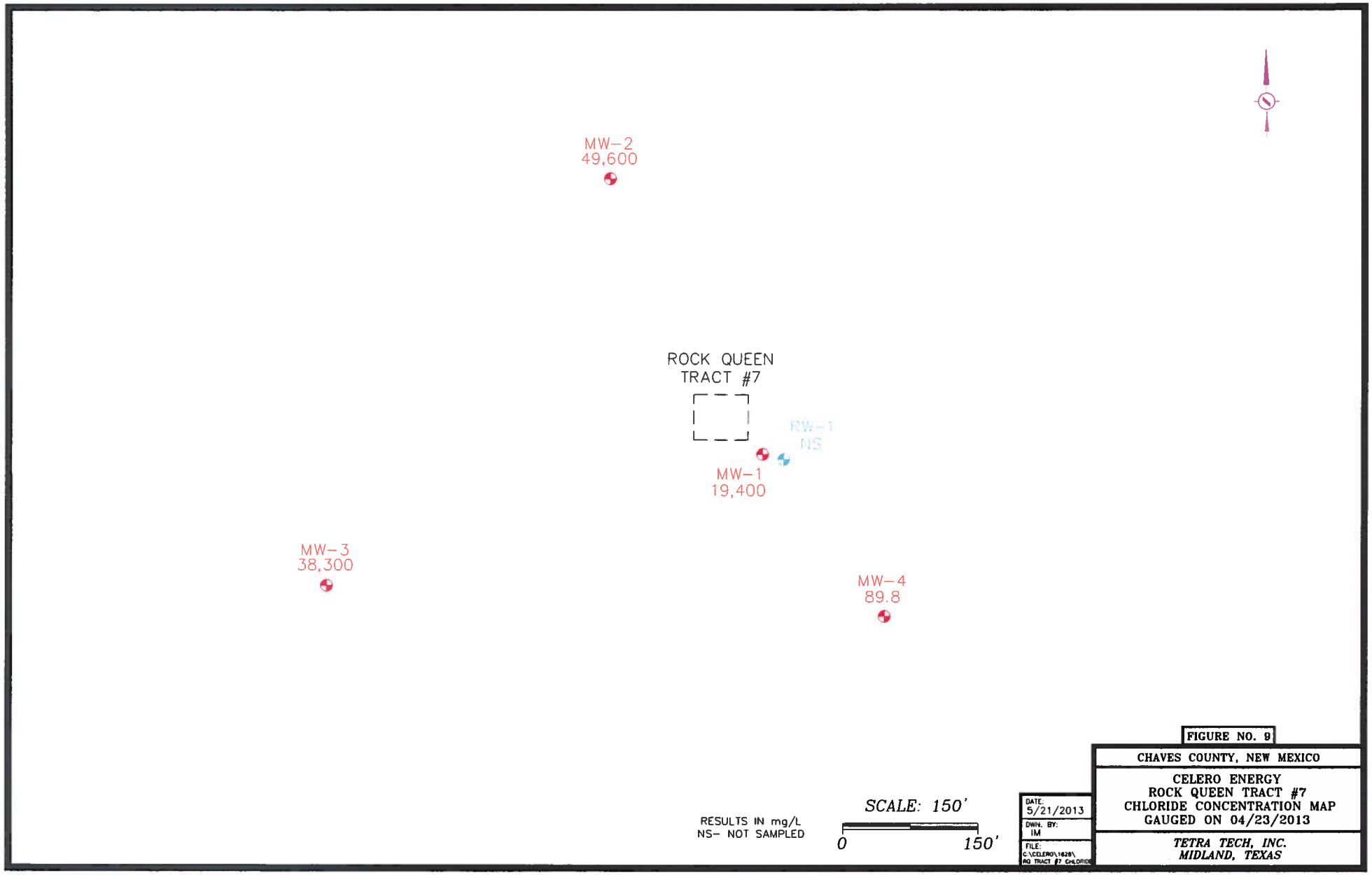


FIGURE NO. 8

CHAVES COUNTY, NEW MEXICO

CELERO ENERGY
ROCK QUEEN TRACT #7
CHLORIDE CONCENTRATION MAP
GAUGED ON 01/30/2013

TETRA TECH, INC.
MIDLAND, TEXAS


MW-2
49,600
ROCK QUEEN
TRACT #7
RW-1
NS
MW-1
19,400
MW-3
38,300
MW-4
89.8
RESULTS IN mg/L
NS- NOT SAMPLED
SCALE: 150'
0
150'
DATE:
5/21/2013
DWN. BY:
IM
FILE:
C:\CELERO\1628\
RQ TRACT #7 CHLORIDE
FIGURE NO. 9
CHAVES COUNTY, NEW MEXICO
CELERO ENERGY
ROCK QUEEN TRACT #7
CHLORIDE CONCENTRATION MAP
GAUGED ON 04/23/2013
TETRA TECH, INC.
MIDLAND, TEXAS

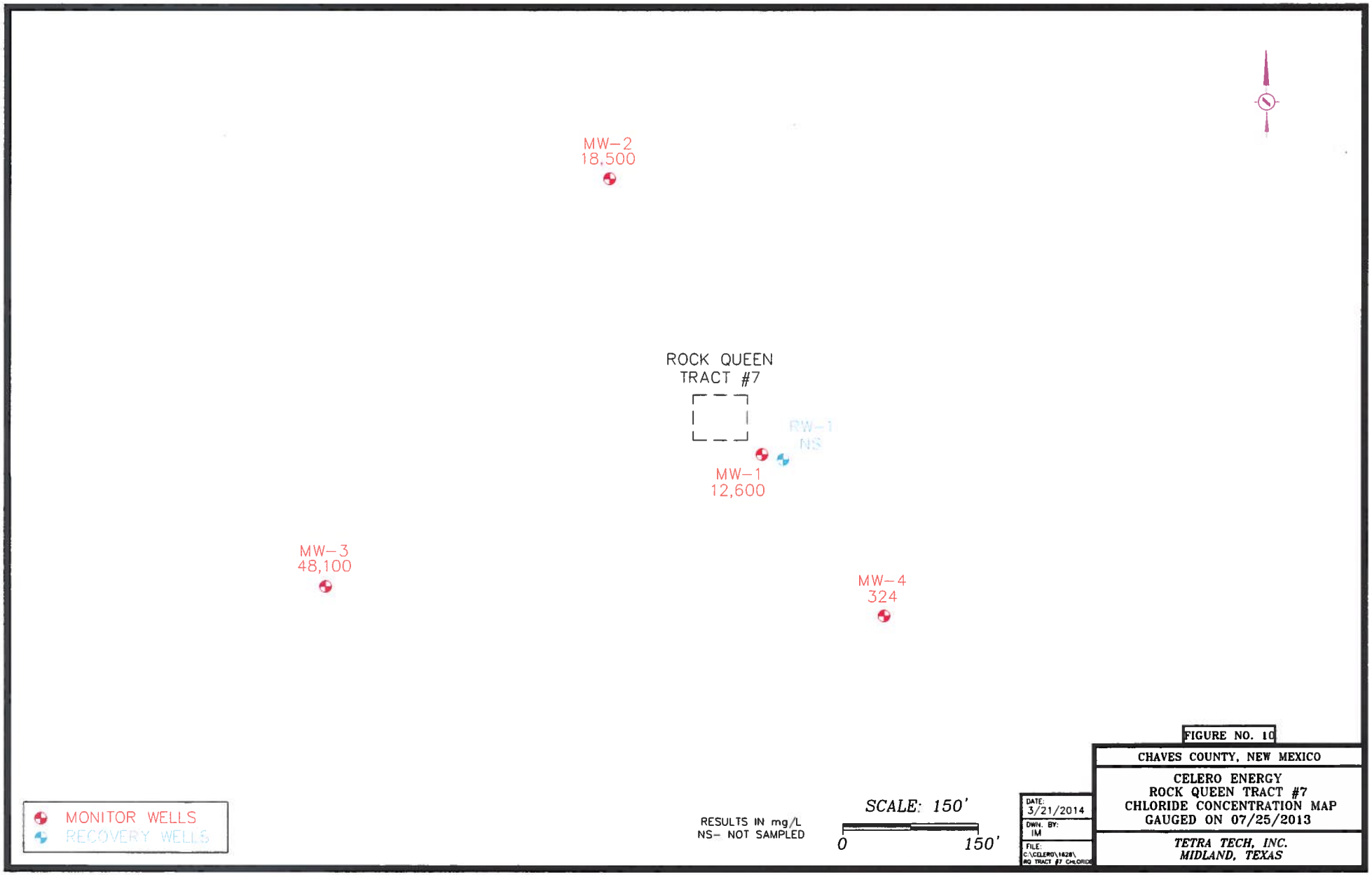


FIGURE NO. 10

CHAVES COUNTY, NEW MEXICO

CELERO ENERGY
ROCK QUEEN TRACT #7
CHLORIDE CONCENTRATION MAP
GAUGED ON 07/25/2013

TETRA TECH, INC.
MIDLAND, TEXAS

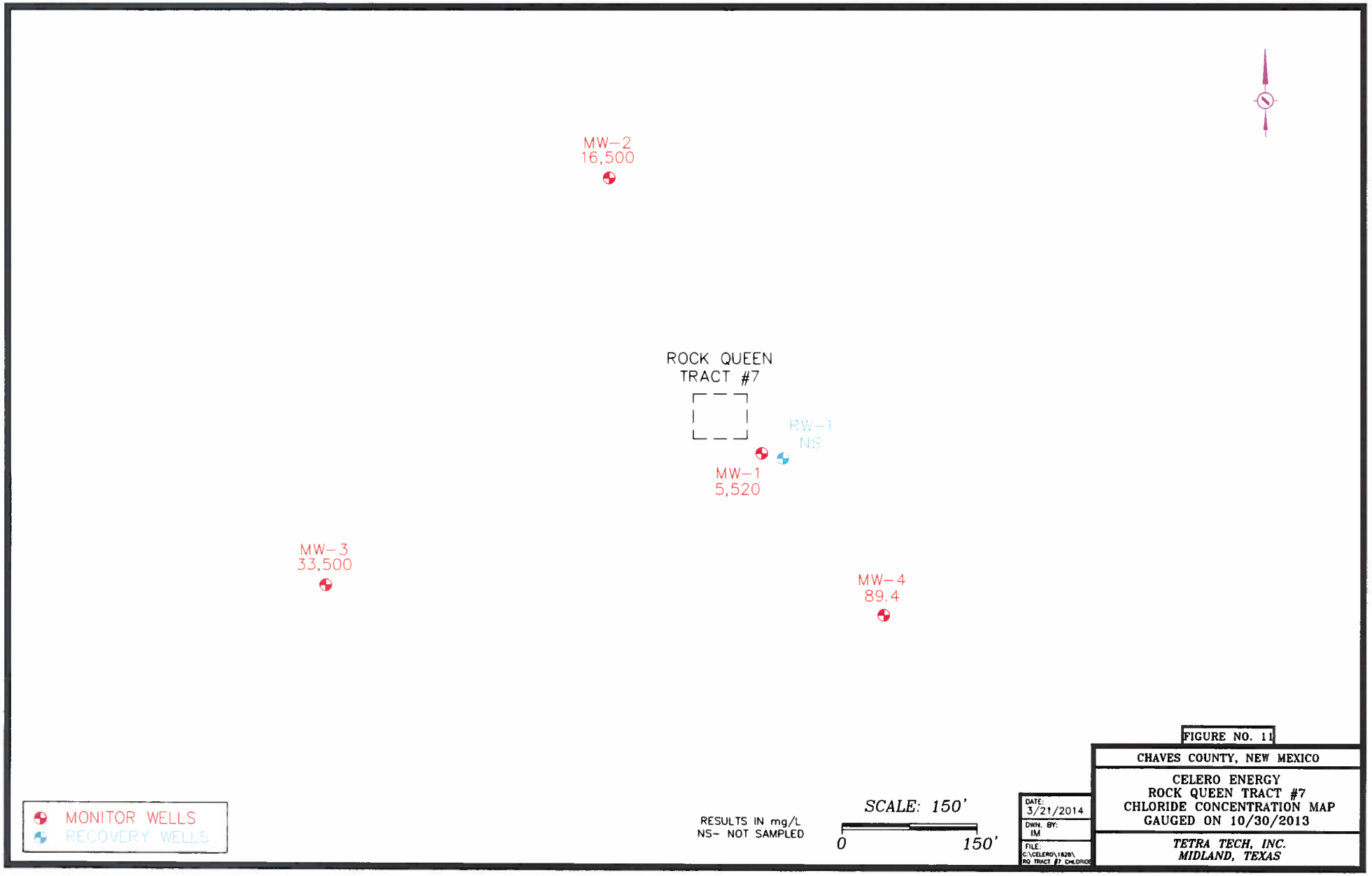


FIGURE NO. 11

CHAVES COUNTY, NEW MEXICO

CELERO ENERGY
ROCK QUEEN TRACT #7
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 #7
Chaves County, New Mexico

Monitor Well	Date Gauged	Date Well Installation	TOC Elevation (ft)	Depth of Well (bgs in ft)	Depth to Groundwater (ft)	Groundwater Elevation (ft)
MW-1	11/24/09	11/17/09	4,428.76	170.00	149.66	4,279.10
	02/25/10				149.43	4,279.33
	07/12/10				149.46	4,279.30
	10/11/10				149.44	4,279.32
	01/17/11				149.43	4,279.33
	04/11/11				149.51	4,279.25
	07/29/11				150.47	4,278.29
	10/27/11				149.40	4,279.36
	01/03/12				149.53	4,279.23
	04/09/12				149.39	4,279.37
	07/24/12				149.41	4,279.35
	10/24/12				149.60	4,279.16
	01/30/13				149.70	4,279.06
	04/22/13				149.54	4,279.22
	07/25/13				149.56	4,279.20
	10/30/13				149.65	4,279.11
MW-2	01/17/11	11/18/10	4,432.58	178.60	155.17	4,277.41
	04/11/11				155.20	4,277.38
	07/29/11				155.97	4,276.61
	10/27/11				155.11	4,277.47
	01/03/12				155.16	4,277.42
	04/09/12				155.09	4,277.49
	07/24/12				155.08	4,277.50
	10/24/12				155.21	4,277.37
	01/30/13				154.23	4,278.35
	04/22/13				154.31	4,278.27
	07/25/13				155.09	4,277.49
	10/30/13				151.78	4,280.80

Table 1
Celero Energy II, LP
Groundwater Gauging Data
Rock Queen Unit Tract #7
Chaves County, New Mexico

Monitor Well	Date Gauged	Date Well Installation	TOC Elevation (ft)	Depth of Well (bgs in ft)	Depth to Groundwater (ft)	Groundwater Elevation (ft)
MW-3	01/17/11	11/17/10	4,428.37	183.50	154.89	4,273.48
	04/11/11				154.97	4,273.40
	07/29/11				155.76	4,272.61
	10/27/11				154.86	4,273.51
	01/03/12				154.92	4,273.45
MW-3	04/09/12				154.83	4,273.54
	07/24/12				154.81	4,273.56
	10/24/12				154.93	4,273.44
	01/30/13				154.98	4,273.39
	04/22/13				154.84	4,273.53
	07/25/13				154.89	4,273.48
	10/30/13				155.02	4,273.35
MW-4	01/17/11	11/16/10	4,427.28	179.60	146.22	4,281.06
	04/11/11				146.30	4,280.98
	07/29/11				147.26	4,280.02
	10/27/11				146.40	4,280.88
	01/03/12				146.33	4,280.95
	04/09/12				146.32	4,280.96
	07/24/12				146.35	4,280.93
	10/24/12				146.37	4,280.91
	01/30/13				146.43	4,280.85
	04/22/13				146.31	4,280.97
	07/25/13				146.30	4,280.98
	10/30/13				146.20	4,281.08
RW-1	01/17/11	12/07/10	4,428.04	159.45	148.10	4,279.94
	04/11/11				148.29	4,279.75
	07/29/11				149.07	4,278.97
	10/27/11				148.14	4,279.90
	01/03/12				148.28	4,279.76
RW-1	04/09/12				148.14	4,279.90

Table 1
Celero Energy II, LP
Groundwater Gauging Data
Rock Queen Unit Tract #7
Chaves County, New Mexico

Monitor Well	Date Gauged	Date Well Installation	TOC Elevation (ft)	Depth of Well (bgs in ft)	Depth to Groundwater (ft)	Groundwater Elevation (ft)
	07/24/12				148.12	4,279.92
	10/24/12				148.32	4,279.72
	01/30/13				--	--
	04/22/13				148.32	4,279.72
	07/25/13				148.24	4,279.80
	04/22/13				148.14	4,279.90

Table 2
Celero Energy II, LP
Groundwater Analytical Results
Rock Queen Unit Tract #7
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	11/24/09	1,730	430	585	15.3	<1.00	<1.00	114	114	150	4,690	9,100	6,100	7.55
	02/25/10	8,010	2,250	2,860	80.0	<1.00	<1.00	93	93	463	24,000	38,300	29,300	7.11
	07/12/10	-	-	-	-	-	-	-	-	316	3,060	3,060	-	-
	10/11/10	-	-	-	-	-	-	-	-	960	20,000	48,400	-	-
	01/19/11	-	-	-	-	-	-	-	-	<2500	18,200	38,600	-	-
	04/14/11	-	-	-	-	-	-	-	-	1,020	20,500	32,000	-	-
	07/29/11	-	-	-	-	-	-	-	-	1,170	20,500	33,700	-	-
	10/28/11	-	-	-	-	-	-	-	-	1,270	13,100	23,200	-	-
	01/06/12	-	-	-	-	-	-	-	-	1,260	18,000	23,200	-	-
	04/12/12	-	-	-	-	-	-	-	-	1,020	9,840	25,600	-	-
	07/25/12	-	-	-	-	-	-	-	-	-	25,700	-	-	-
	10/25/12	-	-	-	-	-	-	-	-	826	22,000	51,500	-	-
	01/30/13	-	-	-	-	-	-	-	-	690	17,100	32,400	-	-
	04/24/13	5,440	1,310	4,700	37.3	<1.00	<1.00	551	551	924	19,400	43,700	19,000	6.70
	07/25/13	1,700	458	4,980	49.8	<20.0	<20.0	179	179	<2500	12,600	22,900	6,130	6.91
	10/30/13	531	184	2,920	38.9	<20.0	<20.0	356	356	609	5,520	11,900	2,080	7.43
MW-2	01/19/11	-	-	-	-	-	-	-	-	1,250	45,100	78,200	-	-
	04/14/11	-	-	-	-	-	-	-	-	1,280	19,100	33,000	-	-
	07/29/11	-	-	-	-	-	-	-	-	1,570	11,700	25,900	-	-
	10/28/11	-	-	-	-	-	-	-	-	1,010	10,500	19,500	-	-
	01/06/12	-	-	-	-	-	-	-	-	1,840	26,000	35,800	-	-
	04/12/12	-	-	-	-	-	-	-	-	1,800	21,800	36,900	-	-
	07/25/12	-	-	-	-	-	-	-	-	-	27,300	-	-	-
	10/25/12	-	-	-	-	-	-	-	-	1,490	22,100	37,200	-	-
	01/30/13	-	-	-	-	-	-	-	-	1,140	13,800	24,800	-	-
	04/24/13	6,310	2,510	22,800	102	<1.00	<1.00	160	160	1,610	49,600	88,600	26,100	6.20
	07/25/13	1,030	516	8,400	129	<20.0	<20.0	173	173	<2500	18,500	33,000	4,700	6.86
	10/30/13	1,850	821	33,500	181	<20.0	<20.0	320	320	1,030	33,500	33,700	8,000	7.05
MW-3	01/19/11	-	-	-	-	-	-	-	-	1,750	47,500	81,800	-	-

Table 2
Celero Energy II, LP
Groundwater Analytical Results
Rock Queen Unit Tract #7
Chaves County, New Mexico

Monitor Well	Date Sampled	Dissolved Calcium (mg/L)	Dissolved Magnesium (mg/L)	Dissolved Sodium (mg/L)	Dissolved Potassium (mg/L)	Hydroxide Alkalinity (mg/L)	Carbonate Alkalinity (mg/L)	Bicarbonate Alkalinity (mg/L)	Total Alkalinity (mg/L)	Sulfate (mg/L)	Chloride (mg/L)	TDS (mg/L)	Hardness (mg/L)	pH
MW-3	04/14/11	-	-	-	-	-	-	-	-	1,170	25,100	41,000	-	-
	07/29/11	-	-	-	-	-	-	-	-	1,420	25,100	52,400	-	-
	10/28/11	-	-	-	-	-	-	-	-	1,480	33,400	57,000	-	-
	01/06/12	-	-	-	-	-	-	-	-	1,680	45,300	68,400	-	-
	04/12/12	-	-	-	-	-	-	-	-	1,560	38,300	63,900	-	-
	07/25/12	-	-	-	-	-	-	-	-	-	30,000	-	-	-
	10/25/12	-	-	-	-	-	-	-	-	1,830	57,200	85,700	-	-
	01/30/13	-	-	-	-	-	-	-	-	1,300	27,600	44,800	-	-
	04/24/13	3,520	1,740	21,400	196	<1.00	<1.00	152	152	1,500	38,300	57,100	16,000	6.51
	07/25/13	132	27.4	122	6.5	<20.0	<20.0	139	139	97.9	324	990	443	7.66
	10/30/13	1,850	821	10,600	181	<20.0	<20.0	320	320	1,030	33,500	33,700	8,000	7.05
MW-4	01/19/11	-	-	-	-	-	-	-	-	279	<125	792	-	-
	04/14/11	-	-	-	-	-	-	-	-	81	510	3,330	-	-
	07/29/11	-	-	-	-	-	-	-	-	114	127	648	-	-
	10/28/11	-	-	-	-	-	-	-	-	113	144	770	-	-
	01/06/12	-	-	-	-	-	-	-	-	114	98.4	646	-	-
	04/12/12	-	-	-	-	-	-	-	-	106	87.5	579	-	-
	07/25/12	-	-	-	-	-	-	-	-	-	138	-	-	-
	10/25/12	-	-	-	-	-	-	-	-	110	122	695	-	-
	01/30/13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	04/24/13	86.4	18.8	61.3	2.33	<1.00	<1.00	142	142	109	89.8	640	293	7.90
	07/25/13	4,490.0	2,140.0	25,100.0	265.00	<20.0	<20.0	156	156	<12500	48,100.0	49,200	20,000	6.58
	10/30/13	86.1	15.4	82.2	<10.0	<20.0	<20.0	166	166	115	89.4	900	278	7.85
RW-1	01/19/11	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	04/14/11	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	07/29/11	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	10/28/11	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
	04/12/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

Table 2

Celero Energy II, LP

Groundwater Analytical Results

Rock Queen Unit Tract #7

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
RW-1	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
	04/24/13	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 #7
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	11/24/09	<0.001	<0.001	<0.001	<0.001	<0.001
	02/25/10	<0.001	<0.001	<0.001	<0.001	<0.001
	07/12/10	<0.001	<0.001	<0.001	<0.001	<0.001
	10/11/10	<0.001	<0.001	<0.001	<0.001	<0.001
	01/19/11	<0.001	<0.001	<0.001	<0.001	<0.001
	04/14/11	<0.001	<0.001	<0.001	<0.001	<0.001
	07/29/11	<0.001	<0.001	<0.001	<0.001	<0.001
	10/28/11	<0.001	<0.001	<0.001	<0.001	<0.001
	01/06/12	<0.001	<0.001	<0.001	<0.001	<0.001
	04/12/12	<0.001	<0.001	<0.001	<0.001	<0.001
	07/25/12	<0.001	<0.001	<0.001	<0.001	0.0041
	10/25/12	<0.001	<0.001	<0.001	<0.001	<0.001
	01/30/13	<0.001	<0.001	<0.001	<0.001	<0.001
	04/24/13	<0.001	<0.001	<0.001	<0.001	<0.001
	07/25/13	<0.001	<0.001	<0.001	<0.001	<0.001
	10/30/13	<0.001	<0.001	<0.001	<0.003	<0.003
MW-2	01/19/11	<0.001	<0.001	<0.001	<0.001	<0.001
	04/14/11	0.0068	<0.001	<0.001	<0.001	0.0068
	07/29/11	0.0065	<0.001	<0.001	<0.001	0.0068
	10/28/11	<0.001	<0.001	<0.001	<0.001	<0.001
	01/06/12	<0.001	<0.001	<0.001	<0.001	<0.001
	04/12/12	<0.001	<0.001	<0.001	<0.001	<0.001
	07/25/12	0.0050	0.0011	<0.001	0.0088	0.0149
	10/25/12	0.00320	<0.001	<0.001	<0.001	0.00320
	01/30/13	<0.001	<0.001	<0.001	<0.001	<0.001
	04/24/13	0.00480	<0.001	<0.001	<0.001	0.00480
	07/25/13	<0.001	<0.001	<0.001	<0.001	<0.001
	10/30/13	<0.001	<0.001	<0.001	<0.003	<0.003
MW-3	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
	07/29/11	<0.001	<0.001	<0.001	<0.001	<0.001
	10/28/11	<0.001	<0.001	<0.001	<0.001	<0.001
	01/06/12	<0.001	<0.001	<0.001	<0.001	<0.001
	04/12/12	<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
	04/24/13	<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	<0.003	<0.003
MW-4	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
	07/29/11	<0.001	<0.001	<0.001	<0.001	<0.001
	10/28/11	<0.001	<0.001	<0.001	<0.001	<0.001
	01/06/12	<0.001	<0.001	<0.001	<0.001	<0.001
	04/12/12	<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	NS	NS	NS	NS	NS
	04/24/13	<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	<0.003	<0.003
RW-1	01/19/11	NS	NS	NS	NS	NS
	04/14/11	NS	NS	NS	NS	NS
	07/29/11	NS	NS	NS	NS	NS
	10/28/11	NS	NS	NS	NS	NS

Table 3
Celero Energy II, LP
Groundwater Analytical Results
Rock Queen Unit Tract #7
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)
RW-1	01/06/12	NS	NS	NS	NS	NS
	04/12/12	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
	04/24/13	NS	NS	NS	NS	NS
	07/25/13	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 20, 2013

Work Order: 13020134

Project Location: Chavez Co., NM
Project Name: Celero/Rock Queen #7
Project Number: 114-6401628

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
320185	MW-1	water	2013-01-30	09:30	2013-02-01
320186	MW-2	water	2013-01-30	10:00	2013-02-01
320187	MW-3	water	2013-01-30	09:50	2013-02-01

Report Corrections (Work Order 13020134)

- 2/20/13: Added narrative comment concerning hold time for samples 320186 and 320187.

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

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Case Narrative

Samples for project Celero/Rock Queen #7 were received by TraceAnalysis, Inc. on 2013-02-01 and assigned to work order 13020134. Samples for work order 13020134 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	83687	2013-02-07 at 12:00	98757	2013-02-07 at 12:00
Chloride (IC)	E 300.0	83644	2013-02-05 at 09:46	98812	2013-02-05 at 13:31
SO4 (IC)	E 300.0	83644	2013-02-05 at 09:46	98812	2013-02-05 at 13:31
TDS	SM 2540C	83642	2013-02-05 at 09:17	98843	2013-02-05 at 16:06
TDS	SM 2540C	83948	2013-02-18 at 08:43	99086	2013-02-19 at 15:45

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 13020134 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: 320185 - MW-1

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	98757	Date Analyzed:	2013-02-07	Analyzed By:	YG
Prep Batch:	83687	Sample Preparation:	2013-02-07	Prepared By:	YG

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

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	QSR	QSR		0.115	mg/L	1	0.100	115	75.7 - 109
4-Bromofluorobenzene (4-BFB)				0.0974	mg/L	1	0.100	97	68.1 - 109

Sample: 320185 - MW-1

Laboratory:	Midland				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	98812	Date Analyzed:	2013-02-05	Analyzed By:	AR
Prep Batch:	83644	Sample Preparation:	2013-02-05	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	QR	1	**17100**	mg/L	1000	2.50

Sample: 320185 - MW-1

Laboratory:	Midland				
Analysis:	SO4 (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	98812	Date Analyzed:	2013-02-05	Analyzed By:	AR
Prep Batch:	83644	Sample Preparation:	2013-02-05	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Sulfate		1	**690**	mg/L	100	2.50

Sample: 320185 - MW-1

Laboratory:	Midland				
Analysis:	TDS	Analytical Method:	SM 2540C	Prep Method:	N/A
QC Batch:	98843	Date Analyzed:	2013-02-05	Analyzed By:	AR
Prep Batch:	83642	Sample Preparation:	2013-02-06	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		1	**32400**	mg/L	100	10.0

Sample: 320186 - MW-2

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	98757	Date Analyzed:	2013-02-07	Analyzed By:	YG
Prep Batch:	83687	Sample Preparation:	2013-02-07	Prepared By:	YG

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

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	Q#F	Q#F		0.128	mg/L	1	0.100	128	75.7 - 109
4-Bromofluorobenzene (4-BFB)				0.0992	mg/L	1	0.100	99	68.1 - 109

Sample: 320186 - MW-2

Laboratory:	Midland				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	98812	Date Analyzed:	2013-02-05	Analyzed By:	AR
Prep Batch:	83644	Sample Preparation:	2013-02-05	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	Q#	1	**13800**	mg/L	1000	2.50

Sample: 320186 - MW-2

Laboratory:	Midland				
Analysis:	SO4 (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	98812	Date Analyzed:	2013-02-05	Analyzed By:	AR
Prep Batch:	83644	Sample Preparation:	2013-02-05	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Sulfate		1	**1140**	mg/L	100	2.50

Sample: 320186 - MW-2

Laboratory:	Midland				
Analysis:	TDS	Analytical Method:	SM 2540C	Prep Method:	N/A
QC Batch:	99086	Date Analyzed:	2013-02-19	Analyzed By:	AR
Prep Batch:	83948	Sample Preparation:	2013-02-18	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		1	**24800**	mg/L	100	10.0

Sample: 320187 - MW-3

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	98757	Date Analyzed:	2013-02-07	Analyzed By:	YG
Prep Batch:	83687	Sample Preparation:	2013-02-07	Prepared By:	YG

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

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	Q#1	Q#1		0.116	mg/L	1	0.100	116	75.7 - 109
4-Bromofluorobenzene (4-BFB)				0.0988	mg/L	1	0.100	99	68.1 - 109

Sample: 320187 - MW-3

Laboratory:	Midland				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	98812	Date Analyzed:	2013-02-05	Analyzed By:	AR
Prep Batch:	83644	Sample Preparation:	2013-02-05	Prepared By:	AR

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
Chloride	Q*	1	**27600**		mg/L	1000	2.50

Sample: 320187 - MW-3

Laboratory:	Midland				
Analysis:	SO4 (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	98812	Date Analyzed:	2013-02-05	Analyzed By:	AR
Prep Batch:	83644	Sample Preparation:	2013-02-05	Prepared By:	AR

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
Sulfate		1	**1300**		mg/L	100	2.50

Sample: 320187 - MW-3

Laboratory:	Midland				
Analysis:	TDS	Analytical Method:	SM 2540C	Prep Method:	N/A
QC Batch:	99086	Date Analyzed:	2013-02-19	Analyzed By:	AR
Prep Batch:	83948	Sample Preparation:	2013-02-18	Prepared By:	AR

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
Total Dissolved Solids	2	1	**44800**		mg/L	100	10.0

Method Blanks

Method Blank (1) QC Batch: 98757

QC Batch: 98757 | Date Analyzed: 2013-02-07 | Analyzed By: YG
Prep Batch: 83687 | QC Preparation: 2013-02-07 | Prepared By: YG

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

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

Method Blank (1) QC Batch: 98812

QC Batch: 98812 | Date Analyzed: 2013-02-05 | Analyzed By: AR
Prep Batch: 83644 | QC Preparation: 2013-02-05 | Prepared By: AR

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride		1	<0.265	mg/L	2.5

Method Blank (1) QC Batch: 98812

QC Batch: 98812 | Date Analyzed: 2013-02-05 | Analyzed By: AR
Prep Batch: 83644 | QC Preparation: 2013-02-05 | Prepared By: AR

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

Method Blank (1) QC Batch: 98843

QC Batch: 98843 | Date Analyzed: 2013-02-05 | Analyzed By: AR
Prep Batch: 83642 | QC Preparation: 2013-02-05 | Prepared By: AR

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

Method Blank (1) QC Batch: 99086

QC Batch: 99086 | Date Analyzed: 2013-02-19 | Analyzed By: AR
Prep Batch: 83948 | QC Preparation: 2013-02-18 | Prepared By: AR

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

Duplicates (1) Duplicated Sample: 320185

QC Batch: 98843 | Date Analyzed: 2013-02-05 | Analyzed By: AR
Prep Batch: 83642 | QC Preparation: 2013-02-05 | Prepared By: AR

Param		Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
Total Dissolved Solids	1	35500	32400	mg/L	100	9	10

Duplicates (1) Duplicated Sample: 320187

QC Batch: 99086 | Date Analyzed: 2013-02-19 | Analyzed By: AR
Prep Batch: 83948 | QC Preparation: 2013-02-18 | Prepared By: AR

Param		Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
Total Dissolved Solids	1	46500	44800	mg/L	100	4	10

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 98757 | Date Analyzed: 2013-02-07 | Analyzed By: YG
Prep Batch: 83687 | QC Preparation: 2013-02-07 | Prepared By: YG

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	0.108	mg/L	1	0.100	<0.000200	108	80 - 120
Toluene		1	0.109	mg/L	1	0.100	<0.000300	109	80 - 120
Ethylbenzene		1	0.112	mg/L	1	0.100	<0.000400	112	70.6 - 120
Xylene		1	0.347	mg/L	1	0.300	<0.00120	116	79.2 - 120

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	0.109	mg/L	1	0.100	<0.000200	109	80 - 120	1	20
Toluene		1	0.110	mg/L	1	0.100	<0.000300	110	80 - 120	1	20
Ethylbenzene		1	0.114	mg/L	1	0.100	<0.000400	114	70.6 - 120	2	20
Xylene		1	0.351	mg/L	1	0.300	<0.00120	117	79.2 - 120	1	20

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

Surrogate			LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	Qsr	Qsr	0.117	0.117	mg/L	1	0.100	117	117	75.7 - 109
4-Bromofluorobenzene (4-BFB)			0.102	0.103	mg/L	1	0.100	102	103	68.1 - 109

Laboratory Control Spike (LCS-1)

QC Batch: 98812 | Date Analyzed: 2013-02-05 | Analyzed By: AR
Prep Batch: 83644 | QC Preparation: 2013-02-05 | Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	22.6	mg/L	1	25.0	<0.265	90	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	22.7	mg/L	1	25.0	<0.265	91	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: 98812 | Date Analyzed: 2013-02-05 | Analyzed By: AR
Prep Batch: 83644 | QC Preparation: 2013-02-05 | Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate		1	24.1	mg/L	1	25.0	<0.177	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
Sulfate		1	24.3	mg/L	1	25.0	<0.177	97	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: 98843 | Date Analyzed: 2013-02-05 | 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	976	mg/L	1	1000	<9.75	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		1	986	mg/L	1	1000	<9.75	99	90 - 110	1	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: 99086 | Date Analyzed: 2013-02-19 | Analyzed By: AR
Prep Batch: 83948 | QC Preparation: 2013-02-18 | Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Total Dissolved Solids		1	972	mg/L	1	1000	<9.75	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
Total Dissolved Solids		1	963	mg/L	1	1000	<9.75	96	90 - 110	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: 320185

QC Batch: 98757 | Date Analyzed: 2013-02-07 | Analyzed By: YG
Prep Batch: 83687 | QC Preparation: 2013-02-07 | Prepared By: YG

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	0.0962	mg/L	1	0.100	<0.000200	96	25.7 - 139
Toluene		1	0.0955	mg/L	1	0.100	<0.000300	96	32.7 - 134
Ethylbenzene		1	0.0985	mg/L	1	0.100	<0.000400	98	45.9 - 120
Xylene		1	0.304	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	0.0889	mg/L	1	0.100	<0.000200	89	25.7 - 139	8	20
Toluene		1	0.0893	mg/L	1	0.100	<0.000300	89	32.7 - 134	7	20
Ethylbenzene		1	0.0920	mg/L	1	0.100	<0.000400	92	45.9 - 120	7	20
Xylene		1	0.283	mg/L	1	0.300	<0.00120	94	34.9 - 128	7	20

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

Surrogate			MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	Qsr	Qsr	0.119	0.112	mg/L	1	0.1	119	112	75.7 - 109
4-Bromofluorobenzene (4-BFB)			0.0991	0.0994	mg/L	1	0.1	99	99	68.1 - 109

Matrix Spike (MS-1) Spiked Sample: 320185

QC Batch: 98812 | Date Analyzed: 2013-02-05 | Analyzed By: AR
Prep Batch: 83644 | QC Preparation: 2013-02-05 | Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	52700	mg/L	1000	30000	17100	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	QM	QM	1	53600	mg/L	1000	30000	17100	122	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: 320185

QC Batch: 98812 | Date Analyzed: 2013-02-05 | Analyzed By: AR
Prep Batch: 83644 | QC Preparation: 2013-02-05 | Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate		1	25900	mg/L	1000	30000	270	85	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	26100	mg/L	1000	30000	270	86	80 - 120	1	20

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

Calibration Standards

Standard (CCV-1)

QC Batch: 98757 | Date Analyzed: 2013-02-07 | Analyzed By: YG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.104	104	80 - 120	2013-02-07
Toluene		1	mg/L	0.100	0.105	105	80 - 120	2013-02-07
Ethylbenzene		1	mg/L	0.100	0.108	108	80 - 120	2013-02-07
Xylene		1	mg/L	0.300	0.325	108	80 - 120	2013-02-07

Standard (CCV-2)

QC Batch: 98757 | Date Analyzed: 2013-02-07 | Analyzed By: YG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.108	108	80 - 120	2013-02-07
Toluene		1	mg/L	0.100	0.109	109	80 - 120	2013-02-07
Ethylbenzene		1	mg/L	0.100	0.114	114	80 - 120	2013-02-07
Xylene		1	mg/L	0.300	0.353	118	80 - 120	2013-02-07

Standard (CCV-3)

QC Batch: 98757 | Date Analyzed: 2013-02-07 | Analyzed By: YG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.109	109	80 - 120	2013-02-07
Toluene		1	mg/L	0.100	0.110	110	80 - 120	2013-02-07
Ethylbenzene		1	mg/L	0.100	0.114	114	80 - 120	2013-02-07
Xylene		1	mg/L	0.300	0.353	118	80 - 120	2013-02-07

Standard (CCV-1)

QC Batch: 98812 | Date Analyzed: 2013-02-05 | Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1	mg/L	25.0	22.6	90	90 - 110	2013-02-05

Standard (CCV-1)

QC Batch: 98812 | Date Analyzed: 2013-02-05 | Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Sulfate		1	mg/L	25.0	23.2	93	90 - 110	2013-02-05

Standard (CCV-2)

QC Batch: 98812 | Date Analyzed: 2013-02-05 | Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1	mg/L	25.0	23.4	94	90 - 110	2013-02-05

Standard (CCV-2)

QC Batch: 98812 | Date Analyzed: 2013-02-05 | Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Sulfate		1	mg/L	25.0	24.8	99	90 - 110	2013-02-05

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

Result Comments

1 special comment: MW-2 (320186) and MW-3 (320187): TDS was prepped/analyzed/confirmed out of hold time 2/18, 2/19.
2 special comment: MW-2 (320186) and MW-3 (320187): TDS was prepped/analyzed/confirmed out of hold time 2/18, 2/19.

Attachments

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

1302C134

Analysis Request of Chain of Custody Record

PAGE: 1 OF:

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

114-6401628

CLIENT NAME: Cekero Energy

SITE MANAGER: Jeff Kindley

PROJECT NO.: ~~115-6401628~~ 114-6401628

PROJECT NAME: Rock Queen #7

LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE
320185	1/30	0930	W		X	MW-1	4		X		X	
186	↓	1000	↓		↓	MW-2	4		X		X	
187	↓	0950	↓		↓	MW-3	4		X		X	

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	SW 1671
X												X				1	
X												X				X	
X												X				X	

RELINQUISHED BY: (Signature) — Date: 2-1-13 Time: 1415
RECEIVED BY: (Signature) — Date: 2/1/13 Time: 14:15
SAMPLED BY: (Print & Initial) Mateusz Krajewski / Ryan Reich — 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: Trace
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 Matera air

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 9, 2013

Work Order: 13042618

Project Location: Chavez Co., NM
Project Name: Celero/Rock Queen #7
Project Number: 114-6401628

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
327403	MW-1	water	2013-04-24	14:25	2013-04-25
327404	MW-2	water	2013-04-24	13:25	2013-04-25
327405	MW-3	water	2013-04-24	12:55	2013-04-25
327406	MW-4	water	2013-04-24	14:10	2013-04-25

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

This report consists of a total of 47 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

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

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

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Calibration Standards **36**
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QC Batch 101120 - CCV (1) . . . 39
QC Batch 101120 - CCV (1) . . . 40
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Limits of Detection (LOD) **45**

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Report Definitions . . . 46

Case Narrative

Samples for project Celero/Rock Queen #7 were received by TraceAnalysis, Inc. on 2013-04-25 and assigned to work order 13042618. Samples for work order 13042618 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
BTEX	S 8021B	85524	2013-04-30 at 12:53	100911	2013-04-30 at 12:54
BTEX	S 8021B	85587	2013-05-02 at 09:25	100979	2013-05-02 at 09:26
Ca, Dissolved	S 6010C	85570	2013-05-01 at 12:00	101120	2013-05-07 at 08:58
Ca, Dissolved	S 6010C	85572	2013-05-01 at 12:02	101121	2013-05-07 at 09:03
Chloride (IC)	E 300.0	85704	2013-05-03 at 14:00	101124	2013-05-03 at 15:07
Chloride (IC)	E 300.0	85706	2013-05-06 at 14:00	101126	2013-05-06 at 15:55
Hardness	S 6010C	85570	2013-05-01 at 12:00	101120	2013-05-07 at 08:58
Hardness	S 6010C	85572	2013-05-01 at 12:02	101121	2013-05-07 at 09:03
K, Dissolved	S 6010C	85570	2013-05-01 at 12:00	101120	2013-05-07 at 08:58
K, Dissolved	S 6010C	85572	2013-05-01 at 12:02	101121	2013-05-07 at 09:03
Mg, Dissolved	S 6010C	85570	2013-05-01 at 12:00	101120	2013-05-07 at 08:58
Mg, Dissolved	S 6010C	85572	2013-05-01 at 12:02	101121	2013-05-07 at 09:03
Na, Dissolved	S 6010C	85570	2013-05-01 at 12:00	101120	2013-05-07 at 08:58
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
SO4 (IC)	E 300.0	85704	2013-05-03 at 14:00	101124	2013-05-03 at 15:07
SO4 (IC)	E 300.0	85706	2013-05-06 at 14:00	101126	2013-05-06 at 15:55
TDS	SM 2540C	85494	2013-04-26 at 11:39	100878	2013-04-27 at 15:41

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 13042618 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.

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Dissolved Calcium		1	**5440**	**5440**	<4.41	mg/L	100	4.41	1	0.0441

Sample: 327403 - MW-1

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	**19400**	**19400**	<169	mg/L	1000	169	2.5	0.169

Sample: 327403 - MW-1

Laboratory:	Lubbock				
Analysis:	Hardness	Analytical Method:	S 6010C	Prep Method:	N/A
QC Batch:	101120	Date Analyzed:	2013-05-07	Analyzed By:	RR
Prep Batch:	85570	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)			**19000**	**19000**	0.00	mg eq CaCO3/L	1	0.00		

Sample: 327403 - MW-1

Laboratory:	Lubbock				
Analysis:	K, Dissolved	Analytical Method:	S 6010C	Prep Method:	S 3005A
QC Batch:	101120	Date Analyzed:	2013-05-07	Analyzed By:	RR
Prep Batch:	85570	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	**37.3**	**37.3**	<0.443	mg/L	10	0.443	1	0.0443

Sample: 327403 - MW-1

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

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	**43700**	**43700**	<975	mg/L	100	975	10	9.75

Sample: 327404 - 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	**160**	**160**	<1.00	mg/L as CaCo3	1	1.00	1	1
Total Alkalinity		1	**160**	**160**	<20.0	mg/L as CaCo3	1	20.0	20	20

Sample: 327404 - MW-2

Laboratory: Midland
Analysis: BTEX | Analytical Method: S 8021B | Prep Method: S 5030B
QC Batch: 100911 | Date Analyzed: 2013-04-30 | Analyzed By: AH
Prep Batch: 85524 | Sample Preparation: 2013-04-29 | Prepared By: AH

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Benzene	Qr,Q*	2	**0.00480**	**0.00480**	<0.000200	mg/L	1	0.000200	0.001	0.0002
Toluene	Qr,Q*,U	2	<0.000300	<0.00100	<0.000300	mg/L	1	0.000300	0.001	0.0003
Ethylbenzene	Qr,Q*,U	2	<0.000400	<0.00100	<0.000400	mg/L	1	0.000400	0.001	0.0004
Xylene	Qr,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)			0.0856	mg/L	1	0.100	86	70 - 130
4-Bromofluorobenzene (4-BFB)	Qsr		0.0695	mg/L	1	0.100	70	70 - 130

sample 327404 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	**102**	**102**	<0.443	mg/L	10	0.443	1	0.0443

Sample: 327404 - MW-2

Laboratory:	Lubbock				
Analysis:	Mg, Dissolved	Analytical Method:	S 6010C	Prep Method:	S 3005A
QC Batch:	101120	Date Analyzed:	2013-05-07	Analyzed By:	RR
Prep Batch:	85570	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	**2510**	**2510**	<2.96	mg/L	100	2.96	1	0.0296

Sample: 327404 - MW-2

Laboratory:	Lubbock				
Analysis:	Na, Dissolved	Analytical Method:	S 6010C	Prep Method:	S 3005A
QC Batch:	101120	Date Analyzed:	2013-05-07	Analyzed By:	RR
Prep Batch:	85570	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	**22800**	**22800**	<172	mg/L	1000	172	1	0.172

Sample: 327404 - MW-2

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	6.20	s.u.	1	0

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)			0.0913	mg/L	1	0.100	91	70 - 130
4-Bromofluorobenzene (4-BFB)			0.0836	mg/L	1	0.100	84	70 - 130

Sample: 327405 - 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	**3520**	**3520**	<4.41	mg/L	100	4.41	1	0.0441

Sample: 327405 - MW-3

Laboratory: Lubbock
Analysis: Chloride (IC) — Analytical Method: E 300.0 — Prep Method: N/A
QC Batch: 101124 — Date Analyzed: 2013-05-03 — Analyzed By: RL
Prep Batch: 85704 — Sample Preparation: 2013-05-03 — Prepared By: RL

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Chloride		1	**38300**	**38300**	<169	mg/L	1000	169	2.5	0.169

Sample: 327405 - 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

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	6.51	s.u.	1	0

Sample: 327405 - MW-3

Laboratory: Lubbock
Analysis: SO4 (IC) | Analytical Method: E 300.0 | Prep Method: N/A
QC Batch: 101124 | Date Analyzed: 2013-05-03 | Analyzed By: RL
Prep Batch: 85704 | Sample Preparation: 2013-05-03 | 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	**1500**	<2500	<224	mg/L	1000	224	2.5	0.224

Sample: 327405 - MW-3

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	**57100**	**57100**	<975	mg/L	100	975	10	9.75

Sample: 327406 - 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	**142**	**142**	<1.00	mg/L as CaCo3	1	1.00	1	1

continued ...

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Chloride		1	**89.8**	**89.8**	<0.845	mg/L	5	0.845	2.5	0.169

Sample: 327406 - 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)			**293**	**293**	0.00	mg eq CaCO3/L	1	0.00		

Sample: 327406 - 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	**2.33**	**2.33**	<0.0443	mg/L	1	0.0443	1	0.0443

Sample: 327406 - 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	**18.8**	**18.8**	<0.0296	mg/L	1	0.0296	1	0.0296

Sample: 327406 - MW-4

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

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: 100911 | Date Analyzed: 2013-04-30 | Analyzed By: AH
Prep Batch: 85524 | QC Preparation: 2013-04-30 | 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)			0.0852	mg/L	1	0.100	85	70 - 130
4-Bromofluorobenzene (4-BFB)			0.0773	mg/L	1	0.100	77	70 - 130

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

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

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
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

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

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

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
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: 101120 | Date Analyzed: 2013-05-07 | Analyzed By: RR
Prep Batch: 85570 | 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	52.1	mg/L	1	50.0	<0.0441	104	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	51.8	mg/L	1	50.0	<0.0441	104	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: 101120 | Date Analyzed: 2013-05-07 | Analyzed By: RR
Prep Batch: 85570 | QC Preparation: 2013-05-01 | Prepared By: KV

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Sulfate		1	25.2	mg/L	1	25.0	<0.224	101	90 - 110	0	20

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

Laboratory Control Spike (LCS-1)

QC Batch: 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: 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
Sulfate		1	26.2	mg/L	1	25.0	<0.224	105	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	25.7	mg/L	1	25.0	<0.224	103	90 - 110	2	20

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

Matrix Spike (MS-1) Spiked Sample: 327126

QC Batch: 100911 | Date Analyzed: 2013-04-30 | Analyzed By: AH
Prep Batch: 85524 | QC Preparation: 2013-04-30 | Prepared By: AH

Matrix Spike (MS-1) Spiked Sample: 327393

QC Batch: 101120 | Date Analyzed: 2013-05-07 | Analyzed By: RR
Prep Batch: 85570 | 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	2940	mg/L	1	500	2490	90	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	2970	mg/L	1	500	2490	96	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: 327393

QC Batch: 101120 | Date Analyzed: 2013-05-07 | Analyzed By: RR
Prep Batch: 85570 | 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	539	mg/L	1	500	22.6	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 Potassium		1	535	mg/L	1	500	22.6	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: 327393

QC Batch: 101120 | Date Analyzed: 2013-05-07 | Analyzed By: RR
Prep Batch: 85570 | 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	1020	mg/L	1	500	575	89	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	1050	mg/L	1	500	575	95	75 - 125	3	20

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: 327396

QC Batch: 101124 | Date Analyzed: 2013-05-03 | Analyzed By: RL
Prep Batch: 85704 | QC Preparation: 2013-05-03 | Prepared By: RL

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
Sulfate		1	252	mg/L	5	125	109	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	254	mg/L	5	125	109	116	80 - 120	1	20

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

standard continued ...

Param	F	C	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Ethylbenzene		2	mg/L	0.100	0.0928	93	80 - 120	2013-04-30
Xylene		2	mg/L	0.300	0.276	92	80 - 120	2013-04-30

Standard (CCV-3)

QC Batch: 100911 Date Analyzed: 2013-04-30 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	0.0962	96	80 - 120	2013-04-30
Toluene		2	mg/L	0.100	0.0945	94	80 - 120	2013-04-30
Ethylbenzene		2	mg/L	0.100	0.0941	94	80 - 120	2013-04-30
Xylene		2	mg/L	0.300	0.280	93	80 - 120	2013-04-30

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 (ICV-1)

QC Batch: 101120 | 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: 101120 | 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: 101120 | 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: 101120 | 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	53.8	105	90 - 110	2013-05-07

Standard (CCV-1)

QC Batch: 101120 | Date Analyzed: 2013-05-07 | Analyzed By: RR

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

Standard (CCV-2)

QC Batch: 101124 Date Analyzed: 2013-05-03 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	25.1	100	90 - 110	2013-05-03

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-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
Sulfate		1	mg/L	25.0	25.9	104	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-2)

QC Batch: 101126 Date Analyzed: 2013-05-06 Analyzed By: RL

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	-

Attachments

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

1304 2618

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 6401628

PROJECT NAME: Celero / Rock Queen #7

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, Sulfates
327403	4/24	1425	W		X	mw-1	4	N	X		X		X												X				
327404		1325				mw-2																							
327405		1245				mw-3																							
327406		1410				mw-4																							

RELINQUISHED BY: (Signature) Date: 4.25.13 Time: 1645
RECEIVED BY: (Signature) Date: 4/25/13 Time: 1645

RELINQUISHED BY: (Signature) Date: 4.29.13 Time: 15:36
RECEIVED BY: (Signature) Date: Time:

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

SAMPLED BY: (Print & Initial) AR IRD Date: 4.25.13 Time: 1645

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

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

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

TETRA TECH CONTACT PERSON: Jeff Kindley

Results by

RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: 5 9°

REMARKS: LS ZP 896047 3.2/3.5

AR

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

Midland - BTEX, pH + TDS
Lubbock - all other tests

TRACEANALYSIS, INC.

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(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: 13072615

Project Location: Chavez Co., NM
Project Name: Celero/Rock Queen #7
Project Number: 114-6401628

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
336642	MW-1	water	2013-07-25	09:45	2013-07-26
336643	MW-2	water	2013-07-25	10:40	2013-07-26
336644	MW-3	water	2013-07-25	10:05	2013-07-26
336645	MW-4	water	2013-07-25	10:20	2013-07-26

Report Corrections (Work Order 13072615)

- 8/20/13: Re-ran Salts for sample 336642.
- 8/20/13: Re-ran Salts, SO4 Cl, and TDS for sample 336645.

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

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Case Narrative

Samples for project Celero/Rock Queen #7 were received by TraceAnalysis, Inc. on 2013-07-26 and assigned to work order 13072615. Samples for work order 13072615 were received damaged 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	103654	2013-07-30 at 14:50
BTEX	S 8021B	87705	2013-07-29 at 15:10	103610	2013-08-01 at 10:18
Ca, Dissolved	S 6010C	87738	2013-07-30 at 16:21	103950	2013-08-12 at 16:30
Chloride (IC)	E 300.0	87895	2013-08-05 at 09:00	103740	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	103950	2013-08-12 at 16:30
K, Dissolved	S 6010C	87738	2013-07-30 at 16:21	103950	2013-08-12 at 16:30
Mg, Dissolved	S 6010C	87738	2013-07-30 at 16:21	103950	2013-08-12 at 16:30
Na, Dissolved	S 6010C	87738	2013-07-30 at 16:21	103950	2013-08-12 at 16:30
pH	SM 4500-H+	87639	2013-07-26 at 10:44	103499	2013-07-26 at 15:31
SO4 (IC)	E 300.0	87895	2013-08-05 at 09:00	103740	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 13072615 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: 336642 - MW-1

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Hydroxide Alkalinity	U	2	<20.0	mg/L as CaCo3	1	20.0
Carbonate Alkalinity	U	2	<20.0	mg/L as CaCo3	1	20.0
Bicarbonate Alkalinity		2	**179**	mg/L as CaCo3	1	20.0
Total Alkalinity		2	**179**	mg/L as CaCo3	1	20.0

Sample: 336642 - MW-1

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

Parameter	Flag	Cert	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)			0.0905	mg/L	1	0.100	90	70 - 130
4-Bromofluorobenzene (4-BFB)			0.0843	mg/L	1	0.100	84	70 - 130

Sample: 336642 - MW-1

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Dissolved Calcium		1	**1700**	mg/L	100	1.00
Dissolved Potassium		1	**49.8**	mg/L	1	1.00
Dissolved Magnesium		1	**458**	mg/L	1	1.00
Dissolved Sodium		1	**4980**	mg/L	100	1.00

Sample: 336642 - MW-1

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	103740	Date Analyzed:	2013-08-05	Analyzed By:	RL
Prep Batch:	87895	Sample Preparation:	2013-08-05	Prepared By:	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1	**12600**	mg/L	1000	2.50

Sample: 336642 - MW-1

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Hardness (by ICP)			**6130**	mg eq CaCO3/L	1	0.00

Sample: 336642 - MW-1

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
pH		2	**6.91**	s.u.	1	0.00

Sample: 336642 - MW-1

Laboratory:	Lubbock				
Analysis:	SO4 (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	103740	Date Analyzed:	2013-08-05	Analyzed By:	RL
Prep Batch:	87895	Sample Preparation:	2013-08-05	Prepared By:	RL

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

Sample: 336642 - MW-1

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		2	**22900**	mg/L	50	2.50

Sample: 336643 - MW-2

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Hydroxide Alkalinity	U	2	<20.0	mg/L as CaCo3	1	20.0
Carbonate Alkalinity	U	2	<20.0	mg/L as CaCo3	1	20.0
Bicarbonate Alkalinity		2	**173**	mg/L as CaCo3	1	20.0
Total Alkalinity		2	**173**	mg/L as CaCo3	1	20.0

Sample: 336643 - MW-2

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

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.114	mg/L	1	0.100	114	70 - 130
4-Bromofluorobenzene (4-BFB)			0.0890	mg/L	1	0.100	89	70 - 130

Sample: 336643 - MW-2

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Dissolved Calcium		1	**1030**	mg/L	1	1.00
Dissolved Potassium		1	**129**	mg/L	1	1.00
Dissolved Magnesium		1	**516**	mg/L	1	1.00
Dissolved Sodium		1	**8400**	mg/L	100	1.00

Sample: 336643 - MW-2

Laboratory: Lubbock
Analysis: Chloride (IC) | Analytical Method: E 300.0 | Prep Method: N/A
QC Batch: 103740 | Date Analyzed: 2013-08-05 | Analyzed By: RL
Prep Batch: 87895 | Sample Preparation: 2013-08-05 | Prepared By: RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1	**18500**	mg/L	1000	2.50

Sample: 336643 - MW-2

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Hardness (by ICP)			**4700**	mg eq CaCO3/L	1	0.00

Sample: 336643 - MW-2

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
pH		2	**6.86**	s.u.	1	0.00

Sample: 336643 - MW-2

Laboratory:	Lubbock				
Analysis:	SO4 (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	103740	Date Analyzed:	2013-08-05	Analyzed By:	RL
Prep Batch:	87895	Sample Preparation:	2013-08-05	Prepared By:	RL

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

Sample: 336643 - 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	**33000**	mg/L	100	2.50

Sample: 336644 - MW-3

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

Parameter	Flag	Cert	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	**139**	mg/L as CaCo3	1	20.0
Total Alkalinity		2	**139**	mg/L as CaCo3	1	20.0

Sample: 336644 - 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	Result	RL Units	Dilution	RL
Benzene	U	2	<0.00100	mg/L	1	0.00100
Toluene	U	2	<0.00100	mg/L	1	0.00100
Ethylbenzene	U	2	<0.00100	mg/L	1	0.00100
Xylene	U	2	<0.00100	mg/L	1	0.00100

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

Sample: 336644 - MW-3

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

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Dissolved Calcium		1	**132**	mg/L	1	1.00
Dissolved Potassium		1	**6.47**	mg/L	1	1.00
Dissolved Magnesium		1	**27.4**	mg/L	1	1.00

continued . . .

sample 336644 continued . . .

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Dissolved Sodium		1	**122**	mg/L	1	1.00

Sample: 336644 - MW-3

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	103740	Date Analyzed:	2013-08-05	Analyzed By:	RL
Prep Batch:	87895	Sample Preparation:	2013-08-05	Prepared By:	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1	**324**	mg/L	10	2.50

Sample: 336644 - MW-3

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Hardness (by ICP)			**443**	mg eq CaCO3/L	1	0.00

Sample: 336644 - MW-3

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
pH		2	**7.66**	s.u.	1	0.00

Sample: 336644 - MW-3

Laboratory:	Lubbock				
Analysis:	SO4 (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	103740	Date Analyzed:	2013-08-05	Analyzed By:	RL
Prep Batch:	87895	Sample Preparation:	2013-08-05	Prepared By:	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Sulfate		1	**97.9**	mg/L	10	2.50

Sample: 336644 - MW-3

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		2	**990**	mg/L	2	2.50

Sample: 336645 - MW-4

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Hydroxide Alkalinity	U	2	<20.0	mg/L as CaCo3	1	20.0
Carbonate Alkalinity	U	2	<20.0	mg/L as CaCo3	1	20.0
Bicarbonate Alkalinity		2	**156**	mg/L as CaCo3	1	20.0
Total Alkalinity		2	**156**	mg/L as CaCo3	1	20.0

Sample: 336645 - 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)			0.0979	mg/L	1	0.100	98	70 - 130
4-Bromofluorobenzene (4-BFB)			0.0916	mg/L	1	0.100	92	70 - 130

Sample: 336645 - MW-4

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Dissolved Calcium		1	**4490**	mg/L	100	1.00
Dissolved Potassium		1	**265**	mg/L	1	1.00
Dissolved Magnesium		1	**2140**	mg/L	100	1.00
Dissolved Sodium		1	**25100**	mg/L	1000	1.00

Sample: 336645 - MW-4

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	**48100**	mg/L	5000	2.50

Sample: 336645 - MW-4

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Hardness (by ICP)			**20000**	mg eq CaCO3/L	1	0.00

Sample: 336645 - MW-4

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
pH		2	**6.58**	s.u.	1	0.00

Sample: 336645 - MW-4

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	<12500	mg/L	5000	2.50

Sample: 336645 - 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	**49200**	mg/L	100	2.50

Method Blanks

Method Blank (1) QC Batch: 103610

QC Batch: 103610 | Date Analyzed: 2013-08-01 | Analyzed By: AH
Prep Batch: 87705 | QC Preparation: 2013-07-29 | Prepared By: AH

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		2	<0.000200	mg/L	0.001
Toluene		2	<0.000300	mg/L	0.001
Ethylbenzene		2	<0.000400	mg/L	0.001
Xylene		2	<0.00120	mg/L	0.001

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.101	mg/L	1	0.100	101	70 - 130
4-Bromofluorobenzene (4-BFB)			0.0956	mg/L	1	0.100	96	70 - 130

Method Blank (1) QC Batch: 103618

QC Batch: 103618 | Date Analyzed: 2013-07-26 | Analyzed By: AR
Prep Batch: 87794 | QC Preparation: 2013-07-25 | Prepared By: AR

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

Method Blank (1) QC Batch: 103654

QC Batch: 103654 | Date Analyzed: 2013-07-30 | Analyzed By: AR
Prep Batch: 87699 | QC Preparation: 2013-07-29 | Prepared By: AR

Parameter	Flag	Cert	MDL Result	Units	RL
Hydroxide Alkalinity		2	<20.0	mg/L as CaCo3	20
Carbonate Alkalinity		2	<20.0	mg/L as CaCo3	20
Bicarbonate Alkalinity		2	<20.0	mg/L as CaCo3	20

continued ...

method blank continued ...

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

Method Blank (1) QC Batch: 103740

QC Batch: 103740 Date Analyzed: 2013-08-05 Analyzed By: RL
Prep Batch: 87895 QC Preparation: 2013-08-05 Prepared By: RL

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

Method Blank (1) QC Batch: 103740

QC Batch: 103740 Date Analyzed: 2013-08-05 Analyzed By: RL
Prep Batch: 87895 QC Preparation: 2013-08-05 Prepared By: RL

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

Method Blank (1) QC Batch: 103950

QC Batch: 103950 Date Analyzed: 2013-08-12 Analyzed By: RR
Prep Batch: 87738 QC Preparation: 2013-07-30 Prepared By: PM

Parameter	Flag	Cert	MDL Result	Units	RL
Dissolved Calcium		1	<0.0441	mg/L	1
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: 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-2)

QC Batch: 103618 | Date Analyzed: 2013-07-26 | Analyzed By: AR
Prep Batch: 87794 | QC Preparation: 2013-07-25 | Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Total Dissolved Solids		2	1030	mg/L	1	1000	<2.50	103	87.8 - 109.1

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

continued ...

control spikes continued ...

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

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

Laboratory Control Spike (LCS-1)

QC Batch: 103740 | Date Analyzed: 2013-08-05 | Analyzed By: RL
Prep Batch: 87895 | QC Preparation: 2013-08-05 | Prepared By: RL

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

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		1	25.0	mg/L	1	25.0	<0.169	100	90 - 110	0	20

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

Laboratory Control Spike (LCS-1)

QC Batch: 103740 | Date Analyzed: 2013-08-05 | Analyzed By: RL
Prep Batch: 87895 | QC Preparation: 2013-08-05 | Prepared By: RL

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

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Sulfate		1	25.5	mg/L	1	25.0	<0.224	102	90 - 110	1	20

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

Laboratory Control Spike (LCS-1)

QC Batch: 103950 | Date Analyzed: 2013-08-12 | Analyzed By: RR
Prep Batch: 87738 | QC Preparation: 2013-07-30 | Prepared By: PM

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Dissolved Calcium		1	52.1	mg/L	1	50.0	<0.0441	104	85 - 115
Dissolved Potassium		1	51.6	mg/L	1	50.0	<0.0443	103	85 - 115
Dissolved Magnesium		1	53.3	mg/L	1	50.0	<0.0296	107	85 - 115
Dissolved Sodium		1	53.1	mg/L	1	50.0	<0.172	106	85 - 115

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Dissolved Calcium		1	52.2	mg/L	1	50.0	<0.0441	104	85 - 115	0	20
Dissolved Potassium		1	51.9	mg/L	1	50.0	<0.0443	104	85 - 115	1	20
Dissolved Magnesium		1	51.7	mg/L	1	50.0	<0.0296	103	85 - 115	3	20
Dissolved Sodium		1	52.9	mg/L	1	50.0	<0.172	106	85 - 115	0	20

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

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: 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.

continued ...

matrix spikes continued ...

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		2	0.105	mg/L	1	0.100	<0.000200	105	70 - 130	4	20
Toluene		2	0.104	mg/L	1	0.100	<0.000300	104	70 - 130	4	20
Ethylbenzene		2	0.102	mg/L	1	0.100	<0.000400	102	70 - 130	4	20
Xylene		2	0.304	mg/L	1	0.300	<0.00120	101	70 - 130	4	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.0958	0.0981	mg/L	1	0.1	96	98	70 - 130
4-Bromofluorobenzene (4-BFB)	0.100	0.101	mg/L	1	0.1	100	101	70 - 130

Matrix Spike (MS-1) Spiked Sample: 336650

QC Batch: 103740 | Date Analyzed: 2013-08-05 | Analyzed By: RL
Prep Batch: 87895 | QC Preparation: 2013-08-05 | Prepared By: RL

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	54000	mg/L	1000	25000	23900	120	80 - 120

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		1	54000	mg/L	1000	25000	23900	120	80 - 120	0	20

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

Matrix Spike (MS-1) Spiked Sample: 336650

QC Batch: 103740 | Date Analyzed: 2013-08-05 | Analyzed By: RL
Prep Batch: 87895 | QC Preparation: 2013-08-05 | Prepared By: RL

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate		1	27500	mg/L	1000	25000	365	108	80 - 120

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Sulfate		1	27200	mg/L	1000	25000	365	107	80 - 120	1	20

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

Matrix Spike (MS-1) Spiked Sample: 336637

QC Batch: 103950 | Date Analyzed: 2013-08-12 | Analyzed By: RR
Prep Batch: 87738 | QC Preparation: 2013-07-30 | Prepared By: PM

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Dissolved Calcium		1	664	mg/L	1	500	133	106	75 - 125
Dissolved Potassium		1	540	mg/L	1	500	5.37	107	75 - 125
Dissolved Magnesium		1	560	mg/L	1	500	4.61	111	75 - 125
Dissolved Sodium		1	554	mg/L	1	500	58.5	99	75 - 125

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Dissolved Calcium		1	721	mg/L	1	500	133	118	75 - 125	8	20
Dissolved Potassium		1	585	mg/L	1	500	5.37	116	75 - 125	8	20
Dissolved Magnesium		1	585	mg/L	1	500	4.61	116	75 - 125	4	20
Dissolved Sodium		1	631	mg/L	1	500	58.5	114	75 - 125	13	20

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

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: 103499 Date Analyzed: 2013-07-26 Analyzed By: AR

Param	Flag	Cert	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
pH		2	s.u.	7.00	7.10	101	98 - 102	2013-07-26

Standard (CCV-1)

QC Batch: 103499 Date Analyzed: 2013-07-26 Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
pH		2	s.u.	7.00	7.04	100	98 - 102	2013-07-26

Standard (CCV-1)

QC Batch: 103610 Date Analyzed: 2013-08-01 Analyzed By: AH

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		2	mg/L	0.100	0.107	107	80 - 120	2013-08-01
Toluene		2	mg/L	0.100	0.107	107	80 - 120	2013-08-01
Ethylbenzene		2	mg/L	0.100	0.108	108	80 - 120	2013-08-01
Xylene		2	mg/L	0.300	0.320	107	80 - 120	2013-08-01

Standard (CCV-2)

QC Batch: 103610 Date Analyzed: 2013-08-01 Analyzed By: AH

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		2	mg/L	0.100	0.105	105	80 - 120	2013-08-01
Toluene		2	mg/L	0.100	0.104	104	80 - 120	2013-08-01
Ethylbenzene		2	mg/L	0.100	0.104	104	80 - 120	2013-08-01
Xylene		2	mg/L	0.300	0.311	104	80 - 120	2013-08-01

Standard (CCV-3)

QC Batch: 103610 Date Analyzed: 2013-08-01 Analyzed By: AH

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		2	mg/L	0.100	0.104	104	80 - 120	2013-08-01
Toluene		2	mg/L	0.100	0.105	105	80 - 120	2013-08-01
Ethylbenzene		2	mg/L	0.100	0.106	106	80 - 120	2013-08-01
Xylene		2	mg/L	0.300	0.315	105	80 - 120	2013-08-01

Standard (ICV-1)

QC Batch: 103654 Date Analyzed: 2013-07-30 Analyzed By: AR

Param	Flag	Cert	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Hydroxide Alkalinity		2	mg/L as CaCo3	0.00	<20.0		-	2013-07-30
Carbonate Alkalinity		2	mg/L as CaCo3	0.00	242		-	2013-07-30
Bicarbonate Alkalinity		2	mg/L as CaCo3	0.00	<20.0		-	2013-07-30
Total Alkalinity		2	mg/L as CaCo3	250	244	98	90 - 110	2013-07-30

Standard (CCV-1)

QC Batch: 103654 Date Analyzed: 2013-07-30 Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Hydroxide Alkalinity		2	mg/L as CaCo3	0.00	39.0		-	2013-07-30

continued ...

standard continued ...

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Carbonate Alkalinity		2	mg/L as CaCo3	0.00	190		-	2013-07-30
Bicarbonate Alkalinity		2	mg/L as CaCo3	0.00	<4.00		-	2013-07-30
Total Alkalinity		2	mg/L as CaCo3	250	229	92	90 - 110	2013-07-30

Standard (CCV-1)

QC Batch: 103740 Date Analyzed: 2013-08-05 Analyzed By: RL

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1	mg/L	25.0	25.1	100	90 - 110	2013-08-05

Standard (CCV-1)

QC Batch: 103740 Date Analyzed: 2013-08-05 Analyzed By: RL

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Sulfate		1	mg/L	25.0	25.9	104	90 - 110	2013-08-05

Standard (CCV-2)

QC Batch: 103740 Date Analyzed: 2013-08-05 Analyzed By: RL

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1	mg/L	25.0	24.8	99	90 - 110	2013-08-05

Standard (CCV-2)

QC Batch: 103740 Date Analyzed: 2013-08-05 Analyzed By: RL

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Sulfate		1	mg/L	25.0	25.6	102	90 - 110	2013-08-05

Standard (ICV-1)

QC Batch: 103950 Date Analyzed: 2013-08-12 Analyzed By: RR

Param	Flag	Cert	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dissolved Calcium		1	mg/L	51.0	48.3	95	90 - 110	2013-08-12
Dissolved Potassium		1	mg/L	55.0	52.4	95	90 - 110	2013-08-12
Dissolved Magnesium		1	mg/L	51.0	51.5	101	90 - 110	2013-08-12
Dissolved Sodium		1	mg/L	51.0	50.1	98	90 - 110	2013-08-12

Standard (CCV-1)

QC Batch: 103950 Date Analyzed: 2013-08-12 Analyzed By: RR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dissolved Calcium		1	mg/L	51.0	54.1	106	90 - 110	2013-08-12
Dissolved Potassium		1	mg/L	55.0	57.2	104	90 - 110	2013-08-12
Dissolved Magnesium		1	mg/L	51.0	52.8	104	90 - 110	2013-08-12
Dissolved Sodium		1	mg/L	51.0	53.0	104	90 - 110	2013-08-12

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.

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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: Greg Pope
PROJECT NO.: 114-6401628
PROJECT NAME: Rock Queen Tract #7

ANALYSIS REQUEST (Circle or Specify Method No.)

LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015 MOD. TX1005 (Ext. to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS sulfates	pH/TDS/alk	Anions/Ca/K/Na/Mg/Sul/Cl
336642	7/25/13	0945	W		X	MW-1	5	N	X		X		X												X						
643	↓	1040	↓		↓	MW-2	↓	↓	↓		↓		↓												↓						
644	↓	1005	↓		↓	MW-3	↓	↓	↓		↓		↓												↓						
645	↓	1020	↓		↓	MW-4	↓	↓	↓		↓		↓												↓						

RELINQUISHED BY: (Signature) [signature] Date: Time:
RECEIVED BY: (Signature) [signature] Date: 7-26-13 Time: 8:30
SAMPLED BY: (Print & Initial) GP/RD Date: Time:

RELINQUISHED BY: (Signature) [signature] Date: 7-26-13 Time: 8:30
RECEIVED BY: (Signature) [signature] Date: 7/26/13 Time: 8:30
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: AH
Results by:

RECEIVING LABORATORY:
ADDRESS:
CITY: STATE: ZIP:
CONTACT: PHONE:
RECEIVED BY: (Signature)
DATE: TIME:
RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: 3.3°
REMARKS: MW-1 - one broken VOA

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

~~13072418~~ 13072615

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: Greg Pope
PROJECT NO.: 114-6401628
PROJECT NAME: Rock Queen Tract #7

ANALYSIS REQUEST (Circle or Specify Method No.)

LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015 MOD. TX1005 (Ext. to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS, Sulfate	pH/TDS/alk	Anions/Ca/K/Na/Mg/Br/Cl
336642	7/25/13	0945	W		X	MW-1	5	N	X		X		X												X						
643	↓	1040	↓		↓	MW-2	↓	↓	↓		↓		↓												↓						
644	↓	1005	↓		↓	MW-3	↓	↓	↓		↓		↓												↓						
645	↓	1020	↓		↓	MW-4	↓	↓	↓		↓		↓												↓						

RELINQUISHED BY: (Signature) [signature] Date: Time:
RECEIVED BY: (Signature) [signature] Date: 7-26-13 Time: 8:30

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

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

SAMPLED BY: (Print & Initial) GP/RD Date: Time:
SAMPLE SHIPPED BY: (Circle) FEDEX BUS HAND DELIVERED UPS AIRBILL #: OTHER:
TETRA TECH CONTACT PERSON: Results by:
LS ZQ 198885 AH
3.6/3.9
RUSH Charges Authorized: Yes No

RECEIVING LABORATORY:
ADDRESS:
CITY: STATE: ZIP:
CONTACT: PHONE:
RECEIVED BY: (Signature) Brenda Ward TA Lubbock
DATE: 7/30/13 TIME: 8:45

SAMPLE CONDITION WHEN RECEIVED: 3.3°
REMARKS: MW-1 - one broken VOA. Midland - pH/BTEX/alk/TDS 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
336642	1700	458	4980	49.8	179.00	1010	12600				22900	
336643	1030	516	8400	129	173.00	1340	18500				33000	
336644	132	27.4	122	6.47	139.00	97.9	324				990	
336645	4490	2140	25100	265	156.00	1650	48100				49200	

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***
336642	84.83	37.69	216.63	1.27	3.58	21.03	355.45	0.00	0.00	0.00	340.42	380.05	5.500730944
336643	51.40	42.46	365.40	3.30	3.46	27.90	521.89	0.00	0.00	0.00	462.56	553.24	8.927459957
336644	6.59	2.25	5.31	0.17	2.78	2.04	9.14	0.00	0.00	0.00	14.31	13.96	1.258227176
336645	224.05	176.10	1091.85	6.78	3.12	34.35	1356.90	0.00	0.00	0.00	1498.78	1394.37	3.608735974

	EC/Cation	EC/Anion				
336642	34042.2704	38005.42	range	0	to	0
336643	46255.846	55324.38	range	0	to	0
336644	1431.40486	1395.8318	range	0	to	0
336645	149878.03	139437.4	range	0	to	0

TDS/EC	TDS/Cat		TDS/Anion	
#DIV/0!	0.67		0.60	needs to be 0.55-0.77
#DIV/0!	0.71		0.60	needs to be 0.55-0.77
#DIV/0!	0.69		0.71	needs to be 0.55-0.77
#DIV/0!	0.33		0.35	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 19, 2013

Work Order: 13103131

Project Location: Chavez Co., NM
Project Name: Celero/Rock Queen #7
Project Number: 114-6401628

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
345372	MW-1	water	2013-10-30	17:15	2013-10-31
345373	MW-2	water	2013-10-30	17:40	2013-10-31
345374	MW-3	water	2013-10-30	17:50	2013-10-31
345375	MW-4	water	2013-10-30	17:30	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 4

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Sample 345372 (MW-1) . . . 5
Sample 345373 (MW-2) . . . 7
Sample 345374 (MW-3) . . . 9
Sample 345375 (MW-4) . . . 12

Method Blanks 15
QC Batch 106459 - Method Blank (1) . . . 15
QC Batch 106461 - Method Blank (1) . . . 15
QC Batch 106604 - Method Blank (1) . . . 15
QC Batch 106706 - Method Blank (1) . . . 16
QC Batch 106706 - Method Blank (1) . . . 16
QC Batch 106734 - Method Blank (1) . . . 16
QC Batch 106738 - Method Blank (1) . . . 16
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Case Narrative

Samples for project Celero/Rock Queen #7 were received by TraceAnalysis, Inc. on 2013-10-31 and assigned to work order 13103131. Samples for work order 13103131 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	90171	2013-11-01 at 10:25	106461	2013-11-01 at 16:26
BTEX	S 8021B	90156	2013-11-01 at 12:38	106459	2013-11-01 at 15:39
Ca, Dissolved	S 6010C	90268	2013-11-06 at 14:46	106734	2013-11-13 at 10:25
Chloride (IC)	E 300.0	90366	2013-11-08 at 10:30	106706	2013-11-08 at 11:32
Hardness	S 6010C	90268	2013-11-06 at 14:46	106734	2013-11-13 at 10:25
K, Dissolved	S 6010C	90268	2013-11-06 at 14:46	106734	2013-11-13 at 10:25
Mg, Dissolved	S 6010C	90268	2013-11-06 at 14:46	106734	2013-11-13 at 10:25
Na, Dissolved	S 6010C	90268	2013-11-06 at 14:46	106734	2013-11-13 at 10:25
pH	SM 4500-H+	90131	2013-10-31 at 13:47	106464	2013-10-31 at 16:42
SO4 (IC)	E 300.0	90366	2013-11-08 at 10:30	106706	2013-11-08 at 11:32
SO4 (IC)	E 300.0	90395	2013-11-12 at 15:00	106738	2013-11-12 at 16:20
TDS	SM 2540C	90164	2013-11-01 at 09:10	106604	2013-11-02 at 18:13

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 13103131 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: 345372 - MW-1

Laboratory:	Midland				
Analysis:	Alkalinity	Analytical Method:	SM 2320B	Prep Method:	N/A
QC Batch:	106461	Date Analyzed:	2013-11-01	Analyzed By:	AR
Prep Batch:	90171	Sample Preparation:	2013-11-01	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	**356**	mg/L as CaCo3	1	20.0
Total Alkalinity		2	**356**	mg/L as CaCo3	1	20.0

Sample: 345372 - MW-1

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	106459	Date Analyzed:	2013-11-01	Analyzed By:	AK
Prep Batch:	90156	Sample Preparation:	2013-11-01	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	U	2	<0.00100	mg/L	1	0.00100
Toluene	U	2	<0.00100	mg/L	1	0.00100
Ethylbenzene	Q#,U	2	<0.00100	mg/L	1	0.00100
Xylene	Q#,U	2	<0.00300	mg/L	1	0.00300

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0849	mg/L	1	0.100	85	70 - 130
4-Bromofluorobenzene (4-BFB)			0.0765	mg/L	1	0.100	76	70 - 130

Sample: 345372 - MW-1

Laboratory:	Lubbock				
Analysis:	Cations	Analytical Method:	S 6010C	Prep Method:	S 3005A
QC Batch:	106734	Date Analyzed:	2013-11-13	Analyzed By:	RR
Prep Batch:	90268	Sample Preparation:	2013-11-09	Prepared By:	PM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Dissolved Calcium		1	**531**	mg/L	10	1.00
Dissolved Potassium		1	**38.9**	mg/L	10	1.00
Dissolved Magnesium		1	**184**	mg/L	10	1.00
Dissolved Sodium		1	**2920**	mg/L	100	1.00

Sample: 345372 - MW-1

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	106706	Date Analyzed:	2013-11-08	Analyzed By:	RL
Prep Batch:	90366	Sample Preparation:	2013-11-08	Prepared By:	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1	**5520**	mg/L	500	2.50

Sample: 345372 - MW-1

Laboratory:	Lubbock				
Analysis:	Hardness	Analytical Method:	S 6010C	Prep Method:	N/A
QC Batch:	106734	Date Analyzed:	2013-11-13	Analyzed By:	RR
Prep Batch:	90268	Sample Preparation:	2013-11-06	Prepared By:	PM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Hardness (by ICP)			**2080**	mg eq CaCO3/L	1	0.00

Sample: 345372 - MW-1

Laboratory:	Midland				
Analysis:	pH	Analytical Method:	SM 4500-H+	Prep Method:	N/A
QC Batch:	106464	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	**7.43**	s.u.	1	0.00

Sample: 345372 - MW-1

Laboratory:	Lubbock				
Analysis:	SO4 (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	106738	Date Analyzed:	2013-11-12	Analyzed By:	RL
Prep Batch:	90395	Sample Preparation:	2013-11-12	Prepared By:	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Sulfate		1	**609**	mg/L	100	2.50

Sample: 345372 - MW-1

Laboratory:	Midland				
Analysis:	TDS	Analytical Method:	SM 2540C	Prep Method:	N/A
QC Batch:	106604	Date Analyzed:	2013-11-02	Analyzed By:	AR
Prep Batch:	90164	Sample Preparation:	2013-11-01	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		2	**11900**	mg/L	20	2.50

Sample: 345373 - MW-2

Laboratory:	Midland				
Analysis:	Alkalinity	Analytical Method:	SM 2320B	Prep Method:	N/A
QC Batch:	106461	Date Analyzed:	2013-11-01	Analyzed By:	AR
Prep Batch:	90171	Sample Preparation:	2013-11-01	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	**160**	mg/L as CaCo3	1	20.0
Total Alkalinity		2	**160**	mg/L as CaCo3	1	20.0

Sample: 345373 - MW-2

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	106459	Date Analyzed:	2013-11-01	Analyzed By:	AK
Prep Batch:	90156	Sample Preparation:	2013-11-01	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	U	2	<0.00100	mg/L	1	0.00100
Toluene	U	2	<0.00100	mg/L	1	0.00100
Ethylbenzene	Q-, U	2	<0.00100	mg/L	1	0.00100
Xylene	Q-, U	2	<0.00300	mg/L	1	0.00300

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0840	mg/L	1	0.100	84	70 - 130
4-Bromofluorobenzene (4-BFB)			0.0733	mg/L	1	0.100	73	70 - 130

Sample: 345373 - 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	**782**	mg/L	10	1.00
Dissolved Potassium		1	**405**	mg/L	10	1.00
Dissolved Magnesium		1	**410**	mg/L	10	1.00
Dissolved Sodium		1	**7000**	mg/L	1000	1.00

Sample: 345373 - MW-2

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	106706	Date Analyzed:	2013-11-08	Analyzed By:	RL
Prep Batch:	90366	Sample Preparation:	2013-11-08	Prepared By:	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1	**16500**	mg/L	500	2.50

Sample: 345373 - 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)			**3640**	mg eq CaCO3/L	1	0.00

Sample: 345373 - MW-2

Laboratory:	Midland				
Analysis:	pH	Analytical Method:	SM 4500-H+	Prep Method:	N/A
QC Batch:	106464	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	**6.67**	s.u.	1	0.00

Sample: 345373 - MW-2

Laboratory:	Lubbock				
Analysis:	SO4 (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	106706	Date Analyzed:	2013-11-08	Analyzed By:	RL
Prep Batch:	90366	Sample Preparation:	2013-11-08	Prepared By:	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Sulfate		1	**1250**	mg/L	500	2.50

Sample: 345373 - MW-2

Laboratory:	Midland				
Analysis:	TDS	Analytical Method:	SM 2540C	Prep Method:	N/A
QC Batch:	106604	Date Analyzed:	2013-11-02	Analyzed By:	AR
Prep Batch:	90164	Sample Preparation:	2013-11-01	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		2	**84200**	mg/L	100	2.50

Sample: 345374 - MW-3

Laboratory:	Midland				
Analysis:	Alkalinity	Analytical Method:	SM 2320B	Prep Method:	N/A
QC Batch:	106461	Date Analyzed:	2013-11-01	Analyzed By:	AR
Prep Batch:	90171	Sample Preparation:	2013-11-01	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	**320**	mg/L as CaCo3	1	20.0
Total Alkalinity		2	**320**	mg/L as CaCo3	1	20.0

Sample: 345374 - MW-3

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	106459	Date Analyzed:	2013-11-01	Analyzed By:	AK
Prep Batch:	90156	Sample Preparation:	2013-11-01	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	U	2	<0.00100	mg/L	1	0.00100
Toluene	U	2	<0.00100	mg/L	1	0.00100
Ethylbenzene	Q#,U	2	<0.00100	mg/L	1	0.00100
Xylene	Q#,U	2	<0.00300	mg/L	1	0.00300

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0850	mg/L	1	0.100	85	70 - 130
4-Bromofluorobenzene (4-BFB)			0.0770	mg/L	1	0.100	77	70 - 130

Sample: 345374 - MW-3

Laboratory:	Lubbock				
Analysis:	Cations	Analytical Method:	S 6010C	Prep Method:	S 3005A
QC Batch:	106734	Date Analyzed:	2013-11-13	Analyzed By:	RR
Prep Batch:	90268	Sample Preparation:	2013-11-09	Prepared By:	PM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Dissolved Calcium		1	**1850**	mg/L	100	1.00
Dissolved Potassium		1	**181**	mg/L	10	1.00
Dissolved Magnesium		1	**821**	mg/L	10	1.00

continued ...

sample 345374 continued ...

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Dissolved Sodium		1	**10600**	mg/L	100	1.00

Sample: 345374 - MW-3

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	106706	Date Analyzed:	2013-11-08	Analyzed By:	RL
Prep Batch:	90366	Sample Preparation:	2013-11-08	Prepared By:	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1	**33500**	mg/L	1000	2.50

Sample: 345374 - MW-3

Laboratory:	Lubbock				
Analysis:	Hardness	Analytical Method:	S 6010C	Prep Method:	N/A
QC Batch:	106734	Date Analyzed:	2013-11-13	Analyzed By:	RR
Prep Batch:	90268	Sample Preparation:	2013-11-06	Prepared By:	PM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Hardness (by ICP)			**8000**	mg eq CaCO3/L	1	0.00

Sample: 345374 - MW-3

Laboratory:	Midland				
Analysis:	pH	Analytical Method:	SM 4500-H+	Prep Method:	N/A
QC Batch:	106464	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	**7.05**	s.u.	1	0.00

Sample: 345374 - MW-3

Laboratory:	Lubbock				
Analysis:	SO4 (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	106738	Date Analyzed:	2013-11-12	Analyzed By:	RL
Prep Batch:	90395	Sample Preparation:	2013-11-12	Prepared By:	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Sulfate		1	**1030**	mg/L	100	2.50

Sample: 345374 - MW-3

Laboratory:	Midland				
Analysis:	TDS	Analytical Method:	SM 2540C	Prep Method:	N/A
QC Batch:	106604	Date Analyzed:	2013-11-02	Analyzed By:	AR
Prep Batch:	90164	Sample Preparation:	2013-11-01	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		2	**33700**	mg/L	50	2.50

Sample: 345375 - MW-4

Laboratory:	Midland				
Analysis:	Alkalinity	Analytical Method:	SM 2320B	Prep Method:	N/A
QC Batch:	106461	Date Analyzed:	2013-11-01	Analyzed By:	AR
Prep Batch:	90171	Sample Preparation:	2013-11-01	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	**166**	mg/L as CaCo3	1	20.0
Total Alkalinity		2	**166**	mg/L as CaCo3	1	20.0

Sample: 345375 - MW-4

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	106459	Date Analyzed:	2013-11-01	Analyzed By:	AK
Prep Batch:	90156	Sample Preparation:	2013-11-01	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	U	2	<0.00100	mg/L	1	0.00100
Toluene	U	2	<0.00100	mg/L	1	0.00100
Ethylbenzene	Q#,U	2	<0.00100	mg/L	1	0.00100
Xylene	Q#,U	2	<0.00300	mg/L	1	0.00300

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0846	mg/L	1	0.100	85	70 - 130
4-Bromofluorobenzene (4-BFB)			0.0766	mg/L	1	0.100	77	70 - 130

Sample: 345375 - MW-4

Laboratory:	Lubbock				
Analysis:	Cations	Analytical Method:	S 6010C	Prep Method:	S 3005A
QC Batch:	106734	Date Analyzed:	2013-11-13	Analyzed By:	RR
Prep Batch:	90268	Sample Preparation:	2013-11-09	Prepared By:	PM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Dissolved Calcium		1	**86.1**	mg/L	10	1.00
Dissolved Potassium		1	<10.0	mg/L	10	1.00
Dissolved Magnesium		1	**15.4**	mg/L	10	1.00
Dissolved Sodium		1	**82.2**	mg/L	10	1.00

Sample: 345375 - MW-4

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	106706	Date Analyzed:	2013-11-08	Analyzed By:	RL
Prep Batch:	90366	Sample Preparation:	2013-11-08	Prepared By:	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1	**89.4**	mg/L	5	2.50

Sample: 345375 - MW-4

Laboratory:	Lubbock				
Analysis:	Hardness	Analytical Method:	S 6010C	Prep Method:	N/A
QC Batch:	106734	Date Analyzed:	2013-11-13	Analyzed By:	RR
Prep Batch:	90268	Sample Preparation:	2013-11-06	Prepared By:	PM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Hardness (by ICP)			**278**	mg eq CaCO3/L	1	0.00

Sample: 345375 - MW-4

Laboratory:	Midland				
Analysis:	pH	Analytical Method:	SM 4500-H+	Prep Method:	N/A
QC Batch:	106464	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	**7.85**	s.u.	1	0.00

Sample: 345375 - MW-4

Laboratory:	Lubbock				
Analysis:	SO4 (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	106706	Date Analyzed:	2013-11-08	Analyzed By:	RL
Prep Batch:	90366	Sample Preparation:	2013-11-08	Prepared By:	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Sulfate		1	**115**	mg/L	5	2.50

Sample: 345375 - MW-4

Laboratory:	Midland				
Analysis:	TDS	Analytical Method:	SM 2540C	Prep Method:	N/A
QC Batch:	106604	Date Analyzed:	2013-11-02	Analyzed By:	AR
Prep Batch:	90164	Sample Preparation:	2013-11-01	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		2	**900**	mg/L	20	2.50

Method Blanks

Method Blank (1) QC Batch: 106459

QC Batch: 106459 | Date Analyzed: 2013-11-01 | Analyzed By: AK
Prep Batch: 90156 | QC Preparation: 2013-11-01 | Prepared By: AK

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		2	<0.000600	mg/L	0.001
Toluene		2	<0.000400	mg/L	0.001
Ethylbenzene		2	<0.000600	mg/L	0.001
Xylene		2	<0.00130	mg/L	0.003

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0881	mg/L	1	0.100	88	70 - 130
4-Bromofluorobenzene (4-BFB)			0.0780	mg/L	1	0.100	78	70 - 130

Method Blank (1) QC Batch: 106461

QC Batch: 106461 | Date Analyzed: 2013-11-01 | Analyzed By: AR
Prep Batch: 90171 | QC Preparation: 2013-11-01 | 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: 106604

QC Batch: 106604 | Date Analyzed: 2013-11-02 | Analyzed By: AR
Prep Batch: 90164 | QC Preparation: 2013-11-01 | 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: 106706

QC Batch: 106706 Date Analyzed: 2013-11-08 Analyzed By: RL
Prep Batch: 90366 QC Preparation: 2013-11-08 Prepared By: RL

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

Method Blank (1) QC Batch: 106706

QC Batch: 106706 Date Analyzed: 2013-11-08 Analyzed By: RL
Prep Batch: 90366 QC Preparation: 2013-11-08 Prepared By: RL

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

Method Blank (1) QC Batch: 106734

QC Batch: 106734 Date Analyzed: 2013-11-13 Analyzed By: RR
Prep Batch: 90268 QC Preparation: 2013-11-06 Prepared By: PM

Parameter	Flag	Cert	MDL Result	Units	RL
Dissolved Calcium		1	<0.0441	mg/L	1
Dissolved Potassium		1	<0.0443	mg/L	1
Dissolved Magnesium		1	<0.0296	mg/L	1
Dissolved Sodium		1	<0.172	mg/L	1

Method Blank (1) QC Batch: 106738

QC Batch: 106738 | Date Analyzed: 2013-11-12 | Analyzed By: RL
Prep Batch: 90395 | QC Preparation: 2013-11-12 | Prepared By: RL

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

Duplicates (1) Duplicated Sample: 345371

QC Batch: 106461 | Date Analyzed: 2013-11-01 | Analyzed By: AR
Prep Batch: 90171 | QC Preparation: 2013-11-01 | 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	149	126	mg/L as CaCo3	1	17	20
Total Alkalinity	2	149	126	mg/L as CaCo3	1	17	20

Duplicates (1) Duplicated Sample: 345371

QC Batch: 106464 | 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	6.59	6.56	s.u.	1	0	10

Duplicates (1) Duplicated Sample: 345371

QC Batch: 106604 | Date Analyzed: 2013-11-02 | Analyzed By: AR
Prep Batch: 90164 | QC Preparation: 2013-11-01 | Prepared By: AR

continued ...

duplicate continued ...

Param	Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
Total Dissolved Solids	121000	113000	mg/L	100	7	10

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 106459 | Date Analyzed: 2013-11-01 | Analyzed By: AK
Prep Batch: 90156 | QC Preparation: 2013-11-01 | Prepared By: AK

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		2	0.0900	mg/L	1	0.100	<0.000600	90	70 - 130
Toluene		2	0.0892	mg/L	1	0.100	<0.000400	89	70 - 130
Ethylbenzene		2	0.0872	mg/L	1	0.100	<0.000600	87	70 - 130
Xylene		2	0.266	mg/L	1	0.300	<0.00130	89	70 - 130

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		2	0.0895	mg/L	1	0.100	<0.000600	90	70 - 130	1	20
Toluene		2	0.0892	mg/L	1	0.100	<0.000400	89	70 - 130	0	20
Ethylbenzene		2	0.0868	mg/L	1	0.100	<0.000600	87	70 - 130	0	20
Xylene		2	0.265	mg/L	1	0.300	<0.00130	88	70 - 130	0	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.0899	0.0914	mg/L	1	0.100	90	91	70 - 130
4-Bromofluorobenzene (4-BFB)	0.0936	0.0945	mg/L	1	0.100	94	94	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 106604 | Date Analyzed: 2013-11-02 | Analyzed By: AR
Prep Batch: 90164 | QC Preparation: 2013-11-01 | 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	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	981	mg/L	1	1000	<2.50	98	90 - 110	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: 106706 | Date Analyzed: 2013-11-08 | Analyzed By: RL
Prep Batch: 90366 | QC Preparation: 2013-11-08 | Prepared By: RL

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	25.5	mg/L	1	25.0	<0.254	102	90 - 110

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		1	25.4	mg/L	1	25.0	<0.254	102	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: 106706 | Date Analyzed: 2013-11-08 | Analyzed By: RL
Prep Batch: 90366 | QC Preparation: 2013-11-08 | Prepared By: RL

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate		1	26.3	mg/L	1	25.0	<0.132	105	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	<0.132	106	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: 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: 106738 | Date Analyzed: 2013-11-12 | Analyzed By: RL
Prep Batch: 90395 | QC Preparation: 2013-11-12 | Prepared By: RL

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate		1	26.6	mg/L	1	25.0	<0.132	106	90 - 110

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Sulfate		1	26.3	mg/L	1	25.0	<0.132	105	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: 345371

QC Batch: 106459 | Date Analyzed: 2013-11-01 | Analyzed By: AK
Prep Batch: 90156 | QC Preparation: 2013-11-01 | Prepared By: AK

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		2	0.0833	mg/L	1	0.100	<0.000600	83	70 - 130
Toluene		2	0.0783	mg/L	1	0.100	<0.000400	78	70 - 130
Ethylbenzene	Q3	Q3 2	0.0693	mg/L	1	0.100	<0.000600	69	70 - 130
Xylene	Q3	Q3 2	0.207	mg/L	1	0.300	<0.00130	69	70 - 130

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		2	0.0836	mg/L	1	0.100	<0.000600	84	70 - 130	0	20
Toluene		2	0.0793	mg/L	1	0.100	<0.000400	79	70 - 130	1	20
Ethylbenzene	Q3	Q3 2	0.0696	mg/L	1	0.100	<0.000600	70	70 - 130	0	20
Xylene		2	0.211	mg/L	1	0.300	<0.00130	70	70 - 130	2	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.0833	0.0825	mg/L	1	0.1	83	82	70 - 130
4-Bromofluorobenzene (4-BFB)	0.0863	0.0870	mg/L	1	0.1	86	87	70 - 130

Matrix Spike (MS-1) Spiked Sample: 345377

QC Batch: 106706 | Date Analyzed: 2013-11-08 | Analyzed By: RL
Prep Batch: 90366 | QC Preparation: 2013-11-08 | Prepared By: RL

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	286000	mg/L	5000	125000	135837	120	80 - 120

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		1	284000	mg/L	5000	125000	135837	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: 345377

QC Batch: 106706 | Date Analyzed: 2013-11-08 | Analyzed By: RL
Prep Batch: 90366 | QC Preparation: 2013-11-08 | Prepared By: RL

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate		1	137000	mg/L	5000	125000	1810	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	136000	mg/L	5000	125000	1810	107	80 - 120	1	20

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

Matrix Spike (MS-1) Spiked Sample: 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: 346002

QC Batch: 106738 | Date Analyzed: 2013-11-12 | Analyzed By: RL
Prep Batch: 90395 | QC Preparation: 2013-11-12 | Prepared By: RL

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate		1	381	mg/L	10	250	81.9	120	80 - 120

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Sulfate		1	358	mg/L	10	250	81.9	110	80 - 120	6	20

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

Calibration Standards

Standard (CCV-1)

QC Batch: 106459 Date Analyzed: 2013-11-01 Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		2	mg/L	0.100	0.0895	90	80 - 120	2013-11-01
Toluene		2	mg/L	0.100	0.0887	89	80 - 120	2013-11-01
Ethylbenzene		2	mg/L	0.100	0.0871	87	80 - 120	2013-11-01
Xylene		2	mg/L	0.300	0.264	88	80 - 120	2013-11-01

Standard (CCV-2)

QC Batch: 106459 Date Analyzed: 2013-11-01 Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		2	mg/L	0.100	0.0855	86	80 - 120	2013-11-01
Toluene		2	mg/L	0.100	0.0853	85	80 - 120	2013-11-01
Ethylbenzene		2	mg/L	0.100	0.0851	85	80 - 120	2013-11-01
Xylene		2	mg/L	0.300	0.256	85	80 - 120	2013-11-01

Standard (CCV-3)

QC Batch: 106459 Date Analyzed: 2013-11-01 Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		2	mg/L	0.100	0.0898	90	80 - 120	2013-11-01
Toluene		2	mg/L	0.100	0.0877	88	80 - 120	2013-11-01
Ethylbenzene		2	mg/L	0.100	0.0871	87	80 - 120	2013-11-01
Xylene		2	mg/L	0.300	0.263	88	80 - 120	2013-11-01

Standard (CCV-4)

QC Batch: 106459 Date Analyzed: 2013-11-01 Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		2	mg/L	0.100	0.0905	90	80 - 120	2013-11-01
Toluene		2	mg/L	0.100	0.0889	89	80 - 120	2013-11-01
Ethylbenzene		2	mg/L	0.100	0.0872	87	80 - 120	2013-11-01
Xylene		2	mg/L	0.300	0.263	88	80 - 120	2013-11-01

Standard (ICV-1)

QC Batch: 106461 Date Analyzed: 2013-11-01 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		-	2013-11-01
Carbonate Alkalinity		2	mg/L as CaCo3	0.00	232		-	2013-11-01
Bicarbonate Alkalinity		2	mg/L as CaCo3	0.00	<20.0		-	2013-11-01
Total Alkalinity		2	mg/L as CaCo3	250	233	93	90 - 110	2013-11-01

Standard (CCV-1)

QC Batch: 106461 Date Analyzed: 2013-11-01 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		-	2013-11-01
Carbonate Alkalinity		2	mg/L as CaCo3	0.00	214		-	2013-11-01
Bicarbonate Alkalinity		2	mg/L as CaCo3	0.00	<20.0		-	2013-11-01
Total Alkalinity		2	mg/L as CaCo3	250	232	93	90 - 110	2013-11-01

Standard (ICV-1)

QC Batch: 106464 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	6.99	100	98 - 102	2013-10-31

Standard (CCV-1)

QC Batch: 106464 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	7.05	101	98 - 102	2013-10-31

Standard (CCV-1)

QC Batch: 106706 Date Analyzed: 2013-11-08 Analyzed By: RL

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1	mg/L	25.0	25.3	101	90 - 110	2013-11-08

Standard (CCV-1)

QC Batch: 106706 Date Analyzed: 2013-11-08 Analyzed By: RL

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Sulfate		1	mg/L	25.0	26.0	104	90 - 110	2013-11-08

Standard (CCV-2)

QC Batch: 106706 Date Analyzed: 2013-11-08 Analyzed By: RL

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1	mg/L	25.0	25.3	101	90 - 110	2013-11-08

Standard (CCV-2)

QC Batch: 106706 Date Analyzed: 2013-11-08 Analyzed By: RL

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Sulfate		1	mg/L	25.0	26.3	105	90 - 110	2013-11-08

Standard (ICV-1)

QC Batch: 106734 Date Analyzed: 2013-11-13 Analyzed By: RR

Param	Flag	Cert	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dissolved Calcium		1	mg/L	51.0	52.9	104	90 - 110	2013-11-13
Dissolved Potassium		1	mg/L	55.0	56.3	102	90 - 110	2013-11-13
Dissolved Magnesium		1	mg/L	51.0	52.7	103	90 - 110	2013-11-13
Dissolved Sodium		1	mg/L	51.0	50.8	100	90 - 110	2013-11-13

Standard (CCV-1)

QC Batch: 106734 Date Analyzed: 2013-11-13 Analyzed By: RR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dissolved Calcium		1	mg/L	51.0	51.6	101	90 - 110	2013-11-13
Dissolved Potassium		1	mg/L	55.0	54.8	100	90 - 110	2013-11-13
Dissolved Magnesium		1	mg/L	51.0	51.1	100	90 - 110	2013-11-13
Dissolved Sodium		1	mg/L	51.0	50.8	100	90 - 110	2013-11-13

Standard (CCV-1)

QC Batch: 106738 Date Analyzed: 2013-11-12 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	26.4	106	90 - 110	2013-11-12

Standard (CCV-2)

QC Batch: 106738 Date Analyzed: 2013-11-12 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	2013-11-12

Appendix

Report Definitions

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

Laboratory Certifications

C	Certifying Authority	Certification Number	Laboratory Location
-	NCTRCA	WFWB384444Y0909	TraceAnalysis
-	DBE	VN 20657	TraceAnalysis
-	HUB	1752439743100-86536	TraceAnalysis
-	WBE	237019	TraceAnalysis
1	NELAP	T104704219-13-9	Lubbock
2	NELAP	T104704392-13-7	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.

1310 3131

Analysis Request of Chain of Custody Record

PAGE: OF:

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

CLIENT NAME: Celero Energy
SITE MANAGER: Greg Pope
PROJECT NO.: 114-G401628
PROJECT NAME: Rock Queen #7

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
345372	10/31/13	1715	W		X	MW-1	5	N	X		X		X												X			X	
373		1740				MW-2	5																					
374		1750				MW-3	5																					
375		1730				MW-4	5																					

RELINQUISHED BY: (Signature) Date: 10/31/13 Time: 1729
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) CFRD Date: Time:
SAMPLE SHIPPED BY: (Circle) FEDEX BUS HAND DELIVERED UPS AIRBILL #: 802536309 OTHER:
TETRA TECH CONTACT PERSON:
Results by:
RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: 1.8°
REMARKS: Midland - BTEX/all/TDS/pH Rubbish - anions/cations

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