

1R – 1594

2013 AGWMR

03 / 25 / 2013



TETRA TECH

March 25, 2013

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: 2012 Groundwater Sampling Report for the Celero Energy II, LP, Rock Queen Unit Saltwater Plant #1, Located in Unit Letter D, Section 26, Township 13 South, Range 31 East, Chaves County, New Mexico (NMOCD 1RP#1594).

Mr. Von Gonten:

This report details the results of the groundwater sampling events performed at the Celero Energy II, LP (Celero), Rock Queen Unit Saltwater Plant #1 (Site) for 2012. The Site is located approximately 21-1/2 miles north of Maljamar, New Mexico. The Site location is shown on Figures 1 and 2.

FACILITY BACKGROUND

Pit Closure

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

The Rock Queen Saltwater Plant #1 pit was dewatered and the residual sludge, tank bottom materials, and liner were removed in August 2007. Removed fluids were placed into an existing SWD system or taken for disposal, while the sludge, tank bottom materials, and liner were disposed of at Gandy-Marley, Inc.'s landfill site in Lovington, New Mexico. Upon completion of the removal of the fluids, sludge, and liner, the underlying soils were visually inspected for obvious signs of impact. Approximately 2,200 cubic yards of soil were excavated and transported to Gandy-Marley, Inc. for disposal. The pit was excavated to a point where the subsoil would support a soil boring rig.

Tetra Tech

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On October 12, 2009, a report entitled *Assessment and Closure Report for a Pit located at the Rock Queen Unit Saltwater Plant #1* was submitted to the NMOCD. The report detailed the closure of the former pit along with proposed extension of liner at the facility.

Groundwater Investigation

Between May 2007 and December 2010, Celero installed seven 2-inch monitor wells (MW-1 through MW-7) and one 5-inch recovery well (RW-1) to assess the groundwater quality at the Site. The lithology at the Site was relatively consistent with limestone to approximately 10 to 20 feet bgs and with calcareous with medium to very fine grain sand to a depth of approximately 130 to 165 feet bgs. From approximately 130 feet bgs to the terminus (approximately 150 to 198 feet bgs) the soils were a gray/brown to red clay.

During the investigation, groundwater was encountered at depths of approximately 134 to 139 feet bgs. Monitor Well MW-1 was drilled into the surrounding underlying clay to 198 feet bgs and sealed with bentonite back to 145 feet. Afterwards, 40 feet of 0.01 inch slotted screen was installed to from 145 feet to 105 feet bgs. The remaining monitor wells were drilled to depths of 150 to 155 (MW-7) feet bgs and installed with 30 feet of 0.02 inch slotted screen. Recovery well RW-1 was drilled to a depth of 150 feet and installed with 20 feet of 0.035 inch slotted screen. From the top of the screen 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 which were detected in the groundwater above New Mexico Water Quality Control Commission (NMWQCC) standards was chlorides, TDS, SO₄ and benzene in monitor well MW-1. No Phase Separated Hydrocarbons (PSH) has been measured in any of the onsite monitor wells. See Figure 3 detailing the monitor well locations.

Historic Gauging and Monitor Well Sampling

On May 24, 2007, initial sampling began at the site. During 2010, additional monitor wells were installed and quarterly sampling initiated. During the sampling events, all monitor wells were gauged, purged, and sampled with no PSH measured. Utilizing the water level elevation calculations, groundwater gradient maps were generated for all the sampling events with the exception of May 24, 2007, which lacked sufficient points for development of a gradient map. The hydraulic gradient indicates a southeasterly direction.

Historically, each of the wells has been sampled for BTEX utilizing method SW8021B, chlorides and sulfates utilizing method E 300.0, total dissolved solids (TDS) utilizing method SM2540C and periodically for general chemistry using methods SM2320B, SW6010B, SM4500-H+. One sample, MW-1 on January 18, 2011 (0.0116 mg/L) had a result which exceeded the NMWQCC standard of 0.01 milligrams per liter (mg/L) of benzene. The remainder of the samples were below the NMWQCC standards with a majority being at or below detection limits. All the samples collected and analyzed for chlorides were above the NMWQCC standard of 250 mg/L chlorides with samples ranging from 912 mg/L in MW-6 on July 29, 2011 to 174,000 mg/L in MW-1 on April 14, 2011.

2012 GROUNDWATER SAMPLING RESULTS

Tetra Tech, Inc. (Tetra Tech) was onsite January 4, April 9, July 23, and October 24, 2012 to gauge and sample all monitor wells. No PSH was measured in any of the monitor/recovery wells. Utilizing the water level elevation calculations, groundwater gradient maps were generated for the sampling events with a hydraulic gradient consistently to the southeast. Groundwater gradient maps for the sampling events are included as Figures 3 through 7. Gauging data is summarized in Table 1.

On January 4, April 9, July 24, and October 25, 2012, each of the wells was sampled for BTEX utilizing method SW8021B, chlorides, and sulfates utilizing method E 300.0, total dissolved solids (TDS) utilizing method SM2540C. The samples were collected and submitted to Trace of Midland, Texas. All samples were below the NMWQCC standard of 0.01 mg/L of benzene. Chlorides for the sampling period ranged from 732 mg/L in monitor well MW-6 on October 25, 2012 to 168,000 mg/L in monitor well MW-1 on October 25, 2012. All 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 are enclosed in Appendix A.

During purging activities, it was noted that all seven monitor wells (MW-1 through MW-7) and recovery well RW-1 bail dry.

CONCLUSIONS

1. Sampling occurred on January 4, April 9, July 23, and October 24, 2012. 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.

2. The hydraulic gradient indicates a southeasterly direction.
3. All monitor well samples were below the NMWQCC standard of 0.01 mg/L of benzene.
4. All the samples collected and analyzed for chlorides were above the NMWQCC standard of 250 mg/L chlorides with samples ranging from 732 mg/L in monitor well MW-6 on October 25, 2012 to 168,000 mg/L in monitor well MW-1 on October 25, 2012.

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 pump test 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 question or comments concerning the assessment or the activities performed at the Site, please call me at (432) 682-4559.

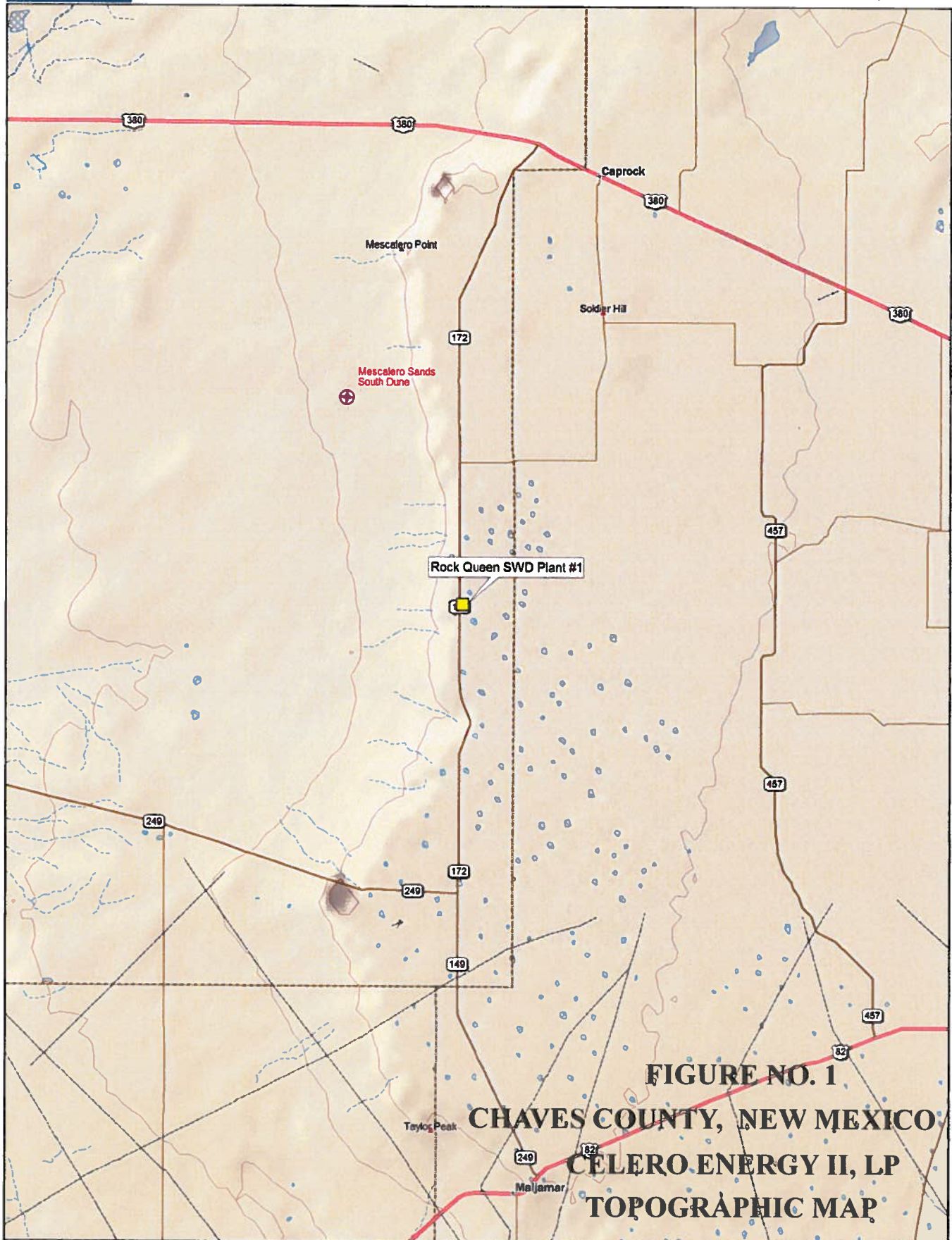
Respectfully submitted,
Tetra Tech, Inc.



Jeffrey Kindley, P.G.
Senior Environmental Geologist

cc: Bruce Woodard – Celero Energy II, LP

FIGURES



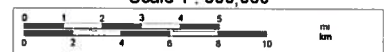
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Scale 1 : 300,000



1" = 4.73 mi

Data Zoom 9-5

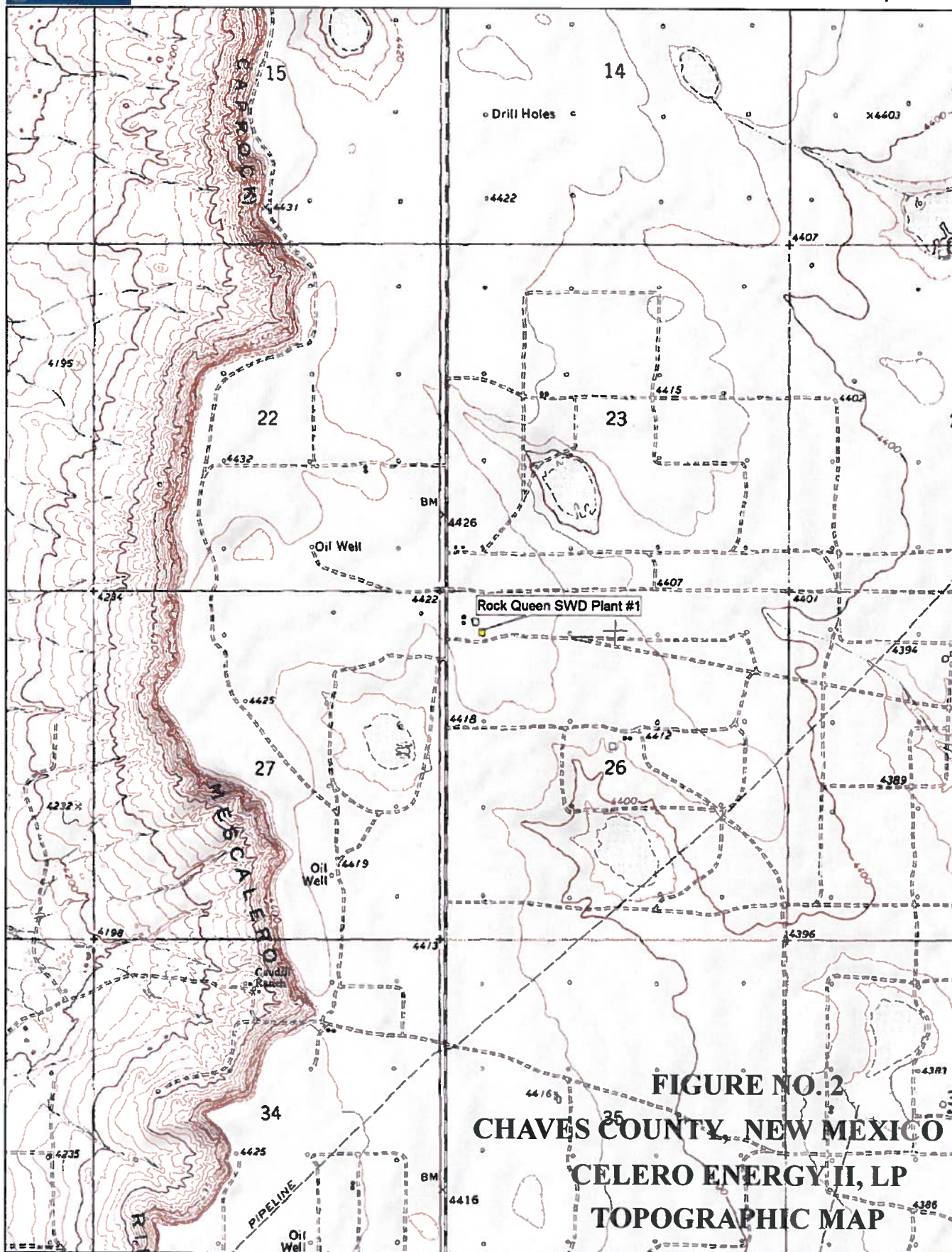
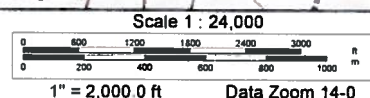


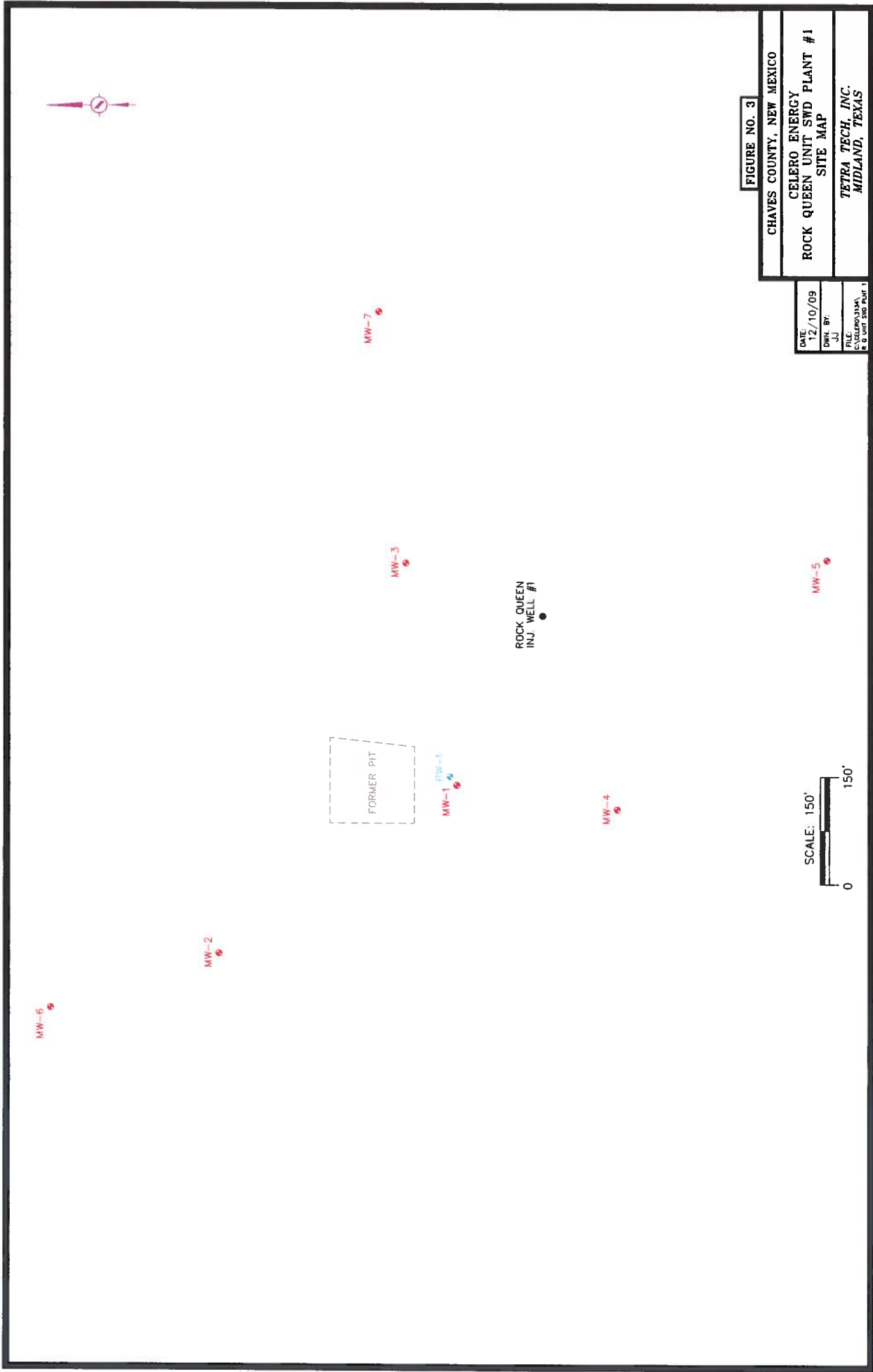
FIGURE NO. 2
CHAVES COUNTY, NEW MEXICO
CELERO ENERGY II, LP
TOPOGRAPHIC MAP

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MW-6
4,285.54

MW-2
4,285.03

FORMER PIT

MW-1
4,284.78
MW-1
4,284.48

MW-3
4,284.67

MW-7
4,283.49

ROCK QUEEN
INJ. WELL #1

MW-4
4,283.24

MW-5
4,281.26

FIGURE NO. 4

CHAVES COUNTY, NEW MEXICO

CELERO ENERGY
ROCK QUEEN UNIT SWD PLANT #1
GROUNDWATER GRADIENT MAP
GAUGED ON 01/03/2012

TETRA TECH, INC.
MIDLAND, TEXAS

DATE: 01/03/2012
OWN: BY: IM
FILE: CELERO SWD PLANT #1
SWD PLANT #1 OF

SCALE: 1" = 150'

C.I. = 1'

APPROXIMATE
GROUNDWATER
GRADIENT DIRECTION



MW-6
4,285.46

MW-2
4,285.03

MW-1
4,284.32

FORMER PIT

MW-3
4,284.63

MW-7
4,283.47

ROCK QUEEN
INJ. WELL #1

MW-4
4,283.22

MW-5
4,281.22

APPARENT
GROUNDWATER
GRADIENT DIRECTION

SCALE: 1" = 150'

C.L. = 1"

FIGURE NO. 5

CHAVES COUNTY, NEW MEXICO
CELERO ENERGY
ROCK QUEEN UNIT SWD PLANT #1
GROUNDWATER GRADIENT MAP
GAUGED ON 04/20/2012
TETRA TECH, INC.
MIDLAND, TEXAS

DATE	04/20/2012
DRAWN BY	JM
FILE	C:\GDP\0314\
SWD PART 1 OF	



MW-6
4,285.50

MW-2
4,285.00

FORMER PIT

MW-1
4,284.41

MW-3
4,284.58

MW-7
4,283.52

ROCK QUEEN
INJ. WELL #1

MW-4
4,283.16

MW-5
4,281.17

APPLICANT
GROUNDWATER
GRADIENT DIRECTION

SCALE: 1" = 150'

C.L. = 1"

FIGURE NO. 6

CHAVES COUNTY, NEW MEXICO

CELERO ENERGY
ROCK QUEEN UNIT SWD PLANT #1
GROUNDWATER GRADIENT MAP
GAUGED ON 07/23/2012

TETRA TECH, INC.
MIDLAND, TEXAS

DATE	07/23/2012
BY	SW
FILE	CHAVES\JIM\
SWD PART 1 OF	

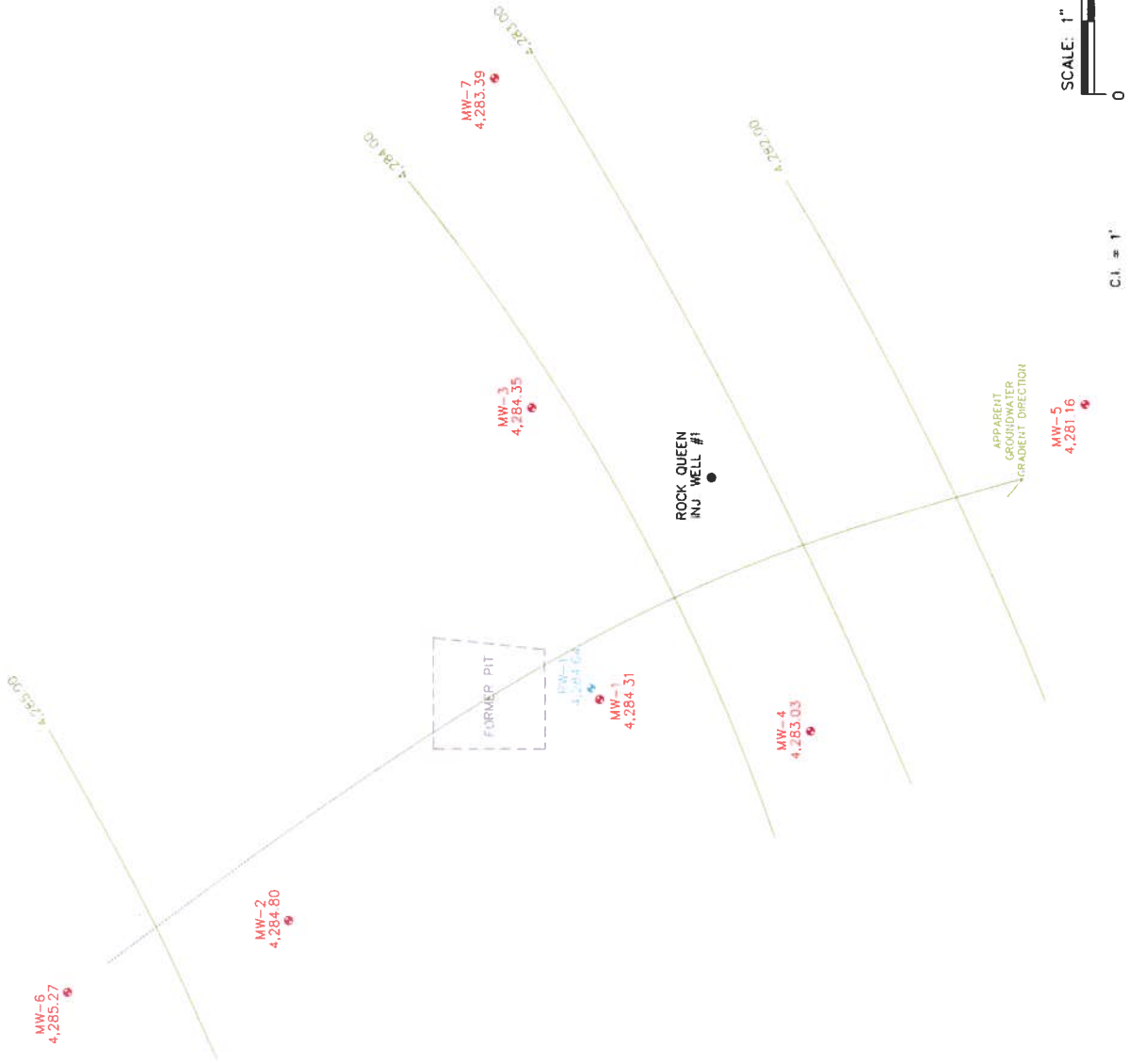


FIGURE NO. 7

CHAVES COUNTY, NEW MEXICO
CELERO ENERGY
ROCK QUEEN UNIT SWD PLANT #1
GROUNDWATER GRADIENT MAP
GAUGED ON 10/24/2012
TETRA TECH, INC.
MIDLAND, TEXAS

DATE	10/24/2012
BY	BT
IN	
FILE	C:\GPR\JMM\
SWD PART	1 OF

SCALE: 1" = 150'
0 150'
C.I. = 1'



MW-6
3,240

MW-2
103,000

MW-7
39,300

MW-3
112,000

ROCK QUEEN
INJ. WELL #1

FORMER PIT

ITW-1
115

MW-1
153,000

MW-4
117,000

DATE	01/04/2012
TIME	07:11
FILE	C:\GEO\0314\
PROJECT	Rock Queen Plant #1



MW-5
42,900

RESULTS IN mg/L
NS - NOT SAMPLED

FIGURE NO. 8

CHAVES COUNTY, NEW MEXICO

CELERO ENERGY
ROCK QUEEN UNIT SWD PLANT #1
CHLORIDE CONCENTRATION MAP
SAMPLED ON 01/04/2012

TETRA TECH, INC.
MIDLAND, TEXAS



MW-6
2,760

MW-2
85,900



MW-7
17,000

MW-3
69,800

ROCK QUEEN
INJ. WELL #1

MW-1
155,000

MW-4
120,000

DATE	04/09/2012
TIME	09:00
FILE	C:\CELERO\JUN
FILE	04/09/2012



MW-5
44,500

RESULTS IN mg/L
NS - NOT SAMPLED

FIGURE NO. 9

CHAVES COUNTY, NEW MEXICO

CELERO ENERGY
ROCK QUEEN UNIT SWD PLANT #1
CHLORIDE CONCENTRATION MAP
SAMPLED ON 04/09/2012

TETRA TECH, INC.
MIDLAND, TEXAS



MW-6
1,470

MW-2
97,100

MW-7
37,700

MW-3
52,000

ROCK QUEEN
INJ. WELL #1

FORMER PIT

MW-1
164,000

MW-4
119,000

MW-5
19,900

RESULTS IN mg/L
NS - NOT SAMPLED

DATE
07/23/2012
OWN
BY
FIG
ENCLOSURE
E & O UNIT SWD PMT 1

SCALE: 150'
0 150'

FIGURE NO. 10

CHAVES COUNTY, NEW MEXICO

CELERO ENERGY
ROCK QUEEN UNIT SWD PLANT #1
CHLORIDE CONCENTRATION MAP
SAMPLED ON 07/23/2012

TETRA TECH, INC.
MIDLAND, TEXAS

TABLES

Table 1
Celero Energy II, LP
Groundwater Gauging Data
Rock Queen Unit Saltwater Injection Plant #1
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	05/24/07	05/24/07	4,421.40	148.00	136.57	4,284.83
	02/05/08				136.08	4,285.32
	11/24/09				136.35	4,285.05
	07/13/10				136.49	4,284.91
	10/11/10				136.57	4,284.83
	01/17/11				136.60	4,284.80
	04/12/11				136.74	4,284.66
	07/28/11				136.82	4,284.58
	10/24/11				136.82	4,284.58
	01/03/12				136.92	4,284.48
	04/09/12				137.08	4,284.32
	07/23/12				136.99	4,284.41
MW-2	10/24/12				137.09	4,284.31
	11/24/09	11/18/09	4,423.57	150.00	137.84	4,285.73
	07/13/10				138.05	4,285.52
	10/11/10				138.18	4,285.39
	01/17/11				138.14	4,285.43
	04/12/11				138.23	4,285.34
	07/28/11				139.22	4,284.35
	10/24/11				138.45	4,285.12
	01/03/12				138.54	4,285.03
	04/09/12				138.54	4,285.03
	07/23/12				138.57	4,285.00
	10/24/12				138.77	4,284.80
MW-3	11/24/09		4,421.79	150.00	137.01	4,284.78
	07/13/10				137.07	4,284.72
	10/11/10				137.19	4,284.60
	01/17/11				136.78	4,285.01
	04/12/11				136.75	4,285.04
	07/28/11				137.82	4,283.97
	10/24/11				137.08	4,284.71
	01/03/12				137.12	4,284.67
	04/09/12				137.16	4,284.63
	07/23/12				137.21	4,284.58
	10/24/12				137.44	4,284.35

Table 1
Celero Energy II, LP
Groundwater Gauging Data
Rock Queen Unit Saltwater Injection Plant #1
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-4	11/24/09	11/18/09	4,421.26	150.00	137.30	4,283.96
	07/13/10				137.64	4,283.62
	10/11/10				137.72	4,283.54
	01/17/11				137.75	4,283.51
	04/12/11				137.89	4,283.37
	07/28/11				138.68	4,282.58
	10/24/11				137.99	4,283.27
	01/03/12				138.02	4,283.24
	04/09/12				138.04	4,283.22
	07/23/12				138.10	4,283.16
MW-5	10/24/12				138.23	4,283.03
	01/17/11	11/22/10	4,420.25	152.40	138.76	4,281.49
	04/12/11				138.81	4,281.44
	07/28/11				139.75	4,280.50
	10/24/11				138.97	4,281.28
	01/03/12				138.99	4,281.26
	04/09/12				139.03	4,281.22
	07/23/12				139.11	4,281.14
	10/24/12				139.09	4,281.16
	01/17/11		4,423.57	149.70	137.62	4,285.95
	04/12/11				137.81	4,285.76
MW-6	07/28/11				138.71	4,284.86
	10/24/11				137.97	4,285.60
	01/03/12				138.03	4,285.54
	04/09/12				138.11	4,285.46
	07/23/12				138.07	4,285.50
	10/24/12				138.30	4,285.27
	01/17/11	11/19/10	4,423.52	159.02	139.76	4,283.76
	04/12/11				139.79	4,283.73
	07/28/11				140.74	4,282.78
	10/24/11				139.96	4,283.56
	01/03/12				140.03	4,283.49
	04/09/12				140.05	4,283.47
	07/23/12				140.00	4,283.52
	10/24/12				140.13	4,283.39
	01/17/11					
	04/12/11					
MW-7	07/28/11					
	10/24/11					
	01/03/12					
	04/09/12					
	07/23/12					
	10/24/12					
	01/17/11					
	04/12/11					
	07/28/11					
	10/24/11					

Table 1
Celero Energy II, LP
Groundwater Gauging Data
Rock Queen Unit Saltwater Injection Plant #1
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)
RW-1	01/17/11	12/12/10	4,420.69	153.03	134.97	4,285.72
	04/12/11				135.35	4,285.34
	07/28/11				136.25	4,284.44
	10/24/11				135.72	4,284.97
	01/03/12				135.91	4,284.78
	04/09/12				135.88	4,284.81
	07/23/12				135.98	4,284.71
	10/24/12				136.05	4,284.64

Table 2
Celero Energy II, LP
Groundwater Analytical Results
Rock Queen Unit Saltwater Injection Plant #1
Chaves County, New Mexico

Monitor Well	Date Sampled	Dissolved Calcium (mg/L)	Dissolved Magnesium (mg/L)	Dissolved Sodium (mg/L)	Dissolved Potassium (mg/L)	Hydroxide Alkalinity (mg/L)	Carbonate Alkalinity (mg/L)	Bicarbonate Alkalinity (mg/L)	Total Alkalinity (mg/L)	Sulfate (mg/L)	Chloride (mg/L)	TDS (mg/L)	Hardness (mg/L)	pH
MW-1	05/24/07	3,040	4,620	79,100	1950	<1.00	<1.00	154	154	1,800	154,000	231,100	26,600	6.45
	11/24/09	2,060	3,630	70,000	1840	<1.00	<1.00	127	127	1,600	139,000	220,000	20,100	5.15
	07/13/10	-	-	-	-	-	-	-	-	1,530	155,000	225,000	-	-
	10/11/10	-	-	-	-	-	-	-	-	1,500	130,000	235,000	-	-
	01/18/11	-	-	-	-	-	-	-	-	1,940	132,000	234,000	-	-
	04/14/11	-	-	-	-	-	-	-	-	1,830	174,000	237,000	-	-
	07/29/11	-	-	-	-	-	-	-	-	1,730	137,000	223,000	-	-
	10/28/11	-	-	-	-	-	-	-	-	1,870	143,000	258,000	-	-
	01/04/12	-	-	-	-	-	-	-	-	1,760	153,000	218,000	-	-
	04/09/12	-	-	-	-	-	-	-	-	1,510	153,000	226,000	-	-
	07/24/12	-	-	-	-	-	-	-	-	-	164,000	-	-	-
	10/25/12	-	-	-	-	-	-	-	-	1,900	168,000	226,000	-	-
MW-2	11/24/09	1,010	633	10,800	270	<1.00	<1.00	127	127	413	19,900	146,000	5,130	6.97
	07/13/10	-	-	-	-	-	-	-	-	652	43,200	72,700	-	-
	10/11/10	-	-	-	-	-	-	-	-	945	51,800	235,000	-	-
	01/18/11	-	-	-	-	-	-	-	-	1,640	66,600	133,000	-	-
	04/14/11	-	-	-	-	-	-	-	-	1,820	99,700	159,000	-	-
	07/29/11	-	-	-	-	-	-	-	-	1,770	90,400	155,000	-	-
	10/28/11	-	-	-	-	-	-	-	-	1,460	80,300	135,000	-	-
	01/04/12	-	-	-	-	-	-	-	-	1,820	103,000	156,000	-	-
	04/09/12	-	-	-	-	-	-	-	-	1,460	85,900	132,000	-	-
	07/24/12	-	-	-	-	-	-	-	-	-	97,100	-	-	-
	10/25/12	-	-	-	-	-	-	-	-	890	45,200	81,400	-	-
	11/24/09	6,030	2,150	29,900	323	<1.00	<1.00	92	92	908	59,500	108,000	23,900	6.02
MW-3	07/13/10	-	-	-	-	-	-	-	-	931	73,200	150,000	-	-
	10/11/10	-	-	-	-	-	-	-	-	934	85,500	167,000	-	-
	01/18/11	-	-	-	-	-	-	-	-	1,230	85,200	154,000	-	-
	04/14/11	-	-	-	-	-	-	-	-	1,250	118,000	188,000	-	-
	07/29/11	-	-	-	-	-	-	-	-	1,100	66,900	103,000	-	-
	10/27/11	-	-	-	-	-	-	-	-	1,160	123,000	184,000	-	-
	01/04/12	-	-	-	-	-	-	-	-	1,220	112,000	163,000	-	-
	04/09/12	-	-	-	-	-	-	-	-	1,100	69,800	104,000	-	-

Table 2

Celero Energy II, LP
Groundwater Analytical Results
Rock Queen Unit Saltwater Injection Plant #1
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	07/24/12	-	-	-	-	-	-	-	-	-	52,000	-	-	-
	10/25/12	-	-	-	-	-	-	-	-	1,210	84,000	123,000	-	-
MW-4	11/24/09	791	253	4,880	76.7	<1.00	<1.00	118	118	286	9,360	22,600	3,020	7.35
	07/13/10	-	-	-	-	-	-	-	-	1,540	85,800	159,000	-	-
	10/11/10	-	-	-	-	-	-	-	-	1,640	93,200	175,000	-	-
	01/18/11	-	-	-	-	-	-	-	-	2,360	93,200	173,000	-	-
	04/14/11	-	-	-	-	-	-	-	-	1,950	102,000	159,000	-	-
	07/29/11	-	-	-	-	-	-	-	-	2,120	107,000	171,000	-	-
	10/28/11	-	-	-	-	-	-	-	-	2,180	124,000	171,000	-	-
	01/04/12	-	-	-	-	-	-	-	-	2,240	117,000	180,000	-	-
	04/09/12	-	-	-	-	-	-	-	-	2,020	120,000	166,000	-	-
	07/24/12	-	-	-	-	-	-	-	-	-	119,000	-	-	-
	10/25/12	-	-	-	-	-	-	-	-	2,230	116,000	177,000	-	-
MW-5	01/18/11	-	-	-	-	-	-	-	-	822	32,400	69,700	-	-
	04/14/11	-	-	-	-	-	-	-	-	1,070	20,000	39,400	-	-
	07/29/11	-	-	-	-	-	-	-	-	854	24,300	46,700	-	-
	10/27/11	-	-	-	-	-	-	-	-	701	49,700	91,900	-	-
	01/04/12	-	-	-	-	-	-	-	-	751	42,900	96,100	-	-
	04/09/12	-	-	-	-	-	-	-	-	692	44,500	79,100	-	-
	07/24/12	-	-	-	-	-	-	-	-	-	19,900	-	-	-
	10/25/12	-	-	-	-	-	-	-	-	1,050	23,500	45,200	-	-
MW-6	01/18/11	-	-	-	-	-	-	-	-	<250	3,010	16,500	-	-
	04/14/11	-	-	-	-	-	-	-	-	188	1,320	2,100	-	-
	07/29/11	-	-	-	-	-	-	-	-	146	912	1,860	-	-
	10/27/11	-	-	-	-	-	-	-	-	191	1,110	2,240	-	-
	01/04/12	-	-	-	-	-	-	-	-	197	3,240	6,080	-	-
	04/09/12	-	-	-	-	-	-	-	-	150	2,760	4,740	-	-
	07/24/12	-	-	-	-	-	-	-	-	-	1,470	-	-	-
	10/25/12	-	-	-	-	-	-	-	-	142	732	1,470	-	-
MW-7	01/18/11	-	-	-	-	-	-	-	-	478	35,700	75,700	-	-
	04/14/11	-	-	-	-	-	-	-	-	657	61,500	91,000	-	-
	07/29/11	-	-	-	-	-	-	-	-	172	17,400	29,500	-	-

Table 2

Celero Energy II, LP
Groundwater Analytical Results
Rock Queen Unit Saltwater Injection Plant #1
Chaves County, New Mexico

Monitor Well	Date Sampled	Dissolved Calcium (mg/L)	Dissolved Magnesium (mg/L)	Dissolved Sodium (mg/L)	Dissolved Potassium (mg/L)	Hydroxide Alkalinity (mg/L)	Carbonate Alkalinity (mg/L)	Bicarbonate Alkalinity (mg/L)	Total Alkalinity (mg/L)	Sulfate (mg/L)	Chloride (mg/L)	TDS (mg/L)	Hardness (mg/L)	pH
MW-7	10/27/11	-	-	-	-	-	-	-	-	529	49,000	75,700	-	-
	01/04/12	-	-	-	-	-	-	-	-	430	39,300	91,800	-	-
	04/09/12	-	-	-	-	-	-	-	-	151	17,000	26,000	-	-
	07/24/12	-	-	-	-	-	-	-	-	-	37,700	-	-	-
	10/25/12	-	-	-	-	-	-	-	-	519	40,700	54,200	-	-
RW-1	01/18/11	-	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
	07/29/11	-	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	10/27/11	-	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	01/04/12	-	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	04/09/12	-	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	07/24/12	-	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 - Not sampled

(-) Not analyzed

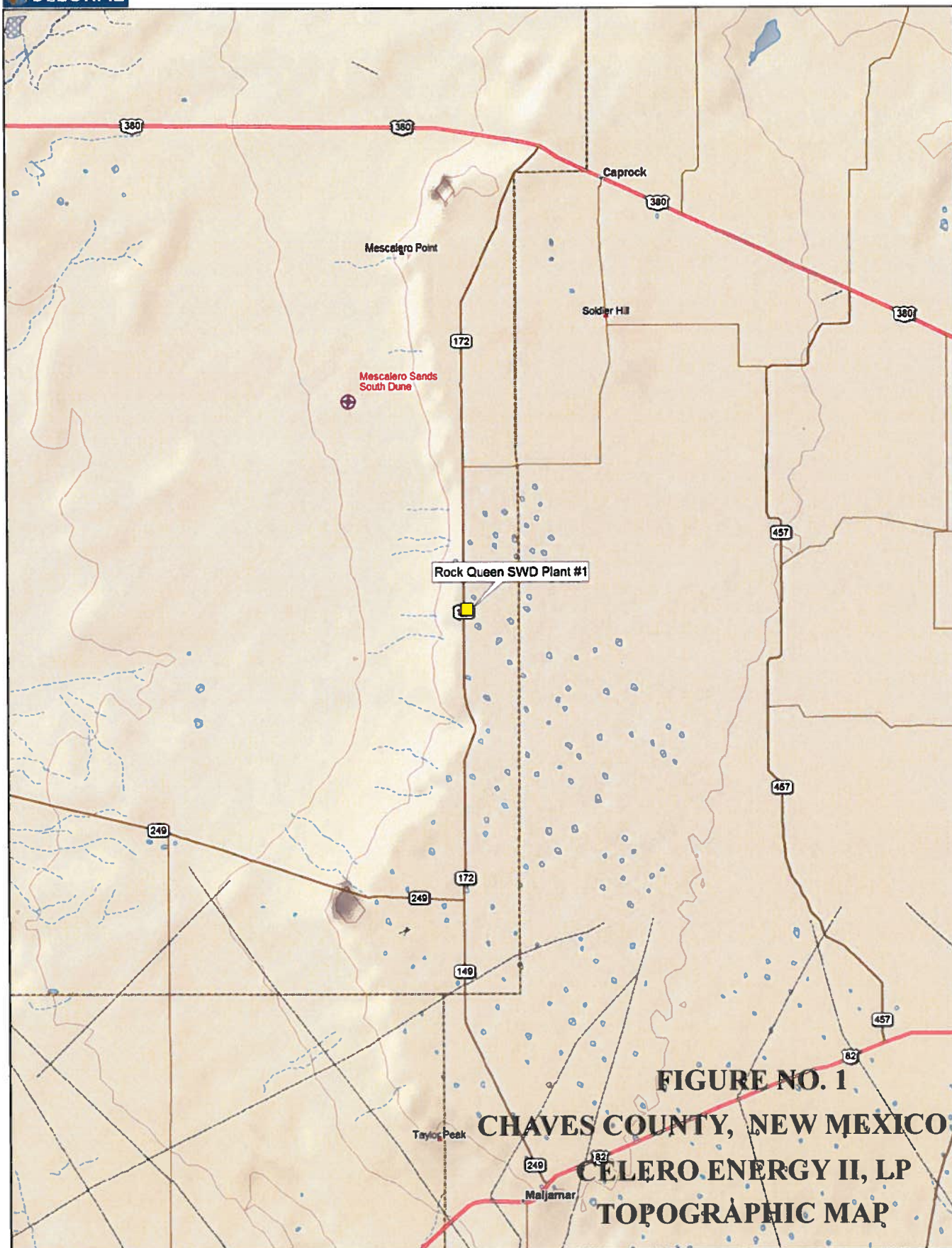
Table 3
Celero Energy II, LP
Groundwater Analytical Results
Rock Queen Saltwater Injection Plant #1
Chaves County, New Mexico

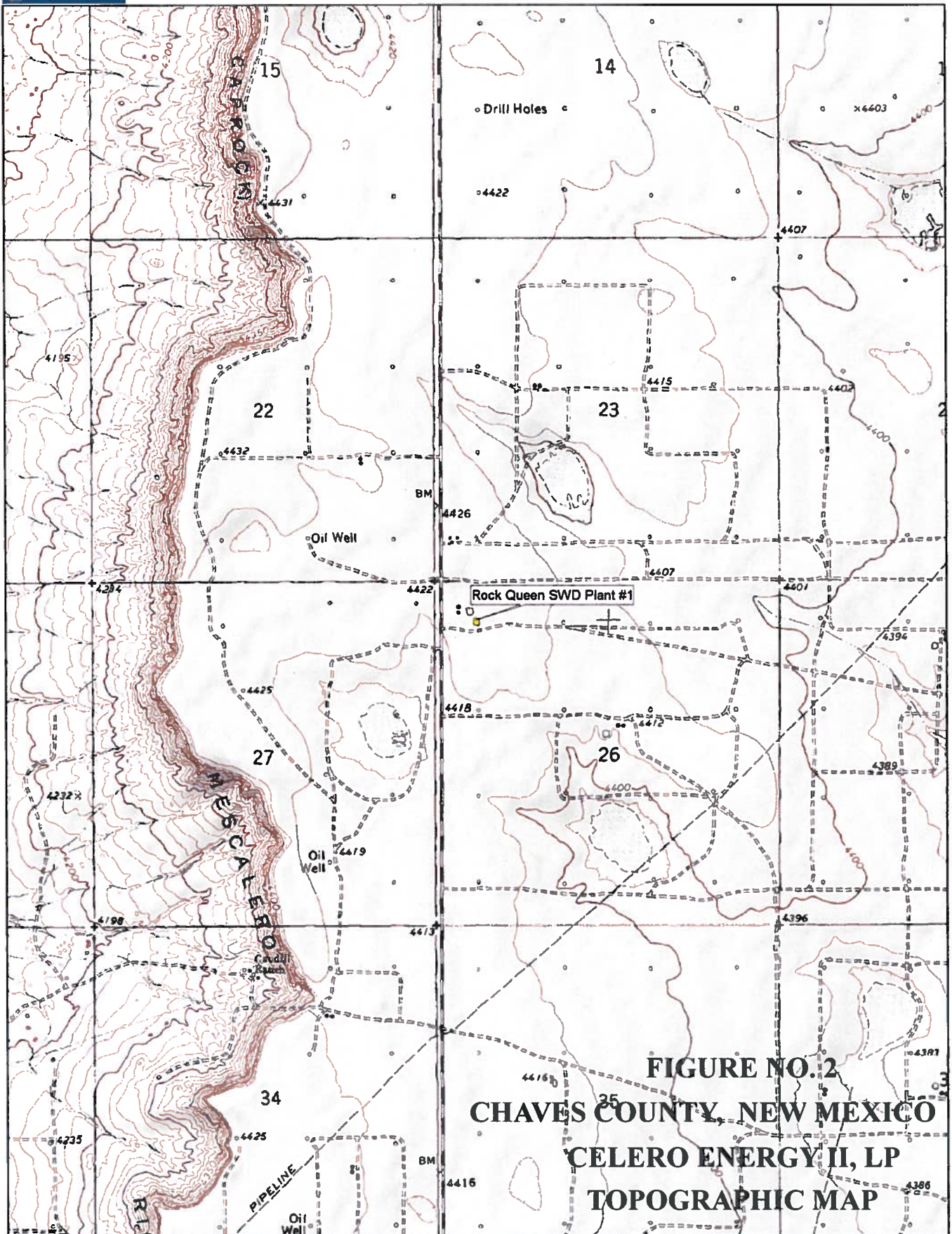
Monitor Well	Date Sampled	Benzene in (mg/L)	Toluene in (mg/L)	Ethyl- Benzene (mg/L)	Xylene in (mg/L)	Total BTEX (mg/L)
MW-1	11/24/09	0.0016	<0.001	<0.001	<0.001	0.0016
	07/13/10	0.0031	<0.001	<0.001	<0.001	0.0031
	10/11/10	0.0038	<0.001	<0.001	<0.001	0.0038
	01/18/11	0.0116	0.0059	<0.001	<0.001	0.0175
	04/14/11	0.0088	0.0055	<0.001	<0.001	0.0143
	07/29/11	0.0081	<0.001	<0.001	<0.001	0.0081
	10/28/11	0.004	<0.001	<0.001	0.0063	0.0103
	01/04/12	0.0042	<0.001	<0.001	<0.001	0.0042
	04/09/12	0.005	<0.001	<0.001	<0.001	0.005
	07/24/12	0.0018	<0.0003	<0.0003	<0.0003	0.0018
	10/25/12	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
MW-2	11/24/09	<0.001	<0.001	<0.001	<0.001	<0.001
	07/13/10	<0.001	<0.001	<0.001	<0.001	<0.001
	10/11/10	0.0017	<0.001	<0.001	<0.001	<0.001
	01/18/11	<0.001	<0.001	<0.001	<0.001	<0.001
	04/14/11	0.0076	<0.001	<0.001	<0.001	0.0076
	07/29/11	0.0092	<0.001	<0.001	<0.001	0.0092
	10/28/11	0.0039	<0.001	<0.001	<0.001	0.0039
	01/04/12	0.0034	<0.001	<0.001	<0.001	0.0034
	04/09/12	0.0052	<0.001	<0.001	<0.001	0.0052
	07/24/12	0.0019	<0.0003	<0.0003	<0.0003	0.0019
	10/25/12	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
MW-3	11/24/09	<0.001	<0.001	<0.001	<0.001	<0.001
	07/13/10	<0.001	<0.001	<0.001	<0.001	<0.001
	10/11/10	<0.001	<0.001	<0.001	<0.001	<0.001
	01/18/11	<0.001	<0.001	<0.001	<0.001	<0.001
	04/14/11	0.0059	<0.001	<0.001	<0.001	0.0059
	07/29/11	<0.001	<0.001	<0.001	<0.001	<0.001
	10/27/11	0.00120	<0.001	<0.001	0.0044	0.0056
	01/04/12	<0.001	<0.001	<0.001	<0.001	<0.001
	04/09/12	<0.001	<0.001	<0.001	<0.001	<0.001
	07/24/12	<0.0003	<0.0003	<0.0003	0.0046	0.0046
	10/25/12	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
MW-4	11/24/09	<0.001	<0.001	<0.001	<0.001	<0.001
	07/13/10	<0.001	<0.001	<0.001	<0.001	<0.001
	10/11/10	0.0015	<0.001	<0.001	<0.001	0.0015
	01/18/11	0.0095	<0.001	<0.001	<0.001	0.0095
	04/14/11	0.0064	<0.001	<0.001	<0.001	0.0064
	07/29/11	0.0084	<0.001	<0.001	<0.001	0.0084
	10/28/11	0.0028	<0.001	<0.001	<0.001	0.0028
	01/04/12	0.0029	<0.001	<0.001	<0.001	0.0029
	04/09/12	0.0065	<0.001	<0.001	<0.001	0.0065
	07/24/12	0.0027	<0.0003	<0.0003	<0.0003	0.0027
	10/25/12	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
	01/30/13	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
	04/25/13	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100

Table 3
Celero Energy II, LP
Groundwater Analytical Results
Rock Queen Saltwater Injection Plant #1
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-4	07/24/13	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
	10/30/13	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
MW-5	01/18/11	<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
	10/27/11	<0.001	<0.001	<0.001	<0.001	<0.001
	01/04/12	<0.001	<0.001	<0.001	<0.001	<0.001
	04/09/12	<0.001	<0.001	<0.001	<0.001	<0.001
	07/24/12	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
	10/25/12	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
MW-6	01/18/11	<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
	10/27/11	<0.001	<0.001	<0.001	<0.001	<0.001
	01/04/12	<0.001	<0.001	<0.001	<0.001	<0.001
	04/09/12	<0.001	<0.001	<0.001	<0.001	<0.001
	07/24/12	<0.0003	<0.0003	<0.0003	0.0007	0.0007
	10/25/12	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
MW-7	01/18/11	<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
	10/27/11	<0.001	<0.001	<0.001	<0.001	<0.001
	01/04/12	<0.001	<0.001	<0.001	<0.001	<0.001
	04/09/12	<0.001	<0.001	<0.001	<0.001	<0.001
	07/24/12	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
	10/25/12	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
RW-1	01/18/11	NS	NS	NS	NS	NS
	04/14/11	NS	NS	NS	NS	NS
	07/29/11	NS	NS	NS	NS	NS
	10/27/11	NS	NS	NS	NS	NS
	01/04/12	NS	NS	NS	NS	NS
	04/09/12	NS	NS	NS	NS	NS
	07/24/12	NS	NS	NS	NS	NS
	10/25/12	NS	NS	NS	NS	NS

NS - Not sampled





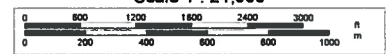
Data use subject to license.

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www.delorme.com



Scale 1 : 24,000



1" = 2,000.0 ft

Data Zoom 14-0



MW-6

MW-2

MW-7

MW-3

ROCK QUEEN
INJ. WELL #1

MW-1

MW-4

SCALE: 150'
0 150'

FIGURE NO. 3

CHAVES COUNTY, NEW MEXICO

CELERO ENERGY
ROCK QUEEN UNIT SWD PLANT #1
SITE MAP

TETRA TECH, INC.
MIDLAND, TEXAS

DATE: 12/10/09
DRAWN BY: JJ
FILE: C:\CELLER\DATA\Rock Queen SWD Plant #1

APPENDIX A

LABORATORY ANALYTICAL



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 988•588•3443 915•585•3443 FAX 915•585•4944
5002 Basin Street, Suite A1 Midland, Texas 79703 432•689•6301 FAX 432•689•6313
6015 Harris Parkway, Suite 110 Ft. Worth, Texas 76132 817•201•5260
E-Mail lab@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: January 17, 2012

Work Order: 12010635



Project Location: Chavez Co., NM
Project Name: Celero/Rock Queen SWD #1
Project Number: 115-6403134

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
285921	MW-1	water	2012-01-04	16:20	2012-01-06
285922	MW-2	water	2012-01-04	15:50	2012-01-06
285923	MW-3	water	2012-01-04	16:16	2012-01-06
285924	MW-4	water	2012-01-04	15:20	2012-01-06
285925	MW-5	water	2012-01-04	15:30	2012-01-06
285926	MW-6	water	2012-01-04	15:40	2012-01-06
285927	MW-7	water	2012-01-04	16:00	2012-01-06

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

A handwritten signature in black ink that reads "Michael Abel". The signature is written in a cursive style with a large, stylized 'M' and 'A'.

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

Report Contents

Case Narrative	5
Analytical Report	6
Sample 285921 (MW-1)	6
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Sample 285923 (MW-3)	8
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QC Batch 87691 - Method Blank (1)	16
QC Batch 87745 - Method Blank (1)	16
QC Batch 87752 - Method Blank (1)	16
QC Batch 87752 - Method Blank (1)	16
QC Batch 87753 - Method Blank (1)	17
QC Batch 87753 - Method Blank (1)	17
QC Batch 87745 - Duplicate (2)	17
Laboratory Control Spikes	18
QC Batch 87691 - LCS (1)	18
QC Batch 87745 - LCS (1)	18
QC Batch 87752 - LCS (1)	19
QC Batch 87752 - LCS (1)	19
QC Batch 87753 - LCS (1)	19
QC Batch 87753 - LCS (1)	20
QC Batch 87691 - MS (1)	20
QC Batch 87752 - MS (1)	21
QC Batch 87752 - MS (1)	21
QC Batch 87753 - MS (1)	22
QC Batch 87753 - MS (1)	22
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QC Batch 87691 - CCV (1)	23
QC Batch 87691 - CCV (2)	23
QC Batch 87691 - CCV (3)	23
QC Batch 87752 - ICV (1)	23
QC Batch 87752 - ICV (1)	24
QC Batch 87752 - CCV (1)	24
QC Batch 87752 - CCV (1)	24
QC Batch 87753 - ICV (1)	24
QC Batch 87753 - ICV (1)	25
QC Batch 87753 - CCV (1)	25
QC Batch 87753 - CCV (1)	25

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Case Narrative

Samples for project Celero/Rock Queen SWD #1 were received by TraceAnalysis, Inc. on 2012-01-06 and assigned to work order 12010635. Samples for work order 12010635 were received intact without headspace and at a temperature of 1.3 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	74456	2012-01-09 at 13:30	87691	2012-01-09 at 14:28
Chloride (IC)	E 300.0	74518	2012-01-10 at 13:59	87752	2012-01-11 at 09:27
Chloride (IC)	E 300.0	74519	2012-01-11 at 10:00	87753	2012-01-11 at 14:28
SO4 (IC)	E 300.0	74518	2012-01-10 at 13:59	87752	2012-01-11 at 09:27
SO4 (IC)	E 300.0	74519	2012-01-11 at 10:00	87753	2012-01-11 at 14:28
TDS	SM 2540C	74507	2012-01-06 at 10:00	87745	2012-01-10 at 15:04

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 12010635 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.

Report Date: January 17, 2012
115-6403134

Work Order: 12010635
Celero/Rock Queen SWD #1

Page Number: 6 of 26
Chavez Co., NM

Analytical Report

Sample: 285921 - MW-1

Laboratory: Midland
Analysis: BTEX
QC Batch: 87691
Prep Batch: 74456

Analytical Method: S 8021B
Date Analyzed: 2012-01-09
Sample Preparation: 2012-01-09

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene		1	0.00420	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)			0.0876	mg/L	1	0.100	88	79.1 - 127.2
4-Bromofluorobenzene (4-BFB)			0.0775	mg/L	1	0.100	78	67.5 - 140.8

Sample: 285921 - MW-1

Laboratory: Midland
Analysis: Chloride (IC)
QC Batch: 87752
Prep Batch: 74518

Analytical Method: E 300.0
Date Analyzed: 2012-01-11
Sample Preparation: 2012-01-10

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	Q*	1	153000	mg/L	5000	2.50

Sample: 285921 - MW-1

Laboratory: Midland
Analysis: SO4 (IC)
QC Batch: 87752
Prep Batch: 74518

Analytical Method: E 300.0
Date Analyzed: 2012-01-11
Sample Preparation: 2012-01-10

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Sulfate	Q*	1	1760	mg/L	50	2.50

Report Date: January 17, 2012
115-6403134

Work Order: 12010635
Celero/Rock Queen SWD #1

Page Number: 7 of 26
Chavez Co., NM

Sample: 285921 - MW-1

Laboratory: Midland
Analysis: TDS
QC Batch: 87745
Prep Batch: 74507

Analytical Method: SM 2540C
Date Analyzed: 2012-01-10
Sample Preparation: 2012-01-06

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		1	218000	mg/L	100	10.0

Sample: 285922 - MW-2

Laboratory: Midland
Analysis: BTEX
QC Batch: 87691
Prep Batch: 74456

Analytical Method: S 8021B
Date Analyzed: 2012-01-09
Sample Preparation: 2012-01-09

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene		1	0.00340	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)			0.0962	mg/L	1	0.100	96	79.1 - 127.2
4-Bromofluorobenzene (4-BFB)			0.0834	mg/L	1	0.100	83	67.5 - 140.8

Sample: 285922 - MW-2

Laboratory: Midland
Analysis: Chloride (IC)
QC Batch: 87752
Prep Batch: 74518

Analytical Method: E 300.0
Date Analyzed: 2012-01-11
Sample Preparation: 2012-01-10

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	Q*	1	103000	mg/L	5000	2.50

Report Date: January 17, 2012
115-6403134

Work Order: 12010635
Celero/Rock Queen SWD #1

Page Number: 8 of 26
Chavez Co., NM

Sample: 285922 - MW-2

Laboratory: Midland
Analysis: SO4 (IC)
QC Batch: 87752
Prep Batch: 74518

Analytical Method: E 300.0
Date Analyzed: 2012-01-11
Sample Preparation: 2012-01-10

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Sulfate	Q ⁿ	1	1820	mg/L	50	2.50

Sample: 285922 - MW-2

Laboratory: Midland
Analysis: TDS
QC Batch: 87745
Prep Batch: 74507

Analytical Method: SM 2540C
Date Analyzed: 2012-01-10
Sample Preparation: 2012-01-06

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		1	156000	mg/L	100	10.0

Sample: 285923 - MW-3

Laboratory: Midland
Analysis: BTEX
QC Batch: 87691
Prep Batch: 74456

Analytical Method: S 8021B
Date Analyzed: 2012-01-09
Sample Preparation: 2012-01-09

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

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)			0.0842	mg/L	1	0.100	84	79.1 - 127.2
4-Bromofluorobenzene (4-BFB)			0.0696	mg/L	1	0.100	70	67.5 - 140.8

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Sample: 285923 - MW-3

Laboratory:	Midland	Analytical Method:	E 300.0	Prep Method:	N/A
Analysis:	Chloride (IC)	Date Analyzed:	2012-01-11	Analyzed By:	AR
QC Batch:	87752	Sample Preparation:	2012-01-10	Prepared By:	AR
Prep Batch:	74518				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	Q*	1	112000	mg/L	5000	2.50

Sample: 285923 - MW-3

Laboratory:	Midland	Analytical Method:	E 300.0	Prep Method:	N/A
Analysis:	SO4 (IC)	Date Analyzed:	2012-01-11	Analyzed By:	AR
QC Batch:	87752	Sample Preparation:	2012-01-10	Prepared By:	AR
Prep Batch:	74518				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Sulfate	Q*	1	1220	mg/L	50	2.50

Sample: 285923 - MW-3

Laboratory:	Midland	Analytical Method:	SM 2540C	Prep Method:	N/A
Analysis:	TDS	Date Analyzed:	2012-01-10	Analyzed By:	AR
QC Batch:	87745	Sample Preparation:	2012-01-06	Prepared By:	AR
Prep Batch:	74507				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		1	163000	mg/L	100	10.0

Sample: 285924 - MW-4

Laboratory:	Midland	Analytical Method:	S 8021B	Prep Method:	S 5030B
Analysis:	BTEX	Date Analyzed:	2012-01-09	Analyzed By:	AG
QC Batch:	87691	Sample Preparation:	2012-01-09	Prepared By:	AG
Prep Batch:	74456				

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sample 285924 continued ...

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene		1	0.00290	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)			0.0893	mg/L	1	0.100	89	79.1 - 127.2
4-Bromofluorobenzene (4-BFB)			0.0753	mg/L	1	0.100	75	67.5 - 140.8

Sample: 285924 - MW-4

Laboratory: Midland	Analytical Method: E 300.0	Prep Method: N/A
Analysis: Chloride (IC)	Date Analyzed: 2012-01-11	Analyzed By: AR
QC Batch: 87753	Sample Preparation: 2012-01-11	Prepared By: AR
Prep Batch: 74519		

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	Qs	1	117000	mg/L	5000	2.50

Sample: 285924 - MW-4

Laboratory: Midland	Analytical Method: E 300.0	Prep Method: N/A
Analysis: SO4 (IC)	Date Analyzed: 2012-01-11	Analyzed By: AR
QC Batch: 87753	Sample Preparation: 2012-01-11	Prepared By: AR
Prep Batch: 74519		

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Sulfate	Qs	1	2240	mg/L	50	2.50

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Sample: 285924 - MW-4

Laboratory: Midland
Analysis: TDS
QC Batch: 87745
Prep Batch: 74507

Analytical Method: SM 2540C
Date Analyzed: 2012-01-10
Sample Preparation: 2012-01-06

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		1	180000	mg/L	100	10.0

Sample: 285925 - MW-5

Laboratory: Midland
Analysis: BTEX
QC Batch: 87691
Prep Batch: 74456

Analytical Method: S 8021B
Date Analyzed: 2012-01-09
Sample Preparation: 2012-01-09

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

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 _{NT}	Q _{NT}	0.133	mg/L	1	0.100	133	79.1 - 127.2
4-Bromofluorobenzene (4-BFB)			0.101	mg/L	1	0.100	101	67.5 - 140.8

Sample: 285925 - MW-5

Laboratory: Midland
Analysis: Chloride (IC)
QC Batch: 87753
Prep Batch: 74519

Analytical Method: E 300.0
Date Analyzed: 2012-01-11
Sample Preparation: 2012-01-11

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	Q _{NT}	1	42900	mg/L	5000	2.50

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Sample: 285925 - MW-5

Laboratory:	Midland	Analytical Method:	E 300.0	Prep Method:	N/A
Analysis:	SO4 (IC)	Date Analyzed:	2012-01-11	Analyzed By:	AR
QC Batch:	87753	Sample Preparation:	2012-01-11	Prepared By:	AR
Prep Batch:	74519				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Sulfate	Q _s	1	751	mg/L	50	2.50

Sample: 285925 - MW-5

Laboratory:	Midland	Analytical Method:	SM 2540C	Prep Method:	N/A
Analysis:	TDS	Date Analyzed:	2012-01-10	Analyzed By:	AR
QC Batch:	87745	Sample Preparation:	2012-01-06	Prepared By:	AR
Prep Batch:	74507				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		1	96100	mg/L	100	10.0

Sample: 285926 - MW-6

Laboratory:	Midland	Analytical Method:	S 8021B	Prep Method:	S 5030B
Analysis:	BTEX	Date Analyzed:	2012-01-09	Analyzed By:	AG
QC Batch:	87691	Sample Preparation:	2012-01-09	Prepared By:	AG
Prep Batch:	74456				

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)			0.0990	mg/L	1	0.100	99	79.1 - 127.2
4-Bromofluorobenzene (4-BFB)	Q _{sr}	Q _{sr}	0.0640	mg/L	1	0.100	64	67.5 - 140.8

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Sample: 285926 - MW-6

Laboratory: Midland
Analysis: Chloride (IC)
QC Batch: 87753
Prep Batch: 74519

Analytical Method: E 300.0
Date Analyzed: 2012-01-11
Sample Preparation: 2012-01-11

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	Q*	1	3240	mg/L	500	2.50

Sample: 285926 - MW-6

Laboratory: Midland
Analysis: SO4 (IC)
QC Batch: 87753
Prep Batch: 74519

Analytical Method: E 300.0
Date Analyzed: 2012-01-11
Sample Preparation: 2012-01-11

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Sulfate	Q*	1	197	mg/L	50	2.50

Sample: 285926 - MW-6

Laboratory: Midland
Analysis: TDS
QC Batch: 87745
Prep Batch: 74507

Analytical Method: SM 2540C
Date Analyzed: 2012-01-10
Sample Preparation: 2012-01-06

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		1	6080	mg/L	5	10.0

Sample: 285927 - MW-7

Laboratory: Midland
Analysis: BTEX
QC Batch: 87691
Prep Batch: 74456

Analytical Method: S 8021B
Date Analyzed: 2012-01-09
Sample Preparation: 2012-01-09

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

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sample 285927 continued ...

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	Q _{nr}	Q _{nr}	0.128	mg/L	1	0.100	128	79.1 - 127.2
4-Bromofluorobenzene (4-BFB)			0.0943	mg/L	1	0.100	94	67.5 - 140.8

Sample: 285927 - MW-7

Laboratory: Midland
Analysis: Chloride (IC)
QC Batch: 87753
Prep Batch: 74519

Analytical Method: E 300.0
Date Analyzed: 2012-01-11
Sample Preparation: 2012-01-11

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	Q _s	1	39300	mg/L	5000	2.50

Sample: 285927 - MW-7

Laboratory: Midland
Analysis: SO4 (IC)
QC Batch: 87753
Prep Batch: 74519

Analytical Method: E 300.0
Date Analyzed: 2012-01-11
Sample Preparation: 2012-01-11

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Sulfate	Q _s	1	430	mg/L	50	2.50

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Sample: 285927 - MW-7

Laboratory: Midland

Analysis: TDS

QC Batch: 87745

Prep Batch: 74507

Analytical Method: SM 2540C

Date Analyzed: 2012-01-10

Sample Preparation: 2012-01-06

Prep Method: N/A

Analyzed By: AR

Prepared By: AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		1	91800	mg/L	100	10.0

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Method Blanks

Method Blank (1) QC Batch: 87691

QC Batch: 87691
Prep Batch: 74456

Date Analyzed: 2012-01-09
QC Preparation: 2012-01-09

Analyzed By: AG
Prepared By: AG

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		1	<0.000400	mg/L	0.001
Toluene		1	<0.000300	mg/L	0.001
Ethylbenzene		1	<0.000300	mg/L	0.001
Xylene		1	<0.000333	mg/L	0.001

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.102	mg/L	1	0.100	102	61.1 - 118.4
4-Bromofluorobenzene (4-BFB)			0.0735	mg/L	1	0.100	74	45.9 - 126.4

Method Blank (1) QC Batch: 87745

QC Batch: 87745
Prep Batch: 74507

Date Analyzed: 2012-01-10
QC Preparation: 2012-01-06

Analyzed By: AR
Prepared By: AR

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

Method Blank (1) QC Batch: 87752

QC Batch: 87752
Prep Batch: 74518

Date Analyzed: 2012-01-11
QC Preparation: 2012-01-10

Analyzed By: AR
Prepared By: AR

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride		1	1.03	mg/L	2.5

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Method Blank (1) QC Batch: 87752

QC Batch: 87752
Prep Batch: 74518

Date Analyzed: 2012-01-11
QC Preparation: 2012-01-10

Analyzed By: AR
Prepared By: AR

Parameter	Flag	Cert	MDL Result	Units	RL
Sulfate		1	0.226	mg/L	2.5

Method Blank (1) QC Batch: 87753

QC Batch: 87753
Prep Batch: 74519

Date Analyzed: 2012-01-11
QC Preparation: 2012-01-11

Analyzed By: AR
Prepared By: AR

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride		1	1.06	mg/L	2.5

Method Blank (1) QC Batch: 87753

QC Batch: 87753
Prep Batch: 74519

Date Analyzed: 2012-01-11
QC Preparation: 2012-01-11

Analyzed By: AR
Prepared By: AR

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

Duplicates (2) Duplicated Sample: 285948

QC Batch: 87745
Prep Batch: 74507

Date Analyzed: 2012-01-10
QC Preparation: 2012-01-06

Analyzed By: AR
Prepared By: AR

Param		Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
Total Dissolved Solids	1	19200	20300	mg/L	100	6	10
Total Dissolved Solids	1	19200	10200	mg/L	100	6	10

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 87691
Prep Batch: 74456

Date Analyzed: 2012-01-09
QC Preparation: 2012-01-09

Analyzed By: AG
Prepared By: AG

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	0.100	mg/L	1	0.100	<0.000400	100	76.8 - 120.3
Toluene		1	0.0952	mg/L	1	0.100	<0.000300	95	80.9 - 122.2
Ethylbenzene		1	0.0890	mg/L	1	0.100	<0.000300	89	72.7 - 120.2
Xylene		1	0.263	mg/L	1	0.300	<0.000333	88	72.1 - 121.5

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	0.105	mg/L	1	0.100	<0.000400	105	76.8 - 120.3	5	20
Toluene		1	0.102	mg/L	1	0.100	<0.000300	102	80.9 - 122.2	7	20
Ethylbenzene		1	0.0971	mg/L	1	0.100	<0.000300	97	72.7 - 120.2	9	20
Xylene		1	0.286	mg/L	1	0.300	<0.000333	95	72.1 - 121.5	8	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)	0.102	0.103	mg/L	1	0.100	102	103	61.9 - 119.2
4-Bromofluorobenzene (4-BFB)	0.0885	0.0921	mg/L	1	0.100	88	92	56.4 - 127.9

Laboratory Control Spike (LCS-1)

QC Batch: 87745
Prep Batch: 74507

Date Analyzed: 2012-01-10
QC Preparation: 2012-01-06

Analyzed By: AR
Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Total Dissolved Solids		1	1010	mg/L	1	1000	<9.75	101	85.5 - 112.7

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

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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		1	1010	mg/L	1	1000	<9.75	101	85.5 - 112.7	0	10

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

Laboratory Control Spike (LCS-1)

QC Batch: 87752
Prep Batch: 74518

Date Analyzed: 2012-01-11
QC Preparation: 2012-01-10

Analyzed By: AR
Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	25.5	mg/L	1	25.0	<0.265	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	25.0	mg/L	1	25.0	<0.265	100	90 - 110	2	20

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

Laboratory Control Spike (LCS-1)

QC Batch: 87752
Prep Batch: 74518

Date Analyzed: 2012-01-11
QC Preparation: 2012-01-10

Analyzed By: AR
Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate		1	25.6	mg/L	1	25.0	<0.177	102	90 - 110

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Sulfate		1	25.5	mg/L	1	25.0	<0.177	102	90 - 110	0	20

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

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Laboratory Control Spike (LCS-1)

QC Batch: 87753
Prep Batch: 74519

Date Analyzed: 2012-01-11
QC Preparation: 2012-01-11

Analyzed By: AR
Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	25.2	mg/L	1	25.0	<0.265	101	90 - 110

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		1	25.1	mg/L	1	25.0	<0.265	100	90 - 110	0	20

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

Laboratory Control Spike (LCS-1)

QC Batch: 87753
Prep Batch: 74519

Date Analyzed: 2012-01-11
QC Preparation: 2012-01-11

Analyzed By: AR
Prepared By: AR

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

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Sulfate		1	25.7	mg/L	1	25.0	<0.177	103	90 - 110	0	20

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

Matrix Spike (MS-1) Spiked Sample: 285929

QC Batch: 87691
Prep Batch: 74456

Date Analyzed: 2012-01-09
QC Preparation: 2012-01-09

Analyzed By: AG
Prepared By: AG

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	0.114	mg/L	1	0.100	<0.000400	114	66.9 - 128.2
Toluene		1	0.103	mg/L	1	0.100	<0.000300	103	81.6 - 122.9
Ethylbenzene		1	0.0884	mg/L	1	0.100	<0.000300	88	62.7 - 117.9

continued ...

matrix spikes continued ...

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Xylene		1	0.260	mg/L	1	0.300	<0.000333	87	62.9 - 118.2

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	0.110	mg/L	1	0.100	<0.000400	110	66.9 - 128.2	4	20
Toluene		1	0.101	mg/L	1	0.100	<0.000300	101	81.6 - 122.9	2	20
Ethylbenzene		1	0.0865	mg/L	1	0.100	<0.000300	86	62.7 - 117.9	2	20
Xylene		1	0.257	mg/L	1	0.300	<0.000333	86	62.9 - 118.2	1	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.0981	0.103	mg/L	1	0.1	98	103	58.6 - 119.7
4-Bromofluorobenzene (4-BFB)	0.0893	0.0958	mg/L	1	0.1	89	96	52.2 - 135.8

Matrix Spike (MS-1) Spiked Sample: 285921

QC Batch: 87752
Prep Batch: 74518

Date Analyzed: 2012-01-11
QC Preparation: 2012-01-10

Analyzed By: AR
Prepared By: AR

Param			MS			Spike	Matrix		Rec.
	F	C	Result	Units	Dil.	Amount	Result	Rec.	Limit
Chloride	Q _n	Q _n	1	158000	mg/L	50	1380	158000	0
									90 - 110

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

Param	F		C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	Q _n	Q _n	1	158000	mg/L	50	1380	158000	0	90 - 110	0	20

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

Matrix Spike (MS-1) Spiked Sample: 285921

QC Batch: 87752
Prep Batch: 74518

Date Analyzed: 2012-01-11
QC Preparation: 2012-01-10

Analyzed By: AR
Prepared By: AR

Report Date: January 17, 2012
115-6403134

Work Order: 12010635
Celero/Rock Queen SWD #1

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Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate	Q*	Q*	1	2820	mg/L	50	1380	1760	77 90 - 110

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	Q*	Q*	1	2820	mg/L	50	1380	1760	77 90 - 110	0	20

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

Matrix Spike (MS-1) Spiked Sample: 285924

QC Batch: 87753
Prep Batch: 74519

Date Analyzed: 2012-01-11
QC Preparation: 2012-01-11

Analyzed By: AR
Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	Q*	Q*	1	121000	mg/L	50	1380	121000	0 90 - 110

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	Q*	Q*	1	121000	mg/L	50	1380	121000	0 90 - 110	0	20

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

Matrix Spike (MS-1) Spiked Sample: 285924

QC Batch: 87753
Prep Batch: 74519

Date Analyzed: 2012-01-11
QC Preparation: 2012-01-11

Analyzed By: AR
Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate	Q*	Q*	1	3290	mg/L	50	1380	2240	76 90 - 110

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	Q*	Q*	1	3300	mg/L	50	1380	2240	77 90 - 110	0	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: 87691

Date Analyzed: 2012-01-09

Analyzed By: AG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.101	101	80 - 120	2012-01-09
Toluene		1	mg/L	0.100	0.0946	95	80 - 120	2012-01-09
Ethylbenzene		1	mg/L	0.100	0.0882	88	80 - 120	2012-01-09
Xylene		1	mg/L	0.300	0.262	87	80 - 120	2012-01-09

Standard (CCV-2)

QC Batch: 87691

Date Analyzed: 2012-01-09

Analyzed By: AG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.101	101	80 - 120	2012-01-09
Toluene		1	mg/L	0.100	0.0957	96	80 - 120	2012-01-09
Ethylbenzene		1	mg/L	0.100	0.0889	89	80 - 120	2012-01-09
Xylene		1	mg/L	0.300	0.260	87	80 - 120	2012-01-09

Standard (CCV-3)

QC Batch: 87691

Date Analyzed: 2012-01-09

Analyzed By: AG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.103	103	80 - 120	2012-01-09
Toluene		1	mg/L	0.100	0.0980	98	80 - 120	2012-01-09
Ethylbenzene		1	mg/L	0.100	0.0918	92	80 - 120	2012-01-09
Xylene		1	mg/L	0.300	0.270	90	80 - 120	2012-01-09

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Standard (ICV-1)

QC Batch: 87752

Date Analyzed: 2012-01-11

Analyzed By: AR

Param	Flag	Cert	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1	mg/L	25.0	24.7	99	90 - 110	2012-01-11

Standard (ICV-1)

QC Batch: 87752

Date Analyzed: 2012-01-11

Analyzed By: AR

Param	Flag	Cert	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Sulfate		1	mg/L	25.0	25.1	100	90 - 110	2012-01-11

Standard (CCV-1)

QC Batch: 87752

Date Analyzed: 2012-01-11

Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1	mg/L	25.0	25.0	100	90 - 110	2012-01-11

Standard (CCV-1)

QC Batch: 87752

Date Analyzed: 2012-01-11

Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Sulfate		1	mg/L	25.0	25.6	102	90 - 110	2012-01-11

Standard (ICV-1)

QC Batch: 87753

Date Analyzed: 2012-01-11

Analyzed By: AR

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Param	Flag	Cert	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1	mg/L	25.0	25.0	100	90 - 110	2012-01-11

Standard (ICV-1)

QC Batch: 87753

Date Analyzed: 2012-01-11

Analyzed By: AR

Param	Flag	Cert	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Sulfate		1	mg/L	25.0	25.6	102	90 - 110	2012-01-11

Standard (CCV-1)

QC Batch: 87753

Date Analyzed: 2012-01-11

Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1	mg/L	25.0	25.0	100	90 - 110	2012-01-11

Standard (CCV-1)

QC Batch: 87753

Date Analyzed: 2012-01-11

Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Sulfate		1	mg/L	25.0	25.5	102	90 - 110	2012-01-11

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	T104704392-11-3	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.
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.



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

Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

Analytical and Quality Control Report

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

Report Date: April 23, 2012

Work Order: 12041218



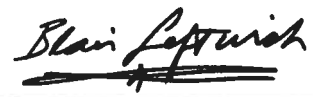
Project Location: Chavez Co., NM
Project Name: Celero/Rock Queen SWD #1
Project Number: 115-6403134A

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
294118	MW-1	water	2012-04-10	17:00	2012-04-12
294119	MW-2	water	2012-04-10	16:30	2012-04-12
294120	MW-3	water	2012-04-10	16:50	2012-04-12
294121	MW-4	water	2012-04-10	16:10	2012-04-12
294122	MW-5	water	2012-04-10	16:00	2012-04-12
294123	MW-6	water	2012-04-10	16:20	2012-04-12
294124	MW-7	water	2012-04-10	16:40	2012-04-12

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

A handwritten signature in black ink, reading "Blair Leftwich". The signature is written in a cursive style and is underlined with a double horizontal line.

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

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Case Narrative

Samples for project Celero/Rock Queen SWD #1 were received by TraceAnalysis, Inc. on 2012-04-12 and assigned to work order 12041218. Samples for work order 12041218 were received intact without headspace and at a temperature of 2.9 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	76629	2012-04-16 at 09:29	90315	2012-04-16 at 11:02
BTEX	S 8021B	76700	2012-04-19 at 10:35	90401	2012-04-20 at 11:02
Chloride (IC)	E 300.0	76666	2012-04-18 at 12:00	90363	2012-04-19 at 07:54
SO4 (IC)	E 300.0	76645	2012-04-17 at 12:00	90338	2012-04-18 at 14:33
SO4 (IC)	E 300.0	76666	2012-04-18 at 12:00	90363	2012-04-19 at 07:54
SO4 (IC)	E 300.0	76736	2012-04-19 at 12:00	90443	2012-04-20 at 09:01
TDS	SM 2540C	76561	2012-04-13 at 09:43	90242	2012-04-15 at 16:30

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 12041218 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.

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115-6403134A

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Celero/Rock Queen SWD #1

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Analytical Report

Sample: 294118 - MW-1

Laboratory: Midland
Analysis: BTEX
QC Batch: 90401
Prep Batch: 76700

Analytical Method: S 8021B
Date Analyzed: 2012-04-20
Sample Preparation: 2012-04-19

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	Q*	2	0.00500	mg/L	1	0.00100
Toluene	Q*,U	2	<0.00100	mg/L	1	0.00100
Ethylbenzene	Q*,U	2	<0.00100	mg/L	1	0.00100
Xylene	Q*,U	2	<0.00100	mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	Q*	Q*	0.0722	mg/L	1	0.100	72	73.5 - 123.1
4-Bromofluorobenzene (4-BFB)			0.0737	mg/L	1	0.100	74	51.1 - 122.9

Sample: 294118 - MW-1

Laboratory: Lubbock
Analysis: Chloride (IC)
QC Batch: 90363
Prep Batch: 76666

Analytical Method: E 300.0
Date Analyzed: 2012-04-19
Sample Preparation: 2012-04-18

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1	153000	mg/L	5000	2.50

Sample: 294118 - MW-1

Laboratory: Lubbock
Analysis: SO4 (IC)
QC Batch: 90338
Prep Batch: 76645

Analytical Method: E 300.0
Date Analyzed: 2012-04-18
Sample Preparation: 2012-04-17

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

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

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Sample: 294118 - MW-1

Laboratory: Midland
Analysis: TDS
QC Batch: 90242
Prep Batch: 76561

Analytical Method: SM 2540C
Date Analyzed: 2012-04-15
Sample Preparation: 2012-04-13

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		2	226000	mg/L	100	10.0

Sample: 294119 - MW-2

Laboratory: Midland
Analysis: BTEX
QC Batch: 90401
Prep Batch: 76700

Analytical Method: S 8021B
Date Analyzed: 2012-04-20
Sample Preparation: 2012-04-19

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	Q ⁿ	2	0.00520	mg/L	1	0.00100
Toluene	Q ⁿ , U	2	<0.00100	mg/L	1	0.00100
Ethylbenzene	Q ⁿ , U	2	<0.00100	mg/L	1	0.00100
Xylene	Q ⁿ , U	2	<0.00100	mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0835	mg/L	1	0.100	84	73.5 - 123.1
4-Bromofluorobenzene (4-BFB)			0.0833	mg/L	1	0.100	83	51.1 - 122.9

Sample: 294119 - MW-2

Laboratory: Lubbock
Analysis: Chloride (IC)
QC Batch: 90363
Prep Batch: 76666

Analytical Method: E 300.0
Date Analyzed: 2012-04-19
Sample Preparation: 2012-04-18

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1	85900	mg/L	2500	2.50

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Sample: 294119 - MW-2

Laboratory: Lubbock
Analysis: SO4 (IC)
QC Batch: 90338
Prep Batch: 76645

Analytical Method: E 300.0
Date Analyzed: 2012-04-18
Sample Preparation: 2012-04-17

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Sulfate		1	1460	mg/L	500	2.50

Sample: 294119 - MW-2

Laboratory: Midland
Analysis: TDS
QC Batch: 90242
Prep Batch: 76561

Analytical Method: SM 2540C
Date Analyzed: 2012-04-15
Sample Preparation: 2012-04-13

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		2	132000	mg/L	100	10.0

Sample: 294120 - MW-3

Laboratory: Midland
Analysis: BTEX
QC Batch: 90315
Prep Batch: 76629

Analytical Method: S 8021B
Date Analyzed: 2012-04-16
Sample Preparation: 2012-04-16

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

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0748	mg/L	1	0.100	75	73.5 - 123.1
4-Bromofluorobenzene (4-BFB)			0.0775	mg/L	1	0.100	78	51.1 - 122.9

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Sample: 294120 - MW-3

Laboratory: Lubbock
Analysis: Chloride (IC)
QC Batch: 90363
Prep Batch: 76666

Analytical Method: E 300.0
Date Analyzed: 2012-04-19
Sample Preparation: 2012-04-18

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1	69800	mg/L	2500	2.50

Sample: 294120 - MW-3

Laboratory: Lubbock
Analysis: SO4 (IC)
QC Batch: 90363
Prep Batch: 76666

Analytical Method: E 300.0
Date Analyzed: 2012-04-19
Sample Preparation: 2012-04-18

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

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

Sample: 294120 - MW-3

Laboratory: Midland
Analysis: TDS
QC Batch: 90242
Prep Batch: 76561

Analytical Method: SM 2540C
Date Analyzed: 2012-04-15
Sample Preparation: 2012-04-13

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		2	104000	mg/L	100	10.0

Sample: 294121 - MW-4

Laboratory: Midland
Analysis: BTEX
QC Batch: 90401
Prep Batch: 76700

Analytical Method: S 8021B
Date Analyzed: 2012-04-20
Sample Preparation: 2012-04-19

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

continued ...

Report Date: April 23, 2012
115-6403134A

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sample 294121 continued ...

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	Q _s	2	0.00650	mg/L	1	0.00100
Toluene	Q _{s,U}	2	<0.00100	mg/L	1	0.00100
Ethylbenzene	Q _{s,U}	2	<0.00100	mg/L	1	0.00100
Xylene	Q _{s,U}	2	<0.00100	mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	Q _{s,r}	Q _{s,r}	0.0712	mg/L	1	0.100	71	73.5 - 123.1
4-Bromofluorobenzene (4-BFB)			0.0715	mg/L	1	0.100	72	51.1 - 122.9

Sample: 294121 - MW-4

Laboratory: Lubbock
Analysis: Chloride (IC)
QC Batch: 90363
Prep Batch: 76666

Analytical Method: E 300.0
Date Analyzed: 2012-04-19
Sample Preparation: 2012-04-18

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1	120000	mg/L	2500	2.50

Sample: 294121 - MW-4

Laboratory: Lubbock
Analysis: SO4 (IC)
QC Batch: 90363
Prep Batch: 76666

Analytical Method: E 300.0
Date Analyzed: 2012-04-19
Sample Preparation: 2012-04-18

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Sulfate		1	2020	mg/L	500	2.50

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Sample: 294121 - MW-4

Laboratory: Midland

Analysis: TDS

QC Batch: 90242

Prep Batch: 76561

Analytical Method: SM 2540C

Date Analyzed: 2012-04-15

Sample Preparation: 2012-04-13

Prep Method: N/A

Analyzed By: AR

Prepared By: AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		2	166000	mg/L	100	10.0

Sample: 294122 - MW-5

Laboratory: Midland

Analysis: BTEX

QC Batch: 90315

Prep Batch: 76629

Analytical Method: S 8021B

Date Analyzed: 2012-04-16

Sample Preparation: 2012-04-16

Prep Method: S 5030B

Analyzed By: tc

Prepared By: tc

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0819	mg/L	1	0.100	82	73.5 - 123.1
4-Bromofluorobenzene (4-BFB)			0.0880	mg/L	1	0.100	88	51.1 - 122.9

Sample: 294122 - MW-5

Laboratory: Lubbock

Analysis: Chloride (IC)

QC Batch: 90363

Prep Batch: 76666

Analytical Method: E 300.0

Date Analyzed: 2012-04-19

Sample Preparation: 2012-04-18

Prep Method: N/A

Analyzed By: RL

Prepared By: RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1	44500	mg/L	1000	2.50

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Sample: 294122 - MW-5

Laboratory: Lubbock
Analysis: SO4 (IC)
QC Batch: 90443
Prep Batch: 76736

Analytical Method: E 300.0
Date Analyzed: 2012-04-20
Sample Preparation: 2012-04-19

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Sulfate		1	692	mg/L	200	2.50

Sample: 294122 - MW-5

Laboratory: Midland
Analysis: TDS
QC Batch: 90242
Prep Batch: 76561

Analytical Method: SM 2540C
Date Analyzed: 2012-04-15
Sample Preparation: 2012-04-13

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		2	79100	mg/L	100	10.0

Sample: 294123 - MW-6

Laboratory: Midland
Analysis: BTEX
QC Batch: 90315
Prep Batch: 76629

Analytical Method: S 8021B
Date Analyzed: 2012-04-16
Sample Preparation: 2012-04-16

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	Q*,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	<0.00100	mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0787	mg/L	1	0.100	79	73.5 - 123.1
4-Bromofluorobenzene (4-BFB)			0.0873	mg/L	1	0.100	87	51.1 - 122.9

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Sample: 294123 - MW-6

Laboratory:	Lubbock	Analytical Method:	E 300.0	Prep Method:	N/A
Analysis:	Chloride (IC)	Date Analyzed:	2012-04-19	Analyzed By:	RL
QC Batch:	90363	Sample Preparation:	2012-04-18	Prepared By:	RL
Prep Batch:	76666				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1	2760	mg/L	100	2.50

Sample: 294123 - MW-6

Laboratory:	Lubbock	Analytical Method:	E 300.0	Prep Method:	N/A
Analysis:	SO4 (IC)	Date Analyzed:	2012-04-20	Analyzed By:	RL
QC Batch:	90443	Sample Preparation:	2012-04-19	Prepared By:	RL
Prep Batch:	76736				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Sulfate		1	150	mg/L	50	2.50

Sample: 294123 - MW-6

Laboratory:	Midland	Analytical Method:	SM 2540C	Prep Method:	N/A
Analysis:	TDS	Date Analyzed:	2012-04-15	Analyzed By:	AR
QC Batch:	90242	Sample Preparation:	2012-04-13	Prepared By:	AR
Prep Batch:	76561				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		2	4740	mg/L	5	10.0

Sample: 294124 - MW-7

Laboratory:	Midland	Analytical Method:	S 8021B	Prep Method:	S 5030B
Analysis:	BTEX	Date Analyzed:	2012-04-16	Analyzed By:	tc
QC Batch:	90315	Sample Preparation:	2012-04-16	Prepared By:	tc
Prep Batch:	76629				

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sample 294124 continued . . .

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	Q ₈ , U	2	<0.00100	mg/L	1	0.00100
Toluene	U	2	<0.00100	mg/L	1	0.00100
Ethylbenzene	Q ₈ , U	2	<0.00100	mg/L	1	0.00100
Xylene	Q ₈ , U	2	<0.00100	mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0933	mg/L	1	0.100	93	73.5 - 123.1
4-Bromofluorobenzene (4-BFB)			0.0934	mg/L	1	0.100	93	51.1 - 122.9

Sample: 294124 - MW-7

Laboratory: Lubbock
Analysis: Chloride (IC)
QC Batch: 90363
Prep Batch: 76666

Analytical Method: E 300.0
Date Analyzed: 2012-04-19
Sample Preparation: 2012-04-18

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1	17000	mg/L	500	2.50

Sample: 294124 - MW-7

Laboratory: Lubbock
Analysis: SO4 (IC)
QC Batch: 90443
Prep Batch: 76736

Analytical Method: E 300.0
Date Analyzed: 2012-04-20
Sample Preparation: 2012-04-19

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

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

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Sample: 294124 - MW-7

Laboratory: Midland

Analysis: TDS

QC Batch: 90242

Prep Batch: 76561

Analytical Method: SM 2540C

Date Analyzed: 2012-04-15

Sample Preparation: 2012-04-13

Prep Method: N/A

Analyzed By: AR

Prepared By: AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		2	26000	mg/L	100	10.0

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Method Blanks

Method Blank (1) QC Batch: 90242

QC Batch: 90242
Prep Batch: 76561

Date Analyzed: 2012-04-15
QC Preparation: 2012-04-13

Analyzed By: AR
Prepared By: AR

Parameter	Flag	Cert	MDL Result	Units	RL
Total Dissolved Solids		2	<9.75	mg/L	10

Method Blank (1) QC Batch: 90315

QC Batch: 90315
Prep Batch: 76629

Date Analyzed: 2012-04-16
QC Preparation: 2012-04-16

Analyzed By: tc
Prepared By: tc

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	0.001

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.101	mg/L	1	0.100	101	74.2 - 126
4-Bromofluorobenzene (4-BFB)			0.100	mg/L	1	0.100	100	51.3 - 124.6

Method Blank (1) QC Batch: 90338

QC Batch: 90338
Prep Batch: 76645

Date Analyzed: 2012-04-18
QC Preparation: 2012-04-17

Analyzed By: RL
Prepared By: RL

Parameter	Flag	Cert	MDL Result	Units	RL
Sulfate		1	<0.179	mg/L	2.5

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Method Blank (1) QC Batch: 90363

QC Batch: 90363
Prep Batch: 76666

Date Analyzed: 2012-04-19
QC Preparation: 2012-04-18

Analyzed By: RL
Prepared By: RL

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride		1	<0.209	mg/L	2.5

Method Blank (1) QC Batch: 90363

QC Batch: 90363
Prep Batch: 76666

Date Analyzed: 2012-04-19
QC Preparation: 2012-04-18

Analyzed By: RL
Prepared By: RL

Parameter	Flag	Cert	MDL Result	Units	RL
Sulfate		1	<0.179	mg/L	2.5

Method Blank (1) QC Batch: 90401

QC Batch: 90401
Prep Batch: 76700

Date Analyzed: 2012-04-20
QC Preparation: 2012-04-19

Analyzed By: tc
Prepared By: tc

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	0.001

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.105	mg/L	1	0.100	105	74.2 - 126
4-Bromofluorobenzene (4-BFB)			0.101	mg/L	1	0.100	101	51.3 - 124.6

Method Blank (1) QC Batch: 90443

QC Batch: 90443
Prep Batch: 76736

Date Analyzed: 2012-04-20
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Analyzed By: RL
Prepared By: RL

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Parameter	Flag	Cert	MDL Result	Units	RL
Sulfate		1	<0.179	mg/L	2.5

Duplicates (1) Duplicated Sample: 294127

QC Batch: 90242
Prep Batch: 76561

Date Analyzed: 2012-04-15
QC Preparation: 2012-04-13

Analyzed By: AR
Prepared By: AR

Param		Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
Total Dissolved Solids	2	18500	20100	mg/L	100	8	10

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 90242
Prep Batch: 76561

Date Analyzed: 2012-04-15
QC Preparation: 2012-04-13

Analyzed By: AR
Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Total Dissolved Solids		2	963	mg/L	1	1000	<9.75	96	85.5 - 112.7

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

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Total Dissolved Solids		2	910	mg/L	1	1000	<9.75	91	85.5 - 112.7	6	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: 90315
Prep Batch: 76629

Date Analyzed: 2012-04-16
QC Preparation: 2012-04-16

Analyzed By: tc
Prepared By: tc

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		2	0.104	mg/L	1	0.100	<0.000600	104	79.7 - 117.6
Toluene		2	0.103	mg/L	1	0.100	<0.000400	103	73.9 - 123.9
Ethylbenzene		2	0.101	mg/L	1	0.100	<0.000600	101	76.8 - 120.8
Xylene		2	0.302	mg/L	1	0.300	<0.00130	101	76.2 - 120.5

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

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		2	0.106	mg/L	1	0.100	<0.000600	106	79.7 - 117.6	2	20
Toluene		2	0.106	mg/L	1	0.100	<0.000400	106	73.9 - 123.9	3	20
Ethylbenzene		2	0.104	mg/L	1	0.100	<0.000600	104	76.8 - 120.8	3	20
Xylene		2	0.312	mg/L	1	0.300	<0.00130	104	76.2 - 120.5	3	20

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

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control spikes continued ...

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.0919	0.0923	mg/L	1	0.100	92	92	72.5 - 117
4-Bromofluorobenzene (4-BFB)	0.0912	0.0949	mg/L	1	0.100	91	95	69.4 - 124

Laboratory Control Spike (LCS-1)

QC Batch: 90338
Prep Batch: 76645

Date Analyzed: 2012-04-18
QC Preparation: 2012-04-17

Analyzed By: RL
Prepared By: RL

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate		1	25.2	mg/L	1	25.0	<0.179	101	90 - 110

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Sulfate		1	25.4	mg/L	1	25.0	<0.179	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: 90363
Prep Batch: 76666

Date Analyzed: 2012-04-19
QC Preparation: 2012-04-18

Analyzed By: RL
Prepared By: RL

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	24.8	mg/L	1	25.0	<0.209	99	90 - 110

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		1	24.9	mg/L	1	25.0	<0.209	100	90 - 110	0	20

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

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Laboratory Control Spike (LCS-1)

QC Batch: 90363
Prep Batch: 76666

Date Analyzed: 2012-04-19
QC Preparation: 2012-04-18

Analyzed By: RL
Prepared By: RL

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate		1	25.0	mg/L	1	25.0	<0.179	100	90 - 110

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Sulfate		1	25.0	mg/L	1	25.0	<0.179	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: 90401
Prep Batch: 76700

Date Analyzed: 2012-04-20
QC Preparation: 2012-04-19

Analyzed By: tc
Prepared By: tc

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		2	0.102	mg/L	1	0.100	<0.000600	102	79.7 - 117.6
Toluene		2	0.102	mg/L	1	0.100	<0.000400	102	73.9 - 123.9
Ethylbenzene		2	0.102	mg/L	1	0.100	<0.000600	102	76.8 - 120.8
Xylene		2	0.306	mg/L	1	0.300	<0.00130	102	76.2 - 120.5

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	0.108	mg/L	1	0.100	<0.000600	108	79.7 - 117.6	6	20
Toluene		2	0.108	mg/L	1	0.100	<0.000400	108	73.9 - 123.9	6	20
Ethylbenzene		2	0.109	mg/L	1	0.100	<0.000600	109	76.8 - 120.8	7	20
Xylene		2	0.328	mg/L	1	0.300	<0.00130	109	76.2 - 120.5	7	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)	0.0898	0.0924	mg/L	1	0.100	90	92	72.5 - 117
4-Bromofluorobenzene (4-BFB)	0.0920	0.0933	mg/L	1	0.100	92	93	69.4 - 124

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Laboratory Control Spike (LCS-1)

QC Batch: 90443
Prep Batch: 76736

Date Analyzed: 2012-04-20
QC Preparation: 2012-04-19

Analyzed By: RL
Prepared By: RL

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate		1	25.0	mg/L	1	25.0	<0.179	100	90 - 110

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

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Sulfate		1	24.9	mg/L	1	25.0	<0.179	100	90 - 110	0	20

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

Matrix Spike (MS-1) Spiked Sample: 294303

QC Batch: 90315
Prep Batch: 76629

Date Analyzed: 2012-04-16
QC Preparation: 2012-04-16

Analyzed By: tc
Prepared By: tc

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	
Benzene	Q _n	Q _n	2	0.308	mg/L	10	1.00	0.1368	17	86.6 - 130.3
Toluene			2	1.25	mg/L	10	1.00	0.0521	120	82.2 - 120.1
Ethylbenzene	Q _n	Q _n	2	1.42	mg/L	10	1.00	1.2127	21	66.8 - 119.2
Xylene	Q _n	Q _n	2	2.73	mg/L	10	3.00	1.5002	41	66.5 - 118.4

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit	
Benzene	Q _n	Q _n	2	0.338	mg/L	10	1.00	0.1368	20	86.6 - 130.3	9	20
Toluene			2	1.19	mg/L	10	1.00	0.0521	114	82.2 - 120.1	5	20
Ethylbenzene	Q _n	Q _n	2	1.47	mg/L	10	1.00	1.2127	26	66.8 - 119.2	4	20
Xylene	Q _n	Q _n	2	2.81	mg/L	10	3.00	1.5002	44	66.5 - 118.4	3	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.957	1.04	mg/L	10	1	96	104	73.2 - 116.6
4-Bromofluorobenzene (4-BFB)	0.980	1.03	mg/L	10	1	98	103	64.8 - 125.7

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Matrix Spike (MS-1) Spiked Sample: 294377

QC Batch: 90338
Prep Batch: 76645

Date Analyzed: 2012-04-18
QC Preparation: 2012-04-17

Analyzed By: RL
Prepared By: RL

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate		1	125	mg/L	5	104	27.85	93	90 - 110

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	130	mg/L	5	104	27.85	98	90 - 110	4	20

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

Matrix Spike (MS-1) Spiked Sample: 294125

QC Batch: 90363
Prep Batch: 76666

Date Analyzed: 2012-04-19
QC Preparation: 2012-04-18

Analyzed By: RL
Prepared By: RL

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	117000	mg/L	2500	52100	67085	96	90 - 110

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	115000	mg/L	2500	52100	67085	92	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: 294125

QC Batch: 90363
Prep Batch: 76666

Date Analyzed: 2012-04-19
QC Preparation: 2012-04-18

Analyzed By: RL
Prepared By: RL

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate		1	54600	mg/L	2500	52100	844	103	90 - 110

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

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Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Sulfate		1	52800	mg/L	2500	52100	844	100	90 - 110	3	20

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

Matrix Spike (MS-1) Spiked Sample: 294170

QC Batch: 90401
Prep Batch: 76700

Date Analyzed: 2012-04-20
QC Preparation: 2012-04-19

Analyzed By: tc
Prepared By: tc

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	Q ⁿ	Q ⁿ	2	<0.000600	mg/L	1	0.100	<0.000600	0 86.6 - 130.3
Toluene	Q ⁿ	Q ⁿ	2	<0.000400	mg/L	1	0.100	<0.000400	0 82.2 - 120.1
Ethylbenzene	Q ⁿ	Q ⁿ	2	<0.000600	mg/L	1	0.100	<0.000600	0 66.8 - 119.2
Xylene	Q ⁿ	Q ⁿ	2	<0.00130	mg/L	1	0.300	<0.00130	0 66.5 - 118.4

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene	Q ⁿ	Q ⁿ	2	<0.000600	mg/L	1	0.100	<0.000600	0 86.6 - 130.3	0	20
Toluene	Q ⁿ	Q ⁿ	2	<0.000400	mg/L	1	0.100	<0.000400	0 82.2 - 120.1	0	20
Ethylbenzene	Q ⁿ	Q ⁿ	2	<0.000600	mg/L	1	0.100	<0.000600	0 66.8 - 119.2	0	20
Xylene	Q ⁿ	Q ⁿ	2	<0.00130	mg/L	1	0.300	<0.00130	0 66.5 - 118.4	0	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)	0.0780	0.0955	mg/L	1	0.1	78	96	73.2 - 116.6
4-Bromofluorobenzene (4-BFB)	0.0747	0.0956	mg/L	1	0.1	75	96	64.8 - 125.7

Matrix Spike (MS-1) Spiked Sample: 294124

QC Batch: 90443
Prep Batch: 76736

Date Analyzed: 2012-04-20
QC Preparation: 2012-04-19

Analyzed By: RL
Prepared By: RL

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate		1	2200	mg/L	100	2080	151	98	90 - 110

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

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Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Sulfate		1	2220	mg/L	100	2080	151	99	90 - 110	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: 90315

Date Analyzed: 2012-04-16

Analyzed By: tc

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		2	mg/L	0.100	0.110	110	80 - 120	2012-04-16
Toluene		2	mg/L	0.100	0.110	110	80 - 120	2012-04-16
Ethylbenzene		2	mg/L	0.100	0.108	108	80 - 120	2012-04-16
Xylene		2	mg/L	0.300	0.324	108	80 - 120	2012-04-16

Standard (CCV-2)

QC Batch: 90315

Date Analyzed: 2012-04-16

Analyzed By: tc

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		2	mg/L	0.100	0.112	112	80 - 120	2012-04-16
Toluene		2	mg/L	0.100	0.112	112	80 - 120	2012-04-16
Ethylbenzene		2	mg/L	0.100	0.113	113	80 - 120	2012-04-16
Xylene		2	mg/L	0.300	0.337	112	80 - 120	2012-04-16

Standard (CCV-1)

QC Batch: 90338

Date Analyzed: 2012-04-18

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	25.5	102	90 - 110	2012-04-18

Standard (CCV-2)

QC Batch: 90338

Date Analyzed: 2012-04-18

Analyzed By: RL

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Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Sulfate		1	mg/L	25.0	25.2	101	90 - 110	2012-04-18

Standard (CCV-1)

QC Batch: 90363

Date Analyzed: 2012-04-19

Analyzed By: RL

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1	mg/L	25.0	24.8	99	90 - 110	2012-04-19

Standard (CCV-1)

QC Batch: 90363

Date Analyzed: 2012-04-19

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	25.4	102	90 - 110	2012-04-19

Standard (CCV-2)

QC Batch: 90363

Date Analyzed: 2012-04-19

Analyzed By: RL

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1	mg/L	25.0	25.0	100	90 - 110	2012-04-19

Standard (CCV-2)

QC Batch: 90363

Date Analyzed: 2012-04-19

Analyzed By: RL

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Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Sulfate		1	mg/L	25.0	25.3	101	90 - 110	2012-04-19

Standard (CCV-2)

QC Batch: 90401

Date Analyzed: 2012-04-20

Analyzed By: tc

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	2012-04-20
Toluene		2	mg/L	0.100	0.105	105	80 - 120	2012-04-20
Ethylbenzene		2	mg/L	0.100	0.104	104	80 - 120	2012-04-20
Xylene		2	mg/L	0.300	0.312	104	80 - 120	2012-04-20

Standard (CCV-3)

QC Batch: 90401

Date Analyzed: 2012-04-20

Analyzed By: tc

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		2	mg/L	0.100	0.103	103	80 - 120	2012-04-20
Toluene		2	mg/L	0.100	0.103	103	80 - 120	2012-04-20
Ethylbenzene		2	mg/L	0.100	0.102	102	80 - 120	2012-04-20
Xylene		2	mg/L	0.300	0.307	102	80 - 120	2012-04-20

Standard (CCV-1)

QC Batch: 90443

Date Analyzed: 2012-04-20

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	24.6	98	90 - 110	2012-04-20

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Standard (CCV-2)

QC Batch: 90443

Date Analyzed: 2012-04-20

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	25.2	101	90 - 110	2012-04-20

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	T104704219-12-7	Lubbock
2	NELAP	T104704392-11-3	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 than 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.
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.

120412/18

Analysis Request of Chain of Custody Record



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

CLIENT NAME: Celero SITE MANAGER: Jeff Kindley
PROJECT NO.: 15-6403134A PROJECT NAME: Celero / Rock Creek #1 sand

LAB ID NUMBER	DATE	TIME	PRESERVATIVE METHOD			SAMPLE IDENTIFICATION
			MATRIX	COMP	GRAB	
121	1/10	1700	12		X	MW-1
122	1/11	1630				MW-2
123	1/11	1650				MW-3
124	1/11	1610				MW-4
125	1/11	1600				MW-5
126	1/11	1620				MW-6
127	1/11	1610				MW-7

RELINQUISHED BY: (Signature) [Signature] Date: 4/17/12 Time: 11:50
RELINQUISHED BY: (Signature) [Signature] Date: 4/17/12 Time: 11:50
RELINQUISHED BY: (Signature) [Signature] Date: 4/17/12 Time: 11:50

RECEIVING LABORATORY: True ADDRESS: Midland STATE: TX ZIP: 79701 PHONE: 682-4559
CITY: Midland DATE: 4/17/12 TIME: 9:00
CONTACT: Jeff Kindley

REMARKS: AS ZN 59086
3.2
3.1
290 intact

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

PAGE: 1 OF: 1

ANALYSIS REQUEST
(Circle or Specify Method No.)

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 Cr Pb Hg Se	
TCLP Volatiles	
TCLP Semi Volatiles	
RCI	
GC/MS Vol. 8240/8260/624	
GC/MS Semi. Vol. 8270/825	
PCB's 8080/608	
Pest. 808/608	
Chlordane	
Gamma Spec.	
Alpha Beta (Air)	
PLM (Asbestos)	
Major Anions/Cations, pH, TS	

SAMPLED BY: (Print & Initial) JRS Date: 4/12/12 Time: 11:12

SAMPLE SHIPPED BY: (Circle) BUS AIRBILL #: 1175
FEDEX AND DELIVERED UPS
OTHER: UPS

TETRA TECH CONTACT PERSON: Jeff Kindley Results by: Jeff Kindley

RUSH Charges Authorized: Yes No



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

Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

Analytical and Quality Control Report

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

Report Date: August 7, 2012

Work Order: 12072701



Project Location: Chavez Co., NM
Project Name: Celero/Rock Queen SWD #1
Project Number: 115-6403134A

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
304903	MW-1	water	2012-07-24	14:10	2012-07-26
304904	MW-3	water	2012-07-24	14:20	2012-07-26
304905	MW-7	water	2012-07-24	14:30	2012-07-26
304906	MW-2	water	2012-07-24	14:45	2012-07-26
304907	MW-6	water	2012-07-24	14:55	2012-07-26
304908	MW-4	water	2012-07-24	15:10	2012-07-26
304909	MW-5	water	2012-07-24	15:20	2012-07-26

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

This report consists of a total of 24 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.

A handwritten signature in black ink that reads "Michael Abel". The signature is written in a cursive style with a large, stylized 'M' and 'A'.

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

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Case Narrative

Samples for project Celero/Rock Queen SWD #1 were received by TraceAnalysis, Inc. on 2012-07-26 and assigned to work order 12072701. Samples for work order 12072701 were received intact without headspace and at a temperature of 4.0 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	79320	2012-08-01 at 15:45	93574	2012-08-01 at 15:45
BTEX	S 8021B	79393	2012-08-03 at 16:37	93654	2012-08-03 at 16:37
BTEX	S 8021B	79409	2012-08-06 at 13:02	93674	2012-08-06 at 13:02
Chloride (IC)	E 300.0	79317	2012-08-01 at 09:17	93593	2012-08-02 at 11:18
Chloride (IC)	E 300.0	79317	2012-08-01 at 09:17	93594	2012-08-03 at 11:19

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 12072701 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: 304903 - MW-1

Laboratory: Lubbock
Analysis: BTEX
QC Batch: 93674
Prep Batch: 79409

Analytical Method: S 8021B
Date Analyzed: 2012-08-06
Sample Preparation: 2012-08-06

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

Parameter	F	C	SDL Based Result	SQL Based Result	Method Blank Result	Units	Dilution	SDL	SQL (Unadjusted)	MDL (Unadjusted)
Benzene	I	1	0.00180	0.00180	<0.000371	mg/L	1	0.000371	0.001	0.000371
Toluene	U	1	<0.000347	<0.00100	<0.000347	mg/L	1	0.000347	0.001	0.000347
Ethylbenzene	U	1	<0.000326	<0.00100	<0.000326	mg/L	1	0.000326	0.001	0.000326
Xylene	U	1	<0.000357	<0.00100	<0.000357	mg/L	1	0.000357	0.001	0.000357

Surrogate	F	C	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0821	mg/L	1	0.100	82	70 - 130
4-Bromofluorobenzene (4-BFB)	QSR		0.0515	mg/L	1	0.100	52	70 - 130

Sample: 304903 - MW-1

Laboratory: Midland
Analysis: Chloride (IC)
QC Batch: 93593
Prep Batch: 79317

Analytical Method: E 300.0
Date Analyzed: 2012-08-02
Sample Preparation: 2012-08-01

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

Parameter	F	C	SDL Based Result	SQL Based Result	Method Blank Result	Units	Dilution	SDL	SQL (Unadjusted)	MDL (Unadjusted)
Chloride	QSR	2	164000	164000	<2650	mg/L	10000	2650	2.5	0.265

Sample: 304904 - MW-3

Laboratory: Lubbock
Analysis: BTEX
QC Batch: 93654
Prep Batch: 79393

Analytical Method: S 8021B
Date Analyzed: 2012-08-03
Sample Preparation: 2012-08-03

Prep Method: S 5030B
Analyzed By: MT
Prepared By: ZLM

Report Date: August 7, 2012
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Parameter	F	C	SDL Based Result	SQL Based Result	Method Blank Result	Units	Dilution	SDL	SQL (Unadjusted)	MDL (Unadjusted)
Benzene	u	1	<0.000371	<0.00100	<0.000371	mg/L	1	0.000371	0.001	0.000371
Toluene	u	1	<0.000347	<0.00100	<0.000347	mg/L	1	0.000347	0.001	0.000347
Ethylbenzene	u	1	<0.000326	<0.00100	<0.000326	mg/L	1	0.000326	0.001	0.000326
Xylene		1	0.00460	0.00460	<0.000357	mg/L	1	0.000357	0.001	0.000357

Surrogate	F	C	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.108	mg/L	1	0.100	108	70 - 130
4-Bromofluorobenzene (4-BFB)			0.0901	mg/L	1	0.100	90	70 - 130

Sample: 304904 - MW-3

Laboratory: Midland
Analysis: Chloride (IC)
QC Batch: 93593
Prep Batch: 79317

Analytical Method: E 300.0
Date Analyzed: 2012-08-02
Sample Preparation: 2012-08-01

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

Parameter	F	C	SDL Based Result	SQL Based Result	Method Blank Result	Units	Dilution	SDL	SQL (Unadjusted)	MDL (Unadjusted)
Chloride	Qs	2	52000	52000	<1320	mg/L	5000	1320	2.5	0.265

Sample: 304905 - MW-7

Laboratory: Lubbock
Analysis: BTEX
QC Batch: 93654
Prep Batch: 79393

Analytical Method: S 8021B
Date Analyzed: 2012-08-03
Sample Preparation: 2012-08-03

Prep Method: S 5030B
Analyzed By: M'I
Prepared By: ZLM

Parameter	F	C	SDL Based Result	SQL Based Result	Method Blank Result	Units	Dilution	SDL	SQL (Unadjusted)	MDL (Unadjusted)
Benzene	u	1	<0.000371	<0.00100	<0.000371	mg/L	1	0.000371	0.001	0.000371
Toluene	u	1	<0.000347	<0.00100	<0.000347	mg/L	1	0.000347	0.001	0.000347
Ethylbenzene	u	1	<0.000326	<0.00100	<0.000326	mg/L	1	0.000326	0.001	0.000326
Xylene	u	1	<0.000357	<0.00100	<0.000357	mg/L	1	0.000357	0.001	0.000357

Surrogate	F	C	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0976	mg/L	1	0.100	98	70 - 130
4-Bromofluorobenzene (4-BFB)			0.0981	mg/L	1	0.100	98	70 - 130

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Sample: 304905 - MW-7

Laboratory: Midland
Analysis: Chloride (IC) Analytical Method: E 300.0 Prep Method: N/A
QC Batch: 93593 Date Analyzed: 2012-08-02 Analyzed By: AR
Prep Batch: 79317 Sample Preparation: 2012-08-01 Prepared By: AR

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Chloride	Q#	2	37700	37700	<1320	mg/L	5000	1320	2.5	0.265

Sample: 304906 - MW-2

Laboratory: Lubbock
Analysis: BTEX Analytical Method: S 8021B Prep Method: S 5030B
QC Batch: 93654 Date Analyzed: 2012-08-03 Analyzed By: MT
Prep Batch: 79393 Sample Preparation: 2012-08-03 Prepared By: ZLM

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Benzene		1	0.00190	0.00190	<0.000371	mg/L	1	0.000371	0.001	0.000371
Toluene	u	1	<0.000347	<0.00100	<0.000347	mg/L	1	0.000347	0.001	0.000347
Ethylbenzene	u	1	<0.000326	<0.00100	<0.000326	mg/L	1	0.000326	0.001	0.000326
Xylene	u	1	<0.000357	<0.00100	<0.000357	mg/L	1	0.000357	0.001	0.000357

Surrogate	F	C	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TF ₃ T)			0.0789	mg/L	1	0.100	79	70 - 130
4-Bromofluorobenzene (4-BFB)			0.0750	mg/L	1	0.100	75	70 - 130

Sample: 304906 - MW-2

Laboratory: Midland
Analysis: Chloride (IC) Analytical Method: E 300.0 Prep Method: N/A
QC Batch: 93593 Date Analyzed: 2012-08-02 Analyzed By: AR
Prep Batch: 79317 Sample Preparation: 2012-08-01 Prepared By: AR

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Chloride	Q#	2	97100	97100	<1320	mg/L	5000	1320	2.5	0.265

Report Date: August 7, 2012
115-6403134A

Work Order: 12072701
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Sample: 304907 - MW-6

Laboratory: Lubbock

Analysis: BTEX

QC Batch: 93574

Prep Batch: 79320

Analytical Method: S 8021B

Date Analyzed: 2012-08-01

Sample Preparation: 2012-08-01

Prep Method: S 5030B

Analyzed By: ZLM

Prepared By: ZLM

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Benzene	U	1	<0.000371	<0.00100	<0.000371	mg/L	1	0.000371	0.001	0.000371
Toluene	U	1	<0.000347	<0.00100	<0.000347	mg/L	1	0.000347	0.001	0.000347
Ethylbenzene	U	1	<0.000326	<0.00100	<0.000326	mg/L	1	0.000326	0.001	0.000326
Xylene	U	1	0.000700	<0.00100	0.000700	mg/L	1	0.000357	0.001	0.000357

Surrogate	F	C	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0891	mg/L	1	0.100	89	70 - 130
4-Bromofluorobenzene (4-BFB)			0.0915	mg/L	1	0.100	92	70 - 130

Sample: 304907 - MW-6

Laboratory: Midland

Analysis: Chloride (IC)

QC Batch: 93594

Prep Batch: 79317

Analytical Method: E 300.0

Date Analyzed: 2012-08-03

Sample Preparation: 2012-08-01

Prep Method: N/A

Analyzed By: AR

Prepared By: AR

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Chloride		2	1470	1470	<26.5	mg/L	100	26.5	2.5	0.265

Sample: 304908 - MW-4

Laboratory: Lubbock

Analysis: BTEX

QC Batch: 93654

Prep Batch: 79393

Analytical Method: S 8021B

Date Analyzed: 2012-08-03

Sample Preparation: 2012-08-03

Prep Method: S 5030B

Analyzed By: MT

Prepared By: ZLM

Parameter	F	C	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Benzene		1	0.00270	0.00270	<0.000371	mg/L	1	0.000371	0.001	0.000371
Toluene	U	1	<0.000347	<0.00100	<0.000347	mg/L	1	0.000347	0.001	0.000347
Ethylbenzene	U	1	<0.000326	<0.00100	<0.000326	mg/L	1	0.000326	0.001	0.000326
Xylene	U	1	<0.000357	<0.00100	<0.000357	mg/L	1	0.000357	0.001	0.000357

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Surrogate	F	C	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0759	mg/L	1	0.100	76	70 - 130
4-Bromofluorobenzene (4-BFB)			0.0714	mg/L	1	0.100	71	70 - 130

Sample: 304908 - MW-4

Laboratory: Midland
Analysis: Chloride (IC)
QC Batch: 93594
Prep Batch: 79317

Analytical Method: E 300.0
Date Analyzed: 2012-08-03
Sample Preparation: 2012-08-01

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

Parameter	F	C	SDL Based Result	SQL Based Result	Method Blank Result	Units	Dilution	SDL	SQL (Unadjusted)	MDL (Unadjusted)
Chloride		2	119000	119000	<2650	mg/L	10000	2650	2.5	0.265

Sample: 304909 - MW-5

Laboratory: Lubbock
Analysis: BTEX
QC Batch: 93574
Prep Batch: 79320

Analytical Method: S 8021B
Date Analyzed: 2012-08-01
Sample Preparation: 2012-08-01

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

Parameter	F	C	SDL Based Result	SQL Based Result	Method Blank Result	Units	Dilution	SDL	SQL (Unadjusted)	MDL (Unadjusted)
Benzene	u	1	<0.000371	<0.00100	<0.000371	mg/L	1	0.000371	0.001	0.000371
Toluene	u	1	<0.000347	<0.00100	<0.000347	mg/L	1	0.000347	0.001	0.000347
Ethylbenzene	u	1	<0.000326	<0.00100	<0.000326	mg/L	1	0.000326	0.001	0.000326
Xylene	u	1	<0.000357	<0.00100	0.000700	mg/L	1	0.000357	0.001	0.000357

Surrogate	F	C	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0858	mg/L	1	0.100	86	70 - 130
4-Bromofluorobenzene (4-BFB)			0.0887	mg/L	1	0.100	89	70 - 130

Sample: 304909 - MW-5

Laboratory: Midland
Analysis: Chloride (IC)
QC Batch: 93594
Prep Batch: 79317

Analytical Method: E 300.0
Date Analyzed: 2012-08-03
Sample Preparation: 2012-08-01

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

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Parameter	F	C	SDL Based Result	SQL Based Result	Method Blank Result	Units	Dilution	SDL	SQL (Unadjusted)	MDL (Unadjusted)
Chloride		2	19900	19900	<132	mg/L	500	132	2.5	0.265

Method Blanks

Method Blank (1)

QC Batch: 93574
Prep Batch: 79320

Date Analyzed: 2012-08-01
QC Preparation: 2012-08-01

Analyzed By: ZLM
Prepared By: ZLM

Parameter	F	C	Result	Units	Reporting Limits
Benzene		1	<0.000371	mg/L	0.000371
Toluene		1	<0.000347	mg/L	0.000347
Ethylbenzene		1	<0.000326	mg/L	0.000326
Xylene		1	0.000700	mg/L	0.000357

Surrogate	F	C	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0902	mg/L	1	0.100	90	70 - 130
4-Bromofluorobenzene (4-BFB)			0.0928	mg/L	1	0.100	93	70 - 130

Method Blank (1)

QC Batch: 93593
Prep Batch: 79317

Date Analyzed: 2012-08-02
QC Preparation: 2012-08-01

Analyzed By: AR
Prepared By: AR

Parameter	F	C	Result	Units	Reporting Limits
Chloride		2	0.794	mg/L	0.265

Method Blank (1)

QC Batch: 93594
Prep Batch: 79317

Date Analyzed: 2012-08-03
QC Preparation: 2012-08-01

Analyzed By: AR
Prepared By: AR

Parameter	F	C	Result	Units	Reporting Limits
Chloride		2	0.747	mg/L	0.265

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Method Blank (1)

QC Batch: 93654
Prep Batch: 79393

Date Analyzed: 2012-08-03
QC Preparation: 2012-08-03

Analyzed By: MT
Prepared By: ZLM

Parameter	F	C	Result	Units	Reporting Limits
Benzene		1	<0.000371	mg/L	0.000371
Toluene		1	<0.000347	mg/L	0.000347
Ethylbenzene		1	<0.000326	mg/L	0.000326
Xylene		1	<0.000357	mg/L	0.000357

Surrogate	F	C	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0984	mg/L	1	0.100	98	70 - 130
4-Bromofluorobenzene (4-BFB)			0.100	mg/L	1	0.100	100	70 - 130

Method Blank (1)

QC Batch: 93674
Prep Batch: 79409

Date Analyzed: 2012-08-06
QC Preparation: 2012-08-06

Analyzed By: ZLM
Prepared By: ZLM

Parameter	F	C	Result	Units	Reporting Limits
Benzene		1	<0.000371	mg/L	0.000371
Toluene		1	<0.000347	mg/L	0.000347
Ethylbenzene		1	<0.000326	mg/L	0.000326
Xylene		1	<0.000357	mg/L	0.000357

Surrogate	F	C	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.102	mg/L	1	0.100	102	70 - 130
4-Bromofluorobenzene (4-BFB)			0.105	mg/L	1	0.100	105	70 - 130

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 93574
Prep Batch: 79320

Date Analyzed: 2012-08-01
QC Preparation: 2012-08-01

Analyzed By: ZLM
Prepared By: ZLM

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	0.0911	mg/L	1	0.100	<0.000371	91	78.6 - 120
Toluene		1	0.0908	mg/L	1	0.100	<0.000347	91	79.6 - 120
Ethylbenzene		1	0.0947	mg/L	1	0.100	<0.000326	95	80 - 120
Xylene		1	0.280	mg/L	1	0.300	0.0007	93	79.3 - 120

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

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	0.0915	mg/L	1	0.100	<0.000371	92	78.6 - 120	0	20
Toluene		1	0.0910	mg/L	1	0.100	<0.000347	91	79.6 - 120	0	20
Ethylbenzene		1	0.0963	mg/L	1	0.100	<0.000326	96	80 - 120	2	20
Xylene		1	0.281	mg/L	1	0.300	0.0007	94	79.3 - 120	0	20

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

Surrogate	F	C	LCS Result	LCS Result	Units	Dil.	Spike Amount	LCS Rec.	LCS Rec.	Rec. Limit
Trifluorotoluene (TFT)			0.0891	0.0889	mg/L	1	0.100	89	89	70 - 130
4-Bromofluorobenzene (4-BFB)			0.0877	0.0887	mg/L	1	0.100	88	89	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 93593
Prep Batch: 79317

Date Analyzed: 2012-08-02
QC Preparation: 2012-08-01

Analyzed By: AR
Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		2	25.4	mg/L	1	25.0	<0.265	102	90 - 110

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

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		2	25.8	mg/L	1	25.0	<0.265	103	90 - 110	2	20

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

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Laboratory Control Spike (LCS-1)

QC Batch: 93594
Prep Batch: 79317

Date Analyzed: 2012-08-03
QC Preparation: 2012-08-01

Analyzed By: AR
Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		2	25.6	mg/L	1	25.0	<0.265	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		2	25.5	mg/L	1	25.0	<0.265	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: 93654
Prep Batch: 79393

Date Analyzed: 2012-08-03
QC Preparation: 2012-08-03

Analyzed By: MT
Prepared By: ZLM

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	0.0971	mg/L	1	0.100	<0.000371	97	78.6 - 120
Toluene		1	0.101	mg/L	1	0.100	<0.000347	101	79.6 - 120
Ethylbenzene		1	0.104	mg/L	1	0.100	<0.000326	104	80 - 120
Xylene		1	0.308	mg/L	1	0.300	<0.000357	102	79.3 - 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	0.0986	mg/L	1	0.100	<0.000371	99	78.6 - 120	2	20
Toluene		1	0.102	mg/L	1	0.100	<0.000347	102	79.6 - 120	1	20
Ethylbenzene		1	0.106	mg/L	1	0.100	<0.000326	106	80 - 120	2	20
Xylene		1	0.311	mg/L	1	0.300	<0.000357	104	79.3 - 120	1	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)			0.0967	0.0969	mg/L	1	0.100	97	97	70 - 130
4-Bromofluorobenzene (4-BFB)			0.0949	0.0958	mg/L	1	0.100	95	96	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 93674
Prep Batch: 79409

Date Analyzed: 2012-08-06
QC Preparation: 2012-08-06

Analyzed By: ZLM
Prepared By: ZLM

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Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	0.0983	mg/L	1	0.100	<0.000371	98	78.6 - 120
Toluene		1	0.102	mg/L	1	0.100	<0.000347	102	79.6 - 120
Ethylbenzene		1	0.105	mg/L	1	0.100	<0.000326	105	80 - 120
Xylene		1	0.310	mg/L	1	0.300	<0.000357	103	79.3 - 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	0.102	mg/L	1	0.100	<0.000371	102	78.6 - 120	4	20
Toluene		1	0.106	mg/L	1	0.100	<0.000347	106	79.6 - 120	4	20
Ethylbenzene		1	0.112	mg/L	1	0.100	<0.000326	112	80 - 120	6	20
Xylene		1	0.325	mg/L	1	0.300	<0.000357	108	79.3 - 120	5	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)			0.0976	0.0979	mg/L	1	0.100	98	98	70 - 130
4-Bromofluorobenzene (4-BFB)			0.0962	0.0960	mg/L	1	0.100	96	96	70 - 130

Matrix Spike (MS-1) Spiked Sample: 304906

QC Batch: 93574
Prep Batch: 79320

Date Analyzed: 2012-08-01
QC Preparation: 2012-08-01

Analyzed By: ZLM
Prepared By: ZLM

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	0.0895	mg/L	1	0.100	0.0034	86	42.2 - 136
Toluene		1	0.0756	mg/L	1	0.100	<0.000347	76	44.3 - 133
Ethylbenzene		1	0.0684	mg/L	1	0.100	<0.000326	68	45.6 - 132
Xylene		1	0.200	mg/L	1	0.300	<0.000357	67	44.7 - 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	0.0884	mg/L	1	0.100	0.0034	85	42.2 - 136	1	20
Toluene		1	0.0714	mg/L	1	0.100	<0.000347	71	44.3 - 133	6	20
Ethylbenzene		1	0.0648	mg/L	1	0.100	<0.000326	65	45.6 - 132	5	20
Xylene		1	0.192	mg/L	1	0.300	<0.000357	64	44.7 - 128	4	20

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

Surrogate	F	C	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)			0.0722	0.0680	mg/L	1	0.1	72	68	70 - 130
4-Bromofluorobenzene (4-BFB)			0.0620	0.0617	mg/L	1	0.1	62	62	70 - 130

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Matrix Spike (MS-1) Spiked Sample: 304906

QC Batch: 93593
Prep Batch: 79317

Date Analyzed: 2012-08-02
QC Preparation: 2012-08-01

Analyzed By: AR
Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		2	262000	mg/L	5000	138000	97100	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	Qs	2	263000	mg/L	5000	138000	97100	121	80 - 120	0	20

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

Matrix Spike (MS-1) Spiked Sample: 304907

QC Batch: 93594
Prep Batch: 79317

Date Analyzed: 2012-08-03
QC Preparation: 2012-08-01

Analyzed By: AR
Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		2	4490	mg/L	100	2750	1470	110	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		2	4500	mg/L	100	2750	1470	110	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: 305349

QC Batch: 93654
Prep Batch: 79393

Date Analyzed: 2012-08-03
QC Preparation: 2012-08-03

Analyzed By: MT
Prepared By: ZLM

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	0.102	mg/L	1	0.100	0.0006	101	42.2 - 136
Toluene		1	0.104	mg/L	1	0.100	<0.000347	104	44.3 - 133
Ethylbenzene		1	0.106	mg/L	1	0.100	<0.000326	106	45.6 - 132
Xylene		1	0.312	mg/L	1	0.300	<0.000357	104	44.7 - 128

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

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Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	0.102	mg/L	1	0.100	0.0006	101	42.2 - 136	0	20
Toluene		1	0.106	mg/L	1	0.100	<0.000347	106	44.3 - 133	2	20
Ethylbenzene		1	0.109	mg/L	1	0.100	<0.000326	109	45.6 - 132	3	20
Xylene		1	0.319	mg/L	1	0.300	<0.000357	106	44.7 - 128	2	20

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

Surrogate	F	C	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)			0.0991	0.0988	mg/L	1	0.1	99	99	70 - 130
4-Bromofluorobenzene (4-BFB)			0.0929	0.0921	mg/L	1	0.1	93	92	70 - 130

Matrix Spike (MS-1) Spiked Sample: 305411

QC Batch: 93674
Prep Batch: 79409

Date Analyzed: 2012-08-06
QC Preparation: 2012-08-06

Analyzed By: ZLM
Prepared By: ZLM

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	0.499	mg/L	5	0.500	<0.00186	100	42.2 - 136
Toluene		1	0.522	mg/L	5	0.500	<0.00174	104	44.3 - 133
Ethylbenzene		1	0.532	mg/L	5	0.500	<0.00163	106	45.6 - 132
Xylene		1	1.57	mg/L	5	1.50	<0.00178	105	44.7 - 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	0.488	mg/L	5	0.500	<0.00186	98	42.2 - 136	2	20
Toluene		1	0.513	mg/L	5	0.500	<0.00174	103	44.3 - 133	2	20
Ethylbenzene		1	0.523	mg/L	5	0.500	<0.00163	105	45.6 - 132	2	20
Xylene		1	1.55	mg/L	5	1.50	<0.00178	103	44.7 - 128	1	20

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

Surrogate	F	C	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)			0.498	0.498	mg/L	5	0.5	100	100	70 - 130
4-Bromofluorobenzene (4-BFB)			0.498	0.497	mg/L	5	0.5	100	99	70 - 130

Calibration Standards

Standard (CCV-1)

QC Batch: 93574

Date Analyzed: 2012-08-01

Analyzed By: ZLM

Param	F	C	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.0938	94	80 - 120	2012-08-01
Toluene		1	mg/L	0.100	0.0923	92	80 - 120	2012-08-01
Ethylbenzene		1	mg/L	0.100	0.0963	96	80 - 120	2012-08-01
Xylene		1	mg/L	0.300	0.281	94	80 - 120	2012-08-01

Standard (CCV-2)

QC Batch: 93574

Date Analyzed: 2012-08-01

Analyzed By: ZLM

Param	F	C	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.0896	90	80 - 120	2012-08-01
Toluene		1	mg/L	0.100	0.0880	88	80 - 120	2012-08-01
Ethylbenzene		1	mg/L	0.100	0.0933	93	80 - 120	2012-08-01
Xylene		1	mg/L	0.300	0.273	91	80 - 120	2012-08-01

Standard (CCV-3)

QC Batch: 93574

Date Analyzed: 2012-08-01

Analyzed By: ZLM

Param	F	C	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.0883	88	80 - 120	2012-08-01
Toluene		1	mg/L	0.100	0.0863	86	80 - 120	2012-08-01
Ethylbenzene		1	mg/L	0.100	0.0893	89	80 - 120	2012-08-01
Xylene		1	mg/L	0.300	0.266	89	80 - 120	2012-08-01

Standard (CCV-1)

QC Batch: 93593

Date Analyzed: 2012-08-02

Analyzed By: AR

Report Date: August 7, 2012
115-6403134A

Work Order: 12072701
Celero/Rock Queen SWD #1

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Param	F	C	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		2	mg/L	25.0	25.2	101	90 - 110	2012-08-02

Standard (CCV-2)

QC Batch: 93593

Date Analyzed: 2012-08-02

Analyzed By: AR

Param	F	C	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		2	mg/L	25.0	25.5	102	90 - 110	2012-08-02

Standard (CCV-1)

QC Batch: 93594

Date Analyzed: 2012-08-03

Analyzed By: AR

Param	F	C	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		2	mg/L	25.0	25.5	102	90 - 110	2012-08-03

Standard (CCV-2)

QC Batch: 93594

Date Analyzed: 2012-08-03

Analyzed By: AR

Param	F	C	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		2	mg/L	25.0	25.5	102	90 - 110	2012-08-03

Standard (CCV-1)

QC Batch: 93654

Date Analyzed: 2012-08-03

Analyzed By: MT

Param	F	C	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.101	101	80 - 120	2012-08-03
Toluene		1	mg/L	0.100	0.104	104	80 - 120	2012-08-03

continued ...

Report Date: August 7, 2012
115-6403134A

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Celero/Rock Queen SWD #1

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standard continued ...

Param	F	C	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Ethylbenzene		1	mg/L	0.100	0.108	108	80 - 120	2012-08-03
Xylene		1	mg/L	0.300	0.314	105	80 - 120	2012-08-03

Standard (CCV-2)

QC Batch: 93654

Date Analyzed: 2012-08-03

Analyzed By: MT

Param	F	C	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.100	100	80 - 120	2012-08-03
Toluene		1	mg/L	0.100	0.104	104	80 - 120	2012-08-03
Ethylbenzene		1	mg/L	0.100	0.105	105	80 - 120	2012-08-03
Xylene		1	mg/L	0.300	0.308	103	80 - 120	2012-08-03

Standard (CCV-3)

QC Batch: 93654

Date Analyzed: 2012-08-03

Analyzed By: MT

Param	F	C	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.101	101	80 - 120	2012-08-03
Toluene		1	mg/L	0.100	0.104	104	80 - 120	2012-08-03
Ethylbenzene		1	mg/L	0.100	0.106	106	80 - 120	2012-08-03
Xylene		1	mg/L	0.300	0.312	104	80 - 120	2012-08-03

Standard (CCV-1)

QC Batch: 93674

Date Analyzed: 2012-08-06

Analyzed By: ZLM

Param	F	C	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.101	101	80 - 120	2012-08-06
Toluene		1	mg/L	0.100	0.105	105	80 - 120	2012-08-06
Ethylbenzene		1	mg/L	0.100	0.107	107	80 - 120	2012-08-06
Xylene		1	mg/L	0.300	0.317	106	80 - 120	2012-08-06

Report Date: August 7, 2012
115-6403134A

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Standard (CCV-2)

QC Batch: 93674

Date Analyzed: 2012-08-06

Analyzed By: ZLM

Param	F	C	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.0990	99	80 - 120	2012-08-06
Toluene		1	mg/L	0.100	0.104	104	80 - 120	2012-08-06
Ethylbenzene		1	mg/L	0.100	0.109	109	80 - 120	2012-08-06
Xylene		1	mg/L	0.300	0.313	104	80 - 120	2012-08-06

Standard (CCV-3)

QC Batch: 93674

Date Analyzed: 2012-08-06

Analyzed By: ZLM

Param	F	C	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.0928	93	80 - 120	2012-08-06
Toluene		1	mg/L	0.100	0.0956	96	80 - 120	2012-08-06
Ethylbenzene		1	mg/L	0.100	0.0962	96	80 - 120	2012-08-06
Xylene		1	mg/L	0.300	0.285	95	80 - 120	2012-08-06

Limits of Detection (LOD)

Test	Method	Matrix	Instrument	Analyte	Spike Amount	Pass
BTEX	S 8021B	water	BTEX-1	Benzene	0.000950	Pass
BTEX	S 8021B	water	BTEX-1	Toluene	0.000950	Pass
BTEX	S 8021B	water	BTEX-1	Ethylbenzene	0.000950	Pass
BTEX	S 8021B	water	BTEX-1	Xylene	0.000950	Pass
Chloride (IC)	E 300.0	water	Dionex IC	Chloride	0.00	-

Appendix

Report Definitions

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

Laboratory Certifications

C	Certifying Authority	Certification Number	Laboratory Location
-	NCTRCA	WFWB384444Y0909	TraceAnalysis
-	DBE	VN 20657	TraceAnalysis
-	HUB	1752439743100-86536	TraceAnalysis
-	WBE	237019	TraceAnalysis
1	NELAP	T104704219-12-8	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 than 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.
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 Sample was reran to confirm matrix interference with the surrogate recovery.

Attachments

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

12072701

Analysis Request of Chain of Custody Record

PAGE: 1 OF: 1

ANALYSIS REQUEST
(Circle or Specify Method No.)**TETRA TECH**1910 N. Big Spring St.
Midland, Texas 79705
(432) 682-4559 • Fax (432) 682-3946CLIENT NAME: **Celero Energy** SITE MANAGER: **Jeff Kindley**PROJECT NO.: **115-6403344** PROJECT NAME: **Rock Queen #1 SWP**LAB I.D. NUMBER: **712412** DATE: **1410** TIME: **1410** MATRIX: **X** GRAB: **X** COMP: **X** SAMPLE IDENTIFICATION: **Churn Co**

LAB I.D. NUMBER	DATE	TIME	MATRIX	GRAB	COMP	SAMPLE IDENTIFICATION
904	712412	1410	X	X	X	MW-1
905	1420	1420	X	X	X	MW-3
906	1430	1430	X	X	X	MW-7
907	1445	1445	X	X	X	MW-2
908	1455	1455	X	X	X	MW-6
909	1510	1510	X	X	X	MW-4
910	1520	1520	X	X	X	MW-5

NUMBER OF CONTAINERS	FILTERED (Y/N)	HCL	HNO3	ICE	NONE	PRESERVATIVE METHOD
4	3	X	X	X	X	BTX 8021B
4	3	X	X	X	X	PAH 8270
4	3	X	X	X	X	TCRA Metals Ag As Ba Cd Cr Pb Hg Se
4	3	X	X	X	X	TCLP Metals Ag As Ba Cd Cr Pb Hg Se
4	3	X	X	X	X	TCLP Volatiles
4	3	X	X	X	X	TCLP Semi Volatiles
4	3	X	X	X	X	RCI
4	3	X	X	X	X	GC, MS Vol. 8240/8260/624
4	3	X	X	X	X	GC, MS Seml. Vol. 8270/625
4	3	X	X	X	X	PCB's 8080/608
4	3	X	X	X	X	Pest. 808/608
4	3	X	X	X	X	Chloride
4	3	X	X	X	X	Gamma Spec.
4	3	X	X	X	X	Alpha Beta (Air)
4	3	X	X	X	X	PLM (Asbestos)
4	3	X	X	X	X	Major Anions/Cations, pH, TDS

RELINQUISHED BY: (Signature)	DATE: 1415	RECEIVED BY: (Signature)	DATE: 1415
<i>[Signature]</i>	1415	<i>[Signature]</i>	1415
<i>[Signature]</i>	1415	<i>[Signature]</i>	1415
<i>[Signature]</i>	1415	<i>[Signature]</i>	1415
<i>[Signature]</i>	1415	<i>[Signature]</i>	1415

RECEIVING LABORATORY:	ADDRESS:	CITY:	STATE:	ZIP:	PHONE:	DATE:	TIME:

SAMPLE CONDITION WHEN RECEIVED:	REMARKS:
4C	Midland - 01 Subbed - BTX

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

12073701

Analysis Request of Chain of Custody Record

PAGE: 1 OF: 1

ANALYSIS REQUEST
(Circle or Specify Method No.)**TETRA TECH**1910 N. Big Spring St.
Midland, Texas 79705
(432) 682-4559 • Fax (432) 682-3946CLIENT NAME: **Celero Energy** SITE MANAGER: **Jeff Kindley**PROJECT NO.: **115-6403134** PROJECT NAME: **Rock Queen #1 SWP**LAB ID. NUMBER: **903** DATE: **1410** TIME: **1410** GRAB: **X** COMP: **X** MATRIX: **X** SAMPLE IDENTIFICATION: **Chen Ba**PRESERVATIVE METHOD: **ICE** FILTERED (Y/N): **3** HCL: **3** HNO3: **3** NONE: **3**NUMBER OF CONTAINERS: **4**BTX 8021B: **3**TPH 8015 MOD. TX1005 (Ext. to C35): **3**PAH 8270: **3**RCRA Metals Ag As Ba Cd Cr Pb Hg Se: **3**TCLP Metals Ag As Ba Cd Cr Pb Hg Se: **3**TCLP Volatiles: **3**TCLP Semi Volatiles: **3**RCI: **3**GC/MS Vol. 8240/8260/624: **3**GC/MS Semi. Vol. 8270/625: **3**PCB's 8080/608: **3**Post. 808/608: **3**Chloride: **3**Gamma Spec.: **3**Alpha Beta (Air): **3**PLM (Asbestos): **3**Major Anions/Cations, pH, TDS: **3**

RELINQUISHED BY: (Signature) **[Signature]** Date: **1/15/12** Time: **1415** RECEIVED BY: (Signature) **[Signature]** Date: **1/15/12** Time: **1415**

RELINQUISHED BY: (Signature) **[Signature]** Date: **1/15/12** Time: **1415** RECEIVED BY: (Signature) **[Signature]** Date: **1/15/12** Time: **1415**

RELINQUISHED BY: (Signature) **[Signature]** Date: **1/15/12** Time: **1415** RECEIVED BY: (Signature) **[Signature]** Date: **1/15/12** Time: **1415**

RECEIVING LABORATORY: **Shanda Ward** ADDRESS: **Shanda Ward** CITY: **Shanda Ward** STATE: **Shanda Ward** ZIP: **Shanda Ward** PHONE: **Shanda Ward**

DATE: **7/31/12** TIME: **9:05**

REMARKS: **Midland - Cl Subbiah - BTEX**

43C

Results by: **Jeff Kindley**

RUSH Charges Authorized: **Yes**

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



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

Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

Analytical and Quality Control Report

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

Report Date: November 6, 2012

Work Order: 12102915



Project Location: Chavez Co., NM
Project Name: Celero/Rock Queen SWD #1
Project Number: 115-6403134A

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
312892	MW-1	water	2012-10-25	11:00	2012-10-26
312893	MW-2	water	2012-10-25	10:30	2012-10-26
312894	MW-3	water	2012-10-25	10:50	2012-10-26
312895	MW-4	water	2012-10-25	10:10	2012-10-26
312896	MW-5	water	2012-10-25	10:00	2012-10-26
312897	MW-6	water	2012-10-25	10:20	2012-10-26
312898	MW-7	water	2012-10-25	10:40	2012-10-26

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

This report consists of a total of 33 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

A handwritten signature in black ink that reads "Michael Abel". The signature is written in a cursive style with a large, stylized 'M' and 'A'.

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

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QC Batch 96257 - CCV (2)	28
QC Batch 96258 - CCV (1)	28
QC Batch 96258 - CCV (1)	29
QC Batch 96258 - CCV (2)	29
QC Batch 96258 - CCV (2)	29
QC Batch 96259 - CCV (1)	29
QC Batch 96259 - CCV (1)	30
QC Batch 96259 - CCV (2)	30
QC Batch 96259 - CCV (2)	30
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Case Narrative

Samples for project Celero/Rock Queen SWD #1 were received by TraceAnalysis, Inc. on 2012-10-26 and assigned to work order 12102915. Samples for work order 12102915 were received intact without headspace and at a temperature of 2.5 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	81530	2012-10-31 at 09:16	96190	2012-10-31 at 09:16
BTEX	S 8021B	81633	2012-11-05 at 09:49	96325	2012-11-05 at 09:49
Chloride (IC)	E 300.0	81479	2012-10-29 at 10:22	96257	2012-11-03 at 13:29
Chloride (IC)	E 300.0	81480	2012-10-29 at 10:22	96258	2012-11-03 at 13:30
Chloride (IC)	E 300.0	81500	2012-10-31 at 12:30	96259	2012-11-03 at 13:46
SO4 (IC)	E 300.0	81479	2012-10-29 at 10:22	96257	2012-11-03 at 13:29
SO4 (IC)	E 300.0	81480	2012-10-29 at 10:22	96258	2012-11-03 at 13:30
SO4 (IC)	E 300.0	81500	2012-10-31 at 12:30	96259	2012-11-03 at 13:46
TDS	SM 2540C	81517	2012-10-29 at 09:59	96181	2012-10-30 at 15:00

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 12102915 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.

Report Date: November 6, 2012
115-6403134A

Work Order: 12102915
Celero/Rock Queen SWD #1

Page Number: 6 of 33
Chavez Co., NM

Analytical Report

Sample: 312892 - MW-1

Laboratory: Midland
Analysis: BTEX
QC Batch: 96325
Prep Batch: 81633

Analytical Method: S 8021B
Date Analyzed: 2012-11-05
Sample Preparation: 2012-11-05

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

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	¹ Q _{sr}	Q _{sr}	0.0632	mg/L	1	0.100	63	70 - 130
4-Bromofluorobenzene (4-BFB)	² Q _{sr}	Q _{sr}	0.0379	mg/L	1	0.100	38	70 - 130

Sample: 312892 - MW-1

Laboratory: Midland
Analysis: Chloride (IC)
QC Batch: 96257
Prep Batch: 81479

Analytical Method: E 300.0
Date Analyzed: 2012-11-03
Sample Preparation: 2012-10-29

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1	168000	mg/L	5000	2.50

Sample: 312892 - MW-1

Laboratory: Midland
Analysis: SO4 (IC)
QC Batch: 96257
Prep Batch: 81479

Analytical Method: E 300.0
Date Analyzed: 2012-11-03
Sample Preparation: 2012-10-29

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Sulfate		1	1900	mg/L	50	2.50

Report Date: November 6, 2012
115-6403134A

Work Order: 12102915
Celero/Rock Queen SWD #1

Page Number: 7 of 33
Chavez Co., NM

Sample: 312892 - MW-1

Laboratory: Midland
Analysis: TDS
QC Batch: 96181
Prep Batch: 81517

Analytical Method: SM 2540C
Date Analyzed: 2012-10-30
Sample Preparation: 2012-10-29

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		1	226000	mg/L	100	10.0

Sample: 312893 - MW-2

Laboratory: Midland
Analysis: BTEX
QC Batch: 96190
Prep Batch: 81530

Analytical Method: S 8021B
Date Analyzed: 2012-10-31
Sample Preparation: 2012-10-31

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	U	1	<0.00100	mg/L	1	0.00100
Toluene	U	1	<0.00100	mg/L	1	0.00100
Ethylbenzene	Q, 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)			0.0837	mg/L	1	0.100	84	70 - 130
4-Bromofluorobenzene (4-BFB)			0.0730	mg/L	1	0.100	73	70 - 130

Sample: 312893 - MW-2

Laboratory: Midland
Analysis: Chloride (IC)
QC Batch: 96257
Prep Batch: 81479

Analytical Method: E 300.0
Date Analyzed: 2012-11-03
Sample Preparation: 2012-10-29

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1	45200	mg/L	5000	2.50

Report Date: November 6, 2012
115-6403134A

Work Order: 12102915
Celero/Rock Queen SWD #1

Page Number: 8 of 33
Chavez Co., NM

Sample: 312893 - MW-2

Laboratory: Midland
Analysis: SO4 (IC)
QC Batch: 96257
Prep Batch: 81479

Analytical Method: E 300.0
Date Analyzed: 2012-11-03
Sample Preparation: 2012-10-29

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Sulfate		1	890	mg/L	50	2.50

Sample: 312893 - MW-2

Laboratory: Midland
Analysis: TDS
QC Batch: 96181
Prep Batch: 81517

Analytical Method: SM 2540C
Date Analyzed: 2012-10-30
Sample Preparation: 2012-10-29

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		1	81400	mg/L	100	10.0

Sample: 312894 - MW-3

Laboratory: Midland
Analysis: BTEX
QC Batch: 96190
Prep Batch: 81530

Analytical Method: S 8021B
Date Analyzed: 2012-10-31
Sample Preparation: 2012-10-31

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	U	1	<0.00100	mg/L	1	0.00100
Toluene	U	1	<0.00100	mg/L	1	0.00100
Ethylbenzene	Q, 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)			0.0881	mg/L	1	0.100	88	70 - 130
4-Bromofluorobenzene (4-BFB)			0.0787	mg/L	1	0.100	79	70 - 130

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Sample: 312894 - MW-3

Laboratory:	Midland	Analytical Method:	E 300.0	Prep Method:	N/A
Analysis:	Chloride (IC)	Date Analyzed:	2012-11-03	Analyzed By:	AR
QC Batch:	96258	Sample Preparation:	2012-10-29	Prepared By:	AR
Prep Batch:	81480				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1	84000	mg/L	5000	2.50

Sample: 312894 - MW-3

Laboratory:	Midland	Analytical Method:	E 300.0	Prep Method:	N/A
Analysis:	SO4 (IC)	Date Analyzed:	2012-11-03	Analyzed By:	AR
QC Batch:	96258	Sample Preparation:	2012-10-29	Prepared By:	AR
Prep Batch:	81480				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Sulfate		1	1210	mg/L	50	2.50

Sample: 312894 - MW-3

Laboratory:	Midland	Analytical Method:	SM 2540C	Prep Method:	N/A
Analysis:	TDS	Date Analyzed:	2012-10-30	Analyzed By:	AR
QC Batch:	96181	Sample Preparation:	2012-10-29	Prepared By:	AR
Prep Batch:	81517				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		1	123000	mg/L	100	10.0

Sample: 312895 - MW-4

Laboratory:	Midland	Analytical Method:	S 8021B	Prep Method:	S 5030B
Analysis:	BTEX	Date Analyzed:	2012-11-05	Analyzed By:	YG
QC Batch:	96325	Sample Preparation:	2012-11-05	Prepared By:	YG
Prep Batch:	81633				

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sample 312895 continued ...

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	³ Q _{sr}	Q _{sr}	0.0674	mg/L	1	0.100	67	70 - 130
4-Bromofluorobenzene (4-BFB)	⁴ Q _{sr}	Q _{sr}	0.0532	mg/L	1	0.100	53	70 - 130

Sample: 312895 - MW-4

Laboratory: Midland
Analysis: Chloride (IC)
QC Batch: 96258
Prep Batch: 81480

Analytical Method: E 300.0
Date Analyzed: 2012-11-03
Sample Preparation: 2012-10-29

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1	116000	mg/L	5000	2.50

Sample: 312895 - MW-4

Laboratory: Midland
Analysis: SO4 (IC)
QC Batch: 96258
Prep Batch: 81480

Analytical Method: E 300.0
Date Analyzed: 2012-11-03
Sample Preparation: 2012-10-29

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Sulfate		1	2230	mg/L	50	2.50

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Sample: 312895 - MW-4

Laboratory: Midland

Analysis: TDS

QC Batch: 96181

Prep Batch: 81517

Analytical Method: SM 2540C

Date Analyzed: 2012-10-30

Sample Preparation: 2012-10-29

Prep Method: N/A

Analyzed By: AR

Prepared By: AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		1	177000	mg/L	100	10.0

Sample: 312896 - MW-5

Laboratory: Midland

Analysis: BTEX

QC Batch: 96190

Prep Batch: 81530

Analytical Method: S 8021B

Date Analyzed: 2012-10-31

Sample Preparation: 2012-10-31

Prep Method: S 5030B

Analyzed By: YG

Prepared By: YG

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	U	1	<0.00100	mg/L	1	0.00100
Toluene	U	1	<0.00100	mg/L	1	0.00100
Ethylbenzene	Qs, 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)			0.0852	mg/L	1	0.100	85	70 - 130
4-Bromofluorobenzene (4-BFB)			0.0908	mg/L	1	0.100	91	70 - 130

Sample: 312896 - MW-5

Laboratory: Midland

Analysis: Chloride (IC)

QC Batch: 96259

Prep Batch: 81500

Analytical Method: E 300.0

Date Analyzed: 2012-11-03

Sample Preparation: 2012-10-31

Prep Method: N/A

Analyzed By: AR

Prepared By: AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1	23500	mg/L	5000	2.50

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Sample: 312896 - MW-5

Laboratory: Midland
Analysis: SO4 (IC)
QC Batch: 96259
Prep Batch: 81500

Analytical Method: E 300.0
Date Analyzed: 2012-11-03
Sample Preparation: 2012-10-31

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Sulfate		1	1050	mg/L	50	2.50

Sample: 312896 - MW-5

Laboratory: Midland
Analysis: TDS
QC Batch: 96181
Prep Batch: 81517

Analytical Method: SM 2540C
Date Analyzed: 2012-10-30
Sample Preparation: 2012-10-29

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		1	45200	mg/L	100	10.0

Sample: 312897 - MW-6

Laboratory: Midland
Analysis: BTEX
QC Batch: 96190
Prep Batch: 81530

Analytical Method: S 8021B
Date Analyzed: 2012-10-31
Sample Preparation: 2012-10-31

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	U	1	<0.00100	mg/L	1	0.00100
Toluene	U	1	<0.00100	mg/L	1	0.00100
Ethylbenzene	Q, 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)			0.0891	mg/L	1	0.100	89	70 - 130
4-Bromofluorobenzene (4-BFB)			0.0845	mg/L	1	0.100	84	70 - 130

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Sample: 312897 - MW-6

Laboratory: Midland	Analytical Method: E 300.0	Prep Method: N/A
Analysis: Chloride (IC)	Date Analyzed: 2012-11-03	Analyzed By: AR
QC Batch: 96259	Sample Preparation: 2012-10-31	Prepared By: AR
Prep Batch: 81500		

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1	732	mg/L	100	2.50

Sample: 312897 - MW-6

Laboratory: Midland	Analytical Method: E 300.0	Prep Method: N/A
Analysis: SO4 (IC)	Date Analyzed: 2012-11-03	Analyzed By: AR
QC Batch: 96259	Sample Preparation: 2012-10-31	Prepared By: AR
Prep Batch: 81500		

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Sulfate		1	142	mg/L	10	2.50

Sample: 312897 - MW-6

Laboratory: Midland	Analytical Method: SM 2540C	Prep Method: N/A
Analysis: TDS	Date Analyzed: 2012-10-30	Analyzed By: AR
QC Batch: 96181	Sample Preparation: 2012-10-29	Prepared By: AR
Prep Batch: 81517		

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		1	1470	mg/L	5	10.0

Sample: 312898 - MW-7

Laboratory: Midland	Analytical Method: S 8021B	Prep Method: S 5030B
Analysis: BTEX	Date Analyzed: 2012-10-31	Analyzed By: YG
QC Batch: 96190	Sample Preparation: 2012-10-31	Prepared By: YG
Prep Batch: 81530		

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Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	u	1	<0.00100	mg/L	1	0.00100
Toluene	u	1	<0.00100	mg/L	1	0.00100
Ethylbenzene	Q,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)			0.0850	mg/L	1	0.100	85	70 - 130
4-Bromofluorobenzene (4-BFB)			0.0767	mg/L	1	0.100	77	70 - 130

Sample: 312898 - MW-7

Laboratory: Midland
Analysis: Chloride (IC)
QC Batch: 96259
Prep Batch: 81500

Analytical Method: E 300.0
Date Analyzed: 2012-11-03
Sample Preparation: 2012-10-31

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1	40700	mg/L	5000	2.50

Sample: 312898 - MW-7

Laboratory: Midland
Analysis: SO4 (IC)
QC Batch: 96259
Prep Batch: 81500

Analytical Method: E 300.0
Date Analyzed: 2012-11-03
Sample Preparation: 2012-10-31

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Sulfate		1	519	mg/L	50	2.50

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Sample: 312898 - MW-7

Laboratory: Midland
Analysis: TDS
QC Batch: 96181
Prep Batch: 81517

Analytical Method: SM 2540C
Date Analyzed: 2012-10-30
Sample Preparation: 2012-10-29

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		1	54200	mg/L	100	10.0

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Method Blanks

Method Blank (1) QC Batch: 96181

QC Batch: 96181
Prep Batch: 81517

Date Analyzed: 2012-10-30
QC Preparation: 2012-10-29

Analyzed By: AR
Prepared By: AR

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

Method Blank (1) QC Batch: 96190

QC Batch: 96190
Prep Batch: 81530

Date Analyzed: 2012-10-31
QC Preparation: 2012-10-31

Analyzed By: YG
Prepared By: YG

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		1	<0.000600	mg/L	0.001
Toluene		1	<0.000600	mg/L	0.001
Ethylbenzene		1	<0.000800	mg/L	0.001
Xylene		1	<0.000767	mg/L	0.001

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0918	mg/L	1	0.100	92	70 - 130
4-Bromofluorobenzene (4-BFB)			0.0904	mg/L	1	0.100	90	70 - 130

Method Blank (1) QC Batch: 96257

QC Batch: 96257
Prep Batch: 81479

Date Analyzed: 2012-11-03
QC Preparation: 2012-10-29

Analyzed By: AR
Prepared By: AR

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

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Method Blank (1) QC Batch: 96257

QC Batch: 96257 Date Analyzed: 2012-11-03 Analyzed By: AR
Prep Batch: 81479 QC Preparation: 2012-10-29 Prepared By: AR

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

Method Blank (1) QC Batch: 96258

QC Batch: 96258 Date Analyzed: 2012-11-03 Analyzed By: AR
Prep Batch: 81480 QC Preparation: 2012-10-29 Prepared By: AR

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

Method Blank (1) QC Batch: 96258

QC Batch: 96258 Date Analyzed: 2012-11-03 Analyzed By: AR
Prep Batch: 81480 QC Preparation: 2012-10-29 Prepared By: AR

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

Method Blank (1) QC Batch: 96259

QC Batch: 96259 Date Analyzed: 2012-11-03 Analyzed By: AR
Prep Batch: 81500 QC Preparation: 2012-10-31 Prepared By: AR

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

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Method Blank (1) QC Batch: 96259

QC Batch: 96259
Prep Batch: 81500

Date Analyzed: 2012-11-03
QC Preparation: 2012-10-31

Analyzed By: AR
Prepared By: AR

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

Method Blank (1) QC Batch: 96325

QC Batch: 96325
Prep Batch: 81633

Date Analyzed: 2012-11-05
QC Preparation: 2012-11-05

Analyzed By: YG
Prepared By: YG

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		1	<0.000600	mg/L	0.001
Toluene		1	<0.000600	mg/L	0.001
Ethylbenzene		1	<0.000800	mg/L	0.001
Xylene		1	<0.000767	mg/L	0.001

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0855	mg/L	1	0.100	86	70 - 130
4-Bromofluorobenzene (4-BFB)			0.0856	mg/L	1	0.100	86	70 - 130

Duplicates (2) Duplicated Sample: 312898

QC Batch: 96181
Prep Batch: 81517

Date Analyzed: 2012-10-30
QC Preparation: 2012-10-29

Analyzed By: AR
Prepared By: AR

Param		Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
Total Dissolved Solids	1	58100	54200	mg/L	100	7	10
Total Dissolved Solids	1	58100	115000	mg/L	100	7	10

Laboratory Control Spikes

Laboratory Control Spike (LCS-2)

QC Batch: 96181
Prep Batch: 81517

Date Analyzed: 2012-10-30
QC Preparation: 2012-10-29

Analyzed By: AR
Prepared By: AR

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

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Total Dissolved Solids		1	1020	mg/L	1	1000	<9.75	102	90 - 110	5	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: 96190
Prep Batch: 81530

Date Analyzed: 2012-10-31
QC Preparation: 2012-10-31

Analyzed By: YG
Prepared By: YG

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	0.0882	mg/L	1	0.100	<0.000600	88	70 - 130
Toluene		1	0.0899	mg/L	1	0.100	<0.000600	90	70 - 130
Ethylbenzene		1	0.0861	mg/L	1	0.100	<0.000800	86	70 - 130
Xylene		1	0.272	mg/L	1	0.300	<0.000767	91	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		1	0.0869	mg/L	1	0.100	<0.000600	87	70 - 130	2	20
Toluene		1	0.0890	mg/L	1	0.100	<0.000600	89	70 - 130	1	20
Ethylbenzene		1	0.0856	mg/L	1	0.100	<0.000800	86	70 - 130	1	20
Xylene		1	0.270	mg/L	1	0.300	<0.000767	90	70 - 130	1	20

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

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Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.0888	0.0900	mg/L	1	0.100	89	90	70 - 130
4-Bromofluorobenzene (4-BFB)	0.0875	0.0879	mg/L	1	0.100	88	88	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 96257
Prep Batch: 81479

Date Analyzed: 2012-11-03
QC Preparation: 2012-10-29

Analyzed By: AR
Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	23.2	mg/L	1	25.0	<0.265	93	90 - 110

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		1	23.3	mg/L	1	25.0	<0.265	93	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: 96257
Prep Batch: 81479

Date Analyzed: 2012-11-03
QC Preparation: 2012-10-29

Analyzed By: AR
Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate		1	23.5	mg/L	1	25.0	<0.177	94	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	23.6	mg/L	1	25.0	<0.177	94	90 - 110	0	20

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

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Laboratory Control Spike (LCS-1)

QC Batch: 96258
Prep Batch: 81480

Date Analyzed: 2012-11-03
QC Preparation: 2012-10-29

Analyzed By: AR
Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	23.3	mg/L	1	25.0	<0.265	93	90 - 110

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

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		1	23.3	mg/L	1	25.0	<0.265	93	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: 96258
Prep Batch: 81480

Date Analyzed: 2012-11-03
QC Preparation: 2012-10-29

Analyzed By: AR
Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate		1	23.7	mg/L	1	25.0	<0.177	95	90 - 110

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

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Sulfate		1	23.7	mg/L	1	25.0	<0.177	95	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: 96259
Prep Batch: 81500

Date Analyzed: 2012-11-03
QC Preparation: 2012-10-31

Analyzed By: AR
Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	25.2	mg/L	1	25.0	<0.265	101	90 - 110

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

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Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		1	24.3	mg/L	1	25.0	<0.265	97	90 - 110	4	20

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

Laboratory Control Spike (LCS-1)

QC Batch: 96259
Prep Batch: 81500

Date Analyzed: 2012-11-03
QC Preparation: 2012-10-31

Analyzed By: AR
Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate		1	26.7	mg/L	1	25.0	<0.177	107	90 - 110

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

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Sulfate		1	26.5	mg/L	1	25.0	<0.177	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: 96325
Prep Batch: 81633

Date Analyzed: 2012-11-05
QC Preparation: 2012-11-05

Analyzed By: YG
Prepared By: YG

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	0.0908	mg/L	1	0.100	<0.000600	91	70 - 130
Toluene		1	0.0886	mg/L	1	0.100	<0.000600	89	70 - 130
Ethylbenzene		1	0.0823	mg/L	1	0.100	<0.000800	82	70 - 130
Xylene		1	0.259	mg/L	1	0.300	<0.000767	86	70 - 130

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

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	0.0947	mg/L	1	0.100	<0.000600	95	70 - 130	4	20
Toluene		1	0.0931	mg/L	1	0.100	<0.000600	93	70 - 130	5	20
Ethylbenzene		1	0.0874	mg/L	1	0.100	<0.000800	87	70 - 130	6	20
Xylene		1	0.274	mg/L	1	0.300	<0.000767	91	70 - 130	6	20

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

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Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.0820	0.0875	mg/L	1	0.100	82	88	70 - 130
4-Bromofluorobenzene (4-BFB)	0.0847	0.0894	mg/L	1	0.100	85	89	70 - 130

Matrix Spike (MS-1) Spiked Sample: 312882

QC Batch: 96190
Prep Batch: 81530

Date Analyzed: 2012-10-31
QC Preparation: 2012-10-31

Analyzed By: YG
Prepared By: YG

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	0.0834	mg/L	1	0.100	<0.000600	83	70 - 130
Toluene		1	0.0904	mg/L	1	0.100	0.0043	86	70 - 130
Ethylbenzene		1	0.0866	mg/L	1	0.100	0.0048	82	70 - 130
Xylene		1	0.274	mg/L	1	0.300	0.0164	86	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		1	0.0784	mg/L	1	0.100	<0.000600	78	70 - 130	6	20
Toluene		1	0.0775	mg/L	1	0.100	0.0043	73	70 - 130	15	20
Ethylbenzene	Q*	Q*	0.0726	mg/L	1	0.100	0.0048	68	70 - 130	18	20
Xylene		1	0.228	mg/L	1	0.300	0.0164	70	70 - 130	18	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)	0.0909	0.0907	mg/L	1	0.1	91	91	70 - 130
4-Bromofluorobenzene (4-BFB)	0.0885	0.0879	mg/L	1	0.1	88	88	70 - 130

Matrix Spike (MS-1) Spiked Sample: 312891

QC Batch: 96257
Prep Batch: 81479

Date Analyzed: 2012-11-03
QC Preparation: 2012-10-29

Analyzed By: AR
Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	39200	mg/L	1000	30000	8000	104	80 - 120

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

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Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		1	39100	mg/L	1000	30000	8000	104	80 - 120	0	20

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

Matrix Spike (MS-1) Spiked Sample: 312891

QC Batch: 96257
Prep Batch: 81479

Date Analyzed: 2012-11-03
QC Preparation: 2012-10-29

Analyzed By: AR
Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate		1	27300	mg/L	1000	30000	313	90	80 - 120

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Sulfate		1	27200	mg/L	1000	30000	313	90	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: 312895

QC Batch: 96258
Prep Batch: 81480

Date Analyzed: 2012-11-03
QC Preparation: 2012-10-29

Analyzed By: AR
Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	1700000	mg/L	50000	1500000	116000	106	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	1710000	mg/L	50000	1500000	116000	106	80 - 120	1	20

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

Matrix Spike (MS-1) Spiked Sample: 312895

QC Batch: 96258
Prep Batch: 81480

Date Analyzed: 2012-11-03
QC Preparation: 2012-10-29

Analyzed By: AR
Prepared By: AR

Report Date: November 6, 2012
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Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate		1	1340000	mg/L	50000	1500000	<8850	89	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	1350000	mg/L	50000	1500000	<8850	90	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: 312897

QC Batch: 96259
Prep Batch: 81500

Date Analyzed: 2012-11-03
QC Preparation: 2012-10-31

Analyzed By: AR
Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	3750	mg/L	10	3000	732	101	80 - 120

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		1	3800	mg/L	10	3000	732	102	80 - 120	1	20

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

Matrix Spike (MS-1) Spiked Sample: 312897

QC Batch: 96259
Prep Batch: 81500

Date Analyzed: 2012-11-03
QC Preparation: 2012-10-31

Analyzed By: AR
Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate		1	2840	mg/L	10	3000	130	90	80 - 120

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Sulfate		1	2920	mg/L	10	3000	130	93	80 - 120	3	20

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

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Matrix Spike (MS-1) Spiked Sample: 313026

QC Batch: 96325
Prep Batch: 81633

Date Analyzed: 2012-11-05
QC Preparation: 2012-11-05

Analyzed By: YG
Prepared By: YG

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	0.0932	mg/L	1	0.100	<0.000600	93	70 - 130
Toluene		1	0.0917	mg/L	1	0.100	<0.000600	92	70 - 130
Ethylbenzene		1	0.0863	mg/L	1	0.100	<0.000800	86	70 - 130
Xylene		1	0.270	mg/L	1	0.300	<0.000767	90	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		1	0.0949	mg/L	1	0.100	<0.000600	95	70 - 130	2	20
Toluene		1	0.0930	mg/L	1	0.100	<0.000600	93	70 - 130	1	20
Ethylbenzene		1	0.0870	mg/L	1	0.100	<0.000800	87	70 - 130	1	20
Xylene		1	0.273	mg/L	1	0.300	<0.000767	91	70 - 130	1	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.0862	0.0863	mg/L	1	0.1	86	86	70 - 130
4-Bromofluorobenzene (4-BFB)	0.0885	0.0880	mg/L	1	0.1	88	88	70 - 130

Calibration Standards

Standard (CCV-1)

QC Batch: 96190

Date Analyzed: 2012-10-31

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	0.0880	88	80 - 120	2012-10-31
Toluene		1	mg/L	0.100	0.0904	90	80 - 120	2012-10-31
Ethylbenzene		1	mg/L	0.100	0.0872	87	80 - 120	2012-10-31
Xylene		1	mg/L	0.300	0.274	91	80 - 120	2012-10-31

Standard (CCV-2)

QC Batch: 96190

Date Analyzed: 2012-10-31

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	0.0832	83	80 - 120	2012-10-31
Toluene		1	mg/L	0.100	0.0868	87	80 - 120	2012-10-31
Ethylbenzene		1	mg/L	0.100	0.0832	83	80 - 120	2012-10-31
Xylene		1	mg/L	0.300	0.262	87	80 - 120	2012-10-31

Standard (CCV-3)

QC Batch: 96190

Date Analyzed: 2012-10-31

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	0.0950	95	80 - 120	2012-10-31
Toluene		1	mg/L	0.100	0.0935	94	80 - 120	2012-10-31
Ethylbenzene		1	mg/L	0.100	0.0871	87	80 - 120	2012-10-31
Xylene		1	mg/L	0.300	0.273	91	80 - 120	2012-10-31

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Standard (CCV-1)

QC Batch: 96257

Date Analyzed: 2012-11-03

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	23.7	95	90 - 110	2012-11-03

Standard (CCV-1)

QC Batch: 96257

Date Analyzed: 2012-11-03

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	24.4	98	90 - 110	2012-11-03

Standard (CCV-2)

QC Batch: 96257

Date Analyzed: 2012-11-03

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	23.7	95	90 - 110	2012-11-03

Standard (CCV-2)

QC Batch: 96257

Date Analyzed: 2012-11-03

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	24.1	96	90 - 110	2012-11-03

Standard (CCV-1)

QC Batch: 96258

Date Analyzed: 2012-11-03

Analyzed By: AR

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Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1	mg/L	25.0	23.7	95	90 - 110	2012-11-03

Standard (CCV-1)

QC Batch: 96258

Date Analyzed: 2012-11-03

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	24.1	96	90 - 110	2012-11-03

Standard (CCV-2)

QC Batch: 96258

Date Analyzed: 2012-11-03

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	23.7	95	90 - 110	2012-11-03

Standard (CCV-2)

QC Batch: 96258

Date Analyzed: 2012-11-03

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	24.0	96	90 - 110	2012-11-03

Standard (CCV-1)

QC Batch: 96259

Date Analyzed: 2012-11-03

Analyzed By: AR

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Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1	mg/L	25.0	23.7	95	90 - 110	2012-11-03

Standard (CCV-1)

QC Batch: 96259

Date Analyzed: 2012-11-03

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	24.0	96	90 - 110	2012-11-03

Standard (CCV-2)

QC Batch: 96259

Date Analyzed: 2012-11-03

Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1	mg/L	25.0	25.4	102	90 - 110	2012-11-03

Standard (CCV-2)

QC Batch: 96259

Date Analyzed: 2012-11-03

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	27.0	108	90 - 110	2012-11-03

Standard (CCV-1)

QC Batch: 96325

Date Analyzed: 2012-11-05

Analyzed By: YG

Report Date: November 6, 2012
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Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.0891	89	80 - 120	2012-11-05
Toluene		1	mg/L	0.100	0.0870	87	80 - 120	2012-11-05
Ethylbenzene		1	mg/L	0.100	0.0811	81	80 - 120	2012-11-05
Xylene		1	mg/L	0.300	0.255	85	80 - 120	2012-11-05

Standard (CCV-2)

QC Batch: 96325

Date Analyzed: 2012-11-05

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	0.0932	93	80 - 120	2012-11-05
Toluene		1	mg/L	0.100	0.0906	91	80 - 120	2012-11-05
Ethylbenzene		1	mg/L	0.100	0.0840	84	80 - 120	2012-11-05
Xylene		1	mg/L	0.300	0.264	88	80 - 120	2012-11-05

Standard (CCV-3)

QC Batch: 96325

Date Analyzed: 2012-11-05

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	0.0939	94	80 - 120	2012-11-05
Toluene		1	mg/L	0.100	0.0925	92	80 - 120	2012-11-05
Ethylbenzene		1	mg/L	0.100	0.0865	86	80 - 120	2012-11-05
Xylene		1	mg/L	0.300	0.272	91	80 - 120	2012-11-05

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 than 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.
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 Data confirmed by reanalysis.
- 2 Data confirmed by reanalysis.
- 3 Data confirmed by reanalysis.
- 4 Data confirmed by reanalysis.

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Attachments

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

12102915

Analysis Request of Chain of Custody Record

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

CLIENT NAME: Celeco		SITE MANAGER: Jeff Kindley	
PROJECT NO.: 115-6403134A		PROJECT NAME: Celeco-Rock Queen #1 SWD	
LAB I.D. NUMBER		SAMPLE IDENTIFICATION	
	DATE	TIME	GRAB
82892	10/25	1100	X
893		1030	X
894		1050	X
895		1010	X
896		1000	X
897		1020	X
898		1040	X

NUMBER OF CONTAINERS		PRESERVATIVE METHOD	
	NUMBER OF CONTAINERS	HCL	ICE
4	4	X	X
4	4	X	X
4	4	X	X
4	4	X	X
4	4	X	X
4	4	X	X
4	4	X	X

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 Seml. Vol. 8270/625	PCB's 8080/808	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
✓											✓				✓
															✓
															✓
															✓
															✓
															✓
															✓

RECEIVED BY: (Signature) [Signature]		RECEIVED BY: (Signature) [Signature]	
Date: 10-26-11	Time: 14:35	Date: 10-26-11	Time: 14:35
RECEIVED BY: (Signature) [Signature]		RECEIVED BY: (Signature) [Signature]	
Date: 10-26-11	Time: 14:35	Date: 10-26-11	Time: 14:35
RECEIVED BY: (Signature) [Signature]		RECEIVED BY: (Signature) [Signature]	
Date: 10-26-11	Time: 14:35	Date: 10-26-11	Time: 14:35
RECEIVED BY: (Signature) [Signature]		RECEIVED BY: (Signature) [Signature]	
Date: 10-26-11	Time: 14:35	Date: 10-26-11	Time: 14:35

RECEIVING LABORATORY: **Trace**
ADDRESS: **Midland** STATE: **TX** ZIP: **79701**
CONTACT: **Jeff Kindley** PHONE: **(432) 682-4559**

SAMPLE CONDITION WHEN RECEIVED: **0 headspace intact**

REMARKS: **2.5**

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