

1R – 1664

2012 AGWMR

03 / 25 / 2013



TETRA TECH

March 29, 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 Annual Groundwater Sampling Report for the Celero Energy II, LP, Rock Queen Unit Tract 33 Tank Battery, Located in Unit Letter F, Section 23, Township 13 South, Range 31 East, Chaves County, New Mexico (NMOCD 1RP#1664).

Mr. Von Gonten:

This report details the results of the groundwater sampling events performed at the Celero Energy II, LP (Celero), Rock Queen Unit Tract 33 Tank Battery (Site) for 2012. The Site location is shown on Figures 1 and 2.

FACILITY BACKGROUND

Pit Closure

On October 8, 2007, Highlander (Tetra Tech) submitted an Investigation and Characterization work plan (ICP) for an open pit at the Site. The ICP was subsequently approved by the New Mexico Oil Conservation Division (NMOCD).

The Tract 33 Tank Battery pit was dewatered and the residual sludge, tank bottom materials, and liner were removed in September 2007. Removed fluids were placed into an existing SWD system or taken for disposal, while the sludge, tank bottom materials, and liner were disposed of at Gandy-Marley, Inc.'s landfill site in Lovington, New Mexico. Upon completion of the removal of the fluids, sludge, and liner, the underlying soils were visually inspected for signs of impact. Approximately 460 cubic yards of soil were excavated and transported to Gandy-Marley, Inc. for disposal. The pit was excavated to a point where the subsoil would support a soil boring rig.

On October 12, 2009, a report entitled *Assessment and Closure Report for the Pit located at the Rock Queen Unit Track 33 Tank Battery* was submitted to

Tetra Tech

1910 North Big Spring, Midland, TX 79705

Tel 432.682.4559

Fax 432.682.3946

www.tetrattech.com

the NMOCD. The report detailed the closure of the former pit at the facility.

Groundwater Investigation

Between June 2009 and December 2010, Celero installed four 2-inch monitor wells (MW-1 through MW-4) and one 5-inch recovery well (RW-1) to assess the groundwater quality at the Site. The lithology at the Site was relatively consistent with limestone to approximately 10 to 15 feet bgs and with calcareous sand to very fine grain sand to a depth of approximately 110 to 120 feet bgs. From approximately 110 feet bgs to the terminus (approximately 125 to 150 feet bgs) the soils were a gray to red clay.

During the investigation, groundwater was encountered at depths of approximately 111 to 115 feet bgs. Monitor Well MW-1 was drilled into the surrounding underlying clay to 150 feet bgs and installed with 60 feet of 0.02 inch slotted screen. The remaining monitor wells were drilled to depths of 125 feet bgs and installed with 30 feet of 0.02 inch slotted screen. Recovery well RW-1 was drilled to a depth of 120 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 in several wells (MW-1 and RW-1), benzene. 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 December 28, 2009, initial sampling began at the site. During 2010, additional monitor wells were installed and quarterly sampling initiated. During the sampling events, all monitor wells were gauged, purged, and sampled with no PSH measured. Utilizing the water level elevation calculations, groundwater gradient maps were generated for the sampling events with a hydraulic gradient consistently to the south to southwest.

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+. Of the samples collected, two samples, MW-1 on January 21, 2011 (0.0121 mg/L) and on July 28, 2011 (0.0114 mg/L) and RW-1 on April 14, 2011 (0.0124 mg/L) had results which exceeded the NMWQCC standard of 0.01 milligrams per liter (mg/L) of benzene. The remainder of the samples was below the NMWQCC standards with a



majority being at or below detection limits. Chlorides for the sampling period ranged from 45.4 mg/L in up gradient monitor well MW-2 on October 28, 2011 to 88,700 mg/L in monitor well MW-1 on October 11, 2010. With the exception of MW-2, all additional monitor wells exceeded the NMWQCC standard of 250 mg/L chlorides

2012 GROUNDWATER SAMPLING RESULTS

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

On January 4, April 12, July 24, and October 25, 2012, each of the monitor 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 collected and analyzed were below the NMWQCC standard of 0.01 mg/L of benzene. Chlorides ranged for the sampling period ranged from 29.7 mg/L in monitor well MW-2 (October 25, 2012) to 89,400 mg/L in monitor well MW-1 (April 12, 2012). With the exception of monitor well MW-2, all additional monitor wells exceeded the NMWQCC standard of 250 mg/L chlorides. The general chemistry and BTEX analyses are shown in Tables 2 and 3, respectively. Chloride concentration maps for the sampling period 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 four monitor wells (MW-1 through MW-4) bail dry, while recovery well RW-1 does not.

CONCLUSIONS

1. Sampling occurred on January 4, April 12, July 24, and October 25, 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, total dissolved solids (TDS) utilizing method SM2540C.
2. The hydraulic gradient indicates a south to southwesterly direction.

3. All samples for the period were below the NMWQCC standard of 0.01 mg/L of benzene.
4. Chloride concentrations exceed the NMWQCC standards of 250 mg/L in all monitor wells with the exception of monitor well MW-2. For the year, the chloride concentrations at the site ranged from 29.7 mg/L in MW-2 on October 25, 2012 to 89,400 mg/L in MW-1 on April 12, 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 addition of a windmill remediation system 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.

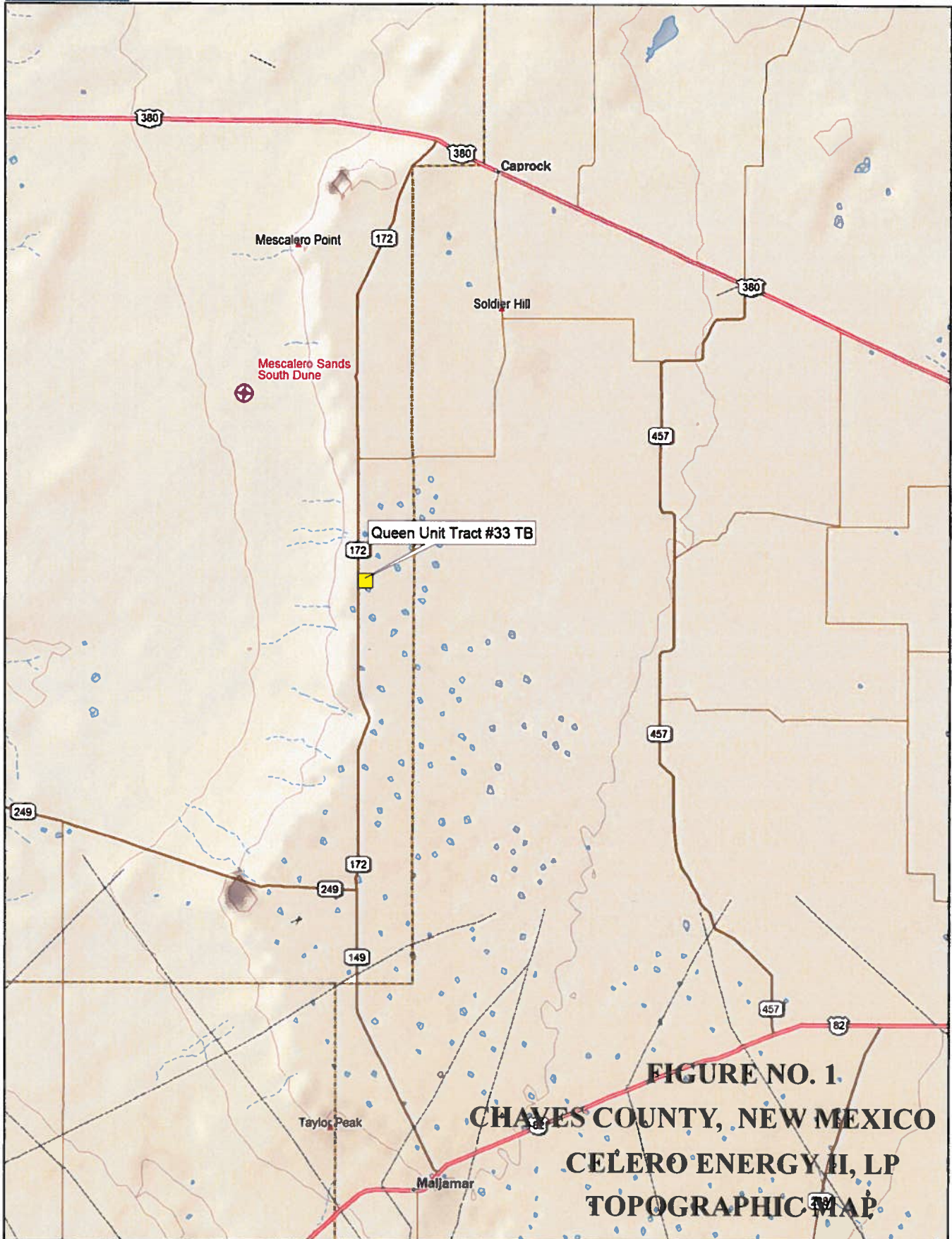

Jeffrey Kindley, P.G.
Senior Environmental Geologist

cc: Bruce Woodard – Celero Energy II, LP

FIGURES

4

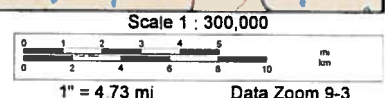
14



Data use subject to license.

© DeLorme. Topo USA® 8.

www.delorme.com



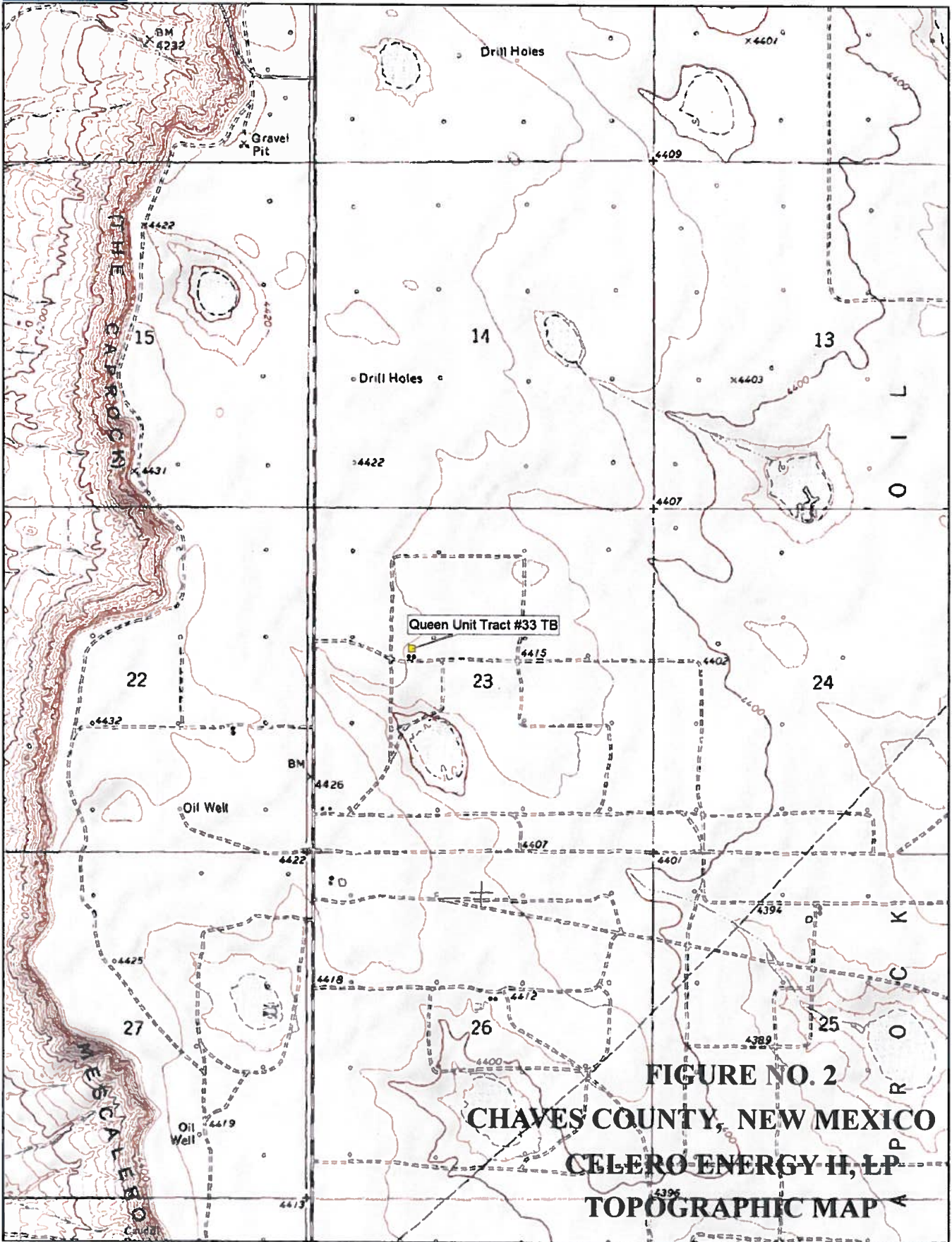


FIGURE NO. 2
CHAVES COUNTY, NEW MEXICO
CELERO ENERGY II, LP
TOPOGRAPHIC MAP



MW-2



FORMER
PIT
AREA

RW-1
NS



MW-1



MW-4



MW-3



SCALE: 100'
0 100'

DATE:	01/04/2012
DWN. BY:	IM
FILE:	CELERO UNIT TRACT #33
PROJECT:	CELERO UNIT TRACT #33

FIGURE NO. 3

CHAVES COUNTY, NEW MEXICO
CELERO ENERGY
ROCK QUEEN UNIT TRACT #33
SITE MAP
TETRA TECH, INC. MIDLAND, TEXAS



MW-2
4,306.78

FORMER
PIT
AREA

MW-1
4,304.95

MW-3
4,304.25

MW-4
4,302.76

APPARENT
GROUNDWATER
GRADIENT DIRECTION

MONITOR WELL LOCATION
RECOVERY WELL LOCATION

C.I. = 1' SCALE: 100' 0 100'

DATE: 01/03/2012
DWN. BY: IM
FILE: C:\Users\j131\Documents\333131.dwg

FIGURE NO. 4

CHAVES COUNTY, NEW MEXICO

CELERO ENERGY
ROCK QUEEN UNIT TRACT #33
GROUNDWATER GRADIENT MAP
GAUGED ON 01/03/2012

TETRA TECH, INC.
MIDLAND, TEXAS



FORMER
PIT
AREA

MW-2
4,306.75

MW-1
4,304.95

MW-4
4,302.78

MW-3
4,304.29

4,305.00

4,304.00

4,303.00

APPARENT
GROUNDWATER
GRADIENT DIRECTION



DATE:	04/09/2012
DWN. BY:	IM
FILE:	ROCK QUEEN UNIT TRACT #33
NO.	04/09/2012

C.I. = 1" = 100'
SCALE: 100'
0 100'

FIGURE NO. 5

CHAVES COUNTY, NEW MEXICO
CELERO ENERGY
ROCK QUEEN UNIT TRACT #33
GROUNDWATER GRADIENT MAP
GAUGED ON 04/09/2012
TETRA TECH, INC.
MIDLAND, TEXAS



MW-2
4,306.79

FORMER
PIT
AREA

MW-1
4,304.96

MW-3
4,304.31

MW-4
4,302.74

4,304.00

4,303.00

4,305.00

APPARENT
GROUNDWATER
GRADIENT DIRECTION



DATE:	7/23/2012
DWN BY:	IM
FILE:	ROCK QUEEN UNIT TRACT #33
NO:	07/23/2012

SCALE: 100'

0 100'

C.I. = 1'

FIGURE NO. 6

CHAVES COUNTY, NEW MEXICO

CELERO ENERGY
ROCK QUEEN UNIT TRACT #33
GROUNDWATER GRADIENT MAP
GAUGED ON 07/23/2012

TETRA TECH, INC.
MIDLAND, TEXAS



MW-2
4,306.69

FORMER
PIT
AREA

EW-1
4,305.23

MW-1
4,304.83

MW-4
4,302.69

MW-3
4,304.20

4,304.00

4,303.00

APPARENT
GROUNDWATER
GRADIENT DIRECTION



C.I. = 1" = 100'

SCALE: 100'

DATE: 10/24/2012
DRAWN BY: IM
FILE: ROCK QUEEN UNIT TRACT #33
PROJECT: GROUNDWATER GRADIENT MAP
NO. 10/24/2012

FIGURE NO. 7

CHAVES COUNTY, NEW MEXICO

CELERO ENERGY
ROCK QUEEN UNIT TRACT #33
GROUNDWATER GRADIENT MAP
GAUGED ON 10/24/2012

TETRA TECH, INC.
MIDLAND, TEXAS



FORMER
PIT
AREA

RW-1
HS



MW-1
82,200



MW-4
8,320



MW-3
6,380



DATE:	01/04/2012
DWN. BY:	TM
FILE:	CELERO ENERGY
PROJECT:	ROCK QUEEN UNIT TRACT #33
NO. OF PAGES:	33
NO. OF SHEETS:	33

FIGURE NO. 8

CHAVES COUNTY, NEW MEXICO
CELERO ENERGY ROCK QUEEN UNIT TRACT #33 CHLORIDE CONCENTRATION MAP SAMPLED ON 01/04/2012
TETRA TECH, INC. MIDLAND, TEXAS



MW-2
42.4



FORMER
PIT
AREA

RW-1
NS



MW-1
89,400



MW-4
7,850



MW-3
6,280



RESULTS IN mg/L

SCALE: 100'

0 100'

DATE: 04/04/2012
DWN. BY: IM
FILE: 040404.DWG
BY: 040404.DWG

FIGURE NO. 9

CHAVES COUNTY, NEW MEXICO

CELERO ENERGY
ROCK QUEEN UNIT TRACT #33
CHLORIDE CONCENTRATION MAP
SAMPLED ON 04/04/2012

TETRA TECH, INC.
MIDLAND, TEXAS



FORMER
PIT
AREA

MW-2
51.9

FW-1
HS

MW-1
69,500

MW-4
8,270

MW-3
6,310



RESULTS IN mg/L

SCALE: 100'

0 100'

DATE: 07/25/2012
DRAWN BY: JM
FILE: 10000001101
SHEET: 33 OF 33

FIGURE NO. 10

CHAVES COUNTY, NEW MEXICO

CELERO ENERGY
ROCK QUEEN UNIT TRACT #33
CHLORIDE CONCENTRATION MAP
SAMPLED ON 07/25/2012

TETRA TECH, INC.
MIDLAND, TEXAS



MW-2
29.7



FORMER
PIT
AREA

FW-1
NS



MW-1
74,300



MW-4
8,000



MW-3
6,210



RESULTS IN mg/L

SCALE: 100'

0 100'

DATE: 10/25/2012
DRAWN BY: IM
FILE: C:\GOLDER\31133
CHLORIDE CONCENTRATION MAP
10/25/2012

FIGURE NO. 11

CHAVES COUNTY, NEW MEXICO

CELERO ENERGY
ROCK QUEEN UNIT TRACT #33
CHLORIDE CONCENTRATION MAP
SAMPLED ON 10/25/2012

TETRA TECH, INC.
MIDLAND, TEXAS

TABLES

Table 1
Celero Energy II, LP
Groundwater Gauging Data
Rock Queen Unit Tract 33 Tank Battery
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	12/28/09	12/10/09	4,417.04	153.75	112.14	4,304.90
	02/25/10			153.25	112.09	4,304.95
	07/12/10			153.25	112.07	4,304.97
	10/11/10			153.25	112.11	4,304.93
	01/17/11			153.25	112.04	4,305.00
	04/12/11			153.25	112.00	4,305.04
	07/27/11			153.25	112.79	4,304.25
	10/24/11			153.25	112.04	4,305.00
	01/03/12			153.25	112.09	4,304.95
	04/09/12			153.25	112.09	4,304.95
	07/23/12			153.25	112.08	4,304.96
	10/24/12			153.25	112.21	4,304.83
MW-2	01/17/11	11/30/10	4,417.96	129.00	111.19	4,306.77
	04/12/11			129.00	111.18	4,306.78
	07/27/11			129.00	111.93	4,306.03
	10/24/11			129.00	111.21	4,306.75
	01/03/12			129.00	111.18	4,306.78
	04/09/12			129.00	111.21	4,306.75
	07/23/12			129.00	111.17	4,306.79
	10/24/12			129.00	111.27	4,306.69
MW-3	01/17/11	11/18/10	4,416.05	129.53	111.78	4,304.27
	04/12/11			129.53	111.75	4,304.30
	07/27/11			129.53	112.55	4,303.50
	10/24/11			129.53	111.78	4,304.27
	01/03/12			129.53	111.80	4,304.25
	04/09/12			129.53	111.76	4,304.29
	07/23/12			129.53	111.74	4,304.31
	10/24/12			129.53	111.85	4,304.20
MW-4	01/17/11	11/30/10	4,417.87	128.45	115.08	4,302.79
	04/12/11			128.45	115.05	4,302.82
	07/27/11			128.45	115.85	4,302.02
	10/24/11			128.45	115.13	4,302.74
	01/03/12			128.45	115.11	4,302.76
	04/09/12			128.45	115.09	4,302.78
	07/23/12			128.45	115.13	4,302.74
	10/24/12			128.45	115.18	4,302.69
RW-1	01/17/11	12/06/10	4,416.61	128.65	111.22	4,305.39

Table 1
Celero Energy II, LP
Groundwater Gauging Data
Rock Queen Unit Tract 33 Tank Battery
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	04/12/11			128.65	111.03	4,305.58
	07/27/11			128.65	112.01	4,304.60
	10/24/11			128.65	111.21	4,305.40
	01/03/12			128.65	111.24	4,305.37
	04/09/12			128.65	111.23	4,305.38
	07/23/12			128.65	111.29	4,305.32
	10/24/12			128.65	111.38	4,305.23

Table 2
Celero Energy II, LP
Groundwater Analytical Results
Rock Queen Unit Tract #33 Tank Battery
Chaves County, New Mexico

Monitor Well	Date Sampled	Dissolved Calcium (mg/L)	Dissolved Magnesium (mg/L)	Dissolved Sodium (mg/L)	Dissolved Potassium (mg/L)	Hydroxide Alkalinity (mg/L)	Carbonate Alkalinity (mg/L)	Bicarbonate Alkalinity (mg/L)	Total Alkalinity (mg/L)	Sulfate (mg/L)	Chloride (mg/L)	TDS (mg/L)	Hardness (mg/L)	pH
MW-1	12/28/09	607	156	1,080	13.3	<1.00	<1.00	134	134	99.3	3,220	5,430	2,160	7.33
	02/25/10	8,440	3,140	13,700	185.0	<1.00	<1.00	98	98	604	46,800	90,100	34,000	6.44
	07/13/10	-	-	-	-	-	-	-	-	613	63,500	102,000	-	-
	10/11/10	-	-	-	-	-	-	-	-	1,070	88,700	161,000	-	-
	01/21/11	-	-	-	-	-	-	-	-	1,050	81,200	134,000	-	-
	04/14/11	-	-	-	-	-	-	-	-	1,010	77,400	116,000	-	-
	07/28/11	-	-	-	-	-	-	-	-	1,080	83,600	124,000	-	-
	10/28/11	-	-	-	-	-	-	-	-	1,070	73,300	120,000	-	-
	01/04/12	-	-	-	-	-	-	-	-	932	82,200	113,000	-	-
	04/12/12	-	-	-	-	-	-	-	-	1,070	89,400	111,000	-	-
MW-2	07/24/12	-	-	-	-	-	-	-	-	-	69,500	-	-	-
	10/25/12	-	-	-	-	-	-	-	-	1,090	74,300	115,000	-	-
	01/21/11	-	-	-	-	-	-	-	-	124	55.6	2,010	-	-
	04/14/11	-	-	-	-	-	-	-	-	133	48.5	544	-	-
	07/28/11	-	-	-	-	-	-	-	-	171	55.1	576	-	-
	10/28/11	-	-	-	-	-	-	-	-	163	45.4	566	-	-
	01/04/12	-	-	-	-	-	-	-	-	173	43.2	660	-	-
	04/12/12	-	-	-	-	-	-	-	-	167	42.4	598	-	-
	07/24/12	-	-	-	-	-	-	-	-	-	51.9	-	-	-
	10/25/12	-	-	-	-	-	-	-	-	98.2	29.7	624	-	-
MW-3	01/21/11	-	-	-	-	-	-	-	-	132	5,370	10,600	-	-
	04/14/11	-	-	-	-	-	-	-	-	126	5,420	6,180	-	-
	07/28/11	-	-	-	-	-	-	-	-	155	6,950	9,820	-	-
	10/28/11	-	-	-	-	-	-	-	-	143	5,860	11,100	-	-
	01/04/12	-	-	-	-	-	-	-	-	150	6,380	10,200	-	-
	04/12/12	-	-	-	-	-	-	-	-	145	6,280	11,200	-	-
	07/24/12	-	-	-	-	-	-	-	-	-	6,310	-	-	-
	10/25/12	-	-	-	-	-	-	-	-	149	6,210	11,100	-	-
	01/21/11	-	-	-	-	-	-	-	-	230	6,510	18,400	-	-
	04/14/11	-	-	-	-	-	-	-	-	236	7,410	25,400	-	-
MW-4	07/28/11	-	-	-	-	-	-	-	-	258	5,450	12,700	-	-
	10/28/11	-	-	-	-	-	-	-	-	324	8,170	15,600	-	-
	01/04/12	-	-	-	-	-	-	-	-	247	8,320	20,300	-	-
	04/12/12	-	-	-	-	-	-	-	-	232	7,850	12,900	-	-

Table 2
Celero Energy II, LP
Groundwater Analytical Results
Rock Queen Unit Tract #33 Tank Battery
Chaves County, New Mexico

Monitor Well	Date Sampled	Dissolved Calcium (mg/L)	Dissolved Magnesium (mg/L)	Dissolved Sodium (mg/L)	Dissolved Potassium (mg/L)	Hydroxide Alkalinity (mg/L)	Carbonate Alkalinity (mg/L)	Bicarbonate Alkalinity (mg/L)	Total Alkalinity (mg/L)	Sulfate (mg/L)	Chloride (mg/L)	TDS (mg/L)	Hardness (mg/L)	pH
MW-4	07/24/12	-	-	-	-	-	-	-	-	-	8,270	-	-	-
	10/25/12	-	-	-	-	-	-	-	-	281	8,000	9,800	-	-
RW-1	01/21/11	-	-	-	-	-	-	-	-	NS	NS	NS	-	-
	04/14/11	-	-	-	-	-	-	-	-	1,070	83,700	122,000	-	-
	07/28/11	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	10/28/11	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	01/04/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	04/12/12	-	-	-	-	-	-	-	-	NS	NS	NS	-	-
	07/24/12	-	-	-	-	-	-	-	-	NS	NS	NS	-	-
	10/25/12	-	-	-	-	-	-	-	-	NS	NS	NS	-	-

NS - Not sampled
(-) Not analyzed

Table 3
Celero Energy II, LP
Groundwater Analytical Results
Rock Queen Unit Tract 33 Tank Battery
Chaves County, New Mexico

Monitor Well	Date Sampled	Benzene in (mg/L)	Toluene in (mg/L)	Ethyl- Benzene (mg/L)	Xylene in (mg/L)	Total BTEX (mg/L)
MW-1	12/28/09	<0.001	<0.001	<0.001	<0.001	<0.001
	02/25/10	<0.001	<0.001	<0.001	<0.001	<0.001
	07/13/10	0.002	0.0015	<0.001	<0.001	0.0035
	10/11/10	0.0048	<0.001	<0.001	<0.001	0.0048
	01/21/11	0.0121	0.0066	<0.001	<0.001	0.0187
	04/14/11	0.0076	<0.001	<0.001	<0.001	0.0076
	07/28/11	0.0114	<0.001	<0.001	<0.001	0.0114
	10/28/11	0.0020	<0.0010	<0.0010	0.0365	0.0385
	01/04/12	0.0068	0.0020	<0.0010	<0.0010	0.0088
	04/12/12	0.0089	<0.0010	<0.0010	<0.0010	0.0089
	10/25/12	0.0069	<0.0010	<0.0010	<0.0010	0.0069
MW-2	01/21/11	<0.001	<0.001	<0.001	<0.001	<0.001
	04/14/11	<0.001	<0.001	<0.001	<0.001	<0.001
	07/28/11	<0.001	<0.001	<0.001	<0.001	<0.001
	10/28/11	<0.001	<0.001	<0.001	<0.001	<0.001
	01/04/12	<0.001	<0.001	<0.001	<0.001	<0.001
	04/12/12	<0.001	<0.001	<0.001	<0.001	<0.001
	10/25/12	<0.001	<0.001	<0.001	<0.001	<0.001
MW-3	01/21/11	<0.001	<0.001	<0.001	<0.001	<0.001
	04/14/11	<0.001	<0.001	<0.001	<0.001	<0.001
	07/28/11	<0.001	<0.001	<0.001	<0.001	<0.001
	10/28/11	<0.001	<0.001	<0.001	<0.001	<0.001
	01/04/12	<0.001	<0.001	<0.001	<0.001	<0.001
	04/12/12	<0.001	<0.001	<0.001	<0.001	<0.001
	10/25/12	<0.001	<0.001	<0.001	<0.001	<0.001
MW-4	01/21/11	<0.001	<0.001	<0.001	<0.001	<0.001
	04/14/11	<0.001	<0.001	<0.001	<0.001	<0.001
	07/28/11	<0.001	<0.001	<0.001	<0.001	<0.001
	10/28/11	<0.001	<0.001	<0.001	<0.001	<0.001
	01/04/12	<0.001	<0.001	<0.001	<0.001	<0.001
	04/12/12	<0.001	<0.001	<0.001	<0.001	<0.001
	10/25/12	<0.001	<0.001	<0.001	<0.001	<0.001
RW-1	01/21/11	NS	NS	NS	NS	NS
	04/14/11	0.0124	0.007	<0.001	0.0176	0.0370
	07/28/11	NS	NS	NS	NS	NS
	10/28/11	NS	NS	NS	NS	NS
	01/04/12	NS	NS	NS	NS	NS
	04/12/12	NS	NS	NS	NS	NS
	10/25/12	NS	NS	NS	NS	NS

NS

Not Sampled

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 19, 2012

Work Order: 12010639



Project Location: Chavez County, NM
Project Name: Celero/Rock Queen #33
Project Number: 115-6403133A

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
285945	MW-1	water	2012-01-04	14:30	2012-01-06
285946	MW-2	water	2012-01-04	15:00	2012-01-06
285947	MW-3	water	2012-01-04	14:40	2012-01-06
285948	MW-4	water	2012-01-04	14:50	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 25 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

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

Report Contents

Case Narrative	4
Analytical Report	5
Sample 285945 (MW-1)	5
Sample 285946 (MW-2)	6
Sample 285947 (MW-3)	7
Sample 285948 (MW-4)	8
Method Blanks	11
QC Batch 87691 - Method Blank (1)	11
QC Batch 87701 - Method Blank (1)	11
QC Batch 87745 - Method Blank (1)	11
QC Batch 87755 - Method Blank (1)	12
QC Batch 87831 - Method Blank (1)	12
QC Batch 87831 - Method Blank (1)	12
QC Batch 87832 - Method Blank (1)	12
QC Batch 87745 - Duplicate (2)	13
Laboratory Control Spikes	14
QC Batch 87691 - LCS (1)	14
QC Batch 87701 - LCS (1)	14
QC Batch 87745 - LCS (1)	15
QC Batch 87745 - LCS (2)	15
QC Batch 87755 - LCS (1)	16
QC Batch 87831 - LCS (1)	16
QC Batch 87831 - LCS (1)	16
QC Batch 87832 - LCS (1)	17
QC Batch 87691 - MS (1)	17
QC Batch 87701 - MS (1)	18
QC Batch 87755 - MS (1)	18
QC Batch 87831 - MS (1)	19
QC Batch 87831 - MS (1)	19
QC Batch 87832 - MS (1)	20
Calibration Standards	21
QC Batch 87691 - CCV (1)	21
QC Batch 87691 - CCV (2)	21
QC Batch 87701 - CCV (2)	21
QC Batch 87701 - CCV (3)	21
QC Batch 87755 - ICV (1)	22
QC Batch 87755 - CCV (1)	22
QC Batch 87831 - CCV (1)	22
QC Batch 87831 - CCV (1)	22
QC Batch 87831 - CCV (2)	23
QC Batch 87831 - CCV (2)	23
QC Batch 87832 - CCV (1)	23

QC Batch 87832 - CCV (2)	23
Appendix	25
Report Definitions	25
Laboratory Certifications	25
Standard Flags	25
Attachments	25

Case Narrative

Samples for project Celero/Rock Queen #33 were received by TraceAnalysis, Inc. on 2012-01-06 and assigned to work order 12010639. Samples for work order 12010639 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
BTEX	S 8021B	74464	2012-01-10 at 14:00	87701	2012-01-10 at 17:31
Chloride (IC)	E 300.0	74567	2012-01-16 at 10:04	87831	2012-01-17 at 14:44
Chloride (IC)	E 300.0	74568	2012-01-16 at 10:05	87832	2012-01-17 at 14:45
SO4 (IC)	E 300.0	74520	2012-01-11 at 14:01	87755	2012-01-11 at 20:29
SO4 (IC)	E 300.0	74567	2012-01-16 at 10:04	87831	2012-01-17 at 14:44
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 12010639 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 19, 2012
115-6403133A

Work Order: 12010639
Celero/Rock Queen #33

Page Number: 5 of 25
Chavez County, NM

Analytical Report

Sample: 285945 - MW-1

Laboratory: Midland
Analysis: BTEX
QC Batch: 87701
Prep Batch: 74464

Analytical Method: S 8021B
Date Analyzed: 2012-01-10
Sample Preparation: 2012-01-10

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene		1	0.00680	mg/L	1	0.00100
Toluene		1	0.00200	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)			0.104	mg/L	1	0.100	104	79.1 - 127.2
4-Bromofluorobenzene (4-BFB)			0.0911	mg/L	1	0.100	91	67.5 - 140.8

Sample: 285945 - MW-1

Laboratory: Midland
Analysis: Chloride (IC)
QC Batch: 87831
Prep Batch: 74567

Analytical Method: E 300.0
Date Analyzed: 2012-01-17
Sample Preparation: 2012-01-16

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1	82200	mg/L	5000	2.50

Sample: 285945 - MW-1

Laboratory: Midland
Analysis: SO4 (IC)
QC Batch: 87755
Prep Batch: 74520

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	932	mg/L	50	2.50

Report Date: January 19, 2012
115-6403133A

Work Order: 12010639
Celero/Rock Queen #33

Page Number: 6 of 25
Chavez County, NM

Sample: 285945 - 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	113000	mg/L	100	10.0

Sample: 285946 - 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	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)			0.0726	mg/L	1	0.100	73	67.5 - 140.8

Sample: 285946 - MW-2

Laboratory: Midland
Analysis: Chloride (IC)
QC Batch: 87831
Prep Batch: 74567

Analytical Method: E 300.0
Date Analyzed: 2012-01-17
Sample Preparation: 2012-01-16

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1	43.2	mg/L	5	2.50

Report Date: January 19, 2012
115-6403133A

Work Order: 12010639
Celero/Rock Queen #33

Page Number: 7 of 25
Chavez County, NM

Sample: 285946 - MW-2

Laboratory: Midland
Analysis: SO4 (IC)
QC Batch: 87831
Prep Batch: 74567

Analytical Method: E 300.0
Date Analyzed: 2012-01-17
Sample Preparation: 2012-01-16

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Sulfate	Q ^a	1	173	mg/L	5	2.50

Sample: 285946 - 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	660	mg/L	1	10.0

Sample: 285947 - 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)			0.117	mg/L	1	0.100	117	79.1 - 127.2
4-Bromofluorobenzene (4-BFB)			0.0860	mg/L	1	0.100	86	67.5 - 140.8

Report Date: January 19, 2012
115-6403133A

Work Order: 12010639
Celero/Rock Queen #33

Page Number: 8 of 25
Chavez County, NM

Sample: 285947 - MW-3

Laboratory:	Midland	Analytical Method:	E 300.0	Prep Method:	N/A
Analysis:	Chloride (IC)	Date Analyzed:	2012-01-17	Analyzed By:	AR
QC Batch:	87831	Sample Preparation:	2012-01-16	Prepared By:	AR
Prep Batch:	74567				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1	6380	mg/L	500	2.50

Sample: 285947 - 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:	87755	Sample Preparation:	2012-01-11	Prepared By:	AR
Prep Batch:	74520				

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

Sample: 285947 - 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	10200	mg/L	10	10.0

Sample: 285948 - 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				

continued ...

Report Date: January 19, 2012
115-6403133A

Work Order: 12010639
Celero/Rock Queen #33

Page Number: 9 of 25
Chavez County, NM

sample 285948 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 (TF'T)			0.107	mg/L	1	0.100	107	79.1 - 127.2
4-Bromofluorobenzene (4-BFB)			0.0772	mg/L	1	0.100	77	67.5 - 140.8

Sample: 285948 - MW-4

Laboratory: Midland
Analysis: Chloride (IC)
QC Batch: 87832
Prep Batch: 74568

Analytical Method: E 300.0
Date Analyzed: 2012-01-17
Sample Preparation: 2012-01-16

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1	8320	mg/L	500	2.50

Sample: 285948 - MW-4

Laboratory: Midland
Analysis: SO4 (IC)
QC Batch: 87755
Prep Batch: 74520

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	Qs	1	247	mg/L	50	2.50

Report Date: January 19, 2012
115-6403133A

Work Order: 12010639
Celero/Rock Queen #33

Page Number: 10 of 25
Chavez County, NM

Sample: 285948 - 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	20300	mg/L	100	10.0

Report Date: January 19, 2012
115-6403133A

Work Order: 12010639
Celero/Rock Queen #33

Page Number: 11 of 25
Chavez County, NM

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: 87701

QC Batch: 87701
Prep Batch: 74464

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

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)			0.0964	mg/L	1	0.100	96	61.1 - 118.4
4-Bromofluorobenzene (4-BFB)			0.0701	mg/L	1	0.100	70	45.9 - 126.4

Report Date: January 19, 2012
115-6403133A

Work Order: 12010639
Celero/Rock Queen #33

Page Number: 12 of 25
Chavez County, NM

Method Blank (1) QC Batch: 87745

QC Batch: 87745 Date Analyzed: 2012-01-10 Analyzed By: AR
Prep Batch: 74507 QC Preparation: 2012-01-06 Prepared By: AR

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

Method Blank (1) QC Batch: 87755

QC Batch: 87755 Date Analyzed: 2012-01-11 Analyzed By: AR
Prep Batch: 74520 QC Preparation: 2012-01-11 Prepared By: AR

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

Method Blank (1) QC Batch: 87831

QC Batch: 87831 Date Analyzed: 2012-01-17 Analyzed By: AR
Prep Batch: 74567 QC Preparation: 2012-01-16 Prepared By: AR

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride		1	1.39	mg/L	2.5

Method Blank (1) QC Batch: 87831

QC Batch: 87831 Date Analyzed: 2012-01-17 Analyzed By: AR
Prep Batch: 74567 QC Preparation: 2012-01-16 Prepared By: AR

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

Report Date: January 19, 2012
115-6403133A

Work Order: 12010639
Celero/Rock Queen #33

Page Number: 13 of 25
Chavez County, NM

Method Blank (1) QC Batch: 87832

QC Batch: 87832
Prep Batch: 74568

Date Analyzed: 2012-01-17
QC Preparation: 2012-01-16

Analyzed By: AR
Prepared By: AR

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride		1	1.11	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

Report Date: January 19, 2012
115-6403133A

Work Order: 12010639
Celero/Rock Queen #33

Page Number: 14 of 25
Chavez County, NM

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: 87701
Prep Batch: 74464

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

Analyzed By: AG
Prepared By: AG

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	0.106	mg/L	1	0.100	<0.000400	106	76.8 - 120.3
Toluene		1	0.102	mg/L	1	0.100	<0.000300	102	80.9 - 122.2
Ethylbenzene		1	0.0962	mg/L	1	0.100	<0.000300	96	72.7 - 120.2
Xylene		1	0.285	mg/L	1	0.300	<0.000333	95	72.1 - 121.5

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

Report Date: January 19, 2012
115-6403133A

Work Order: 12010639
Celero/Rock Queen #33

Page Number: 15 of 25
Chavez County, NM

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	0.108	mg/L	1	0.100	<0.000400	108	76.8 - 120.3	2	20
Toluene		1	0.104	mg/L	1	0.100	<0.000300	104	80.9 - 122.2	2	20
Ethylbenzene		1	0.0983	mg/L	1	0.100	<0.000300	98	72.7 - 120.2	2	20
Xylene		1	0.291	mg/L	1	0.300	<0.000333	97	72.1 - 121.5	2	20

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

Surrogate	LCS Result	LCS Result	Units	Dil.	Spike Amount	LCS Rec.	LCS Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.102	0.101	mg/L	1	0.100	102	101	61.9 - 119.2
4-Bromofluorobenzene (4-BFB)	0.0912	0.0902	mg/L	1	0.100	91	90	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.

Param	F	C	LCS 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-2)

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	962	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		1	1040	mg/L	1	1000	<9.75	104	85.5 - 112.7	8	10

Report Date: January 19, 2012
115-6403133A

Work Order: 12010639
Celero/Rock Queen #33

Page Number: 16 of 25
Chavez County, NM

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: 87755
Prep Batch: 74520

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	25.7	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	25.6	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.

Laboratory Control Spike (LCS-1)

QC Batch: 87831
Prep Batch: 74567

Date Analyzed: 2012-01-17
QC Preparation: 2012-01-16

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	25.6	mg/L	1	25.0	<0.265	102	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: 87831
Prep Batch: 74567

Date Analyzed: 2012-01-17
QC Preparation: 2012-01-16

Analyzed By: AR
Prepared By: AR

Report Date: January 19, 2012
115-6403133A

Work Order: 12010639
Celero/Rock Queen #33

Page Number: 17 of 25
Chavez County, NM

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate		1	25.7	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	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Sulfate		1	25.8	mg/L	1	25.0	<0.177	103	90 - 110	0	20

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

Laboratory Control Spike (LCS-1)

QC Batch: 87832
Prep Batch: 74568

Date Analyzed: 2012-01-17
QC Preparation: 2012-01-16

Analyzed By: AR
Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	25.3	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	LCS 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	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: 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
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.

continued ...

Report Date: January 19, 2012
115-6403133A

Work Order: 12010639
Celero/Rock Queen #33

Page Number: 18 of 25
Chavez County, NM

matrix spikes continued ...

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
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: 285945

QC Batch: 87701
Prep Batch: 74464

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

Analyzed By: AG
Prepared By: AG

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	0.112	mg/L	1	0.100	0.0068	105	66.9 - 128.2
Toluene		1	0.0945	mg/L	1	0.100	0.002	92	81.6 - 122.9
Ethylbenzene		1	0.0786	mg/L	1	0.100	<0.000300	79	62.7 - 117.9
Xylene		1	0.233	mg/L	1	0.300	<0.000333	78	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	0.113	mg/L	1	0.100	0.0068	106	66.9 - 128.2	1	20
Toluene		1	0.0960	mg/L	1	0.100	0.002	94	81.6 - 122.9	2	20
Ethylbenzene		1	0.0807	mg/L	1	0.100	<0.000300	81	62.7 - 117.9	3	20
Xylene		1	0.236	mg/L	1	0.300	<0.000333	79	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)	0.0966	0.114	mg/L	1	0.1	97	114	58.6 - 119.7
4-Bromofluorobenzene (4-BFB)	0.0986	0.116	mg/L	1	0.1	99	116	52.2 - 135.8

Report Date: January 19, 2012
115-6403133A

Work Order: 12010639
Celero/Rock Queen #33

Page Number: 19 of 25
Chavez County, NM

Matrix Spike (MS-1) Spiked Sample: 285945

QC Batch: 87755
Prep Batch: 74520

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 ⁿ	Q ⁿ	1	2060	mg/L	50	1380	932	82 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 ⁿ	Q ⁿ	1	2060	mg/L	50	1380	932	82 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: 285946

QC Batch: 87831
Prep Batch: 74567

Date Analyzed: 2012-01-17
QC Preparation: 2012-01-16

Analyzed By: AR
Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	1710	mg/L	50	1380	204	110	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	1710	mg/L	50	1380	204	110	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: 285946

QC Batch: 87831
Prep Batch: 74567

Date Analyzed: 2012-01-17
QC Preparation: 2012-01-16

Analyzed By: AR
Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate	Q ⁿ	Q ⁿ	1	1450	mg/L	50	1380	238	88 90 - 110

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

Report Date: January 19, 2012
115-6403133A

Work Order: 12010639
Celero/Rock Queen #33

Page Number: 20 of 25
Chavez County, NM

Param			F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Sulfate	Q ^s	Q ^s		1	1460	mg/L	50	1380	238	89	90 - 110	1	20

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

Matrix Spike (MS-1) Spiked Sample: 286088

QC Batch: 87832
Prep Batch: 74568

Date Analyzed: 2012-01-17
QC Preparation: 2012-01-16

Analyzed By: AR
Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	191	mg/L	5	138	55.6	98	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	189	mg/L	5	138	55.6	97	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: 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-2)

QC Batch: 87701

Date Analyzed: 2012-01-10

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	2012-01-10
Toluene		1	mg/L	0.100	0.0955	96	80 - 120	2012-01-10
Ethylbenzene		1	mg/L	0.100	0.0897	90	80 - 120	2012-01-10
Xylene		1	mg/L	0.300	0.263	88	80 - 120	2012-01-10

Report Date: January 19, 2012
115-6403133A

Work Order: 12010639
Celero/Rock Queen #33

Page Number: 22 of 25
Chavez County, NM

Standard (CCV-3)

QC Batch: 87701

Date Analyzed: 2012-01-10

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	0.104	104	80 - 120	2012-01-10
Toluene		1	mg/L	0.100	0.0992	99	80 - 120	2012-01-10
Ethylbenzene		1	mg/L	0.100	0.0944	94	80 - 120	2012-01-10
Xylene		1	mg/L	0.300	0.277	92	80 - 120	2012-01-10

Standard (ICV-1)

QC Batch: 87755

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	25.5	102	90 - 110	2012-01-11

Standard (CCV-1)

QC Batch: 87755

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	25.7	103	90 - 110	2012-01-11

Standard (CCV-1)

QC Batch: 87831

Date Analyzed: 2012-01-17

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	25.2	101	90 - 110	2012-01-17

Report Date: January 19, 2012
115-6403133A

Work Order: 12010639
Celero/Rock Queen #33

Page Number: 23 of 25
Chavez County, NM

Standard (CCV-1)

QC Batch: 87831

Date Analyzed: 2012-01-17

Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Sulfate		1	mg/L	25.0	25.8	103	90 - 110	2012-01-17

Standard (CCV-2)

QC Batch: 87831

Date Analyzed: 2012-01-17

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	25.3	101	90 - 110	2012-01-17

Standard (CCV-2)

QC Batch: 87831

Date Analyzed: 2012-01-17

Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Sulfate		1	mg/L	25.0	25.8	103	90 - 110	2012-01-17

Standard (CCV-1)

QC Batch: 87832

Date Analyzed: 2012-01-17

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	25.3	101	90 - 110	2012-01-17

Standard (CCV-2)

QC Batch: 87832

Date Analyzed: 2012-01-17

Analyzed By: AR

Report Date: January 19, 2012
115-6403133A

Work Order: 12010639
Celero/Rock Queen #33

Page Number: 24 of 25
Chavez County, NM

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	2012-01-17

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 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.

Analysis Request of Chain of Custody Record

PAGE:

ANALYSIS REQUEST

(Circle or Specify Method No.)



TETRA TECH

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

[illegible]

REMARKS:

SAMPLE CONDITION WHEN RECEIVED:

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: April 24, 2012

Work Order: 12041303



Project Location: Chavez County, NM
Project Name: Celero/Rock Queen #33
Project Number: 115-6403133A

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
294162	MW-1	water	2012-04-12	11:00	2012-04-12
294163	MW-2	water	2012-04-12	11:10	2012-04-12
294164	MW-3	water	2012-04-12	10:50	2012-04-12
294165	MW-4	water	2012-04-12	10:40	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 29 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

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

Report Contents

Case Narrative	4
Analytical Report	5
Sample 294162 (MW-1)	5
Sample 294163 (MW-2)	6
Sample 294164 (MW-3)	7
Sample 294165 (MW-4)	8
Method Blanks	11
QC Batch 90365 - Method Blank (1)	11
QC Batch 90366 - Method Blank (1)	11
QC Batch 90401 - Method Blank (1)	11
QC Batch 90403 - Method Blank (1)	12
QC Batch 90451 - Method Blank (1)	12
QC Batch 90451 - Method Blank (1)	12
QC Batch 90452 - Method Blank (1)	13
QC Batch 90452 - Method Blank (1)	13
QC Batch 90513 - Method Blank (1)	13
QC Batch 90365 - Duplicate (1)	13
Laboratory Control Spikes	15
QC Batch 90365 - LCS (1)	15
QC Batch 90366 - LCS (1)	15
QC Batch 90401 - LCS (1)	16
QC Batch 90403 - LCS (1)	16
QC Batch 90451 - LCS (1)	17
QC Batch 90451 - LCS (1)	17
QC Batch 90452 - LCS (1)	18
QC Batch 90452 - LCS (1)	18
QC Batch 90513 - LCS (1)	18
QC Batch 90366 - MS (1)	19
QC Batch 90401 - MS (1)	19
QC Batch 90403 - MS (1)	20
QC Batch 90451 - MS (1)	21
QC Batch 90451 - MS (1)	21
QC Batch 90452 - MS (1)	22
QC Batch 90452 - MS (1)	22
QC Batch 90513 - MS (1)	22
Calibration Standards	24
QC Batch 90366 - CCV (1)	24
QC Batch 90366 - CCV (2)	24
QC Batch 90401 - CCV (1)	24
QC Batch 90401 - CCV (2)	24
QC Batch 90403 - CCV (2)	25
QC Batch 90403 - CCV (3)	25

QC Batch 90451 - CCV (1)	25
QC Batch 90451 - CCV (1)	26
QC Batch 90451 - CCV (2)	26
QC Batch 90451 - CCV (2)	26
QC Batch 90452 - CCV (1)	26
QC Batch 90452 - CCV (1)	27
QC Batch 90452 - CCV (2)	27
QC Batch 90452 - CCV (2)	27
QC Batch 90513 - CCV (1)	27
QC Batch 90513 - CCV (2)	28
Appendix	29
Report Definitions	29
Laboratory Certifications	29
Standard Flags	29
Attachments	29

Case Narrative

Samples for project Celero/Rock Queen #33 were received by TraceAnalysis, Inc. on 2012-04-12 and assigned to work order 12041303. Samples for work order 12041303 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	76670	2012-04-18 at 12:45	90366	2012-04-18 at 19:02
BTEX	S 8021B	76700	2012-04-19 at 10:35	90401	2012-04-20 at 11:02
BTEX	S 8021B	76700	2012-04-19 at 10:35	90403	2012-04-20 at 02:09
Chloride (IC)	E 300.0	76740	2012-04-21 at 14:00	90451	2012-04-23 at 09:36
Chloride (IC)	E 300.0	76741	2012-04-21 at 14:00	90452	2012-04-23 at 09:39
SO4 (IC)	E 300.0	76740	2012-04-21 at 14:00	90451	2012-04-23 at 09:36
SO4 (IC)	E 300.0	76741	2012-04-21 at 14:00	90452	2012-04-23 at 09:39
SO4 (IC)	E 300.0	76794	2012-04-23 at 14:00	90513	2012-04-24 at 09:06
TDS	SM 2540C	76601	2012-04-16 at 10:25	90365	2012-04-17 at 16:53

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 12041303 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: April 24, 2012
115-6403133A

Work Order: 12041303
Celero/Rock Queen #33

Page Number: 5 of 29
Chavez County, NM

Analytical Report

Sample: 294162 - MW-1

Laboratory: Midland
Analysis: BTEX
QC Batch: 90403
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		2	0.00890	mg/L	1	0.00100
Toluene	u	2	<0.00100	mg/L	1	0.00100
Ethylbenzene	u	2	<0.00100	mg/L	1	0.00100
Xylene	u	2	<0.00100	mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0971	mg/L	1	0.100	97	73.5 - 123.1
4-Bromofluorobenzene (4-BFB)			0.0989	mg/L	1	0.100	99	51.1 - 122.9

Sample: 294162 - MW-1

Laboratory: Lubbock
Analysis: Chloride (IC)
QC Batch: 90451
Prep Batch: 76740

Analytical Method: E 300.0
Date Analyzed: 2012-04-23
Sample Preparation: 2012-04-21

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	Q ₁	1	89400	mg/L	2500	2.50

Sample: 294162 - MW-1

Laboratory: Lubbock
Analysis: SO4 (IC)
QC Batch: 90451
Prep Batch: 76740

Analytical Method: E 300.0
Date Analyzed: 2012-04-23
Sample Preparation: 2012-04-21

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

Report Date: April 24, 2012
115-6403133A

Work Order: 12041303
Celero/Rock Queen #33

Page Number: 6 of 29
Chavez County, NM

Sample: 294162 - MW-1

Laboratory: Midland
Analysis: TDS
QC Batch: 90365
Prep Batch: 76601

Analytical Method: SM 2540C
Date Analyzed: 2012-04-17
Sample Preparation: 2012-04-16

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		2	111000	mg/L	100	10.0

Sample: 294163 - MW-2

Laboratory: Midland
Analysis: BTEX
QC Batch: 90366
Prep Batch: 76670

Analytical Method: S 8021B
Date Analyzed: 2012-04-18
Sample Preparation: 2012-04-18

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

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0959	mg/L	1	0.100	96	73.5 - 123.1
4-Bromofluorobenzene (4-BFB)			0.0957	mg/L	1	0.100	96	51.1 - 122.9

Sample: 294163 - MW-2

Laboratory: Lubbock
Analysis: Chloride (IC)
QC Batch: 90451
Prep Batch: 76740

Analytical Method: E 300.0
Date Analyzed: 2012-04-23
Sample Preparation: 2012-04-21

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	Q*	1	42.4	mg/L	5	2.50

Report Date: April 24, 2012
115-6403133A

Work Order: 12041303
Celero/Rock Queen #33

Page Number: 7 of 29
Chavez County, NM

Sample: 294163 - MW-2

Laboratory: Lubbock
Analysis: SO4 (IC)
QC Batch: 90451
Prep Batch: 76740

Analytical Method: E 300.0
Date Analyzed: 2012-04-23
Sample Preparation: 2012-04-21

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Sulfate		1	167	mg/L	5	2.50

Sample: 294163 - MW-2

Laboratory: Midland
Analysis: TDS
QC Batch: 90365
Prep Batch: 76601

Analytical Method: SM 2540C
Date Analyzed: 2012-04-17
Sample Preparation: 2012-04-16

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		2	598	mg/L	1	10.0

Sample: 294164 - MW-3

Laboratory: Midland
Analysis: BTEX
QC Batch: 90366
Prep Batch: 76670

Analytical Method: S 8021B
Date Analyzed: 2012-04-18
Sample Preparation: 2012-04-18

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

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0985	mg/L	1	0.100	98	73.5 - 123.1
4-Bromofluorobenzene (4-BFB)			0.0977	mg/L	1	0.100	98	51.1 - 122.9

Report Date: April 24, 2012
115-6403133A

Work Order: 12041303
Celero/Rock Queen #33

Page Number: 8 of 29
Chavez County, NM

Sample: 294164 - MW-3

Laboratory:	Lubbock	Analytical Method:	E 300.0	Prep Method:	N/A
Analysis:	Chloride (IC)	Date Analyzed:	2012-04-23	Analyzed By:	RL
QC Batch:	90452	Sample Preparation:	2012-04-21	Prepared By:	RL
Prep Batch:	76741				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1	6280	mg/L	500	2.50

Sample: 294164 - MW-3

Laboratory:	Lubbock	Analytical Method:	E 300.0	Prep Method:	N/A
Analysis:	SO4 (IC)	Date Analyzed:	2012-04-24	Analyzed By:	RL
QC Batch:	90513	Sample Preparation:	2012-04-23	Prepared By:	RL
Prep Batch:	76794				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Sulfate		1	145	mg/L	25	2.50

Sample: 294164 - MW-3

Laboratory:	Midland	Analytical Method:	SM 2540C	Prep Method:	N/A
Analysis:	TDS	Date Analyzed:	2012-04-17	Analyzed By:	AR
QC Batch:	90365	Sample Preparation:	2012-04-16	Prepared By:	AR
Prep Batch:	76601				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		2	11200	mg/L	10	10.0

Sample: 294165 - MW-4

Laboratory:	Midland	Analytical Method:	S 8021B	Prep Method:	S 5030B
Analysis:	BTEX	Date Analyzed:	2012-04-20	Analyzed By:	tc
QC Batch:	90401	Sample Preparation:	2012-04-19	Prepared By:	tc
Prep Batch:	76700				

continued . . .

Report Date: April 24, 2012
115-6403133A

Work Order: 12041303
Celero/Rock Queen #33

Page Number: 9 of 29
Chavez County, NM

sample 294165 continued ...

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	Q#,U	2	<0.00100	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)			0.0859	mg/L	1	0.100	86	73.5 - 123.1
4-Bromofluorobenzene (4-BFB)			0.0824	mg/L	1	0.100	82	51.1 - 122.9

Sample: 294165 - MW-4

Laboratory: Lubbock
Analysis: Chloride (IC)
QC Batch: 90452
Prep Batch: 76741

Analytical Method: E 300.0
Date Analyzed: 2012-04-23
Sample Preparation: 2012-04-21

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1	7850	mg/L	500	2.50

Sample: 294165 - MW-4

Laboratory: Lubbock
Analysis: SO4 (IC)
QC Batch: 90452
Prep Batch: 76741

Analytical Method: E 300.0
Date Analyzed: 2012-04-23
Sample Preparation: 2012-04-21

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

Report Date: April 24, 2012
115-6403133A

Work Order: 12041303
Celero/Rock Queen #33

Page Number: 10 of 29
Chavez County, NM

Sample: 294165 - MW-4

Laboratory: Midland
Analysis: TDS
QC Batch: 90365
Prep Batch: 76601

Analytical Method: SM 2540C
Date Analyzed: 2012-04-17
Sample Preparation: 2012-04-16

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		2	12900	mg/L	20	10.0

Report Date: April 24, 2012
115-6403133A

Work Order: 12041303
Celero/Rock Queen #33

Page Number: 11 of 29
Chavez County, NM

Method Blanks

Method Blank (1) QC Batch: 90365

QC Batch: 90365
Prep Batch: 76601

Date Analyzed: 2012-04-17
QC Preparation: 2012-04-16

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: 90366

QC Batch: 90366
Prep Batch: 76670

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

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)			0.0907	mg/L	1	0.100	91	74.2 - 126
4-Bromofluorobenzene (4-BFB)			0.0891	mg/L	1	0.100	89	51.3 - 124.6

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

continued ...

Report Date: April 24, 2012
115-6403133A

Work Order: 12041303
Celero/Rock Queen #33

Page Number: 12 of 29
Chavez County, NM

method blank continued ...

Parameter	Flag	Cert	MDL Result	Units	RL
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: 90403

QC Batch: 90403
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)			0.0917	mg/L	1	0.100	92	74.2 - 126
4-Bromofluorobenzene (4-BFB)			0.0916	mg/L	1	0.100	92	51.3 - 124.6

Method Blank (1) QC Batch: 90451

QC Batch: 90451
Prep Batch: 76740

Date Analyzed: 2012-04-23
QC Preparation: 2012-04-21

Analyzed By: RL
Prepared By: RL

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride		1	0.322	mg/L	2.5

Report Date: April 24, 2012
115-6403133A

Work Order: 12041303
Celero/Rock Queen #33

Page Number: 13 of 29
Chavez County, NM

Method Blank (1) QC Batch: 90451

QC Batch: 90451
Prep Batch: 76740

Date Analyzed: 2012-04-23
QC Preparation: 2012-04-21

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: 90452

QC Batch: 90452
Prep Batch: 76741

Date Analyzed: 2012-04-23
QC Preparation: 2012-04-21

Analyzed By: RL
Prepared By: RL

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride		1	0.684	mg/L	2.5

Method Blank (1) QC Batch: 90452

QC Batch: 90452
Prep Batch: 76741

Date Analyzed: 2012-04-23
QC Preparation: 2012-04-21

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: 90513

QC Batch: 90513
Prep Batch: 76794

Date Analyzed: 2012-04-24
QC Preparation: 2012-04-23

Analyzed By: RL
Prepared By: RL

Parameter	Flag	Cert	MDL Result	Units	RL
Sulfate		1	0.249	mg/L	2.5

Report Date: April 24, 2012
115-6403133A

Work Order: 12041303
Celero/Rock Queen #33

Page Number: 14 of 29
Chavez County, NM

Duplicates (1) Duplicated Sample: 294165

QC Batch: 90365
Prep Batch: 76601

Date Analyzed: 2012-04-17
QC Preparation: 2012-04-16

Analyzed By: AR
Prepared By: AR

Param		Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
Total Dissolved Solids	2	13800	12900	mg/L	20	6	10

Report Date: April 24, 2012
115-6403133A

Work Order: 12041303
Celero/Rock Queen #33

Page Number: 15 of 29
Chavez County, NM

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 90365
Prep Batch: 76601

Date Analyzed: 2012-04-17
QC Preparation: 2012-04-16

Analyzed By: AR
Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Total Dissolved Solids		2	1020	mg/L	1	1000	<9.75	102	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	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Total Dissolved Solids		2	1040	mg/L	1	1000	<9.75	104	85.5 - 112.7	2	10

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

Laboratory Control Spike (LCS-1)

QC Batch: 90366
Prep Batch: 76670

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

Analyzed By: tc
Prepared By: tc

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		2	0.111	mg/L	1	0.100	<0.000600	111	79.7 - 117.6
Toluene		2	0.112	mg/L	1	0.100	<0.000400	112	73.9 - 123.9
Ethylbenzene		2	0.111	mg/L	1	0.100	<0.000600	111	76.8 - 120.8
Xylene		2	0.331	mg/L	1	0.300	<0.00130	110	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	0.107	mg/L	1	0.100	<0.000600	107	79.7 - 117.6	4	20
Toluene		2	0.107	mg/L	1	0.100	<0.000400	107	73.9 - 123.9	5	20
Ethylbenzene		2	0.108	mg/L	1	0.100	<0.000600	108	76.8 - 120.8	3	20
Xylene		2	0.324	mg/L	1	0.300	<0.00130	108	76.2 - 120.5	2	20

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

continued ...

Report Date: April 24, 2012
115-6403133A

Work Order: 12041303
Celero/Rock Queen #33

Page Number: 16 of 29
Chavez County, NM

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)	0.101	0.0944	mg/L	1	0.100	101	94	72.5 - 117
4-Bromofluorobenzene (4-BFB)	0.102	0.0960	mg/L	1	0.100	102	96	69.4 - 124

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

Laboratory Control Spike (LCS-1)

QC Batch: 90403
Prep Batch: 76700

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

Analyzed By: tc
Prepared By: tc

Report Date: April 24, 2012
115-6403133A

Work Order: 12041303
Celero/Rock Queen #33

Page Number: 17 of 29
Chavez County, NM

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	0.104	mg/L	1	0.100	<0.000400	104	73.9 - 123.9
Ethylbenzene		2	0.105	mg/L	1	0.100	<0.000600	105	76.8 - 120.8
Xylene		2	0.314	mg/L	1	0.300	<0.00130	105	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	0.103	mg/L	1	0.100	<0.000600	103	79.7 - 117.6	1	20
Toluene		2	0.103	mg/L	1	0.100	<0.000400	103	73.9 - 123.9	1	20
Ethylbenzene		2	0.103	mg/L	1	0.100	<0.000600	103	76.8 - 120.8	2	20
Xylene		2	0.308	mg/L	1	0.300	<0.00130	103	76.2 - 120.5	2	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.0831	0.0890	mg/L	1	0.100	83	89	72.5 - 117
4-Bromofluorobenzene (4-BFB)	0.0862	0.0893	mg/L	1	0.100	86	89	69.4 - 124

Laboratory Control Spike (LCS-1)

QC Batch: 90451
Prep Batch: 76740

Date Analyzed: 2012-04-23
QC Preparation: 2012-04-21

Analyzed By: RL
Prepared By: RL

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	25.2	mg/L	1	25.0	<0.209	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	25.5	mg/L	1	25.0	<0.209	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: 90451
Prep Batch: 76740

Date Analyzed: 2012-04-23
QC Preparation: 2012-04-21

Analyzed By: RL
Prepared By: RL

Report Date: April 24, 2012
115-6403133A

Work Order: 12041303
Celero/Rock Queen #33

Page Number: 18 of 29
Chavez County, NM

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	25.3	mg/L	1	25.0	<0.179	101	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: 90452
Prep Batch: 76741

Date Analyzed: 2012-04-23
QC Preparation: 2012-04-21

Analyzed By: RL
Prepared By: RL

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	26.8	mg/L	1	25.0	<0.209	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
Chloride		1	25.8	mg/L	1	25.0	<0.209	103	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: 90452
Prep Batch: 76741

Date Analyzed: 2012-04-23
QC Preparation: 2012-04-21

Analyzed By: RL
Prepared By: RL

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate		1	25.5	mg/L	1	25.0	<0.179	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	25.2	mg/L	1	25.0	<0.179	101	90 - 110	1	20

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

Report Date: April 24, 2012
115-6403133A

Work Order: 12041303
Celero/Rock Queen #33

Page Number: 19 of 29
Chavez County, NM

Laboratory Control Spike (LCS-1)

QC Batch: 90513
Prep Batch: 76794

Date Analyzed: 2012-04-24
QC Preparation: 2012-04-23

Analyzed By: RL
Prepared By: RL

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate		1	25.5	mg/L	1	25.0	<0.179	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	25.1	mg/L	1	25.0	<0.179	100	90 - 110	2	20

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

Matrix Spike (MS-1) Spiked Sample: 294164

QC Batch: 90366
Prep Batch: 76670

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

Analyzed By: tc
Prepared By: tc

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		2	0.111	mg/L	1	0.100	<0.000600	111	86.6 - 130.3
Toluene		2	0.111	mg/L	1	0.100	<0.000400	111	82.2 - 120.1
Ethylbenzene		2	0.112	mg/L	1	0.100	<0.000600	112	66.8 - 119.2
Xylene		2	0.335	mg/L	1	0.300	<0.00130	112	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		2	0.109	mg/L	1	0.100	<0.000600	109	86.6 - 130.3	2	20
Toluene		2	0.109	mg/L	1	0.100	<0.000400	109	82.2 - 120.1	2	20
Ethylbenzene		2	0.110	mg/L	1	0.100	<0.000600	110	66.8 - 119.2	2	20
Xylene		2	0.331	mg/L	1	0.300	<0.00130	110	66.5 - 118.4	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)	0.104	0.0996	mg/L	1	0.1	104	100	73.2 - 116.6
4-Bromofluorobenzene (4-BFB)	0.102	0.0945	mg/L	1	0.1	102	94	64.8 - 125.7

Report Date: April 24, 2012
115-6403133A

Work Order: 12041303
Celero/Rock Queen #33

Page Number: 20 of 29
Chavez County, NM

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 (TF ¹)	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: 294386

QC Batch: 90403
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		2	0.0999	mg/L	1	0.100	<0.000600	100	86.6 - 130.3
Toluene		2	0.0996	mg/L	1	0.100	<0.000400	100	82.2 - 120.1
Ethylbenzene		2	0.0997	mg/L	1	0.100	<0.000600	100	66.8 - 119.2
Xylene		2	0.297	mg/L	1	0.300	<0.00130	99	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		2	0.100	mg/L	1	0.100	<0.000600	100	86.6 - 130.3	0	20
Toluene		2	0.0996	mg/L	1	0.100	<0.000400	100	82.2 - 120.1	0	20

continued ...

Report Date: April 24, 2012
115-6403133A

Work Order: 12041303
Celero/Rock Queen #33

Page Number: 21 of 29
Chavez County, NM

matrix spikes continued ...

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Ethylbenzene		2	0.101	mg/L	1	0.100	<0.000600	101	66.8 - 119.2	1	20
Xylene		2	0.303	mg/L	1	0.300	<0.00130	101	66.5 - 118.4	2	20

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

Surrogate			MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	Q _{sr}	Q _{sr}	0.0624	0.0707	mg/L	1	0.1	62	71	73.2 - 116.6
4-Bromofluorobenzene (4-BFB)	Q _{sr}	Q _{sr}	0.0614	0.0703	mg/L	1	0.1	61	70	64.8 - 125.7

Matrix Spike (MS-1) Spiked Sample: 294163

QC Batch: 90451
Prep Batch: 76740

Date Analyzed: 2012-04-23
QC Preparation: 2012-04-21

Analyzed By: RL
Prepared By: RL

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	Q _{sr}	Q _{sr}	1	505	mg/L	10	417	42.7	111

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 _{sr}	Q _{sr}	1	507	mg/L	10	417	42.7	111	90 - 110	0

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

Matrix Spike (MS-1) Spiked Sample: 294163

QC Batch: 90451
Prep Batch: 76740

Date Analyzed: 2012-04-23
QC Preparation: 2012-04-21

Analyzed By: RL
Prepared By: RL

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate		1	607	mg/L	10	417	157	108	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	611	mg/L	10	417	157	109	90 - 110	1	20

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

Report Date: April 24, 2012
115-6403133A

Work Order: 12041303
Celero/Rock Queen #33

Page Number: 22 of 29
Chavez County, NM

Matrix Spike (MS-1) Spiked Sample: 294172

QC Batch: 90452
Prep Batch: 76741

Date Analyzed: 2012-04-23
QC Preparation: 2012-04-21

Analyzed By: RL
Prepared By: RL

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	3450	mg/L	100	2080	1349	101	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	3470	mg/L	100	2080	1349	102	90 - 110	1	20

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

Matrix Spike (MS-1) Spiked Sample: 294172

QC Batch: 90452
Prep Batch: 76741

Date Analyzed: 2012-04-23
QC Preparation: 2012-04-21

Analyzed By: RL
Prepared By: RL

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate		1	2170	mg/L	100	2080	74.5	101	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	2190	mg/L	100	2080	74.5	102	90 - 110	1	20

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

Matrix Spike (MS-1) Spiked Sample: 294864

QC Batch: 90513
Prep Batch: 76794

Date Analyzed: 2012-04-24
QC Preparation: 2012-04-23

Analyzed By: RL
Prepared By: RL

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate		1	123	mg/L	5	104	22.2	97	90 - 110

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

Report Date: April 24, 2012
115-6403133A

Work Order: 12041303
Celero/Rock Queen #33

Page Number: 23 of 29
Chavez County, NM

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Sulfate		1	124	mg/L	5	104	22.2	98	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: 90366

Date Analyzed: 2012-04-18

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	2012-04-18
Toluene		2	mg/L	0.100	0.105	105	80 - 120	2012-04-18
Ethylbenzene		2	mg/L	0.100	0.106	106	80 - 120	2012-04-18
Xylene		2	mg/L	0.300	0.313	104	80 - 120	2012-04-18

Standard (CCV-2)

QC Batch: 90366

Date Analyzed: 2012-04-18

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	2012-04-18
Toluene		2	mg/L	0.100	0.109	109	80 - 120	2012-04-18
Ethylbenzene		2	mg/L	0.100	0.111	111	80 - 120	2012-04-18
Xylene		2	mg/L	0.300	0.332	111	80 - 120	2012-04-18

Standard (CCV-1)

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	0.107	107	80 - 120	2012-04-20
Xylene		2	mg/L	0.300	0.320	107	80 - 120	2012-04-20

Report Date: April 24, 2012
115-6403133A

Work Order: 12041303
Celero/Rock Queen #33

Page Number: 25 of 29
Chavez County, NM

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-2)

QC Batch: 90403

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	0.106	106	80 - 120	2012-04-20
Toluene		2	mg/L	0.100	0.107	107	80 - 120	2012-04-20
Ethylbenzene		2	mg/L	0.100	0.107	107	80 - 120	2012-04-20
Xylene		2	mg/L	0.300	0.321	107	80 - 120	2012-04-20

Standard (CCV-3)

QC Batch: 90403

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	0.105	105	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	0.105	105	80 - 120	2012-04-20
Xylene		2	mg/L	0.300	0.315	105	80 - 120	2012-04-20

Standard (CCV-1)

QC Batch: 90451

Date Analyzed: 2012-04-23

Analyzed By: RL

Report Date: April 24, 2012
115-6403133A

Work Order: 12041303
Celero/Rock Queen #33

Page Number: 26 of 29
Chavez County, NM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1	mg/L	25.0	25.3	101	90 - 110	2012-04-23

Standard (CCV-1)

QC Batch: 90451

Date Analyzed: 2012-04-23

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	25.3	101	90 - 110	2012-04-23

Standard (CCV-2)

QC Batch: 90451

Date Analyzed: 2012-04-23

Analyzed By: RL

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1	mg/L	25.0	26.1	104	90 - 110	2012-04-23

Standard (CCV-2)

QC Batch: 90451

Date Analyzed: 2012-04-23

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	2012-04-23

Standard (CCV-1)

QC Batch: 90452

Date Analyzed: 2012-04-23

Analyzed By: RL

Report Date: April 24, 2012
115-6403133A

Work Order: 12041303
Celero/Rock Queen #33

Page Number: 27 of 29
Chavez County, NM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1	mg/L	25.0	26.1	104	90 - 110	2012-04-23

Standard (CCV-1)

QC Batch: 90452

Date Analyzed: 2012-04-23

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	2012-04-23

Standard (CCV-2)

QC Batch: 90452

Date Analyzed: 2012-04-23

Analyzed By: RL

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1	mg/L	25.0	26.4	106	90 - 110	2012-04-23

Standard (CCV-2)

QC Batch: 90452

Date Analyzed: 2012-04-23

Analyzed By: RL

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Sulfate		1	mg/L	25.0	25.9	104	90 - 110	2012-04-23

Standard (CCV-1)

QC Batch: 90513

Date Analyzed: 2012-04-24

Analyzed By: RL

Report Date: April 24, 2012
115-6403133A

Work Order: 12041303
Celero/Rock Queen #33

Page Number: 28 of 29
Chavez County, NM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Sulfate		1	mg/L	25.0	25.0	100	90 - 110	2012-04-24

Standard (CCV-2)

QC Batch: 90513

Date Analyzed: 2012-04-24

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	24.7	99	90 - 110	2012-04-24

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 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.

Analysis Request of Chain of Custody Record



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

[illegible]

REMARKS: ~~£~~ Mudlaid - BTEX/TDS

SAMPLE CONDITION WHEN RECEIVED:
99% 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.

Analysis Request of Chain of Custody Record



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

[illegible]

RELINQUISHED BY: (Signature)	Date: 4/12/12	RECEIVED BY: (Signature)
RELINQUISHED BY: (Signature)	Date: 4/15/12	RECEIVED BY: (Signature)
RELINQUISHED BY: (Signature)	Date: 8/30	RECEIVED BY: (Signature)
RECEIVING LABORATORY:	STATE: TX	RECEIVED BY: (Signature)
ADDRESS:	ZIP:	DATE: 4/17/12
CITY: Midland	PHONE:	
CONTACT:		

SAMPLE CONDITION WHEN RECEIVED:	REMARKS:
240 vint	3.2 K Muldick - BTEX/TDS
	3.11

Please fill out all copies - Laboratory retains Yellow copy - Return Original copy to Tetra

25. ZN 579/07

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

[illegible]



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: 12072704



Project Location: Chavez County, NM
Project Name: Celero/Rock Queen #33
Project Number: 115-6403133A

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
304921	MW-1	water	2012-07-24	17:30	2012-07-26
304922	MW-2	water	2012-07-24	17:45	2012-07-26
304923	MW-3	water	2012-07-24	17:20	2012-07-26
304924	MW-4	water	2012-07-24	17:50	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 13 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

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

Report Contents

Case Narrative	3
Analytical Report	4
Sample 304921 (MW-1)	4
Sample 304922 (MW-2)	4
Sample 304923 (MW-3)	5
Sample 304924 (MW-4)	6
Method Blanks	7
QC Batch 93574 - Method Blank (1)	7
QC Batch 93694 - Method Blank (1)	7
Laboratory Control Spikes	8
QC Batch 93574 - LCS (1)	8
QC Batch 93694 - LCS (1)	8
QC Batch 93574 - MS (1)	9
QC Batch 93694 - MS (1)	9
Calibration Standards	11
QC Batch 93574 - CCV (1)	11
QC Batch 93574 - CCV (2)	11
QC Batch 93574 - CCV (3)	11
QC Batch 93694 - CCV (1)	11
QC Batch 93694 - CCV (2)	12
Appendix	13
Report Definitions	13
Laboratory Certifications	13
Standard Flags	13
Attachments	13

Case Narrative

Samples for project Celero/Rock Queen #33 were received by TraceAnalysis, Inc. on 2012-07-26 and assigned to work order 12072704. Samples for work order 12072704 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
Chloride (IC)	E 300.0	79415	2012-08-05 at 00:51	93694	2012-08-06 at 13:09

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

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 12072704 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: August 7, 2012
115-6403133A

Work Order: 12072704
Celero/Rock Queen #33

Page Number: 4 of 13
Chavez County, NM

Analytical Report

Sample: 304921 - MW-1

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	Flag	Cert	RL Result	Units	Dilution	RL
Benzene		1	0.00350	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		1	0.0177	mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	Q _{tr}	Q _{tr}	0.133	mg/L	1	0.100	133	70 - 130
4-Bromofluorobenzene (4-BFB)			0.0718	mg/L	1	0.100	72	70 - 130

Sample: 304921 - MW-1

Laboratory: Midland
Analysis: Chloride (IC)
QC Batch: 93694
Prep Batch: 79415

Analytical Method: E 300.0
Date Analyzed: 2012-08-06
Sample Preparation: 2012-08-05

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		2	69500	mg/L	10000	2.50

Sample: 304922 - MW-2

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

Report Date: August 7, 2012
115-6403133A

Work Order: 12072704
Celero/Rock Queen #33

Page Number: 5 of 13
Chavez County, NM

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)			0.0844	mg/L	1	0.100	84	70 - 130
4-Bromofluorobenzene (4-BFB)			0.0858	mg/L	1	0.100	86	70 - 130

Sample: 304922 - MW-2

Laboratory: Midland
Analysis: Chloride (IC)
QC Batch: 93694
Prep Batch: 79415

Analytical Method: E 300.0
Date Analyzed: 2012-08-06
Sample Preparation: 2012-08-05

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		2	51.9	mg/L	10	2.50

Sample: 304923 - MW-3

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	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)			0.0843	mg/L	1	0.100	84	70 - 130
4-Bromofluorobenzene (4-BFB)			0.0866	mg/L	1	0.100	87	70 - 130

Report Date: August 7, 2012
115-6403133A

Work Order: 12072704
Celero/Rock Queen #33

Page Number: 6 of 13
Chavez County, NM

Sample: 304923 - MW-3

Laboratory: Midland
Analysis: Chloride (IC)
QC Batch: 93694
Prep Batch: 79415

Analytical Method: E 300.0
Date Analyzed: 2012-08-06
Sample Preparation: 2012-08-05

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		2	6310	mg/L	500	2.50

Sample: 304924 - MW-4

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	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)			0.0845	mg/L	1	0.100	84	70 - 130
4-Bromofluorobenzene (4-BFB)			0.0869	mg/L	1	0.100	87	70 - 130

Sample: 304924 - MW-4

Laboratory: Midland
Analysis: Chloride (IC)
QC Batch: 93694
Prep Batch: 79415

Analytical Method: E 300.0
Date Analyzed: 2012-08-06
Sample Preparation: 2012-08-05

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		2	8270	mg/L	1000	2.50

Report Date: August 7, 2012
115-6403133A

Work Order: 12072704
Celero/Rock Queen #33

Page Number: 7 of 13
Chavez County, NM

Method Blanks

Method Blank (1) QC Batch: 93574

QC Batch: 93574
Prep Batch: 79320

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

Analyzed By: ZLM
Prepared By: ZLM

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		1	<0.000371	mg/L	0.001
Toluene		1	<0.000347	mg/L	0.001
Ethylbenzene		1	<0.000326	mg/L	0.001
Xylene		1	0.000700	mg/L	0.001

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

Method Blank (1) QC Batch: 93694

QC Batch: 93694
Prep Batch: 79415

Date Analyzed: 2012-08-06
QC Preparation: 2012-08-05

Analyzed By: AR
Prepared By: AR

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride		2	1.03	mg/L	2.5

Report Date: August 7, 2012
115-6403133A

Work Order: 12072704
Celero/Rock Queen #33

Page Number: 8 of 13
Chavez County, NM

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	LCSD 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	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD 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: 93694
Prep Batch: 79415

Date Analyzed: 2012-08-06
QC Preparation: 2012-08-05

Analyzed By: AR
Prepared By: AR

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

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

continued ...

Report Date: August 7, 2012
115-6403133A

Work Order: 12072704
Celero/Rock Queen #33

Page Number: 9 of 13
Chavez County, NM

control spikes continued ...

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		2	25.0	mg/L	1	25.0	<0.265	100	90 - 110	0	20

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

Matrix Spike (MS-1) Spiked Sample: 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	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

Matrix Spike (MS-1) Spiked Sample: 304922

QC Batch: 93694
Prep Batch: 79415

Date Analyzed: 2012-08-06
QC Preparation: 2012-08-05

Analyzed By: AR
Prepared By: AR

Report Date: August 7, 2012
115-6403133A

Work Order: 12072704
Celero/Rock Queen #33

Page Number: 10 of 13
Chavez County, NM

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		2	357	mg/L	10	275	51.9	111	80 - 120

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		2	314	mg/L	10	275	51.9	95	80 - 120	13	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: 93574

Date Analyzed: 2012-08-01

Analyzed By: ZLM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.0938	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	Flag	Cert	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	Flag	Cert	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

Report Date: August 7, 2012
115-6403133A

Work Order: 12072704
Celero/Rock Queen #33

Page Number: 12 of 13
Chavez County, NM

Standard (CCV-1)

QC Batch: 93694

Date Analyzed: 2012-08-06

Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		2	mg/L	25.0	26.7	107	90 - 110	2012-08-06

Standard (CCV-2)

QC Batch: 93694

Date Analyzed: 2012-08-06

Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		2	mg/L	25.0	25.1	100	90 - 110	2012-08-06

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

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 800-375-1296 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 (Corrected Report)

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

Report Date: November 8, 2012

Work Order: 12102914



Project Location: Chavez Co., NM
Project Name: Celero/Rock Queen Unit Tract #33
Project Number: 115-6403133A

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
312888	MW-1	water	2012-10-25	14:25	2012-10-26
312889	MW-2	water	2012-10-25	14:30	2012-10-26
312890	MW-3	water	2012-10-25	14:20	2012-10-26
312891	MW-4	water	2012-10-25	14:35	2012-10-26

Report Corrections (Work Order 12102914)

- Re-ran the Cl and SO4 for sample 312890. 11-8-12

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

Michael Abel

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

Report Contents

Case Narrative	5
Analytical Report	6
Sample 312888 (MW-1)	6
Sample 312889 (MW-2)	7
Sample 312890 (MW-3)	8
Sample 312891 (MW-4)	9
Method Blanks	12
QC Batch 96181 - Method Blank (1)	12
QC Batch 96190 - Method Blank (1)	12
QC Batch 96215 - Method Blank (1)	12
QC Batch 96215 - Method Blank (1)	13
QC Batch 96257 - Method Blank (1)	13
QC Batch 96257 - Method Blank (1)	13
QC Batch 96325 - Method Blank (1)	13
QC Batch 96424 - Method Blank (1)	14
QC Batch 96424 - Method Blank (1)	14
QC Batch 96181 - Duplicate (2)	14
Laboratory Control Spikes	15
QC Batch 96181 - LCS (1)	15
QC Batch 96181 - LCS (2)	15
QC Batch 96190 - LCS (1)	15
QC Batch 96215 - LCS (1)	16
QC Batch 96215 - LCS (1)	16
QC Batch 96257 - LCS (1)	17
QC Batch 96257 - LCS (1)	17
QC Batch 96325 - LCS (1)	17
QC Batch 96424 - LCS (1)	18
QC Batch 96424 - LCS (1)	18
QC Batch 96190 - MS (1)	19
QC Batch 96215 - MS (1)	19
QC Batch 96215 - MS (1)	20
QC Batch 96257 - MS (1)	20
QC Batch 96257 - MS (1)	21
QC Batch 96325 - MS (1)	21
QC Batch 96424 - MS (1)	22
QC Batch 96424 - MS (1)	22
Calibration Standards	23
QC Batch 96190 - CCV (1)	23
QC Batch 96190 - CCV (2)	23
QC Batch 96190 - CCV (3)	23
QC Batch 96215 - CCV (1)	23
QC Batch 96215 - CCV (1)	24

QC Batch 96215 - CCV (2)	24
QC Batch 96215 - CCV (2)	24
QC Batch 96257 - CCV (1)	24
QC Batch 96257 - CCV (1)	25
QC Batch 96257 - CCV (2)	25
QC Batch 96257 - CCV (2)	25
QC Batch 96325 - CCV (1)	25
QC Batch 96325 - CCV (2)	26
QC Batch 96325 - CCV (3)	26
QC Batch 96424 - CCV (1)	26
QC Batch 96424 - CCV (1)	27
QC Batch 96424 - CCV (2)	27
QC Batch 96424 - CCV (2)	27

Appendix	28
Report Definitions	28
Laboratory Certifications	28
Standard Flags	28
Result Comments	28
Attachments	28

Case Narrative

Samples for project Celero/Rock Queen Unit Tract #33 were received by TraceAnalysis, Inc. on 2012-10-26 and assigned to work order 12102914. Samples for work order 12102914 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	81478	2012-10-29 at 10:21	96215	2012-10-31 at 15:07
Chloride (IC)	E 300.0	81479	2012-10-29 at 10:22	96257	2012-11-03 at 13:29
Chloride (IC)	E 300.0	81714	2012-11-07 at 16:17	96424	2012-11-07 at 16:18
SO4 (IC)	E 300.0	81478	2012-10-29 at 10:21	96215	2012-10-31 at 15:07
SO4 (IC)	E 300.0	81479	2012-10-29 at 10:22	96257	2012-11-03 at 13:29
SO4 (IC)	E 300.0	81714	2012-11-07 at 16:17	96424	2012-11-07 at 16:18
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 12102914 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 8, 2012
115-6403133A

Work Order: 12102914
Celero/Rock Queen Unit Tract #33

Page Number: 6 of 29
Chavez Co., NM

Analytical Report

Sample: 312888 - 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		1	0.00690	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 _{tr}	Q _{tr}	0.247	mg/L	1	0.100	247	70 - 130
4-Bromofluorobenzene (4-BFB)	² Q _{tr}	Q _{tr}	0.0683	mg/L	1	0.100	68	70 - 130

Sample: 312888 - MW-1

Laboratory: Midland
Analysis: Chloride (IC)
QC Batch: 96215
Prep Batch: 81478

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

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	Q _s	1	74300	mg/L	5000	2.50

Sample: 312888 - MW-1

Laboratory: Midland
Analysis: SO4 (IC)
QC Batch: 96215
Prep Batch: 81478

Analytical Method: E 300.0
Date Analyzed: 2012-10-31
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	1090	mg/L	50	2.50

Report Date: November 8, 2012
115-6403133A

Work Order: 12102914
Celero/Rock Queen Unit Tract #33

Page Number: 7 of 29
Chavez Co., NM

Sample: 312888 - 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	115000	mg/L	100	10.0

Sample: 312889 - 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)			0.0888	mg/L	1	0.100	89	70 - 130
4-Bromofluorobenzene (4-BFB)			0.0845	mg/L	1	0.100	84	70 - 130

Sample: 312889 - MW-2

Laboratory: Midland
Analysis: Chloride (IC)
QC Batch: 96215
Prep Batch: 81478

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

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	Q	1	29.7	mg/L	5	2.50

Report Date: November 8, 2012
115-6403133A

Work Order: 12102914
Celero/Rock Queen Unit Tract #33

Page Number: 8 of 29
Chavez Co., NM

Sample: 312889 - MW-2

Laboratory: Midland
Analysis: SO4 (IC)
QC Batch: 96215
Prep Batch: 81478

Analytical Method: E 300.0
Date Analyzed: 2012-10-31
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	98.2	mg/L	5	2.50

Sample: 312889 - 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	624	mg/L	2	10.0

Sample: 312890 - 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)			0.0872	mg/L	1	0.100	87	70 - 130
4-Bromofluorobenzene (4-BFB)			0.0837	mg/L	1	0.100	84	70 - 130

Report Date: November 8, 2012
115-6403133A

Work Order: 12102914
Celero/Rock Queen Unit Tract #33

Page Number: 9 of 29
Chavez Co., NM

Sample: 312890 - MW-3

Laboratory:	Midland	Analytical Method:	E 300.0	Prep Method:	N/A
Analysis:	Chloride (IC)	Date Analyzed:	2012-11-07	Analyzed By:	AR
QC Batch:	96424	Sample Preparation:	2012-11-07	Prepared By:	AR
Prep Batch:	81714				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1	6210	mg/L	500	2.50

Sample: 312890 - MW-3

Laboratory:	Midland	Analytical Method:	E 300.0	Prep Method:	N/A
Analysis:	SO4 (IC)	Date Analyzed:	2012-11-07	Analyzed By:	AR
QC Batch:	96424	Sample Preparation:	2012-11-07	Prepared By:	AR
Prep Batch:	81714				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Sulfate		1	149	mg/L	5	2.50

Sample: 312890 - 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	11100	mg/L	20	10.0

Sample: 312891 - MW-4

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				

continued ...

Report Date: November 8, 2012
115-6403133A

Work Order: 12102914
Celero/Rock Queen Unit Tract #33

Page Number: 10 of 29
Chavez Co., NM

sample 312891 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	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)			0.0895	mg/L	1	0.100	90	70 - 130
4-Bromofluorobenzene (4-BFB)			0.0835	mg/L	1	0.100	84	70 - 130

Sample: 312891 - MW-4

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	8000	mg/L	1000	2.50

Sample: 312891 - MW-4

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	281	mg/L	10	2.50

Report Date: November 8, 2012
115-6403133A

Work Order: 12102914
Celero/Rock Queen Unit Tract #33

Page Number: 11 of 29
Chavez Co., NM

Sample: 312891 - 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	9800	mg/L	50	10.0

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: 96215

QC Batch: 96215
Prep Batch: 81478

Date Analyzed: 2012-10-31
QC Preparation: 2012-10-29

Analyzed By: AR
Prepared By: AR

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride		1	1.01	mg/L	2.5

Report Date: November 8, 2012
115-6403133A

Work Order: 12102914
Celero/Rock Queen Unit Tract #33

Page Number: 13 of 29
Chavez Co., NM

Method Blank (1) QC Batch: 96215

QC Batch: 96215
Prep Batch: 81478

Date Analyzed: 2012-10-31
QC Preparation: 2012-10-29

Analyzed By: AR
Prepared By: AR

Parameter	Flag	Cert	MDL Result	Units	RL
Sulfate		1	0.230	mg/L	2.5

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

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
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

Report Date: November 8, 2012
115-6403133A

Work Order: 12102914
Celero/Rock Queen Unit Tract #33

Page Number: 14 of 29
Chavez Co., NM

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

Method Blank (1) QC Batch: 96424

QC Batch: 96424
Prep Batch: 81714

Date Analyzed: 2012-11-07
QC Preparation: 2012-11-07

Analyzed By: AR
Prepared By: AR

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride		1	1.30	mg/L	2.5

Method Blank (1) QC Batch: 96424

QC Batch: 96424
Prep Batch: 81714

Date Analyzed: 2012-11-07
QC Preparation: 2012-11-07

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: 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

Report Date: November 8, 2012
115-6403133A

Work Order: 12102914
Celero/Rock Queen Unit Tract #33

Page Number: 15 of 29
Chavez Co., NM

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

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	1080	mg/L	1	1000	<9.75	108	90 - 110

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Total Dissolved Solids		1	1090	mg/L	1	1000	<9.75	109	90 - 110	1	10

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

Laboratory Control Spike (LCS-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

Report Date: November 8, 2012
115-6403133A

Work Order: 12102914
Celero/Rock Queen Unit Tract #33

Page Number: 16 of 29
Chavez Co., NM

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	LCS 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.

Surrogate	LCS Result	LCS Result	Units	Dil.	Spike Amount	LCS Rec.	LCS 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: 96215
Prep Batch: 81478

Date Analyzed: 2012-10-31
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	23.7	mg/L	1	25.0	<0.265	95	90 - 110

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

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		1	23.5	mg/L	1	25.0	<0.265	94	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: 96215
Prep Batch: 81478

Date Analyzed: 2012-10-31
QC Preparation: 2012-10-29

Analyzed By: AR
Prepared By: AR

Report Date: November 8, 2012
115-6403133A

Work Order: 12102914
Celero/Rock Queen Unit Tract #33

Page Number: 17 of 29
Chavez Co., NM

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

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Sulfate		1	23.3	mg/L	1	25.0	<0.177	93	90 - 110	11	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
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.

Report Date: November 8, 2012
115-6403133A

Work Order: 12102914
Celero/Rock Queen Unit Tract #33

Page Number: 18 of 29
Chavez Co., NM

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.

Surrogate	LCS Result	LCS Result	Units	Dil.	Spike Amount	LCS Rec.	LCS 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

Laboratory Control Spike (LCS-1)

QC Batch: 96424
Prep Batch: 81714

Date Analyzed: 2012-11-07
QC Preparation: 2012-11-07

Analyzed By: AR
Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	22.5	mg/L	1	25.0	<0.265	90	90 - 110

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

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		1	22.6	mg/L	1	25.0	<0.265	90	90 - 110	0	20

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

Report Date: November 8, 2012
115-6403133A

Work Order: 12102914
Celero/Rock Queen Unit Tract #33

Page Number: 19 of 29
Chavez Co., NM

Laboratory Control Spike (LCS-1)

QC Batch: 96424
Prep Batch: 81714

Date Analyzed: 2012-11-07
QC Preparation: 2012-11-07

Analyzed By: AR
Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate		1	22.6	mg/L	1	25.0	<0.177	90	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	22.7	mg/L	1	25.0	<0.177	91	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: 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

Report Date: November 8, 2012
115-6403133A

Work Order: 12102914
Celero/Rock Queen Unit Tract #33

Page Number: 20 of 29
Chavez Co., NM

Matrix Spike (MS-1) Spiked Sample: 312890

QC Batch: 96215
Prep Batch: 81478

Date Analyzed: 2012-10-31
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	Q _n	Q _n	1	233000	mg/L	500	150000	52100	121 80 - 120

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	Q _n	Q _n	1	233000	mg/L	500	150000	52100	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: 312890

QC Batch: 96215
Prep Batch: 81478

Date Analyzed: 2012-10-31
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	139000	mg/L	500	150000	168	92 80 - 120

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Sulfate			1	141000	mg/L	500	150000	168	94 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: 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.

Report Date: November 8, 2012
115-6403133A

Work Order: 12102914
Celero/Rock Queen Unit Tract #33

Page Number: 21 of 29
Chavez Co., NM

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: 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.

Report Date: November 8, 2012
115-6403133A

Work Order: 12102914
Celero/Rock Queen Unit Tract #33

Page Number: 22 of 29
Chavez Co., NM

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

Matrix Spike (MS-1) Spiked Sample: 313049

QC Batch: 96424
Prep Batch: 81714

Date Analyzed: 2012-11-07
QC Preparation: 2012-11-07

Analyzed By: AR
Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	218	mg/L	5	150	75.9	95	80 - 120

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD Limit
Chloride		1	218	mg/L	5	150	75.9	95	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: 313049

QC Batch: 96424
Prep Batch: 81714

Date Analyzed: 2012-11-07
QC Preparation: 2012-11-07

Analyzed By: AR
Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate		1	190	mg/L	5	150	68.4	81	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 Limit
Sulfate		1	192	mg/L	5	150	68.4	82	80 - 120	1 20

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

Calibration Standards

Standard (CCV-1)

QC Batch: 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

Report Date: November 8, 2012
115-6403133A

Work Order: 12102914
Celero/Rock Queen Unit Tract #33

Page Number: 24 of 29
Chavez Co., NM

Standard (CCV-1)

QC Batch: 96215

Date Analyzed: 2012-10-31

Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1	mg/L	25.0	24.1	96	90 - 110	2012-10-31

Standard (CCV-1)

QC Batch: 96215

Date Analyzed: 2012-10-31

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	25.0	100	90 - 110	2012-10-31

Standard (CCV-2)

QC Batch: 96215

Date Analyzed: 2012-10-31

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	2012-10-31

Standard (CCV-2)

QC Batch: 96215

Date Analyzed: 2012-10-31

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	2012-10-31

Standard (CCV-1)

QC Batch: 96257

Date Analyzed: 2012-11-03

Analyzed By: AR

Report Date: November 8, 2012
115-6403133A

Work Order: 12102914
Celero/Rock Queen Unit Tract #33

Page Number: 25 of 29
Chavez Co., NM

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: 96325

Date Analyzed: 2012-11-05

Analyzed By: YG

Report Date: November 8, 2012
115-6403133A

Work Order: 12102914
Celero/Rock Queen Unit Tract #33

Page Number: 26 of 29
Chavez Co., NM

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

Standard (CCV-1)

QC Batch: 96424

Date Analyzed: 2012-11-07

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	2012-11-07

Report Date: November 8, 2012
115-6403133A

Work Order: 12102914
Celero/Rock Queen Unit Tract #33

Page Number: 27 of 29
Chavez Co., NM

Standard (CCV-1)

QC Batch: 96424

Date Analyzed: 2012-11-07

Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Sulfate		1	mg/L	25.0	23.9	96	90 - 110	2012-11-07

Standard (CCV-2)

QC Batch: 96424

Date Analyzed: 2012-11-07

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	23.2	93	90 - 110	2012-11-07

Standard (CCV-2)

QC Batch: 96424

Date Analyzed: 2012-11-07

Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Sulfate		1	mg/L	25.0	23.6	94	90 - 110	2012-11-07

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.

Attachments

Report Date: November 8, 2012
115-6403133A

Work Order: 12102914
Celero/Rock Queen Unit Tract #33

Page Number: 29 of 29
Chavez Co., NM

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

12/10/29/14

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) 682-3946

CLIENT NAME: Celero		SITE MANAGER: Jeff Kindley		PROJECT NAME: Celero - Rock Dugan #33		SAMPLE IDENTIFICATION		PRESERVATIVE METHOD		ANALYSIS REQUEST (Circle or Specify Method No.)																				
LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP.	GRAB	NUMBER OF CONTAINERS	FLTERED (Y/N)	HCL	HNO3	ICE	NONE	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. 8270/625	PCBs 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Meq/L Anions/Cations, pH, TDS	SVI/Fat		
312888	10/25	1425	✓		✓	4		✓		✓																				
889	✓	1432	W		✓	4		✓		✓																				
890	✓	1430	W		✓	4		✓		✓																				
891	✓	1435	W		✓	4		✓		✓																				

RELINQUISHED BY: (Signature) [Signature]		Date: 10/26/12 Time: 14:55	RECEIVED BY: (Signature) [Signature]		Date: 10/26/12 Time: 14:55	SAMPLED BY: (Print & Initial) Evan Reich		Date: 10/26/12 Time: 14:55
RELINQUISHED BY: (Signature) [Signature]		Date: _____ Time: _____	RECEIVED BY: (Signature) [Signature]		Date: _____ Time: _____	SAMPLE SHIPPED BY: (Circle) FEDEX		AIRBILL #: _____
RELINQUISHED BY: (Signature) [Signature]		Date: _____ Time: _____	RECEIVED BY: (Signature) [Signature]		Date: _____ Time: _____	HAND DELIVERED BUS		OTHER: _____
RECEIVING LABORATORY: ADDRESS: <u>Midland</u> STATE: _____ ZIP: _____ CONTACT: _____ PHONE: _____		RECEIVED BY: (Signature) [Signature]		DATE: _____ TIME: _____		TETRA TECH CONTACT PERSON: Jeff Kindley		Results by: _____
SAMPLE CONDITION WHEN RECEIVED: 2.6		REMARKS: intact + 0 headspace		DATE: _____ TIME: _____		RUSH Charges Authorized: Yes _____ No _____		Notes: all

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