1R - 1645

2009 - 2011 GWMR

03 / 29 / 2012



March 29, 2012

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: Comprehensive Groundwater Sampling Report for the Celero Energy II, LP, Rock Queen Unit Tract 7 Tank Battery, Located in Unit Letter I, Section 22, Township 13 South, Range 31 East, Chaves County, New Mexico (NMOCD 1RP#1645).

Mr. Von Gonten:

This report details the results of the groundwater sampling events performed at the Celero Energy II, LP (Celero), Rock Queen Unit Tract 7 Tank Battery (Site) from November 2009 through December 2011. The Site is located approximately 22 miles north of Maljamar, New Mexico. The Site location is shown on Figures 1 and 2.

FACILITY BACKGROUND

Pit Closure

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

The Tract 7 Tank Battery pit was dewatered and the residual sludge, tank bottom materials, and liner were removed in October 2007. Removed fluids were placed into an existing SWD system or taken for disposal, while the sludge, tank bottom materials, and liner were disposed of at Gandy-Marley, Inc.'s landfill site in Lovington, New Mexico. Upon completion of the removal of the fluids, sludge, and liner, the underlying soils were visually inspected for signs of impact. Approximately 440 cubic yards of soil were excavated and transported to Gandy-Marley, Inc. for disposal. The pit was excavated to a point where the subsoil would support a soil boring rig.



On October 12, 2009, a report entitled Assessment and Closure Report for the Pit located at the Rock Queen Unit Track 7 Tank Battery was submitted to the NMOCD. The report detailed the closure of the former pit at the facility.

Groundwater Investigation

Between November 2009 and December 2010, Celero installed four 2-inch monitor wells (MW-1 through MW-4) and one 5-inch recovery well (RW-1) to assess the groundwater quality at the Site. The lithology at the Site was relatively consistent with limestone encountered to approximately 15 feet below ground surface (bgs) and very fine grain sands extending to approximately 150 to 160 feet bgs. From approximately 150 to 160 feet to the terminus of the borings (approximately 155 to 180 feet) the soils consisted of gray to red clay. See Appendix A for Boring Logs.

During the investigation, groundwater was encountered at depths of approximately 149 to 155 feet bgs. Monitor Well MW-1 was drilled into the surrounding underlying clay to 170 feet bgs and installed with 60 feet of 0.02 inch slotted screen. The remaining monitor wells were drilled to depths of 175 to 180 feet bgs and installed with 40 feet of 0.02 inch slotted screen. Recovery well RW-1 was drilled to a depth of 155 feet and installed with 20 feet of 0.035 inch slotted screen. From the top of the screens to the surface of the boring, the wells were completed with blank schedule 40 PVC casing. See Appendix B for monitor well installation diagrams.

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

Gauging and Monitor Well Sampling

On November 24, 2009, initial sampling began at the site. During 2010, additional monitor wells were installed and quarterly sampling initiated. During the sampling events, all monitor wells were gauged, purged and sampled with no PSH measured. Utilizing the water level elevation calculations, groundwater gradient maps were generated for the January, April, July and October 2011 sampling events. The hydraulic gradient indicates a westerly direction. Groundwater gradient maps for the sampling events are included as Figures 4 through 7. Gauging data is summarized in Table 1.

During the sampling events, each of the wells was purged utilizing either a submersible pump or by hand bailing and subsequently sampled for BTEX



utilizing method SW8021B, chlorides and sulfates utilizing method E 300.0, total dissolved solids (TDS) utilizing method SM2540C and periodically for general chemistry using methods SM2320B, SW6010B, SM4500-H+. The samples were properly preserved and submitted under proper chain-of-custody control to Trace Analysis Inc. of Lubbock, Texas. All water samples collected and analyzed were below the NMWQCC standard of 0.01 milligrams per liter (mg/L) of benzene. Chlorides for the sampling period ranged from <125 mg/L in up gradient monitor well MW-4 on January 19, 2011 to 47,500 mg/L in down gradient monitor well MW-3 on January 19, 2011. With the exception of MW-4 all additional monitor wells exceeded the NMWQCC standard of 250 mg/L chlorides. The general chemistry and BTEX analyses are shown in Tables 2 and 3, respectively. Chloride concentration maps for the sampling events are included as Figures 8 through 15. Copies of the laboratory analyses are enclosed in Appendix C.

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

CONCLUSIONS

- 1. On November 24, 2009, initial sampling began at the site. During 2010, additional monitor wells were installed and quarterly sampling initiated. During the sampling events, all monitor wells were gauged, purged, and sampled. The samples were preserved, delivered to Trace Analysis, Inc. of Midland, Texas, and analyzed for BTEX utilizing method 8021B, 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+.
- 2. The hydraulic gradient indicates a westerly direction.
- 3. All wells tested below the NMQQCC standards of 0.01 mg/L for benzene.
- 4. Chloride concentrations exceed the NMWQCC standards of 250 mg/L in all monitor wells with the exception of up gradient MW-4. The chloride concentrations at the site range from <125 mg/L in up gradient MW-4 on January 19, 2011 to 47,500 mg/L in down gradient monitor well MW-3 on January 19, 2011.

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. A remediation system consisting of a either a low flow solar/electric pump or a windmill system will be installed in recovery well RW-1. The recovered fluids will be collected in an above ground tank and utilized for possible water flooding purposes in the surrounding oilfield.

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

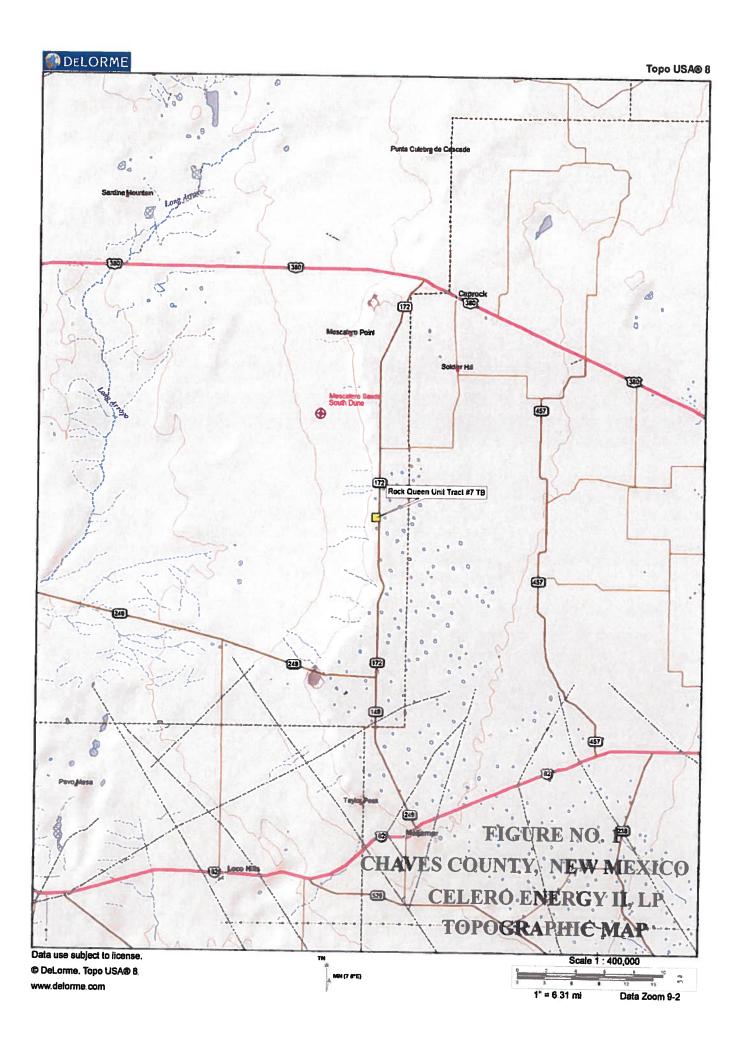
Respectfully submitted, Tetra Tech, Inc.

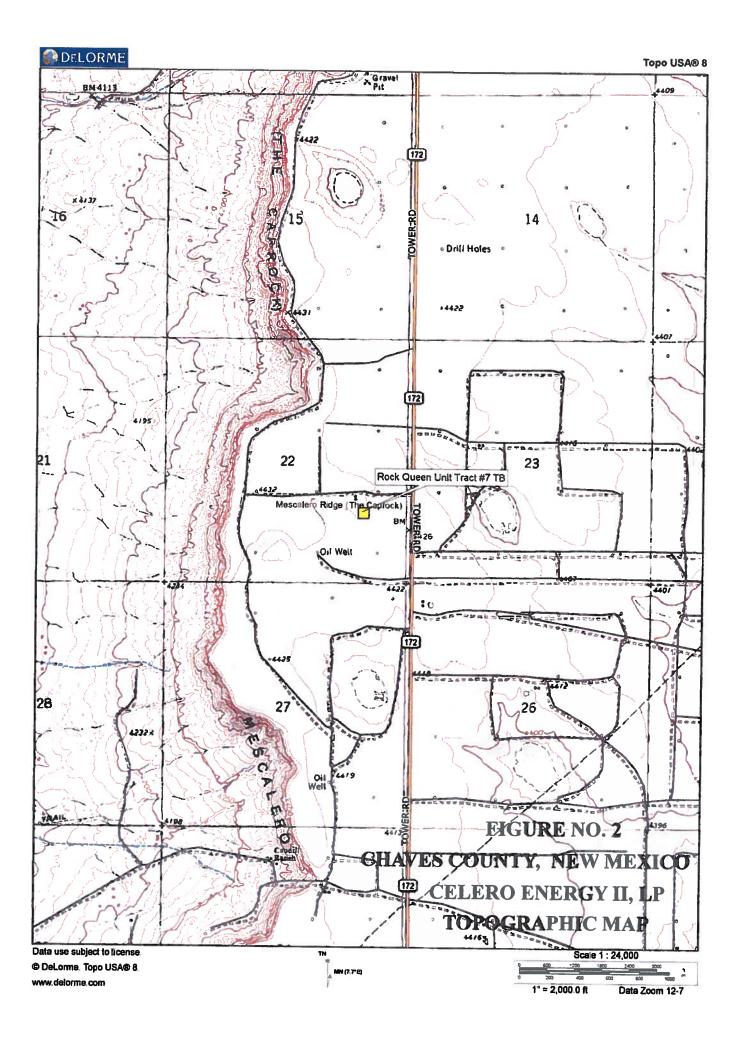
Jeffrey kindley, P.G.

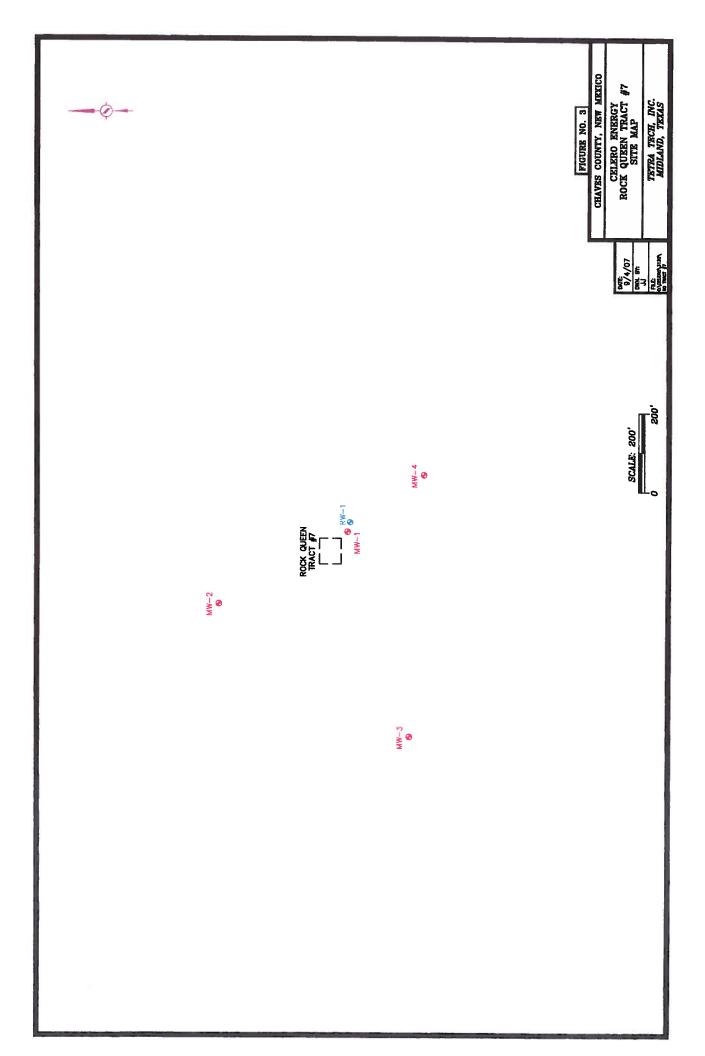
Senior Environmental Geologist

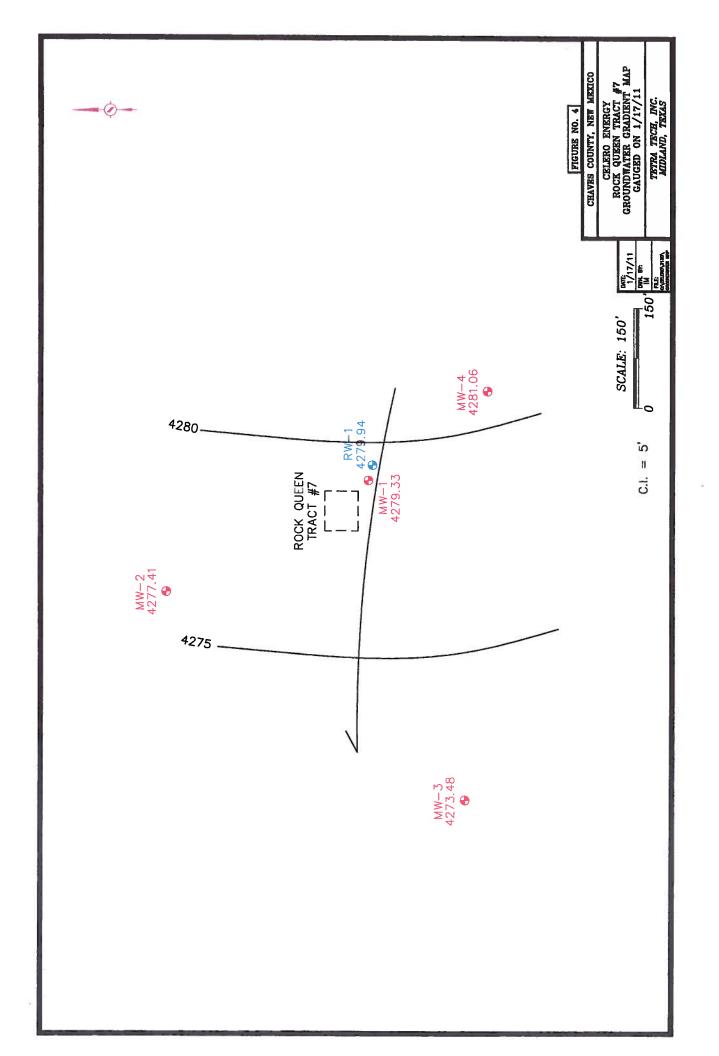
cc: Bruce Woodard - Celero Energy II, LP

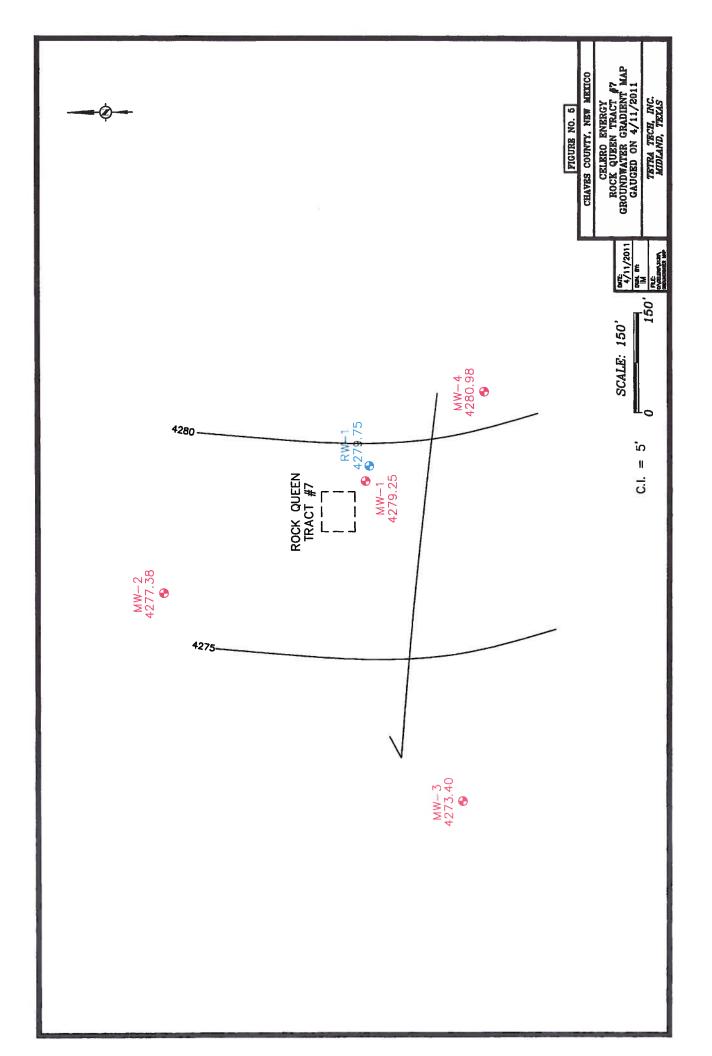
FIGURES

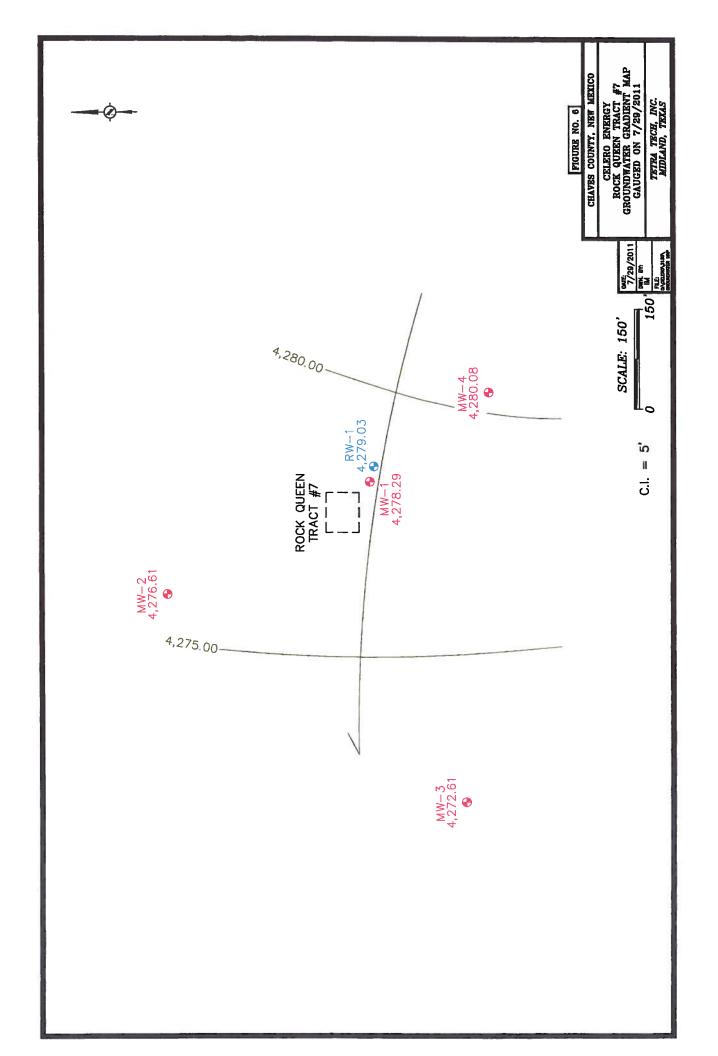


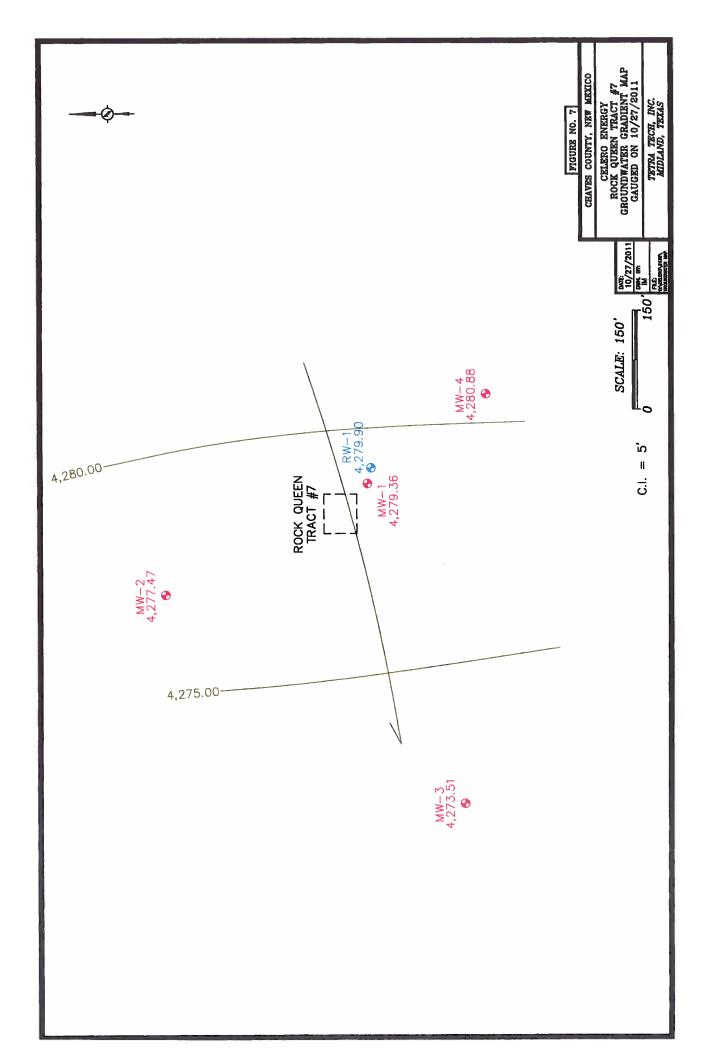


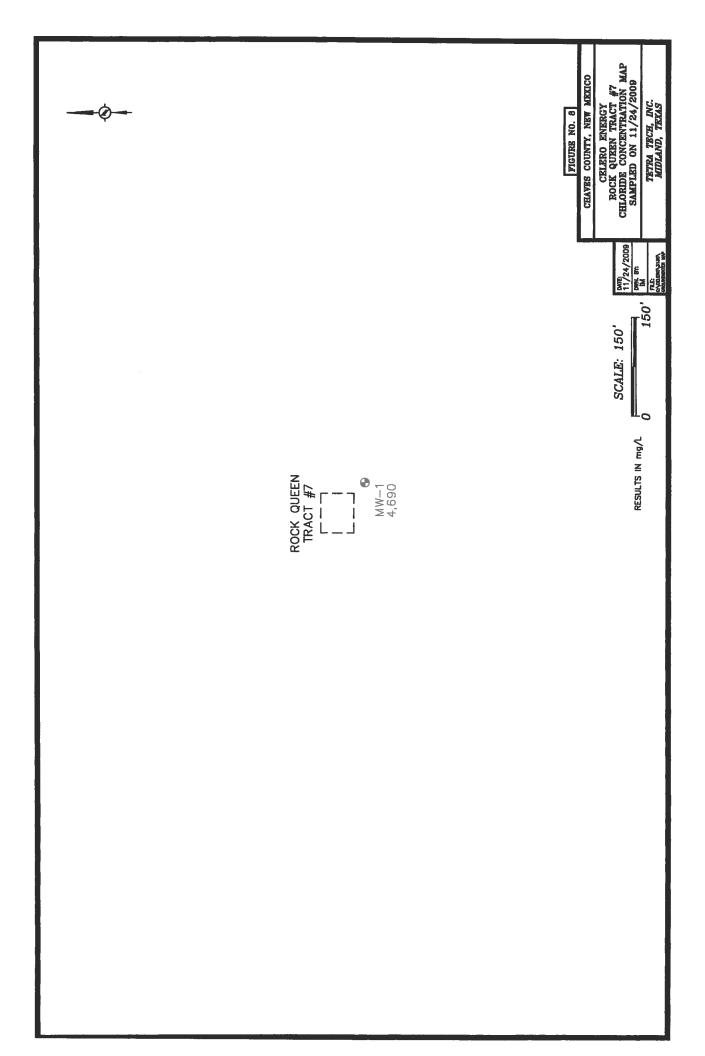




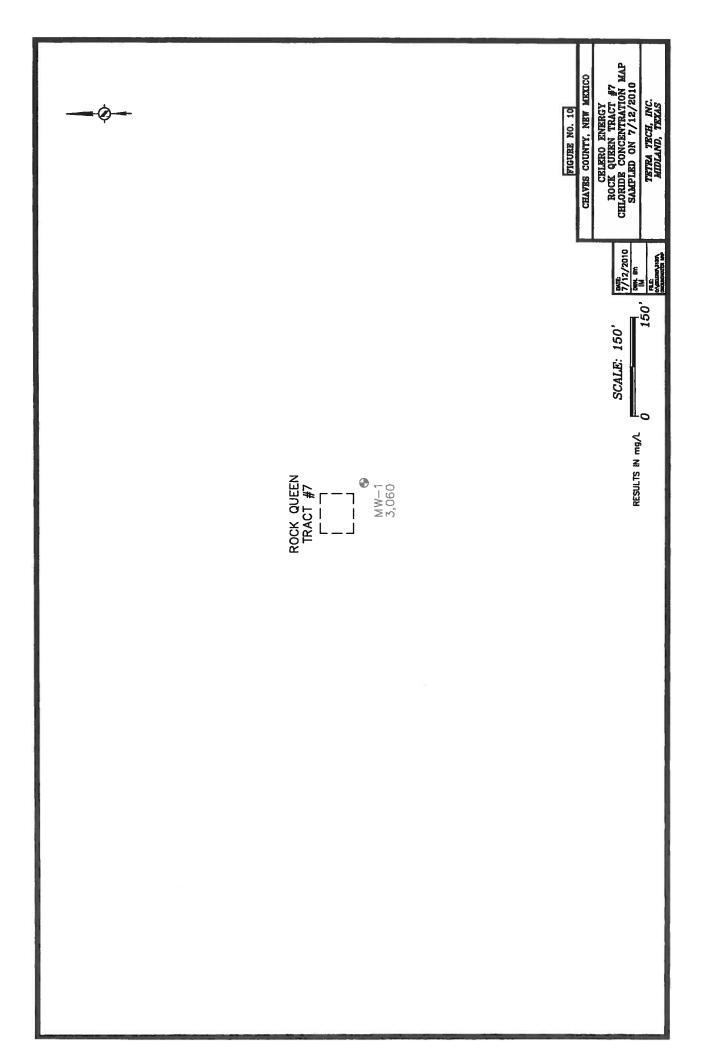




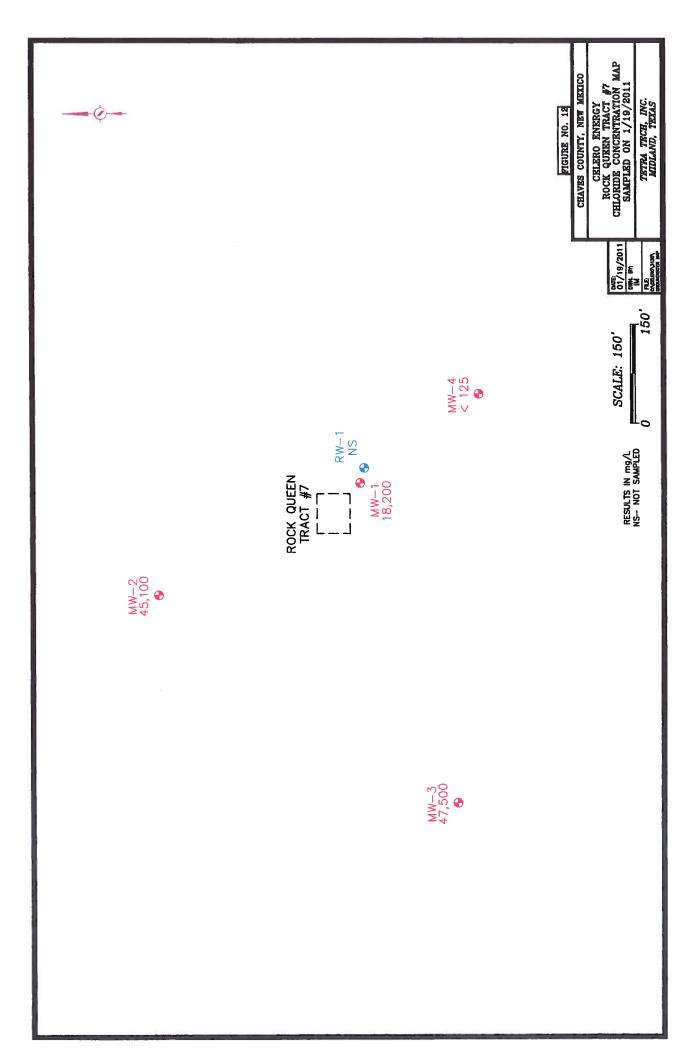




CELERO ENERGY ROCK QUEEN TRACT #7 CHLORIDE CONCENTRATION MAP SAMPLED ON 02/25/2010 CHAVES COUNTY, NEW MEXICO TETRA TECH, INC. MIDLAND, TEXAS FIGURE NO. 9 150' PRE BT | 150' CYCLONATAN CYC SCALE: 150' RESULTS IN mg/L 0 ROCK QUEEN
TRACT #7 ₩W—1 24,000



CHAVES COUNTY, NEW MEXICO
CELERO ENERGY
ROCK QUEEN TRACT #7
CHLORIDE CONCENTRATION MAP
SAMPLED ON 10/11/2010 SCALE: 150' RESULTS IN mg/L ROCK QUEEN
TRACT #7 ₩W-1 20,000



CHAVES COUNTY, NEW MEXICO
CELERO ENERGY
ROCK QUIERN TRACT #7
CHLORIDE CONCENTRATION MAP
SAMPLED ON 4/14/11
TETRA TECH, INC.
AMDIAND, TEXAS -0-FIGURE NO. 13 A/14/2011
ONN. Br.
IM
FILE.
evacuous area 150, SCALE: 150' 510 € RESULTS IN mg/L NS- NOT SAMPLED MW−2 19,100 MW-3 25,100

MW-2 11,700

MW-4 127 **⊕**

SCALE: 150'

RESULTS IN mg/L NS- NOT SAMPLED

150

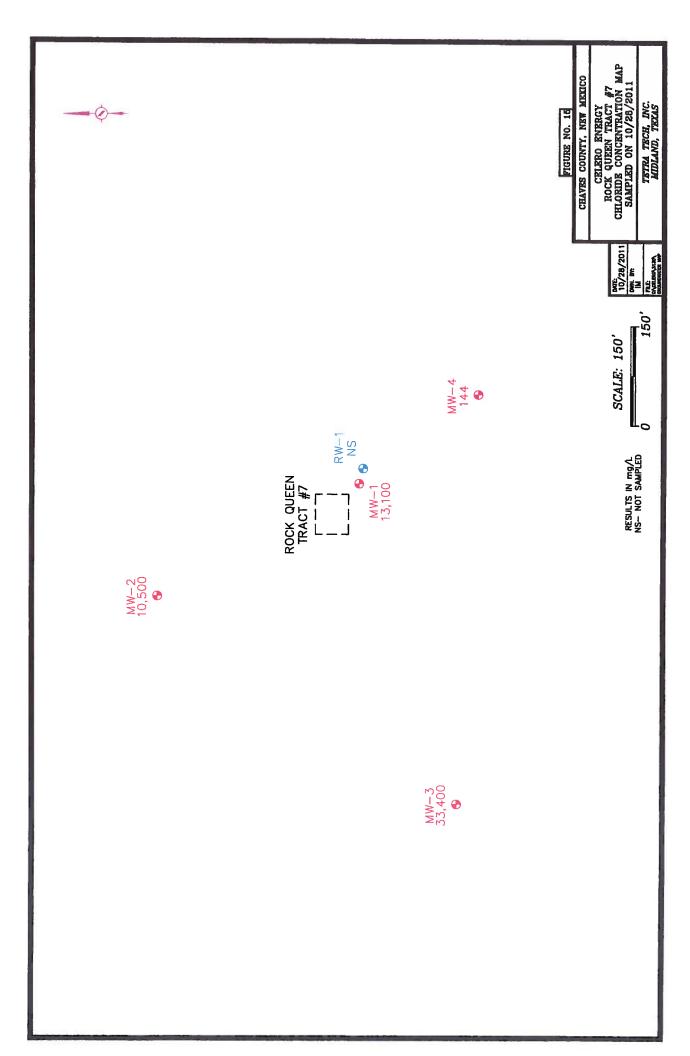
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CHAVES COUNTY, NEW MEXICO
CELERO ENERGY
ROCK QUIEN TRACT #7
CHLORIDE CONCENTRATION MAP
SAMPLED ON 7/29/2011

TETRA TECH, INC. MIDLAND, TEXAS

-0-

MW-3 25,100



TABLES

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

			Chav	Chaves County. New Mexico		
Well	Date Gauged	Date Well Installation	TOC Elevation	Depth of Well	Depth to	Groundwater Elevation
MW-1	11/24/09	11/17/09	4 428 76	470.00	(II)	(#)
	02/25/10		01:03+1:	70.00	149.66	4,279.10
	07/12/10				149.43	4.279.33
	10/11/10				149.46	4.279.30
	01/17/11				149.44	4.279.32
	04/11/11				149.43	4.279.33
	07/29/11				149.51	4,279.25
	10/27/11				150.47	4,278.29
MW-2	01/17//11	11/18/10	4 430 ER	770 00	149.40	4,279.36
	04/11/11		1,105.30	1/8.60	155.17	4,277.41
	07/29/11				155.20	4,277.38
	10/27/11				155.97	4,276.61
MW-3	01/17/11	11/17/10	1 100 07	907	155.11	4,277.47
	04/11/11	2	4,420.3/	183.50	154.89	4,273.48
	07/29/11				154.97	4,273.40
	10/27/11				155.76	4,272.61
MW-4	01/17/11	11/16/10	A A97 90	00 047	154.86	4,273.51
	04/11/11	2	1,727.20	1/9.60	146.22	4,281.06
	07/29/11				146.30	4,280.98
	10/27/11				147.26	4,280.02
RW-1	01/17/11	12/07/10	A A50 0A		146.40	4,280.88
	04/11/11	2	4,420.04	159.45	148.10	4,279.94
	07/29/11				148.29	4,279.75
	10/27/11				149.07	4,278.97
					148.14	4,279.90

Table 2 Celero Energy II, LP

Groundwater Analytical Results

Rock Queen Unit Tract #7 Chaves Courty, New Mexico

Manitor	4	Dissolved	Dissolved	Dissolved	Dissolved	Hydroxide	Carbonate	Bicarbonate	Total					
Well	Sampled	Calcium	Magnesium	Sodium	Potassium	Alkalinity	Alkalinity	Alkalinity	Alkalinity	Sulfate (mo/l.)	Chloride (mo/l.)	TDS (mg/L)	Hardness	£
		(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)				(magaz)	
MW-1	11/24/09	1,730	430	585	15.3	<1.00	<1.00	114	114	150	4,690	9,100	6,100	7.55
	02/25/10	8,010	2,250	2,860	80.0	41.00	41.00	83	88	463	24,000	38,300	29,300	7.11
	07/12/10	,	•	,			,	•	•	316	3,060	3,060		
	10/11/10	8	8	•	•	,	•		•	096	20,000	48,400	,	
	01/19/11	*	ā	æ					,	<2500	18,200	38,600	•	
	04/14/11	j.	,	•			•	•	•	1,020	20,500	32,000		,
	07/29/11	1		•	•			•	٠	1,170	20,500	33,700		•
	10/28/11	٠			·			•	•	1,270	13,100	23,200	•	,
MW-2	01/19/11	•	<u></u>	a		,			,	1,250	45,100	78,200		
	04/14/11	٠	٠		•	1	•	•	•	1,280	19,100	33,000	•	•
	07/29/11	•	ĸ		×	,		•	•	1,570	11,700	25,900	•	•
	10/28/11		*		·	•	,	•	•	1,010	10,500	19,500	,	,
MW-3	01/19/11		1,*		•	•	•		•	1,750	47,500	81,800		
	04/14/11	000		e	•	•	•	•	•	1,170	25,100	41,000		,
	07/29/11			•		•		•	•	1,420	25,100	52,400	•	•
	10/28/11	•	×	a a	•			•	•	1,480	33,400	27,000		
A A	01/19/11	•		•	•			•	•	279	- - - - - - - -	792		
	04/14/11	•	٠		•		•	•	1	81	510	3,330		
	07/29/11	•	•		53	,	•	•		114	127	648	•	
	10/28/11			•		•	•	•	1	113	144	770		
-MY	01/19/11	S	S	S	S	SN	S	SN	SN	NS	SN	SN	SS	NS
	04/14/11	S	S	S	S	SN	SN	NS	NS	SN	SN	SN	SN	S
	07/29/11	S	S	S	SN	SN	SN	NS	SN	SS	SS	SS	Š	SN
	10/28/11	SN	SN	SS	NS	NS	NS	NS	NS	SN	NS	SS	SN	SN

NS - Not sampled (-) Not analyzed

Table 3
Celero Energy II, LP
Groundwater Analytical Results
Rock Queen Unit Tract #7

		CI	naves County, New M	lexico		
Monitor Well	Date Sampled	Benzene in (mg/L)	Toluene in (mg/L)	Ethyl- Benzene (mg/L)	Xylene in (mg/L)	Total BTEX (mg/L)
MW-1	11/24/09	<0.001	<0.001	<0.001	<0.001	<0.001
	02/25/10	<0.001	<0.001	<0.001	<0.001	<0.001
	07/12/10	<0.001	<0.001	<0.001	<0.001	<0.001
	10/11/10	<0.001	<0.001	<0.001	<0.001	<0.001
	01/19/11	<0.001	<0.001	<0.001	<0.001	<0.001
	04/14/11	<0.001	<0.001	<0.001	<0.001	<0.001
	07/29/11	<0.001	<0.001	<0.001	<0.001	<0.001
	10/28/11	<0.001	<0.001	<0.001	<0.001	<0.001
MW-2	01/19/11	<0.001	<0.001	<0.001	<0.001	<0.001
	04/14/11	0.0068	<0.001	<0.001	<0.001	0.0068
	07/29/11	0.0065	<0.001	<0.001	<0.001	0.0068
	10/28/11	<0.001	<0.001	<0.001	<0.001	<0.001
MW-3	01/19/11	<0.001	<0.001	<0.001	<0.001	<0.001
	04/14/11	<0.001	<0.001	<0.001	<0.001	<0,001
	07/29/11	<0.001	<0.001	<0.001	<0,001	<0.001
	10/28/11	<0.001	<0.001	<0.001	<0.001	<0.001
MW-4	01/19/11	<0.001	<0.001	<0.001	<0.001	<0.001
	04/14/11	<0.001	<0.001	<0.001	<0.001	<0.001
Į.	07/29/11	<0.001	<0.001	<0.001	<0.001	<0,001
	10/28/11	<0.001	<0.001	<0.001	<0.001	<0.001
RW-1	01/19/11	NS	NS	NS	NS	NS
1	04/14/11	NS	NS	NS	NS	NS
1	07/29/11	NS	NS	NS	NS	NS
	10/28/11	NS	NS	NS	NS	NS

NS - Not sampled

APPENDIX A BORING LOGS

Boring/Well MW-1

GPS N33.172564° W103.804064°

Project Number 115-6403130A

Client Celero Energy II, LP

Site Name Rock Queen Unit Tract # 7 Tank Battery

Site Location Chaves County, New Mexico

Letter I, Section 22, Township 13 South, Range 31 East

Total Depth 170
Date Installed 11/17/09

DEPTH (Ft)	OVM	SAMPLE DESCRIPTION
3-5		Hard buff limestone
8-10		Hard buff limestone with chert
13-15		Hard tan sandy limestone
18-20		Tan fine grain sand
23-25		Tan fine grain sand
28-30		Tan fine grain sand
33-35		Tan fine grain sand
38-40		Tan fine grain sand
43-45		Tan fine grain sand
48-50	30	Tan fine grain sand
53-55	**	Tan fine grain sand
58-60		Tan fine grain sand
63-65		Tan to brown fine grain well sorted sand
68-70	••	Tan to brown fine grain well sorted sand
73-75	**	Tan to brown fine grain well sorted sand
78-80		Tan to brown fine grain well sorted sand (Mud up)
83-85		Tan to brown fine grain well sorted sand
88-90		Tan to brown fine grain well sorted sand with gravel intermixed
93-95		Tan to brown fine grain well sorted sand with gravel intermixed
98-100		Tan to brown fine grain well sorted sand
103-105	**	Tan to brown fine grain well sorted sand
108-110	••	Tan to brown fine grain well sorted sand
113-115	••	Tan to brown fine grain well sorted sand
118-120	••	Tan to brown fine grain well sorted sand
123-125	**	Tan to brown fine grain well sorted sand

Boring/Well

MW-1

GPS

N33.172564° W103.804064°

Project Number 115-6403130A

Client

Celero Energy II, LP

Site Name

Rock Queen Unit Tract # 7 Tank Battery

Site Location

Chaves County, New Mexico

Letter I, Section 22, Township 13 South, Range 31 East

Total Depth

170

Date installed

11/17/09

DEPTH (Ft)	OVM	SAMPLE DESCRIPTION
128-130		Tan to brown fine grain well sorted sand
133-135		Tan to brown fine grain well sorted sand
138-140		Tan to brown fine grain well sorted sand
143-145		Tan to brown fine grain well sorted sand
148-150		Tan to brown fine grain well sorted sand
153-155		Red to brown sandy clay
158-160	9-	Red to brown sandy clay
163-165		Red to brown sandy clay
168-170		Red to brown sandy clay

Total Depth:

170'

Depth to groundwater encountered unknown.

Boring/Well

MW-2

GPS

N33.17362° W

W103.80504°

Project Number

115-6403130A

Client

Celero Energy II, LP

Site Name

Rock Queen Unit Tract #7 Tank Battery

Site Location

Chaves, New Mexico

Letter I, Section 22, Township 13 South, Range 31 East

Total Depth

175'

Date Installed

11/18/10

Depth (Ft)	OVM	Sample Description
5-6'	••	Caliche with Buff Sand and 15%Chert
10-11'		Caliche with 10% Chert
15-16'		Caliche with Buff Sand and 5% Chert
20-21'		Buff Sand with 15% Caliche
25-26'		Light Brown Fine Grain Well Sorted Sand
30-31'		Light Brown Fine Grain Well Sorted Sand
35-36'	**	Light Brown Fine Grain Well Sorted Sand
40-41'	••	Light Brown Fine Grain Well Sorted Sand
45-46'		Light Brown Fine Grain Well Sorted Sand
50-51'		Light Brown Fine Grain Well Sorted Sand
55-56'	••	Light Brown Fine Grain Well Sorted Sand
60-61'	••	Brown Fine Grain Well Sorted Sand
65-66'	••	Brown Fine Grain Well Sorted Sand
70-71'		Brown Fine Grain Well Sorted Sand
75-76'	••	Brown Fine Grain Well Sorted Sand
80-81'	**	Brown Fine Grain Well Sorted Sand
85-86'		Brown Fine Grain Well Sorted Sand with Rounded and Angular Caliche
90-91'		Brown Fine Grain Well Sorted Sand with Rounded and Angular Caliche
95-96'		Brown Fine Grain Well Sorted Sand with Rounded and Angular Caliche
100-101'	**	Brown Fine Grain Well Sorted Sand with Rounded and Angular Caliche
105-106'		Brown Fine Grain Well Sorted Sand with Rounded and Angular Caliche
110-111'	**	Brown Fine Grain Well Sorted Sand with Rounded and Angular Caliche
115-116'		Brown Fine Grain Well Sorted Sand with Rounded and Angular Caliche
120-121'	••	Brown Fine Grain Well Sorted Sand with Rounded and Angular Caliche
125-126'		Brown Fine Grain Well Sorted Sand with Rounded and Angular Caliche

Boring/Well

MW-2

GPS

N33.17362°

W103.80504°

Project Number

115-6403130A

Client

Celero Energy II, LP

Site Name

Rock Queen Unit Tract #7 Tank Battery

Site Location

Chaves, New Mexico

Letter I, Section 22, Township 13 South, Range 31 East

Total Depth

175'

Date Installed

11/18/10

130-131'	••	Brown Fine Grain Well Sorted Sand with Rounded and Angular Caliche
135-136'		Brown Fine Grain Well Sorted Sand with Rounded and Angular Caliche
140-141'		Brown Fine Grain Well Sorted Sand with Rounded and Angular Caliche
145-146'	ne.	Brown Fine Grain Well Sorted Sand with Rounded and Angular Caliche
150-151'		Brown Fine Grain Well Sorted Sand with Rounded and Angular Caliche
155-156'		Blue Brown Clay with Angular Caliche
160-161'		Blue Brown Clay with Red Bed
165-166'		Red Bed
170-171'	*-	Red Bed
175'		Red Bed

Total Depth:

175'

Ground water depth not encountered while drilling.

Boring/Well

MW-3

GPS

N33.17220°

W103.80511°

Project Number: 115-6403130A

Client

Celero Energy II, LP

Site Name

Rock Queen Unit Tract #7 Tank Battery

Site Location

Chaves, New Mexico

Letter J, Section 22, Township 13 South, Range 31 East

Total Depth

180'

Date Installed

11/17/10

Depth (Ft)	OVM	Sample Description
5-6'		Caliche
10-11'		Caliche and Chert
15-16'		Caliche
20-21'		Light Brown Fine Grain Sand
25-26'		Light Tan Fine Grain Sand with 20% Caliche
30-31'		Light Tan Fine Grain Sand with 20% Caliche
35-36'		Light Tan Fine Grain Sand with 20% Caliche
40-41'		Light Tan Fine Grain Sand with 20% Caliche
45-46'		Light Tan Fine Grain Sand with 20% Caliche
50-51'		Light Tan Fine Grain Sand with 20% Caliche
55-56'		Light Brown Fine Grain Well Sorted Sand
60-61'		Light Brown Fine Grain Well Sorted Sand
65-66'		Light Brown Fine Grain Well Sorted Sand
70-71'		Light Brown Fine Grain Well Sorted Sand
75-76'		Light Brown Fine Grain Well Sorted Sand
80-81'	••	Light Brown Fine Grain Well Sorted Sand
85-86'		Light Brown Fine Grain Well Sorted Sand with 10% Angular Gravel
90-91'	••	Light Brown Fine Grain Well Sorted Sand with 10% Angular Gravel
95-96'	••	Light Brown Fine Grain Well Sorted Sand with 5% Angular Gravel
100-101'	**	Light Brown Fine Grain Well Sorted Sand with 5% Angular Gravel
105-106'	**	Light Brown Fine Grain Well Sorted Sand with 5% Angular Gravel
110-111'		Light Brown Fine Grain Well Sorted Sand with 10% Angular Gravel
115-116'		Light Brown Fine Grain Well Sorted Sand with 10% Angular Gravel
120-121'		Light Brown Fine Grain Well Sorted Sand with 10% Angular Gravel
125-126'	**	Light Brown Fine Grain Well Sorted Sand with 10% Angular Gravel

Boring/Well MW-3

GPS N33.17220° W103.80511°

Project Number: 115-6403130A

Client Celero Energy II, LP

Site Name Rock Queen Unit Tract #7 Tank Battery

Site Location Chaves, New Mexico

Letter J, Section 22, Township 13 South, Range 31 East

Total Depth 180'
Date installed 11/17/10

130-131'		Light Brown Fine Grain Well Sorted Sand
135-136'		Light Brown Fine Grain Well Sorted Sand
140-141'	••	Light Brown Fine Grain Well Sorted Sand
145-146'		Light Brown Fine Grain Well Sorted Sand
150-151'		Light Brown Fine Grain Well Sorted Sand
155-156'	••	Light Brown Fine Grain Well Sorted Sand
160-161'		Light Brown Fine Grain Well Sorted Sand
165-166'	••	Light Brown Fine Grain Well Sorted Sand
170-171'	••	Red Bed
175-176'		Red Bed with Blue Green Clay
180		Red Bed

Total Depth: 175' Ground water depth not encountered while drilling.

Boring/Well

MW-4

GPS

N33.17218° W103.80413°

Project Number 115-6403130A

Client

Celero Energy II, LP

Site Name

Rock Queen Unit Tract #7 Tank Battery

Site Location

Chaves, New Mexico

Letter I, Section 22, Township 13 South, Range 31 East

Total Depth

175'

Date Installed

11/16/10

Depth (Ft)	OVM	Sample Description
5-6'		Caliche
10-11'		Caliche and Chert
15-16'	••	Caliche
20-21'		Light Brown Fine Grain Sand
25-26'		Light Tan Fine Grain Sand with 30% Caliche
30-31'		Light Tan Fine Grain Sand with 30% Caliche
35-36'		Light Tan Fine Grain Sand with 30% Caliche
40-41'		Light Tan Fine Grain Sand with 30% Caliche
45-46'		Light Brown Fine Grain Well Sorted Sand
50-51'	••	Light Brown Fine Grain Well Sorted Sand
55-56'		Light Brown Fine Grain Well Sorted Sand
60-61'		Light Brown Fine Grain Well Sorted Sand
65-66'	••	Light Brown Fine Grain Well Sorted Sand
70-71'		Light Brown Fine Grain Well Sorted Sand
75-76'	••	Light Brown Fine Grain Well Sorted Sand
80-81'	••	Light Brown Fine Grain Well Sorted Sand
85-86'		Light Brown Fine Grain Well Sorted Sand
90-91'	••	Light Brown Fine Grain Well Sorted Sand
95-96'		Light Brown Fine Grain Well Sorted Sand
100-101'	**	Light Brown Fine Grain Well Sorted Sand
105-106'	40	Light Brown Fine Grain Well Sorted Sand
110-111'	**	Light Brown Fine Grain Well Sorted Sand
115-116'		Light Brown Fine Grain Well Sorted Sand
120-121'		Light Brown Fine Grain Medium Sorted Sand
125-126'	**	Light Brown Fine Grain Medium Sorted Sand

Boring/Well MW-4

GPS N33.17218° W103.80413°

Project Number 115-6403130A

Client Celero Energy II, LP

Site Name Rock Queen Unit Tract #7 Tank Battery

Site Location Chaves, New Mexico

Letter I, Section 22, Township 13 South, Range 31 East

Total Depth 175'

Date Installed 11/16/10

The second secon	The second second second	
130-131'		Light Brown Fine Grain Medium Sorted Sand
135-136'		Light Brown Fine Grain Medium Sorted Sand
140-141'		Light Brown Fine Grain Medium Sorted Sand
145-146'		Light Brown Fine Grain Medium Sorted Sand
150-151'		Light Brown Fine Grain Sand with Blue Grey Clay
155-156'		Light Brown Fine Grain Sand with Blue Grey Clay
160-161'		Light Brown Fine Grain Sand with Blue Grey Clay
165-166'		Red Bed
170-171'		Red Bed
175'		Red Bed

Total Depth:

175'

Ground water depth not encountered while drilling.

Boring/Well

RW-1

GPS

N33.172547° W103.803986°

Project Number 115-6403130A

Client

Celero Energy II, LP

Site Name

Rock Queen Unit Tract #7 Tank Battery

Site Location

Chaves, New Mexico

Letter I, Section 22, Township 13 South, Range 31 East

Total Depth

155

Date Installed

12/7/10 to 12/8/10

Depth (Ft)	OVM	Sample Description
5-6'		Buff limestone
10-11'	ni 44	Buff to tan sandy limestone
15-16'		Tan to buff fine grain calcareous sand
20-21'	••	Tan fine grain well sorted calcareous sand
25-26'		Tan fine grain well sorted calcareous sand
30-31'		Tan fine grain well sorted calcareous sand
35-36'		Tan fine grain well sorted calcareous sand
40-41'		Tan fine grain well sorted calcareous sand
45-46'		Tan fine grain well sorted sand
50-51'		Tan fine grain well sorted sand
55-56'		Tan fine grain well sorted sand
60-61'		Tan fine grain well sorted sand
65-66'	••	Tan fine grain well sorted sand
70-71'		Tan fine grain well sorted sand
75-76'		Tan fine grain well sorted sand
80-81'		Tan fine grain well sorted sand
85-86'	••	Tan fine grain well sorted sand
90-91'	••	Tan fine grain well sorted sand
95-96'	••	Tan fine grain well sorted sand
100-101'		Tan fine grain sand with gravel
105-106'		Tan fine grain sand with gravel
110-111'		Tan fine grain sand with gravel
115-116'		Tan fine grain sand with gravel
120-121'	**	Tan fine grain sand with gravel
125-126'		Tan fine grain sand with gravel

Boring/Well

RW-1

GPS

N33.172547° W103.803986°

Project Number 115-6403130A

Client

Celero Energy II, LP

Site Name

Rock Queen Unit Tract #7 Tank Battery

Site Location

Chaves, New Mexico

Letter I, Section 22, Township 13 South, Range 31 East

Total Depth

155

Date Installed

12/7/10 to 12/8/10

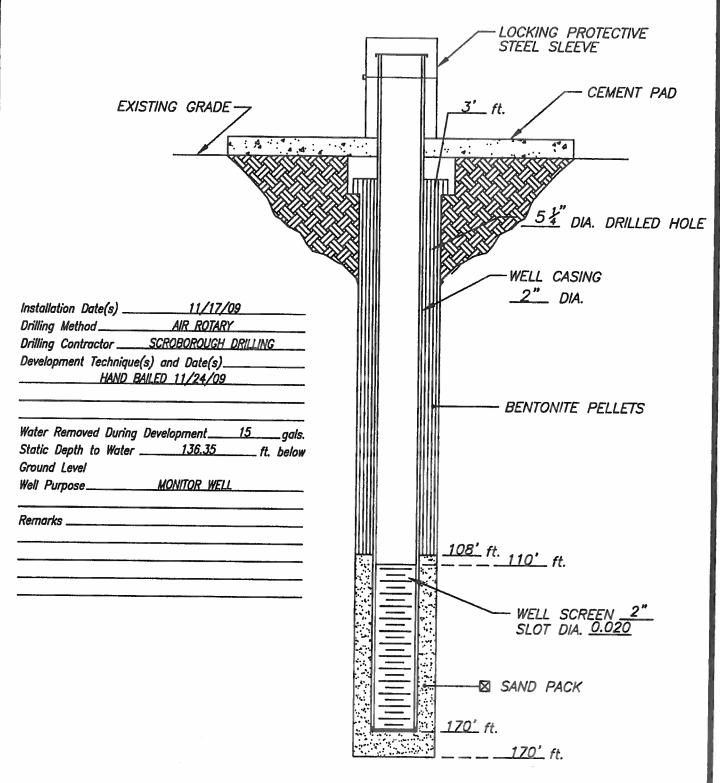
130-131'	 Tan fine grain sand with grave!
135-136'	 Tan fine grain sand with gravel
140-141'	 Tan fine grain sand with gravel
145-146'	 Tan fine grain sand with gravel
150-151'	 Tan to red clay
155-156'	 Tan to red clay

Total Depth:

155'

Ground water depth not encountered while drilling.

APPENDIX B MONITOR WELL INSTALLATION DIAGRAMS



DATE: 11/20/09

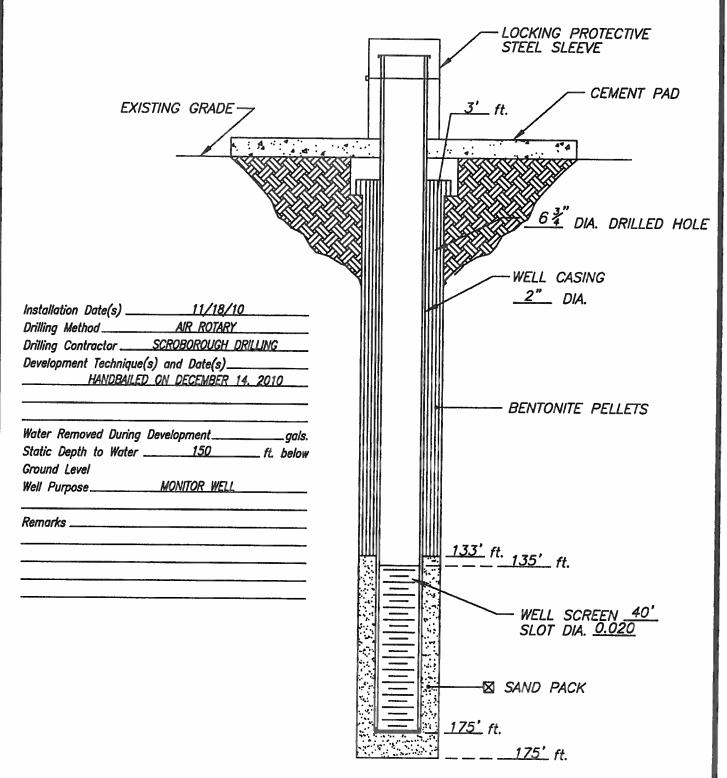
TETRA TECH, INC. MIDLAND, TEXAS CLIENT: CELERO ENERGY II, LLC

PROJECT: ROCK QUEEN TRACT #7

LOCATION: CHAVES COUNTY, NEW MEXICO

WELL NO.

MW-1



DATE: 11/18/10

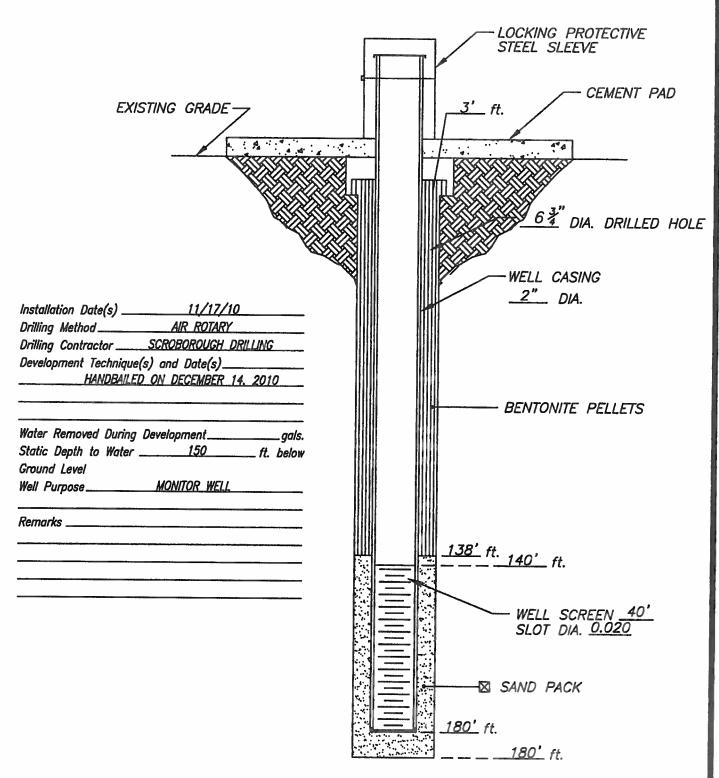
TETRA TECH, INC. MIDLAND, TEXAS CLIENT: CELERO ENERGY II, LLC

PROJECT: ROCK QUEEN TRACT #7

LOCATION: CHAVES COUNTY, NEW MEXICO

WELL NO.

MW-2



DATE: 11/17/10

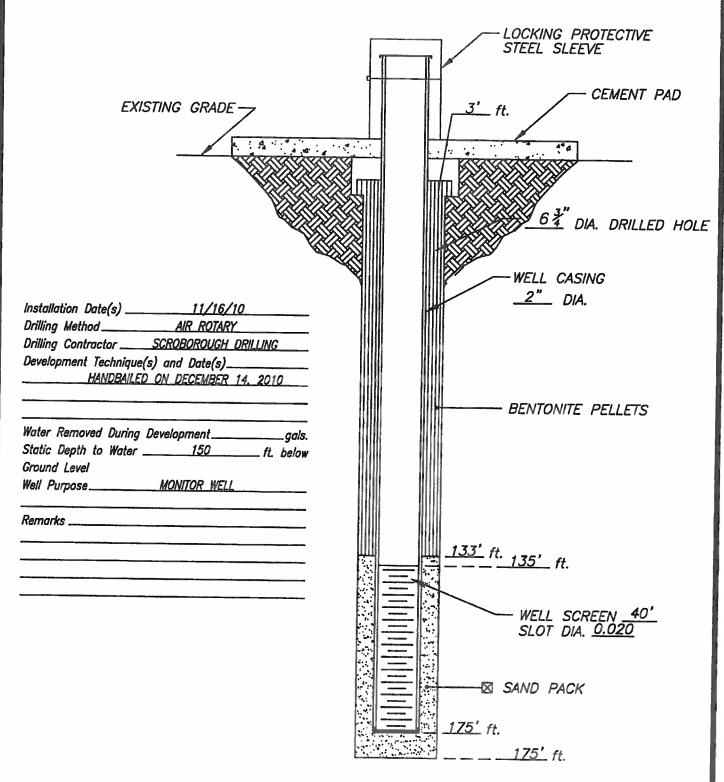
TETRA TECH, INC. MIDLAND, TEXAS CLIENT: CELERO ENERGY II, LLC

PROJECT: ROCK QUEEN TRACT #7

LOCATION: CHAVES COUNTY, NEW MEXICO

WELL NO.

MW-3



DATE: 11/16/10

TETRA TECH, INC.
MIDLAND, TEXAS

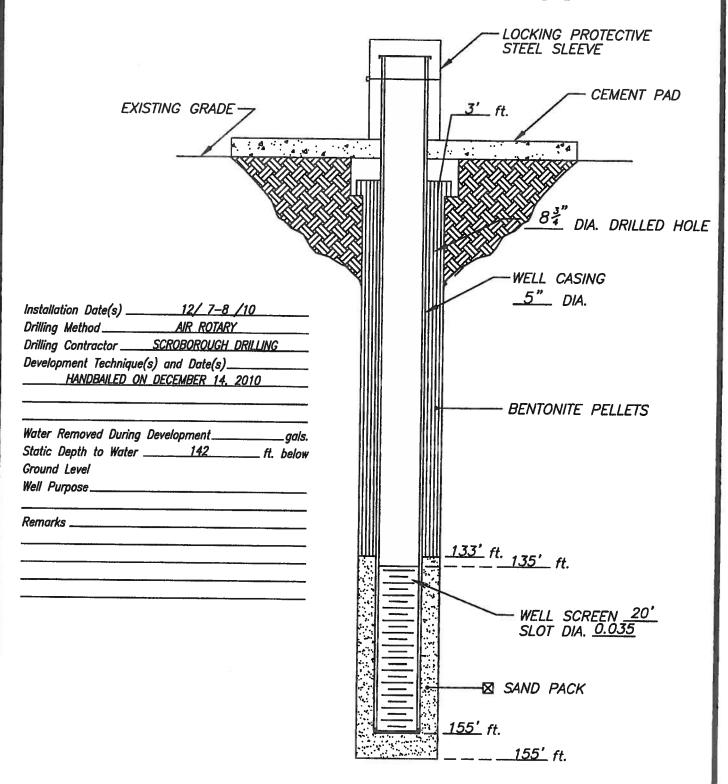
CLIENT: CELERO ENERGY II, LLC

PROJECT: ROCK QUEEN TRACT #7

LOCATION: CHAVES COUNTY, NEW MEXICO

WELL NO.

MW-4



DATE: 12/7/10

TETRA TECH, INC.
MIDLAND, TEXAS

CLIENT: CELERO ENERGY II, LLC

PROJECT: ROCK QUEEN TRACT #7

LOCATION: CHAVES COUNTY, NEW MEXICO

WELL NO.

RW-1

APPENDIX C LABORATORY ANALYSIS



6701 Abeideen Avenue, Suite 9 200 East Sunset Road, Suite E

Lubbock, Texas 79424 El Paso, Texas 79922

888 • 588 • 3443

806 • 794 • 1296 915 • 585 • 3443 FAX 806 • 794 • 1298 FAX 915 • 585 • 4944

5002 Basin Street, Shite A1

432 • 589 • 6301

FAX 432 • 689 • 6313

6015 Harris Parkway, Suite 110 Ft. Worth, Texas 76132

817 • 201 • 5260

E-Mail: lah@traceanalysis.com

Certifications

WBENC: 237019

HUB:

1752439743100-86536

DBE: VN 20657

NCTRCA

WFWB38444Y0909

NELAP Certifications

Lubbock:

T104704219-08-TX

El Paso:

T104704221-08-TX

T104704392-08-TX Midland:

LELAP-02003 Kansas E-10317 LELAP-02002

Analytical and Quality Control Report

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

Work Order: 11012129

Report Date: February 3, 2011

Chavez County, NM Project Location:

Project Name:

Celero/Rock Queen #7 TB

Project Number:

115-6403130

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

			Date	1 ime	Date
Sample	Description	\mathbf{Matrix}	Taken	\mathbf{Taken}	Received
255903	MW-1	water	2011-01-20	18:19	2011-01-21
255904	MW-2	water	2011-01-20	18:00	2011-01-21
255905	MW-3	water	2011-01-20	18:12	2011-01-21
255906	MW-4	water	2011-01-20	18:16	2011-01-21
255907	Rinseate	water	2011-01-20	16:45	2011-01-21

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 18 pages and shall not be reproduced except in its entirety, without written approval of

TraceAnalysis, Inc.

Michael april

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

Standard Flags

 ${\bf B}$ - The sample contains less than ten times the concentration found in the method blank.

Samples for project Celero/Rock Queen #7 TB were received by TraceAnalysis, Inc. on 2011-01-21 and assigned to work order 11012129. Samples for work order 11012129 were received intact without headspace and at a temperature of 12.3 C.

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

		\mathbf{Prep}	Prep	\mathbf{QC}	Analysis
Test	Method	Batch	Date	Batch	Date
BTEX	S 8021B	66157	2011-01-24 at 11:00	77124	2011-01-24 at 13:17
Chloride (IC)	E 300.0	66273	2011-01-30 at 10:00	77266	2011-01-30 at 17:14
SO4 (IC)	E 300.0	66273	2011-01-30 at 10:00	77266	2011-01-30 at 17:14
SO4 (IC)	E 300.0	66364	2011-02-01 at 10:33	77367	2011-02-01 at 12:49
TDS	SM 2540C	66128	2011-01-24 at 11:48	77161	2011-01-26 at 15:20
TDS	SM 2540C	66142	2011-01-24 at 11:30	77255	2011-01-31 at 10:09

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 11012129 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.

115-6403130

Work Order: 11012129 Celero/Rock Queen #7 TB

Page Number: 4 of 18 Chavez County, NM

Analytical Report

Sample: 255903 - MW-1

Laboratory: Midland

Analysis: BTEX QC Batch: 77124 Prep Batch: 66157

Analytical Method: Date Analyzed:

S 8021B 2011-01-24 Sample Preparation: 2011-01-24 Prep Method: S 5030B Analyzed By: \mathbf{AG} Prepared By: \mathbf{AG}

RL

		T CL			
Parameter	Flag	Result	Units	Dilution	RL
Benzene		< 0.00100	mg/L	1	0.00100
Toluene		< 0.00100	mg/L	1	0.00100
Ethylbenzene		< 0.00100	mg/L	1	0.00100
Xylene		< 0.00100	m mg/L	1	0.00100

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.108	mg/L	1	0.100	108	67.8 - 126
4-Bromofluorobenzene (4-BFB)		0.100	mg/L	1	0.100	100	51.1 - 128

Sample: 255903 - MW-1

Laboratory: Lubbock

Analysis: Chloride (IC) QC Batch: 77266 Prep Batch: 66273

Analytical Method: Date Analyzed:

E 300.0 2011-01-30 Sample Preparation: 2011-01-30 Prep Method: N/A Analyzed By: PG Prepared By: PG

RL

Parameter	Flag	Result	Units	Dilution	RL
Chloride		18200	mg/L	1000	2.50

Sample: 255903 - MW-1

Laboratory:

Lubbock

Analysis: SO4 (IC) QC Batch: 77266 Prep Batch: 66273

Analytical Method: Date Analyzed:

E 300.0 2011-01-30 Sample Preparation: 2011-01-30 Prep Method: N/A Analyzed By: PG

PG

Prepared By:

RL

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

115-6403130

Work Order: 11012129 Celero/Rock Queen #7 TB Page Number: 5 of 18 Chavez County, NM

Sample: 255903 - MW-1

Laboratory: Analysis:

QC Batch:

TDS 77161 Prep Batch: 66128

Midland Analytical Method: Date Analyzed:

SM 2540C 2011-01-26 Sample Preparation: 2011-01-24 Prep Method: N/A Analyzed By: ARPrepared By: AR

RL

Parameter	Flag	Result	Units	Dilution	RL
Total Dissolved Solids		38600	mg/L	100	10.0

Sample: 255904 - MW-2

Laboratory: Midland

Analysis: BTEX QC Batch: 77124 Prep Batch: 66157

Analytical Method: S 8021B Date Analyzed: 2011-01-24 Sample Preparation: 2011-01-24 Prep Method: S 5030B Analyzed By: AG Prepared By: AG

RL

Parameter	Flag	Result	Units	Dilution	RL
Benzene		< 0.00100	m mg/L	1	0.00100
Toluene		< 0.00100	$\mathrm{mg/L}$	1	0.00100
Ethylbenzene		< 0.00100	mg/L	1	0.00100
Xylene		< 0.00100	mg/L	1	0.00100

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	6	0.107	mg/L	1	0.100	107	67.8 - 126
4-Bromofluorobenzene (4-BFB)		0.0992	mg/L	1	0.100	99	51.1 - 128

Sample: 255904 - MW-2

Laboratory: Lubbock

Analysis: Chloride (IC) QC Batch: 77266 Prep Batch: 66273

Analytical Method: E 300.0 Date Analyzed: 2011-01-30 Sample Preparation: 2011-01-30

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

RL

Parameter	Flag	Result	Units	Dilution	RL
Chloride		45100	mg/L	10000	2.50

Celero/Rock Queen #7 TB Chavez County, NM Sample: 255904 - MW-2 Laboratory: Lubbock Analysis: SO4 (IC) Analytical Method: E 300.0 Prep Method: N/A QC Batch: 77367 Date Analyzed: 2011-02-01 Analyzed By: PGPrep Batch: 66364 Sample Preparation: 2011-02-01 Prepared By: PGRLParameter Flag Result Units Dilution RLSulfate 1250 mg/L 50 2.50 Sample: 255904 - MW-2 Laboratory: Midland Analysis: TDS Analytical Method: SM 2540C Prep Method: N/A QC Batch: 77161 Date Analyzed: 2011-01-26 Analyzed By: AR Prep Batch: 66128 Sample Preparation: 2011-01-24 Prepared By: AR RLParameter Flag Result Units Dilution RLTotal Dissolved Solids 78200 mg/L 100 10.0 Sample: 255905 - MW-3 Laboratory: Midland Analysis: BTEX Analytical Method: S 8021B Prep Method: S 5030B QC Batch: 77124 Date Analyzed: 2011-01-24 Analyzed By: AG Prep Batch: 66157 Sample Preparation: 2011-01-24 Prepared By: AG RLFlag Parameter Result Units Dilution RLBenzene < 0.00100 mg/L 1 0.00100 Toluene < 0.00100 mg/L 1 0.00100 Ethylbenzene < 0.00100 mg/L 1 0.00100Xvlene < 0.00100 mg/L 1 0.00100

Spike

Amount

0.100

0.100

Percent

Recovery

108

101

Recovery

Limits

67.8 - 126

51.1 - 128

Work Order: 11012129

Page Number: 6 of 18

Report Date: February 3, 2011

115-6403130

Surrogate

Trifluorotoluene (TFT)

4-Bromofluorobenzene (4-BFB)

Flag

Result

0.108

0.101

Units

mg/L

mg/L

Dilution

1

1

Report Date: February 3, 2011 115-6403130		11		er: 11012129 Queen #7 TB	Page Number Chavez Cou	
Sample: 25	5905 - MW-3					
Laboratory: Analysis: QC Batch: Prep Batch:	Lubbock Chloride (IC) 77266 66273		Analytical Metho Date Analyzed: Sample Preparat	2011-01-30	Prep Method Analyzed By: Prepared By:	PG
			RL			
Parameter	Fla	ıg	Result	Units	Dilution	RL
Chloride			47500	mg/L	5000	2.50
Sample: 25	5905 - MW-3					
Laboratory: Analysis: QC Batch: Prep Batch:	Lubbock SO4 (IC) 77367 66364		Analytical Method: Date Analyzed: Sample Preparation	2011-02-01	Prep Method Analyzed By: Prepared By:	\overrightarrow{PG}
			RL			
Parameter	Fla	ıg	Result	Units	Dilution	RL
Sulfate			1750	mg/L	50	2.50
Sample: 25	5905 - MW-3					
Laboratory:	Midland					
Analysis:	TDS		Analytical Method:	SM 2540C	Prep Method	,
QC Batch:	77161		Date Analyzed:	2011-01-26	Analyzed By:	
Prep Batch:	66128		Sample Preparation	: 2011-01-24	Prepared By:	AR
_			RL			
Parameter		Flag	Result	Units	Dilution	RL
Total Dissolv	red Solids		81800	mg/L	100	10.0
Sample: 25	5906 - MW-4					
Laboratory:	Midland					
Analysis:	BTEX		Analytical Method:	S 8021B	Prep Method: S	5030B
QC Batch:	77124		Date Analyzed:	2011-01-24		G.
Prep Batch:	66157		Sample Preparation:	2011-01-24		Ğ
			RL			
Parameter	FI FI	ag	Result	Units	Dilution	RL
Benzene			< 0.00100	mg/L		0.00100
Toluene			<0.00100	$_{ m mg/L}$	1 (0.00100

continued ...

Report Date: February 3, 2011 115-6403130

Work Order: 11012129 Celero/Rock Queen #7 TB

Page Number: 8 of 18 Chavez County, NM

RL

10.0

Dilution

2

sample .	255906	continued			
----------	--------	-----------	--	--	--

sample 2559	06 continued								
			RL						
Parameter	Flag		Result		Units	Dil	ution		RL
Ethylbenzen	e		< 0.00100		mg/L		1	0	.00100
Xylene			< 0.00100		mg/L		1	0	.00100
								_	
Surrogate		Flag	Result	Units	Dilution	Spike Amount	Percent		covery mits
Trifluorotolu	iono (TFT)	Tiag	0.114	mg/L	1	0.100	Recovery 114		3 - 126
	robenzene (4-BFB)		0.114	mg/L	1	0.100	103		
4-Biomonuo	TOBERZERE (T-DI-D)		0.100	mg/ L	<u> </u>	0.100	103		l - 128
Sample: 25	55906 - MW-4								
Laboratory:	Lubbock								
Analysis:	Chloride (IC)		Analytica	al Method:	E 300.0		Prep Me	ethod:	N/A
QC Batch:	77266		Date Ana		2011-01-30		Analyze		PG
Prep Batch:	66273			Preparation			Prepare		PG
			-	-				J ·	
_			RL						
Parameter	Flag		Result		Units	D	ilution		RL
Chloride			279		mg/L		50		2.50
Sample: 25	55906 - MW-4								
Laboratory:	Lubbock								
Analysis:	SO4 (IC)		Analytical 1		E 300.0		Prep Me	ethod:	N/A
QC Batch:	77266		Date Analy		2011-01-30		Analyze	d By:	PĠ
Prep Batch:	66273		Sample Pre	paration:	2011-01-30		Prepare	d By:	PG
			RL						
Parameter	Flag		Result		Units	D	ilution		RL
Sulfate			<125		mg/L		50	•	2.50
<u> </u>					<u> </u>				
_	55906 - MW-4								
Laboratory:	Midland								
Analysis:	TDS		Analytical N		SM 2540C		Prep Me		N/A
QC Batch:	77255		Date Analyz		2011-01-31		Analyze		AR
Prep Batch:	66142		Sample Prep	paration:	2011-01-25		Prepare	d By:	\mathbf{AR}

RL

792

Units

mg/L

Result

Flag

Parameter

Total Dissolved Solids

Report Date: February 3, 2011 Work Order: 11012129 Page Number: 9 of 18 115-6403130 Celero/Rock Queen #7 TB Chavez County, NM

Sample: 255907 - Rinseate Laboratory: Midland

Analysis: **BTEX** Analytical Method: S 8021B Prep Method: S 5030B QC Batch: 77124 Date Analyzed: 2011-01-24 Analyzed By: AG Prep Batch: 66157 Sample Preparation: 2011-01-24 Prepared By: AG

		RL			
Parameter_	Flag	Result	Units	Dilution	RL
Benzene		< 0.00100	mg/L	1	0.00100
Toluene		< 0.00100	mg/L	1	0.00100
Ethylbenzene		< 0.00100	mg/L	1	0.00100
Xylene		< 0.00100	mg/L	1	0.00100

					Spike	Percent	Recovery
Surrogate	Flag	\mathbf{Result}	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)		0.108	mg/L	1	0.100	108	67.8 - 126
4-Bromofluorobenzene (4-BFB)		0.100	mg/L	1	0.100	100	51.1 - 128

Sample: 255907 - Rinseate

Laboratory: Lubbock

Analysis: Chloride (IC) Analytical Method: E 300.0 Prep Method: N/A QC Batch: 77266 Date Analyzed: 2011-01-30 Analyzed By: PG Prep Batch: 66273 Sample Preparation: 2011-01-30 Prepared By: PG

Sample: 255907 - Rinseate

Laboratory: Lubbock

SO4 (IC) Analysis: Analytical Method: E 300.0 Prep Method: N/A QC Batch: 77266 Date Analyzed: 2011-01-30 Analyzed By: PG Prep Batch: 66273 Sample Preparation: 2011-01-30 Prepared By: PG

		m RL			
Parameter	Flag	Result	\mathbf{Units}	Dilution	RL
Sulfate		<12.5	m mg/L	5	2.50

Report Date: February 3, 2011 115-6403130

Work Order: 11012129 Celero/Rock Queen #7 TB Page Number: 10 of 18 Chavez County. NM

Sample:	255907 -	Rinseate
---------	----------	----------

Laboratory: Midland

Analysis: TDS QC Batch: 77255 Prep Batch: 66142 Analytical Method: SM 2540C Date Analyzed: 2011-01-31 Sample Preparation: 2011-01-25

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

RL

Parameter	Flag	Result	Units	Dilution	RL
Total Dissolved Solids		74.0	mg/L	1	10.0

Method Blank (1) QC Batch: 77124

QC Batch: 77124 Prep Batch: 66157 Date Analyzed: 2011-01-24 QC Preparation: 2011-01-24

Analyzed By: AG Prepared By: AG

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.115	mg/L	1	0.100	115	70.2 - 118
4-Bromofluorobenzene (4-BFB)		0.111	mg/L	1	0.100	111	47.3 - 116

Method Blank (1) QC Batch: 77161

QC Batch: 77161 Prep Batch: 66128 Date Analyzed: 2011-01-26 QC Preparation: 2011-01-24

Analyzed By: AR Prepared By: AR

Method Blank (1) QC Batch: 77255

QC Batch: 77255 Prep Batch: 66142 Date Analyzed: 2011-01-31 QC Preparation: 2011-01-24 Analyzed By: AR Prepared By: AR

115 - 6403130

Work Order: 11012129 Celero/Rock Queen #7 TB Page Number: 11 of 18 Chavez County, NM

Parameter	Fl	ap.	MDL Result	Units		RL
Total Dissolved Solids			10.0	mg/L		10
			,			
Method Blank (1)	QC Batch: 77266					
QC Batch: 77266		Date Analyzed:	2011-01-30		Analyzed By:	PG
Prep Batch: 66273		QC Preparation:	2011-01-30		Prepared By:	PG
_			MDL			
Parameter	Flag		esult	Units		RL
Chloride		<0.0	0142	mg/L		2.5
Method Blank (1)	QC Batch: 77266					
QC Batch: 77266		Date Analyzed:	2011-01-30		Analyzed By:	PG
Prep Batch: 66273		QC Preparation:	2011-01-30		Prepared By:	PG
		M	IDL			
Parameter	Flag	Res	sult	Units		RL
Sulfate		<0.	126	mg/L		2.5
Method Blank (1)	QC Batch: 77367					
QC Batch: 77367		Date Analyzed:	2011-02-01		Analyzed By:	PG
Prep Batch: 66364		QC Preparation:	2011-02-01		Prepared By:	PG
		M	DL			
Parameter	Flag	Res	sult	Units		RL
Sulfate	_	<0.	126	mg/L		2.5

Duplicates (1) Duplicated Sample: 255905

QC Batch: 77161 Prep Batch: 66128

Date Analyzed: 2011-01-26 QC Preparation: 2011-01-24 Analyzed By: AR Prepared By: AR

	Duplicate	Sample				RPD
Param	Result	Result	Units	Dilution	RPD	Limit
Total Dissolved Solids	81500	81800	mg/L	100	0	10

115-6403130

Work Order: 11012129 Celero/Rock Queen #7 TB Page Number: 12 of 18 Chavez County, NM

Duplicates (1)

Duplicated Sample: 255921

QC Batch:

77255 Prep Batch: 66142 Date Analyzed:

2011-01-31

Analyzed By: AR

QC Preparation: 2011-01-24

Prepared By: AR

	Duplicate	Sample				RPD
Param	Result	Result	Units	Dilution	RPD	Limit
Total Dissolved Solids	147000	134000	mg/L	100	9	10

Laboratory Control Spike (LCS-1)

QC Batch: Prep Batch: 66157

77124

Date Analyzed:

2011-01-24

Analyzed By: AG

QC Preparation: 2011-01-24

Prepared By: AG

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	0.0885	mg/L	1	0.100	< 0.000600	88	82.9 - 118
Toluene	0.0989	mg/L	1	0.100	< 0.000600	99	82.7 - 117
Ethylbenzene	0.102	mg/L	1	0.100	< 0.000800	102	78.8 - 116
Xylene	0.308	mg/L	1	0.300	< 0.000767	103	79.3 - 116

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

	LCSD			Spike	Matrix		Rec.		RPD
Param	Result	\mathbf{Units}	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Benzene	0.0906	mg/L	1	0.100	< 0.000600	91	82.9 - 118	2	20
Toluene	0.102	mg/L	1	0.100	< 0.000600	102	82.7 - 117	3	20
Ethylbenzene	0.106	mg/L	1	0.100	< 0.000800	106	78.8 - 116	4	20
Xylene	0.320	mg/L	1	0.300	< 0.000767	107	79.3 - 116	4	20

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

	LCS	LCSD			Spike	LCS	LCSD	Rec.
Surrogate	Result	Result	Units	Dil.	Amount	Rec.	Rec.	Limit
Trifluorotoluene (TFT)	0.110	0.111	mg/L	1	0.100	110	111	67.3 - 113
4-Bromofluorobenzene (4-BFB)	0.110	0.113	mg/L	1	0.100	110	113	68.2 - 134

Laboratory Control Spike (LCS-1)

QC Batch: Prep Batch: 66128

77161

Date Analyzed:

2011-01-26

Analyzed By: AR

QC Preparation: 2011-01-24

Prepared By: AR

	LCS			Spike	Matrix		${ m Rec.}$
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Total Dissolved Solids	993	m mg/L	1	1000	< 9.75	99	90 - 110

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

115-6403130

Work Order: 11012129 Celero/Rock Queen #7 TB

Page Number: 13 of 18 Chavez County, NM

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Total Dissolved Solids	999	mg/L	1	1000	< 9.75	100	90 - 110	1	10

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

Laboratory Control Spike (LCS-1)

QC Batch:

Date Analyzed:

2011-01-31

Analyzed By: AR

Prep Batch: 66142

QC Preparation: 2011-01-24

Prepared By: AR

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

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

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

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

Laboratory Control Spike (LCS-1)

QC Batch:

Prep Batch: 66273

Date Analyzed:

2011-01-30

Analyzed By: PG

Prepared By: PG

	LCS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Chloride	24.0	mg/L	1	25.0	< 0.0142	96	90 - 110

QC Preparation: 2011-01-30

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

	LCSD			Spike	Matrix		${f Rec}.$		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Chloride	24.0	mg/L	1	25.0	< 0.0142	96	90 - 110	0	20

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

Laboratory Control Spike (LCS-1)

QC Batch:

Date Analyzed:

2011-01-30

Analyzed By: PG

Prep Batch: 66273

QC Preparation: 2011-01-30

Prepared By: PG

continued ...

115-6403130

Work Order: 11012129 Celero/Rock Queen #7 TB

Page Number: 14 of 18 Chavez County. NM

control spikes continued . . .

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate	24.6	mg/L	1	25.0	< 0.126	98	90 - 110

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

	LCSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Sulfate	24.6	mg/L	1	25.0	< 0.126	98	90 - 110	0	20

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

Laboratory Control Spike (LCS-1)

QC Batch:

Date Analyzed:

2011-02-01

Analyzed By: PG

Prep Batch: 66364

QC Preparation: 2011-02-01

Prepared By: PG

	LCS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Sulfate	24.4	mg/L	1	25.0	< 0.126	98	90 - 110

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

	LCSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Sulfate	24.0	mg/L	1	25.0	< 0.126	96	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: 255921

QC Batch: 77124 Prep Batch: 66157 Date Analyzed: QC Preparation: 2011-01-24

2011-01-24

Analyzed By: AG Prepared By: AG

Param		MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	1	0.0669	mg/L	1	0.100	0.0121	55	77.9 - 114
Toluene	2	0.0633	mg/L	1	0.100	0.0066	57	78.3 - 111
Ethylbenzene	3	0.0573	mg/L	1	0.100	< 0.000800	57	75.3 - 110
Xylene	4	0.145	mg/L	1	0.300	< 0.000767	48	75.7 - 109

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

¹Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.

²Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.

³Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control. ⁴Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.

Report Date: February 3, 2011 115-6403130

Work Order: 11012129 Celero/Rock Queen #7 TB

Param		MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene	5	0.0811	mg/L	1	0.100	0.0121	69	77.9 - 114	19	20
Toluene	6	0.0774	mg/L	1	0.100	0.0066	71	78.3 - 111	20	20
Ethylbenzene	7	0.0693	mg/L	1	0.100	< 0.000800	69	75.3 - 110	19	20
Xylene	8	0.180	mg/L	1	0.300	< 0.000767	60	75.7 - 109	22	20

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

_		MS	MSD			Spike	MS	MSD	Rec.
Surrogate		Result	Result	\mathbf{Units}	Dil.	Amount	Rec.	Rec.	\mathbf{Limit}
Trifluorotoluene (TFT)	9	0.0705	0.0437	$\overline{\mathrm{mg/L}}$	1	0.1	70	44	68.3 - 107
4-Bromofluorobenzene (4-BFB)	10	0.0736	0.0449	mg/L	1	0.1	74	45	60.1 - 135

Matrix Spike (MS-1) Spiked Sample: 256128

QC Batch: 77266 Prep Batch: 66273 Date Analyzed: 2011-01-30 QC Preparation: 2011-01-30

Analyzed By: PG Prepared By: PG

Page Number: 15 of 18

Chavez County, NM

	MS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Chloride	121	mg/L	5	125	2.2	95	90 - 110

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

	MSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Chloride	120	mg/L	5	125	2.2	94	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: 256128

QC Batch: 77266 Prep Batch: 66273 Date Analyzed: 2011-01-30 QC Preparation: 2011-01-30

Analyzed By: PG Prepared By: PG

	MS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Sulfate	123	mg/L	5	125	< 0.630	98	90 - 110

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

⁵Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.

⁶Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.
⁷Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.

⁸Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.

⁹Surrogate out due to peak interference.

¹⁰Surrogate out due to peak interference.

115-6403130

Work Order: 11012129 Celero/Rock Queen #7 TB

Page Number: 16 of 18 Chavez County, NM

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Sulfate	122	mg/L	5	125	< 0.630	98	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: 256245

QC Batch:

77367

Date Analyzed:

2011-02-01

Analyzed By: PG

Prepared By: PG

Prep Batch: 66364

QC Preparation: 2011-02-01

	MS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Sulfate	13000	mg/L	500	12500	<63.0	104	90 - 110

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

	MSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Sulfate	13000	mg/L	500	12500	<63.0	104	90 - 110	0	20

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

Standard (CCV-1)

QC Batch: 77124

Date Analyzed: 2011-01-24

Analyzed By: AG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/L	0.100	0.0910	91	80 - 120	2011-01-24
Toluene		mg/L	0.100	0.102	102	80 - 120	2011-01-24
Ethylbenzene		$_{ m mg/L}$	0.100	0.108	108	80 - 120	2011-01-24
Xylene	_	mg/L	0.300	0.325	108	80 - 120	2011-01-24

Standard (CCV-2)

QC Batch: 77124

Date Analyzed: 2011-01-24

Analyzed By: AG

			CCVs True	CCVs Found	CCVs Percent	Percent Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Benzene		mg/L	0.100	0.0858	86	80 - 120	2011-01-24
Toluene		mg/L	0.100	0.0989	99	80 - 120	2011-01-24
Ethylbenzene		$_{ m mg/L}$	0.100	0.103	103	80 - 120	2011-01-24
Xylene		mg/L	0.300	0.308	103	80 - 120	2011-01-24

115 - 6403130

Work Order: 11012129 Celero/Rock Queen #7 TB

Page Number: 17 of 18 Chavez County, NM

Standard	(CCV-3)
~ ~ ~ ~ ~ ~ ~	

QC Batch: 77124

Date Analyzed: 2011-01-24

Analyzed By: AG

			\mathbf{CCVs}	\mathbf{CCVs}	\mathbf{CCVs}	Percent	
			True	Found	Percent	Recovery	Date
Param	\mathbf{Flag}	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Benzene		mg/L	0.100	0.0820	82	80 - 120	2011-01-24
Toluene		$_{ m mg/L}$	0.100	0.0952	95	80 - 120	2011-01-24
Ethylbenzene		m mg/L	0.100	0.0976	98	80 - 120	2011-01-24
Xylene		mg/L	0.300	0.294	98	80 - 120	2011-01-24

Standard (CCV-1)

QC Batch: 77266

Date Analyzed: 2011-01-30

Analyzed By: PG

Danama	Ela -	TTota	CCVs True	CCVs Found	CCVs Percent	Percent Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Chloride		mg/L	25.0	24.1	96	90 - 110	2011-01-30

Standard (CCV-1)

QC Batch: 77266

Date Analyzed: 2011-01-30

Analyzed By: PG

			CCVs True	${ m CCVs} \ { m Found}$	${ m CCVs} \ { m Percent}$	Percent Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Sulfate		mg/L	25.0	24.7	99	90 - 110	2011-01-30

Standard (CCV-2)

QC Batch: 77266

Date Analyzed: 2011-01-30

Analyzed By: PG

			\mathbf{CCVs}	\mathbf{CCVs}	\mathbf{CCVs}	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Chloride		m mg/L	25.0	24.0	96	90 - 110	2011-01-30

Standard (CCV-2)

QC Batch: 77266

Date Analyzed: 2011-01-30

Analyzed By: PG

115-6403130

Work Order: 11012129 Celero/Rock Queen #7 TB Page Number: 18 of 18 Chavez County, NM

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Sulfate		mg/L	25.0	24.5	98	90 - 110	2011-01-30

Standard (CCV-1)

QC Batch: 77367

Date Analyzed: 2011-02-01

Analyzed By: PG

			\mathbf{CCVs}	\mathbf{CCVs}	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Sulfate		mg/L	25.0	23.9	96	90 - 110	2011-02-01

Standard (CCV-2)

QC Batch: 77367

Date Analyzed: 2011-02-01

Analyzed By: PG

			CCVs	\mathbf{CCVs}	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Sulfate		$\mathrm{mg/L}$	25.0	24.1	96	90 - 110	2011-02-01

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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 27, 2011

Work Order: 11041526

Project Location: Chavez Co., NM

Project Name:

Celero/Rock Queen Tract #7

Project Number:

115-6403130A

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

			Date	Time	Date
Sample	Description	Matrix	Taken	Taken	Received
263892	MW-1	water	2011-04-14	10:05	2011-04-15
263893	MW-2	water	2011-04-14	10:15	2011-04-15
263894	MW-3	water	2011-04-14	10:00	2011-04-15
263895	MW-4	water	2011-04-14	10:25	2011-04-15

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 20 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 263892 (MW-1)	4
Sample 263893 (MW-2)	5
Sample 263894 (MW-3)	6
Sample 263895 (MW-4)	7
Method Blanks	10
OOD 4 1 00440 N (1 1 D) 1 (4)	10
QC Batch 80628 - Method Blank (1)	10
QC Batch 80628 - Method Blank (1)	10
$OC(D_{-k-1}, occo, M(A), M(D), A(A))$	10
OOD 11 00000 11 (1 1D) 1 (4)	11
OOD 41 00015 35 (1 1D) 1 (1)	11
	11
	12
	12
QC Batch 80628 - LCS (1)	12
QC Batch 80628 - LCS (1)	13
QC Batch 80663 - LCS (1)	13
	13
QC Batch 80715 - LCS (1)	14
QC Batch 80628 - MS (1)	14
	15
QC Batch 80663 - MS (1)	15
QC Batch 80663 - MS (1)	15
Calibration Standards	17
QC Batch 80419 - CCV (2)	17
QC Batch 80419 - CCV (3)	17
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QC Batch 80628 - ICV (1)	17
QC Batch 80628 - CCV (1)	18
QC Batch 80628 - CCV (1)	18
QC Batch 80663 - ICV (1)	18
QC Batch 80663 - ICV (1)	18
QC Batch 80663 - CCV (1)	19
	19
Appendix	00
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Carrier to the	20
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Case Narrative

Samples for project Celero/Rock Queen Tract #7 were received by TraceAnalysis, Inc. on 2011-04-15 and assigned to work order 11041526. Samples for work order 11041526 were received intact without headspace and at a temperature of 0.6 C.

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

		Prep	Prep	\mathbf{QC}	Analysis
Test	Method	Batch	Date	Batch	Date
BTEX	S 8021B	68257	2011-04-18 at 08:51	80419	2011-04-18 at 08:51
Chloride (IC)	E 300.0	68430	2011-04-20 at 12:00	80628	2011-04-22 at 15:03
Chloride (IC)	E 300.0	68436	2011-04-25 at 08:21	80663	2011-04-26 at 15:30
SO4 (IC)	E 300.0	68430	2011-04-20 at 12:00	80628	2011-04-22 at 15:03
SO4 (IC)	E 300.0	68436	2011-04-25 at 08:21	80663	2011-04-26 at 15:30
TDS	SM 2540C	68387	2011-04-20 at 11:51	80715	2011-04-26 at 13:47

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 11041526 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 27, 2011

115-6403130A

Work Order: 11041526 Celero/Rock Queen Tract #7 Page Number: 4 of 20 Chavez Co., NM

Analytical Report

Sample: 263892 - MW-1

Laboratory:

Midland

Analysis: QC Batch:

BTEX 80419

Analytical Method: Date Analyzed:

S 8021B

2011-04-18

Prep Method: S 5030B Analyzed By: ME

Prep Batch: 68257

Sample Preparation: 2011-04-18

Prepared By:

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1	0.0981	mg/L	1	0.100	98	67.8 - 129
4-Bromofluorobenzene (4-BFB)		1	0.100	mg/L	1	0.100	100	51.1 - 128

Sample: 263892 - MW-1

Laboratory:

Midland

Analysis: QC Batch: Prep Batch: 68430

Chloride (IC) 80628

Date Analyzed: Sample Preparation: 2011-04-20

E 300.0 2011-04-22 Prep Method: N/A Analyzed By: AR

AR

Prepared By:

RT

			n.L			
Parameter	Flag	Cert	Result	Units	Dilution	RL
Chloride		1	20500	m mg/L	1000	2.50

Analytical Method:

Sample: 263892 - MW-1

Laboratory: Analysis: QC Batch:

Midland SO4 (IC) 80628 Prep Batch: 68430

Analytical Method: Date Analyzed:

Sample Preparation:

E 300.0 2011-04-22 2011-04-20

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

RT

Parameter	Flag	Cert	Result	Units	Dilution	RL
Sulfate		1	1020	mg/L	100	2.50

Report Date: April 27, 2011

Work Order: 11041526 Celero/Rock Queen Tract #7 Page Number: 5 of 20 Chavez Co., NM

Sample: 263892 - MW-1

Laboratory: Midland

115-6403130A

Analysis: TDS Analytical Method: SM 2540C QC Batch: 80715 Date Analyzed: 2011-04-26 Prep Batch: 68387 Sample Preparation: 2011-04-20

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

RL

Parameter Flag Cert Result Units Dilution RL Total Dissolved Solids 1 32000 mg/L 100 10.0

Sample: 263893 - MW-2

Laboratory: Midland

Analysis: BTEX Analytical Method: S 8021B Prep Method: S 5030B QC Batch: 80419 Date Analyzed: 2011-04-18 Analyzed By: ME Prep Batch: 68257 Sample Preparation: 2011-04-18 Prepared By: ME

RLCert Parameter Flag Result Units Dilution RLBenzene 0.00680 mg/L 0.00100 1 Toluene < 0.00100 mg/L 1 0.00100 Ethylbenzene 1 < 0.00100 mg/L 1 0.00100 Xylene < 0.00100 mg/L 1 0.00100

						Spike	Percent	Recovery
Surrogate	Flag	Cert	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)		1	0.0903	mg/L	1	0.100	90	67.8 - 129
4-Bromofluorobenzene (4-BFB)		1	0.0980	mg/L	1	0.100	98	51.1 - 128

Sample: 263893 - MW-2

Laboratory: Midland

Chloride (IC) Analysis: Analytical Method: E 300.0 Prep Method: N/A QC Batch: 80628 Date Analyzed: 2011-04-22 Analyzed By: AR Prep Batch: 68430 Sample Preparation: 2011-04-20 Prepared By: AR

Report Date: April 27, 2011 115-6403130A

Work Order: 11041526 Celero/Rock Queen Tract #7 Page Number: 6 of 20 Chavez Co., NM

Sample: 263893 - MW-2

Laboratory: Midland

SO4 (IC) Analysis: QC Batch: 80628 Prep Batch: 68430

Analytical Method: E 300.0 Date Analyzed: 2011-04-22 Sample Preparation: 2011-04-20

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

			RL
arameter	Flag	Cert	Result

Pa Units Dilution RLSulfate 1280 mg/L 100 2.50 1

Sample: 263893 - MW-2

Laboratory: Midland

Analysis: TDS QC Batch: 80715 Prep Batch: 68387

Analytical Method: SM 2540C Date Analyzed: 2011-04-26 Sample Preparation: 2011-04-20

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

			RL
Parameter	Flag	Cert	Result
Total Dissolved Colida			22000

Units Dilution RLmg/L 100 10.0 Total Dissolved Solids 33000

Sample: 263894 - MW-3

Laboratory: Midland

Analysis: BTEX QC Batch: 80419 Prep Batch: 68257

Analytical Method: S 8021B Date Analyzed: 2011-04-18 Sample Preparation: 2011-04-18 Prep Method: S 5030B Analyzed By: ME Prepared By: ME

Parameter	Flag	Cert	Result	Units	Dilution	RL
Benzene		1	< 0.00100	mg/L	1	0.00100
Toluene		1	< 0.00100	mg/L	1	0.00100
Ethylbenzene		1	< 0.00100	mg/L	1	0.00100
Xylene		1	< 0.00100	${ m mg/L}$	1	0.00100

						Spike	Percent	Recovery
Surrogate	Flag	Cert	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)		1	0.0914	mg/L	1	0.100	91	67.8 - 129
4-Bromofluorobenzene (4-BFB)		1	0.0998	mg/L	1	0.100	100	51.1 - 128

Report Date: April 27, 201 115-6403130A	1			r: 11041526 Queen Tract #7		Page Number: 7 Chavez Co.	
Sample: 263894 - MW-3							
Laboratory: Midland Analysis: Chloride (IC)		Λ	l N	- l - E 200 0		D 160	37/4
QC Batch: 80628			nalytical Meth ate Analyzed:	od: E 300.0 2011-04-2	99	Prep Method:	
Prep Batch: 68430			mple Preparat			Analyzed By: Prepared By:	AR AR
,			pio 1 repuid	2011 012	.0	Trepared by.	AIU
D				RL			
Parameter	Flag			Result	Units	Dilution	RL
Chloride			1	25100	mg/L	500	2.50
Sample: 263894 - MW-3							
Laboratory: Midland							
Analysis: SO4 (IC)		Anal	ytical Method	: E 300.0		Prep Method:	N/A
QC Batch: 80628			Analyzed:	2011-04-22		Analyzed By:	AR
Prep Batch: 68430		Sam	ple Preparatio	n: 2011-04-20		Prepared By:	AR
Parameter	T21	C.		RL	TT	D11	
Sulfate	Flag			Result	Units	Dilution	RL
Sunate			1	1170	mg/L	50	2.50
Sample: 263894 - MW-3							
Laboratory: Midland							
Analysis: TDS			ytical Method:			Prep Method:	N/A
QC Batch: 80715			Analyzed:	2011-04-26		Analyzed By:	AR
Prep Batch: 68387		Samp	le Preparation	n: 2011-04-20		Prepared By:	AR
.				RL			
Parameter		Flag	Cert	Result	Units	Dilution	RL
Total Dissolved Solids			1	41000	mg/L	100	10.0
Total Dissolved Solids		100		41000	mg/L	100	-
Sample: 263895 - MW-4							
Laboratory: Midland			1357	G cocat B			

Analytical Method:

Sample Preparation:

Date Analyzed:

S 8021B

2011-04-18

2011-04-18

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

continued ...

Analysis: QC Batch: Prep Batch:

 \mathbf{BTEX}

80419

68257

Report Date: April 27, 2011 115-6403130A

Work Order: 11041526 Celero/Rock Queen Tract #7 Page Number: 8 of 20 Chavez Co., NM

sample 263895 continued ...

				RL				
Parameter	Flag	Cert		Result	Uni	s	Dilution	RL
				RL				
Parameter	Flag	Cert		Result	Unit	s	Dilution	RL
Benzene		1	<	0.00100	mg/	L	1	0.00100
Toluene		1	<	0.00100	mg/	L	1	0.00100
Ethylbenzene		1	<	0.00100	mg/		1	0.00100
Xylene		1	<	0.00100	mg/	L	1	0.00100
						Spike	Percent	Recovery
Surrogate	Flag	Cert	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)	-	1	0.0952	mg/L	1	0.100	95	67.8 - 129
4-Bromofluorobenzene (4-BFB)		1	0.0967	mg/L	1	0.100	97	51.1 - 128

Sample: 263895 - MW-4

Laboratory: Midland

Chloride (IC) Analysis: Analytical Method: E 300.0 Prep Method: N/A QC Batch: 80663 Date Analyzed: 2011-04-26 Analyzed By: AR Prep Batch: 68436 Sample Preparation: 2011-04-25 Prepared By: AR

Sample: 263895 - MW-4

Laboratory: Midland

Analysis: SO4 (IC) Analytical Method: E 300.0 Prep Method: N/A QC Batch: 80663 Date Analyzed: 2011-04-26 Analyzed By: AR Prep Batch: 68436 Sample Preparation: 2011-04-25 Prepared By: AR

Report Date: April 27, 2011 Work Order: 11041526 Page Number: 9 of 20 115-6403130A Celero/Rock Queen Tract #7 Chavez Co., NM Sample: 263895 - MW-4 Laboratory: Midland Analysis: TDS Analytical Method: SM 2540C Prep Method: N/A QC Batch: 80715 Date Analyzed: AR 2011-04-26 Analyzed By: Prep Batch: 68387 Sample Preparation: 2011-04-20 Prepared By: AR RLParameter Flag Cert Result Units Dilution RLTotal Dissolved Solids 3330 mg/L 10.0 5

Report Date: April 27, 2011 115-6403130A

Work Order: 11041526 Celero/Rock Queen Tract #7 Page Number: 10 of 20 Chavez Co., NM

Method Blanks

Method Blank (1)

QC Batch: 80419

QC Batch: 80419 Prep Batch: 68257

Date Analyzed: 2011-04-18 QC Preparation: 2011-04-18 Analyzed By: ME Prepared By: ME

MDL Parameter Flag Cert Units Result RLBenzene < 0.000400 mg/L 0.001 Toluene < 0.000300 mg/L 0.0011 Ethylbenzene < 0.000300 mg/L 0.001 1 Xylene < 0.000333 mg/L 0.001

						Spike	Percent	Recovery
Surrogate	Flag	Cert	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)		1	0.0911	mg/L	1	0.100	91	70.2 - 118
4-Bromofluorobenzene (4-BFB)		1	0.104	mg/L	1	0.100	104	47.3 - 116

Method Blank (1)

QC Batch: 80628

QC Batch: 80628 Prep Batch: 68430 Date Analyzed: 2011-04-22 QC Preparation: 2011-04-20 Analyzed By: AR Prepared By: AR

MDL Parameter Flag Cert Result Units RLChloride 0.593 mg/L 2.5

Method Blank (1)

QC Batch: 80628

QC Batch: 80628 Prep Batch: 68430 Date Analyzed: 2011-04-22 QC Preparation: 2011-04-20 Analyzed By: AR. Prepared By: AR

			MDL		
Parameter	Flag	Cert	Result	Units	RL
Sulfate		11	< 0.177	mg/L	2.5

Report Date: April 27, 2011 115-6403130A	Work Ordo Celero/Rock (er: 11041526 Queen Tract 7	¥7 ———————	Page Number: 11 of 20 Chavez Co., NM				
Method Blank (1) QC Batch: 80663	3							
QC Batch: 80663 Prep Batch: 68436	Date Analyzed: QC Preparation:	2011-04-26 2011-04-25			Analyzed By Prepared By:			
Parameter Flag	g Cert		MDL Result		Units mg/T	RL 2.5		
Childride	1		0.070		mg/L	2.5		
Method Blank (1) QC Batch: 80663	3							
QC Batch: 80663 Prep Batch: 68436	Date Analyzed: QC Preparation:	2011-04-26 2011-04-25			Analyzed By: Prepared By:			
Parameter Flag	g Cert		MDL Result	74 · · · · · ·	Units mg/L	RL 2.5		
Method Blank (1) QC Batch: 80715								
QC Batch: 80715 Prep Batch: 68387	Date Analyzed: QC Preparation:	2011-04-26 2011-04-20			Analyzed By: Prepared By:			
Parameter	Flag	Cert	MDL Result		Units	RL		
Total Dissolved Solids		1	<9.75	,	mg/L	10		
Duplicates (1) Duplicated Sample: 263	8895							
QC Batch: 80715 Prep Batch: 68387	Date Analyzed: QC Preparation:	2011-04-26 2011-04-20			Analyzed By: Prepared By:	AR AR		
Param	Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit		
Total Dissolved Solids	3480	3330	m mg/L	5	4	10		

Report Date: April 27, 2011

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Work Order: 11041526 Celero/Rock Queen Tract #7 Page Number: 12 of 20 Chavez Co., NM

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch:

80419

Date Analyzed:

2011-04-18

Analyzed By: ME Prepared By: ME

Prep Batch: 68257

QC Preparation: 2011-04-18

			LCS			Spike	Matrix		Rec.
Param	F	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit
Benzene		1	0.0882	mg/L	1	0.100	< 0.000400	88	76.8 - 110
Toluene		1	0.0944	mg/L	1	0.100	< 0.000300	94	81 - 108
Ethylbenzene		1	0.0965	mg/L	1	0.100	< 0.000300	96	78.8 - 118
Xylene		1	0.291	mg/L	1	0.300	< 0.000333	97	80.3 - 119

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

			LCSD			Spike	Matrix		Rec.		RPD
Param	F	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Benzene		1	0.0948	mg/L	1	0.100	< 0.000400	95	76.8 - 110	7	20
Toluene		1	0.102	${ m mg/L}$	1	0.100	< 0.000300	102	81 - 108	8	20
Ethylbenzene		1	0.104	mg/L	1	0.100	< 0.000300	104	78.8 - 118	8	20
Xylene		1	0.314	mg/L	1	0.300	< 0.000333	105	80.3 - 119	8	20

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

		LCS	LCSD			Spike	LCS	LCSD	Rec.
Surrogate		Result	Result	Units	Dil.	Amount	Rec.	Rec.	Limit
Trifluorotoluene (TFT)	1	0.0994	0.0964	mg/L	1	0.100	99	96	66.6 - 114
4-Bromofluorobenzene (4-BFB)	1	0.119	0.116	mg/L	1	0.100	119	116	68.2 - 124

Laboratory Control Spike (LCS-1)

QC Batch:

80628

Date Analyzed:

2011-04-22

Analyzed By: AR

Prep Batch:

68430

QC Preparation: 2011-04-20

Prepared By: AR

LCS Rec. Spike Matrix \mathbf{C} Param F Result Units Dil. Amount Result Rec. Limit Chloride 24.6 mg/L 25.0 < 0.265 98 90 - 110

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

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Work Order: 11041526 Celero/Rock Queen Tract #7 Page Number: 13 of 20 Chavez Co., NM

	.,		
control	snikes	continued	

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
			LCSD			Spike	Matrix		Rec.		RPD
Param	\mathbf{F}	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Chloride		1	24.7	mg/L	1	25.0	< 0.265	99	90 - 110	0	20

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

Laboratory Control Spike (LCS-1)

QC Batch: 80628 Prep Batch: 68430 Date Analyzed: 2011-04-22 QC Preparation: 2011-04-20 Analyzed By: AR Prepared By: AR

			LCS			Spike	Matrix		Rec.
Param	F	C	Result	Units	Dil.	Amount	Result	Rec.	Limit
Sulfate		1	24.2	mg/L	1	25.0	< 0.177	97	90 - 110

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

			LCSD			Spike	Matrix		Rec.		RPD
Param	F	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Sulfate		1	24.2	mg/L	1	25.0	< 0.177	97	90 - 110	0	20

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

Laboratory Control Spike (LCS-1)

QC Batch: 80663 Prep Batch: 68436 Date Analyzed: 2011-04-26 QC Preparation: 2011-04-25

Analyzed By: AR Prepared By: AR

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

			LCSD			Spike	Matrix		Rec.		RPD
Param	F	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Chloride		1	25.6	mg/L	1	25.0	< 0.265	102	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 27, 2011

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Work Order: 11041526 Celero/Rock Queen Tract #7 Page Number: 14 of 20

Chavez Co., NM

Laboratory Control Spike (LCS-1)

OC Batch: Prep Batch:

80663 68436 Date Analyzed: QC Preparation:

2011-04-26 2011-04-25

Analyzed By: AR Prepared By:

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

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

			LCSD			Spike	Matrix		Rec.		RPD
Param	F	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Sulfate		3 1 3	22.7	mg/L	1	25.0	< 0.177	91	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: Prep Batch:

80715 68387 Date Analyzed: QC Preparation:

2011-04-26 2011-04-20

Analyzed By: Prepared By:

LCS Spike Matrix Rec. Param F C Result Units Dil. Amount Result Limit Rec. Total Dissolved Solids 966 mg/L 1000 < 9.75 97 90 - 110

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

			LCSD			Spike	Matrix		Rec.		RPD
Param	F	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Total Dissolved Solids		1	992	mg/L	1	1000	<9.75	99	90 - 110	3	10

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

Matrix Spike (MS-1) Spiked Sample: 263891

QC Batch:

80628 Prep Batch: 68430 Date Analyzed: QC Preparation:

2011-04-22 2011-04-20

Analyzed By: AR Prepared By: AR

MS Spike Matrix Rec. Param F C Result Units Dil. Result Amount Rec. Limit Chloride 3430 mg/L 2750 997 88 90 - 110

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

Report Date: April 27, 2011

115-6403130A

Work Order: 11041526 Celero/Rock Queen Tract #7 Page Number: 15 of 20 Chavez Co., NM

			MSD			Spike	Matrix		Rec.		RPD
Param	F	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Chloride		1	3380	mg/L	100	2750	997	87	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: 263891

QC Batch: 80628 Prep Batch: 68430 Date Analyzed: 2011-04-22 QC Preparation: 2011-04-20

Analyzed By: AR Prepared By: AR

			MS			Spike	Matrix		Rec.
Param	F	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit
Sulfate		1	3830	mg/L	100	2750	1570	82	90 - 110

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

			MSD			Spike	Matrix		Rec.		RPD
Param	F	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Sulfate		1	3800	mg/L	100	2750	1570	81	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: 263897

QC Batch: 80663 Prep Batch: 68436

Date Analyzed: 2011-04-26 QC Preparation: 2011-04-25 Analyzed By: AR Prepared By: AR

			MS			Spike	Matrix		Rec.
Param	F	C	Result	Units	Dil.	Amount	Result	Rec.	Limit
Chloride		1	1400	mg/L	50	1380	91.7	95	90 - 110

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

			MSD			Spike	Matrix		Rec.		RPD
Param	F	\mathbf{C}	Result	Units	Dil_{-}	Amount	Result	Rec.	Limit	RPD	Limit
Chloride		1	1410	mg/L	50	1380	91.7	96	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: 263897

QC Batch: 80663 Date Analyzed: 2011-04-26 Analyzed By: AR Prep Batch: 68436 QC Preparation: 2011-04-25 Prepared By: AR

Report Date: April 27, 2011 115-6403130A

Param

Sulfate

Work Order: 11041526 Celero/Rock Queen Tract #7

Dil.

50

Amount

1380

Result

32

Rec.

88

Limit

90 - 110

Page Number: 16 of 20 Chavez Co., NM

RPD

3

Limit

20

Param	F	\mathbf{C}	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate		1	1200	mg/L	50	1380	32	85	90 - 110
Percent recovery is based or	ı the spike resu	lt. RF	D is based	on the spi	ike and s	pike duplicat	e result.		8
		MS	D		Spike	Matrix	Rec	С.	RPD

Units

mg/L

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

Result

1240

Report Date: April 27, 2011 115-6403130A Work Order: 11041526 Celero/Rock Queen Tract #7 Page Number: 17 of 20

Chavez Co., NM

Calibration Standards

Standard (CCV-2)

QC Batch: 80419 Date Analyzed: 2011-04-18 Analyzed By: ME

				CCVs	CCVs	CCVs	Percent	
				True	Found	Percent	Recovery	Date
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Benzene		1	mg/L	0.100	0.0964	96	80 - 120	2011-04-18
Toluene		1	mg/L	0.100	0.100	100	80 - 120	2011-04-18
Ethylbenzene		1	$_{ m mg/L}$	0.100	0.0997	100	80 - 120	2011-04-18
Xylene		1	mg/L	0.300	0.298	99	80 - 120	2011-04-18

Standard (CCV-3)

QC Batch: 80419 Date Analyzed: 2011-04-18 Analyzed By: ME

				CCVs True	CCVs Found	CCVs Percent	Percent Recovery	Date
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Benzene		1	mg/L	0.100	0.0957	96	80 - 120	2011-04-18
Toluene		1	mg/L	0.100	0.0994	99	80 - 120	2011-04-18
Ethylbenzene		1	$_{ m mg/L}$	0.100	0.0987	99	80 - 120	2011-04-18
Xylene		1	mg/L	0.300	0.294	98	80 - 120	2011-04-18

Standard (ICV-1)

QC Batch: 80628 Date Analyzed: 2011-04-22 Analyzed By: AR

ICVs ICVs ICVs Percent True Found Percent Recovery Date Param Flag Cert Units Conc. Limits Conc. Recovery Analyzed Chloride mg/L 25.0 96 90 - 110 2011-04-22 24.1

Standard (ICV-1)

QC Batch: 80628 Date Analyzed: 2011-04-22 Analyzed By: AR

Report Date: April 27, 2011

115-6403130A

Work Order: 11041526 Celero/Rock Queen Tract #7 Page Number: 18 of 20 Chavez Co., NM

Param	Flag	Cert	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
			7-					
Sulfate		1	mg/L	25.0	24.1	96	90 - 110	2011-04-22

Standard (CCV-1)

QC Batch: 80628

Date Analyzed: 2011-04-22

Analyzed By: AR

				CCVs	CCVs	CCVs	Percent	
				True	Found	Percent	Recovery	Date
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Chloride		1	mg/L	25.0	24.1	96	90 - 110	2011-04-22

Standard (CCV-1)

QC Batch: 80628

Date Analyzed: 2011-04-22

Analyzed By: AR

				CCVs	CCVs	CCVs	Percent	
				True	Found	Percent	Recovery	Date
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Sulfate		1	mg/L	25.0	24.8	99	90 - 110	2011-04-22

Standard (ICV-1)

QC Batch: 80663

Date Analyzed: 2011-04-26

Analyzed By: AR

				ICVs	ICVs	ICVs	Percent	
				True	Found	Percent	Recovery	Date
Param	Flag	Cert	Units	Conc	Conc.	Recovery	Limits	Analyzed
Chloride		1	mg/L	25.0	24.3	97	90 - 110	2011-04-26

Standard (ICV-1)

QC Batch: 80663

Date Analyzed: 2011-04-26

Analyzed By: AR

Report Date: April 27, 2011

115-6403130A

Work Order: 11041526 Celero/Rock Queen Tract #7 Page Number: 19 of 20

Chavez Co., NM

Param	Flag	Cert	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Sulfate		1	mg/L	25.0	25.0	100	90 - 110	2011-04-26

Standard (CCV-1)

QC Batch: 80663

Date Analyzed: 2011-04-26

Analyzed By: AR

				CCVs	CCVs	CCVs	Percent	
				True	Found	Percent	Recovery	Date
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Chloride		1	mg/L	25.0	22.8	91	90 - 110	2011-04-26

Standard (CCV-1)

QC Batch: 80663

Date Analyzed: 2011-04-26

Analyzed By: AR

				CCVs	CCVs	CCVs	Percent	
				True	Found	Percent	Recovery	Date
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Sulfate		1	mg/L	25.0	22.8	91	90 - 110	2011-04-26

Work Order: 11041526 Celero/Rock Queen Tract #7 Page Number: 20 of 20 Chavez Co., NM

Appendix

Laboratory Certifications

	Certifying	Certification	Laboratory
\mathbf{C}	Authority	Number	Location
-	NCTRCA	WFWB384444Y0909	TraceAnalysis
-	DBE	VN 20657	TraceAnalysis
-	HUB	1752439743100-86536	TraceAnalysis
-	WBE	237019	TraceAnalysis
1	NELAP	T104704392-10-TX	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.

*Wo #: Nousal

PAGE: OF:	TAGE:	ANALYSIS REQUEST (Circle or Specify Method No.)	q A+ bq HB 2e q C+ bp HB 2e	la Bla C. 280/624 3270/625	A BA els: A BA els: A BA els: Bolline	PAH 8270 RCRA Mer TCLP Wer TCLP Vola TCLP Sem GC.MS Se PCB's 808 P	× × × ×						80% 100	AIRB	P K. L.	Authorized: No Yes No	Project Manager retains Pink copy - Accounting receives Gold copy.
* WO # . 11041526	Analysis Request of Chain of Custody Record		1910 N. Big Spring St. Midland, Texas 79705 (432) 682-4559 • Fax (432) 682-3946	Colero SITE MANAGER: E	PROJECT NAME: ROCK QUEEN TINCH #7	DENTIFICATION NUMBER O FILTERED TOTAL	x x mm X mm 1))) > 101	XWb				Management of the state of the	Time: HECENED BY: (Stendarm)	Time: RECEIVED BY: (Signature)	CONTACT: PHONE ZP: DATE: TIME	SI HOBATO ICH NO MOI



200 East Sunset Road, Suite E

5002 Basin Street, Suite AT Midland, Texas 79703 6015 Harris Parkway, Suite 110 Ft. Worth, Texas 76132

El Paso, Texas 79922 888 • 588 • 3443

915 • 585 • 3443 432 • 689 • 6301 817 - 201 - 5260

FAX 806 • 794 • 1298 FAX 915 • 585 • 4944 FAX 432 • 689 • 6313

E-Mail: lab@traceanalysis.com

Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Oklahoma ISO 17025 Kansas

Analytical and Quality Control Report

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

Report Date: August 25, 2011

Work Order: 11080110

Project Location: Chavez Co., NM

Project Name: Celero/Rock Queen #7 TB

Project Number: 115-6403130

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

			Date	Time	Date
Sample	Description	Matrix	Taken	Taken	Received
273243	MW-1	water	2011-07-29	12:50	2011-07-29
273244	MW-2	water	2011-07-29	12:30	2011-07-29
273245	MW-3	water	2011-07-29	12:40	2011-07-29
273246	MW-4	water	2011-07-29	13:00	2011-07-29

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 21 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																																
Analytical Report																																
Sample 273243 (MW-1)				- 10			•				8 8										14							*:		50.0 0		
Sample 273244 (MW-2)																																
Sample 273245 (MW-3)																																
Sample 273246 (MW-4)				• 10	e x	* *	•			•	×1 ×			•											٠		12			100	÷	
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Case Narrative

Samples for project Celero/Rock Queen #7 TB were received by TraceAnalysis, Inc. on 2011-07-29 and assigned to work order 11080110. Samples for work order 11080110 were received intact without headspace and at a temperature of 10.8 C.

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

		Prep	Prep	QC	Analysis
Test	Method	Batch	Date	Batch	Date
BTEX	S 8021B	70958	2011-08-03 at 09:47	83538	2011-08-03 at 09:47
Chloride (IC)	E 300.0	71007	2011-08-03 at 10:14	83606	2011-08-04 at 10:14
Chloride (IC)	E 300.0	71505	2011-08-22 at 09:26	84218	2011-08-22 at 14:27
SO4 (IC)	E 300.0	71007	2011-08-03 at 10:14	83606	2011-08-04 at 10:14
SO4 (IC)	E 300.0	71505	2011-08-22 at 09:26	84218	2011-08-22 at 14:27
TDS	SM 2540C	71017	2011-08-05 at 12:42	83880	2011-08-15 at 15:06

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 11080110 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.

115-6403130

Work Order: 11080110 Celero/Rock Queen #7 TB

Page Number: 5 of 21 Chavez Co., NM

Analytical Report

Sample: 273243 - MW-1

Laboratory:

Midland

Analysis: QC Batch: Prep Batch:

BTEX 83538 70958

Analytical Method: Date Analyzed:

S 8021B

2011-08-03 Sample Preparation: 2011-08-03 Prep Method: S 5030B Analyzed By: ME

Prepared By: ME

			RL			
Parameter	Flag	Cert	Result	Units	Dilution	RL
Benzene	υ	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	υ	1	< 0.00100	mg/L	1	0.00100

						Spike	Percent	Recovery
Surrogate	Flag	Cert	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)			0.101	mg/L	1	0.100	101	79.1 - 127.2
4-Bromofluorobenzene (4-BFB)			0.0972	${ m mg/L}$	1	0.100	97	67.5 - 140.8

Sample: 273243 - MW-1

Laboratory:

Midland

Analysis: QC Batch: Prep Batch: Chloride (IC)

83606 71007

Analytical Method: Date Analyzed:

E 300.0 2011-08-04 Sample Preparation: 2011-08-03 Prep Method: N/A Analyzed By: AR

AR

Prepared By:

RL Parameter Flag Cert Result Units Dilution RLChloride 20500 1000 mg/L 2.50

Sample: 273243 - MW-1

Laboratory:

Midland

Analysis: SO4 (IC) QC Batch: 83606 Prep Batch: 71007

Analytical Method: Date Analyzed: Sample Preparation:

E 300.0 2011-08-04 2011-08-03 Prep Method: N/A Analyzed By: AR Prepared By: AR

			RL			
Parameter	Flag	Cert	Result	Units	Dilution	RL
Sulfate		1	1170	mg/L	100	2.50

115-6403130

Work Order: 11080110 Celero/Rock Queen #7 TB Page Number: 6 of 21 Chavez Co., NM

Sample: 273243 - MW-1

Laboratory:

Midland

Analysis: QC Batch: Prep Batch:

TDS 83880 71017

Analytical Method: Date Analyzed:

SM 2540C

2011-08-15 Sample Preparation: 2011-08-08 Prep Method: N/A Analyzed By: AR

Prepared By:

100

RLFlag

н

Parameter Total Dissolved Solids Cert Result 33700 1

Units Dilution mg/L

RL10.0

AR.

Sample: 273244 - MW-2

Laboratory:

Midland

Analysis: QC Batch: Prep Batch:

BTEX 83538 70958

Analytical Method: Date Analyzed:

Sample Preparation:

S 8021B 2011-08-03

2011-08-03

Prep Method: S 5030B

Analyzed By: ME Prepared By: ME

RLParameter Flag Cert Result Benzene

Units Dilution RL0.00650 mg/L 0.00100 1 1 Toluene 0.00100 < 0.00100 mg/L 1 υ Ethylbenzene < 0.00100 mg/L 0.00100 1 U Xylene < 0.00100 mg/L 1 0.00100υ

						Spike	Percent	Recovery
Surrogate	Flag	Cert	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)			0.0996	mg/L	1	0.100	100	79.1 - 127.2
4-Bromofluorobenzene (4-BFB)			0.0948	mg/L	1	0.100	95	67.5 - 140.8

Sample: 273244 - MW-2

Laboratory:

Midland

Analysis: Chloride (IC) QC Batch: 84218 Prep Batch: 71505

Analytical Method: Date Analyzed:

Sample Preparation:

E 300.0 2011-08-22 2011-08-22 Prep Method: N/A Analyzed By: AR Prepared By: AR

RLFlag Parameter Cert Result Units Dilution RLChloride 11700 mg/L 1000 2.501

 Report Date: August 25, 2011
 Work Order: 11080110
 Page Number: 7 of 21

 115-6403130
 Celero/Rock Queen #7 TB
 Chavez Co., NM

Sample: 273244 - MW-2

Laboratory: Midland

Analysis: SO4 (IC) Analytical Method: E 300.0 Prep Method: N/A QC Batch: 84218 Date Analyzed: 2011-08-22 Analyzed By: AR Prep Batch: 71505 Sample Preparation: 2011-08-22 Prepared By: AR

Sample: 273244 - MW-2

Laboratory: Midland

Analysis: TDS Analytical Method: SM 2540C Prep Method: N/A QC Batch: 83880 Date Analyzed: 2011-08-15 Analyzed By: AR Prep Batch: 71017 Sample Preparation: 2011-08-08 Prepared By: AR

Sample: 273245 - MW-3

Laboratory: Midland

Analysis: BTEX Analytical Method: S 8021B Prep Method: S 5030B QC Batch: 83538 Date Analyzed: 2011-08-03 Analyzed By: MESample Preparation: Prep Batch: 70958 2011-08-03 Prepared By: ME

RLParameter Flag Cert Result Units Dilution RLBenzene < 0.00100 mg/L U 1 0.00100 Toluene U 1 < 0.00100 mg/L 1 0.00100 Ethylbenzene υ 1 < 0.00100 mg/L 1 0.00100 Xylene υ < 0.00100 mg/L1 0.00100

						Spike	Percent	Recovery
Surrogate	Flag	Cert	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)			0.102	mg/L	1	0.100	102	79.1 - 127.2
4-Bromofluorobenzene (4-BFB)			0.0977	mg/L	1	0.100	98	67.5 - 140.8

Report Date: August 25, 2011 115-6403130			Work Ore Celero/Roc	В	Page Number: Chavez Co		
Sample: 273245 - MW-3					· -		
Laboratory: Midland							
Analysis: Chloride (IC)			alytical Metl			Prep Method:	N/A
QC Batch: 84218			te Analyzed:	2011-08		Analyzed By:	AR
Prep Batch: 71505		Sa	mple Prepara	tion: 2011-08	-22	Prepared By:	AR
				RL			
Parameter	Flag	C	ert	Result	Units	Dilution	RL
Chloride			1	25100	mg/L	500	2.50
Sample: 273245 - MW-3							
Laboratory: Midland							
Analysis: SO4 (IC)		Anal	ytical Metho	i: E 300.0		Prep Method:	N/A
QC Batch: 84218			Analyzed:	2011-08-2)	Analyzed By:	AR
Prep Batch: 71505			ole Preparatio			Prepared By:	AR
•						roporou 2,	7.7.7
Parameter	Flag	C	ert	RL Result	Units	Dilution	RL
Sulfate	1105		1	1420	mg/L	50	2.50
					6/ 2		2.00
Sample: 273245 - MW-3							
Laboratory: Midland							
Analysis: TDS			tical Method			Prep Method:	N/A
QC Batch: 83880			Analyzed:	2011-08-15		Analyzed By:	AR
Prep Batch: 71017		Samp	le Preparatio	n: 2011-08-08		Prepared By:	AR_{\odot}
				RL			
Parameter	·	Flag	Cert	Result	Units	Dilution	RL
Total Dissolved Solids		н	i	52400	$_{ m mg/L}$	100	10.0

Analytical Method:

Sample Preparation:

Date Analyzed:

S 8021B

2011-08-03

2011-08-03

Laboratory: Midland

Prep Batch: 70958

BTEX

83538

Analysis:

QC Batch:

Prepared By:

Prep Method: S 5030B

ME

Analyzed By: ME

Report Date: August 25, 2011 115-6403130

Work Order: 11080110 Celero/Rock Queen #7 TB Page Number: 9 of 21 Chavez Co., NM

sample 273246 continued ...

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

						Spike	Percent	Recovery
Surrogate	Flag	Cert	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)			0.106	mg/L	1	0.100	106	79.1 - 127.2
4-Bromofluorobenzene (4-BFB)			0.0991	mg/L	1	0.100	99	67.5 - 140.8

Sample: 273246 - MW-4

Laboratory: Midland

Analysis: Chloride (IC)

Analytical Method: E 300.0

Prep Method: N/A

QC Batch: 83606

Date Analyzed: 2011-08-04

Prep Batch: 71007

Sample Preparation: 2011-08-03

Prep Method: N/A

Analyzed By: AR

			RL			
Parameter	Flag	Cert	Result	Units	Dilution	RL
Chloride		1	127	mg/L	5	2.50

Sample: 273246 - MW-4

Laboratory: Midland

Analysis: SO4 (IC) Analytical Method: E 300.0 Prep Method: N/A QC Batch: 83606 Date Analyzed: 2011-08-04 Analyzed By: AR. Prep Batch: 71007 Sample Preparation: 2011-08-03 Prepared By: AR

			RL			
Parameter	Flag	Cert	Result	Units	Dilution	RL
Sulfate		1	114	mg/L	5	2.50

Report Date: August 25, 2011 Work Order: 11080110 Page Number: 10 of 21 115-6403130 Celero/Rock Queen #7 TB Chavez Co., NM Sample: 273246 - MW-4 Laboratory: Midland Analysis: TDS Analytical Method: SM 2540C Prep Method: N/A QC Batch: 83880 Date Analyzed: 2011-08-15 Analyzed By: AR Prep Batch: 71017 Sample Preparation: 2011-08-08 Prepared By: AR RL

Cert

Result

648

Units

mg/L

Dilution

RL

10.0

Flag

н

Parameter

Total Dissolved Solids

115-6403130

Work Order: 11080110 Celero/Rock Queen #7 TB Page Number: 11 of 21 Chavez Co., NM

Method Blanks

Method Blank (1)

QC Batch: 83538

QC Batch: Prep Batch: 70958

83538

Date Analyzed:

2011-08-03

Analyzed By: ME

QC Preparation:

2011-08-03

Prepared By: ME

Parameter	Flag	Cert	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)			0.103	mg/L	1	0.100	103	61.1 - 118.4
4-Bromofluorobenzene (4-BFB)			0.0946	mg/L	1	0.100	95	45.9 - 126.4

Method Blank (1)

QC Batch: 83606

QC Batch: 83606 Prep Batch: 71007

Date Analyzed: 2011-08-04 QC Preparation: 2011-08-03 Analyzed By: AR Prepared By: AR

MDL Parameter Flag Cert Result Units RLChloride 2.99 mg/L 2.5

Method Blank (1)

QC Batch: 83606

QC Batch: 83606 Prep Batch: 71007

Date Analyzed: 2011-08-04 QC Preparation: 2011-08-03

Analyzed By: AR Prepared By: AR

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

Report Date: August 25, 201 115-6403130	11		er: 11080110 : Queen #7 T		Page Number: 12 of 21 Chavez Co., NM		
Method Blank (1) QC	Batch: 83880						
QC Batch: 83880 Prep Batch: 71017		Date Analyzed: QC Preparation:	2011-08-15 2011-08-05		Analyzed By Prepared By		
Parameter		Flag	Cert	MDL Result	Units	RL	
Total Dissolved Solids			1	<9.75	mg/L	10	
Method Blank (1) QC	Batch: 84218						
QC Batch: 84218 Prep Batch: 71505		Date Analyzed: QC Preparation:	2011-08-22 2011-08-22		Analyzed By Prepared By		
Parameter	Flag	Cert		MDL Result	Units	RL	
Chloride	jun	1		< 0.265	mg/L	2.5	
Method Blank (1) QC	Batch: 84218						
QC Batch: 84218 Prep Batch: 71505		Date Analyzed: QC Preparation:	2011-08-22 2011-08-22		Analyzed By Prepared By		
Parameter	Flag	Cert		MDL Result	Units	RL	
Sulfate		1		<0.177	mg/L	2.5	
Duplicates (1) Duplicate	ed Sample: 2732	46					
QC Batch: 83880 Prep Batch: 71017		Date Analyzed: QC Preparation:	2011-08-15 2011-08-05		Analyzed By: Prepared By:		
Param	48.0	Duplicate Result	Sample Result	Units	Dilution RPD	RPD Limit	
Total Dissolved Solids	1	614	648	mg/L	2 5	10	

Report Date: August 25, 2011 115-6403130

Work Order: 11080110

Celero/Rock Queen #7 TB

Page Number: 13 of 21 Chavez Co., NM

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch:

83538

Date Analyzed:

2011-08-03

Analyzed By: ME Prepared By: ME

Prep Batch: 70958

QC Preparation: 2011-08-03

			LCS			Spike	Matrix		Rec.
Param	F	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit
Benzene		1	0.101	mg/L	1	0.100	< 0.000400	101	76.8 - 110.3
Toluene		1	0.0979	mg/L	1	0.100	< 0.000300	98	90.9 - 122.2
Ethylbenzene		1	0.0919	mg/L	1	0.100	< 0.000300	92	72.7 - 120.2
Xylene		1	0.276	mg/L	1	0.300	< 0.000333	92	72.1 - 121.5

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

			LCSD			Spike	Matrix		Rec.		RPD
Param	\mathbf{F}	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Benzene		1	0.103	mg/L	1	0.100	< 0.000400	103	76.8 - 110.3	2	20
Toluene		1	0.0996	mg/L	1	0.100	< 0.000300	100	90.9 - 122.2	2	20
Ethylbenzene		1	0.0942	mg/L	1	0.100	< 0.000300	94	72.7 - 120.2	2	20
Xylene		1	0.282	mg/L	1	0.300	< 0.000333	94	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	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.0992	0.0894	mg/L	1	0.100	99	89	61.9 - 119.2
4-Bromofluorobenzene (4-BFB)	0.0986	0.0880	mg/L	1	0.100	99	88	56.4 - 127.9

Laboratory Control Spike (LCS-1)

QC Batch:

83606

Date Analyzed:

2011-08-04

Analyzed By: AR

Prep Batch: 71007

QC Preparation: 2011-08-03

Prepared By: AR

			LCS			Spike	Matrix		Rec.
Param	F	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit
Chloride		1	27.5	mg/L	1	25.0	< 0.265	110	90.9 - 113.9

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

115-6403130

Work Order: 11080110 Celero/Rock Queen #7 TB Page Number: 14 of 21 Chavez Co., NM

control spikes continued . . .

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
			LCSD			Spike	Matrix		Rec.		RPD
Param	F	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Chloride	5-7	1	27.5	$\mathrm{mg/L}$	1	25.0	< 0.265	110	90.9 - 113.9	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:

83606

Date Analyzed:

2011-08-04

Analyzed By: AR

Prep Batch: 71007

QC Preparation: 2011-08-03

Prepared By: AR

			LCS			Spike	Matrix		Rec.
Param	\mathbf{F}	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit
Sulfate		1	26.8	mg/L	1	25.0	< 0.177	107	99 - 113.6

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

			LCSD			Spike	Matrix		Rec.		RPD
Param	F	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Sulfate		1	26.7	mg/L	1	25.0	< 0.177	107	99 - 113.6	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:

83880

Date Analyzed:

2011-08-15

Analyzed By: AR

Prep Batch: 71017

QC Preparation: 2011-08-05

Prepared By: AR

			LCS			Spike	Matrix		Rec.
Param	\mathbf{F}	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit
Total Dissolved Solids		1	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.

			LCSD			Spike	Matrix		Rec.		RPD
Param	\mathbf{F}	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Total Dissolved Solids		1	1040	${ m mg/L}$	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.

115-6403130

Work Order: 11080110 Celero/Rock Queen #7 TB Page Number: 15 of 21 Chavez Co., NM

Laboratory Control Spike (LCS-1)

QC Batch: Prep Batch: 71505

84218

Date Analyzed:

2011-08-22

QC Preparation: 2011-08-22 Analyzed By: AR Prepared By: AR

LCS Spike Matrix Rec. Param F \mathbf{C} Result Units Dil. Amount Result Rec. Limit Chloride 24.3 mg/L 25.0 < 0.265 97 90.9 - 113.9

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

			LCSD			Spike	Matrix		Rec.		RPD
Param	F	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Chloride		1	24.0	mg/L	1	25.0	< 0.265	96	90.9 - 113.9	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:

84218

Date Analyzed:

2011-08-22

Analyzed By: AR

Prep Batch: 71505

QC Preparation: 2011-08-22

Prepared By: AR

			LCS			Spike	Matrix		Rec.
Param	F	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit
Sulfate		1	26.0	mg/L	1	25.0	< 0.177	104	99 - 113.6

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

			LCSD			Spike	Matrix		Rec.		RPD
Param	F	C	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Sulfate		1	26.1	mg/L	1	25.0	< 0.177	104	99 - 113.6	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: 273037

QC Batch:

83538

Date Analyzed:

2011-08-03

Analyzed By: ME

Prep Batch: 70958

QC Preparation: 2011-08-03

Prepared By: ME

			MS			Spike	Matrix		Rec.
Param	F	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit
Benzene		1	0.587	mg/L	5	0.500	0.127	92	66.9 - 128.2
Toluene		1	0.544	mg/L	5	0.500	0.1205	85	81.6 - 122.9
Ethylbenzene		1	0.421	mg/L	5	0.500	< 0.00150	84	62.7 - 117.9

continued . . .

115-6403130

Work Order: 11080110 Celero/Rock Queen #7 TB Page Number: 16 of 21 Chavez Co., NM

matrix spikes continued ...

			MS			Spike	Matrix		Rec.
Param	F	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit
Xylene		1	1.29	$\mathrm{mg/L}$	5	1.50	0.1543	76	62.9 - 118.2

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

			MSD			Spike	Matrix		Rec.		RPD
Param	F	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Benzene	7.2	1	0.607	mg/L	5	0.500	0.127	96	66.9 - 128.2	3	20
Toluene		1	0.563	mg/L	5	0.500	0.1205	88	81.6 - 122.9	3	20
Ethylbenzene		1	0.438	mg/L	5	0.500	< 0.00150	88	62.7 - 117.9	4	20
Xylene		1	1.34	mg/L	5	1.50	0.1543	79	62.9 - 118.2	4	20

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

	MS	MSD			Spike	MS	MSD	Rec.
Surrogate	Result	Result	Units	Dil.	Amount	Rec.	Rec.	Limit
Trifluorotoluene (TFT)	0.511	0.468	mg/L	5	0.5	102	94	58.6 - 119.7
4-Bromofluorobenzene (4-BFB)	0.502	0.461	${ m mg/L}$	5	0.5	100	92	52.2 - 135.8

Matrix Spike (MS-1) Spiked Sample: 273243

QC Batch: Prep Batch: 71007

Date Analyzed: QC Preparation: 2011-08-03

2011-08-04

Analyzed By: AR

Prepared By: AR

			MS			Spike	Matrix		Rec.
Param	F	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit
Chloride		1	18000	mg/L	100	2750	18000	0	48.4 - 143.2

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

			MSD			Spike	Matrix		Rec.		RPD
Param	F	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Chloride		1	17900	mg/L	100	2750	18000	0	48.4 - 143.2	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: 273243

QC Batch: 83606 Date Analyzed:

2011-08-04

Analyzed By: AR

Prep Batch: 71007

QC Preparation: 2011-08-03

Prepared By: AR

115-6403130

Work Order: 11080110 Celero/Rock Queen #7 TB Page Number: 17 of 21 Chavez Co., NM

			MS			Spike	Matrix		Rec.
Param	F	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit
Sulfate		1	3380	mg/L	100	2750	1170	80	59.7 - 115.4

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

			MSD			Spike	Matrix		Rec.		RPD
Param	F	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Sulfate		1	3360	mg/L	100	2750	1170	80	59.7 - 115.4	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: 273206

QC Batch:

84218

Date Analyzed:

2011-08-22

Analyzed By: AR

Prep Batch: 71505

QC Preparation: 2011-08-22

Prepared By: AR

			MS			Spike	Matrix		Rec.
Param	F	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit
Chloride		1	2200	mg/L	50	1380	1010	86	48.4 - 143.2

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

			MSD			Spike	Matrix		Rec.		RPD
Param	F	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Chloride		1	2150	mg/L	50	1380	1010	83	48.4 - 143.2	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: 273206

QC Batch: Prep Batch: 71505

84218

Date Analyzed:

QC Preparation: 2011-08-22

2011-08-22

Analyzed By: AR Prepared By: AR

			MS			Spike	Matrix		Rec.
Param	F	C	Result	Units	Dil.	Amount	Result	Rec.	${f Limit}$
Sulfate		1	1270	$\mathrm{mg/L}$	50	1380	103	85	59.7 - 115.4

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

			MSD			Spike	Matrix		Rec.		RPD
Param	F	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Sulfate		1	1230	mg/L	50	1380	103	82	59.7 - 115.4	3	20

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

115-6403130

Work Order: 11080110 Celero/Rock Queen #7 TB

Page Number: 18 of 21 Chavez Co., NM

Calibration Standards

Standard (CCV-1)

QC Batch: 83538

Date Analyzed: 2011-08-03

Analyzed By: ME

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene	20	1	mg/L	0.100	0.0989	99	80 - 120	2011-08-03
Toluene		1	mg/L	0.100	0.0948	95	80 - 120	2011-08-03
Ethylbenzene		1	mg/L	0.100	0.0892	89	80 - 120	2011-08-03
Xylene		1	mg/L	0.300	0.271	90	80 - 120	2011-08-03

Standard (CCV-2)

QC Batch: 83538

Date Analyzed: 2011-08-03

Analyzed By: ME

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.102	102	80 - 120	2011-08-03
Toluene		1	$_{ m mg/L}$	0.100	0.0980	98	80 - 120	2011-08-03
Ethylbenzene		1	mg/L	0.100	0.0920	92	80 - 120	2011-08-03
Xylene		1	mg/L	0.300	0.276	92	80 - 120	2011-08-03

Standard (CCV-3)

QC Batch: 83538

Date Analyzed: 2011-08-03

Analyzed By: ME

				CCVs	CCVs	CCVs	Percent	
				True	Found	Percent	Recovery	Date
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Benzene		1	m mg/L	0.100	0.101	101	80 - 120	2011-08-03
Toluene		1	${ m mg/L}$	0.100	0.0972	97	80 - 120	2011-08-03
Ethylbenzene		1	$\mathrm{mg/L}$	0.100	0.0903	90	80 - 120	2011-08-03
Xylene		1	mg/L	0.300	0.272	91	80 - 120	2011-08-03

115-6403130

Work Order: 11080110 Celero/Rock Queen #7 TB Page Number: 19 of 21 Chavez Co., NM

Standard (ICV-1)

QC Batch: 83606

Date Analyzed: 2011-08-04

Analyzed By: AR

				ICVs	ICVs	ICVs	Percent	
				True	Found	Percent	Recovery	Date
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Chloride		1	$_{ m mg/L}$	25.0	26.8	107	90 - 110	2011-08-04

Standard (ICV-1)

QC Batch: 83606

Date Analyzed: 2011-08-04

Analyzed By: AR

				ICVs	ICVs	ICVs	Percent	
				True	Found	Percent	Recovery	Date
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Sulfate		1	mg/L	25.0	26.7	107	90 - 110	2011-08-04

Standard (CCV-1)

QC Batch: 83606

Date Analyzed: 2011-08-04

Analyzed By: AR

				CCVs True	CCVs Found	CCVs Percent	Percent Recovery	Date
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Chloride	· -	1	mg/L	25.0	27.1	108	90 - 110	2011-08-04

Standard (CCV-1)

QC Batch: 83606

Date Analyzed: 2011-08-04

Analyzed By: AR

				CCVs True	CCVs Found	CCVs Percent	Percent Recovery	Date
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Sulfate		1	${ m mg/L}$	25.0	26.6	106	90 - 110	2011-08-04

Standard (ICV-1)

QC Batch: 84218

Date Analyzed: 2011-08-22

Analyzed By: AR

115 - 6403130

Work Order: 11080110 Celero/Rock Queen #7 TB Page Number: 20 of 21 Chavez Co., NM

Param	Flag	Cert	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		ı	mg/L	25.0	24.8	99	90 - 110	2011-08-22

Standard (ICV-1)

QC Batch: 84218

Date Analyzed: 2011-08-22

Analyzed By: AR

				ICVs	ICVs	ICVs	Percent	
				True	Found	Percent	Recovery	Date
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Sulfate		1	$_{ m mg/L}$	25.0	25.0	100	90 - 110	2011-08-22

Standard (CCV-1)

QC Batch: 84218

Date Analyzed: 2011-08-22

Analyzed By: AR

				CCVs	CCVs	CCVs	Percent	
				True	Found	Percent	Recovery	Date
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Chloride		1	mg/L	25.0	24.3	97	90 - 110	2011-08-22

Standard (CCV-1)

QC Batch: 84218

Date Analyzed: 2011-08-22

Analyzed By: AR

				CCVs	CCVs	CCVs	Percent	
				True	Found	Percent	Recovery	Date
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Sulfate		1	mg/L	25.0	27.4	110	90 - 110	2011-08-22

115-6403130

Work Order: 11080110 Celero/Rock Queen #7 TB Page Number: 21 of 21 Chavez Co., NM

Appendix

Laboratory Certifications

	Certifying	Certification	Laboratory
C	Authority	Number	Location
-	NCTRCA	WFWB384444Y0909	TraceAnalysis
-	DBE	VN 20657	TraceAnalysis
-	HUB	1752439743100-86536	TraceAnalysis
-	WBE	237019	TraceAnalysis
1	NELAP	T104704392-10-TX	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.

ケイグリクラ RUSH Charges Authorized: Results by: Major Aniona/Cations, pH, TDS e. AIRBILL #: copy to Tetra Tech - Project Manager retains Pink copy - Accounting receives Gold copy. PLM (Asbestos) OTHER: (Circle or Specify Method No.) (tiA) steB anqlA **ANALYSIS REQUEST** (Chloride) Pest. 808/608 2 PAGE PCB's 8080/608 H SAMPLE SHIPPED BY; (Circle)

SAMPLE SHIPPED BY; (Circle)

BUS

UPS GC.MS Semi. Vol. 8270/625 GC:MS AOI: 8540/8560/654 SAMPLED BY: (Print & Initial) TCLP Semi Volatiles Metais Ag As Ba Cd Vr Pd Hg Se RCRA Metals Ag As Ba Cd Cr Pb Hg Se 07S8 HA9 (Ext. to C35) 2001XT 8015 MOD. HqT BIEX 8021E PRESERVATIVE METHOD NONE Analysis Request of Chain of Custody Record ICE EONH Time: Time: Date: HOF FILTERED (Y/N) TIME NUMBER OF CONTAINERS (432) 682-4559 • Fax (432) 682-3946 RECEIVED BY: (Signature) SAMPLE IDENTIFICATION RECEIVED BY: (Signature) 485-111d **TETRA TECH** 1910 N. Big Spring St. Midland, Texas 79705 SITE MANAGER: Kik Burry Chavez. G. Ning XLLO #: 110X0110 Laboratory retains Yellow copy DATE 7-MW REMARKS: ME-3 7-MM ーコス S Lero NAME ZIP: Date: Time: Date: Time: PHONE PROJECT **BARD** COMP Please fill out all copies **XIHTAM** STATE 1250 2521 TIME 300 SAMPLE CONDITION WHEN RECEIVED: 077 DEE 0117-511 1 hro RELINQUISHED BY: (Signature) RELINQUISHED BY: (Signature) RELINQUISHED BY: (Signature) Fell, RECEIVING LABORATORY:
ADDRESS: Colleged
CONTACT: DATE 301 CLIENT NAME: PROJECT NO.: 273343 LAB I.D. NUMBER 246 Zúl phe



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Analytical and Quality Control Report

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

Report Date: November 30, 2011

Work Order: 11103124

Project Location: Chavez Co., NM

Project Name:

Celero/Rock Queen Tract #7

Project Number:

115-6403130A

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

			Date	Time	Date
Sample	Description	Matrix	Taken	Taken	Received
281139	MW-4	water	2011-10-28	13:25	2011-10-31
281140	MW-2	water	2011-10-28	13:55	2011-10-31
281141	MW-1	water	2011-10-28	13:45	2011-10-31
281142	MW-3	water	2011-10-28	13:35	2011-10-31

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

This report consists of a total of 14 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

Notes:

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

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

Michael ale

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Report Date: November 30, 2011 115-6403130A

Work Order: 11103124 Celero/Rock Queen Tract #7 Page Number: 3 of 14 Chavez Co., NM

Case Narrative

Samples for project Celero/Rock Queen Tract #7 were received by TraceAnalysis, Inc. on 2011-10-31 and assigned to work order 11103124. Samples for work order 11103124 were received intact without headspace and at a temperature of 3.9 C.

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

		Prep	Prep	$_{ m QC}$	Analysis
Test	Method	Batch	Date	Batch	Date
SO4 (IC)	E 300.0	73346	2011-11-01 at 10:24	86371	2011-11-02 at 10:30
SO4 (IC)	E 300.0	73346	2011-11-01 at 10:24	86373	2011-11-02 at 10:31
TDS	SM 2540C	73423	2011-11-15 at 13:54	86753	2011-11-18 at 15:13
TDS	SM 2540C	73460	2011-11-16 at 15:57	86754	2011-11-21 at 15:15

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 11103124 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 30, 2011

Work Order: 11103124 115-6403130A Celero/Rock Queen Tract #7 Page Number: 4 of 14 Chavez Co., NM

Analytical Report

Sample: 281139 - MW-4

Laboratory: Midland

Analysis: SO4 (IC) QC Batch: 86371 Prep Batch: 73346

Analytical Method: Date Analyzed: Sample Preparation:

E 300.0 2011-11-02 2011-11-03 Prep Method: N/A Analyzed By: AR Prepared By: AR

SDL MQL Method Based Based Blank

MQL MDL Parameter F \mathbf{C} Result Result Result Units Dilution SDL (Unadjusted) (Unadjusted) Sulfate Qs 113 113 < 0.885 mg/L 5 0.885 2.5 0.177

Sample: 281139 - MW-4

Laboratory: Midland

Analysis: TDS QC Batch: 86753 Prep Batch: 73423 Analytical Method: SM 2540C Date Analyzed: 2011-11-18 Sample Preparation: 2011-11-15

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

SDL MQL Method

Based Based Blank MQL MDL Parameter C F Result Result Result Units Dilution SDL (Unadjusted) (Unadjusted) Total Dissolved Solids 770 770 <19.5 mg/L 19.5 9.752 10

Sample: 281140 - MW-2

Laboratory: Midland

Analysis: SO4 (IC) QC Batch: 86373 Prep Batch: 73346

Analytical Method: E 300.0 Date Analyzed: 2011-11-02 Sample Preparation: 2011-11-03

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

SDL MQL Method Based Based Blank

MQL MDL Parameter F SDL C Result Result Result Units Dilution (Unadjusted) (Unadjusted) Sulfate Qs 1010 1010 <17.7 mg/L 100 17.7 2.5 0.177

Sample: 281140 - MW-2

Laboratory: Midland

TDS Analysis: Analytical Method: SM 2540C Prep Method: N/A

Report Date: November 3: 115-6403130A	0, 20	11		Cele		Page Number: 5 of 14 Chavez Co., NM				
QC Batch: 86753			D	ate Analy	zed:	2011-11	-18		Analyze	d By: AR
Prep Batch: 73423			Si	ample Pro	eparation:	2011-11	-15		Prepare	d By: AR
			SDL	MQL	Method					
			Based	Based	Blank				MQL	MDL
Parameter	Result	Result	Result	Units	Dilution	SDL	(Unadjusted)	(Unadjusted)		
Total Dissolved Solids 1 19500 1950					<975	mg/L	100	975	10	9.75

Sample: 281141 - MW-1

Laboratory:	Midland									
Analysis:	SO4 (IC)			Anal	ytical Meth	od: E	300.0		Prep M	lethod: N/A
QC Batch:	86373			Date	Analyzed:	20	11-11-02		Analyz	ed By: AR
Prep Batch:	73346			Samp	ole Preparat	ion: 20	11-11-03		Prepare	ed By: AR
			SDL	MQL	Method					
			Based	Based	Blank				MQL	MDL
Parameter	F	\mathbf{C}	Result	Result	Result	Units	Dilution	SDL	(Unadjusted)	(Unadjusted)
Sulfate	Qs	1	1270	1270	<17.7	mg/L	100	17.7	2.5	0.177

Sample: 281141 - MW-1

Laboratory: Analysis: QC Batch: Prep Batch:	Midland TDS 86753 73423			D	nalytical ate Analy ample Pre		SM 254 2011-11 2011-11	1-18		Analyze	ethod: N/A d By: AR d By: AR
				SDL	MQL	Method					
				Based	Based	Blank				MQL	MDL
Parameter		\mathbf{F}	\mathbf{C}	Result	Result	Result	Units	Dilution	SDL	(Unadjusted)	(Unadjusted)
Total Dissolv	ed Solids		1	23200	23200	<975	mg/L	100	975	10	9.75

Sample: 281142 - MW-3

Sulfate	Qs	1	1480	1480	<88.5	mg/L	500	88.5	2.5	0.177
Parameter	\mathbf{F}	\mathbf{C}	Result	Result	Result	Units	Dilution	SDL	(Unadjusted)	(Unadjusted)
			Based	Based	Blank				MQL	MDL
			SDL	MQL	Method					
Prep Batch:	73346			Samp	ole Preparat	ion: 20	11-11-03		Prepare	ed By: AR
QC Batch:	86373				Analyzed:		11-11-02		Analyze	ed By: AR
Analysis:	SO4 (IC)			Anal	ytical Meth	od: E	300.0		Prep M	ethod: N/A
Laboratory:	Midland									

Report Date: November 30, 2011 Work Order: 11103124 Page Number: 6 of 14 115-6403130A Celero/Rock Queen Tract #7 Chavez Co., NM Sample: 281142 - MW-3 Laboratory: Midland Analysis: TDS Analytical Method: SM 2540C Prep Method: N/A QC Batch: 2011-11-21 86754 Date Analyzed: Analyzed By: AR Prep Batch: 73460 Sample Preparation: 2011-11-17 Prepared By: AR SDL MQL Method Based Based Blank MQL MDL \mathbf{C} Parameter \mathbf{F} Result Result Result SDL Units Dilution (Unadjusted) (Unadjusted) Total Dissolved Solids 57000 mg/L57000 <975 100 975 10 9.75

Report Date: November 30, 2011

115-6403130A

Work Order: 11103124 Celero/Rock Queen Tract #7 Page Number: 7 of 14 Chavez Co., NM

Method Blanks

Method Blank (1)

QC Batch: Prep Batch:

86371 73346 Date Analyzed:

2011-11-02 QC Preparation: 2011-11-01

Analyzed By: AR

Prepared By: AR

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

Method Blank (1)

QC Batch:

86373 Prep Batch: 73346 Date Analyzed:

2011-11-02 QC Preparation: 2011-11-01

Analyzed By: AR Prepared By: AR

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

Method Blank (1)

QC Batch: Prep Batch:

86753 73423 Date Analyzed: QC Preparation:

2011-11-18 2011-11-15 Analyzed By: AR Prepared By: AR

Reporting \mathbf{C} Parameter Result Units Limits Total Dissolved Solids < 9.75 mg/L 9.75

Method Blank (1)

QC Batch: Prep Batch:

86754 73460 Date Analyzed: QC Preparation:

2011-11-21 2011-11-16

Analyzed By: AR Prepared By: AR Report Date: November 30, 2011

115-6403130A

Work Order: 11103124 Celero/Rock Queen Tract #7 Page Number: 8 of 14 Chavez Co., NM

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

Duplicate (1) Duplicated Sample: 281141

QC Batch: 86753 Prep Batch: 73423 Date Analyzed: 20 QC Preparation: 20

2011-11-18 Analyz 2011-11-15 Prepar

Analyzed By: AR Prepared By: AR

Duplicate Sample **RPD** Param F C Result Result Units Dilution **RPD** Limit Total Dissolved Solids 22400 23200 100 mg/L 4 10

Duplicate (1) Duplicated Sample: 281151

QC Batch: 86754 Prep Batch: 73460 Date Analyzed: 201 QC Preparation: 201

2011-11-21 2011-11-16 Analyzed By: AR Prepared By: AR

Duplicate Sample RPD Param F \mathbf{C} Result Result Units Dilution **RPD** Limit Total Dissolved Solids 130000 135000 100 1 mg/L 4 10

Work Order: 11103124 Celero/Rock Queen Tract #7 Page Number: 9 of 14 Chavez Co., NM

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch:

Date Analyzed:

2011-11-02

Analyzed By: AR.

Prepared By: AR

Prep Batch:

73346

QC Preparation: 2011-11-01

			LCS			Spike	Matrix		Rec.
Param	F	C	Result	Units	Dil.	Amount	Result	Rec.	Limit
Sulfate		1	25.2	$\mathrm{mg/L}$	1	25.0	< 0.177	101	90 - 110

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

			LCSD			Spike	Matrix		Rec.		RPD
Param	F	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Sulfate	300 =	1	25.1	mg/L	1	25.0	< 0.177	100	90 - 110	0	20

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

Laboratory Control Spike (LCS-1)

QC Batch:

Param

Sulfate

86373

Date Analyzed:

2011-11-02

Analyzed By: AR Prepared By: AR

Prep Batch: 73346

QC Preparation: 2011-11-01

LCS

Result

25.2

Dil.

Spike

Amount

25.0

< 0.177

Matrix Rec. Result Rec. Limit

90 - 110

101

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

F

 \mathbf{C}

			LCSD			Spike	Matrix		Rec.		RPD
Param	\mathbf{F}	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Sulfate		1	25.1	mg/L	1	25.0	< 0.177	100	90 - 110	0	20

Units

mg/L

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:

Date Analyzed:

2011-11-18

Analyzed By: AR

Prep Batch: 73423

QC Preparation: 2011-11-15

Prepared By: AR

			LCS			Spike	Matrix		Rec.
Param	F	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit
Total Dissolved Solids		1	961	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.

Work Order: 11103124 Celero/Rock Queen Tract #7 Page Number: 10 of 14 Chavez Co., NM

			LCSD			Spike	Matrix		Rec.		RPD
Param	F	C	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Total Dissolved Solids		1	987	mg/L	1	1000	< 9.75	99	85.5 - 112.7	3	10

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

Laboratory Control Spike (LCS-1)

QC Batch: 86754 Prep Batch: 73460 Date Analyzed: 2011-11-21 QC Preparation: 2011-11-16 Analyzed By: AR Prepared By: AR

			LCS			Spike	Matrix		Rec.
Param	F	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit
Total Dissolved Solids		1	1000	mg/L	1	1000	< 9.75	100	85.5 - 112.7

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

			LCSD			Spike	Matrix		${f Rec.}$		RPD
Param	F	C	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Total Dissolved Solids		1	1030	mg/L	1	1000	< 9.75	103	85.5 - 112.7	3	10

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

Matrix Spike (MS-1) Spiked Sample: 281137

 QC Batch:
 86371
 Date Analyzed:
 2011-11-02

 Prep Batch:
 73346
 QC Preparation:
 2011-11-01

Analyzed By: AR Prepared By: AR

			MS			Spike	Matrix		Rec.
Param	F	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit
Sulfate	Qs	1	2450	mg/L	100	2750	173	83	90 - 110

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

			MSD			Spike	Matrix		Rec.		RPD
Param	\mathbf{F}	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Sulfate	Os	1	2460	mg/L	100	2750	173	83	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: 281141

QC Batch: 86373 Date Analyzed: 2011-11-02 Analyzed By: AR
Prep Batch: 73346 QC Preparation: 2011-11-01 Prepared By: AR

Work Order: 11103124 Celero/Rock Queen Tract #7

Page Number: 11 of 14 Chavez Co., NM

			MS			Spike	Matrix		Rec.
Param	F	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit
Sulfate	Qs	1	3480	mg/L	100	2750	1270	80	90 - 110

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

			MSD			Spike	Matrix		Rec.		RPD
Param	F	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Sulfate		i	3500	mg/L	100	2750	1270	81	90 - 110	1	20

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

Work Order: 11103124 Celero/Rock Queen Tract #7 Page Number: 12 of 14 Chavez Co., NM

Calibration Standards

Standard (ICV-1)

QC Batch: 86371

Date Analyzed: 2011-11-02

Analyzed By: AR

				CCVs True	CCVs Found	CCVs Percent	Percent Recovery	Date
Param	F	\mathbf{C}	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Sulfate		1	mg/L	25.0	25.6	102	90 - 110	2011-11-02

Standard (CCV-1)

QC Batch: 86371

Date Analyzed: 2011-11-02

Analyzed By: AR

D	F.	C	T T ••	CCVs True	CCVs Found	CCVs Percent	Percent Recovery	Date
Param	F'	C	$\mathbf{U}\mathbf{nits}$	Conc.	Conc.	Recovery	Limits	Analyzed
Sulfate		1	mg/L	25.0	25.2	101	90 - 110	2011-11-02

Standard (ICV-1)

QC Batch: 86373

Date Analyzed: 2011-11-02

Analyzed By: AR

				CCVs	CCVs	CCVs	Percent	
				True	Found	Percent	Recovery	Date
Param	F	C	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Sulfate		1	mg/L	25.0	25.2	101	90 - 110	2011-11-02

Standard (CCV-1)

QC Batch: 86373

Date Analyzed: 2011-11-02

Analyzed By: AR

				CCVs	CCVs	CCVs	Percent	5
			9	True	Found	Percent	Recovery	Date
Param	F	\mathbf{C}	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Sulfate		1	mg/L	25.0	25.3	101	90 - 110	2011-11-02

Work Order: 11103124 Celero/Rock Queen Tract #7 Page Number: 13 of 14 Chavez Co., NM

Limits of Detection (LOD)

Report Date: November 30, 2011 Work Order: 11103124 Page Number: 14 of 14 115-6403130A Celero/Rock Queen Tract #7 Chavez Co., NM

Appendix

Report Definitions

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

Laboratory Certifications

	Certifying	Certification	Laboratory
\mathbf{C}	Authority	Number	Location
-	NCTRCA	WFWB384444Y0909	TraceAnalysis
-	DBE	VN 20657	TraceAnalysis
-	HUB	1752439743100-86536	TraceAnalysis
-	WBE	237019	TraceAnalysis
1	NELAP	T104704392-10-TX	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.

	JEST thod No.)	1	T ,Hq ,sn	(hlA) (sofa	q8 ammab ete8 anqlA edaA) MJq oinA joleM	X <	X	X I	×		()**		Date: Timés:	AIRBILL #: OTHER:	Results by: RUSH Charges	Authorized: A Yes Mc
	ANALYSIS REQUEST (Circle or Specify Method No.)			8 .loV .ln 809\	HCI GC.MS Ser GC.MS Ser GC.MS Vol.								A Initial) TI SA	r: (Circle) BUS UPS	CT PERSON:	198
	(Ch	Cr Pb Hg Se	b) ad a	A gA str sell									SAMPLED BY: (Print & Initial)	SAMPLE SHIPPED BY: (Circle) FEDEX BUS MAND DELIVERED UPS	тетна теся сомта 	\$ \$
IV Kecord	- 1	5. (Ext. to C35)	PRESERVATIVE METHOD	(N/A)	NONE HOCH HOCH HOCH HILEBED HILEBED HOLH HOLH HOLH HOLH HOLH HOLH HOLH HOL	7 X			A 4 CAP				Date: (DS) (1)	Date: Time:	James.	TIME 8 40
Chain of Custody	4		SITE MANAGER: Jeff Krudley	Queen #7	SAMPLE IDENTIFICATION										HECENARY BY: (Signature) RECEIVED BY: (Signature)	DATE 11/1/H
Heduest of Chain		1910 I Midlau (432) 68	SITE	CENTO / Rak Quen	COMP	A MU-H	2-MW)	1-012	E-MM-3				1	Time: (OCT)	Time	PHONE ZIP:
Analysis He			CLIENT NAME: CLATO	Ω	DATE TIME 1000	1428 SES	[SET]	SHE!	2551	* .			PIELINQUISHED BY: (Signature)	REDUCUISHED BY (Signature)		STATE: