1R - 1645

2009 – 2011 GWMR

10/13/2011



October 13, 2011

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 April 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) with 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 constituent 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, gauged, purged and sampled with no PSH measured. Utilizing the water level elevation calculations, groundwater gradient maps were generated for the January and April 2011 sampling events. The hydraulic gradient indicates a westerly direction. Groundwater gradient maps for the sampling events are included as Figures 4 and 5. 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 6 through 10. 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

- 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.</p>

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.



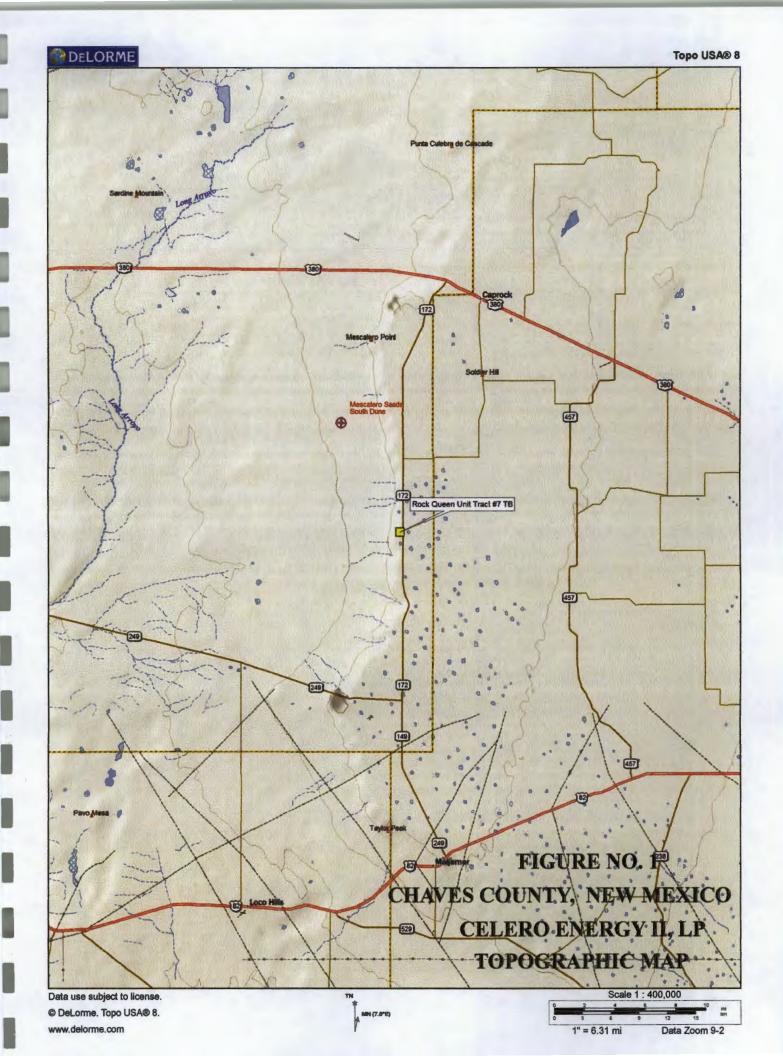
Respectfully submitted, Tetra Tech, Inc.

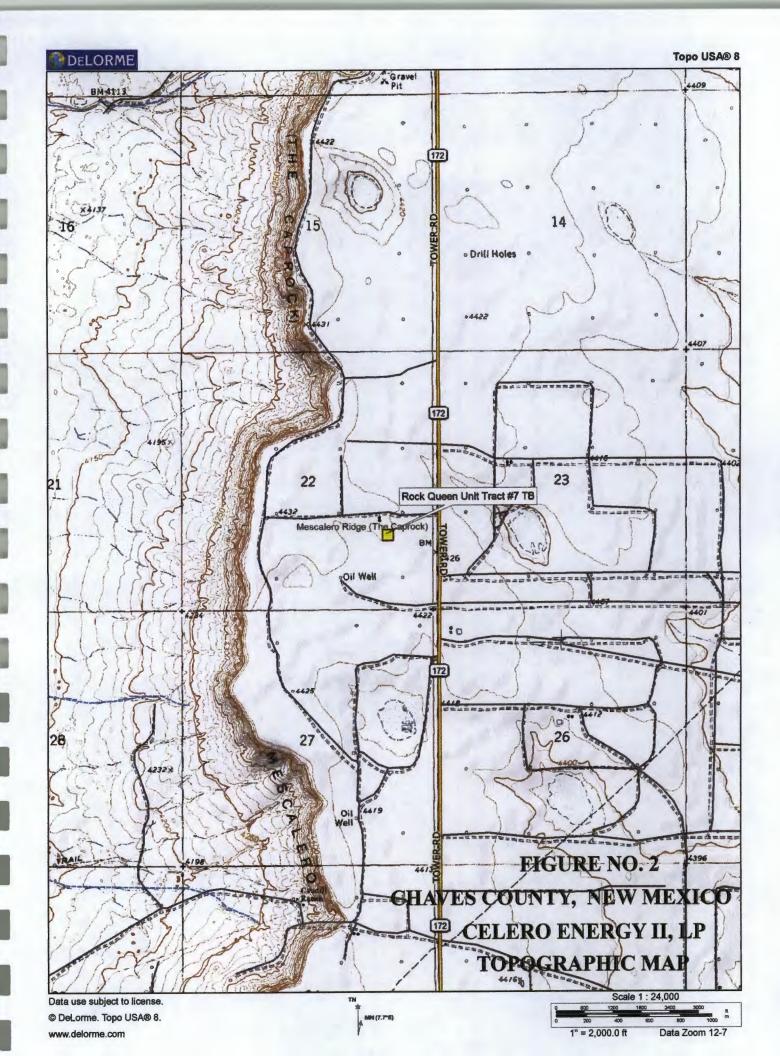
Jeffrey Kindley, P.G. Senior Environmental Geologist

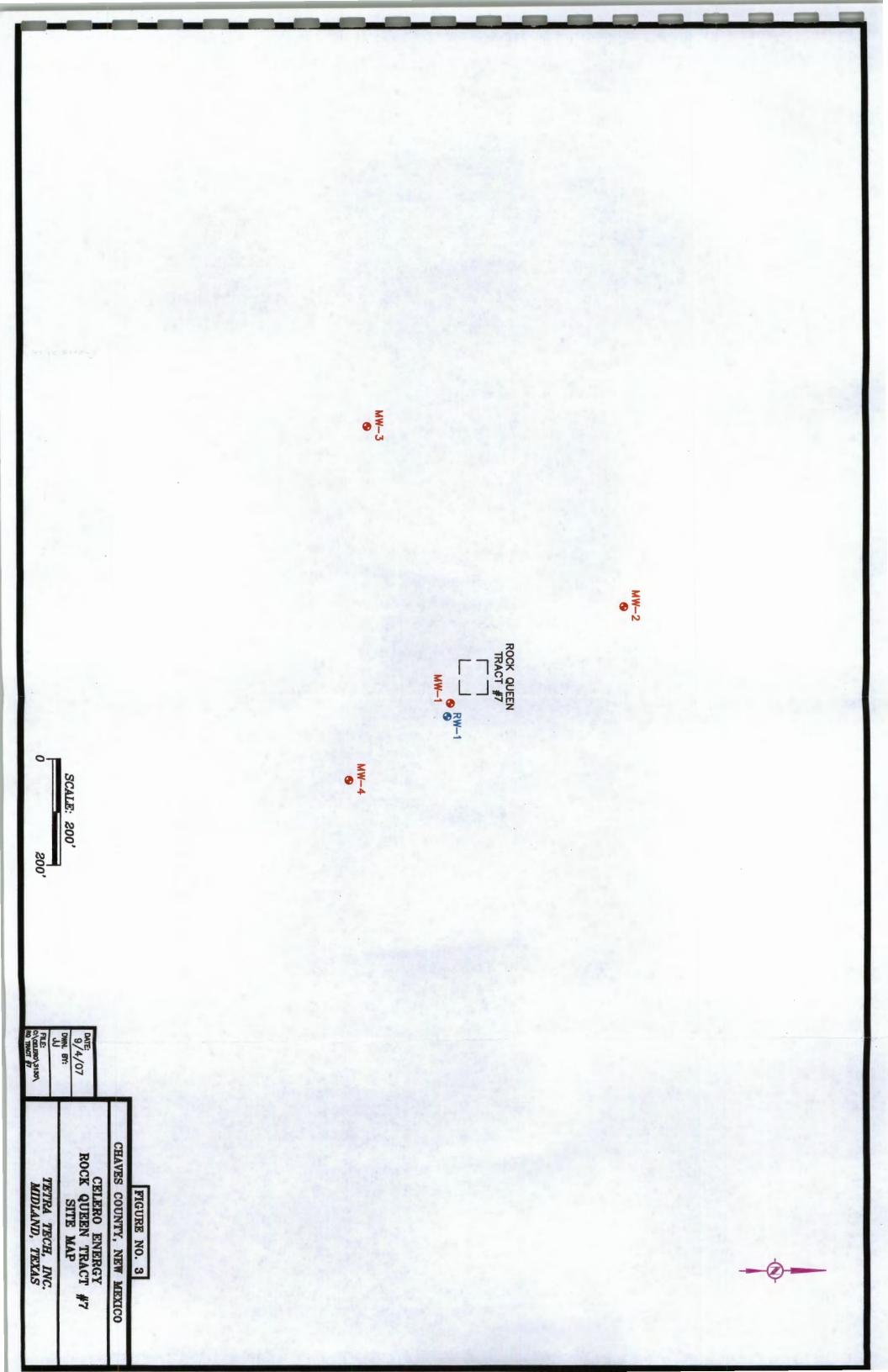
Bruce Woodard - Celero Energy II, LP

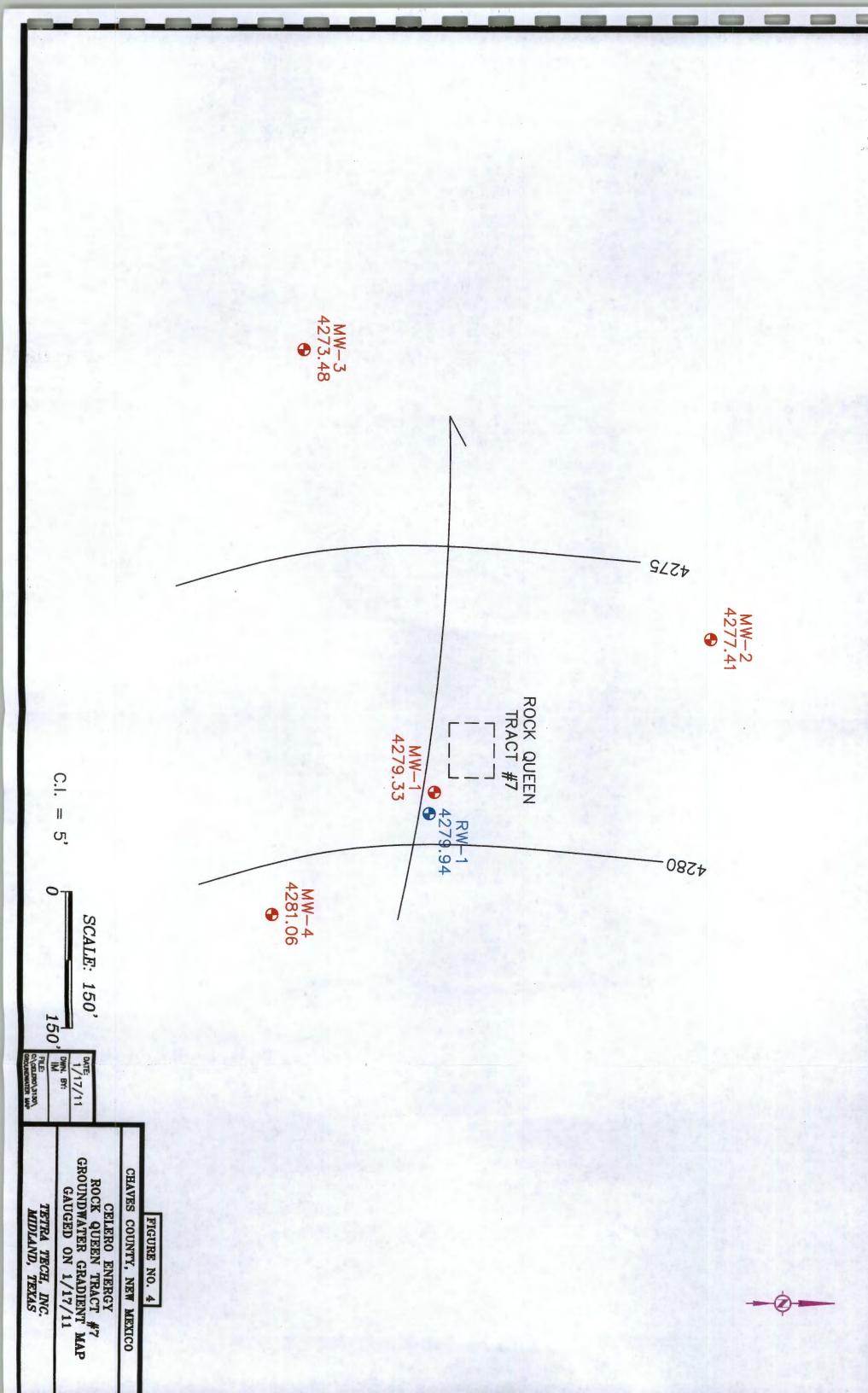
cc:

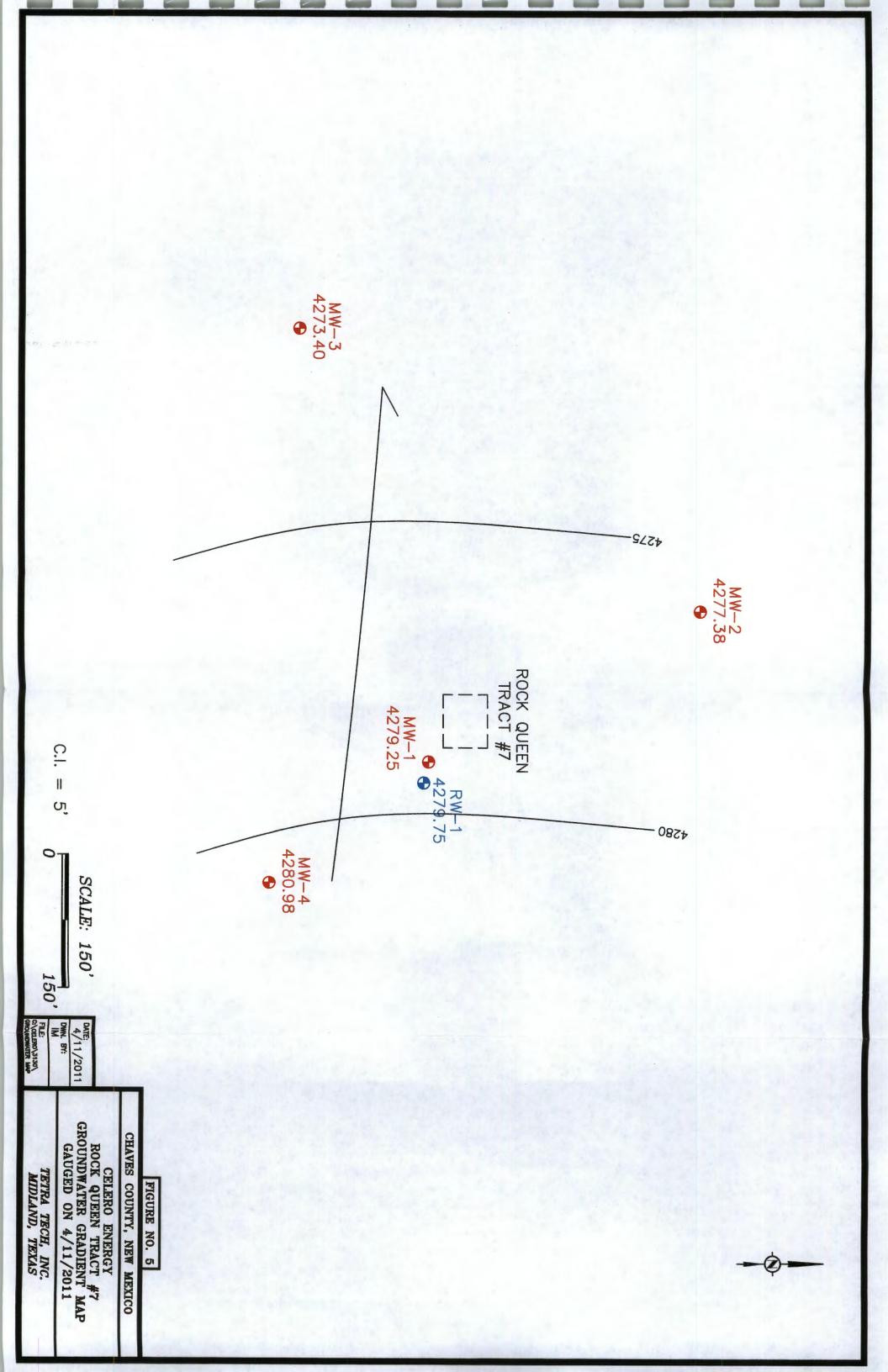
FIGURES











ROCK QUEEN
TRACT #7

RESULTS IN mg/L

SCALE: 150'

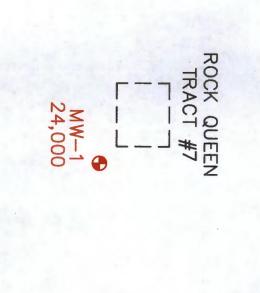
150°

DATE: 11/24/2009 DWN. BY: IM

CHAVES COUNTY, NEW MEXICO

FIGURE NO. 6

CELERO ENERGY
ROCK QUEEN TRACT #7
CHLORIDE CONCENTRATION MAP
GAUGED ON 11/24/2009 TETRA TECH, INC. MIDLAND, TEXAS



RESULTS IN mg/L

SCALE: 150'

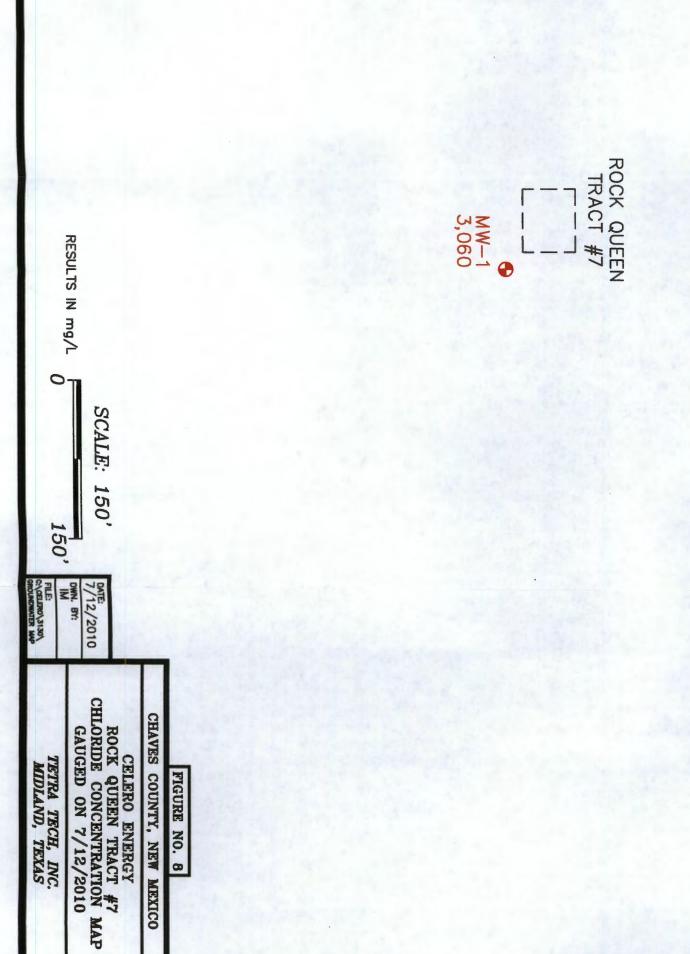
150

DATE:
02/25/2010
DWN. BY:
IM
FILE:
C:\GELETO\3130\
GRUHDWATER MAP

CHAVES COUNTY, NEW MEXICO FIGURE NO. 7

CELERO ENERGY
ROCK QUEEN TRACT #7
CHLORIDE CONCENTRATION MAP
GAUGED ON 02/25/2010

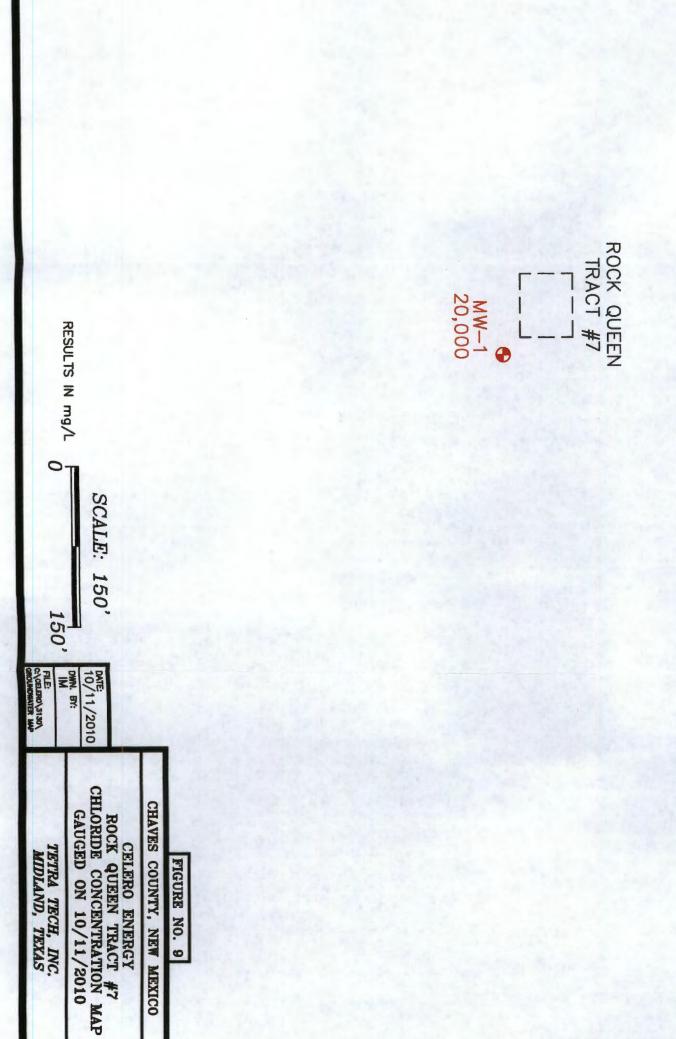
MIDLAND, TEXAS

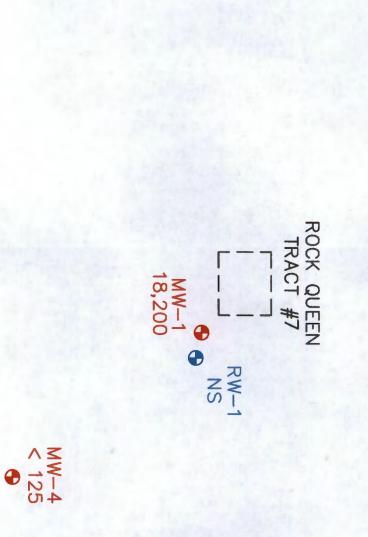


CHAVES COUNTY, NEW MEXICO

FIGURE NO. 8

TETRA TECH, INC. MIDLAND, TEXAS





MW−3 47,500

RESULTS IN mg/L NS- NOT SAMPLED

SCALE: 150'

150 DATE: 01/19/2011 DWN. BY:

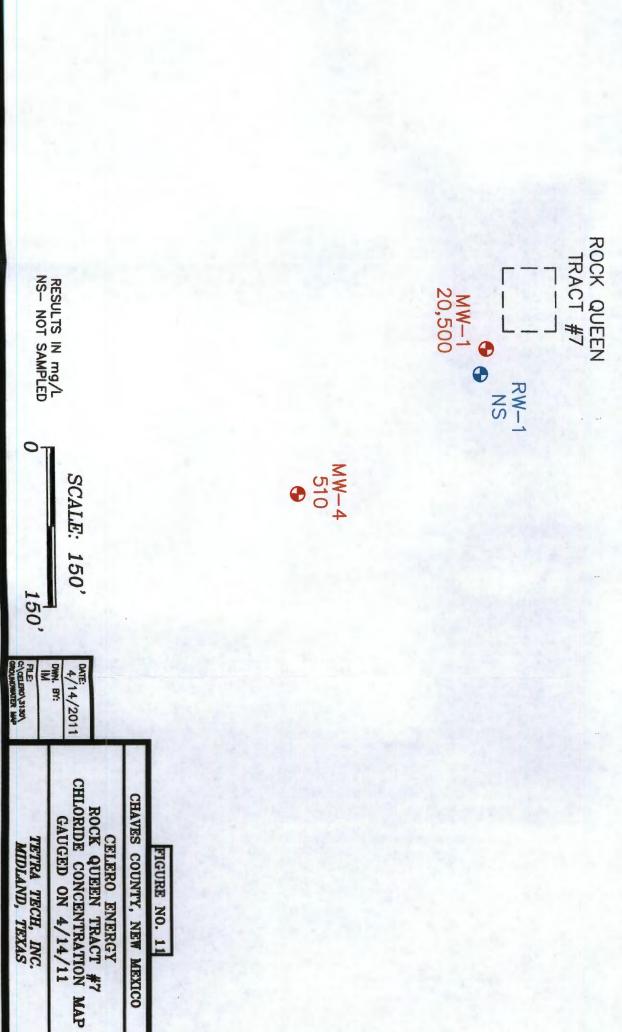
TETRA TECH, INC. MIDLAND, TEXAS

CELERO ENERGY
ROCK QUEEN TRACT #7
CHLORIDE CONCENTRATION MAP
GAUGED ON 1/19/2011

CHAVES COUNTY, NEW MEXICO

FIGURE NO. 10

MW-2 45,100



TETRA TECH, INC.
MIDLAND, TEXAS

FIGURE NO. 11

MW−3 25,100

MW-2 19,100 **⊕**

TABLES

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

_								_	_	_		_	_		_	
Groundwater Elevation	(π)	4,279.10	4,279.33	4,279.30	4,279.32	4,279.33	4,279.25	4,277.41	4,277.38	4,273.48	4,273.40	4,281.06	4,280.98	4,279.94	4,279.75	
Depth to Groundwater	(щ)	149.66	149.43	149.46	149.44	149.43	149.51	155.17	155.20	154.89	154.97	146.22	146.30	148.10	148.29	
Depth of Well	(bgs in ft)	170.00						178.60		183.50		179.60		159.45		
TOC Elevation	(TT)	4,428.76						4,432.58		4,428.37		4,427.28		4,428.04		
Date Well	Installation	11/17/09						11/18/10		11/17/10		11/16/10		12/07/10		
Date	Gauged	11/24/09	02/25/10	07/12/10	10/11/10	01/17/11	04/11/11	01/17/11	04/11/11	01/17/11	04/11/11	01/17/11	04/11/11	01/17/11	04/11/11	
Monitor	Well	MW-1						MW-2		MW-3		MW-4		RW-1		

Celero Energy II, LP Table 2

Groundwater Analytical Results Rock Queen Unit Tract #7 Chaves County, New Mexico

		Dissolved	Dissolved	Dissotved	Dissolved	Hydroxide	Carbonate	Bicarbonate	Total	9	Chicaido		Hardrooo	
Monitor	Sampled	Calcium	Magnesium	Sodium	Potassium	Alkalinity	Alkalinity	Alkalinity	Alkalinity	(mg/L)	(mg/L)	TDS (mg/L)	(mg/L)	품
•		(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)					
MW-1	11/24/09	1,730	430	585	15.3	<1.00	<1.00	114	114	150	4,690	9,100	6,100	7.55
	02/25/10	8,010	2,250	2,860	80.0	<1.00	<1.00	83	66	463	24,000	38,300	29,300	7.11
	01/13/10				•	•	,	•	•	316	3,060	5,910	,	ı
	10/13/10	,				•	,	,		096	20,000	48,400		
	01/20/11					,	,	•	•	<2,500	18,200	38,600		,
	04/14/11			•	•	,	1	,	•	1,020	20,500	32,000		,
MW-2	01/20/11		٠			1	•	•		1,250	45,100	78,200	,	,
	04/14/11		,	•		•	•		•	1,280	19,100	33,000		
WW-3	01/20/11	•							-	1,750	47,500	81,800		,
	04/14/11	,	ı		•	•		•	1	1,170	25,100	41,000		
4-WM	01/20/11	,				•		•	•	<125	279	792		,
	04/14/11	•	,				•	•	,	81	510	3,330		,
RW-1	01/20/11	SN	SN	SN	SN	SN	SN	SN	SN	NS	SN	NS	SN	SN
	04/14/11	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

NS - Not sampled (-) Not analyzed

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

Chaves County, New Mexico

		Benzene	Toluene	Ethyl-	Xylene	Total
Monitor Well	Date Sampled	in	in	Benzene	in	BTEX
		(mg/L)	(mg/L)	(mg/L)	(mg/L)	(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
	07/13/10	<0.001	<0.001	<0.001	<0.001	<0.001
	10/13/10	<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
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
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
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
RW-1	01/19/11	NS	NS	NS	NS	NS
	04/14/11	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	N+ N+	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	njir site	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		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°

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'	 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'	4*	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'		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

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'		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 gravel
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

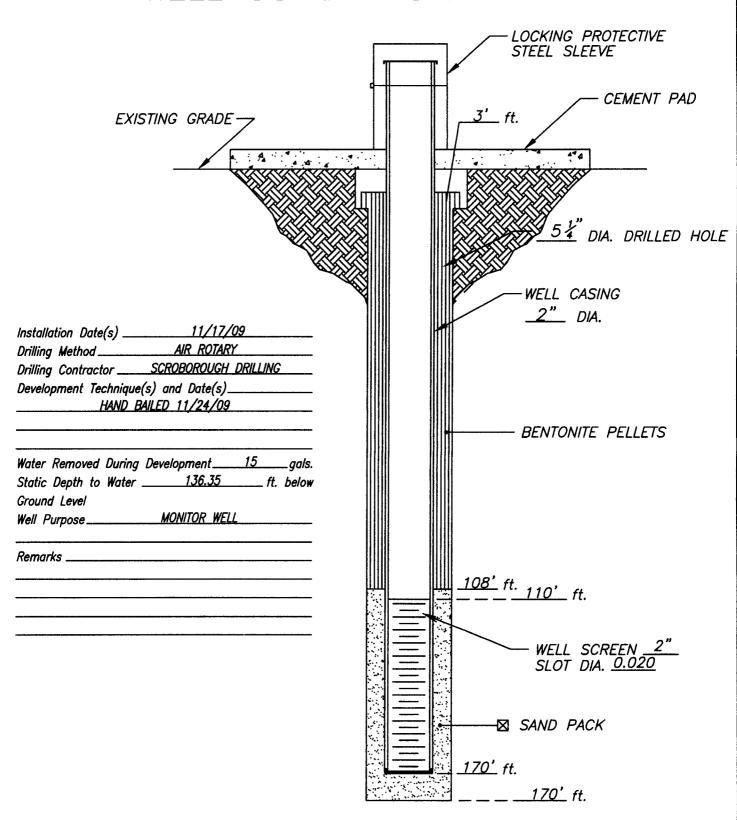
Total Depth:

155'

Ground water depth not encountered while drilling.

APPENDIX B MONITOR WELL INSTALLATION DIAGRAMS

WELL CONSTRUCTION LOG



DATE: 11/20/09

TETRA TECH, INC. MIDLAND, TEXAS

CLIENT: CELERO ENERGY II, LLC

PROJECT: ROCK QUEEN TRACT #7

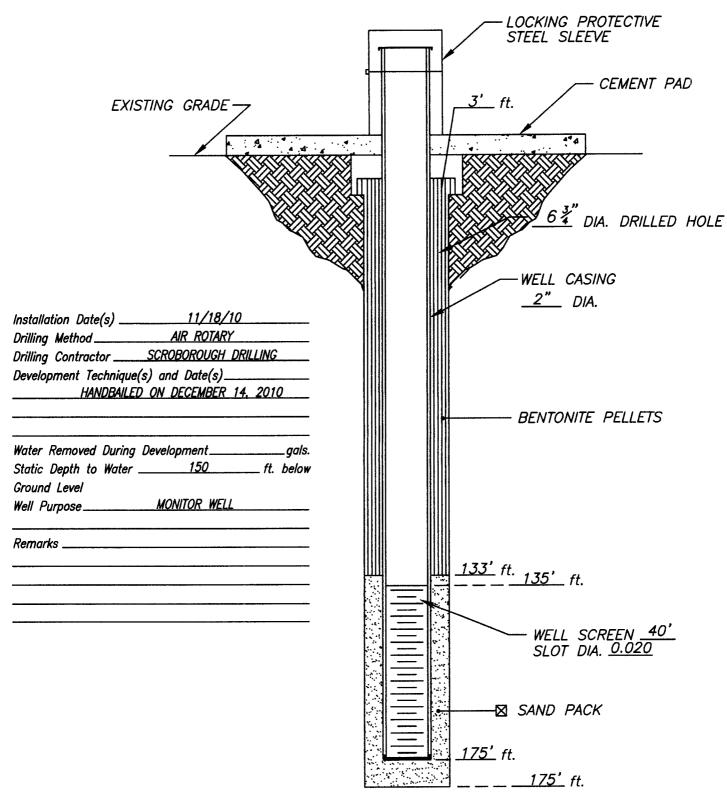
LOCATION: CHAVES COUNTY, NEW MEXICO

WELL NO.

MW-1

115-6403130

WELL CONSTRUCTION LOG



TETRA TECH, INC.
MIDLAND, TEXAS

CLIENT: CELERO ENERGY II, LLC

PROJECT: ROCK QUEEN TRACT #7

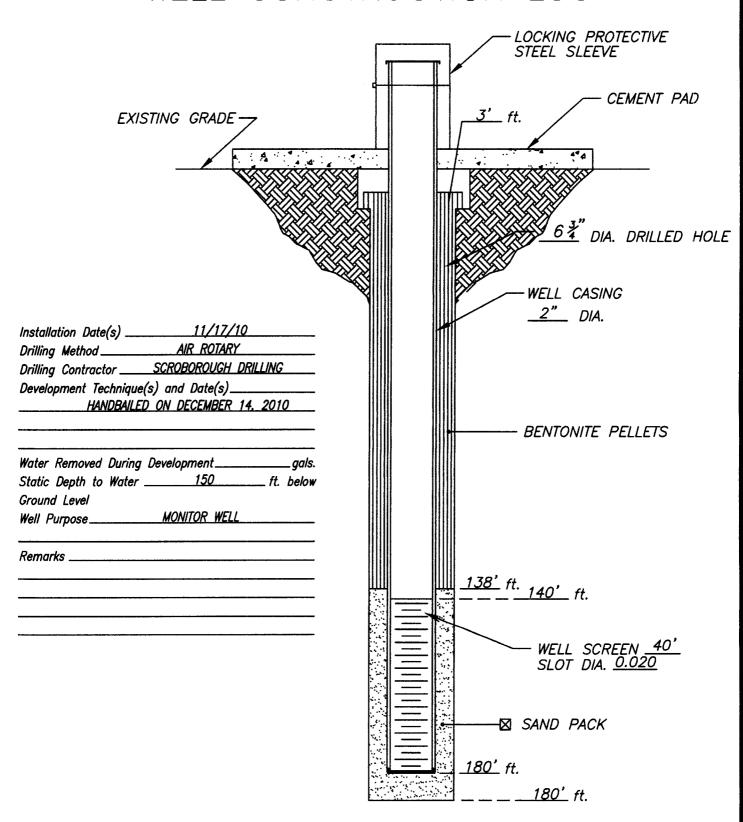
LOCATION: CHAVES COUNTY, NEW MEXICO

WELL NO.

MW-2

115-6403130

WELL CONSTRUCTION LOG



DATE: 11/17/10

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

PROJECT: ROCK QUEEN TRACT #7

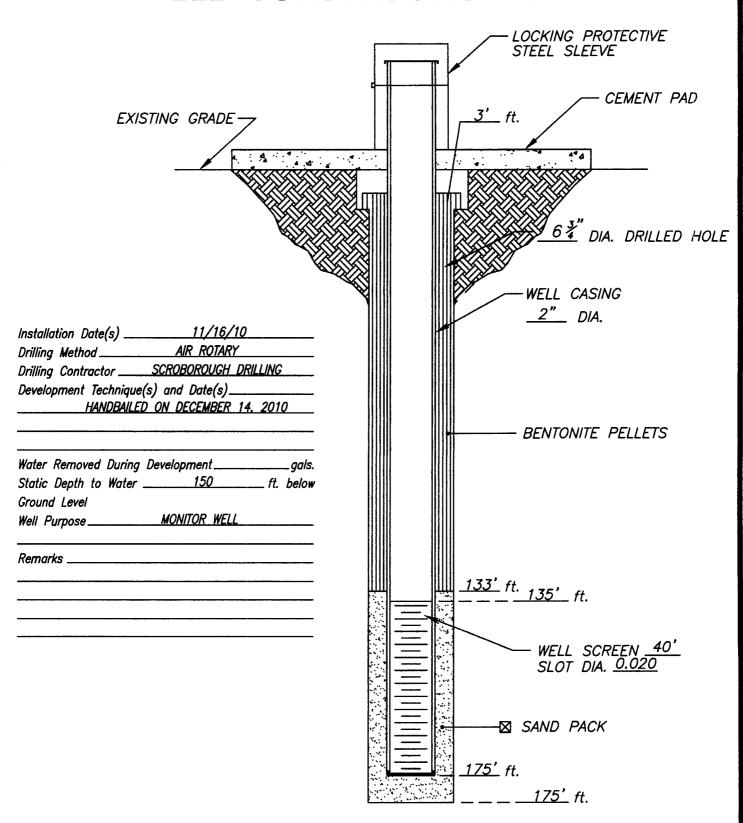
LOCATION: CHAVES COUNTY, NEW MEXICO

WELL NO.

MW-3

115-6403130

WELL CONSTRUCTION LOG



TETRA TECH, INC.
MIDLAND, TEXAS

CLIENT: CELERO ENERGY II, LLC

PROJECT: ROCK QUEEN TRACT #7

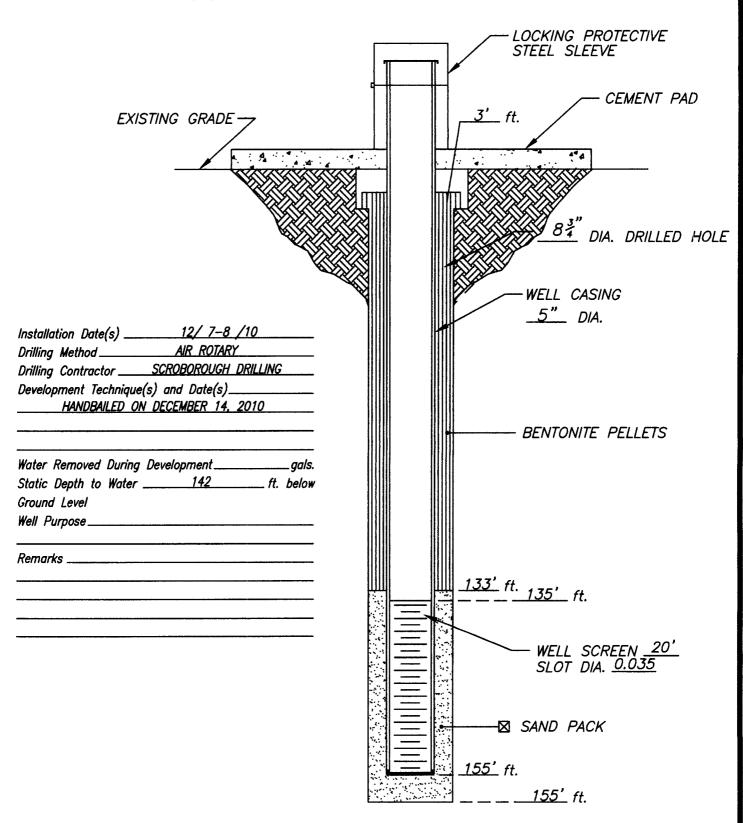
LOCATION: CHAVES COUNTY, NEW MEXICO

WELL NO.

MW-4

115-6403130

WELL CONSTRUCTION LOG



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

115-6403130

APPENDIX C LABORATORY ANALYSIS



6701 Aberdeen Avenue, Suite 9 200 East Sunset Road, Suite E 5002 Basin Street, Suite A1

Lubbock, Texas 79424 El Paso, Texas 79922 Midland, Texas 79703

800 • 378 • 1296 888 - 588 - 3443 806 • 794 • 1296 915 • 585 • 3443 432-689-6301 FAX 806 • 794 • 1298 FAX 915 • 585 • 4944 FAX 432 • 689 • 6313

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

817 • 201 • 5260

E-Mail: lab@traceanatysis.com

Certifications

WBENC: 237019

HUB:

1752439743100-86536 NCTRCA WFWB38444Y0909

DBE: VN 20657

NELAP Certifications

Lubbock: T104704219-08-TX

LELAP-02003 Kansas E-10317

El Paso: T104704221-08-TX LELAP-02002

Midland: T104704392-08-TX

Analytical and Quality Control Report

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

Project Location: Chavez Co., NM Project Name: Celero/Tract 7 Project Number: 115-6403130A

Report Date: December 7, 2009

Work Order: 9112520

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

Date Time Date Taken Received Sample Description Matrix Taken 2009-11-25 215843MW-1 water 2009-11-24 14:45

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 15 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.

Case Narrative

Samples for project Celero/Tract 7 were received by TraceAnalysis, Inc. on 2009-11-25 and assigned to work order 9112520. Samples for work order 9112520 were received intact without headspace and at a temperature of 3.2 deg. C.

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

		Prep	Prep	QC	Analysis
Test	Method	Batch	Date	Batch	Date
Alkalinity	SM 2320B	56132	2009-12-01 at 10:04	65677	2009-12-01 at 16:04
BTEX	S 8021B	56178	2009-12-02 at 10:28	65725	2009-12-02 at 10:28
Ca, Dissolved	S 6010B	56137	2009-12-02 at 09:55	65745	2009-12-03 at 14:57
Chloride (IC)	E 300.0	56093	2009-11-30 at 12:22	65660	2009-12-01 at 08:59
Hardness	S 6010B	56137	2009-12-02 at 09:55	65745	2009-12-03 at 14:57
K, Dissolved	S 6010B	56137	2009-12-02 at 09:55	65745	2009-12-03 at 14:57
Mg, Dissolved	S 6010B	56137	2009-12-02 at 09:55	65745	2009-12-03 at 14:57
Na, Dissolved	S 6010B	56137	2009-12-02 at 09:55	65745	2009-12-03 at 14:57
pН	SM 4500-H+	56049	2009-11-25 at 11:09	65589	2009-11-25 at 12:09
SO4 (IC)	E 300.0	56093	2009-11-30 at 12:22	65660	2009-12-01 at 08:59
TDS	SM 2540C	56115	2009-12-01 at 10:13	65808	2009-12-07 at 14:46

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 9112520 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.

115-6403130A

Work Order: 9112520 Celero/Tract 7 Page Number: 4 of 15 Chavez Co., NM

Analytical Report

Sample: 215843 - MW-1

Laboratory: Midland

Analysis: Alkalinity
QC Batch: 65677
Prep Batch: 56132

Analytical Method: SM 2320B Date Analyzed: 2009-12-01 Sample Preparation: 2009-12-01 Prep Method: N/A Analyzed By: AR Prepared By: AR

		m RL			
Parameter	\mathbf{Flag}	Result	Units	Dilution	RL
Hydroxide Alkalinity		<1.00	mg/L as CaCo3	1	1.00
Carbonate Alkalinity		< 1.00	mg/L as CaCo3	1	1.00
Bicarbonate Alkalinity		114	mg/L as CaCo3	1	4.00
Total Alkalinity		114	mg/L as CaCo3	1	4.00

Sample: 215843 - MW-1

Laboratory: Midland

Analysis: BTEX QC Batch: 65725 Prep Batch: 56178 Analytical Method: S 8021B Date Analyzed: 2009-12-02 Sample Preparation: 2009-12-02

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

		RL			
Parameter	${f Flag}$	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	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)		0.103	mg/L	1	0.100	103	70.9 - 119.8
4-Bromofluorobenzene (4-BFB)		0.0881	mg/L	1	0.100	88	68.1 - 118.8

Sample: 215843 - MW-1

Laboratory: Lubbock

Analysis: Cations QC Batch: 65745 Prep Batch: 56137 Analytical Method: S 6010B Date Analyzed: 2009-12-03 Sample Preparation: 2009-12-02

Prep Method: S 3005A Analyzed By: RR Prepared By: KV

continued ...

Report Date: December 7, 2009 115-6403130A

Work Order: 9112520 Celero/Tract 7 Page Number: 5 of 15 Chavez Co., NM

sample 215843 continued ...

		m RL			
Parameter	Flag	Result	Units	Dilution	RL
Dissolved Potassium		15.3	mg/L	1	1.00
Dissolved Magnesium		430	mg/L	10	1.00
Dissolved Sodium		585	mg/L	10	1.00

Sample: 215843 - MW-1

Laboratory: Midland

Analysis: Chloride (IC) QC Batch: 65660 Prep Batch: 56093 Analytical Method: E 300.0 Date Analyzed: 2009-12-01 Sample Preparation: 2009-11-30

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

Sample: 215843 - MW-1

Laboratory: Lubbock

Analysis: Hardness QC Batch: 65745 Prep Batch: 56137 Analytical Method: S 6010B
Date Analyzed: 2009-12-03
Sample Preparation: 2009-12-02

Prep Method: N/A Analyzed By: RR Prepared By: KV

Sample: 215843 - MW-1

Laboratory: Midland

Analysis: pH QC Batch: 65589 Prep Batch: 56049 Analytical Method: SM 4500-H+
Date Analyzed: 2009-11-25
Sample Preparation: 2009-11-25

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

Report Date: 115-6403130		7, 2009	Work Orde Celero/		Page Number: 6 Chavez Co.	
Sample: 215	843 - MV	V-1				
Laboratory: Analysis: QC Batch: Prep Batch:	Midland SO4 (IC) 65660 56093		Analytical Method: Date Analyzed: Sample Preparation:	E 300.0 2009-12-01 2009-11-30	Prep Method: Analyzed By: Prepared By:	N/A AR AR
Parameter		Flag	RL Result	Units	Dilution	RL
Sulfate			150	mg/L	5	0.500
Sample: 215	843 - MW	V-1				
Laboratory: Analysis: QC Batch: Prep Batch:	Midland TDS 65808 56115		Analytical Method: Date Analyzed: Sample Preparation:	SM 2540C 2009-12-07 2009-12-01	Prep Method: Analyzed By: Prepared By:	N/A AR AR
Parameter Total Dissolve	ed Solids	Flag	RL Result 9100	Units mg/L	Dilution 100	RL 10.0
						,
Method Bla	nk (1)	QC Batch: 65660				
QC Batch: Prep Batch:	65660 56093		U	009-12-01 009-11-30	Analyzed By: Prepared By:	
			MDI			
Parameter Chloride		Flag	Resul <0.47		Units mg/L	RL 0.5
Method Bla	nk (1)	QC Batch: 65660				
•	65660 56093		•	009-12-01 009-11-30	Analyzed By: Prepared By:	
Parameter		Flag	MDI Resul		Units	RL
Sulfate			< 0.21		mg/L	0.5

Report Date: December 7, 2009 115-6403130A

Work Order: 9112520 Celero/Tract 7

Page Number: 7 of 15 Chavez Co., NM

Method Blank (1)

QC Batch: 65677

QC Batch: 65677 Prep Batch: 56132 Date Analyzed: 2009-12-01 QC Preparation: 2009-12-01 Analyzed By: AR Prepared By: AR

MDL

		1411212		
Parameter	Flag	Result	Units	RL
Hydroxide Alkalinity		<1.00	mg/L as CaCo3	1
Carbonate Alkalinity		< 1.00	mg/L as $CaCo3$	1
Bicarbonate Alkalinity		<4.00	mg/L as CaCo3	4
Total Alkalinity		<4.00	mg/L as $CaCo3$	4

Method Blank (1)

QC Batch: 65725

QC Batch: 65725 Prep Batch: 56178 Date Analyzed: QC Preparation: 2009-12-02

2009-12-02

Analyzed By: tn

Prepared By: tn

MDL

		1411717		
Parameter	Flag	Result	Units	RL
Benzene		< 0.000300	mg/L	0.001
Toluene		< 0.000200	${ m mg/L}$	0.001
Ethylbenzene		< 0.000200	${ m mg/L}$	0.001
Xylene		< 0.000900	$\mathrm{mg/L}$	0.001

					\mathbf{Spike}	Percent	Recovery
Surrogate	Flag	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)		0.108	mg/L	1	0.100	108	73.6 - 116.6
4-Bromofluorobenzene (4-BFB)		0.0928	mg/L	1	0.100	93	70.6 - 107.5

Method Blank (1)

QC Batch: 65745

QC Batch: 65745 Prep Batch: 56137 Date Analyzed: 2009-12-03 QC Preparation: 2009-12-02 Analyzed By: RR

Prepared By: KV

		MDL		
Parameter	Flag	Result	Units	RL
Dissolved Calcium		< 0.117	mg/L	1
Dissolved Potassium		< 0.172	${ m mg/L}$	1
Dissolved Magnesium		< 0.160	${ m mg/L}$	1
Dissolved Sodium		< 0.0500	${ m mg/L}$	1

115-6403130A

Work Order: 9112520

Celero/Tract 7

Page Number: 8 of 15 Chavez Co., NM

Method Blank (1)

QC Batch: 65808

QC Batch: Prep Batch:

65808 56115 Date Analyzed:

2009-12-07

QC Preparation: 2009-12-01 Analyzed By: AR AR

Prepared By:

MDL

Parameter Flag Total Dissolved Solids

7.61

Result < 9.75

RLUnits mg/L 10

Duplicates (1) Duplicated Sample: 215843

QC Batch:

65589

Date Analyzed:

2009-11-25

Analyzed By: AR

1

Prep Batch:

pН

56049

QC Preparation:

2009-11-25

Prepared By: AR

RPD

Limit

1.5

Duplicate Sample Result Dilution RPD Param Result Units

7.55

Duplicated Sample: 215843 Duplicates (1)

QC Batch:

65677

Prep Batch: 56132

Date Analyzed: QC Preparation:

2009-12-01 2009-12-01

s.u.

Analyzed By: AR

Prepared By: AR

Param	Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
Hydroxide Alkalinity	<1.00	<1.00	mg/L as CaCo3	1	0	20
Carbonate Alkalinity	< 1.00	< 1.00	mg/L as CaCo3	1	0	20
Bicarbonate Alkalinity	95.0	114	mg/L as CaCo3	1	18	20
Total Alkalinity	95.0	114	mg/L as CaCo3	1	18	20

Duplicates (1) Duplicated Sample: 215843

QC Batch:

65808

Prep Batch: 56115 Date Analyzed:

QC Preparation:

2009-12-07

2009-12-01

Analyzed By: AR

Prepared By: AR

	Duplicate	Sample				RPD
Param	Result	Result	Units	Dilution	RPD	$_{ m Limit}$
Total Dissolved Solids	9500	9100	mg/L	100	4	10

Laboratory Control Spike (LCS-1)

QC Batch:

65660

Date Analyzed:

2009-12-01

Analyzed By: AR

Prep Batch: 56093

QC Preparation:

2009-11-30

Prepared By: AR

115-6403130A

Work Order: 9112520 Celero/Tract 7

Page Number: 9 of 15 Chavez Co., NM

	LCS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Chloride	26.1	mg/L	1	25.0	< 0.475	104	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
Chloride	26.0	mg/L	1	25.0	< 0.475	104	90 - 110	0	

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:

65660

Date Analyzed:

2009-12-01

Analyzed By: AR

Prep Batch:

56093

QC Preparation:

2009-11-30

Prepared By: AR

	LCS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Sulfate	24.3	mg/L	1	25.0	< 0.217	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	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Sulfate	24.8	mg/L	1	25.0	< 0.217	99	90 - 110	2	

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: 56178

65725

Date Analyzed:

2009-12-02 QC Preparation: 2009-12-02

Analyzed By: tn Prepared By: tn

LCS Matrix Rec. Spike Param Result Units Dil. Result Limit Amount Rec. Benzene 0.100 < 0.000300 79.4 - 111.8 0.0980 mg/L 1 98 Toluene 97 79.3 - 110 0.0973mg/L 1 0.100< 0.000200 Ethylbenzene 0.0977 mg/L 1 0.100 < 0.000200 98 73.8 - 113.1 Xylene 0.290mg/L 0.300 < 0.000900 97 73.9 - 113.6 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	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Benzene	0.100	mg/L	1	0.100	< 0.000300	100	79.4 - 111.8	2	20
Toluene	0.100	mg/L	1	0.100	< 0.000200	100	79.3 - 110	3	20
Ethylbenzene	0.0994	mg/L	1	0.100	< 0.000200	99	73.8 - 113.1	2	20
Xylene	0.296	mg/L	1	0.300	< 0.000900	99	73.9 - 113.6	2	20

115-6403130A

Work Order: 9112520 Celero/Tract 7

Page Number: 10 of 15 Chavez Co., NM

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)	0.104	0.102	mg/L	1	0.100	104	102	76.2 - 119.6
4-Bromofluorobenzene (4-BFB)	0.0938	0.0926	mg/L	1	0.100	94	93	77.9 - 109.8

Laboratory Control Spike (LCS-1)

QC Batch:

65745

Date Analyzed:

2009-12-03

Analyzed By: RR

Prep Batch: 56137

QC Preparation: 2009-12-02

Prepared By: KV

	LCS			Spike	Matrix		${f Rec}$.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Dissolved Calcium	51.9	mg/L	1	50.0	< 0.117	104	85 - 115
Dissolved Potassium	50.7	mg/L	1	50.0	< 0.172	101	85 - 115
Dissolved Magnesium	50.5	mg/L	1	50.0	< 0.160	101	85 - 115
Dissolved Sodium	51.1	mg/L	1	50.0	< 0.0500	102	85 - 115

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
Dissolved Calcium	50.8	mg/L	1	50.0	< 0.117	102	85 - 115	2	20
Dissolved Potassium	50.0	mg/L	1	50.0	< 0.172	100	85 - 115	1	20
Dissolved Magnesium	49.7	mg/L	1	50.0	< 0.160	99	85 - 115	2	20
Dissolved Sodium	49.7	mg/L	1	50.0	< 0.0500	99	85 - 115	3	20

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

Laboratory Control Spike (LCS-1)

QC Batch:

65808

Date Analyzed:

2009-12-07

Analyzed By: AR

Prep Batch: 56115

QC Preparation: 2009-12-01

Prepared By: AR

	LCS			Spike	Matrix		Rec.
Param	Result	\mathbf{Units}	Dil.	Amount	Result	Rec.	Limit
Total Dissolved Solids	972	mg/L	1	1000	< 9.75	97	90 - 110

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

	LCSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Total Dissolved Solids	1010	mg/L	1	1000	< 9.75	101	90 - 110	4	10

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

Work Order: 9112520 115-6403130A Celero/Tract 7

Page Number: 11 of 15 Chavez Co., NM

Matrix Spike (MS-1) Spiked Sample: 215843

QC Batch: 65660 Prep Batch: 56093 Date Analyzed: 2009-12-01 QC Preparation: 2009-11-30 Analyzed By: AR Prepared By: AR

		MS			Spike	Matrix		Rec.
Param		Result	Units	Dil.	Amount	Result	Rec.	${f Limit}$
Chloride	I	5330	mg/L	5	27.5	4690	2327	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	2	5320	mg/L	5	27.5	4690	2291	90 - 110	0	

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

Matrix Spike (MS-1) Spiked Sample: 215843

QC Batch: 65660 Prep Batch: 56093 Date Analyzed: 2009-12-01 QC Preparation: 2009-11-30 Analyzed By: AR Prepared By: AR

		MS			Spike	Matrix		Rec.
Param		Result	\mathbf{Units}	Dil.	Amount	Result	Rec.	\mathbf{Limit}
Sulfate	3	254	mg/L	5	27.5	150	378	90 - 110

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

		MSD			Spike	Matrix		${ m Rec.}$		RPD
Param		Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Sulfate	4	256	mg/L	5	27.5	150	385	90 - 110	1	

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

Matrix Spike (MS-1) Spiked Sample: 215919

QC Batch: 65725 Prep Batch: 56178 Date Analyzed: 2009-12-02 QC Preparation: 2009-12-02 Analyzed By: tn Prepared By: tn

	MS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	${f Limit}$
Benzene	13.9	mg/L	50	5.00	8.779	102	77.3 - 117.4
Toluene	4.88	mg/L	50	5.00	< 0.0100	98	75 - 111.8
Ethylbenzene	5.23	mg/L	50	5.00	0.2906	99	78.8 - 106.6

continued ...

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

²MSD analyte out of range. MS/MSD has a RPD within limits. Therfore, MS shows extraction occured properly.

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

⁴MSD analyte out of range. MS/MSD has a RPD within limits. Therfore, MS shows extraction occured properly.

115-6403130A

Work Order: 9112520 Celero/Tract 7 Page Number: 12 of 15 Chavez Co., NM

matrix spikes continued ...

	MS			\mathbf{Spike}	Matrix		${ m Rec.}$
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Xylene	14.5	mg/L	50	15.0	< 0.0450	97	68.9 - 114

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{Result}	Units	Dil.	Amount	Result	Rec.	\mathbf{Limit}	RPD	Liniit
Benzene	13.6	mg/L	50	5.00	8.779	96	77.3 - 117.4	2	20
Toluene	4.72	mg/L	50	5.00	< 0.0100	94	75 - 111.8	3	20
Ethylbenzene	5.08	mg/L	50	5.00	0.2906	96	78.8 - 106.6	3	20
Xylene	14.1	mg/L	50	15.0	< 0.0450	94	68.9 - 114	3	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)	5.43	5.26	mg/L	50	5	109	105	76.3 - 109.8
4-Bromofluorobenzene (4-BFB)	4.74	4.63	${ m mg/L}$	50	5	95	93	75.2 - 112.8

Matrix Spike (MS-1) Spiked Sample: 215149

QC Batch: 65745 Prep Batch: 56137 Date Analyzed: 2009-12-03 QC Preparation: 2009-12-02

Analyzed By: RR Prepared By: KV

	MS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	\mathbf{Limit}
Dissolved Calcium	104	mg/L	1	50.0	54.7	99	75 - 125
Dissolved Potassium	53.0	mg/L	1	50.0	2.85	100	75 - 125
Dissolved Magnesium	88.0	mg/L	1	50.0	40	96	75 - 125
Dissolved Sodium	199	mg/L	1	50.0	150	98	75 - 125

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
Dissolved Calcium	102	mg/L	1	50.0	54.7	95	75 - 125	2	20
Dissolved Potassium	53.3	mg/L	1	50.0	2.85	101	75 - 125	1	20
Dissolved Magnesium	86.5	mg/L	1	50.0	40	93	75 - 125	2	20
Dissolved Sodium	194	mg/L	1	50.0	150	88	75 - 125	2	20

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

Standard (ICV-1)

QC Batch: 65589 Date Analyzed: 2009-11-25 Analyzed By: AR

115-6403130A

Work Order: 9112520 Celero/Tract 7

Page Number: 13 of 15

Chavez Co., NM

			ICVs	ICVs	ICVs	Percent	Data
Param	Flag	Units	True Conc.	Found Conc.	Percent Recovery	Recovery Limits	Date Analyzed
pН		s.u.	7.00	6.85	98	98 - 102	2009-11-25

Standard (CCV-1)

QC Batch: 65589

Date Analyzed: 2009-11-25

Analyzed By: AR

			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	\mathbf{Flag}	Units	Conc.	Conc.	Recovery	Limits	Analyzed
pН		s.u.	7.00	7.15	102	98 - 102	2009-11-25

Standard (ICV-1)

QC Batch: 65660

Date Analyzed: 2009-12-01

Analyzed By: AR

			ICVs	ICVs	ICVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Chloride		mg/L	25.0	25.0	100	90 - 110	2009-12-01

Standard (ICV-1)

QC Batch: 65660

Date Analyzed: 2009-12-01

Analyzed By: AR

			ICVs	ICVs	ICVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Sulfate		mg/L	25.0	24.4	98	90 - 110	2009-12-01

Standard (CCV-1)

QC Batch: 65660

Date Analyzed: 2009-12-01

Analyzed By: AR

			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	\mathbf{Date}
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Chloride		${ m mg/L}$	25.0	24.9	100	90 - 110	2009-12-01

Standard (CCV-1)

QC Batch: 65660

Date Analyzed: 2009-12-01

Analyzed By: AR

115-6403130A

Work Order: 9112520 Celero/Tract 7 Page Number: 14 of 15 Chavez Co., NM

			${ m CCVs} \ { m True}$	CCVs Found	${ m CCVs} \ { m Percent}$	Percent Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Sulfate		mg/L	25.0	24.0	96	90 - 110	2009-12-01

Standard (ICV-1)

QC Batch: 65677

Date Analyzed: 2009-12-01

Analyzed By: AR

			ICVs	ICVs	ICVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Hydroxide Alkalinity		mg/L as CaCo3	0.00	<1.00		0 - 200	2009-12-01
Carbonate Alkalinity		mg/L as CaCo3	0.00	224		0 - 200	2009-12-01
Bicarbonate Alkalinity		mg/L as CaCo3	0.00	25.0		0 - 200	2009-12-01
Total Alkalinity		mg/L as CaCo3	250	249	100	90 - 110	2009-12-01

Standard (CCV-1)

QC Batch: 65677

Date Analyzed: 2009-12-01

Analyzed By: AR

			$rac{ ext{CCVs}}{ ext{True}}$	CCVs Found	${ m CCVs} \ { m Percent}$	Percent Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Hydroxide Alkalinity		mg/L as CaCo3	0.00	<1.00		0 - 200	2009-12-01
Carbonate Alkalinity		mg/L as CaCo3	0.00	224		0 - 200	2009-12-01
Bicarbonate Alkalinity		mg/L as CaCo3	0.00	26.0		0 - 200	2009-12-01
Total Alkalinity		mg/L as CaCo3	250	250	100	90 - 110	2009-12-01

Standard (CCV-2)

QC Batch: 65725

Date Analyzed: 2009-12-02

Analyzed By: tn

			CCVs True	CCVs Found	$\begin{array}{c} \text{CCVs} \\ \text{Percent} \end{array}$	Percent Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Benzene		mg/L	0.100	0.0896	90	80 - 120	2009-12-02
Toluene		mg/L	0.100	0.0895	90	80 - 120	2009-12-02
Ethylbenzene		mg/L	0.100	0.0883	88	80 - 120	2009-12-02
Xylene		mg/L	0.300	0.263	88	80 - 120	2009-12-02

Standard (CCV-3)

QC Batch: 65725 Date Analyzed: 2009-12-02 Analyzed By: tn

Report Date: December 7, 2009 Work Order: 9112520 Page Number: 15 of 15 115-6403130A Celero/Tract 7 Chavez Co., NM

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/L	0.100	0.0977	98	80 - 120	2009-12-02
Toluene		mg/L	0.100	0.0975	98	80 - 120	2009-12-02
Ethylbenzene		mg/L	0.100	0.0962	96	80 - 120	2009-12-02
Xylene		mg/L	0.300	0.286	95	80 - 120	2009-12-02

Standard (ICV-1)

QC Batch: 65745 Date Analyzed: 2009-12-03 Analyzed By: RR

			ICVs	ICVs	ICVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Dissolved Calcium		mg/L	50.0	52.2	104	90 - 110	2009-12-03
Dissolved Potassium		mg/L	50.0	51.2	102	90 - 110	2009-12-03
Dissolved Magnesium		mg/L	50.0	52.4	105	90 - 110	2009-12-03
Dissolved Sodium		mg/L	50.0	50.5	101	90 - 110	2009-12-03

Standard (CCV-1)

QC Batch: 65745 Date Analyzed: 2009-12-03 Analyzed By: RR

			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Dissolved Calcium		mg/L	50.0	52.4	105	90 - 110	2009-12-03
Dissolved Potassium		mg/L	50.0	49.7	99	90 - 110	2009-12-03
Dissolved Magnesium		mg/L	50.0	52.4	105	90 - 110	2009-12-03
Dissolved Sodium		mg/L	50.0	50.5	101	90 - 110	2009-12-03

Analysis Request of Chain of Custody Record RECEIVED BY: (Signature) COURT FOX RECEIVED BY: (Signature) (432) 682-4559 • Fax (432) 682-3946 Chours Co MA SAMPLE IDENTIFICATION TETRA TECH 1910 N. Big Spring St. Midland, Texas 79705 SITE MANAGER 11/23/205 1 PROJECT NAME Date:
Time:
Date:
Date: 8480 HWOO XIRTAM

1445

124

216843

TIME

DATE

LAB I.D. NUMBER

CLIENT NAME:

PROJECT NO.:

Major Anions/Cations phy (DS

GC:MS Semi: Vol. 8270/625

GC'W2 AOI' 8540/8560/654

.GOM 2108

HGT BIEX 8021B

NONE

(N/N) GBRBTJR NUMBER OF CONTAINERS

ICE **EONH** HOF

Metals Ag As Ba Cd Vr Pd Hg Se RCRA Metals Ag As Ba Cd Cr Pb Hg Se

2001XT

PRESERVATIVE METHOD

(Ext. to C35)

TCLP Semi Volatiles

Camma Spec

Chloride 909/808 Jeeq BCB. ₹ 8090/608

e.

Crow # 9112520

Circle or Specify Method No.)

ANALYSIS REQUEST

10.4 a Charles - Laboratory retains Vellow copy - Beturn Orginal copy to Tetra Tech - Project Mahager retains Pink copy - Accounting receives Gold copy. LS 27325356

Julybour - Pations hardrund

Š

RUSH Charges Authorized: Results by:

Kirelley

9:00 Am U.D

DATE 1(-30-09

2H2

PHONE

SAMPLE CONDITION WHEN RECEIVED:

Maller of

CONTACT

7200 STATE:

RECEIVING LABORATORY: ADDRESS:

RELINQUISHED BY: (Signature)

RELINQUISHED BY: (Signature

AIRBILL # OTHER:

SAMPLE SHIPPED BY: (Circle)

FEDEX FRAND DELIVERED.

Date: 16 2.10

Date:
Time: 10.110

Date:
Time:
T



6701 Aberdeen Avenue, Suite 9 200 East Sunset Road, Suite E 5002 Basin Street, Suite A1

Lubbock, Texas 79424 El Paso, Texas 79922 Midland, Texas 79703

800 • 378 • 1296 888 • 588 • 3443 806 • 794 • 1296 915 • 585 • 3443 432 • 689 • 6301

FAX 915-585-4944 FAX 432 • 689 • 6313

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

817 • 201 • 5260

E-Mail: lab@traceanalysis.com

Certifications

WBENC: 237019

HUB:

1752439743100-86536

DBE: VN 20657

NCTRCA WFWB38444Y0909

NELAP Certifications

Lubbock: T104704219-08-TX

LELAP-02003 Kansas E-10317 El Paso: T104704221-08-TX

LELAP-02002

Midland: T104704392-08-TX

Analytical and Quality Control Report

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

Report Date: March 9, 2010

Work Order:

10022632

Project Location:

Chavez County, 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
223829	MW-1	water	2010-02-25	16:40	2010-02-26

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

This report consists of a total of 15 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

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

Case Narrative

Samples for project Celero/Rock Queen #7 TB were received by TraceAnalysis, Inc. on 2010-02-26 and assigned to work order 10022632. Samples for work order 10022632 were received intact without headspace and at a temperature of 2.6 C.

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

		Prep	Prep	QC	Analysis
Test	Method	Batch	Date	Batch	Date
Alkalinity	SM 2320B	58086	2010-03-01 at 08:24	67894	2010-03-01 at 15:26
BTEX	S 8021B	58101	2010-03-01 at 15:45	67911	2010-03-01 at 17:11
Ca, Dissolved	S 6010B	58109	2010-03-02 at 12:55	67940	2010-03-02 at 16:17
Chloride (IC)	E 300.0	58087	2010-03-01 at 12:28	67932	2010-03-02 at 11:58
Hardness	S 6010B	58109	2010-03-02 at 12:55	67940	2010-03-02 at 16:17
K, Dissolved	S 6010B	58109	2010-03-02 at 12:55	67940	2010-03-02 at 16:17
Mg, Dissolved	S 6010B	58109	2010-03-02 at 12:55	67940	2010-03-02 at 16:17
Na, Dissolved	S 6010B	58109	2010-03-02 at 12:55	67940	2010-03-02 at 16:17
pН	SM 4500-H+	58060	2010-02-26 at 16:00	67873	2010-02-26 at 17:15
SO4 (IC)	E 300.0	58087	2010-03-01 at 12:28	67932	2010-03-02 at 11:58
TDS	SM 2540C	58134	2010-03-03 at 08:46	68076	2010-03-08 at 16:06

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 10022632 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: March 9, 2010 Work Order: 10022632 115-6403130 Celero/Rock Queen #7 TB

Analytical Report

Sample: 223829 - MW-1

Laboratory: Midland

Analysis: Alkalinity QC Batch: 67894 Prep Batch: 58086 Analytical Method: SM 2320B Date Analyzed: 2010-03-01 Sample Preparation: 2010-03-01

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

Page Number: 4 of 15

Chavez County, NM

		RL			
Parameter	Flag	Result	Units	Dilution	RL
Hydroxide Alkalinity		<1.00	mg/L as CaCo3	1	1.00
Carbonate Alkalinity		<1.00	mg/L as CaCo3	1	1.00
Bicarbonate Alkalinity		93.0	mg/L as CaCo3	1	4.00
Total Alkalinity		93.0	mg/L as CaCo3	1	4.00

Sample: 223829 - MW-1

Laboratory: Midland

Analysis: BTEX Analytical Method: S 8021B QC Batch: 67911 Date Analyzed: 2010-03-01 Prep Batch: 58101 Sample Preparation: 2010-03-01 Prep Method: S 5030B Analyzed By: AG Prepared By: AG

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

					Spike	Percent	$\operatorname{Recovery}$
Surrogate	Flag	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)		0.0983	mg/L	1	0.100	98	65.9 - 129.8
4-Bromofluorobenzene (4-BFB)		0.101	$\mathrm{mg/L}$	1	0.100	101	51.1 - 118.8

Sample: 223829 - MW-1

Laboratory: Lubbock

Analysis: Cations Analytical Method: S 6010B QC Batch: 67940 Date Analyzed: 2010-03-02 Prep Batch: 58109 Sample Preparation: 2010-03-02 Prep Method: S 3005A Analyzed By: RR Prepared By: KV

continued ...

Report Date: March 9, 2010 115-6403130 Work Order: 10022632 Celero/Rock Queen #7 TB Page Number: 5 of 15 Chavez County, NM

sample 223829 continued ...

		RL			
Parameter	Flag	Result	Units	Dilution	RL
Dissolved Potassium		80.0	mg/L	1	0.100
Dissolved Magnesium		2250	mg/L	1000	0.100
Dissolved Sodium		2860	mg/L	1000	0.100

Sample: 223829 - MW-1

Laboratory: Midland

Analysis: Chloride (IC) Analytical Method: E 300.0 QC Batch: 67932 Date Analyzed: 2010-03-02 Prep Batch: 58087 Sample Preparation: 2010-03-01

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

Sample: 223829 - MW-1

Laboratory: Lubbock

Analysis: Hardness QC Batch: 67940 Prep Batch: 58109 Analytical Method: S 6010B
Date Analyzed: 2010-03-02
Sample Preparation: 2010-03-02

Prep Method: N/A Analyzed By: RR Prepared By: KV

		RL			
Parameter	Flag	Result	Units	Dilution	RL
Hardness (by ICP)		29300	mg eq CaCO3/L	1	0.00

Sample: 223829 - MW-1

Laboratory: Midland

Analysis: pH Analytical Method: SM 4500-H+QC Batch: 67873 Date Analyzed: 2010-02-26 Prep Batch: 58060 Sample Preparation: 2010-02-26 Prep Method: N/A Analyzed By: AG Prepared By: AG

		m RL			
Parameter	Flag	Result	Units	Dilution	RL
pH		7.11	s.u.	1	0.00

Report Date: 115-6403130	March 9, 2	2010	Work Order: Celero/Rock Qu		Page Number: 6 Chavez Count	
Sample: 2238	829 - MW	7-1				
Laboratory: 1	Midland					
Analysis: S	SO4 (IC)		Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch: 6	67932		Date Analyzed:	2010-03-02	Analyzed By:	AR
Prep Batch: 5	58087		Sample Preparation:	2010-03-01	Prepared By:	AR
			RL			
Parameter		Flag	Result	Units	Dilution	RL
Sulfate			463	mg/L	50	0.500
Analysis: C QC Batch: 6	3 29 - MW Midland FDS 58076 58134	7-1	Analytical Method: Date Analyzed: Sample Preparation:	SM 2540C 2010-03-08 2010-03-03	Prep Method: Analyzed By: Prepared By:	N/A AR AR
•						
Parameter		Flag	RL Result	Units	Dilution	RL
Total Dissolved	l Solids	- 140	38300	mg/L	100	10.0
•	67894	QC Batch: 67894	•	010-03-01	Analyzed By:	
Prep Batch: 5	58086		QC Preparation: 20	010-03-01	Prepared By:	AR
D .		DI	MD		TT 4:	T. T
Parameter	1,	Flag			Units	RL
Hydroxide Alka	-		<1.0		mg/L as CaCo3	1
Carbonate Alka			<1.0		mg/L as CaCo3	1
Bicarbonate Al Total Alkalinity			<4.0 <4.0		mg/L as CaCo3	4
Method Blan		QC Batch: 67911	\4. .0		mg/L as CaCo3	4
	, ,	ac Daten. 0/911				
•	7911		v)10-03-01	Analyzed By:	
Prep Batch: 5	8101		QC Preparation: 20	010-03-01	Prepared By:	\mathbf{AG}

MDL

Result

< 0.000300

Flag

Parameter

Benzene

continued ...

RL

0.001

Units

mg/L

Report Date: March 9, 2010 115-6403130

Work Order: 10022632 Celero/Rock Queen #7 TB Page Number: 7 of 15 Chavez County, NM

method	blank	continued	

		MDL		
Parameter	Flag	Result	Units	RL
Toluene		< 0.000200	mg/L	0.001
Ethylbenzene		< 0.000200	${ m mg/L}$	0.001
Xylene		< 0.000900	mg/L	0.001

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.0991	mg/L	1	0.100	99	73.6 - 126.6
4-Bromofluorobenzene (4-BFB)		0.102	mg/L	1	0.100	102	62.6 - 117.5

Method Blank (1)

QC Batch: 67932

QC Batch: 67932 Prep Batch: 58087 Date Analyzed: 2010-03-02 QC Preparation: 2010-03-01 Analyzed By: AR Prepared By: AR

MDL Parameter Flag Result

Method Blank (1)

Chloride

QC Batch: 67932

QC Batch: 67932 Prep Batch: 58087 Date Analyzed: 2010-03-02 QC Preparation: 2010-03-01 Analyzed By: AR Prepared By: AR

MDL Promotor

Method Blank (1)

QC Batch: 67940

QC Batch: 67940 Prep Batch: 58109 Date Analyzed: 2010-03-02 QC Preparation: 2010-03-02 Analyzed By: RR Prepared By: KV

MDL Parameter Flag Result

Parameter	Flag	Result	${f Units}$	RL
Dissolved Calcium		< 0.00216	mg/L	0.1
Dissolved Potassium		< 0.00645	mg/L	0.1
Dissolved Magnesium		< 0.00594	mg/L	0.1
Dissolved Sodium		< 0.00548	mg/L	0.1

115-6403130

Work Order: 10022632 Celero/Rock Queen #7 TB Page Number: 8 of 15 Chavez County, NM

Method Blank (1)

QC Batch: 68076

QC Batch: 68076 Prep Batch: 58134 Date Analyzed: 2010-03-08 QC Preparation: 2010-03-03 Analyzed By: AR Prepared By: AR

MDL

Parameter Flag Result Units RLTotal Dissolved Solids < 9.75 mg/L 10

Duplicates (1) Duplicated Sample: 223824

QC Batch:

67873

Date Analyzed:

2010-02-26

Analyzed By: \mathbf{AG}

Prep Batch:

58060

QC Preparation: 2010-02-26

Prepared By: AG

RPD Duplicate Sample RPD Result Result Dilution Limit Param Units 6.22 6.24 0 pН s.u. 1 1.5

Duplicates (1) Duplicated Sample: 223818

QC Batch: Prep Batch: 58086

67894

Date Analyzed: QC Preparation:

2010-03-01 2010-03-01 Analyzed By: AR

Prepared By: AR

	Duplicate	Sample				RPD
Param	Result	Result	Units	Dilution	RPD	Limit
Hydroxide Alkalinity	<1.00	<1.00	mg/L as CaCo3	1	0	20
Carbonate Alkalinity	< 1.00	< 1.00	mg/L as CaCo3	1	0	20
Bicarbonate Alkalinity	192	194	mg/L as CaCo3	1	1	20
Total Alkalinity	192	194	mg/L as $CaCo3$	1	1	20

Duplicates (1) Duplicated Sample: 224053

QC Batch: Prep Batch:

68076 58134 Date Analyzed: QC Preparation:

2010-03-08 2010-03-03

Analyzed By: AR Prepared By: AR

RPD Duplicate Sample RPD Result Result Units Dilution Limit Param Total Dissolved Solids 2240 2310 10 mg/L 5 3

Laboratory Control Spike (LCS-1)

QC Batch:

67911

Date Analyzed:

2010-03-01

Analyzed By: AG

Prep Batch: 58101

QC Preparation:

2010-03-01

Prepared By: AG

115 - 6403130

Work Order: 10022632 Celero/Rock Queen #7 TB

LCS Spike Matrix Rec. Param Result Limit Units Dil. Amount Result Rec. Benzene 0.0949 < 0.000300 79.4 - 112.4 mg/L 1 0.100 95 79.3 - 110 Toluene 0.0942mg/L 1 0.100< 0.000200 94Ethylbenzene 0.0935 mg/L 1 0.100 < 0.000200 94 73.8 - 113.1 Xylene 0.282mg/L 1 0.300< 0.000900 94 73.9 - 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	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Benzene	0.0957	mg/L	1	0.100	< 0.000300	96	79.4 - 112.4	1	20
Toluene	0.0954	${ m mg/L}$	1	0.100	< 0.000200	95	79.3 - 110	1	20
Ethylbenzene	0.0952	mg/L	1	0.100	< 0.000200	95	73.8 - 113.1	2	20
Xylene	0.287	mg/L	1	0.300	< 0.000900	96	73.9 - 113.6	2	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)	0.0954	0.0943	mg/L	1	0.100	95	94	76.2 - 129.6
4-Bromofluorobenzene (4-BFB)	0.112	0.111	mg/L	1	0.100	112	111	77.9 - 119.8

Laboratory Control Spike (LCS-1)

QC Batch: 67932 Prep Batch: 58087 Date Analyzed: 2010-03-02 QC Preparation: 2010-03-01 Analyzed By: AR Prepared By: AR

	$_{ m LCS}$			\mathbf{Spike}	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	\mathbf{Limit}
Chloride	23.7	mg/L	1	25.0	< 0.475	95	90 - 110

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

	LCSD			\mathbf{Spike}	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Chloride	23.7	mg/L	1	25.0	< 0.475	95	90 - 110	0	

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: 67932 Prep Batch: 58087 Date Analyzed: 2010-03-02 QC Preparation: 2010-03-01 Analyzed By: AR Prepared By: AR

	LCS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Sulfate	23.2	mg/L	1	25.0	< 0.217	93	90 - 110

Page Number: 9 of 15 Chavez County, NM

115-6403130

Work Order: 10022632 Celero/Rock Queen #7 TB Page Number: 10 of 15 Chavez County, NM

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

	LCSD			$_{ m Spike}$	Matrix		Rec .		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Sulfate	23.1	mg/L	1	25.0	< 0.217	92	90 - 110	0	

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:

Dissolved Sodium

67940

Date Analyzed:

2010-03-02

Analyzed By: RR

Prep Batch:

58109

QC Preparation: 2010-03-02

Prepared By: KV

101

85 - 115

LCS Matrix Spike Rec. Param Result Units Dil. Amount Result Rec. Limit Dissolved Calcium 52.9 mg/L 50.0 < 0.00216 106 85 - 115 1 Dissolved Potassium 1 50.0 < 0.00645 103 85 - 115 51.6 mg/L 50.0 < 0.00594 85 - 115 Dissolved Magnesium 53.9 mg/L 1 108

1

50.0

< 0.00548

mg/L

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

50.6

	LCSD			\mathbf{Spike}	Matrix		Rec.		RPD
Param	Result	\mathbf{Units}	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Dissolved Calcium	51.0	mg/L	1	50.0	< 0.00216	102	85 - 115	4	20
Dissolved Potassium	49.7	${ m mg/L}$	1	50.0	< 0.00645	99	85 - 115	4	20
Dissolved Magnesium	51.5	m mg/L	1	50.0	< 0.00594	103	85 - 115	5	20
Dissolved Sodium	49.0	mg/L	1	50.0	< 0.00548	98	85 - 115	3	20

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

Laboratory Control Spike (LCS-1)

QC Batch: 68076 Prep Batch: 58134

Date Analyzed: QC Preparation:

2010-03-08 2010-03-03

Analyzed By: AR Prepared By: AR

LCS Spike Matrix Rec. Rec. Param Result Units Dil. Amount Result Limit 1000 < 9.75 101 90 - 110 Total Dissolved Solids 1010 mg/L 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	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Total Dissolved Solids	1010	mg/L	1	1000	< 9.75	101	90 - 110	0	10

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

Report Date: March 9, 2010 Work Order: 10022632 Page Number: 11 of 15 115-6403130 Celero/Rock Queen #7 TB Chavez County, NM

Matrix Spike (MS-1) Spiked Sample: 223853

QC Batch: 67911 Date Analyzed: 2010-03-01 Analyzed By: AG
Prep Batch: 58101 QC Preparation: 2010-03-01 Prepared By: AG

	MS			\mathbf{Spike}	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Benzene	10.9	mg/L	50	5.00	5.9567	99	77.3 - 117.4
Toluene	6.30	mg/L	50	5.00	1.5038	96	75 - 111.8
Ethylbenzene	5.23	mg/L	50	5.00	0.5072	94	78.8 - 106.6
Xylene	14.6	mg/L	50	15.0	0.6358	93	68.9 - 114

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
Benzene	10.6	mg/L	50	5.00	5.9567	93	77.3 - 117.4	3	20
Toluene	5.98	mg/L	50	5.00	1.5038	90	75 - 111.8	5	20
Ethylbenzene	4.79	mg/L	50	5.00	0.5072	86	78.8 - 106.6	9	20
Xylene	13.5	mg/L	50	15.0	0.6358	86	68.9 - 114	8	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	\mathbf{Result}	\mathbf{Units}	Dil.	Amount	$\mathrm{Rec}.$	Rec .	\mathbf{Limit}
Trifluorotoluene (TFT)	4.41	4.27	mg/L	50	5	88	85	76.3 - 129.8
4-Bromofluorobenzene (4-BFB)	5.17	4.98	mg/L	50	5	103	100	75.2 - 112.8

Matrix Spike (MS-1) Spiked Sample: 223829

QC Batch: 67932 Date Analyzed: 2010-03-02 Analyzed By: AR
Prep Batch: 58087 QC Preparation: 2010-03-01 Prepared By: AR

		MS			\mathbf{Spike}	Matrix		${ m Rec.}$
Param		Result	\mathbf{Units}	Dil.	Amount	Result	Rec.	Limit
Chloride	1	27200	mg/L	50	1380	24013	232	90 - 110

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

		MSD			\mathbf{Spike}	Matrix		${ m Rec.}$		RPD
Param		Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Chloride	2	27300	mg/L	50	1380	24013	239	90 - 110	0	

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 peak interference. Use LCS/LCSD to demonstrate analysis is under control.

²MSD analyte out of range. MS/MSD has a RPD within limits. Therfore, MS shows extraction occured properly.

115-6403130

Work Order: 10022632 Celero/Rock Queen #7 TB Page Number: 12 of 15 Chavez County, NM

Matrix Spike (MS-1) Spiked Sample: 223829

QC Batch: 67932 Prep Batch: 58087 Date Analyzed:

2010 - 03 - 02

Analyzed By: AR

QC Preparation: 2010-03-01

Prepared By: AR

		MS			Spike	Matrix		${ m Rec.}$
Param		Result	Units	Dil.	Amount	Result	Rec.	Limit
Sulfate	3	1500	mg/L	50	1380	463	75	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	\mathbf{Units}	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Sulfate	4	1590	mg/L	50	1380	463	82	90 - 110	6	

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

Matrix Spike (MS-1) Spiked Sample: 223817

QC Batch: 67940 Prep Batch: 58109 Date Analyzed: 2010-03-02 QC Preparation: 2010-03-02 Analyzed By: RR Prepared By: KV

	MS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Dissolved Calcium	366	mg/L	1	50.0	306	120	75 - 125
Dissolved Potassium	72.6	mg/L	1	50.0	20.6	104	75 - 125
Dissolved Magnesium	117	mg/L	1	50.0	71	92	75 - 125
Dissolved Sodium	485	mg/L	1	50.0	439	92	75 - 125

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{Result}	Units	Dil.	Amount	Result	Rec.	\mathbf{Limit}	RPD	Limit
Dissolved Calcium	356	mg/L	1	50.0	306	100	75 - 125	3	20
Dissolved Potassium	75.6	mg/L	1	50.0	20.6	110	75 - 125	4	20
Dissolved Magnesium	120	mg/L	1	50.0	71	98	75 - 125	2	20
Dissolved Sodium	486	mg/L	1	50.0	439	94	75 - 125	0	20

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

Standard (ICV-1)

QC Batch: 67873

Date Analyzed: 2010-02-26

Analyzed By: AG

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

⁴MSD analyte out of range. MS/MSD has a RPD within limits. Therfore, MS shows extraction occured properly.

115-6403130

Work Order: 10022632 Celero/Rock Queen #7 TB Page Number: 13 of 15 Chavez County, NM

			ICVs	ICVs	ICVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
pН		s.u.	7.00	6.99	100	98 - 102	2010-02-26

Standard (CCV-1)

QC Batch: 67873

Date Analyzed: 2010-02-26

Analyzed By: AG

			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
pН		s.u.	7.00	6.93	99	98 - 102	2010-02-26

Standard (ICV-1)

QC Batch: 67894

Date Analyzed: 2010-03-01

Analyzed By: AR

			ICVs	ICVs	ICVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Hydroxide Alkalinity		mg/L as CaCo3	0.00	17.0		0 - 200	2010-03-01
Carbonate Alkalinity		mg/L as CaCo3	0.00	244		0 - 200	2010-03-01
Bicarbonate Alkalinity		mg/L as CaCo3	0.00	<4.00		0 - 200	2010-03-01
Total Alkalinity		mg/L as CaCo3	250	261	104	90 - 110	2010-03-01

Standard (CCV-1)

QC Batch: 67894

Date Analyzed: 2010-03-01

Analyzed By: AR

Analyzed By: AG

			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Hydroxide Alkalinity		mg/L as CaCo3	0.00	29.0		0 - 200	2010-03-01
Carbonate Alkalinity		mg/L as CaCo3	0.00	224		0 - 200	2010-03-01
Bicarbonate Alkalinity		mg/L as CaCo3	0.00	< 4.00		0 - 200	2010-03-01
Total Alkalinity		mg/L as CaCo3	250	253	101	90 - 110	2010-03-01

Standard (CCV-1)

QC Batch: 67911

Date Analyzed: 2010-03-01

115-6403130

Work Order: 10022632 Celero/Rock Queen #7 TB Page Number: 14 of 15 Chavez County, NM

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/L	0.100	0.0875	88	80 - 120	2010-03-01
Toluene		mg/L	0.100	0.0857	86	80 - 120	2010-03-01
Ethylbenzene		mg/L	0.100	0.0823	82	80 - 120	2010-03-01
Xylene		mg/L	0.300	0.249	83	80 - 120	2010-03-01

Standard (CCV-2)

QC Batch: 67911

Date Analyzed: 2010-03-01

Analyzed By: AG

			\mathbf{CCVs}	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Benzene		mg/L	0.100	0.0945	94	80 - 120	2010-03-01
Toluene		mg/L	0.100	0.0943	94	80 - 120	2010-03-01
Ethylbenzene		mg/L	0.100	0.0941	94	80 - 120	2010-03-01
Xylene		mg/L	0.300	0.283	94	80 - 120	2010-03-01

Standard (ICV-1)

QC Batch: 67932

Date Analyzed: 2010-03-02

Analyzed By: AR

			ICVs	ICVs	ICVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Chloride		mg/L	25.0	23.4	94	90 - 110	2010-03-02

Standard (ICV-1)

QC Batch: 67932

Date Analyzed: 2010-03-02

Analyzed By: AR

			ICVs True	ICVs Found	$\begin{array}{c} {\rm ICVs} \\ {\rm Percent} \end{array}$	Percent Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Sulfate		mg/L	25.0	25.3	101	90 - 110	2010-03-02

Standard (CCV-1)

QC Batch: 67932

 $Date\ Analyzed:\ \ 2010\text{-}03\text{-}02$

Analyzed By: AR

115-6403130

Work Order: 10022632 Celero/Rock Queen #7 TB Page Number: 15 of 15 Chavez County, NM

			CCVs True	CCVs Found	CCVs Percent	Percent Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Chloride		mg/L	25.0	23.0	92	90 - 110	2010-03-02

Standard (CCV-1)

QC Batch: 67932

Date Analyzed: 2010-03-02

Analyzed By: AR

			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Sulfate		mg/L	25.0	24.9	100	90 - 110	2010-03-02

Standard (ICV-1)

QC Batch: 67940

Date Analyzed: 2010-03-02

Analyzed By: RR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dissolved Calcium	1 lag	mg/L	50.0	51.3	103	90 - 110	2010-03-02
Dissolved Calcium Dissolved Potassium		mg/L	50.0	50.3	101	90 - 110	2010-03-02
Dissolved Magnesium		mg/L	50.0	51.6	103	90 - 110	2010-03-02
Dissolved Sodium		mg/L	50.0	49.8	100	90 - 110	2010-03-02

Standard (CCV-1)

QC Batch: 67940

Date Analyzed: 2010-03-02

Analyzed By: RR

			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Dissolved Calcium		mg/L	51.0	50.5	99	90 - 110	2010-03-02
Dissolved Potassium		mg/L	55.0	55.3	100	90 - 110	2010-03-02
Dissolved Magnesium		$_{ m mg/L}$	51.0	50.6	99	90 - 110	2010-03-02
Dissolved Sodium		mg/L	51.0	51.2	100	90 - 110	2010-03-02

ş RUSH Charges Authorized: Results by: Major Anions/Cations, pH, TDS AIRBILL #: OF: Accounting receives Gold copy. OTHER Circle or Specify Method No.) Alpha Beta (Air) gamma Spec ANALYSIS REQUEST Chloride Chims Pest. 808/608 PCB's 8080/608 SAMPLE SHIPPED BY: (Circle)
FEDEX
BUS
FAND DELIVERED UPS
TETRA TECH CONTACT PERSON: E GC.MS Semi. Vol. 8270/625 SAMPLED BY: (Print & Initial) 3C.MS Vol. 8240/8260/624 JH Kindley TCLP Semi Volatiles Metais Ag As Ba Cd Vr Pd Hg Se HCRA Metals Ag As Ba Cd Cr Pb Hg Se BOTS MOD. HqT (Ext. to C35) 2001XT BIEX 8021B × 01123110 PRESERVATIVE METHOD NONE Analysis Request of Chain of Custody Record × CE Time: Date: Date: HIOS нсг 3 7 TIME FILTERED (Y/N) NUMBER OF CONTAINERS - Return Orginal copy to 7/3 Midland, Texas 79705 (432) 682-4559 • Fax (432) 682-3946 RECEIVED BY: (Signature) SAMPLE IDENTIFICATION X 31(0) -1 **TETRA TECH** 1910 N. Big Spring St. Ruk Quen - Laboratory retains Yellow copy DATE SITE MANAGER: 2/26/13 Order # 100 and 630 300 ME ZIP Colors Enryy PROJECT NAME: Date: Time: Date: Time: PHONE SARE × Please fill out all copies MOC 3 XIRTAM Toxer STATE 25 SAMPLE CONDITION WHEN RECEIVED: ナンピーシー・ TIME CLIENT NAME: REMNQUISHED BY: (Signature) RELINCHISHED BY: (Signature) HECEIVING LABORATORY:
ADDRESS:
CITY: A14/4/4.4 d
CONTACT: DATE 115-6403130 Scio 2/2 PROJECT NO.: 232839 LAB I.D. NUMBER

Lone Star 76030145 5.2%



6701 Aberdeen Avenue, Suite 9 200 East Sunset Road, Suite E 5002 Basin Street, Suite A1

Lubbock, Texas 79424 El Paso, Texas 79922 800 • 378 • 1296 888 • 588 • 3443

806 • 794 • 1296 915 • 585 • 3443 432 • 689 • 6301 FAX 806 • 794 • 1298 FAX 915 • 585 • 4944 FAX 432 • 689 • 6313

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

Midland, Texas 79703

817 - 201 - 5260

E-Mail: lab@traceanalysis.com

Certifications

WBENC: 237019

HUB:

1752439743100-86536

DBE: VN 20657

NCTRCA WFWB38444Y0909

NELAP Certifications

Lubbock:

T104704219-08-TX

LELAP-02003

Kansas E-10317

El Paso: T104704221-08-TX

LELAP-02002

Midland: T104704392-08-TX

Analytical and Quality Control Report

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

Report Date: July 27, 2010

Work Order: 10071412

Project Location:

Chavez County, 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
237456	MW-1	water	2010-07-13	13:45	2010-07-14

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 10 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

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

Case Narrative

Samples for project Celero/Rock Queen #7 TB were received by TraceAnalysis, Inc. on 2010-07-14 and assigned to work order 10071412. Samples for work order 10071412 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	QC	Analysis
Test	Method	Batch	Date	Batch	Date
BTEX	S 8021B	61451	2010-07-14 at 16:00	71724	2010-07-14 at 16:42
Chloride (IC)	E 300.0	61482	2010-07-15 at 09:54	71929	2010-07-16 at 03:27
SO4 (IC)	E 300.0	61482	2010-07-15 at 09:54	71929	2010-07-16 at 03:27
TDS	SM 2540C	61516	2010-07-15 at 10:29	72039	2010-07-26 at 12:30

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

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 10071412 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: 10071412 Celero/Rock Queen #7 TB Page Number: 4 of 10 Chavez County, NM

Analytical Report

Sample: 237456 - MW-1

Laboratory: Midland

Analysis: **BTEX** QC Batch: 71724Prep Batch: 61451

Analytical Method:

S 8021B Date Analyzed: 2010-07-14 Sample Preparation: 2010-07-14 Prep Method: S 5030B Analyzed By: \mathbf{AG}

AG

Prepared By:

RI.

		100			
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	$\mathrm{mg/L}$	1	0.00100
Xylene		< 0.00100	mg/L	1	0.00100

					Spike	Percent	Recovery
Surrogate	Flag	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)		0.104	mg/L	1	0.100	104	67.8 - 126
4-Bromofluorobenzene (4-BFB)		0.0877	mg/L	1	0.100	88	51.1 - 128

Sample: 237456 - MW-1

Laboratory: Midland

Analysis: Chloride (IC) QC Batch: 71929 Prep Batch: 61482

Analytical Method: E 300.0 Date Analyzed: 2010-07-16 Sample Preparation: 2010-07-15

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

RL

Parameter	Flag	Result	Units	Dilution	RL
Chloride		3060	mg/L	500	2.50

Sample: 237456 - MW-1

Laboratory: Midland

Analysis: SO4 (IC) QC Batch: 71929 Prep Batch: 61482

Analytical Method: E 300.0Date Analyzed: 2010-07-16 Sample Preparation: 2010-07-15

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

RL

Parameter	Flag	Result	Units	Dilution	RL
Sulfate		316	mg/L	50	2.50

115-6403130

Work Order: 10071412 Celero/Rock Queen #7 TB Page Number: 5 of 10 Chavez County, NM

Sample: 237456 - MW-1

Laboratory: Midland

TDS 72039 Analytical Method: Date Analyzed:

SM 2540C 2010-07-26 Prep Method: N/A Analyzed By:

QC Batch: Prep Batch:

Analysis:

61516

Sample Preparation:

2010-07-16

ARPrepared By: AR

RL

Flag Dilution RLParameter Result Units 10.0 Total Dissolved Solids 5910 mg/L

Method Blank (1)

QC Batch: 71724

QC Batch: Prep Batch: 61451

71724

Date Analyzed: QC Preparation: 2010-07-14

2010-07-14

Analyzed By:

 \mathbf{AG} Prepared By:

MDL

		MIDE		
Parameter	Flag	Result	Units	m RL
Benzene		< 0.000600	mg/L	0.001
Toluene		< 0.000600	m mg/L	0.001
Ethylbenzene		< 0.000800	${ m mg/L}$	0.001
Xylene		< 0.000767	m mg/L	0.001

					Spike	Percent	Recovery
Surrogate	Flag	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)		0.0973	mg/L	1	0.100	97	70.2 - 118
4-Bromofluorobenzene (4-BFB)		0.0848	$_{ m mg/L}$	1	0.100	85	47.3 - 116

Method Blank (1)

QC Batch: 71929

QC Batch: 71929

Date Analyzed:

2010-07-16

Analyzed By: AR

Prep Batch: 61482

Prepared By: AR

QC Preparation: 2010-07-15

MDL

Units RLParameter Flag Result Chloride 0.462 mg/L 2.5

Method Blank (1)

QC Batch: 71929

QC Batch: 71929 Prep Batch: 61482 Date Analyzed: QC Preparation:

2010-07-16 2010-07-15

Analyzed By: AR Prepared By: AR

115-6403130

Work Order: 10071412 Celero/Rock Queen #7 TB Page Number: 6 of 10 Chavez County, NM

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

Method Blank (1)

QC Batch: 72039

QC Batch: 72039 Date Analyzed:

2010-07-26

Analyzed By: AR

Prep Batch:

61516

QC Preparation: 2010-07-15

Prepared By: AR

MDL

Parameter Result Flag Units RLTotal Dissolved Solids 10.0 mg/L 10

Duplicates (2) Duplicated Sample: 237468

QC Batch:

72039

Date Analyzed:

2010-07-26

Analyzed By: AR

Prep Batch: 61516

QC Preparation: 2010-07-15

Prepared By: AR

	Duplicate	Sample				RPD
Param	Result	Result	Units	Dilution	RPD	Limit
Total Dissolved Solids	109000	5910	mg/L	100	7	10
Total Dissolved Solids	109000	102000	mg/L	100	7	10

Laboratory Control Spike (LCS-1)

QC Batch:

71724

Date Analyzed:

2010-07-14

Analyzed By: AG

Prep Batch: 61451

QC Preparation: 2010-07-14

Prepared By: AG

	LCS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Benzene	0.100	mg/L	1	0.100	< 0.000600	100	82.9 - 108
Toluene	0.0992	mg/L	1	0.100	< 0.000600	99	82.7 - 107
Ethylbenzene	0.0949	mg/L	1	0.100	< 0.000800	95	78.8 - 106
Xylene	0.287	mg/L	1	0.300	< 0.000767	96	79.3 - 106

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
Benzene	0.101	mg/L	1	0.100	< 0.000600	101	82.9 - 108	1	20
Toluene	0.101	mg/L	1	0.100	< 0.000600	101	82.7 - 107	2	20
Ethylbenzene	0.0967	mg/L	1	0.100	< 0.000800	97	78.8 - 106	2	20
Xylene	0.292	mg/L	1	0.300	< 0.000767	97	79.3 - 106	2	20

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

115-6403130

Work Order: 10071412 Celero/Rock Queen #7 TB Page Number: 7 of 10 Chavez County, NM

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.103	0.0996	mg/L	1	0.100	103	100	67.3 - 113
4-Bromofluorobenzene (4-BFB)	0.0966	0.0941	mg/L	1	0.100	97	94	68.2 - 124

Laboratory Control Spike (LCS-1)

QC Batch:

71929

Date Analyzed:

2010-07-16

Analyzed By: AR

Prep Batch: 61482

QC Preparation:

2010-07-15

Prepared By: AR

	LCS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Chloride	25.6	m mg/L	1	25.0	< 0.265	102	90 - 110

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

	LCSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Chloride	25.1	mg/L	1	25.0	< 0.265	100	90 - 110	2	20

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

Laboratory Control Spike (LCS-1)

QC Batch:

71929

Date Analyzed:

2010-07-16

Analyzed By: AR

Prep Batch: 61482

QC Preparation: 2010-07-15

Prepared By: AR

	LCS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Sulfate	24.9	mg/L	1	25.0	< 0.177	100	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	25.0	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:

72039

Date Analyzed:

2010-07-26

Analyzed By: AR

Prep Batch: 61516

QC Preparation: 2010-07-15

Prepared By: AR

	LCS			Spike	Matrix		${ m Rec.}$
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Total Dissolved Solids	1030	mg/L	1	1000	< 9.75	103	90 - 110

115-6403130

Work Order: 10071412 Celero/Rock Queen #7 TB Page Number: 8 of 10 Chavez County, NM

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.	$_{ m Limit}$	RPD	Limit
Total Dissolved Solids	1040	mg/L	1	1000	< 9.75	104	90 - 110	1	10

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

Matrix Spike (MS-1)

Spiked Sample: 237430

QC Batch: 71724 Prep Batch: 61451 Date Analyzed: 2010-07-14 QC Preparation: 2010-07-14 Analyzed By: AG Prepared By: AG

		MS			Spike	Matrix		Rec.
Param		Result	Units	Dil.	Amount	Result	Rec.	Limit
Benzene		0.100	mg/L	1	0.100	0.0031	97	77.9 - 114
Toluene		0.0800	mg/L	1	0.100	< 0.000600	80	78.3 - 111
Ethylbenzene	1	0.0695	mg/L	1	0.100	< 0.000800	70	75.3 - 110
Xylene	2	0.211	mg/L	1	0.300	< 0.000767	70	75.7 - 109

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.	\mathbf{Limit}	RPD	Limit
Benzene		0.0908	mg/L	1	0.100	0.0031	88	77.9 - 114	10	20
Toluene	3	0.0719	mg/L	1	0.100	< 0.000600	72	78.3 - 111	11	20
Ethylbenzene	4	0.0623	mg/L	1	0.100	< 0.000800	62	75.3 - 110	11	2 0
Xylene	5	0.189	mg/L	1	0.300	< 0.000767	63	75.7 - 109	11	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)	6 7	0.0434	0.0551	mg/L	1	0.1	43	55	68.3 - 107
4-Bromofluorobenzene (4-BFB)	8 9	0.0418	0.0525	mg/L	1	0.1	42	52	60.1 - 135

Matrix Spike (MS-1) Spiked Sample: 237459

QC Batch: 71929 Prep Batch: 61482 Date Analyzed: 2010-07-16 QC Preparation: 2010-07-15 Analyzed By: AR Prepared By: AR

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.

 $^{^3}$ MSD analyte out of range. MS/MSD has a RPD within limits. Therfore, MS shows extraction occured properly.

⁴MSD analyte out of range. MS/MSD has a RPD within limits. Therfore, MS shows extraction occured properly. ⁵MSD analyte out of range. MS/MSD has a RPD within limits. Therfore, MS shows extraction occured properly.

⁶Surrogate TFT out due to matrix interference. Sample was not reran due to lack of sample.

⁷Surrogate TFT out due to matrix interference. Sample was not reran due to lack of sample.

⁸Surrogate 4-BFB out due to matrix interference. Sample was not reran due to lack of sample.

⁹Surrogate 4-BFB out due to matrix interference. Sample was not reran due to lack of sample.

115-6403130

Work Order: 10071412 Celero/Rock Queen #7 TB Page Number: 9 of 10 Chavez County, NM

		MS			Spike	Matrix		Rec.
Param		Result	Units	Dil.	Amount	Result	${ m Rec.}$	Limit
Chloride	10	15500	$_{ m mg/L}$	100	2750	12350	114	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	11	15500	mg/L	100	2750	12350	114	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: 237459

QC Batch: 71929 Prep Batch: 61482 Date Analyzed: 2010-07-16 QC Preparation: 2010-07-15

Analyzed By: AR Prepared By: AR

		MS			Spike	Matrix		Rec.
Param		Result	Units	Dil.	Amount	Result	Rec.	Limit
Sulfate	12	2500	mg/L	100	2750	181	84	90 - 110

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

		MSD			Spike	Matrix		${ m Rec.}$		RPD
Param		Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Sulfate	13	2500	mg/L	100	2750	181	84	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: 71724

Date Analyzed: 2010-07-14

Analyzed By: AG

			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Benzene		mg/L	0.100	0.0986	99	80 - 120	2010-07-14
Toluene		mg/L	0.100	0.0974	97	80 - 120	2010-07-14
Ethylbenzene		mg/L	0.100	0.0912	91	80 - 120	2010-07-14
Xylene		mg/L	0.300	0.274	91	80 - 120	2010-07-14

Standard (CCV-2)

QC Batch: 71724

Date Analyzed: 2010-07-14

Analyzed By: AG

¹⁰Matrix spike recovery out of control limits due to peak interference. Use LCS/LCSD to demonstrate analysis is under control.

¹¹MSD analyte out of range. MS/MSD has a RPD within limits. Therfore, MS shows extraction occurred properly.

¹²Matrix spike recovery out of control limits due to peak interference. Use LCS/LCSD to demonstrate analysis is under control.

¹³MSD analyte out of range. MS/MSD has a RPD within limits. Therfore, MS shows extraction occurred properly.

115-6403130

Work Order: 10071412 Celero/Rock Queen #7 TB Page Number: 10 of 10 Chavez County, NM

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/L	0.100	0.0999	100	80 - 120	2010-07-14
Toluene		mg/L	0.100	0.100	100	80 - 120	2010-07-14
Ethylbenzene		mg/L	0.100	0.0966	97	80 - 120	2010-07-14
Xylene		mg/L	0.300	0.292	97	80 - 120	2010-07-14

Standard (ICV-1)

QC Batch: 71929

Date Analyzed: 2010-07-16

Analyzed By: AR

			ICVs	ICVs	ICVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Chloride		mg/L	25.0	27.3	109	90 - 110	2010-07-16

Standard (ICV-1)

QC Batch: 71929

Date Analyzed: 2010-07-16

Analyzed By: AR

			ICVs True	ICVs Found	ICVs Percent	Percent Recovery	Date
			rrue	round	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Sulfate		mg/L	25.0	23.9	96	90 - 110	2010-07-16

Standard (CCV-1)

QC Batch: 71929

Date Analyzed: 2010-07-16

Analyzed By: AR

			CCVs	CCVs	CCVs	Percent	ъ.
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Chloride		mg/L	25.0	26.9	108	90 - 110	2010-07-16

Standard (CCV-1)

QC Batch: 71929

Date Analyzed: 2010-07-16

Analyzed By: AR

			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	\mathbf{Date}
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Sulfate		mg/L	25.0	26.4	106	90 - 110	2010-07-16

ş RUSH Charge: Authorized: Results by: <u>e</u> Major Anions/Cations, pH,(TDS) AIRBILL #. - Return Orginal copy to Tetra Tech - Project Manager retains Pink copy - Accounting receives Gold copy. OTHER (RoteedsA) MJ9 (Circle or Specify Method No.) Alpha Beta (Air) ദ്രബധദ ഉക്ക ANALYSIS REQUEST PAGE: SAMPLED BY: (Print & Initial) / GP 909/0808 s,EOc SAMPLE SHIPPED BY; (Circle)
FEDEX
BUS
AGNO DELIVERED UPS
TETRA TECH CONTACT PERSON: 3C.MS Semi. Vol. 8270/625 Vol. 8240/8260/624 IOH TCLP Semi Volatiles Metals Ag As Ba Cd Vr Pd Hg Se RCRA Metals Ag As Ba Cd Cr Pb Hg (Ext. to C35) 3001XT 8015 MOD. STEX 802TB PRESERVATIVE METHOD HOME Analysis Request of Chain of Custody Record ICE Date:
Time:
Date:
Date: EONH HCF × 2 FILTERED (Y/N) TIME NUMBER OF CONTAINERS Laste Mid Valla (432) 682-4559 • Fax (432) 682-3946 RECEIVED BY: (Signature) RECEIVED BY: (Signature) SAMPLE IDENTIFICATION TETRA TECH 1910 N. Big Spring St. Order #: WOTHIR Midland, Texas 79705 SITE MANAGER: Chaves Cr. NM PROJECT NAME:
PR DATE 7/14/20E 38-ZIP. Time: Date: Time: 8ARD × 3.9°C NACK Please fill out all copies COMP STATE: -TX 3 XINTAM RECEIVING LABORATORY: Tray ADDRESS: ALEJAND STATE. CITY: 1345 TIME CONTACT: SAMPLE CONDITION WHEN RECEIVED: RELINQUISHED BY: (Signature) RELINQUISHED BY: (Signature) RELINQUISHED BY: (Signature) 115-6403130 DATE 2/5 2000 PROJECT NO.: CLIENT NAME: والم 23749 LAB I.D. NUMBER



6701 Aberdeen Avenue, Suite 9 200 East Sunset Road, Suite E 5002 Basin Street, Suite A1

Lubbock, Texas 79424 El Paso, Texas 79922 800 • 378 • 1296 888 • 588 • 3443 806 • 794 • 1296 915 • 585 • 3443 432 • 689 • 6301

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

Midland, Texas 79703

817 • 201 • 5260

FAX 432 • 689 • 6313

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

E-Mail lab@traceanalysis.com

Certifications

WBENC: 237019

HUB:

1752439743100-86536

DBE: VN 20657

Report Date: November 10, 2010

Work Order: 10101414

NCTRCA WFWB38444Y0909

NELAP Certifications

Lubbock: T104704219-08-TX

LELAP-02003 Kansas E-10317

El Paso: T104704221-08-TX LELAP-02002

Midland:

T104704392-08-TX

Analytical and Quality Control Report

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

Project Location:

Chavez County, 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
247533	MW-1	water	2010-10-13	09:15	2010-10-13

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 10 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

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

Case Narrative

Samples for project Celero/Rock Queen #7 TB were received by TraceAnalysis, Inc. on 2010-10-13 and assigned to work order 10101414. Samples for work order 10101414 were received intact without headspace and at a temperature of 3.5 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	63840	2010-10-14 at 13:40	74557	2010-10-14 at 18:04
Chloride (IC)	E 300.0	64403	2010-11-03 at 10:35	75072	2010-11-03 at 20:21
SO4 (IC)	E 300.0	64531	2010-11-09 at 10:50	75231	2010-11-09 at 22:48
TDS	SM 2540C	63873	2010-10-15 at 10:25	74622	2010-10-21 at 14:52

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 10101414 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 10, 2010 Work Order: 10101414 Page Number: 4 of 10 115-6403130 Chavez County, NM

Celero/Rock Queen #7 TB

Analytical Report

Sample: 247533 - MW-1

Laboratory: Midland

Analysis: **BTEX** QC Batch: 74557 Prep Batch: 63840

Analytical Method: S 8021B Date Analyzed: 2010-10-14 Sample Preparation: 2010-10-14

Prep Method: S 5030B Analyzed By: AG 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
Xvlene		< 0.00100	mg/L	1	0.00100

					Spike	Percent	Recovery
Surrogate	Flag	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)		0.0886	mg/L	1	0.100	89	66.2 - 107
4-Bromofluorobenzene (4-BFB)		0.0727	mg/L	1	0.100	73	39 - 138

Sample: 247533 - MW-1

Laboratory: Lubbock

Analysis: Chloride (IC) QC Batch: 75072 Prep Batch: 64403

Analytical Method: E 300.0 Date Analyzed: 2010-11-03 Sample Preparation: 2010-11-03

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

RLParameter Result Flag Units Dilution RLChloride 20000 mg/L 1000 2.50

Sample: 247533 - MW-1

Laboratory: Lubbock

Analysis: SO4 (IC) QC Batch: 75231 Prep Batch: 64531

Analytical Method: $\to 300.0$ Date Analyzed: 2010-11-09 Sample Preparation: 2010-11-09

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

RLParameter Flag Result Units Dilution RLSulfate 960 mg/L 50 2.50

115-6403130

Work Order: 10101414 Celero/Rock Queen #7 TB Page Number: 5 of 10 Chavez County, NM

Sample: 247533 - MW-1

Midland Laboratory:

Analysis: TDS QC Batch: 74622 63873 Prep Batch:

Analytical Method: Date Analyzed:

SM 2540C 2010-10-21 Sample Preparation: 2010-10-15 Prep Method: N/A Analyzed By: ARPrepared By: AR

RL

Parameter Flag Result Units Dilution RLTotal Dissolved Solids 48400 100 10.0 mg/L

Method Blank (1)

QC Batch: 74557

QC Batch: 74557 Prep Batch: 63840 Date Analyzed: 2010-10-14 QC Preparation: 2010-10-14 Analyzed By: AG Prepared By: AG

MDI

		MILLI		
Parameter	Flag	Result	Units	RL
Benzene		< 0.000400	mg/L	0.001
Toluene		< 0.000800	mg/L	0.001
Ethylbenzene		< 0.000400	mg/L	0.001
Xylene		< 0.000400	m mg/L	0.001

					Spike	Percent	Recovery
Surrogate	\mathbf{Flag}	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)		0.0893	mg/L	1	0.100	89	61.8 - 106
4-Bromofluorobenzene (4-BFB)		0.0784	$_{ m mg/L}$	1	0.100	78	48.5 - 129

Method Blank (1)

QC Batch: 74622

QC Batch: 74622 Prep Batch: 63873 Date Analyzed: 2010-10-21 QC Preparation: 2010-10-15 Analyzed By: AR Prepared By: AR

MDL

Parameter Flag Result Units RLTotal Dissolved Solids 11.0 10 mg/L

Method Blank (1)

QC Batch: 75072

QC Batch: 75072 Prep Batch: 64403

Date Analyzed: 2010-11-03 QC Preparation: 2010-11-03

Analyzed By: PG Prepared By: PG

115-6403130

Work Order: 10101414 Celero/Rock Queen #7 TB Page Number: 6 of 10 Chavez County, NM

		MDL		
Parameter	Flag	Result	Units	RL
Chloride		< 0.0350	mg/L	2.5

Method Blank (1)

QC Batch: 75231

QC Batch: 75231 Date Analyzed:

2010-11-09

Analyzed By: PG

Prep Batch:

64531

QC Preparation:

2010-11-09

Prepared By: PG

MDL

Parameter	Flag	Result	Units	RL
Sulfate		< 0.596	mg/L	2.5

Duplicates (2) Duplicated Sample: 247533

QC Batch:

74622

Date Analyzed:

2010-10-21

Analyzed By: AR

Prep Batch: 63873

QC Preparation:

2010-10-15

Prepared By: AR

	Duplicate	Sample				RPD
Param	Result	Result	Units	Dilution	RPD	Limit
Total Dissolved Solids	46600	11700	mg/L	100	4	10
Total Dissolved Solids	46600	48400	mg/L	100	4	10

Laboratory Control Spike (LCS-1)

QC Batch:

74557

Date Analyzed:

2010-10-14

Analyzed By: AG Prepared By: AG

Prep Batch: 63840

QC Preparation:

2010-10-14

LCS Spike Matrix Rec. Result Units Dil. Result Limit Param Amount Rec. Benzene 0.0939 mg/L 0.100 < 0.000400 80.7 - 117 1 94 < 0.000800 Toluene mg/L 1 0.10095 80.5 - 117 0.0947Ethylbenzene 0.0947mg/L 1 0.100 < 0.000400 95 79.2 - 117 74.1 - 120 **Xylene** 0.277mg/L 1 0.300 < 0.000400 92

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
Benzene	0.0950	mg/L	1	0.100	< 0.000400	95	80.7 - 117	1	20
Toluene	0.0975	mg/L	1	0.100	< 0.000800	98	80.5 - 117	3	20
Ethylbenzene	0.0968	mg/L	1	0.100	< 0.000400	97	79.2 - 117	2	20
Xylene	0.286	mg/L	1	0.300	< 0.000400	95	74.1 - 120	3	20

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

115-6403130

Work Order: 10101414 Celero/Rock Queen #7 TB Page Number: 7 of 10 Chavez County, NM

	LCS	LCSD			Spike	LCS	LCSD	Rec.
Surrogate	\mathbf{Result}	Result	\mathbf{Units}	Dil.	Amount	Rec .	Rec.	Limit
Trifluorotoluene (TFT)	0.0875	0.0904	mg/L	1	0.100	88	90	72.5 - 126
4-Bromofluorobenzene (4-BFB)	0.0805	0.0847	mg/L	1	0.100	80	85	48.3 - 135

Laboratory Control Spike (LCS-2)

QC Batch:

74622

Prep Batch: 63873

Date Analyzed:

2010-10-21

QC Preparation: 2010-10-15

Analyzed By: AR

Prepared By: AR

	LCS			\mathbf{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		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Total Dissolved Solids	1010	mg/L	1	1000	< 9.75	101	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:

75072

Prep Batch: 64403

Date Analyzed: QC Preparation:

2010-11-03 2010-11-03 Analyzed By: PG

Prepared By: PG

	$_{ m LCS}$			\mathbf{Spike}	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Chloride	24.4	mg/L	1	25.0	< 0.0350	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
Chloride	23.8	mg/L	1	25.0	< 0.0350	95	90 - 110	2	20

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

Laboratory Control Spike (LCS-1)

QC Batch: Prep Batch: 64531

75231

Date Analyzed:

2010-11-09

QC Preparation: 2010-11-09 Analyzed By: PG

Prepared By: PG

Rec. LCS Spike Matrix Dil. Amount Result Rec. Limit Param Result Units < 0.596 96 90 - 110 Sulfate 24.0 mg/L 1 25.0

115-6403130

Work Order: 10101414 Celero/Rock Queen #7 TB Page Number: 8 of 10 Chavez County, NM

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	23.9	mg/L	1	25.0	< 0.596	96	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: 247532

QC Batch: 74557 Prep Batch: 63840

Date Analyzed: 2010-10-14 QC Preparation: 2010-10-14 Analyzed By: AG Prepared By: AG

	MS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Benzene	0.107	mg/L	1	0.100	0.0048	102	60.9 - 132
Toluene	0.0929	mg/L	1	0.100	< 0.000800	93	65.7 - 129
Ethylbenzene	0.0881	mg/L	1	0.100	< 0.000400	88	51.5 - 134
Xylene	0.332	mg/L	1	0.300	< 0.000400	111	62.6 - 124

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
Benzene	1	0.0817	mg/L	1	0.100	0.0048	77	60.9 - 132	27	20
Toluene	2	0.0712	mg/L	1	0.100	< 0.000800	71	65.7 - 129	26	20
Ethylbenzene	3	0.0645	mg/L	1	0.100	< 0.000400	64	51.5 - 134	31	20
Xylene		0.283	mg/L	1	0.300	< 0.000400	94	62.6 - 124	16	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)	4 5	0.317	0.331	mg/L	1	0.1	317	331	75.1 - 117
4-Bromofluorobenzene (4-BFB)		0.0577	0.0585	mg/L	1	0.1	58	58	31.3 - 143

Matrix Spike (MS-1) Spiked Sample: 248210

QC Batch: 75072 Date Analyzed: 2010-11-03 Analyzed By: PG

Prep Batch: 64403

QC Preparation: 2010-11-03

Prepared By: PG

continued ...

¹MS/MSD RPD out of RPD Limits. Use LCS/LCSD to demonstrate analysis is under control.

 $^{^2\}mathrm{MS}/\mathrm{MSD}$ RPD out of RPD Limits. Use LCS/LCSD to demonstrate analysis is under control.

³MS/MSD RPD out of RPD Limits. Use LCS/LCSD to demonstrate analysis is under control.

⁴High surrogate recovery due to peak interference.

⁵High surrogate recovery due to peak interference.

115-6403130

Work Order: 10101414 Celero/Rock Queen #7 TB Page Number: 9 of 10 Chavez County, NM

matrix spikes continued . . .

	MS			Spike	Matrix		Rec .
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
	MS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Chloride	1300	mg/L	50	1250	<1.75	104	90 - 110

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

	MSD			\mathbf{Spike}	Matrix		${ m Rec.}$		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Chloride	1300	mg/L	50	1250	<1.75	104	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: 249831

QC Batch: 75231 Prep Batch: 64531 Date Analyzed: 2010-11-09 QC Preparation: 2010-11-09 Analyzed By: PG Prepared By: PG

	MS			Spike	Matrix		$\mathrm{Rec}_{\cdot\cdot}$
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Sulfate	1290	mg/L	50	1250	<29.8	103	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	1290	mg/L	50	1250	<29.8	103	90 - 110	0	20

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

Standard (CCV-2)

QC Batch: 74557

Date Analyzed: 2010-10-14

Analyzed By: AG

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	0.0941	94	80 - 120	2010-10-14
Toluene		m mg/L	0.100	0.0958	96	80 - 120	2010-10-14
Ethylbenzene		mg/L	0.100	0.0935	94	80 - 120	2010-10-14
Xylene		m mg/L	0.300	0.275	92	80 - 120	2010-10-14

Standard (CCV-3)

QC Batch: 74557

Date Analyzed: 2010-10-14

115-6403130

Work Order: 10101414 Celero/Rock Queen #7 TB Page Number: 10 of 10 Chavez County, NM

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/L	0.100	0.0998	100	80 - 120	2010-10-14
Toluene		mg/L	0.100	0.100	100	80 - 120	2010-10-14
Ethylbenzene		mg/L	0.100	0.0964	96	80 - 120	2010-10-14
Xylene		mg/L	0.300	0.288	96	80 - 120	2010-10-14

Standard (CCV-1)

QC Batch: 75072

Date Analyzed: 2010-11-03

Analyzed By: PG

			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	\mathbf{Units}	Conc.	Conc.	Recovery	Limits	${f Analyzed}$
Chloride		mg/L	25.0	25.0	100	90 - 110	2010-11-03

Standard (CCV-2)

QC Batch: 75072

Date Analyzed: 2010-11-03

Analyzed By: PG

			CCVs	CCVs	CCVs	Percent	
			${f True}$	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Chloride		mg/L	25.0	24.7	99	90 - 110	2010-11-03

Standard (CCV-1)

QC Batch: 75231

Date Analyzed: 2010-11-09

Analyzed By: PG

			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Sulfate		mg/L	25.0	23.7	95	90 - 110	2010-11-09

Standard (CCV-2)

QC Batch: 75231

Date Analyzed: 2010-11-09

Analyzed By: PG

			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Sulfate		mg/L	25.0	24.3	97	90 - 110	2010-11-09

Analysis Red	Reduest of Chain o	Beginest of Chain of Custody Becord	R	C	3	Н				Œ	PAGE:	$\left - \right $	$ ^{\circ} $	O.	
	dest of offi		-	3	3	T			(Creek	NALYS or Sp	ANALYSIS REQUEST (Circle or Specify Method No.)	UEST	Ğ.		
	TETRA TECH 1910 N. Big Spring St. Midland, Texas 79705 (432) 682-4559 • Fax (432) 66	TECH Spring St. (as 79705 Fax (432) 682-3946						I AL BE HO SE						\$ 0	
CLIENT NAME:	SITE MANAGER:	; · · · · · · · · · · · · · · · · · · ·	SHEMS	PRES	PRESERVATIVE METHOD	ш	MOIXT							THQ ,810	
PROJECT NO.: PROJ	PROJECT NAME:	ŗ. #					MOD.	A gA el			909/	e.			
LAB LD. DATE TIME EN SOL	ੇ ਹੈ BWHD	SAMPLE IDENTIFICATION	NUMBER OF FILTERED (HINOS	NONE	(ELEX BOSI)	07S8 HAM	TCLP Metal	TCLP Voletil	GC.MS Vol.	PCB's 808/60	Chloride? Germms Spo	Alog srigid recisA) MJ9	moinA volate	
34763 "7a Ser W) - MM X		4 0	2	- ×	*.						×		××	
		New Agricultural Communication of September 1975 of Communication of Commu													
								-	-	<u> </u>					
									 						
								1							
RELINDUISHED BY: (Sugnature)	Date:	RECEIVED BY: (Summire)		N P		1	3	APLED 8	SAMPLED BY: (Phys & helden)	G G	1	┧.	- 10 A	-	4
MELYNOUISHED BY, (Bigmatury)	Date: 14/1/C	RECEIVED BARBONATIONS TO		Deta F	go	200	T	PLE SH	PPED 8	SAMPLE SHIPPED BY: (Circle) FEDEX			AIRBILL #:		
RELINGUISHED BP: (Signature)				Dete	a sadar -	-	T	AND DEL	CONTA	MAND DELINERED UPS TETRA TECH CONTACT PERSON	ž		OTHER S	Resurts by:	
RECEIVING LABORATORY: (1226) ADORESS: (1712) CITY STATE TO CONTACT.	PROVE	RECEIVED BY: (Signature) DATE:	TIME		Transport of the second		Ι	4.5	1	K.11.4			医老	RUSH Charg Authorized: Yes	\$.
SAMPLE CONDITION WHEN PECEWED.	3.13.0 TR 111.0.516	SUL XSIM -P		بر	بر. رس	* ************************************	در.	سر السدار	1.	- 4		Ī			4



6701 Aberdeen Avenue, Suite 9 200 East Sunset Road, Suite E 5002 Basin Street, Suite A1

Lubbock, Texas 79424 El Paso, Texas 79922 Midland, Texas 79703

888 • 588 • 3443

806 • 794 • 1296 915 • 585 • 3443 432 • 689 • 6301

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

6015 Harris Parkway, Suite 110 Ft. Worth, Texas 76132 817 • 201 • 5260 E-Mail: lab@traceanalysis.com

Certifications

WBENC: 237019

HUB:

1752439743100-86536

DBE: VN 20657

NCTRCA WFWB38444Y0909

NELAP Certifications

Lubbock: T104704219-08-TX

LELAP-02003

Kansas E-10317

El Paso: T104704221-08-TX

LELAP-02002

Midland: T104704392-08-TX

Analytical and Quality Control Report

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

Report Date: February 3, 2011

Work Order: 11012129

Project Location: Chavez County, 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	1 ime	Date
Sample	Description	Matrix	Taken	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.

		Prep	Prep	$_{ m QC}$	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.

Report Date: February 3, 2011 Work Order: 11012129 Page Number: 4 of 18 115-6403130 Celero/Rock Queen #7 TB Chavez County, NM

Analytical Report

Sample: 255903 - MW-1

Midland Laboratory:

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

Prep Method: S 5030B Analyzed By: AGPrepared By: \mathbf{AG}

PG

PG

		RL			
Parameter	Flag	Result	Units	Dilution	RL
Benzene		< 0.00100	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

					Spike	Percent	Recovery
Surrogate	Flag	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: 255903 - MW-1

Laboratory: Lubbock

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

RLParameter Result Flag Units Dilution RLChloride 18200 1000 mg/L2.50

Sample: 255903 - MW-1

Laboratory: Lubbock

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

RLParameter Result Flag Units Dilution RLSulfate <2500 mg/L 1000 2.50 Report Date: February 3, 2011 Work Order: 11012129 Page Number: 5 of 18 115-6403130 Celero/Rock Queen #7 TB Chavez County, NM

Sample: 255903 - MW-1

Laboratory: Midland

Prep Method: N/A Analysis: TDS Analytical Method: SM 2540C Date Analyzed: QC Batch: 77161 2011-01-26 Analyzed By: ARPrepared By: Sample Preparation: 2011-01-24 ARPrep Batch: 66128

RL

Sample: 255904 - MW-2

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	m RL
Benzene		< 0.00100	mg/L	1	0.00100
Toluene		< 0.00100	mg/L	1	0.00100
Ethylbenzene		< 0.00100	m mg/L	1	0.00100
Xylene		< 0.00100	mg/L	1	0.00100

					\mathbf{Spike}	Percent	Recovery
Surrogate	Flag	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)		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

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

RL

Parameter	Flag	\mathbf{Result}	Units	Dilution	RL
Chloride		45100	mg/L	10000	2.50

Report Date: February 3, 2011 Work Order: 11012129 Page Number: 6 of 18 115-6403130 Celero/Rock Queen #7 TB Chavez County, NM

Sample: 255904 - MW-2

Laboratory: Lubbock

Analysis: SO4 (IC) QC Batch: 77367 Prep Batch: 66364 Analytical Method: E 300.0 Date Analyzed: 2011-02-01 Sample Preparation: 2011-02-01

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

RL Sameter Flag Result

Sample: 255904 - MW-2

Laboratory: Midland

Analysis: TDS QC Batch: 77161 Prep Batch: 66128 Analytical Method: SM 2540C Date Analyzed: 2011-01-26 Sample Preparation: 2011-01-24 Prep Method: N/A Analyzed By: AR Prepared By: AR

Sample: 255905 - MW-3

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	${f Flag}$	Result	Units	Dilution	RL
Benzene		< 0.00100	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

					Spike	Percent	Recovery
Surrogate	Flag	Result	Units	Dilution	Amount	Recovery	Limits
Triffuorotoluene (TFT)		0.108	mg/L	1	0.100	108	67.8 - 126
4-Bromofluorobenzene (4-BFB)		0.101	mg/L	1	0.100	101	51.1 - 128

Report Date: February 3, 2011 115-6403130				er: 11012129 Queen #7 TB	Page Number: Chavez Cour	
Sample: 25	5905 - MW-3					
Laboratory:	Lubbock					
Analysis:	Chloride (IC)		Analytical Metho	od: E 300.0	Prep Method:	N/A
QC Batch:	77266		Date Analyzed:	2011-01-30	Analyzed By:	\overrightarrow{PG}
Prep Batch:	66273		Sample Preparat	ion: 2011-01 -3 0	Prepared By:	PG
			RL			
Parameter	Flag		Result	Units	Dilution	RL
Chloride			47500	mg/L	5000	2.50
Sample: 25	5905 - MW-3					
Laboratory:	Lubbock					
Analysis:	SO4 (IC)		Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	77367		Date Analyzed:	2011-02-01	Analyzed By:	PG
Prep Batch:	66364		Sample Preparation	n: 2011-02-01	Prepared By:	PG
			RL			
Parameter	Flag		Result	Units	Dilution	RL
Sulfate			1750	$\mathrm{mg/L}$	50	2.50
Sanave						2.00
Sample: 258 Laboratory: Analysis: QC Batch:	5905 - MW-3 Midland TDS 77161 66128		Analytical Method: Date Analyzed: Sample Preparation	SM 2540C 2011-01-26	Prep Method: Analyzed By: Prepared By:	
Sample: 25 Laboratory: Analysis:	Midland TDS 77161		Analytical Method: Date Analyzed: Sample Preparation RL	SM 2540C 2011-01-26	Prep Method: Analyzed By: Prepared By:	N/A AR
Sample: 25: Laboratory: Analysis: QC Batch: Prep Batch:	Midland TDS 77161 66128	Flag	Analytical Method: Date Analyzed: Sample Preparation RL Result	SM 2540C 2011-01-26 a: 2011-01-24 Units	Prep Method: Analyzed By: Prepared By: Dilution	N/A AR AR RL
Sample: 25: Laboratory: Analysis: QC Batch: Prep Batch:	Midland TDS 77161 66128	Flag	Analytical Method: Date Analyzed: Sample Preparation RL	SM 2540C 2011-01-26 a: 2011-01-24	Prep Method: Analyzed By: Prepared By:	N/A AR AR
Sample: 25: Laboratory: Analysis: QC Batch: Prep Batch: Parameter Total Dissolv Sample: 25:	Midland TDS 77161 66128 ed Solids	Flag	Analytical Method: Date Analyzed: Sample Preparation RL Result	SM 2540C 2011-01-26 a: 2011-01-24 Units	Prep Method: Analyzed By: Prepared By: Dilution	N/A AR AR RL
Sample: 25: Laboratory: Analysis: QC Batch: Prep Batch: Parameter Total Dissolv Sample: 25: Laboratory:	Midland TDS 77161 66128 ed Solids 5906 - MW-4 Midland	Flag	Analytical Method: Date Analyzed: Sample Preparation RL Result 81800	SM 2540C 2011-01-26 a: 2011-01-24 Units mg/L	Prep Method: Analyzed By: Prepared By: Dilution 100	N/A AR AR RL 10.0
Sample: 25: Laboratory: Analysis: QC Batch: Prep Batch: Parameter Total Dissolv Sample: 25: Laboratory: Analysis:	Midland TDS 77161 66128 ed Solids 5906 - MW-4 Midland BTEX	Flag	Analytical Method: Date Analyzed: Sample Preparation RL Result 81800 Analytical Method:	SM 2540C 2011-01-26 a: 2011-01-24 Units mg/L	Prep Method: Analyzed By: Prepared By: Dilution 100 Prep Method: S	N/A AR AR RL 10.0
Sample: 25: Laboratory: Analysis: QC Batch: Prep Batch: Parameter Total Dissolv Sample: 25: Laboratory: Analysis: QC Batch:	Midland TDS 77161 66128 ed Solids 5906 - MW-4 Midland	Flag	Analytical Method: Date Analyzed: Sample Preparation RL Result 81800	SM 2540C 2011-01-26 a: 2011-01-24 Units mg/L	Prep Method: Analyzed By: Prepared By: Dilution 100 Prep Method: S Analyzed By: A	N/A AR AR RL 10.0
Sample: 25: Laboratory: Analysis: QC Batch: Prep Batch: Parameter Total Dissolv Sample: 25: Laboratory:	Midland TDS 77161 66128 ed Solids 5906 - MW-4 Midland BTEX 77124	Flag	Analytical Method: Date Analyzed: Sample Preparation RL Result 81800 Analytical Method: Date Analyzed: Sample Preparation:	SM 2540C 2011-01-26 a: 2011-01-24 Units mg/L S 8021B 2011-01-24	Prep Method: Analyzed By: Prepared By: Dilution 100 Prep Method: S Analyzed By: A	N/A AR AR RL 10.0
Sample: 25: Laboratory: Analysis: QC Batch: Prep Batch: Parameter Total Dissolv Sample: 25: Laboratory: Analysis: QC Batch:	Midland TDS 77161 66128 ed Solids 5906 - MW-4 Midland BTEX 77124 66157		Analytical Method: Date Analyzed: Sample Preparation RL Result 81800 Analytical Method: Date Analyzed: Sample Preparation: RL	SM 2540C 2011-01-26 a: 2011-01-24 Units mg/L S 8021B 2011-01-24 2011-01-24	Prep Method: Analyzed By: Prepared By: Dilution 100 Prep Method: S Analyzed By: A Prepared By: A	N/A AR AR 10.0
Sample: 258 Laboratory: Analysis: QC Batch: Prep Batch: Parameter Total Dissolv Sample: 258 Laboratory: Analysis: QC Batch: Prep Batch:	Midland TDS 77161 66128 ed Solids 5906 - MW-4 Midland BTEX 77124		Analytical Method: Date Analyzed: Sample Preparation RL Result 81800 Analytical Method: Date Analyzed: Sample Preparation:	SM 2540C 2011-01-26 a: 2011-01-24 Units mg/L S 8021B 2011-01-24	Prep Method: Analyzed By: Prepared By: Dilution 100 Prep Method: S Analyzed By: A Prepared By: A	N/A AR AR RL 10.0

 $continued \dots$

Report Date: February 3, 2011 115-6403130

Work Order: 11012129 Celero/Rock Queen #7 TB Page Number: 8 of 18 Chavez County, NM

sample 255906 continued ...

			RL	,				
Parameter	Flag		Result		Units	Dil	ution	RL
Ethylbenzene			< 0.00100		mg/L		1	0.00100
Xylene			< 0.00100)	mg/L		1	0.00100
						Spike	Percent	Recovery
Surrogate]	Flag	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)			0.114	mg/L	1	0.100	114	67.8 - 126
4-Bromofluorobenzene (4-BF	B)		0.103	mg/L	1	0.100	103	51.1 - 128

Sample: 255906 - MW-4

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

		RL			
Parameter	Flag	Result	Units	Dilution	RL
Chloride		279	mg/L	50	2.50

Sample: 255906 - MW-4

Laboratory: Lubbock

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

		RL			
Parameter	Flag	Result	Units	Dilution	RL
Sulfate		<125	mg/L	50	2.50

Sample: 255906 - MW-4

Laboratory: Midland

Analysis: TDS Analytical Method: SM 2540C Prep Method: N/A QC Batch: 77255 Date Analyzed: 2011-01-31 Analyzed By: AR Prep Batch: 66142 Sample Preparation: 2011-01-25 Prepared By: AR

		m RL			
Parameter	\mathbf{Flag}	Result	Units	Dilution	RL
Total Dissolved Solids		792	mg/L	2	10.0

Work Order: 11012129 Report Date: February 3, 2011

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 8021BPrep 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

RLParameter Flag Result Units Dilution RL0.00100 Benzene < 0.00100 mg/L 1 Toluene < 0.00100 mg/L 1 0.001001 Ethylbenzene < 0.00100 mg/L 0.00100Xylene < 0.00100 mg/L 1 0.00100

					\mathbf{Spike}	Percent	Recovery
Surrogate	Flag	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 Date Analyzed: QC Batch: 77266 2011-01-30 Analyzed By: PG Prep Batch: Sample Preparation: Prepared By: PG 66273 2011-01-30

RLResult Units Dilution Parameter Flag RL<12.5 2.50Chloride mg/L 5

Sample: 255907 - Rinseate

Laboratory: Lubbock

Analysis: SO4 (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

RLParameter Flag Result Units Dilution RLSulfate <12.5 2.50 mg/L 5

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: Date Analyzed:

SM 2540C 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	mg/L	0.001
Ethylbenzene		< 0.000800	m mg/L	0.001
Xylene		< 0.000767	mg/L	0.001

					Spike	Percent	Recovery
Surrogate	Flag	Result	Units	Dilution	Amount	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

MDL

Parameter	Flag	Result	Units	RL
Total Dissolved Solids		10.0	mg/L	10

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

Param

Total Dissolved Solids

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

Parameter	Fl	0.5	MDL Result	Units		RL
Total Dissolved Solids	FI	ag	10.0	mg/L		10
John Disserted Solids				0/ ~	14/4-00	
Method Blank (1)	QC Batch: 77266					
QC Batch: 77266		Date Analyzed:	2011-01-30		Analyzed By:	\mathbf{PG}
Prep Batch: 66273		QC Preparation:	2011-01-30		Prepared By:	PG
_			MDL			***
Parameter	Flag		esult	Units		RI
Chloride		<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
Parameter	Flag		fDL sult	Units		RI
Sulfate	1 1008		.126	mg/L		
Method Blank (1)	QC Batch: 77367					
QC Batch: 77367		Date Analyzed:	2011-02-01		Analyzed By:	PG
Prep Batch: 66364		QC Preparation:			Prepared By:	PG
			IDL			
Parameter	Flag		sult	Units		RI
Sulfate	4 110	<0	.126	mg/L		2.5
Duplicates (1) Du	plicated Sample: 2559	005				
QC Batch: 77161		Date Analyzed:	2011-01-26		Analyzed By:	AR
Prep Batch: 66128		QC Preparation:	2011-01-24		Prepared By:	AR
	Dupli	icate Sample	e			RPD
Dorom	Dog	ult Decult	Ilnita	Dilution	DDD	Limi

Result

81800

Units

mg/L

Dilution

100

RPD

Limit

10

Result

81500

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: QC Preparation: 2011-01-24

2011-01-31

Analyzed By: AR

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:

Date Analyzed:

2011-01-24

Analyzed By: AG Prepared By: AG

Prep Batch: 66157

QC Preparation: 2011-01-24

	LCS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	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	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:

77161

Prep Batch: 66128

Date Analyzed:

2011-01-26

Analyzed By: AR

QC Preparation: 2011-01-24 Prepared By: AR

	LCS			\mathbf{Spike}	Matrix		${ m Rec.}$
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Total Dissolved Solids	993	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

	LCSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	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:

77255

Date Analyzed:

2011-01-31

Analyzed By: AR

Prep Batch: 66142

QC Preparation: 2011-01-24

Prepared By: AR

	LCS			\mathbf{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		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:

77266

Date Analyzed:

2011-01-30

Analyzed By: PG

Prep Batch: 66273

QC Preparation: 2011-01-30

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

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
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:

77266

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 ...

	LCS			\mathbf{Spike}	Matrix		${ m Rec.}$
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
	LCS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec .	\mathbf{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: 77367 Prep Batch: 66364 Date Analyzed: 2011-02-01 QC Preparation: 2011-02-01 Analyzed By: PG 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			\mathbf{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: 2011-01-24 QC Preparation: 2011-01-24

Analyzed By: AG Prepared By: AG

		MS			Spike	Matrix		Rec.
Param		Result	Units	Dil.	Amount	Result	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.

115-6403130

Work Order: 11012129 Celero/Rock Queen #7 TB

Page Number: 15 of 18 Chavez County, NM

		MSD			Spike	Matrix		Rec.		RPD
Param		Result	Units	Dil.	Amount	Result	Rec.	\mathbf{Limit}	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			\mathbf{Spike}	MS	MSD	Rec.
Surrogate		Result	Result	Units	Dil.	Amount	Rec.	Rec.	Limit
Trifluorotoluene (TFT)	9	0.0705	0.0437	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

	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	\mathbf{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		${ m Rec.}$
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.

Report Date: February 3, 2011

115-6403130

Work Order: 11012129 Celero/Rock Queen #7 TB Page Number: 16 of 18 Chavez County, NM

	MSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	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) Spi

Spiked Sample: 256245

QC Batch: 77367 Prep Batch: 66364 Date Analyzed: 2011-02-01 QC Preparation: 2011-02-01

Analyzed By: PG Prepared By: PG

	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

			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Parain	Flag	Units	Conc.	Conc.	Recovery	Limits	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		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	CCVs	CCVs	Percent	
			True	Found	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		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

Report Date: February 3, 2011 Work Order: 11012129 Page Number: 17 of 18 115-6403130 Celero/Rock Queen #7 TB Chavez County, NM

Standard (CCV-3)

QC Batch: 77124 Date Analyzed: 2011-01-24 Analyzed By: AG

			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Benzene		mg/L	0.100	0.0820	82	80 - 120	2011-01-24
Toluene		mg/L	0.100	0.0952	95	80 - 120	2011-01-24
Ethylbenzene		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

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

Standard (CCV-2)

QC Batch: 77266 Date Analyzed: 2011-01-30 Analyzed By: PG

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

Report Date: February 3, 2011

115-6403130

Work Order: 11012129 Celero/Rock Queen #7 TI Page Number: 18 of 18

7 TB	Chavez County, NM

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

RUSH Charges Authorized: Major Anions/Cations, pH TDS AIRBILL #: ë OTHER (Circle or Specify Method No.) ANALYSIS REQUEST XXXIIInoch-Mhraides, Soy 1 PAGE SAMPLE SHIPPED BY: (Chros)
FEIDEX
GAND DELIVERED UPS
TETPA TECH CONTACT PERSON. CC'ME 2014! API: 8330/852 Jeff Kudley SAMPLED BY (Print & Initial) DE **LCEP Sorni Volatilles** Ag As Be Cd V Pd Hg Se HE AG AS BE Cd Cr Pb Hg Se OYS8 HAP 55 - ZK 95 1497 Hdl (Ext to C36) **9001X1** GOM STOR GLEX BOSIB PRESERVATIVE METHOD × HOME Analysis Request of Chain of Custody Record $\overline{\times}$ CE × Dete: SONH × > HCF 2 MY) DERETURE NUMBER OF CONTAINERS 7 > Sal OTEX SCENED IN CHARLES RECEIVED OF (Signatum) RECEIVED BY (Signature) (432) 682-4559 • Fax (432) 682-3946 RECEIVED BY: Bignature) 1135/11 SAMPLE IDENTIFICATION ľ TETRA TECH 1910 N. Big Spring St. Midland, Texas 79705 ١ -Midland * 100 A CON SITE MANAGER: الأدراف الإسلام A 25.27 Bundte A . i . i PROJECT NAME 3 Dere Pare Celevo PHONE BARD CONE 2 \Box XIHTAM STATE S36/ 2131 1645 200 inta (SAMPLE CONDITION WHEN PECENSO TIME 1811 PELINDUISHED BY: (Signeture) MODELLED BY: (Blondure RECEIVING LABORATORY: ADDRESS: CITY: (1) Hand DATE 02/ 75-64057 RELINGUISHED BY: (Sugn 1/10 21.2 CLIENT NAME: PROJECT NO.: to A9903 LAB I.D. NUMBER g ठु \$ CONTACE

- Accounting raceives Gold copy. copy to Tetra Tech

1

ş



5701 Aberdeen Avenue, Suite 9 200 East Sunset Road, Suite E 5002 Basin Street, Suite A1 6015 Harris Parkway, Suite 110 Ft. Worth, Texas 76132

Lubbock, Texas 79424 El Paso, Texas 79922 Midland, Texas 79703

800 • 378 • 1296 888 • 588 • 3443

806 • 794 • 1296 FAX 806 • 794 • 1298 915 • 585 • 3443 432 • 689 • 6301

817 • 201 • 5260

FAX 915 • 585 • 4944 FAX 432 • 689 • 6313

E-Mail: lab@traceanalysis.com

Certifications

 \mathbf{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

Michael ala

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
QC Batch 80419 - Method Blank (1)	10
QC Batch 80628 - Method Blank (1)	10
QC Batch 80628 - Method Blank (1)	10
QC Batch 80663 - Method Blank (1)	10
QC Batch 80663 - Method Blank (1)	11
QC Batch 80715 - Method Blank (1)	11
QC Batch 80715 - Duplicate (1)	11
	10
Laboratory Control Spikes	12
QC Batch 80419 - LCS (1)	12
QC Batch 80628 - LCS (1)	12
QC Batch 80628 - LCS (1)	13
QC Batch 80663 - LCS (1)	13
QC Batch 80663 - LCS (1)	13
QC Batch 80715 - LCS (1)	14
QC Batch 80628 - MS (1)	14
QC Batch 80628 - MS (1)	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
QC Batch 80628 - ICV (1)	17
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
QC Batch 80663 - CCV (1)	19
Appendix	20
Laboratory Certifications	20
Standard Flags	20
Attachments	20
	2017

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	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.

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

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

RLParameter Flag Cert Result Units Dilution RLBenzene < 0.00100 mg/L 0.00100 Toluene mg/L1 0.00100< 0.00100 1 Ethylbenzene < 0.00100 mg/L1 0.001001 Xylene < 0.00100 mg/L1 0.00100

						Spike	Percent	Recovery
Surrogate	Flag	Cert	Result	Units	Dilution	Amount	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: Chloride (IC) Analytical Method: Prep Method: N/A E 300.0 QC Batch: 80628 Date Analyzed: 2011-04-22 Analyzed By: ARPrep Batch: 68430 Sample Preparation: 2011-04-20 Prepared By: AR

Sample: 263892 - MW-1

Laboratory: Midland

Analysis: SO4 (IC) Analytical Method: E 300.0 Prep Method: N/A QC Batch: 80628 Date Analyzed: 2011-04-22 Analyzed By: ARPrep 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: 5 of 20

Chavez Co., NM

Sample: 263892 - MW-1

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

Sample: 263893 - MW-2

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

RLParameter Flag Cert Result Units Dilution RLBenzene 0.00680 mg/L 0.00100 1 0.00100Toluene < 0.00100 mg/L 1 1 Ethylbenzene < 0.00100 mg/L 0.001001 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

Analysis: Chloride (IC) 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

Report Date: April 27, 2011 115-6403130A		C	Work Order: elero/Rock Qu		Page Number: 6 of 20 Chavez Co., NM			
Sample: 263893 - MW-2								
Laboratory: Midland								
Analysis: SO4 (IC)		Analy	tical Method:	E 300.0		Prep Method:	N/A	
QC Batch: 80628		Date .	Analyzed:	2011-04-22		Analyzed By:	AR	
Prep Batch: 68430		Samp	e Preparation:	2011-04-20		Prepared By:	AR	
				RL				
Parameter	Flag	Ce	rt Re	esult	Units	Dilution	RL	
Sulfate		1	1	280	mg/L	100	2.50	
Sample: 263893 - MW-2								
Laboratory: Midland								
Analysis: TDS		Analyt	ical Method:	SM 2540C		Prep Method:	N/A	
QC Batch: 80715			nalyzed:	2011-04-26		Analyzed By:	AR	
Prep Batch: 68387			e Preparation:	2011-04-20		Prepared By:	AR	
				RL				
Parameter		Flag	Cert	Result	Units	Dilution	RL	
Total Dissolved Solids			1	33000	$_{ m mg/L}$	100	10.0	

Sample: 263894 - MW-3

La	bor	atory:	Midland
	_		

S~8021BAnalysis: BTEXAnalytical Method: QC Batch: 80419 Date Analyzed: 2011-04-18 Prep Batch: 68257 Sample Preparation: 2011-04-18

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

			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

						\mathbf{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-Bronofluorobenzene (4-BFB)		1	0.0998	mg/L	1	0.100	100	51.1 - 128

115-6403130A	port Date: April 27, 2011 5-6403130A			Work Order: 11041526 Celero/Rock Queen Tract #7					
Sample: 2638	394 - MW-3								
Analysis: C QC Batch: 8	Midland Chloride (IC) 80628 88430		Date	ytical Method Analyzed: ole Preparatio	2011-04-2		Prep Method: Analyzed By: Prepared By:	N/A AR AR	
Parameter		Elo <i>a</i>	Cer	. D	RL esult	Units	Dilution	DI	
Chloride		Flag	1 1		5100	mg/L	500	RL 2.50	
Sample: 2638									
•	Midland SO4 (IC)		Analyt	ical Method:	E 300.0		Prep Method:	N/A	
•	80628			nalyzed:	2011-04-22		Analyzed By:	AR	
Prep Batch: 6	68430		Sample	Preparation:	2011-04-20		Prepared By:	AR	
Parameter		Flag	Cer	· R	RL esult	Units	Dilution	RL	
Sulfate		1165	1		170	mg/L	50	2.50	
Analysis: T QC Batch: 8	94 - MW-3 Midland FDS 9715 8387		Date A	cal Method: nalyzed: Preparation:	SM 2540C 2011-04-26 2011-04-20		Prep Method: Analyzed By: Prepared By:	N/A AR AR	
2 Top 2500011. 0			Dampio	1 topulation.	RL		2 repared by:	1110	
Parameter			Flag	Cert	Result	Units	Dilution	RL	
	Solids			1	41000	mg/L	100	10.0	

continued ...

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

 $sample\ 263895\ continued\ \dots$

D	T)		<i>a</i> .		RL	***		D1	DI
Parameter	Flag		Cert		Result	Uni	ts	Dilution	RL
					RL				
Parameter	Flag		Cert		Result	Unit	ts	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	11	0.00100
							Spike	Percent	Recovery
Surrogate]	Flag	Cert	Result	Units	Dilution	Amount	_	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

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

Sample: 263895 - MW-4

Laboratory: Midland

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

Report Date: April 27, 2011 115-6403130A	(Work Order: 11041526 Celero/Rock Queen Tract #7			Page Number: Chavez C	
Sample: 263895 - MW-4						
Laboratory: Midland						
Analysis: TDS	Analy	tical Method:	SM 2540C		Prep Method:	N/A
QC Batch: 80715	Date	Analyzed:	2011-04-26		Analyzed By:	m AR
Prep Batch: 68387	Samp	Sample Preparation:			Prepared By:	AR
			RL			
Parameter	Flag	Cert	Result	Units	Dilution	RL
Total Dissolved Solids		1	3330	m mg/L	5	10.0

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

			\mathbf{MDL}		
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

						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	RL
Chloride		1	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		1	< 0.177	mg/L	2.5

Report Date: April 27, 115-6403130A	2011	Work Orde Celero/Rock C	er: 11041526 Queen Tract #	¥7	Page Number: 11 Chavez Co.,			
Method Blank (1)	QC Batch: 80663							
QC Batch: 80663 Prep Batch: 68436		Date Analyzed: QC Preparation:	2011-04-26 2011-04-25			Analyzed By: Prepared By:	AR AR	
Parameter	Flag	Cert		$rac{ ext{MDL}}{ ext{Result}}$	1	Units	RL	
Chloride		1		0.878		ng/L	2.5	
Method Blank (1)	QC Batch: 80663							
QC Batch: 80663		Date Analyzed:	2011-04-26			Analyzed By:	AR	
Prep Batch: 68436		QC Preparation:	2011-04-25			Prepared By:	AR	
Parameter	Flag	Cert		MDL Result	1	Units	RL	
Sulfate		1		<0.177		ng/L	2.5	
Method Blank (1)	QC Batch: 80715							
QC Batch: 80715		Date Analyzed:	2011-04-26			Analyzed By:	$\mathbf{A}\mathbf{R}$	
Prep Batch: 68387		QC Preparation:	2011-04-20			Prepared By:	AR	
Parameter		Flag	Cert	MDL Result		Units	RL	
Total Dissolved Solids		1105	1	< 9.75		mg/L	10	
Duplicates (1) Dupl	icated Sample: 2638	95						
QC Batch: 80715 Prep Batch: 68387		Date Analyzed: QC Preparation:	2011-04-26 2011-04-20			Analyzed By: Prepared By:	AR AR	
D		Duplicate	Sample	**	Dil	200	RPD	
Param Total Dissolved Solids	-	Result 3480	Result 3330	Units mg/L	Dilution 5	RPD 4	Limit 10	
Even Figurian Doug	1	0400	0000	IIIR/ D	0	1	10	

Work Order: 11041526 Celero/Rock Queen Tract #7

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 80419 Prep Batch: 68257 Date Analyzed: 2011-04-18 QC Preparation: 2011-04-18 Analyzed By: ME Prepared By: ME

Page Number: 12 of 20 Chavez Co., NM

			LCS			Spike	Matrix		Rec.
Param	\mathbf{F}	$^{\rm C}$	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	$\mathrm{mg/L}$	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	\mathbf{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	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)	t	0.119	0.116	$\mathrm{mg/L}$	1	0.100	119	116	68.2 - 124

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			\mathbf{Spike}	Matrix		Rec.
Param	\mathbf{F}	$^{\rm C}$	Result	Units	Dil.	Amount	Result	Rec.	Limit
Chloride		1	24.6	mg/L	1	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.

 $continued \dots$

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

control	snikes	continued		
(1/14/1/1/1/	$a \mu u u c a$	COMMINGE		

Param	F	С	LCSD Result	Units	Dil.	$\begin{array}{c} {\rm Spike} \\ {\rm Amount} \end{array}$	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			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

Date Analyzed: 20

2011-04-22 Analyzed By: AR

Prep Batch: 68430 QC Preparation: 2011-04-20

Prepared By: AR

			LCS			Spike	Matrix		Rec.
Param	\mathbf{F}	$^{\rm C}$	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	\mathbf{F}	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Sulfate		ì	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			\mathbf{Spike}	Matrix		Rec.
Param	\mathbf{F}	$^{\rm C}$	Result	Units	Dil.	Amount	Result	Rec .	Limit
Chloride		1	25.3	mg/L	1	25.0	< 0.265	101	90 - 110

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

			LCSD			\mathbf{Spike}	Matrix		${ m Rec.}$		RPD
Param	\mathbf{F}	$^{\rm C}$	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

115-6403130A

Work Order: 11041526 Celero/Rock Queen Tract #7 Page Number: 14 of 20 Chavez Co., NM

Laboratory Control Spike (LCS-1)

QC Batch:

Prep Batch: 68436

80663

Date Analyzed:

2011-04-26

Analyzed By: AR

QC Preparation: 2011-04-25

Prepared By: AR

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

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

			LCSD			Spike	Matrix		Rec.		RPD
Param	\mathbf{F}	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Sulfate		1	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: 68387

80715

Date Analyzed:

2011-04-26

Analyzed By: AR

Prepared By: AR

			LCS			Spike	Matrix		Rec.
Param	F	$^{\rm C}$	Result	Units	Dil.	Amount	Result	Rec.	$_{ m Limit}$
Total Dissolved Solids		1	966	mg/L	1	1000	< 9.75	97	90 - 110

QC Preparation: 2011-04-20

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

			LCSD			\mathbf{Spike}	Matrix		Rec.		RPD
Param	\mathbf{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

Date Analyzed:

2011-04-22

Analyzed By: AR

Prep Batch: 68430

QC Preparation: 2011-04-20

Prepared By: AR

			MS			Spike	Matrix		Rec.
Param	F	\mathbf{C}	Result	Units	Dil.	${f Amount}$	Result	Rec.	Limit
Chloride		1	3430	mg/L	100	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	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 Date Analyzed: 2011-04-22 Analyzed By: AR

Prep Batch: 68430

QC Preparation: 2011-04-20

Prepared By: AR.

			MS			Spike	Matrix		Rec.
Param	F	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			\mathbf{Spike}	Matrix		Rec.		RPD
Param	\mathbf{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	\mathbf{F}	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit
Chloride		1	1400	nıg/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	nıg/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.

Work Order: 11041526 Celero/Rock Queen Tract #7 Page Number: 16 of 20 Chavez Co., NM

			MS			Spike	Matrix		Rec.
Param	\mathbf{F}	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit
Sulfate		1	1200	mg/L	50	1380	32	85	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.	\mathbf{Limit}	RPD	Limit
Sulfate		1	1240	mg/L	50	1380	32	88	90 - 110	3	20

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

Work Order: 11041526 Celero/Rock Queen Tract #7

Calibration Standards

Standard (CCV-2)

QC Batch: 80419

Date Analyzed: 2011-04-18

Analyzed By: ME

Page Number: 17 of 20

Chavez Co., NM

				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	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	CCVs	CCVs	Percent	
				\mathbf{True}	Found	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	$\mathrm{mg/L}$	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	\mathbf{Flag}	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Chloride		1	mg/L	25.0	24.1	96	90 - 110	2011-04-22

Standard (ICV-1)

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

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

				ICVs True	ICVs Found	ICVs Percent	Percent Recovery	Date
Param	\mathbf{Flag}	Cert	$_{ m Units}$	Conc.	Conc.	Recovery	Limits	Analyzed
Sulfate		1	$_{ m mg/L}$	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	\mathbf{Flag}	Cert	$_{ m Units}$	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	nıg/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

Work Order: 11041526 Celero/Rock Queen Tract #7 Page Number: 19 of 20 Chavez Co., NM

				ICVs	ICVs	ICVs	Percent	
				True	Found	Percent	Recovery	Date
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	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	\mathbf{Units}	Conc.	Conc.	Recovery	Limits	${\bf Analyzed}$
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	${f Units}$	Conc.	Conc.	Recovery	Limits	Analyzed
Sulfate		1	nig/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
$^{\rm C}$	Authority	Number	Location
-	NCTRCA	WFWB384444Y0909	TraceAnalysis
-	DBE	VN 20657	TraceAnalysis
-	HUB	1752439743100-86536	TraceAnalysis
-	$_{ m WBE}$	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#: Nou15ab