

BW - ____22____

ANALYTICAL

Summary Report

Lester Waynce Price Jr.
Price LLC
312 Encantado Ridge Ct. NE
Rio Rancho, NM 87124

Report Date: February 17, 2015

Work Order: 15012304



Project Location: Tatum, NM
Project Name: Brine Well-Tatum

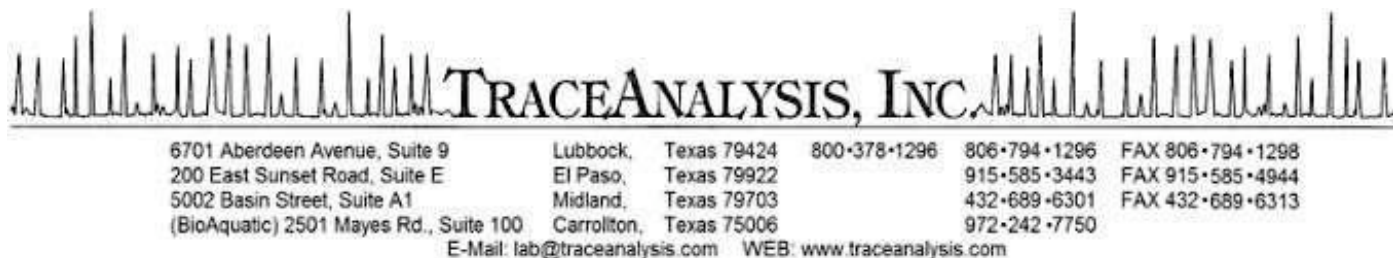
Sample	Description	Matrix	Date Taken	Time Taken	Date Received
385127	Fresh	water	2015-01-16	06:17	2015-01-21
385128	Brine	water	2015-01-16	06:25	2015-01-21

Sample: 385127 - Fresh

Param	Flag	Result	Units	RL
Chloride		71.6	mg/L	2.5
Dissolved Sodium	Qs	75.9	mg/L	1
pH		8.20	s.u.	2
Specific Gravity		0.9861	g/ml	
Total Dissolved Solids		642	mg/L	2.5

Sample: 385128 - Brine

Param	Flag	Result	Units	RL
Chloride	H	16000	mg/L	2.5
Dissolved Sodium	Qs	11400	mg/L	1
pH		6.16	s.u.	2
Specific Gravity		1.027	g/ml	
Total Dissolved Solids		31000	mg/L	2.5



Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

Analytical and Quality Control Report

Lester Wayne Price Jr.
Price LLC
312 Encantado Ridge Ct. NE
Rio Rancho, NM, 87124

Report Date: February 17, 2015

Work Order: 15012304



Project Location: Tatum, NM
Project Name: Brine Well-Tatum
Project Number: Brine Well-Tatum

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

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
385127	Fresh	water	2015-01-16	06:17	2015-01-21
385128	Brine	water	2015-01-16	06:25	2015-01-21

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

Dr. Blair Leftwich, Director
James Taylor, Assistant Director
Brian Pellam, Operations Manager

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Case Narrative

Samples for project Brine Well-Tatum were received by TraceAnalysis, Inc. on 2015-01-21 and assigned to work order 15012304. Samples for work order 15012304 were received intact at a temperature of 2.0 C.

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

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
Chloride (IC)	E 300.0	100958	2015-02-13 at 15:00	119384	2015-02-13 at 18:06
Chloride (IC)	E 300.0	100982	2015-02-16 at 12:00	119410	2015-02-16 at 12:53
Na, Dissolved	S 6010C	100546	2015-01-27 at 17:40	119127	2015-02-06 at 09:23
pH	SM 4500-H+	100544	2015-01-27 at 04:00	118893	2015-01-27 at 16:44
Specific Gravity	ASTM D1429-95	100533	2015-01-27 at 13:00	118885	2015-01-27 at 13:10
TDS	SM 2540C	100553	2015-01-26 at 09:00	118905	2015-01-26 at 17:00

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

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 15012304 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

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Brine Well-Tatum

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Brine Well-Tatum

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Tatum, NM

Analytical Report

Sample: 385127 - Fresh

Laboratory:	Lubbock	Analytical Method:	E 300.0	Prep Method:	N/A
Analysis:	Chloride (IC)	Date Analyzed:	2015-02-13	Analyzed By:	RL
QC Batch:	119384	Sample Preparation:		Prepared By:	RL
Prep Batch:	100958				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	B	1,2,3,4,5	71.6	mg/L	10	2.50

Sample: 385127 - Fresh

Laboratory:	Lubbock	Analytical Method:	S 6010C	Prep Method:	S 3005A
Analysis:	Na, Dissolved	Date Analyzed:	2015-02-06	Analyzed By:	RR
QC Batch:	119127	Sample Preparation:	2015-01-27	Prepared By:	RR
Prep Batch:	100546				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Dissolved Sodium	Qs	2,3,4,5	75.9	mg/L	1	1.00

Sample: 385127 - Fresh

Laboratory:	Lubbock	Analytical Method:	SM 4500-H+	Prep Method:	N/A
Analysis:	pH	Date Analyzed:	2015-01-27	Analyzed By:	AT
QC Batch:	118893	Sample Preparation:	2015-01-27	Prepared By:	AT
Prep Batch:	100544				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
pH		1,2,4,5	8.20	s.u.	1	2.00

Sample: 385127 - Fresh

Laboratory:	Lubbock	Analytical Method:	ASTM D1429-95	Prep Method:	N/A
Analysis:	Specific Gravity	Date Analyzed:	2015-01-27	Analyzed By:	CF
QC Batch:	118885	Sample Preparation:	2015-01-27	Prepared By:	CF
Prep Batch:	100533				

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Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Specific Gravity			0.9861	g/ml	1	0.000

Sample: 385127 - Fresh

Laboratory: Lubbock

Analysis: TDS

QC Batch: 118905

Prep Batch: 100553

Analytical Method: SM 2540C

Date Analyzed: 2015-01-26

Sample Preparation:

Prep Method: N/A

Analyzed By: RL

Prepared By: RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		1,2,3,4,5	642	mg/L	20	2.50

Sample: 385128 - Brine

Laboratory: Lubbock

Analysis: Chloride (IC)

QC Batch: 119410

Prep Batch: 100982

Analytical Method: E 300.0

Date Analyzed: 2015-02-16

Sample Preparation:

Prep Method: N/A

Analyzed By: RL

Prepared By: RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	H	1,2,3,4,5	16000	mg/L	1000	2.50

Sample: 385128 - Brine

Laboratory: Lubbock

Analysis: Na, Dissolved

QC Batch: 119127

Prep Batch: 100546

Analytical Method: S 6010C

Date Analyzed: 2015-02-06

Sample Preparation: 2015-01-27

Prep Method: S 3005A

Analyzed By: RR

Prepared By: RR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Dissolved Sodium	Qs	2,3,4,5	11400	mg/L	100	1.00

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Sample: 385128 - Brine

Laboratory: Lubbock

Analysis: pH

QC Batch: 118893

Prep Batch: 100544

Analytical Method: SM 4500-H+

Date Analyzed: 2015-01-27

Sample Preparation: 2015-01-27

Prep Method: N/A

Analyzed By: AT

Prepared By: AT

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
pH		1,2,4,5	6.16	s.u.	1	2.00

Sample: 385128 - Brine

Laboratory: Lubbock

Analysis: Specific Gravity

QC Batch: 118885

Prep Batch: 100533

Analytical Method: ASTM D1429-95

Date Analyzed: 2015-01-27

Sample Preparation: 2015-01-27

Prep Method: N/A

Analyzed By: CF

Prepared By: CF

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Specific Gravity			1.027	g/ml	1	0.000

Sample: 385128 - Brine

Laboratory: Lubbock

Analysis: TDS

QC Batch: 118905

Prep Batch: 100553

Analytical Method: SM 2540C

Date Analyzed: 2015-01-26

Sample Preparation:

Prep Method: N/A

Analyzed By: RL

Prepared By: RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		1,2,3,4,5	31000	mg/L	1000	2.50

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Method Blanks

Method Blank (1) QC Batch: 118885

QC Batch: 118885 Date Analyzed: 2015-01-27 Analyzed By: CF
Prep Batch: 100533 QC Preparation: 2015-01-27 Prepared By: CF

Parameter	Flag	Cert	MDL Result	Units	RL
Specific Gravity			0.9916	g/ml	

Method Blank (1) QC Batch: 118905

QC Batch: 118905 Date Analyzed: 2015-01-26 Analyzed By: RL
Prep Batch: 100533 QC Preparation: 2015-01-26 Prepared By: RL

Parameter	Flag	Cert	MDL Result	Units	RL
Total Dissolved Solids		1,2,3,4,5	<25.0	mg/L	2.5

Method Blank (1) QC Batch: 119127

QC Batch: 119127 Date Analyzed: 2015-02-06 Analyzed By: RR
Prep Batch: 100546 QC Preparation: 2015-01-27 Prepared By: PM

Parameter	Flag	Cert	MDL Result	Units	RL
Dissolved Sodium		2,3,4,5	<0.0184	mg/L	1

Method Blank (1) QC Batch: 119384

QC Batch: 119384 Date Analyzed: 2015-02-13 Analyzed By: RL
Prep Batch: 100958 QC Preparation: 2015-02-13 Prepared By: RL

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Parameter	Flag	Cert	MDL Result	Units	RL
Chloride		1,2,3,4,5	0.826	mg/L	2.5

Method Blank (1) QC Batch: 119410

QC Batch: 119410	Date Analyzed: 2015-02-16	Analyzed By: RL
Prep Batch: 100982	QC Preparation: 2015-02-16	Prepared By: RL

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride		1,2,3,4,5	0.767	mg/L	2.5

Duplicates

Duplicates (1) Duplicated Sample: 385269

QC Batch: 118885 Date Analyzed: 2015-01-27 Analyzed By: CF
Prep Batch: 100533 QC Preparation: 2015-01-27 Prepared By: CF

Param	Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
Specific Gravity	1.074	1.072	g/ml	1	0	200

Duplicates (1) Duplicated Sample: 385269

QC Batch: 118893 Date Analyzed: 2015-01-27 Analyzed By: AT
Prep Batch: 100544 QC Preparation: 2015-01-27 Prepared By: AT

Param	Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
pH	6.79	6.78	s.u.	1	0	20

Duplicates (1) Duplicated Sample: 385130

QC Batch: 118905 Date Analyzed: 2015-01-26 Analyzed By: RL
Prep Batch: 100553 QC Preparation: 2015-01-26 Prepared By: RL

Param	Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
Total Dissolved Solids	850	806	mg/L	20	5	10

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Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 118905
Prep Batch: 100553

Date Analyzed: 2015-01-26
QC Preparation: 2015-01-26

Analyzed By: RL
Prepared By: RL

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Total Dissolved Solids		1,2,3,4,5	988	mg/L	10	1000	<25.0	99	90 - 110

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Total Dissolved Solids		1,2,3,4,5	978	mg/L	10	1000	<25.0	98	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: 119127
Prep Batch: 100546

Date Analyzed: 2015-02-06
QC Preparation: 2015-01-27

Analyzed By: RR
Prepared By: PM

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Dissolved Sodium		2,3,4,5	56.0	mg/L	1	52.5	<0.0184	107	85 - 115

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Dissolved Sodium		2,3,4,5	57.2	mg/L	1	52.5	<0.0184	109	85 - 115	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: 119384
Prep Batch: 100958

Date Analyzed: 2015-02-13
QC Preparation: 2015-02-13

Analyzed By: RL
Prepared By: RL

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Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1,2,3,4,5	24.1	mg/L	1	25.0	0.826	93	90 - 110

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		1,2,3,4,5	24.3	mg/L	1	25.0	0.826	94	90 - 110	1	20

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

Laboratory Control Spike (LCS-1)

QC Batch: 119410
Prep Batch: 100982

Date Analyzed: 2015-02-16
QC Preparation: 2015-02-16

Analyzed By: RL
Prepared By: RL

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1,2,3,4,5	24.0	mg/L	1	25.0	0.767	93	90 - 110

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		1,2,3,4,5	23.5	mg/L	1	25.0	0.767	91	90 - 110	2	20

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

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Matrix Spikes

Matrix Spike (xMS-1) Spiked Sample: 385041

QC Batch: 119127
Prep Batch: 100546

Date Analyzed: 2015-02-06
QC Preparation: 2015-01-27

Analyzed By: RR
Prepared By: PM

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Dissolved Sodium		2,3,4,5	1660	mg/L	1	525	1210	86	75 - 125

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

Param	F		C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Dissolved Sodium	Q _s	Q _s	2,3,4,5	1580	mg/L	1	525	1210	70	75 - 125	5	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: 385127

QC Batch: 119384
Prep Batch: 100958

Date Analyzed: 2015-02-13
QC Preparation: 2015-02-13

Analyzed By: RL
Prepared By: RL

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1,2,3,4,5	319	mg/L	10	250	71.6	99	80 - 120

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		1,2,3,4,5	312	mg/L	10	250	71.6	96	80 - 120	2	20

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

Matrix Spike (MS-1) Spiked Sample: 386889

QC Batch: 119410
Prep Batch: 100982

Date Analyzed: 2015-02-16
QC Preparation: 2015-02-16

Analyzed By: RL
Prepared By: RL

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1,2,3,4,5	3350	mg/L	100	2500	812	102	80 - 120

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		1,2,3,4,5	3290	mg/L	100	2500	812	99	80 - 120	2	20

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

Calibration Standards

Standard (ICV-1)

QC Batch: 118893

Date Analyzed: 2015-01-27

Analyzed By: AT

Param	Flag	Cert	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
pH		1,2,4,5	s.u.	7.00	7.01	100	98.6 - 101.4	2015-01-27

Standard (CCV-1)

QC Batch: 118893

Date Analyzed: 2015-01-27

Analyzed By: AT

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
pH		1,2,4,5	s.u.	7.00	7.01	100	98.6 - 101.4	2015-01-27

Standard (ICV-1)

QC Batch: 119127

Date Analyzed: 2015-02-06

Analyzed By: RR

Param	Flag	Cert	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dissolved Sodium		2,3,4,5	mg/L	51.0	51.7	101	90 - 110	2015-02-06

Standard (CCV-1)

QC Batch: 119127

Date Analyzed: 2015-02-06

Analyzed By: RR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dissolved Sodium		2,3,4,5	mg/L	51.0	55.9	110	90 - 110	2015-02-06

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Standard (CCV-1)

QC Batch: 119384

Date Analyzed: 2015-02-13

Analyzed By: RL

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1,2,3,4,5	mg/L	25.0	23.6	94	90 - 110	2015-02-13

Standard (CCV-2)

QC Batch: 119384

Date Analyzed: 2015-02-13

Analyzed By: RL

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1,2,3,4,5	mg/L	25.0	23.8	95	90 - 110	2015-02-13

Standard (CCV-1)

QC Batch: 119410

Date Analyzed: 2015-02-16

Analyzed By: RL

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1,2,3,4,5	mg/L	25.0	23.8	95	90 - 110	2015-02-16

Standard (CCV-2)

QC Batch: 119410

Date Analyzed: 2015-02-16

Analyzed By: RL

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1,2,3,4,5	mg/L	25.0	23.9	96	90 - 110	2015-02-16

Appendix

Report Definitions

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

Laboratory Certifications

C	Certifying Authority	Certification Number	Laboratory Location
-	NCTRCA	WFWB384444Y0909	TraceAnalysis
-	DBE	VN 20657	TraceAnalysis
-	HUB	1752439743100-86536	TraceAnalysis
-	WBE	237019	TraceAnalysis
1	PJLA	L14-93	Lubbock
2	Kansas	Kansas E-10317	Lubbock
3	LELAP	LELAP-02003	Lubbock
4	NELAP	T104704219-14-10	Lubbock
5		2014-018	Lubbock

Standard Flags

F	Description
B	Analyte detected in the corresponding method blank above the method detection limit
H	Analyzed out of hold time
J	Estimated concentration
Jb	The analyte is positively identified and the value is approximated between the SDL and MQL. Sample contains less then ten times the concentration found in the method blank. The result should be considered non-detect to the SDL.
Je	Estimated concentration exceeding calibration range.
MI1	Split peak or shoulder peak
MI2	Instrument software did not integrate
MI3	Instrument software misidentified the peak
MI4	Instrument software integrated improperly
MI5	Baseline correction
Qc	Calibration check outside of laboratory limits.
Qr	RPD outside of laboratory limits
Qs	Spike recovery outside of laboratory limits.
Qsr	Surrogate recovery outside of laboratory limits.

F	Description
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.

TraceAnalysis, Inc.

email: lab@traceanalysis.com

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1 (888) 588-3443

BioAquatic Testing
2501 Mayes Rd., Ste 100
Carrollton, Texas 75006
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[illegible]

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C. O. C.

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Summary Report

Wayne Price
Price LLC
312 Encantado Ridge Ct. NE
Rio Rancho, NM 87124

Report Date: July 31, 2014

Work Order: 14072110



Project Location: Buckeye, NM-Tatum, NM
Project Name: Quarterly Samples
Project Number: Buckeye Station-Tatum Station

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
368929	BS FW	water	2014-07-17	13:05	2014-07-17
368930	BS BW	water	2014-07-17	13:08	2014-07-17
368931	TS FW	water	2014-07-17	13:59	2014-07-17
368932	TS BW	water	2014-07-17	14:03	2014-07-17

Sample: 368929 - BS FW

Param	Flag	Result	Units	RL
Chloride		341	mg/L	2.5
Density		0.995	g/ml	
pH		7.62	s.u.	2
Total Dissolved Solids	Qr	864	mg/L	2.5

Sample: 368930 - BS BW

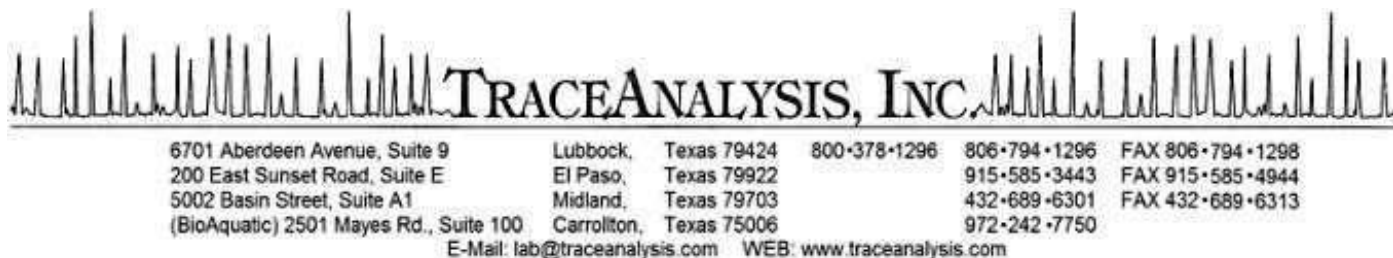
Param	Flag	Result	Units	RL
Chloride		200000	mg/L	2.5
Density		1.20	g/ml	
Dissolved Sodium		149000	mg/L	1
pH		6.90	s.u.	2
Total Dissolved Solids		295000	mg/L	2.5

Sample: 368931 - TS FW

Param	Flag	Result	Units	RL
Chloride		76.8	mg/L	2.5
Density		0.994	g/ml	
pH		9.30	s.u.	2
Total Dissolved Solids		639	mg/L	2.5

Sample: 368932 - TS BW

Param	Flag	Result	Units	RL
Chloride		17900	mg/L	2.5
Density		1.02	g/ml	
Dissolved Sodium		11300	mg/L	1
pH		6.21	s.u.	2
Total Dissolved Solids		34600	mg/L	2.5



Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

Analytical and Quality Control Report

Wayne Price
Price LLC
312 Encantado Ridge Ct. NE
Rio Rancho, NM, 87124

Report Date: July 31, 2014

Work Order: 14072110



Project Location: Buckeye, NM-Tatum, NM
Project Name: Quarterly Samples
Project Number: Buckeye Station-Tatum Station

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

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
368929	BS FW	water	2014-07-17	13:05	2014-07-17
368930	BS BW	water	2014-07-17	13:08	2014-07-17
368931	TS FW	water	2014-07-17	13:59	2014-07-17
368932	TS BW	water	2014-07-17	14:03	2014-07-17

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

A handwritten signature in black ink, reading "Blair Leftwich".

Dr. Blair Leftwich, Director
James Taylor, Assistant Director

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Case Narrative

Samples for project Quarterly Samples were received by TraceAnalysis, Inc. on 2014-07-17 and assigned to work order 14072110. Samples for work order 14072110 were received intact at a temperature of 1.0 C.

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

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
Chloride (IC)	E 300.0	96480	2014-07-29 at 16:46	114086	2014-07-29 at 16:46
Density	ASTM D854-92	96429	2014-07-28 at 11:00	114019	2014-07-28 at 11:15
Na, Dissolved	S 6010C	96355	2014-07-24 at 13:18	114016	2014-07-25 at 15:56
pH	SM 4500-H+	96321	2014-07-23 at 10:49	113880	2014-07-23 at 10:50
TDS	SM 2540C	96388	2014-07-23 at 11:00	113960	2014-07-23 at 11:00
TDS	SM 2540C	96452	2014-07-25 at 11:40	114047	2014-07-25 at 11:40

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 14072110 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

Analytical Report

Sample: 368929 - BS FW

Laboratory:	El Paso	Analytical Method:	E 300.0	Prep Method:	N/A
Analysis:	Chloride (IC)	Date Analyzed:	2014-07-29	Analyzed By:	JR
QC Batch:	114086	Sample Preparation:	2014-07-29	Prepared By:	JR
Prep Batch:	96480				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1,4,6	341	mg/L	10	2.50

Sample: 368929 - BS FW

Laboratory:	Lubbock	Analytical Method:	ASTM D854-92	Prep Method:	N/A
Analysis:	Density	Date Analyzed:	2014-07-28	Analyzed By:	CF
QC Batch:	114019	Sample Preparation:	2014-07-28	Prepared By:	CF
Prep Batch:	96429				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Density			0.995	g/ml	1	0.00

Sample: 368929 - BS FW

Laboratory:	Lubbock	Analytical Method:	SM 4500-H+	Prep Method:	N/A
Analysis:	pH	Date Analyzed:	2014-07-23	Analyzed By:	AT
QC Batch:	113880	Sample Preparation:	2014-07-23	Prepared By:	AT
Prep Batch:	96321				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
pH		2,3,7,8	7.62	s.u.	1	2.00

Sample: 368929 - BS FW

Laboratory:	Lubbock	Analytical Method:	SM 2540C	Prep Method:	N/A
Analysis:	TDS	Date Analyzed:	2014-07-25	Analyzed By:	CF
QC Batch:	114047	Sample Preparation:	2014-07-25	Prepared By:	CF
Prep Batch:	96452				

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Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids	Qr	2,3,5,7,8	864	mg/L	20	2.50

Sample: 368930 - BS BW

Laboratory: El Paso
Analysis: Chloride (IC) Analytical Method: E 300.0 Prep Method: N/A
QC Batch: 114086 Date Analyzed: 2014-07-29 Analyzed By: JR
Prep Batch: 96480 Sample Preparation: 2014-07-29 Prepared By: JR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1,4,6	200000	mg/L	5000	2.50

Sample: 368930 - BS BW

Laboratory: Lubbock
Analysis: Density Analytical Method: ASTM D854-92 Prep Method: N/A
QC Batch: 114019 Date Analyzed: 2014-07-28 Analyzed By: CF
Prep Batch: 96429 Sample Preparation: 2014-07-28 Prepared By: CF

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Density			1.20	g/ml	1	0.00

Sample: 368930 - BS BW

Laboratory: Lubbock
Analysis: Na, Dissolved Analytical Method: S 6010C Prep Method: S 3005A
QC Batch: 114016 Date Analyzed: 2014-07-25 Analyzed By: LM
Prep Batch: 96355 Sample Preparation: 2014-07-24 Prepared By: LM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Dissolved Sodium		3,5,7,8	149000	mg/L	10000	1.00

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Sample: 368930 - BS BW

Laboratory:	Lubbock		
Analysis:	pH	Analytical Method:	SM 4500-H+
QC Batch:	113880	Date Analyzed:	2014-07-23
Prep Batch:	96321	Sample Preparation:	2014-07-23
		Prep Method:	N/A
		Analyzed By:	AT
		Prepared By:	AT

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
pH		2,3,7,8	6.90	s.u.	1	2.00

Sample: 368930 - BS BW

Laboratory:	Lubbock		
Analysis:	TDS	Analytical Method:	SM 2540C
QC Batch:	113960	Date Analyzed:	2014-07-23
Prep Batch:	96388	Sample Preparation:	2014-07-23
		Prep Method:	N/A
		Analyzed By:	CF
		Prepared By:	CF

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		2,3,5,7,8	295000	mg/L	2000	2.50

Sample: 368931 - TS FW

Laboratory:	El Paso		
Analysis:	Chloride (IC)	Analytical Method:	E 300.0
QC Batch:	114086	Date Analyzed:	2014-07-29
Prep Batch:	96480	Sample Preparation:	2014-07-29
		Prep Method:	N/A
		Analyzed By:	JR
		Prepared By:	JR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1,4,6	76.8	mg/L	10	2.50

Sample: 368931 - TS FW

Laboratory:	Lubbock		
Analysis:	Density	Analytical Method:	ASTM D854-92
QC Batch:	114019	Date Analyzed:	2014-07-28
Prep Batch:	96429	Sample Preparation:	2014-07-28
		Prep Method:	N/A
		Analyzed By:	CF
		Prepared By:	CF

continued ...

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sample 368931 continued ...

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Density			0.994	g/ml	1	0.00

Sample: 368931 - TS FW

Laboratory:	Lubbock				
Analysis:	pH	Analytical Method:	SM 4500-H+	Prep Method:	N/A
QC Batch:	113880	Date Analyzed:	2014-07-23	Analyzed By:	AT
Prep Batch:	96321	Sample Preparation:	2014-07-23	Prepared By:	AT

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
pH		2,3,7,8	9.30	s.u.	1	2.00

Sample: 368931 - TS FW

Laboratory:	Lubbock				
Analysis:	TDS	Analytical Method:	SM 2540C	Prep Method:	N/A
QC Batch:	113960	Date Analyzed:	2014-07-23	Analyzed By:	CF
Prep Batch:	96388	Sample Preparation:	2014-07-23	Prepared By:	CF

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		2,3,5,7,8	639	mg/L	10	2.50

Sample: 368932 - TS BW

Laboratory:	El Paso				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	114086	Date Analyzed:	2014-07-29	Analyzed By:	JR
Prep Batch:	96480	Sample Preparation:	2014-07-29	Prepared By:	JR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1,4,6	17900	mg/L	500	2.50

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Sample: 368932 - TS BW

Laboratory:	Lubbock	Analytical Method:	ASTM D854-92	Prep Method:	N/A
Analysis:	Density	Date Analyzed:	2014-07-28	Analyzed By:	CF
QC Batch:	114019	Sample Preparation:	2014-07-28	Prepared By:	CF
Prep Batch:	96429				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Density			1.02	g/ml	1	0.00

Sample: 368932 - TS BW

Laboratory:	Lubbock	Analytical Method:	S 6010C	Prep Method:	S 3005A
Analysis:	Na, Dissolved	Date Analyzed:	2014-07-25	Analyzed By:	LM
QC Batch:	114016	Sample Preparation:	2014-07-24	Prepared By:	LM
Prep Batch:	96355				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Dissolved Sodium		3,5,7,8	11300	mg/L	100	1.00

Sample: 368932 - TS BW

Laboratory:	Lubbock	Analytical Method:	SM 4500-H+	Prep Method:	N/A
Analysis:	pH	Date Analyzed:	2014-07-23	Analyzed By:	AT
QC Batch:	113880	Sample Preparation:	2014-07-23	Prepared By:	AT
Prep Batch:	96321				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
pH		2,3,7,8	6.21	s.u.	1	2.00

Sample: 368932 - TS BW

Laboratory:	Lubbock	Analytical Method:	SM 2540C	Prep Method:	N/A
Analysis:	TDS	Date Analyzed:	2014-07-23	Analyzed By:	CF
QC Batch:	113960	Sample Preparation:	2014-07-23	Prepared By:	CF
Prep Batch:	96388				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Total Dissolved Solids		2,3,5,7,8	34600	mg/L	1000	2.50

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Method Blanks

Method Blank (1) QC Batch: 113960

QC Batch: 113960 Date Analyzed: 2014-07-23 Analyzed By: CF
Prep Batch: 96388 QC Preparation: 2014-07-23 Prepared By: CF

Parameter	Flag	Cert	MDL Result	Units	RL
Total Dissolved Solids		2,3,5,7,8	<2.50	mg/L	2.5

Method Blank (1) QC Batch: 114016

QC Batch: 114016 Date Analyzed: 2014-07-25 Analyzed By: LM
Prep Batch: 96355 QC Preparation: 2014-07-24 Prepared By: PM

Parameter	Flag	Cert	MDL Result	Units	RL
Dissolved Sodium		3,5,7,8	<0.0184	mg/L	1

Method Blank (1) QC Batch: 114019

QC Batch: 114019 Date Analyzed: 2014-07-28 Analyzed By: CF
Prep Batch: 96429 QC Preparation: 2014-07-28 Prepared By: CF

Parameter	Flag	Cert	MDL Result	Units	RL
Density			0.995	g/ml	

Method Blank (1) QC Batch: 114047

QC Batch: 114047 Date Analyzed: 2014-07-25 Analyzed By: CF
Prep Batch: 96452 QC Preparation: 2014-07-25 Prepared By: CF

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Parameter	Flag	Cert	MDL Result	Units	RL
Total Dissolved Solids		2,3,5,7,8	<2.50	mg/L	2.5

Method Blank (1) QC Batch: 114086

QC Batch: 114086
Prep Batch: 96480

Date Analyzed: 2014-07-29
QC Preparation: 2014-07-29

Analyzed By: JR
Prepared By: JR

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride		1,4,6	<0.00680	mg/L	2.5

Duplicates

Duplicates (1) Duplicated Sample: 368940

QC Batch: 113880 Date Analyzed: 2014-07-23 Analyzed By: AT
Prep Batch: 96321 QC Preparation: 2014-07-23 Prepared By: AT

Param		Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
pH	2,3,7,8	8.16	8.20	s.u.	1	0	20

Duplicates (1) Duplicated Sample: 369075

QC Batch: 113960 Date Analyzed: 2014-07-23 Analyzed By: CF
Prep Batch: 96388 QC Preparation: 2014-07-23 Prepared By: CF

Param		Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
Total Dissolved Solids	2,3,5,7,8	381	380	mg/L	10	0	10

Duplicates (1) Duplicated Sample: 368932

QC Batch: 114019 Date Analyzed: 2014-07-28 Analyzed By: CF
Prep Batch: 96429 QC Preparation: 2014-07-28 Prepared By: CF

Param		Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
Density		1.02	1.02	g/ml	1	0	20

Duplicates (1) Duplicated Sample: 369374

QC Batch: 114047 Date Analyzed: 2014-07-25 Analyzed By: CF
Prep Batch: 96452 QC Preparation: 2014-07-25 Prepared By: CF

Param				Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
Total Dissolved Solids	Qr	Qr	2,3,5,7,8	2660	2300	mg/L	50	14	10

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 113960
Prep Batch: 96388

Date Analyzed: 2014-07-23
QC Preparation: 2014-07-23

Analyzed By: CF
Prepared By: CF

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Total Dissolved Solids		2,3,5,7,8	1000	mg/L	1	1000	<2.50	100	90 - 110

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Total Dissolved Solids		2,3,5,7,8	1040	mg/L	1	1000	<2.50	104	90 - 110	4	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: 114016
Prep Batch: 96355

Date Analyzed: 2014-07-25
QC Preparation: 2014-07-24

Analyzed By: LM
Prepared By: PM

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Dissolved Sodium		3,5,7,8	49.5	mg/L	1	52.5	<0.0184	94	85 - 115

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Dissolved Sodium		3,5,7,8	50.2	mg/L	1	52.5	<0.0184	96	85 - 115	1	20

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

Laboratory Control Spike (LCS-1)

QC Batch: 114047
Prep Batch: 96452

Date Analyzed: 2014-07-25
QC Preparation: 2014-07-25

Analyzed By: CF
Prepared By: CF

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Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Total Dissolved Solids		2,3,5,7,8	972	mg/L	1	1000	<2.50	97	90 - 110

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Total Dissolved Solids		2,3,5,7,8	1020	mg/L	1	1000	<2.50	102	90 - 110	5	10

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

Laboratory Control Spike (LCS-1)

QC Batch: 114086
Prep Batch: 96480

Date Analyzed: 2014-07-29
QC Preparation: 2014-07-29

Analyzed By: JR
Prepared By: JR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1,4,6	25.2	mg/L	1	25.0	<0.00680	101	90 - 110

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		1,4,6	25.1	mg/L	1	25.0	<0.00680	100	90 - 110	0	20

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

Matrix Spikes

Matrix Spike (MS-1) Spiked Sample: 368864

QC Batch: 114016
Prep Batch: 96355

Date Analyzed: 2014-07-25
QC Preparation: 2014-07-24

Analyzed By: LM
Prepared By: PM

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Dissolved Sodium		3,5,7,8	4530	mg/L	10	525	4100	82	75 - 125

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Dissolved Sodium		3,5,7,8	4540	mg/L	10	525	4100	84	75 - 125	0	20

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

Matrix Spike (MS-1) Spiked Sample: 368931

QC Batch: 114086
Prep Batch: 96480

Date Analyzed: 2014-07-29
QC Preparation: 2014-07-29

Analyzed By: JR
Prepared By: JR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1,4,6	1480	mg/L	55.6	1390	76.8	101	80 - 120

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		1,4,6	1480	mg/L	55.6	1390	76.8	101	80 - 120	0	20

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

Calibration Standards

Standard (ICV-1)

QC Batch: 113880

Date Analyzed: 2014-07-23

Analyzed By: AT

Param	Flag	Cert	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
pH		2,3,7,8	s.u.	7.00	7.01	100	98 - 102	2014-07-23

Standard (CCV-1)

QC Batch: 113880

Date Analyzed: 2014-07-23

Analyzed By: AT

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
pH		2,3,7,8	s.u.	7.00	7.01	100	98 - 102	2014-07-23

Standard (ICV-1)

QC Batch: 114016

Date Analyzed: 2014-07-25

Analyzed By: LM

Param	Flag	Cert	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dissolved Sodium		3,5,7,8	mg/L	51.0	48.8	96	90 - 110	2014-07-25

Standard (CCV-1)

QC Batch: 114016

Date Analyzed: 2014-07-25

Analyzed By: LM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dissolved Sodium		3,5,7,8	mg/L	51.0	49.9	98	90 - 110	2014-07-25

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Standard (CCV-1)

QC Batch: 114086

Date Analyzed: 2014-07-29

Analyzed By: JR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1,4,6	mg/L	25.0	24.8	99	90 - 110	2014-07-29

Standard (CCV-2)

QC Batch: 114086

Date Analyzed: 2014-07-29

Analyzed By: JR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1,4,6	mg/L	25.0	25.0	100	90 - 110	2014-07-29

Standard (CCV-3)

QC Batch: 114086

Date Analyzed: 2014-07-29

Analyzed By: JR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1,4,6	mg/L	25.0	25.2	101	90 - 110	2014-07-29

Appendix

Report Definitions

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

Laboratory Certifications

C	Certifying Authority	Certification Number	Laboratory Location
-	NCTRCA	WFWB384444Y0909	TraceAnalysis
-	DBE	VN 20657	TraceAnalysis
-	HUB	1752439743100-86536	TraceAnalysis
-	WBE	237019	TraceAnalysis
1	PJLA	L14-103	El Paso
2	PJLA	L14-93	Lubbock
3	Kansas	Kansas E-10317	Lubbock
4	LELAP	LELAP-02002	El Paso
5	LELAP	LELAP-02003	Lubbock
6	NELAP	T104704221-12-3	El Paso
7	NELAP	T104704219-14-10	Lubbock
8		2013-083	Lubbock

Standard Flags

F	Description
B	Analyte detected in the corresponding method blank above the method detection limit
H	Analyzed out of hold time
J	Estimated concentration
Jb	The analyte is positively identified and the value is approximated between the SDL and MQL. Sample contains less than ten times the concentration found in the method blank. The result should be considered non-detect to the SDL.
Je	Estimated concentration exceeding calibration range.
MI1	Split peak or shoulder peak
MI2	Instrument software did not integrate
MI3	Instrument software misidentified the peak
MI4	Instrument software integrated improperly
MI5	Baseline correction
Qc	Calibration check outside of laboratory limits.

F	Description
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.

