



Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: [www.hallenvironmental.com](http://www.hallenvironmental.com)

November 09, 2018

John Shomaker

John Shomaker & Assoc.  
2611 Broadbent Parkway NE  
Albuquerque, NM 87107  
TEL: (505) 345-3407  
FAX (505) 345-9920

RE: Enduring Resources

OrderNo.: 1810E84

Dear John Shomaker:

Hall Environmental Analysis Laboratory received 2 sample(s) on 10/30/2018 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to [www.hallenvironmental.com](http://www.hallenvironmental.com) or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

A handwritten signature in black ink on a yellow rectangular background. The signature appears to be 'Andy Freeman'.

Andy Freeman  
Laboratory Manager  
4901 Hawkins NE  
Albuquerque, NM 87109

**Analytical Report**

Lab Order **1810E84**

Date Reported: **11/9/2018**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** John Shomaker & Assoc.

**Client Sample ID:** End of Pumping Test

**Project:** Enduring Resources

**Collection Date:** 10/27/2018 12:00:00 PM

**Lab ID:** 1810E84-001

**Matrix:** AQUEOUS

**Received Date:** 10/30/2018 3:54:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>MRA</b>
Fluoride	ND	2.0		mg/L	20	10/31/2018 7:06:53 PM	R55330
Chloride	1100	100	*	mg/L	200	11/2/2018 12:53:12 AM	R55350
Bromide	2.9	0.10		mg/L	1	10/31/2018 6:54:02 PM	R55330
Phosphorus, Orthophosphate (As P)	ND	10	H	mg/L	20	10/31/2018 7:06:53 PM	R55330
Sulfate	5100	100	*	mg/L	200	11/2/2018 12:53:12 AM	R55350
Nitrate+Nitrite as N	ND	1.0		mg/L	5	10/31/2018 7:19:44 PM	R55330
<b>SM2510B: SPECIFIC CONDUCTANCE</b>							Analyst: <b>JRR</b>
Conductivity	15000	25		µmhos/c	5	11/6/2018 11:35:09 AM	R55452
<b>SM2320B: ALKALINITY</b>							Analyst: <b>JRR</b>
Bicarbonate (As CaCO3)	294.4	20.00		mg/L Ca	1	11/1/2018 6:52:04 PM	R55345
Carbonate (As CaCO3)	ND	2.000		mg/L Ca	1	11/1/2018 6:52:04 PM	R55345
Total Alkalinity (as CaCO3)	294.4	20.00		mg/L Ca	1	11/1/2018 6:52:04 PM	R55345
<b>SM2540C MOD: TOTAL DISSOLVED SOLIDS</b>							Analyst: <b>KS</b>
Total Dissolved Solids	9430	200	*D	mg/L	1	11/5/2018 4:12:00 PM	41330
<b>SM4500-H+B / 9040C: PH</b>							Analyst: <b>JRR</b>
pH	8.00		H	pH units	1	11/1/2018 6:52:04 PM	R55345
<b>EPA METHOD 6010B: DISSOLVED METALS</b>							Analyst: <b>ELS</b>
Calcium	150	5.0		mg/L	5	11/5/2018 11:22:57 AM	A55387
Magnesium	9.2	1.0		mg/L	1	11/5/2018 10:34:44 AM	A55387
Potassium	56	1.0		mg/L	1	11/5/2018 10:34:44 AM	A55387
Sodium	3200	50		mg/L	50	11/5/2018 11:25:00 AM	A55387

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	PQL Practical Quantitative Limit	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

**Analytical Report**

Lab Order **1810E84**

Date Reported: **11/9/2018**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** John Shomaker & Assoc.

**Client Sample ID:** Final Swab Run

**Project:** Enduring Resources

**Collection Date:** 10/29/2018 3:15:00 PM

**Lab ID:** 1810E84-002

**Matrix:** AQUEOUS

**Received Date:** 10/30/2018 3:54:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>SM2320B: ALKALINITY</b>							Analyst: <b>JRR</b>
Bicarbonate (As CaCO3)	203.7	20.00		mg/L Ca	1	11/1/2018 7:08:25 PM	R55345
Carbonate (As CaCO3)	ND	2.000		mg/L Ca	1	11/1/2018 7:08:25 PM	R55345
Total Alkalinity (as CaCO3)	203.7	20.00		mg/L Ca	1	11/1/2018 7:08:25 PM	R55345

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	PQL Practical Quantitative Limit	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1810E84

09-Nov-18

**Client:** John Shomaker & Assoc.

**Project:** Enduring Resources

Sample ID <b>MB</b>	SampType: <b>mblk</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>PBW</b>	Batch ID: <b>R55330</b>		RunNo: <b>55330</b>							
Prep Date:	Analysis Date: <b>10/31/2018</b>		SeqNo: <b>1840845</b>		Units: <b>mg/L</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Bromide	ND	0.10								
Phosphorus, Orthophosphate (As P	ND	0.50								
Nitrate+Nitrite as N	ND	0.20								

Sample ID <b>LCS</b>	SampType: <b>lcs</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>LCSW</b>	Batch ID: <b>R55330</b>		RunNo: <b>55330</b>							
Prep Date:	Analysis Date: <b>10/31/2018</b>		SeqNo: <b>1840846</b>		Units: <b>mg/L</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.48	0.10	0.5000	0	95.4	90	110			
Bromide	2.5	0.10	2.500	0	98.0	90	110			
Phosphorus, Orthophosphate (As P	4.9	0.50	5.000	0	98.0	90	110			
Nitrate+Nitrite as N	3.5	0.20	3.500	0	101	90	110			

Sample ID <b>MB</b>	SampType: <b>mblk</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>PBW</b>	Batch ID: <b>R55350</b>		RunNo: <b>55350</b>							
Prep Date:	Analysis Date: <b>11/1/2018</b>		SeqNo: <b>1841478</b>		Units: <b>mg/L</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								
Sulfate	ND	0.50								

Sample ID <b>LCS</b>	SampType: <b>lcs</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>LCSW</b>	Batch ID: <b>R55350</b>		RunNo: <b>55350</b>							
Prep Date:	Analysis Date: <b>11/1/2018</b>		SeqNo: <b>1841479</b>		Units: <b>mg/L</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.8	0.50	5.000	0	96.7	90	110			
Sulfate	9.6	0.50	10.00	0	95.5	90	110			

**Qualifiers:**

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- ND Not Detected at the Reporting Limit
- PQL Practical Quantitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1810E84

09-Nov-18

**Client:** John Shomaker & Assoc.

**Project:** Enduring Resources

Sample ID	<b>Ics-1 99.0uS eC</b>	SampType:	<b>LCS</b>	TestCode:	<b>SM2510B: Specific Conductance</b>					
Client ID:	<b>LCSW</b>	Batch ID:	<b>R55452</b>	RunNo:	<b>55452</b>					
Prep Date:		Analysis Date:	<b>11/6/2018</b>	SeqNo:	<b>1845908</b>	Units:	<b>µmhos/cm</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Conductivity	100	5.0	99.00	0	101	80	120			

**Qualifiers:**

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- PQL Practical Quantitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
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- W Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1810E84

09-Nov-18

**Client:** John Shomaker & Assoc.

**Project:** Enduring Resources

Sample ID <b>MB-A</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 6010B: Dissolved Metals</b>							
Client ID: <b>PBW</b>	Batch ID: <b>A55387</b>		RunNo: <b>55387</b>							
Prep Date:	Analysis Date: <b>11/5/2018</b>		SeqNo: <b>1842957</b>		Units: <b>mg/L</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	ND	1.0								
Magnesium	ND	1.0								
Potassium	ND	1.0								
Sodium	ND	1.0								

Sample ID <b>LCS-A</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 6010B: Dissolved Metals</b>							
Client ID: <b>LCSW</b>	Batch ID: <b>A55387</b>		RunNo: <b>55387</b>							
Prep Date:	Analysis Date: <b>11/5/2018</b>		SeqNo: <b>1842960</b>		Units: <b>mg/L</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	50	1.0	50.00	0	101	80	120			
Magnesium	50	1.0	50.00	0	99.3	80	120			
Potassium	49	1.0	50.00	0	98.6	80	120			
Sodium	49	1.0	50.00	0	98.2	80	120			

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
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- PQL Practical Quantitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
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- W Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1810E84

09-Nov-18

**Client:** John Shomaker & Assoc.

**Project:** Enduring Resources

Sample ID	<b>mb-1 alk</b>	SampType:	<b>MBLK</b>	TestCode:	<b>SM2320B: Alkalinity</b>					
Client ID:	<b>PBW</b>	Batch ID:	<b>R55345</b>	RunNo:	<b>55345</b>					
Prep Date:		Analysis Date:	<b>11/1/2018</b>	SeqNo:	<b>1841411</b>	Units:	<b>mg/L CaCO3</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20.00								

Sample ID	<b>ics-1 alk</b>	SampType:	<b>LCS</b>	TestCode:	<b>SM2320B: Alkalinity</b>					
Client ID:	<b>LCSW</b>	Batch ID:	<b>R55345</b>	RunNo:	<b>55345</b>					
Prep Date:		Analysis Date:	<b>11/1/2018</b>	SeqNo:	<b>1841412</b>	Units:	<b>mg/L CaCO3</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	77.04	20.00	80.00	0	96.3	90	110			

Sample ID	<b>mb-2 alk</b>	SampType:	<b>MBLK</b>	TestCode:	<b>SM2320B: Alkalinity</b>					
Client ID:	<b>PBW</b>	Batch ID:	<b>R55345</b>	RunNo:	<b>55345</b>					
Prep Date:		Analysis Date:	<b>11/1/2018</b>	SeqNo:	<b>1841435</b>	Units:	<b>mg/L CaCO3</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20.00								

Sample ID	<b>ics-2 alk</b>	SampType:	<b>LCS</b>	TestCode:	<b>SM2320B: Alkalinity</b>					
Client ID:	<b>LCSW</b>	Batch ID:	<b>R55345</b>	RunNo:	<b>55345</b>					
Prep Date:		Analysis Date:	<b>11/1/2018</b>	SeqNo:	<b>1841436</b>	Units:	<b>mg/L CaCO3</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	76.80	20.00	80.00	0	96.0	90	110			

Sample ID	<b>mb-3 alk</b>	SampType:	<b>MBLK</b>	TestCode:	<b>SM2320B: Alkalinity</b>					
Client ID:	<b>PBW</b>	Batch ID:	<b>R55345</b>	RunNo:	<b>55345</b>					
Prep Date:		Analysis Date:	<b>11/1/2018</b>	SeqNo:	<b>1841459</b>	Units:	<b>mg/L CaCO3</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20.00								

Sample ID	<b>ics-3 alk</b>	SampType:	<b>LCS</b>	TestCode:	<b>SM2320B: Alkalinity</b>					
Client ID:	<b>LCSW</b>	Batch ID:	<b>R55345</b>	RunNo:	<b>55345</b>					
Prep Date:		Analysis Date:	<b>11/1/2018</b>	SeqNo:	<b>1841460</b>	Units:	<b>mg/L CaCO3</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	77.04	20.00	80.00	0	96.3	90	110			

**Qualifiers:**

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- PQL Practical Quantitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1810E84

09-Nov-18

**Client:** John Shomaker & Assoc.

**Project:** Enduring Resources

Sample ID <b>MB-41330</b>	SampType: <b>MBLK</b>	TestCode: <b>SM2540C MOD: Total Dissolved Solids</b>								
Client ID: <b>PBW</b>	Batch ID: <b>41330</b>	RunNo: <b>55401</b>								
Prep Date: <b>11/2/2018</b>	Analysis Date: <b>11/5/2018</b>	SeqNo: <b>1843398</b>	Units: <b>mg/L</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	ND	20.0								

Sample ID <b>LCS-41330</b>	SampType: <b>LCS</b>	TestCode: <b>SM2540C MOD: Total Dissolved Solids</b>								
Client ID: <b>LCSW</b>	Batch ID: <b>41330</b>	RunNo: <b>55401</b>								
Prep Date: <b>11/2/2018</b>	Analysis Date: <b>11/5/2018</b>	SeqNo: <b>1843399</b>	Units: <b>mg/L</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	1000	20.0	1000	0	100	80	120			

**Qualifiers:**

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- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quantitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
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- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified



Hall Environmental Analysis Laboratory  
 4901 Hawkins NE  
 Albuquerque, NM 87109  
 TEL: 505-345-3975 FAX: 505-345-4107  
 Website: www.hallenvironmental.com

### Sample Log-In Check List

Client Name: SHO

Work Order Number: 1810E84

RcptNo: 1

Received By: Jazzmine Burkhead 10/30/2018 3:54:00 PM *Jazzmine Burkhead*

Completed By: Jazzmine Burkhead 10/30/2018 4:03:16 PM *Jazzmine Burkhead*

Reviewed By: ENM 10/30/18

Labeled by: DAS 10/30/18

**Chain of Custody**

1. Is Chain of Custody complete? Yes  No  Not Present
2. How was the sample delivered? Client

**Log In**

3. Was an attempt made to cool the samples? Yes  No  NA
4. Were all samples received at a temperature of >0° C to 6.0°C Yes  No  NA
5. Sample(s) in proper container(s)? Yes  No
6. Sufficient sample volume for indicated test(s)? Yes  No
7. Are samples (except VOA and ONG) properly preserved? Yes  No
8. Was preservative added to bottles? Yes  No  NA
9. VOA vials have zero headspace? Yes  No  No VOA Vials
10. Were any sample containers received broken? Yes  No
11. Does paperwork match bottle labels? Yes  No   
 (Note discrepancies on chain of custody)
12. Are matrices correctly identified on Chain of Custody? Yes  No
13. Is it clear what analyses were requested? Yes  No
14. Were all holding times able to be met? Yes  No   
 (If no, notify customer for authorization.)

# of preserved bottles checked for pH: 2  
 Adjusted? NO *(or >12 unless noted)*  
 Checked by: DAS 10/30/18

**Special Handling (if applicable)**

15. Was client notified of all discrepancies with this order? Yes  No  NA

Person Notified: \_\_\_\_\_ Date: \_\_\_\_\_  
 By Whom: \_\_\_\_\_ Via:  eMail  Phone  Fax  In Person  
 Regarding: \_\_\_\_\_  
 Client Instructions: \_\_\_\_\_

16. Additional remarks:

**17. Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	5.2	Good	Not Present			





**District I**  
 1625 N. French Dr., Hobbs, NM 88240  
 Phone:(575) 393-6161 Fax:(575) 393-0720

**District II**  
 811 S. First St., Artesia, NM 88210  
 Phone:(575) 748-1283 Fax:(575) 748-9720

**District III**  
 1000 Rio Brazos Rd., Aztec, NM 87410  
 Phone:(505) 334-6178 Fax:(505) 334-6170

**District IV**  
 1220 S. St Francis Dr., Santa Fe, NM 87505  
 Phone:(505) 476-3470 Fax:(505) 476-3462

**State of New Mexico**  
**Energy, Minerals and Natural Resources**  
**Oil Conservation Division**  
**1220 S. St Francis Dr.**  
**Santa Fe, NM 87505**

CONDITIONS  
 Action 300691

**CONDITIONS**

Operator: NEW MEXICO ENERGY MINERALS & NATURAL RESOURCE 1220 S St Francis Dr Santa Fe , NM 87504	OGRID: 264235
	Action Number: 300691
	Action Type: [IM-SD] Well File Support Doc (ENG) (IM-AWF)

**CONDITIONS**

Created By	Condition	Condition Date
pgoetze	None	1/7/2024