

**BW - \_\_\_\_\_ 31 \_\_\_\_\_**

# **ANNUAL REPORTS**

**HRC, INC.**  
**P. O. Box 5102**  
**Hobbs, NM 88241-5102**  
**Phone # (575) 393-6662**  
**Fax # (575) 393-6662**

**January 21, 2020**

**Jim Griswold**  
**Senior Hydrologist**  
**ENMRD/Oil Conservation Division**  
**1220 South St. Francis Drive**  
**Santa Fe, New Mexico 87505**

**Ref: 2019 Annual Report**  
**B-31 Schubert 7 – Well #1**

**Dear Mr. Griswold,**

**Enclosed please find the monthly freshwater injection and brine production numbers for the Hobbs facility for the year of 2019.**  
**Included also are Cardinal Laboratories' results of analyses for samples for the month of June 2019 and December, 2019 and the production amounts for January 2019 through December 2019 for your reference.**

**Thank you,**

**Sincerely,**



**Gary M. Schubert**  
**GMS/br**

**Enclosure**

**ANNUAL CLASS III WELL REPORT**

**H.R.C., INC.**

**YEARLY REPORT (BW-031)**

**API 30-025-36781**

**February 6, 2020**

**DAVID ALVARADO**

**(ACTING AGENT FOR H.R.C., INC.)**

ANNUAL CLASS III WELL REPORT

H.R.C., INC.

YEARLY REPORT (BW-031)

API 30-025-36781

February 6, 2020

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(ACTING AGENT FOR H.R.C., INC.)



## **20.6.2.3107 NMAC MONITORING, REPORTING, AND OTHER REQUIERMENTS**

### **SUMMARY OF CLASS III OPERATIONS 2019**

Schubert 7 Well # 1 had a great year during the operations in 2019 no leaks occurred nor did the fresh water freeze all meters and valves were and still are in good working conditions.

Two 750 ball valves were replaced as a preventive maintenance scheduled plan. This will continue as a safe operating condition it will continue in 2020 if needed. Connections are changed out when the first sign of salt is seen behind the threaded end.

During 2019 the transfer pump that transports brine to the sales tanks had the mechanical seals replaced due to the abrasion of the 9.98 PPG brine. In replacing the seals fresh water was used to clean out the lines and valves were shut in allowing the connecting unions to be broken to prevent any impact to the ground within the pump shop where the pump resides.

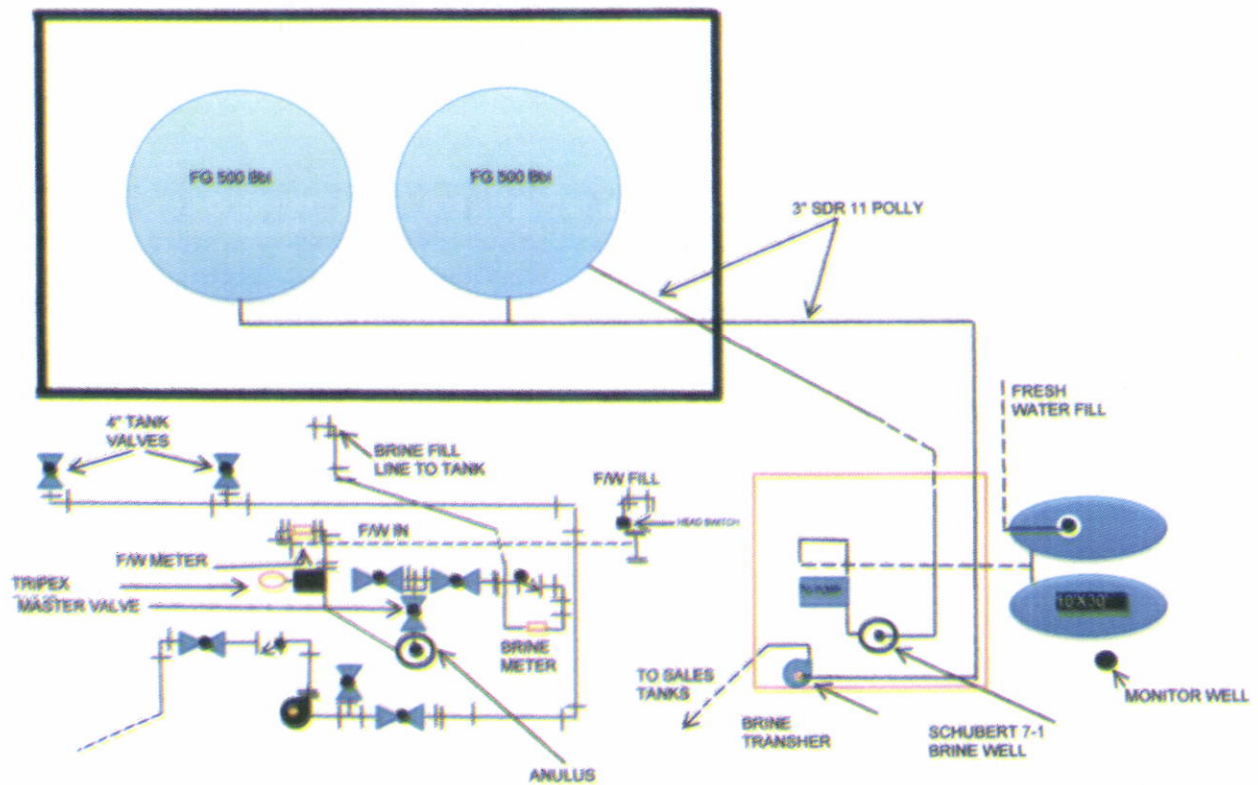
Daily inspections of all lines and connections are visually looked at during a walk around of the facility tanks. All lines are each walked and visually inspected that lead to the pump house. Readings on pressure gauges are recorded with the reading of the brine output meter and the injection of fresh water also are recorded on the day to month logs. Safety shut off mechanisms are tested to insure if high or low pressures were to occur all systems would shut down.

A total of 284,882 Bbl. brine was extracted and weighed at an average of 9.89 PPG an increase of over 84% of the 241,010 Bbl. extracted in 2018.

H.R.C., Inc. plans on replacing the triplex pump with a VFD pump in doing so, the pump will run with a smoother injection rate without the harmonics that the triplex pump emits.

Please find on page 3 a schematic of the facility operations of equipment on the BW-31

H.R.C., INC  
SHUBERT 7 WELL No. 1  
NW/4, SE/4-SEC. 7-T19S-R39E  
LEA COUNTY, NM  
API 30-025-36781  
LAT: 32.6738815  
LONG: -103.0835953



**2019 FLUID INJECTION & BRINE PRODUCTION VOLUME**

MONTH	BRINE	FRESH WATER	
JANUARY	30,031	29,719	
FEBRUARY	28,726	28,492	
MARCH	27,971	27,860	
APRIL	16,717	16,621	
MAY	18,123	13,967	
JUNE	27,630	27,447	
JULY	23,990	23,812	
AUGUST	25,102	24,981	
SEPTEMBER	18,188	18,031	
OCTOBER	28,826	28,683	
NOVEMBER	17,112	17,007	
DECEMBER	22,466	22,340	
<b>YEAR TOTAL</b>	<b>284,882</b>	<b>278,960</b>	

**YEARLY TOTALS BRINE & FRESH**

YEAR	BRINE	FRESH		
2013	304,136	306,265		
2014	310,568	316,007		
2015	291,205	289,656		
2016	283,741	276,593		
2017	303,502	282,445		
2018	241,010	238,627		
2019	284,882	278,960		
<b>TOTAL</b>	<b>2,019,044</b>	<b>1,988,553</b>		

## Semi-Annual Monitor Well Analytical Data Results

Monitor well for the BW-31 for 2019 is on record with OCD, Cardinal Laboratories performed and sampled water from the monitor well on December 31, 2019 for your review. Cardinal Laboratories is accredited through Texas NELAP under certificate number T10470439-18-11.

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2 Total Haloacetic Acids (HAA-5)

Method EPA 524.2 Total Trihalomethanes (TTHM)

Method EPA 524.4 Regulated VOCs (V1, V2, V3)

Cardinal Laboratories is accredited through the State of New Mexico Environment Department for:

Method SM 9223-B Total Coliform and E. coli (Colilert MMO-MUG)

Method EPA 524.2 Regulated VOCs and Total Trihalomethanes (TTHM)

Method EPA 552.2 Total Haloacetic Acids (HAA-5)

Please find the Table below comparison of the June sample and December sample for Inorganic Compounds and Total Recovery Metals by ICP (E200.7) full detail of the Analytical results are attached at the end of this report for your viewing.

Analyte	Result	MDL	Reporting Limit	Units	Analyzed Date	Method
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### INORGANIC COMPOUNDS

Alkalinity, Bicarbonate	215		5.0	mg/L	6-12-19	310.1
Alkalinity Carbonate	<1.00		1.00	mg/L	6-12-19	310.1
Chloride	76.0		4.0	mg/L	6-13-19	4500-C1-B
Conductivity	660		1.00	uS/cm	6-12-19	120.1
pH	7.94		0.1	pH Units	6-12-19	150.1
Sulfate	60.8		10.0	mg/L	6-11-19	375.4
TDS	435		5.0	mg/L	6-13-19	160.1
Alkalinity Total	176		4.00	mg/L	6-12-19	310.1

**TOTAL RECOVERABLE METALS by ICP (E220.7)**

Continued Report for June 2019

Analyte	Result	MDL	Reporting Limit	Units	Analyzed Date	Method
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Calcium	55.1		0.500	mg/L	6-18-19	EPA200.7
Magnesium	17		0.500	mg/L	6-18-19	EPA200.7
Potassium	2.27	0.339	5.00	mg/L	6-18-19	EPA200.7
Sodium	69.0		5.00	mg/L	6-18-19	EPA200.7

**DECEMBER 2019 RESULTS**

Analyte	Result	MDL	Reporting Limit	Units	Analyzed Date	Method
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**INORGANIC COMPOUNDS**

Alkalinity, Bicarbonate	210		5.0	mg/L	12-20-19	310.1
Alkalinity Carbonate	<1.00		1.00	mg/L	12-20-19	310.1
Chloride	68.0		4.0	mg/L	12-19-19	4500-C1-B
Conductivity	674		1.00	uS/cm	12-20-19	120.1
pH	8.02		0.100	pH Units	12-20-19	150.1
Sulfate	63.9		10.0	mg/L	12-20-19	150.1
TDS	392		5.00	mg/L	12-23-19	160.1
Alkalinity Total	172		4.0	mg/L	12-20-19	310.1

**TOTAL RECOVERABLE METALS by ICP (E220.7)**

Calcium	54.2		0.500	mg/L	12-31-19	EPA200.7
Magnesium	16.9		0.500	mg/L	12-31-19	EPA200.7
Potassium	1.95	0.339	5.00	mg/L	12-31-19	EPA200.7
Sodium	64.9		5.0	mg/L	12-31-19	EPA200.7

In comparison from June 2019 to December 2019 the Quality of the Monitor water has improved showing a total of 0.95% reduction in Inorganic Compounds and Total Recoverable Metals from the June testing of the water. The sulfate test showed an increase of 0.95% increase from June 2019 testing of the water.

### **INJECTION PRESSURE**

Injection pressure still runs the same the annulus average is 200 PSIG and the tubing average is at 28 PSIG. The lease operator checks the pressure daily and records it on his daily logs.

### **PIPE LINE HYDROSTATIC TEST RESULTS**

Lines that lead to the storage tanks from the wellhead have a hydrostatic pressure of 8.3 pounds of pressure at the base of the line at the fill tank when idle. The operating static pressure average is 19 psi respectively. The operating pressure is at around 28 psig. Discharge line is of 4" SDR 11 with a max operating pressure of 160 PSI.

Brine Water transfer line from storage tanks at the Schubert 7 well # 1 facility to the sales point at the ANITZ sales facility located 0.8 miles east of WHY 18 on Nadine Rd. (P-26-19S-38E) is constructed of 4" SDR 11 Polyethylene Line with a max pressure of 160 psi the line enters into the west 16' tank holding tank at the top and has a hydrostatic pressure at the base of the line of 8.3 pounds of pressure at the base of the line. In operation transferring fluid from the BW-31 it takes 140 pounds to move 175 GPM through the 4" line. The line is tested periodically by closing the valve at the sales holding tank and line is then pressured at the transfer pump to 150 psi and held for 15 min with the valve closed at the pump. Line has shown no leaks showing good continuity.

### **Visual Leak Inspections Monitoring**

H.R.C., Inc. Operation personnel walks each line that is above ground and inspects all connecting points for any sign of leaks or sweating of threads on connections daily.

The Lease Operator drives out the lines that are underground and below frost level for any signs of compromised line integrity. This is done up to twice a day.

## Quarterly Chemical Analyses

Cardinal Laboratories is accredited through Texas NELAP under certificate number T10470439-18-11.

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2 Total Haloacetic Acids (HAA-5)

Method EPA 524.2 Total Trihalomethanes (TTHM)

Method EPA 524.4 Regulated VOCs (V1, V2, V3)

Cardinal Laboratories is accredited through the State of New Mexico Environment Department for:

Method SM 9223-B Total Coliform and E. coli (Colilert MMO-MUG)

Method EPA 524.2 Regulated VOCs and Total Trihalomethanes (TTHM)

Method EPA 552.2 Total Haloacetic Acids (HAA-5)

Depicted below is Cardinals Analytical Results for Brine and Fresh water at the BW-31.

With this reports is attached the Cardinals results for your viewing.

### BRINE ANALYTICAL RESULTS: JUNE 2019

Analyte	Result	MDL	Reporting Limit	Units	Analyzed Date	Method
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### INORGANIC COMPOUNDS

Alkalinity, Bicarbonate	83.0		5.0	mg/L	6-12-19	310.1
Alkalinity Carbonate	<1.00		1.00	mg/L	6-12-19	310.1
Chloride	196000		4.00	mg/L	6-13-19	4500-C1-B
Conductivity	253000		1.00	uS/cm	6-12-19	120.1
pH	6.94		0.100	pH Units	6-12-19	150.1
Sulfate	4140		833	mg/L	6-11-19	375.4
TDS	314000		5.00	mg/L	6-13-19	160.1
Alkalinity Total	68.00		4.0	mg/L	6-12-19	310.1

**TOTAL RECOVERABLE METALS by ICP (E220.7)**

Continued Brine Report for June 2019

Analyte	Result	MDL	Reporting Limit	Units	Analyzed Date	Method
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Calcium	1570		20.0	mg/L	6-18-19	EPA200.7
Magnesium	433		20.0	mg/L	6-18-19	EPA200.7
Potassium	238	13.5	200	mg/L	6-18-19	EPA200.7
Sodium	141000		1000	mg/L	6-19-19	EPA200.7

**BRINE ANALYTICAL RESULTS: DECEMBER 2019**

Analyte	Result	MDL	Reporting Limit	Units	Analyzed Date	Method
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**INORGANIC COMPOUNDS**

Alkalinity, Bicarbonate	73.0		5.0	mg/L	12-20-19	310.1
Alkalinity Carbonate	<1.00		1.00	mg/L	12-20-19	310.1
Chloride	172000		4.00	mg/L	12-19-19	4500-C1-B
Conductivity	28000		1.00	uS/cm	12-20-19	120.1
pH	7.03		0.100	pH Units	12-20-19	150.1
Sulfate	3780		500	mg/L	12-23-19	375.4
TDS	319000		5.00	mg/L	12-23-19	160.1
Alkalinity Total	60.0		4.0	mg/L	12-20-19	310.1



**TOTAL RECOVERABLE METALS by ICP (E220.7)**

Continued Brine Report for December 2019

Analyte	Result	MDL	Reporting Limit	Units	Analyzed Date	Method
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Calcium	1440		50.0	mg/L	12-31-19	EPA200.7
Magnesium	362		50.0	mg/L	12-31-19	EPA200.7
Potassium	90.9	33.9	500	mg/L	12-31-19	EPA200.7
Sodium	112000		500	mg/L	12-31-19	EPA200.7

**FRESH WATER ANALYTICAL RESULTS: JUNE 2019**

Analyte	Result	MDL	Reporting Limit	Units	Analyzed Date	Method
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**INORGANIC COMPOUNDS**

Alkalinity, Bicarbonate	220		5.00	mg/L	6-12-19	310.1
Alkalinity Carbonate	<1.00		1.00	mg/L	6-12-19	310.1
Chloride	136		4.00	mg/L	6-13-19	4500-C1-B
Conductivity	1040		1.00	uS/cm	6-12-19	120.1
pH	7.81		.100	pH Units	6-12-19	150.1
Sulfate	196		25.00	mg/L	6-11-19	375.4
TDS	674		5.00	mg/L	6-13-19	160.1
Alkalinity Total	180		4.00	mg/L	6-12-19	310.1

**TOTAL RECOVERABLE METALS by ICP (E220.7)**

Continued F/W Report for June 2019

Analyte	Result	MDL	Reporting Limit	Units	Analyzed Date	Method
Calcium	101		0.500	mg/L	6-19-19	EPA200.7
Magnesium	27.9		0.500	mg/L	6-19-19	EPA200.7
Potassium	3.78	0.339	5.00	mg/L	6-19-19	EPA200.7
Sodium	97.8		5.00	mg/L	6-19-19	EPA200.7

**FRESH WATER ANALYTICAL RESULTS: DECEMBER 2019**

Analyte	Result	MDL	Reporting Limit	Units	Analyzed Date	Method
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**INORGANIC COMPOUNDS**

Alkalinity, Bicarbonate	303		5.00	mg/L	12-20-19	310.1
Alkalinity Carbonate	<1.00		1.00	mg/L	12-20-19	310.1
Chloride	232		4.00	mg/L	12-19-19	4500-C1-B
Conductivity	1510		1.00	uS/cm	12-20-19	120.1
pH	7.73		0.100	pH Units	12-20-19	150.1
Sulfate	159		25.0	mg/L	12-23-19	375.4
TDS	896		5.00	mg/L	12-23-19	160.1
Alkalinity Total	248		4.00	mg/L	12-20-19	310.1

**TOTAL RECOVERABLE METALS by ICP (E220.7)**

Continued F/W Report for December 2019

Analyte	Result	MDL	Reporting Limit	Units	Analyzed Date	Method
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Calcium	145		0.500	mg/L	12-31-19	EPA200.7
Magnesium	24.0		0.500	mg/L	12-31-19	EPA200.7
Potassium	17.7	0.339	5.00	mg/L	12-31-19	EPA200.7
Sodium	147		5.00	mg/L	12-31-19	EPA200.7

**MECHANICAL INTEGRITY TEST CHART**

A formation mechanical test was performed on 11/20/16 on the BW-31. Formation Salado was pressured up to 300 psi and was witnessed the chart recorder start by Mark Whitaker at 8:15 AM for a duration of 4 hours test ended at 12:15PM where the casing valve was closed in it was witnessed by George Bowen. Formation Salado held 300 psi for the duration of the test.

Recorder was removed and well was bled back to tanks. Nipple up connections and placed well back into operation producing brine at 200 psi. Please find the subsequent report C-103 and the Chart below for your viewing.

Next formation integrity test will be November 2021.

Submit 1 Copy To Appropriate District Office  
 District I - (575) 393-6161  
 1625 N. French Dr., Hobbs, NM 88240  
 District II - (575) 748-1283  
 811 S. First St., Artesia, NM 88210  
 District III - (505) 334-6178  
 1000 Rio Brazos Rd., Aztec, NM 87410  
 District IV - (505) 476-3460  
 1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico  
 Energy, Minerals and Natural Resources

OIL CONSERVATION DIVISION  
 1220 South St. Francis Dr.  
 Santa Fe, NM 87505

Form C-103  
 Revised July 18, 2013

**SUMMARY NOTICES AND REPORTS ON WELLS**  
 (DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)

1. Type of Well: Oil Well ☐ Gas Well ☒ Other (Brine Supply)

2. Name of Operator

H.R.C., Inc.

3. Address of Operator

P. O. Box 5102, Hobbs, NM 88241

4. Well Location

Unit Letter J : 2313 feet from the South line and 2313 feet from the East line

Section 7 Township 19S Range 39E NMPM County Lea

11. Elevation (Show whether DR, RKB, RT, GR, etc.)

3585 GL

WELL API NO.

30-025-36781

5. Indicate Type of Lease

STATE ☐ FEE ☒

6. State Oil & Gas Lease No.

7. Lease Name or Unit Agreement Name

SCHUBERT 7

8. Well Number 1

9. OGRID Number

131652

10. Pool name or Wildcat

BSW-Salido

## 12. Check Appropriate Box to Indicate Nature of Notice, Report or Other Data

### NOTICE OF INTENTION TO:

PERFORM REMEDIAL WORK ☐ PLUG AND ABANDON ☐

TEMPORARILY ABANDON ☐ CHANGE PLANS ☐

PULL OR ALTER CASING ☐ MULTIPLE COMPL. ☐

DOWNHOLE COMMINGLE ☐

CLOSED-LOOP SYSTEM ☐

OTHER: MIT TEST ☒

### SUBSEQUENT REPORT OF:

REMEDIAL WORK ☐ ALTERING CASING ☐

COMMENCE DRILLING OPNS. ☐ P AND A ☐

CASING/CEMENT JOB ☐

OTHER: MIT TEST ☒

13. Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). SEE RULE 19.15.7.14 NMAC. For Multiple Completions: Attach wellbore diagram of proposed completion or recompletion.

11/20/16 PRESSURE FORMATION TO 300 PSI -- SHUT IN @ P.M.

11/21/16 SHUT IN

11/22/16 RIG UP CHART RECORDER; OPEN CSG. TO CHART

RECORDER @ 300 PSI @ 8:15 AM; WITNESS: MARK

WHITAKER; 4 HR. TEST CLOSE CSG. @ 12:15 PM

WITNESS GEORGE BOWEN -- HECD @ 300 PSI.

1:00 PM - OPEN WELL TO TANKS -- BLEED PRESSURE TO 200 PSI

7:00 PM - PRODUCE BRINE @ 200 PSI

Spud Date:

Rig Release Date:

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE

*Gary M. Schubert*

TITLE President

DATE 11-16-2016

Type or print name

Gary M. Schubert

E-mail address: garymschubert@gmail.com

PHONE: 575-393-3194

For State Use Only

APPROVED BY:

*Gary M. Schubert*

TITLE Senior Engineer

DATE 12/1/2016

Conditions of Approval (if any):





## **DEVIATIONS FROM THE NORMAL OPERATIONS**

No deviations occurred in 2019 from the normal operations at the Schubert 7 Well # 1 BW-31.

## **LEAKS, SPILL CORRECTIVE ACTION REPORTS**

No leaks or spills occurred in 2019 for the Schubert 7 Well # 1 and facility.

## **AREA OF REVIEW UPDATE SUMMARY**

H.R.C., Inc. has updated the AOR for the Schubert 7 Well # 1 (BW-31) showing no new permits have been plotted on the NM OCD GIS program. H.R.C., Inc. will give notice to the Department if any future staking transpires within the AOR.

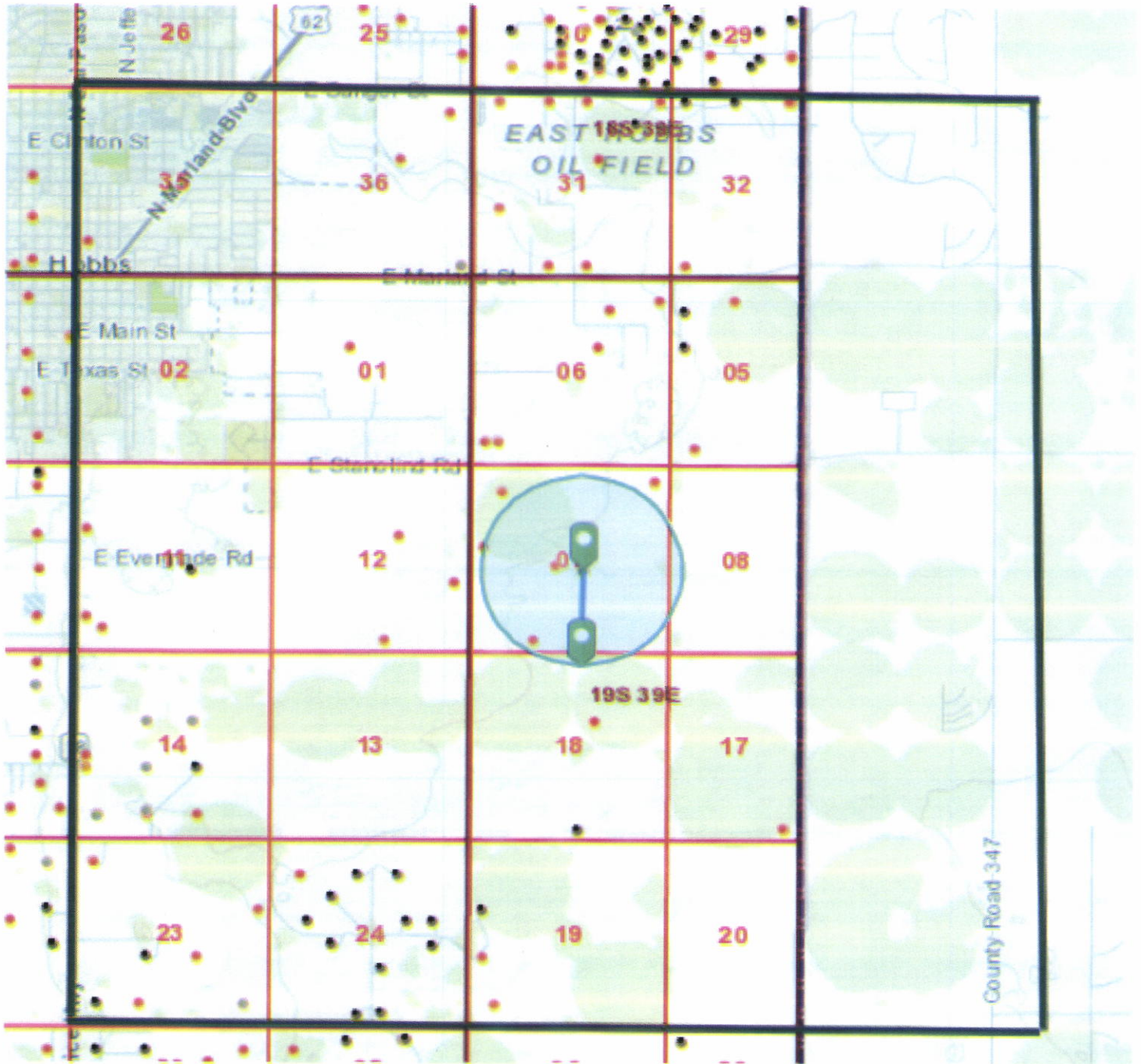
Please find on page 16 a half mile AOR review showing no new permits nor has there been any new wells drilled at this point.

Please find on page 17 a two mile AOR review showing no new permits nor has there been any new wells drilled at this point.





TWO MILE AOR SCHUBERT 7 WELL # 1 (BW-31)





**MITs, SURFACE SUBSIDENCE SURVEYS, CAVERN SIZE AND SHAPE AND VOLUME**

Please see page 13 & 14 for last MIT conducted on 11-20-16 held 300 psi and passed with OCD witnesses.

Surface Subsidence Surveys were conducted by Basin Surveys certified by Gary L. Jones. Four Elevation markers are in place. Please find below where the EM markers are located for BW-31.

**NEW MEXICO STATE PLANE COORDINATES (NAD83)**

WELL	NORTHING	EASTING	LATITUDE	LONGITUDE	ELEVATION
EM-1	611304.81	925484.92	32°40'27.52"	103°05'05.71"	3591.65
EM-2	611100.65	925800.11	32°40'25.46"	103°04'59.79"	3586.37
EM-3	611248.41	925991.42	32°40'26.90"	103°05'04.86"	3586.23
EM-4	610926.15	925561.84	32°40'23.76"	103°05'04.86"	3586.94

Three Surveys were conducted by Basin Surveys during the 2019 period with the description where no change in elevations has occurred also one that was conducted in January 2020. H.R.C., Inc. has depicted the 2019 reports of the surveys for your review below. Please find the plats of the Surveys at the end of this report for your viewing.

REVISION #	DATE	DESCRIPTION
12	January 15, 2019	Resurvey-No Change in Elevations
13	May 7, 2019	Resurvey-No Change in Elevations
14	October 14, 2019	Resurvey-No Change in Elevations
15	January 31, 2019	Resurvey-No Change in Elevations

## Cavern Characterization

BW-31 has extracted an estimated total of 6,204,579 ft.<sup>3</sup> of Halite from the Salado formation from 2006 to December 31, 2019. This calculates to 496,366,322 lbs. of Halite that has produced 4,064,046 Bbl. of brine within this period stated above.

The Sonic log shown on page 20 has approximately 252' of good Halite net pay less than 5 units on the Gama ray side of the log.

Without a true means of running a log that would allow us to see a true picture behind the anhydrite rock would be questionable. The characterization of the cavern can be mathematically calculated using  $V = \pi R^2 h / 3$  where  $[V = (3.14159 * 153.335^2) * (252') / 3]$

$V = 6,204,571 \text{ ft.}^3$  of Halite has been extracted to date. This amount of volume calculated correlates with the total of brine produced from 2006 through December 31, 2019 of 4,064,046 Bbl.

It takes 122.136 Lbs. of salt to produce one barrel of quality brine yielding a Specific Gravity of 1.1959. Multiplying salt ratio to total fluid bbl. total of 4,064,046 (extracted fluid bbl.) equals 496,366,322 Lbs. of salt mined from 2006 to the end of December 31, 2019.

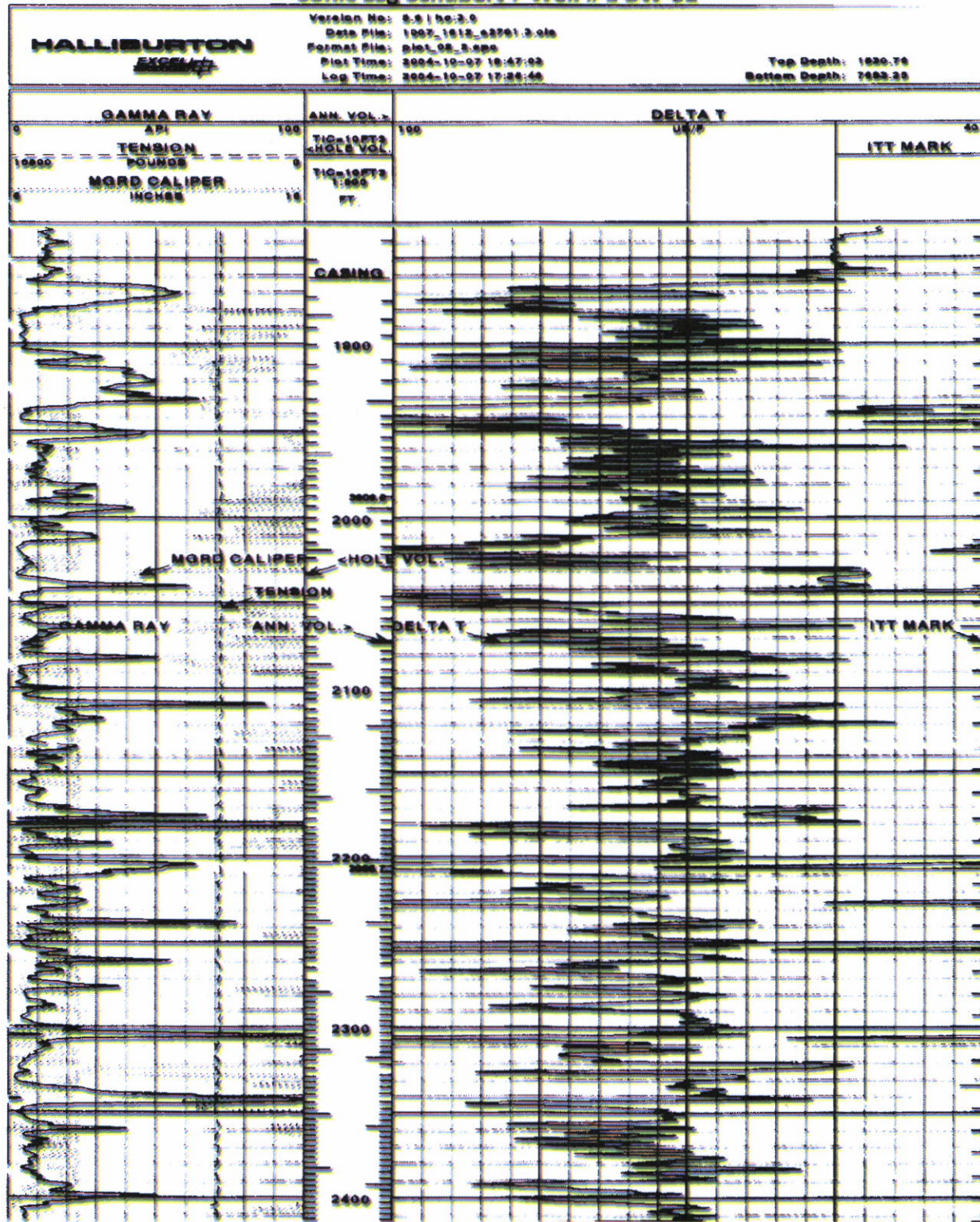
Taking the amount of Halite mined of 496,366,322 Lbs. and dividing the amount by 80 (Lbs. salt per ft.<sup>3</sup>) will equal  $6,204,579 \text{ ft.}^3$ . In respect to the cavern safety factor of 0.45 % the Schubert 7 Well No. 1 (BW-31) has a factor value of  $(306.68' \text{ W} / 1865 \text{ H}) = 0.1644$  well below the States warning factor. New horizons below 2312' will yield greater opportunities.

H.R.C., Inc. plans for the completed remedial work will drill 338' deeper contributing 246' of net Halite pay as per approved C-103 Intent.

BW-31 has a lot of life to continue mining for Halite that is used throughout our needs for the oil industry in Southeastern New Mexico.



## Sonic Log Schubert 7 Well # 1 BW-31





**SUMMARY RATIO INJECTION VS. EXTRACTION**

**2019 FLUID INJECTION & BRINE PRODUCTION VOLUME RATIO %**

MONTH	BRINE	PSI	FRESH WATER	PSI	RATIO	RATIO %
JANUARY	30,031	195-200	29719	25-30	30031:29719	101.0
FEBRUARY	28,726	195-200	28,492	25-30	14363:14246	100.8
MARCH	27,971	195-200	27,860	25-30	27971:27860	100.4
APRIL	16,717	195-200	16,621	25-30	16717:16621	100.6
MAY	18,123	195-200	13,967	25-30	18123:13967	129.8
JUNE	27,630	195-200	27,447	25-30	9210:9149	100.7
JULY	23,990	195-200	23,812	25-30	11995:11906	104.9
AUGUST	25,102	195-200	24,981	25-30	2282:2271	100.5
SEPTEMBER	18,188	195-200	18,031	25-30	18188:18031	100.9
OCTOBER	28,826	195-200	28,683	25-30	28826:28683	100.9
NOVEMBER	17,112	195-200	17,007	25-30	5704:5669	100.6
DECEMBER	22,466	195-200	22,340	25-30	11233:11170	100.6

**MAJOR FACILITY ACTIVITY OR EVENTS**

No major activities or events have taken place during 2019 on location.

H.R.C., Inc. completed the 180 day report after permit was renewed in 2019.

**SURFACE SUBSIDENCE MONITORING PLAN**

Surface Subsidence Surveys were conducted by Basin Surveys certified by Gary L. Jones. Four Elevation markers are in place. Please find below where the EM markers are located for BW-31.

**NEW MEXICO STATE PLANE COORDINATES (NAD83)**

WELL	NORTHING	EASTING	LATITUDE	LONGITUDE	ELEVATION
EM-1	611304.81	925484.92	32°40'27.52"	103°05'05.71"	3591.65
EM-2	611100.65	925800.11	32°40'25.46"	103°04'59.79"	3586.37
EM-3	611248.41	925991.42	32°40'26.90"	103°05'04.86"	3586.23
EM-4	610926.15	925561.84	32°40'23.76"	103°05'04.86"	3586.94

Three Surveys were conducted by Basin Surveys during the 2019 period with the description where no change in elevations has occurred also one that was conducted in January 2020. H.R.C., Inc. has depicted the 2019 reports of the surveys for your review below. Please find the plats of the Surveys at the end of this report for your viewing.

REVISION #	DATE	DESCRIPTION
12	January 15, 2019	Resurvey-No Change in Elevations
13	May 7, 2019	Resurvey-No Change in Elevations
14	October 14, 2019	Resurvey-No Change in Elevations
15	January 31, 2019	Resurvey-No Change in Elevations

**CAVERN CHARACTERIZATION DATA RESULTS.**

Please refer to page 19 and page 20 for data results.

Page 24; Please find the characterization of the Schubert 7 Well No. 1 (BW-31)

We have attached a copy for your viewing at the end of this yearly report.

Schubert 7 Well No1  
API 30-025-36781  
I SEC7 T19S R39E

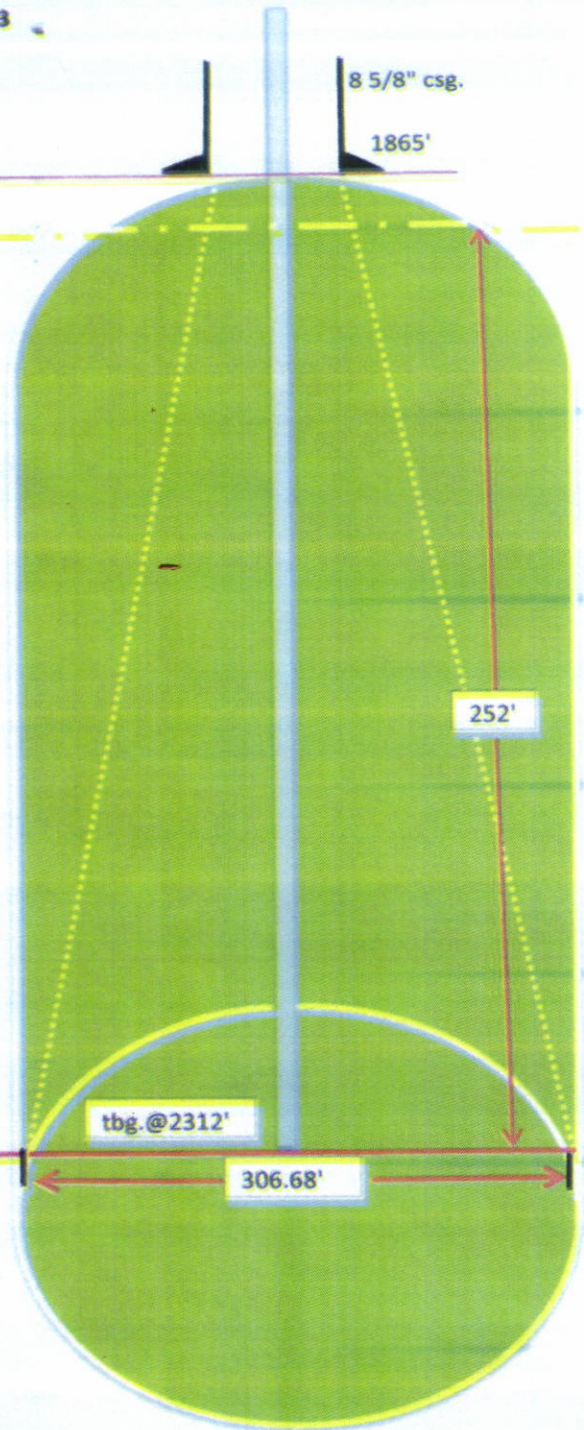
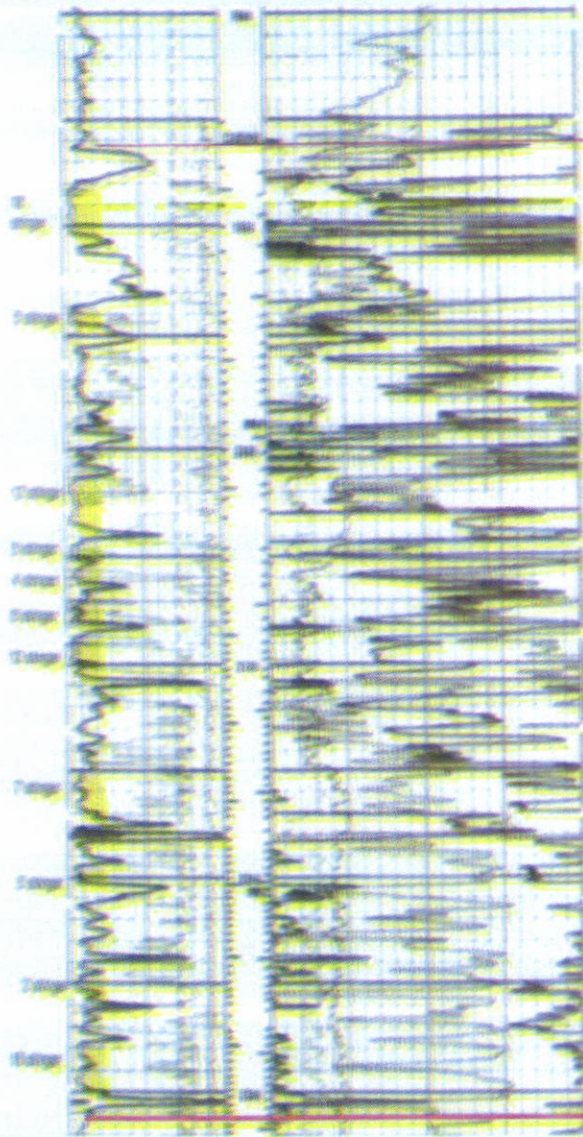
December 31, 2019

LAT: 32.6738815 LONG:-103.0835953

2 7/8" J-55 6.5# IPC

8 5/8" csg.

1865'



PPG 9.97 brine

PPG 8.34 fresh

SG 1.1951

2006 to December 31, 2019 Total Brine bbl. 4,064,046

122.136 LBS / BBL = 496,366,322 LBS HALITE

(496,366,322 LBS) / (80BLS per ft<sup>3</sup>) = 6,204,579 ft<sup>3</sup>

$$V = \frac{\pi r^2 h}{3}$$

$$V = (3.14159 * 153.335^2 * (252') / 3$$

$$V = 6,204,571 \text{ ft}^3$$

Est. height is 252'

Est. cavern floor diameter is 306.68'

306.68 / 1865 = 0.1644 factor value



**BW - 31**

**SCHUBERT 7 – WELL # 1**

**Year 2019**

<b>MONTH</b>	<b>BRINE PRODUCTION (BY Meter)</b>	<b>FRESH WATER INJECTED (By Meter)</b>
January	30,031	29,719
February	28,726	28,492
March	27,971	27,860
April	16,717	16,621
May	18,123	13,967
June	27,630	27,447
July	23,990	23,812
August	25,102	24,981
September	18,188	18,031
October	28,826	28,683
November	17,112	17,007
December	22,466	22,340



**BW 31**

**SCHUBERT 7 - WELL # 1**

[illegible]

June 24, 2019

GARY SCHUBERT

ETZ WATER STATION

PO BOX 6056

HOBBS, NM 88241

RE: SCHUBERT

Enclosed are the results of analyses for samples received by the laboratory on 06/10/19 15:45.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-18-11. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Total Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Cardinal Laboratories is accredited through the State of New Mexico Environment Department for:

Method SM 9223-B	Total Coliform and E. coli (Colilert MMO-MUG)
Method EPA 524.2	Regulated VOCs and Total Trihalomethanes (TTHM)
Method EPA 552.2	Total Haloacetic Acids (HAA-5)

Accreditation applies to public drinking water matrices for State of Colorado and New Mexico.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Celey D. Keene

Lab Director/Quality Manager

**Analytical Results For:**ETZ WATER STATION  
PO BOX 6056  
HOBBS NM, 88241Project: SCHUBERT  
Project Number: SCHUBERT #7 WELL  
Project Manager: GARY SCHUBERT  
Fax To:Reported:  
24-Jun-19 12:00

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BRINE WATER	H902012-01	Water	10-Jun-19 09:45	10-Jun-19 15:45
MONITOR WELL	H902012-02	Water	10-Jun-19 09:47	10-Jun-19 15:45
FRESH WATER	H902012-03	Water	10-Jun-19 09:50	10-Jun-19 15:45

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



### Analytical Results For:

ETZ WATER STATION  
PO BOX 6056  
HOBBS NM, 88241

Project: SCHUBERT  
Project Number: SCHUBERT #7 WELL  
Project Manager: GARY SCHUBERT  
Fax To:

Reported:  
24-Jun-19 12:00

### BRINE WATER H902012-01 (Water)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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#### Cardinal Laboratories

#### Inorganic Compounds

Alkalinity, Bicarbonate	83.0		5.00	mg/L	1	9060311	AC	12-Jun-19	310.1	
Alkalinity, Carbonate	<1.00		1.00	mg/L	1	9060311	AC	12-Jun-19	310.1	
Chloride*	196000		4.00	mg/L	1	9060719	AC	13-Jun-19	4500-Cl-B	
Conductivity*	253000		1.00	uS/cm	1	9061112	AC	12-Jun-19	120.1	
pH*	6.94		0.100	pH Units	1	9061112	AC	12-Jun-19	150.1	
Sulfate*	4140		833	mg/L	83.33	9061107	AC	11-Jun-19	375.4	
TDS*	314000		5.00	mg/L	1	9060701	AC	13-Jun-19	160.1	
Alkalinity, Total*	68.0		4.00	mg/L	1	9060311	AC	12-Jun-19	310.1	

#### Green Analytical Laboratories

#### Total Recoverable Metals by ICP (E200.7)

Calcium*	1570		20.0	mg/L	200	B906139	AES	18-Jun-19	EPA200.7	
Magnesium*	433		20.0	mg/L	200	B906139	AES	18-Jun-19	EPA200.7	
Potassium*	238	13.5	200	mg/L	200	B906139	AES	18-Jun-19	EPA200.7	
Sodium*	141000		1000	mg/L	1000	B906139	AES	19-Jun-19	EPA200.7	

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

### Analytical Results For:

ETZ WATER STATION  
PO BOX 6056  
HOBBS NM, 88241

Project: SCHUBERT  
Project Number: SCHUBERT #7 WELL  
Project Manager: GARY SCHUBERT  
Fax To:

Reported:  
24-Jun-19 12:00

### MONITOR WELL H902012-02 (Water)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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#### Cardinal Laboratories

##### Inorganic Compounds

Alkalinity, Bicarbonate	215		5.00	mg/L	1	9060311	AC	12-Jun-19	310.1	
Alkalinity, Carbonate	<1.00		1.00	mg/L	1	9060311	AC	12-Jun-19	310.1	
Chloride*	76.0		4.00	mg/L	1	9060719	AC	13-Jun-19	4500-Cl-B	
Conductivity*	660		1.00	uS/cm	1	9061112	AC	12-Jun-19	120.1	
pH*	7.94		0.100	pH Units	1	9061112	AC	12-Jun-19	150.1	
Sulfate*	60.8		10.0	mg/L	1	9061107	AC	11-Jun-19	375.4	
TDS*	435		5.00	mg/L	1	9060701	AC	13-Jun-19	160.1	
Alkalinity, Total*	176		4.00	mg/L	1	9060311	AC	12-Jun-19	310.1	

#### Green Analytical Laboratories

##### Total Recoverable Metals by ICP (E200.7)

Calcium*	55.1		0.500	mg/L	5	B906139	AES	18-Jun-19	EPA200.7	
Magnesium*	17.0		0.500	mg/L	5	B906139	AES	18-Jun-19	EPA200.7	
Potassium*	2.27	0.339	5.00	mg/L	5	B906139	AES	18-Jun-19	EPA200.7	
Sodium*	69.0		5.00	mg/L	5	B906139	AES	18-Jun-19	EPA200.7	

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 ETZ WATER STATION  
 PO BOX 6056  
 HOBBS NM, 88241

 Project: SCHUBERT  
 Project Number: SCHUBERT #7 WELL  
 Project Manager: GARY SCHUBERT  
 Fax To:

 Reported:  
 24-Jun-19 12:00

**FRESH WATER**  
**H902012-03 (Water)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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**Cardinal Laboratories**
**Inorganic Compounds**

Alkalinity, Bicarbonate	220		5.00	mg/L	1	9060311	AC	12-Jun-19	310.1	
Alkalinity, Carbonate	<1.00		1.00	mg/L	1	9060311	AC	12-Jun-19	310.1	
Chloride*	136		4.00	mg/L	1	9060719	AC	13-Jun-19	4500-Cl-B	
Conductivity*	1040		1.00	uS/cm	1	9061112	AC	12-Jun-19	120.1	
pH*	7.81		0.100	pH Units	1	9061112	AC	12-Jun-19	150.1	
Sulfate*	196		25.0	mg/L	2.5	9061107	AC	11-Jun-19	375.4	
TDS*	674		5.00	mg/L	1	9060701	AC	13-Jun-19	160.1	
Alkalinity, Total*	180		4.00	mg/L	1	9060311	AC	12-Jun-19	310.1	

**Green Analytical Laboratories**
**Total Recoverable Metals by ICP (E200.7)**

Calcium*	101		0.500	mg/L	5	B906147	AES	19-Jun-19	EPA200.7	
Magnesium*	27.9		0.500	mg/L	5	B906147	AES	19-Jun-19	EPA200.7	
Potassium*	3.78	0.339	5.00	mg/L	5	B906147	AES	19-Jun-19	EPA200.7	
Sodium*	97.8		5.00	mg/L	5	B906147	AES	19-Jun-19	EPA200.7	

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Celey D. Keene, Lab Director/Quality Manager



### Analytical Results For:

ETZ WATER STATION  
PO BOX 6056  
HOBBS NM, 88241

Project: SCHUBERT  
Project Number: SCHUBERT #7 WELL  
Project Manager: GARY SCHUBERT  
Fax To:

Reported:  
24-Jun-19 12:00

### Inorganic Compounds - Quality Control

#### Cardinal Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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#### Batch 9060311 - General Prep - Wet Chem

##### Blank (9060311-BLK1)

Prepared &amp; Analyzed: 04-Jun-19

Alkalinity, Carbonate	ND	1.00	mg/L							
Alkalinity, Bicarbonate	5.00	5.00	mg/L							
Alkalinity, Total	4.00	4.00	mg/L							

##### LCS (9060311-BS1)

Prepared &amp; Analyzed: 04-Jun-19

Alkalinity, Carbonate	ND	2.50	mg/L				80-120			
Alkalinity, Bicarbonate	305	12.5	mg/L				80-120			
Alkalinity, Total	250	10.0	mg/L	250		100	80-120			

##### LCS Dup (9060311-BSD1)

Prepared &amp; Analyzed: 04-Jun-19

Alkalinity, Carbonate	ND	2.50	mg/L				80-120		20	
Alkalinity, Bicarbonate	330	12.5	mg/L				80-120	7.87	20	
Alkalinity, Total	270	10.0	mg/L	250		108	80-120	7.69	20	

#### Batch 9060701 - Filtration

##### Blank (9060701-BLK1)

Prepared: 07-Jun-19 Analyzed: 11-Jun-19

TDS	ND	5.00	mg/L							
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##### LCS (9060701-BS1)

Prepared: 07-Jun-19 Analyzed: 11-Jun-19

TDS	525		mg/L	527		99.6	80-120			
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##### Duplicate (9060701-DUP1)

Source: H901974-01

Prepared: 07-Jun-19 Analyzed: 11-Jun-19

TDS	430	5.00	mg/L		388			10.3	20	
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#### Batch 9060719 - General Prep - Wet Chem

##### Blank (9060719-BLK1)

Prepared: 07-Jun-19 Analyzed: 10-Jun-19

Chloride	ND	4.00	mg/L							
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Celey D. Keene, Lab Director/Quality Manager

### Analytical Results For:

ETZ WATER STATION  
PO BOX 6056  
HOBBS NM, 88241

Project: SCHUBERT  
Project Number: SCHUBERT #7 WELL  
Project Manager: GARY SCHUBERT  
Fax To:

Reported:  
24-Jun-19 12:00

### Inorganic Compounds - Quality Control

#### Cardinal Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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#### Batch 9060719 - General Prep - Wet Chem

##### LCS (9060719-BS1)

Prepared: 07-Jun-19 Analyzed: 10-Jun-19

Chloride	96.0	4.00	mg/L	100	96.0	80-120
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##### LCS Dup (9060719-BSD1)

Prepared: 07-Jun-19 Analyzed: 10-Jun-19

Chloride	100	4.00	mg/L	100	100	80-120	4.08	20
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#### Batch 9061107 - General Prep - Wet Chem

##### Blank (9061107-BLK1)

Prepared &amp; Analyzed: 11-Jun-19

Sulfate	ND	10.0	mg/L
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##### LCS (9061107-BS1)

Prepared &amp; Analyzed: 11-Jun-19

Sulfate	21.6	10.0	mg/L	20.0	108	80-120
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##### LCS Dup (9061107-BSD1)

Prepared &amp; Analyzed: 11-Jun-19

Sulfate	21.3	10.0	mg/L	20.0	106	80-120	1.54	20
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#### Batch 9061112 - General Prep - Wet Chem

##### LCS (9061112-BS1)

Prepared: 11-Jun-19 Analyzed: 12-Jun-19

Conductivity	91900		uS/cm	100000	91.9	80-120
pH	7.09		pH Units	7.00	101	90-110

##### Duplicate (9061112-DUP1)

Source: H902003-01

Prepared: 11-Jun-19 Analyzed: 12-Jun-19

pH	9.01	0.100	pH Units	8.98	0.334	20
Conductivity	11000	1.00	uS/cm	11000	0.273	20

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Celey D. Keene, Lab Director/Quality Manager



**Analytical Results For:**

 ETZ WATER STATION  
 PO BOX 6056  
 HOBBS NM, 88241

 Project: SCHUBERT  
 Project Number: SCHUBERT #7 WELL  
 Project Manager: GARY SCHUBERT  
 Fax To:

 Reported:  
 24-Jun-19 12:00

**Total Recoverable Metals by ICP (E200.7) - Quality Control**
**Green Analytical Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B906139 - Total Rec. 200.7/200.8/200.2**
**Blank (B906139-BLK1)**

Prepared: 14-Jun-19 Analyzed: 18-Jun-19

Sodium	ND	1.00	mg/L							
Calcium	ND	0.100	mg/L							
Magnesium	ND	0.100	mg/L							
Potassium	0.121	1.00	mg/L							J

**LCS (B906139-BS1)**

Prepared: 14-Jun-19 Analyzed: 18-Jun-19

Sodium	3.56	1.00	mg/L	3.24		110	85-115			
Calcium	4.19	0.100	mg/L	4.00		105	85-115			
Potassium	8.47	1.00	mg/L	8.00		106	85-115			
Magnesium	20.5	0.100	mg/L	20.0		103	85-115			

**LCS Dup (B906139-BSD1)**

Prepared: 14-Jun-19 Analyzed: 18-Jun-19

Potassium	8.49	1.00	mg/L	8.00		106	85-115	0.168	20	
Calcium	4.18	0.100	mg/L	4.00		105	85-115	0.250	20	
Magnesium	20.6	0.100	mg/L	20.0		103	85-115	0.406	20	
Sodium	3.49	1.00	mg/L	3.24		108	85-115	2.06	20	

**Batch B906147 - Total Rec. 200.7/200.8/200.2**
**Blank (B906147-BLK1)**

Prepared: 17-Jun-19 Analyzed: 19-Jun-19

Sodium	ND	1.00	mg/L							
Calcium	ND	0.100	mg/L							
Potassium	0.222	1.00	mg/L							J
Magnesium	ND	0.100	mg/L							

**LCS (B906147-BS1)**

Prepared: 17-Jun-19 Analyzed: 19-Jun-19

Sodium	3.63	1.00	mg/L	3.24		112	85-115			
Potassium	8.34	1.00	mg/L	8.00		104	85-115			
Magnesium	20.2	0.100	mg/L	20.0		101	85-115			
Calcium	4.15	0.100	mg/L	4.00		104	85-115			

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 ETZ WATER STATION  
 PO BOX 6056  
 HOBBS NM, 88241

 Project: SCHUBERT  
 Project Number: SCHUBERT #7 WELL  
 Project Manager: GARY SCHUBERT  
 Fax To:

 Reported:  
 24-Jun-19 12:00

**Total Recoverable Metals by ICP (E200.7) - Quality Control**
**Green Analytical Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	--------------------	-------	----------------	------------------	------	----------------	-----	--------------	-------

**Batch B906147 - Total Rec. 200.7/200.8/200.2**
**LCS Dup (B906147-BSD1)**

Prepared: 17-Jun-19 Analyzed: 19-Jun-19

Potassium	8.19	1.00	mg/L	8.00		102	85-115	1.81	20	
Magnesium	19.9	0.100	mg/L	20.0		99.3	85-115	1.67	20	
Sodium	3.48	1.00	mg/L	3.24		107	85-115	4.43	20	
Calcium	4.04	0.100	mg/L	4.00		101	85-115	2.61	20	

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Notes and Definitions**

J	Estimated concentration. Analyte concentration between MDL and RL.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C
	Samples reported on an as received basis (wet) unless otherwise noted on report

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager





# CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Marland, Hobbs, NM 88240  
(575) 393-2326 FAX (575) 393-2476

BILL TO				ANALYSIS REQUEST														
Company Name: 8722 Water Station				P.O. #:														
Project Manager: Gary Schubert				Company:														
Address: P.O. Box 5102				Attn:														
City: Hobbs				Address:														
Phone #: 575 631 0962				City:														
Fax #: 575 631 0962				State:														
Project #: 88241				Phone #:														
Project Name: Water Samples				Fax #:														
Project Location: Schubert #7 Well																		
Sampler Name: Ben Donahue																		
FOR LAB USE ONLY																		
Lab I.D.	Sample I.D.	MATRIX	PRESERV	SAMPLING	DATE	TIME												
H902012	1 Brine water	GROUNDWATER	ACID/BASE	OTHER	6/10/19	9:45a												
	2 Monitor well	WASTEWATER	ICE / COOL	OTHER	6/10/19	9:45a												
	3 Fresh water	SLUDGE	OTHER	OTHER	6/10/19	9:50a												
		OIL																
		SOIL																
		WASTEWATER																
		GROUNDWATER																
		# CONTAINERS																
		(G) RAB OR (C) OMP																

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Relinquished By: <i>[Signature]</i>	Date: 6/10/19	Time: 15:45	Received By: <i>[Signature]</i>	Date: 6/10/19	Time: 15:45
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Delivered By: (Circle One)			Sample Condition		
Sampler - OPS - Bus - Other:			Cool	Intact	Checked By: (Initials)
			Yes <input checked="" type="checkbox"/>	Yes <input checked="" type="checkbox"/>	TO
			No <input type="checkbox"/>	No <input type="checkbox"/>	

Phone Result: ☐ Yes ☐ No  
Fax Result: ☐ Yes ☐ No  
Add'l Phone #: ☐  
Add'l Fax #: ☐

REMARKS:

email results to  
garipmschubert@gmail.com

January 06, 2020

BEN DONAHUE

ETZ WATER STATION

PO BOX 6056

HOBBS, NM 88241

RE: SCHUBERT

Enclosed are the results of analyses for samples received by the laboratory on 12/18/19 16:00.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-19-12. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Total Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Cardinal Laboratories is accredited through the State of New Mexico Environment Department for:

Method SM 9223-B	Total Coliform and E. coli (Colilert MMO-MUG)
Method EPA 524.2	Regulated VOCs and Total Trihalomethanes (TTHM)
Method EPA 552.2	Total Haloacetic Acids (HAA-5)

Accreditation applies to public drinking water matrices for State of Colorado and New Mexico.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Celey D. Keene

Lab Director/Quality Manager



**Analytical Results For:**ETZ WATER STATION  
PO BOX 6056  
HOBBS NM, 88241Project: SCHUBERT  
Project Number: SHUBERT #7 WATER SAMPLES  
Project Manager: BEN DONAHUE  
Fax To:Reported:  
06-Jan-20 11:28

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
#7 BRINE	H904229-01	Water	18-Dec-19 13:13	18-Dec-19 16:00
#7 MONITOR WELL	H904229-02	Water	18-Dec-19 13:15	18-Dec-19 16:00
#7 FRESH INJECTION	H904229-03	Water	18-Dec-19 13:13	18-Dec-19 16:00

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 ETZ WATER STATION  
 PO BOX 6056  
 HOBBS NM, 88241

 Project: SCHUBERT  
 Project Number: SHUBERT #7 WATER SAMPLES  
 Project Manager: BEN DONAHUE  
 Fax To:

 Reported:  
 06-Jan-20 11:28

**#7 BRINE**

H904229-01 (Water)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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**Cardinal Laboratories**
**Inorganic Compounds**

Alkalinity, Bicarbonate	73.0		5.00	mg/L	1	9112607	AC	20-Dec-19	310.1	
Alkalinity, Carbonate	<1.00		1.00	mg/L	1	9112607	AC	20-Dec-19	310.1	
Chloride*	172000		4.00	mg/L	1	9121721	AC	19-Dec-19	4500-Cl-B	
Conductivity*	280000		1.00	uS/cm	1	9121907	AC	20-Dec-19	120.1	
pH*	7.03		0.100	pH Units	1	9121907	AC	20-Dec-19	150.1	
Sulfate*	3780		500	mg/L	50	9122301	AC	23-Dec-19	375.4	
TDS*	319000		5.00	mg/L	1	9121717	AC	23-Dec-19	160.1	
Alkalinity, Total*	60.0		4.00	mg/L	1	9112607	AC	20-Dec-19	310.1	

**Green Analytical Laboratories**
**Total Recoverable Metals by ICP (E200.7)**

Calcium*	1440		50.0	mg/L	500	B912223	AES	31-Dec-19	EPA200.7	
Magnesium*	362		50.0	mg/L	500	B912223	AES	31-Dec-19	EPA200.7	
Potassium*	90.9	33.9	500	mg/L	500	B912223	AES	31-Dec-19	EPA200.7	
Sodium*	112000		500	mg/L	500	B912223	AES	31-Dec-19	EPA200.7	J

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 ETZ WATER STATION  
 PO BOX 6056  
 HOBBS NM, 88241

 Project: SCHUBERT  
 Project Number: SHUBERT #7 WATER SAMPLES  
 Project Manager: BEN DONAHUE  
 Fax To:

 Reported:  
 06-Jan-20 11:28

**#7 MONITOR WELL**

H904229-02 (Water)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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**Cardinal Laboratories**
**Inorganic Compounds**

Alkalinity, Bicarbonate	210		5.00	mg/L	1	9112607	AC	20-Dec-19	310.1	
Alkalinity, Carbonate	<1.00		1.00	mg/L	1	9112607	AC	20-Dec-19	310.1	
Chloride*	68.0		4.00	mg/L	1	9121721	AC	19-Dec-19	4500-Cl-B	
Conductivity*	674		1.00	uS/cm	1	9121907	AC	20-Dec-19	120.1	
pH*	8.02		0.100	pH Units	1	9121907	AC	20-Dec-19	150.1	
Sulfate*	63.9		10.0	mg/L	1	9122301	AC	23-Dec-19	375.4	
TDS*	392		5.00	mg/L	1	9121717	AC	23-Dec-19	160.1	
Alkalinity, Total*	172		4.00	mg/L	1	9112607	AC	20-Dec-19	310.1	

**Green Analytical Laboratories**
**Total Recoverable Metals by ICP (E200.7)**

Calcium*	34.2		0.500	mg/L	5	B912223	AES	31-Dec-19	EPA200.7	
Magnesium*	16.9		0.500	mg/L	5	B912223	AES	31-Dec-19	EPA200.7	
Potassium*	1.95	0.339	5.00	mg/L	5	B912223	AES	31-Dec-19	EPA200.7	
Sodium*	64.9		5.00	mg/L	5	B912223	AES	31-Dec-19	EPA200.7	J

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Celey D. Keene, Lab Director/Quality Manager



**Analytical Results For:**

 ETZ WATER STATION  
 PO BOX 6056  
 HOBBS NM, 88241

 Project: SCHUBERT  
 Project Number: SHUBERT #7 WATER SAMPLES  
 Project Manager: BEN DONAHUE  
 Fax To:

 Reported:  
 06-Jan-20 11:28

**#7 FRESH INJECTION**

H904229-03 (Water)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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**Cardinal Laboratories**
**Inorganic Compounds**

Alkalinity, Bicarbonate	303		5.00	mg/L	1	9112607	AC	20-Dec-19	310.1	
Alkalinity, Carbonate	<1.00		1.00	mg/L	1	9112607	AC	20-Dec-19	310.1	
Chloride*	232		4.00	mg/L	1	9121721	AC	19-Dec-19	4500-Cl-B	
Conductivity*	1510		1.00	uS/cm	1	9121907	AC	20-Dec-19	120.1	
pH*	7.73		0.100	pH Units	1	9121907	AC	20-Dec-19	150.1	
Sulfate*	159		25.0	mg/L	2.5	9122301	AC	23-Dec-19	375.4	
TDS*	896		5.00	mg/L	1	9121717	AC	23-Dec-19	160.1	
Alkalinity, Total*	248		4.00	mg/L	1	9112607	AC	20-Dec-19	310.1	

**Green Analytical Laboratories**
**Total Recoverable Metals by ICP (E200.7)**

Calcium*	145		0.500	mg/L	5	B912223	AES	31-Dec-19	EPA200.7	
Magnesium*	24.0		0.500	mg/L	5	B912223	AES	31-Dec-19	EPA200.7	
Potassium*	17.7	0.339	5.00	mg/L	5	B912223	AES	31-Dec-19	EPA200.7	
Sodium*	147		5.00	mg/L	5	B912223	AES	31-Dec-19	EPA200.7	

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 ETZ WATER STATION  
 PO BOX 6056  
 HOBBS NM, 88241

 Project: SCHUBERT  
 Project Number: SHUBERT #7 WATER SAMPLES  
 Project Manager: BEN DONAHUE  
 Fax To:

 Reported:  
 06-Jan-20 11:28

**Inorganic Compounds - Quality Control**
**Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 9112607 - General Prep - Wet Chem**
**Blank (9112607-BLK1)**

Prepared &amp; Analyzed: 02-Dec-19

Alkalinity, Carbonate	ND	1.00	mg/L
Alkalinity, Bicarbonate	5.00	5.00	mg/L
Alkalinity, Total	4.00	4.00	mg/L

**LCS (9112607-BS1)**

Prepared &amp; Analyzed: 02-Dec-19

Alkalinity, Carbonate	ND	2.50	mg/L				80-120
Alkalinity, Bicarbonate	318	12.5	mg/L				80-120
Alkalinity, Total	260	10.0	mg/L	250	104		80-120

**LCS Dup (9112607-BSD1)**

Prepared &amp; Analyzed: 02-Dec-19

Alkalinity, Carbonate	ND	2.50	mg/L				80-120		20
Alkalinity, Bicarbonate	318	12.5	mg/L				80-120	0.00	20
Alkalinity, Total	260	10.0	mg/L	250	104		80-120	0.00	20

**Batch 9121717 - Filtration**
**Blank (9121717-BLK1)**

Prepared: 17-Dec-19 Analyzed: 19-Dec-19

TDS	ND	5.00	mg/L
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**LCS (9121717-BS1)**

Prepared: 17-Dec-19 Analyzed: 19-Dec-19

TDS	511		mg/L	527	97.0		80-120
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**Duplicate (9121717-DUP1)**

Source: H904189-01

Prepared: 17-Dec-19 Analyzed: 19-Dec-19

TDS	125000	5.00	mg/L	124000				1.01	20
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**Batch 9121721 - General Prep - Wet Chem**
**Blank (9121721-BLK1)**

Prepared &amp; Analyzed: 17-Dec-19

Chloride	ND	4.00	mg/L
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**Cardinal Laboratories**

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



**Analytical Results For:**

 ETZ WATER STATION  
 PO BOX 6056  
 HOBBS NM, 88241

 Project: SCHUBERT  
 Project Number: SHUBERT #7 WATER SAMPLES  
 Project Manager: BEN DONAHUE  
 Fax To:

 Reported:  
 06-Jan-20 11:28

**Inorganic Compounds - Quality Control**
**Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 9121721 - General Prep - Wet Chem**
**LCS (9121721-BS1)**

Prepared &amp; Analyzed: 17-Dec-19

Chloride	100	4.00	mg/L	100		100	80-120			
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**LCS Dup (9121721-BSD1)**

Prepared &amp; Analyzed: 17-Dec-19

Chloride	100	4.00	mg/L	100		100	80-120	0.00	20	
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**Batch 9121907 - General Prep - Wet Chem**
**LCS (9121907-BS1)**

Prepared: 19-Dec-19 Analyzed: 20-Dec-19

pH	7.10		pH Units	7.00		101	90-110			
Conductivity	98700		uS/cm	100000		98.7	80-120			

**Duplicate (9121907-DUP1)**

Source: H904229-01

Prepared: 19-Dec-19 Analyzed: 20-Dec-19

Conductivity	282000	1.00	uS/cm		280000			0.640	20	
pH	6.91	0.100	pH Units		7.03			1.72	20	

**Batch 9122301 - General Prep - Wet Chem**
**Blank (9122301-BLK1)**

Prepared &amp; Analyzed: 23-Dec-19

Sulfate	ND	10.0	mg/L							
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**LCS (9122301-BS1)**

Prepared &amp; Analyzed: 23-Dec-19

Sulfate	20.8	10.0	mg/L	20.0		104	80-120			
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**LCS Dup (9122301-BSD1)**

Prepared &amp; Analyzed: 23-Dec-19

Sulfate	20.7	10.0	mg/L	20.0		103	80-120	0.434	20	
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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 ETZ WATER STATION  
 PO BOX 6056  
 HOBBS NM, 88241

 Project: SCHUBERT  
 Project Number: SHUBERT #7 WATER SAMPLES  
 Project Manager: BEN DONAHUE  
 Fax To:

 Reported:  
 06-Jan-20 11:28

**Total Recoverable Metals by ICP (E200.7) - Quality Control**
**Green Analytical Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B912223 - Total Rec. 200.7/200.8/200.2</b>										
<b>Blank (B912223-BLK1)</b>										
Prepared: 30-Dec-19 Analyzed: 31-Dec-19										
Sodium	ND	1.00	mg/L							
Calcium	ND	0.100	mg/L							
Magnesium	ND	0.100	mg/L							
Potassium	ND	1.00	mg/L							
<b>LCS (B912223-BS1)</b>										
Prepared: 30-Dec-19 Analyzed: 31-Dec-19										
Magnesium	20.8	0.100	mg/L	20.0		104	85-115			
Calcium	4.25	0.100	mg/L	4.00		106	85-115			
Sodium	3.50	1.00	mg/L	3.24		108	85-115			
Potassium	8.40	1.00	mg/L	8.00		105	85-115			
<b>LCS Dup (B912223-BSD1)</b>										
Prepared: 30-Dec-19 Analyzed: 31-Dec-19										
Sodium	3.38	1.00	mg/L	3.24		104	85-115	3.52	20	
Potassium	8.23	1.00	mg/L	8.00		103	85-115	2.06	20	
Calcium	4.15	0.100	mg/L	4.00		104	85-115	2.37	20	
Magnesium	20.4	0.100	mg/L	20.0		102	85-115	1.80	20	

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Celey D. Keene, Lab Director/Quality Manager

**Notes and Definitions**

- J Estimated concentration. Analyte concentration between MDL and RL.
- ND Analyte NOT DETECTED at or above the reporting limit
- RPD Relative Percent Difference
- \*\* Samples not received at proper temperature of 6°C or below.
- \*\*\* Insufficient time to reach temperature.
- Chloride by SM4500Cl-B does not require samples be received at or below 6°C  
Samples reported on an as received basis (wet) unless otherwise noted on report

---

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**Caley D. Keene, Lab Director/Quality Manager**





101 East Merland, Hobbs, NM 88240  
(575) 393-2326 FAX (575) 393-2476

# CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

<b>Company Name:</b> <u>ETS Water Station</u> <b>Project Manager:</b> <u>Ben Donahue</u> <b>Address:</b> <u>P.O. Box 5102</u> <b>City:</b> <u>Hobbs</u> <b>State:</b> <u>NM</u> <b>Zip:</b> <u>88241</u> <b>Phone #:</b> <u>575 393 3944</u> <b>Fax #:</b> _____ <b>Project #:</b> <u>Schubert #7</u> <b>Project Owner:</b> _____ <b>Project Name:</b> <u>Schubert #7 Water Samples</u> <b>Project Location:</b> <u>Schubert #7 Bine Well</u> <b>Sampler Name:</b> <u>Ben Donahue</u>		<b>BILL TO</b> <b>P.O. #:</b> _____ <b>Company:</b> _____ <b>Attn:</b> _____ <b>Address:</b> _____ <b>City:</b> _____ <b>State:</b> _____ <b>Zip:</b> _____ <b>Phone #:</b> _____ <b>Fax #:</b> _____		<b>ANALYSIS REQUEST</b>	
<b>FOR LAB USE ONLY</b> <b>Lab I.D.</b> <u>H904229</u> <b>Sample I.D.</b> _____ <u>1 #7 Bine</u> <u>2 #7 Monitor Well</u> <u>3 #7 Fresh Injection</u>		<b>MATRIX</b> (G) RAB OR (C) OMP. _____ # CONTAINERS _____ GROUNDWATER _____ WASTEWATER _____ SOIL _____ OIL _____ SLUDGE _____ OTHER: _____		<b>PRESERV.</b> ICE / COOL _____ ACID/BASE _____ OTHER: _____	
		<b>SAMPLING</b> <b>DATE</b> <u>12/19/19</u> <b>TIME</b> <u>1:13p</u> <u>12/19/19</u> <u>1:15p</u> <u>12/19/19</u> <u>1:13p</u>		<u>Cation / Anions</u>	

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

<b>Relinquished By:</b> <u>Ben Donahue</u> <b>Date:</b> <u>12-19-19</u> <b>Time:</b> <u>16:00</u>	<b>Received By:</b> <u>Yayana Dilday</u> <b>Date:</b> _____ <b>Time:</b> _____
--	---

**Delivered By:** (Circle One) \_\_\_\_\_

**Observed Temp. °C** -0.9 **Sample Condition** Cool Intact

**Corrected Temp. °C** -0.5 **Cool** Intact **Sample Condition** Cool Intact

**Sampler - UPS - Bus - Other:** \_\_\_\_\_ **Correction Factor +0.4 °C** Yes No Yes No **Observed Temp. °C** \_\_\_\_\_ **Corrected Temp. °C** \_\_\_\_\_

**REMARKS:**

**Verbal Results:** ☐ Yes ☐ No **Acid Phone #:** \_\_\_\_\_

**All Results are emailed. Please provide Email address:** \_\_\_\_\_

**Bacteria (only) Sample Condition** Cool Intact Yes No **Observed Temp. °C** \_\_\_\_\_ **Corrected Temp. °C** \_\_\_\_\_

\* Cardinal cannot accept verbal changes. Please email changes to caley.keene@cardinallabsnm.com

**BW- 031**

**180 DAY**

**Report**

**2019**



Discharge Permit (BW-31), H.R.C., Inc. UIC Class III Brine well "Shubert '7' Well No. 1 (API No. 30-025-36781) UL: J Section 7 Township 19 South, Range 39 East, 2313FSL, 2313 FEL, Lat. 33.67388°, Long. 103.08360° NMPM, Lea County, New Mexico.

#### **Pursuant to 20.6.2.3109A NMAC.**

NM OCD approved the new discharge permit approval conditions on January 23, 2019

H.R.C., Inc. will notify the Director of any increase in the injection volume or injection pressure, or process modifications that would result in any changes in the water quality or volume of the discharge as to the Pursuant of 20.6.2.3107C NMAC.

H.R.C., Inc. Under 20.6.2.33106F will submit a discharge permit renewal application at least 120 days before this permit expires on January 23, 2024.

H.R.C., Inc. Subject to 20.6.2.3114 NMAC has submitted it's \$100.00 filing fee and the \$1.700.00 permit fee for the Shubert 7 well No. 1 (BW-31) to the Water Quality Management Fund.

#### **General Provisions**

H.R.C., Inc. has not had any effluents or leachate to discharge that would directly or indirectly reach the water top of 75 feet from surface. Pursuant to the Water Quality Act and WQCC rules, 20.6.2 NMAC H.R.C., Inc. does not authorize any treatment of, or on-site disposal of, any materials, product, by-production, or oil-field waste at the Schubert 7 Well No. 1 and prohibits the injection of fluids as stated in pursuant of 20.6.2.5004A NMAC. That being:

1. The injection of fluids into a motor vehicle waste disposal well.
2. The injection of fluids into a large capacity cesspool.
3. The injection of any hazardous or radioactive waste into a well except as provided by 20.6.2.5004A (3) NMAC
4. Class IV wells are prohibited, except for wells re-injecting treated ground water into the same formation from which it was drawn as part of a removal or remedial action.
5. Barrier wells, Drainage wells, recharge wells, return flow wells, and motor vehicle waste disposal wells are prohibited.

H.R.C., Inc. is operating in accordance and conditions specified in this Discharge Permit and is complying with the Quality Act and the rules issued to that Act as stated in 20.6.3109C NMAC. Chemical water Analysis are taken to provide the OCD with the water chemical contents showing the standards of 20.6.2.3103 & 20.6.2.3109H(2) NMAC protecting any discharge that will cause any stream or property standards to be violated so that no discharge of any water contaminant will result in a hazard to public health as per 20.6.2.3109H(3) NMAC. Please find the water Chemical Analysis at the end of this report. H.R.C., Inc. will and complies with 20.62.1 through 20.6.2.5399 NMAC for Class III wells.

#### **Modifications and Terminations:**

No modifications have been made at the Shubert 7 Well No. 1 facility and will notify the OCD Director and OCD's Environmental Bureau of any expansion or process modification as per 20.6.2.3107C NMAC. H.R.C., Inc. is aware that a Discharge Permit modification application pursuant to 20.6.2.3109E may be required by the OCD Director. H.R.C., Inc. understands that the OCD Director may require modification, or if it is determined by the OCD Director that the modification may not be adequate, may terminate this Discharge Permit for Class III well that was approved pursuant to the requirements of 20.6.2.500 – 20.6.2.5399 NMAC for the following causes as stated in the Terms 1(A) through 1(c) and 2(a) through 2(c)

#### **General Facility Operations:**

H.R.C., Inc. is continuing to use both fresh water and water that comes from the treated non potable fresh water from the City of Hobbs. Both water types are tested by Cardinal Laboratories located at 101 E Marland street Hobbs, New Mexico. Please find the chemical analysis of the Fresh Water, City of Hobbs Treated Water, and the Brine Water produced by the Shubert 7 Well No. 1 (BW-031) attached at the end of this report. Daily readings of water being injected and brine water being extracted with pressure readings of the well are recorded. The average injection pressure is 200 psi and the average production pressure is 30 psi. Below are the monthly totals from January 2019 through July 2019 (Page 4). OCD has received H.R.C., Inc. 2018 yearly report that contains the totals of injected and extracted fluid totals.

## FRESH WATER

Month - Date	Fresh Water Meter Reading (X 100)	F/W used by Gallons (x 100)	Total Injected BBL
Dec. 2018	1,285,131	Existing 2018 report	Existing 2018 report
Month - Date	Fresh Water Meter Reading (X 100)	F/W used by Gallons (x 100)	Total Injected BBL
January 31, 2019	1,297,613	$12,482 \times 100 / 42 =$	29,719
February 28, 2019	1,309,580	$11,967 \times 100 / 42 =$	28,492
March 30, 2019	1,321,281	$11,701 \times 100 / 42 =$	27,860
April 30, 2019	1,328,262	$6,981 \times 100 / 42 =$	16,612
May 31, 2019	1,335,808	$7,546 \times 100 / 42 =$	13,967
June 30, 2019	1,347,336	$11,528 \times 100 / 42 =$	27,447
July 31, 2019	1,357,337	$10,001 \times 100 / 42 =$	23,812

## PRODUCED BRINE

December 2018			Brine extracted BBL
January 2019			30,031
February 2019			28,726
March 2019			27,971
April 2019			16,717
May 2019			18,123
June 2019			27,630
July 2019			23,990

As pursuant of 20.6.2.5207C.

## **Groundwater Monitor Well**

Please find at the end of this report the water analysis from the Shubert 7 Well No.1 (BW-031) Monitor well. The water analysis taken from the water monitor well at the Schubert 7 Well No. 1 location complies with EPA Quality Assurance / Control (QA/QC) and Data Quality Objectives (DQOs) and shows the following characteristics found within the water as per 20.6.2.3103.

## **Solution Cavern Monitoring Program**

H.R.C., Inc. continues the Surface Subsidence Monitoring Plan that started on 9/9/15 with 4 monuments that monitor the elevation of the monuments and the top of the well casing. Recorded data of the surveying team is entered on a plat for viewing possible surface subsidence and is tied to the nearest USGS geodetic benchmark shown on the Survey Plat with the monuments and dates of each survey performed. The Survey is conducted and recorded by Gary L. Jones with Basin Surveys located at 1120 NW County Rd, Hobbs, New Mexico. Because this is a live document H.R.C., Inc. will report to the Department of the next survey as Basin Survey completes them Please find at the end of this report the latest Survey Plat performed at the Shubert 7 Well No. 1 (BW-031). There are no change to this date of May 7, 2019.

## **Solution Cavern Characterization Program**

Reported Volumes from 2006 through 2017 had a total of 3,538,154 bbl. brine extracted from the BW-031 well. This amount had an average SG of 1.1951 producing brine at 9.97 PPG respectively. There is 252' of formation with 94 foot net pay of Halite being mined. To produce the quality brine a total of 432,135,977 lbs. of salt was used or a total volume of 5,401,700 ft.<sup>3</sup> mined. This calculated to a base of 286.14' in diameter by 252' tall.

Reported Volumes from 2006 through 2018 had a total of 3,779,164 bbl. brine extracted from the well. This amount has an average SG of 1.1951 still producing at an average of 9.97 PPG brine solution though temperature of water very it is not enough to swing a difference in the brine saline composition. A total of 461,571,974.304 lbs. of Halite was used or a total volume of 5,769,650 ft.<sup>3</sup> mined. 2018 cavern size increased by 367,950 ft.<sup>3</sup> with an increase at the base of 9.58 ft. in diameter now at 295.72'. Using the OCD cavern control factor 295.72 / 1865'



equals 0.159 %. From 2006 through July 2019 a total of 3,952,352 bbl. as been produced yielding a total of 173,188 bbl. up to July 2019. This reflects an increase of 7.92' or 264,406 ft.<sup>3</sup> of Halite mined with a calculated Cavern Control Factor of 0.163%.

Please find the Schematic drawings of the 2006 through 2018 and the 2006 through July 2019 Cavern Characterization with the formulation of data results at the end of this report.

### **Annual Certification**

H.R.C., Inc. reported its 2018 annual report to OCD Santa Fe on January 17, 20019 submitting total volumes of fresh water, brine extraction; chemical water analysis and it surface subsidence monitoring findings for 2018 as stated above under Solution Cavern Characterization program shows that the well bore holds an OCD cavern control value for July 2019 of 0.163%.

### **Contingency plan**

H.R.C., Inc. will follow NMAC 20.6.2.1203 where H.R.C., Inc.

1. As soon as possible after learning of such a discharge has occurred within 24 hours will orally notify the Chief of the Ground Water Quality Bureau of the department, or his counter partner in any constituent agency delegated responsibility for enforcement of these rules. H.R.C., Inc. will notify Jim Griswold or Carl Chavez in Santa Fe, District II Hobbs of any release discharge. The Plan will be immediately implemented as follows:

- a. Name, address and telephone number of the person in charge of the facility as well as the owner or operator of the facility.
- b. Name, and address of the facility.
- c. Date, and time, location and duration of the discharge.
- d. The source and cause of the discharge.
- e. A description of the discharge including its chemical composition.

f. The estimated volume of the discharge.

g. Any actions taken to mitigate immediate damage from the discharge.

H.R.C., Inc. within one week of a discharge will send written notification to the same department officials verifying the prior oral notification and providing any appropriate or corrections to the information contained in the prior oral notification.

The C-141 Release Notification and Correction Action form will be used. Once mitigation of the discharge is complete form C-141 will be filled out with the information of what and how the discharge was addressed within 15 days of the discharge.

H.R.C., Inc. will seek in an effort to determine the department's views as to what further corrective actions may be necessary or approved to the discharge in question.

### **Closure**

H.R.C., Inc. will submit as a condition of C-103 Sundry approval and for OCD approval, a facility closure plan with third party cost estimate for its well pursuant to 20.6.2.5209 NMAC as specified in the permit conditions 2.I and 5.B to address the well plugging and abandonment, land surface restoration, environmental groundwater monitoring, pipeline abandonment and a five year surface subsidence monitoring plan. A pre-closure notification will be sent to OCD's Environmental Bureau at least 30 days prior to the date that is proposed to close or to discontinue operation of the Schubert 7 Well No. 1 (BW-031) pursuant to 20.2.5005A NMAC. H.R.C., Inc. understands and will seek the approval of the Environmental Bureau of all proposed well and facility closure before implementing the closure plan and will include the required information as stated from the 17 bullets of (2. Required Information) pursuant to 20.6.2.5005B NMAC.

### **Plugging and Abandonment Plan**

A C-103 Intent form will be submitted for approval with the plugging plan with the C-103, a current wellbore diagram and a wellbore diagram of the proposed cement plugging will be sent for review and approval to the Environmental Bureau and District II in Hobbs H.R.C., Inc. will follow any changes that might be addressed and make corrections to the plan.

### **Record Keeping**

H.R.C., Inc. maintains records of daily production, inspections, surveys, water analysis as required by the discharge plan and is available for review by OCD if needed.

## **Release Reporting**

H.R.C., Inc. will follow its contingency plan as stated above with Oral notification and written Notification please see Contingency Plan in this report.

## **Other Requirements**

H.R.C., Inc. will comply with 74-6-9 NMSA and 20.6.2.3107A NMAC and welcomes any authorized representative of the OCD Director to enter the premises, inspect and copy records, inspect any treatment works, monitoring, and analytical equipment, take samples of injection fluids or produced brine and conduct various types of environmental media sampling also to use H.R.C., Inc. monitor systems and wells in order to collect groundwater samples.

## **Advance Notice**

H.R.C., Inc. will provide OCD's Environmental Bureau and the Hobbs District office at least 5 days advance notice of any environmental sampling to be performed, any well plugging, abandonment or decommissioning of any equipment associated with the BW-031.

## **Environmental Monitoring**

Cardinal Laboratory samples and records its analytical data collected as specified in 20.6.2.3107B NMAC. Cardinal Laboratory is an accredited National Environmental Laboratory Accreditation Conference (NELAC). H.R.C., Inc. will continue to use Cardinal Laboratory and submit their water analysis to the Bureau when received from Cardinal Laboratory including all raw analytical data. BW-031 has a monitor well down gradient of the well as shown on the Surface Subsidence Monitoring survey plat where Cardinal Laboratory takes water for analytical chemical composition as stated in Section 2.A.1 of the Discharge Permit.

## **Bonding or Financial Assurance**

H.R.C., Inc. pursuant to 20.6.2.5210B (17) maintains a single well bond that will cover the cost of plugging and abandonment of the BW-031 Class III well with the surface restoration, pipeline abandonment with the cost of monitoring the Monitor Fresh water well down gradient for five years. The Bond has been approved and in place with this renal permit.

## **Annual Report**

H.R.C., Inc. Mr. Shubert reported that he has sent their 2018 Report on January 17, 2019.

## **Operating Requirements**

1. H.R.C., Inc. is in the process of approving the AFE needed to do its remedial work on the BW-031 as stated on the approved C-103 and as stated within the permit under Brine Production Method. Once the AFE is approved H.R.C., Inc. will start to locate the needed casing, tubular pipe and downhole equipment that will be needed to complete the remedial work of the BW-031.
2. H.R.C., Inc. will notify the OCD's Environmental Bureau and Hobbs District Office within 24 hours if a discharge is suspected into a zone or zones other than the permitted injection zone of 1995'-2750'. The .2 factor per vertical foot of depth to the top of the stated interval of 1995' will be used as the standard to determine Maximum Surface Pressure. The maximum pressure is 399 psi at surface. Safe guards have been installed to shut down the operation if the pressure at 350 psi to assure that fracturing does not occur.
3. Pipeline and connections will be hydro tested once the completion of the well has been done. Safety shut off devices will be installed to prevent a discharge if pressures reach above the high side of pressure or below the operating pressure. H.R.C., Inc. has a lease operator that daily inspects the lines, connections, pressures and tank levels where he records on a day to month report. H.R.C., will send OCD Environmental an updated wellhead schematic with the lines and connections that tie into the wellhead and the tubing showing where the meters, safety pressure devices are located with the hydrostatic test of the lines.

## **Injection Pressure Limits**

1. Well Injection Pressure Limits for the Schubert 7 Well No. 1 (BW-031) is 399 PSI at surface. A 40 pound reduction will be used as a safety limit will be used where the maximum psi of 359 psi will be set on the safety device this will assure that fracturing pressure is not reached.
2. BW-031 is equipped with the needed devices and alarms that will shut down the injection operations if a high or low set pressure is presented while injection is in operation. If creeping pressures arise H.R.C., Inc. will reverse flow from the tubing to the annulus to melt any salt blocks that might occur this method will be used periodically to keep the well clean and used as a preventive method of damaging the formation or fracking.

## **Continuous Monitoring**

Pressure gauges will be placed at the top of the injection port and the annulus discharge port to allow a daily visual of the pressure activity on a daily visit to the well. The Lease Operator will



record each day his findings of the pressure. Daily meter readings will also be read and recorded with the flow volume stored within the brine tank battery.

### **Mechanical Integrity**

BW-031 will undergo an MIT once the new casing is set at a depth of 100 foot below the top of the Salado where a plug (AD-1) packer will be set 20' from the casing shoe and tested to 500 psi for 30 minutes. District II and the OCD Environmental Bureau will be notified 5 days prior to conducting the MIT to allow OCD the opportunity to witness the MIT. All chart recorder information, Chart, Calibration Certificate will be provided to OCD within 5 days of the completion of the MIT.

Please contact me if there are any questions.

Respectfully Yours,

David H. Alvarado  
Acting Agent for H.R.C., Inc.

Alvarado & Sons Consulting LLC

Phone: 575-513-1238

Email: [davidal00136@gmail.com](mailto:davidal00136@gmail.com)



## Chavez, Carl J, EMNRD

---

**From:** Chavez, Carl J, EMNRD  
**Sent:** Thursday, January 4, 2018 10:37 AM  
**To:** 'Gary Schubert'  
**Cc:** Griswold, Jim, EMNRD  
**Subject:** BWs 31 and 36 Annual Reports

Gary:

Good morning. The New Mexico Oil Conservation Division (OCD) has completed its review of the above subject Annual Reports.

Regarding injection and production data, HRC, Inc. also needs to include injection well pressure data or information. Does HRC have an explanation for the relative percent difference in injection vol. (lower vol.) vs. production (higher vol.) exceeding 10%?

Regarding the subsidence well monitoring survey submittal, HRC, Inc. also needs to include information on the elevation transect with close-out elevation for every survey, which demonstrates the accuracy of every survey is required. The table of actual monument elevations per well over time to the nearest 0.01 ft. should definitely be provided. A graph of each monument survey elevation from the table is recommended, but optional, and will assist the operator in providing the data necessary to substantiate request for a reduction in the frequency of surveys in the future.

Regarding the lack of MIT information, HRC, Inc. also needs to provide any MIT information conducted over the year.

Please take some time to review the annual report criteria, and provide a response and/or information requested above to the OCD within 60-days from the date of this message.

Please contact me if you have questions. Thank you.

Mr. Carl J. Chavez, CHMM (#13099)  
New Mexico Oil Conservation Division  
Energy Minerals and Natural Resources Department  
1220 South St Francis Drive  
Santa Fe, New Mexico 87505  
Ph. (505) 476-3490  
E-mail: [CarlJ.Chavez@state.nm.us](mailto:CarlJ.Chavez@state.nm.us)

**“Why not prevent pollution, minimize waste to reduce operating costs, reuse or recycle, and move forward with the rest of the Nation?” (To see how, go to: <http://www.emnrd.state.nm.us/OCD> and see “Publications”)**

**HRC, INC.**  
P. O. Box 5102  
Hobbs, NM 88241-5102  
Phone # (575) 393-6662  
Fax # (575) 393-6662

RECEIVED OCD  
2017 DEC 27 P 3: 10

December 05, 2017

**Jim Griswold**  
Senior Hydrologist  
ENMRD/Oil Conservation Division  
1220 South St. Francis Drive  
Santa Fe, New Mexico 87505

Ref: 2017 Annual Report  
B-31 Schubert 7 – Well # 1

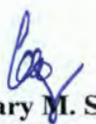
(BW-31)

Dear Mr. Griswold,

Enclosed please find the monthly freshwater injection and brine production numbers for the Hobbs facility for the year of 2017.  
Included also are Cardinal Laboratories' results of analyses for samples for the month of May and November, 2017.

Thank you,

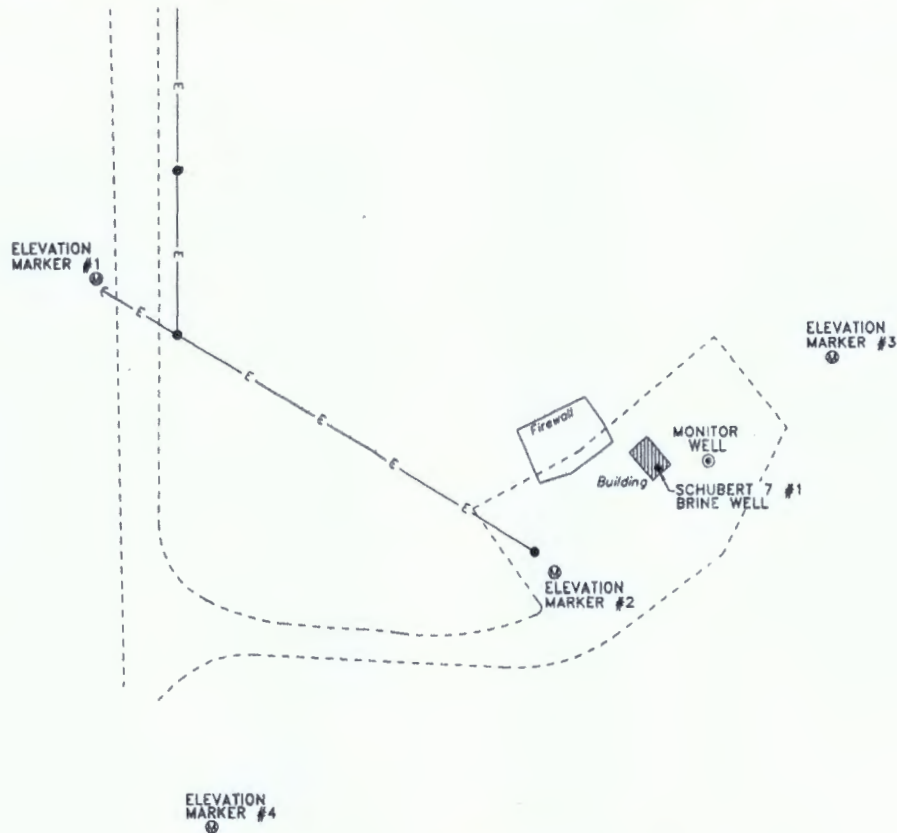
Sincerely,



**Gary M. Schubert**  
GMS/br



SECTION 7, TOWNSHIP 19 SOUTH, RANGE 39 EAST, N.M.P.M.,  
LEA COUNTY, NEW MEXICO.



NOTE:  
ELEVATIONS ARE ON BLACK MARK  
ON NORTH SIDE OF PVC CASING.

NEW MEXICO STATE PLANE COORDINATES (NAD83)

WELL	NORTHING	EASTING	LATITUDE	LONGITUDE	ELEVATION
EM-1	611304.81	925484.92	32°40'27.52"	103°05'05.71"	3591.55
EM-2	611100.65	925800.11	32°40'25.46"	103°05'02.05"	3586.37
EM-3	611248.41	925991.42	32°40'26.90"	103°04'59.79"	3586.23
EM-4	610926.15	925561.84	32°40'23.76"	103°05'04.86"	3586.94

REVISION #	DATE	DESCRIPTION
1	SEPT. 9, 2015	ORIGINAL SURVEY
2	DEC. 15, 2015	RESURVEY-NO CHANGE IN ELEVATIONS
3	APRIL 12, 2016	RESURVEY-NO CHANGE IN ELEVATIONS
4	JULY 26, 2016	RESURVEY-NO CHANGE IN ELEVATIONS
5	OCTOBER 27, 2016	RESURVEY-NO CHANGE IN ELEVATIONS
6	February 6, 2017	RESURVEY-NO CHANGE IN ELEVATIONS
7	May 11, 2017	RESURVEY-NO CHANGE IN ELEVATIONS
8	AUGUST 30, 2017	RESURVEY-NO CHANGE IN ELEVATIONS



SCALE: 1" = 100'

I HEREBY CERTIFY THAT THIS SURVEY WAS PREPARED  
FROM FIELD NOTES OF THIS SURVEY AND  
MEETS OR EXCEEDS THE REQUIREMENTS FOR LAND  
SURVEYS AS SPECIFIED BY THIS STATE.

GARY L. JONES, P.S. 7977  
No. 5074

**BASIN SURVEYS** P.O. BOX 1786-HOBBS, NEW MEXICO

W.O. Number: 33295

Drawn By: K. GOAD

Date: 09-15-2017

Disk: KJG - SCHUBERT MW 33295

Survey Date: 08-30-2017

Sheet 1 of 1 Sheets

**H.R.C. INC.**

REF: ELEVATION MARKERS

ELEVATION MARKERS LOCATED IN  
SECTION 7, TOWNSHIP 19 SOUTH, RANGE 39 EAST,  
N.M.P.M., LEA COUNTY, NEW MEXICO.

June 16, 2017

BEN DONAHUE

ETZ WATER STATION

PO BOX 6056

HOBBS, NM 88241

RE: SCHUBERT FARMS

Enclosed are the results of analyses for samples received by the laboratory on 05/26/17 15:37.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-17-9. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/ga/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/ga/lab_accred_certif.html).

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Total Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Cardinal Laboratories is accredited through the State of New Mexico Environment Department for:

Method SM 9223-B	Total Coliform and E. coli (Colilert MMO-MUG)
Method EPA 524.2	Regulated VOCs and Total Trihalomethanes (TTHM)
Method EPA 552.2	Total Haloacetic Acids (HAA-5)

Accreditation applies to public drinking water matrices for State of Colorado and New Mexico.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Celey D. Keene

Lab Director/Quality Manager

**Analytical Results For:**ETZ WATER STATION  
PO BOX 6056  
HOBBS NM, 88241Project: SCHUBERT FARMS  
Project Number: ETZ SCHUBERT 7 WELL  
Project Manager: BEN DONAHUE  
Fax To:Reported:  
16-Jun-17 11:48

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BRINE WATER	H701410-01	Water	26-May-17 14:00	26-May-17 15:37
FRESH WATER	H701410-02	Water	26-May-17 14:00	26-May-17 15:37
MONITOR WELL	H701410-03	Water	26-May-17 14:00	26-May-17 15:37

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence or any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damage including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



Celey D. Keene, Lab Director/Quality Manager



**Analytical Results For:**

 ETZ WATER STATION  
 PO BOX 6056  
 HOBBS NM, 88241

 Project: SCHUBERT FARMS  
 Project Number: ETZ SCHUBERT 7 WELL  
 Project Manager: BEN DONAHUE  
 Fax To:

 Reported:  
 16-Jun-17 11:48

**BRINE WATER**  
**H701410-01 (Water)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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**Cardinal Laboratories**
**Inorganic Compounds**

Alkalinity, Bicarbonate	146		5.00	mg/L	1	7060101	AC	01-Jun-17	310.1	
Alkalinity, Carbonate	<1.00		1.00	mg/L	1	7060101	AC	01-Jun-17	310.1	
Chloride*	196000		4.00	mg/L	1	7053115	AC	31-May-17	4500-Cl-B	
Conductivity*	497000		1.00	uS/cm	1	7053112	AC	31-May-17	120.1	
pH*	7.00		0.100	pH Units	1	7053112	AC	31-May-17	150.1	
Sulfate*	4120		1000	mg/L	100	7053011	AC	01-Jun-17	375.4	
TDS*	326000		5.00	mg/L	1	7053017	AC	02-Jun-17	160.1	
Alkalinity, Total*	120		4.00	mg/L	1	7060101	AC	01-Jun-17	310.1	

**Green Analytical Laboratories**
**Total Recoverable Metals by ICP (E200.7)**

Calcium*	1660		10.0	mg/L	100	B706035	JLM	07-Jun-17	EPA200.7	
Magnesium*	436		10.0	mg/L	100	B706035	JLM	07-Jun-17	EPA200.7	
Potassium*	176		100	mg/L	100	B706035	JLM	07-Jun-17	EPA200.7	
Sodium*	115000		500	mg/L	500	B706035	JLM	09-Jun-17	EPA200.7	

Cardinal Laboratories

\* = Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



**Analytical Results For:**

 ETZ WATER STATION  
 PO BOX 6056  
 HOBBS NM, 88241

 Project: SCHUBERT FARMS  
 Project Number: ETZ SCHUBERT 7 WELL  
 Project Manager: BEN DONAHUE  
 Fax To:

 Reported:  
 16-Jun-17 11:48

**FRESH WATER**
**H701410-02 (Water)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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**Cardinal Laboratories**
**Inorganic Compounds**

Alkalinity, Bicarbonate	317		5.00	mg/L	1	7060101	AC	01-Jun-17	310.1	
Alkalinity, Carbonate	<1.00		1.00	mg/L	1	7060101	AC	01-Jun-17	310.1	
Chloride*	256		4.00	mg/L	1	7053115	AC	31-May-17	4500-Cl-B	
Conductivity*	1590		1.00	uS/cm	1	7053112	AC	31-May-17	120.1	
pH*	7.00		0.100	pH Units	1	7053112	AC	31-May-17	150.1	
Sulfate*	195		25.0	mg/L	2.5	7053011	AC	01-Jun-17	375.4	
TDS*	1080		5.00	mg/L	1	7053017	AC	02-Jun-17	160.1	
Alkalinity, Total*	260		4.00	mg/L	1	7060101	AC	01-Jun-17	310.1	

**Green Analytical Laboratories**
**Total Recoverable Metals by ICP (E200.7)**

Calcium*	167		1.00	mg/L	10	B706035	JLM	07-Jun-17	EPA200.7	
Magnesium*	40.0		1.00	mg/L	10	B706035	JLM	07-Jun-17	EPA200.7	
Potassium*	11.6		10.0	mg/L	10	B706035	JLM	07-Jun-17	EPA200.7	
Sodium*	190		10.0	mg/L	10	B706035	JLM	07-Jun-17	EPA200.7	

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 ETZ WATER STATION  
 PO BOX 6056  
 HOBBS NM, 88241

 Project: SCHUBERT FARMS  
 Project Number: ETZ SCHUBERT 7 WELL  
 Project Manager: BEN DONAHUE  
 Fax To:

 Reported:  
 16-Jun-17 11:48

**MONITOR WELL**  
**H701410-03 (Water)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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**Cardinal Laboratories**
**Inorganic Compounds**

Alkalinity, Bicarbonate	259	5.00	mg/L	1	7060101	AC	01-Jun-17	310.1		
Alkalinity, Carbonate	<1.00	1.00	mg/L	1	7060101	AC	01-Jun-17	310.1		
Chloride*	144	4.00	mg/L	1	7053115	AC	31-May-17	4500-Cl-B		
Conductivity*	975	1.00	uS/cm	1	7053112	AC	31-May-17	120.1		
pH*	7.68	0.100	pH Units	1	7053112	AC	31-May-17	150.1		
Sulfate*	116	25.0	mg/L	2.5	7053011	AC	01-Jun-17	375.4		
TDS*	634	5.00	mg/L	1	7053017	AC	02-Jun-17	160.1		
Alkalinity, Total*	212	4.00	mg/L	1	7060101	AC	01-Jun-17	310.1		

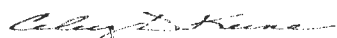
**Green Analytical Laboratories**
**Total Recoverable Metals by ICP (E200.7)**

Calcium*	100	1.00	mg/L	10	B706035	JLM	07-Jun-17	EPA200.7		
Magnesium*	29.1	1.00	mg/L	10	B706035	JLM	07-Jun-17	EPA200.7		
Potassium*	<10.0	10.0	mg/L	10	B706035	JLM	07-Jun-17	EPA200.7		
Sodium*	137	10.0	mg/L	10	B706035	JLM	07-Jun-17	EPA200.7		

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\* = Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**BW - 31**

**SCHUBERT 7 – WELL # 1**

**Year 2017**

<b>MONTH</b>	<b>BRINE PRODUCTION (BY Meter)</b>	<b>FRESH WATER INJECTED (By Meter)</b>
January	27,548	26,059
February	23,762	23,755
March	25,595	23,869
April	22,071	20,562
May	19,857	19,164
June	24,381	22,843
July	29,740	26,581
August	27,455	25,150
September	28,429	25,224
October	26,529	24,738
November	20,445	19,421
December		

**Analytical Results For:**

 ETZ WATER STATION  
 PO BOX 6056  
 HOBBS NM, 88241

 Project: SCHUBERT FARMS  
 Project Number: ETZ SCHUBERT 7 WELL  
 Project Manager: BEN DONAHUE  
 Fax To:

 Reported:  
 16-Jun-17 11:48

**Inorganic Compounds - Quality Control**
**Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7053011 - General Prep - Wet Chem</b>										
<b>Blank (7053011-BLK1)</b>				Prepared: 31-May-17 Analyzed: 01-Jun-17						
Sulfate	ND	10.0	mg/L							
<b>LCS (7053011-BS1)</b>				Prepared: 31-May-17 Analyzed: 01-Jun-17						
Sulfate	19.9	10.0	mg/L	20.0		99.3	80-120			
<b>LCS Dup (7053011-BSD1)</b>				Prepared: 31-May-17 Analyzed: 01-Jun-17						
Sulfate	21.9	10.0	mg/L	20.0		110	80-120	9.86	20	
<b>Batch 7053017 - Filtration</b>										
<b>Blank (7053017-BLK1)</b>				Prepared: 30-May-17 Analyzed: 02-Jun-17						
TDS	ND	5.00	mg/L							
<b>LCS (7053017-BS1)</b>				Prepared: 30-May-17 Analyzed: 02-Jun-17						
TDS	234	5.00	mg/L	213		110	80-120			
<b>Duplicate (7053017-DUP1)</b>				<b>Source: H701403-01</b>		Prepared: 30-May-17 Analyzed: 02-Jun-17				
TDS	950	5.00	mg/L		944			0.634	20	
<b>Batch 7053112 - General Prep - Wet Chem</b>										
<b>LCS (7053112-BS1)</b>				Prepared & Analyzed: 31-May-17						
pH	7.14		pH Units	7.00		102	90-110			
Conductivity	491		uS/cm	445		110	80-120			
<b>Duplicate (7053112-DUP1)</b>				<b>Source: H701410-01</b>		Prepared & Analyzed: 31-May-17				
Conductivity	509000	1.00	uS/cm		497000			2.31	20	
pH	7.00	0.100	pH Units		7.00			0.00	20	

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Celey D. Keene, Lab Director/Quality Manager



**Analytical Results For:**

ETZ WATER STATION  
PO BOX 6056  
HOBBS NM, 88241

Project: SCHUBERT FARMS  
Project Number: ETZ SCHUBERT 7 WELL  
Project Manager: BEN DONAHUE  
Fax To:

Reported:  
16-Jun-17 11:48

**Inorganic Compounds - Quality Control**
**Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7053115 - General Prep - Wet Chem</b>										
<b>Blank (7053115-BLK1)</b>				Prepared & Analyzed: 31-May-17						
Chloride	ND	4.00	mg/L							
<b>LCS (7053115-BS1)</b>				Prepared & Analyzed: 31-May-17						
Chloride	100	4.00	mg/L	100		100	80-120			
<b>LCS Dup (7053115-BSD1)</b>				Prepared & Analyzed: 31-May-17						
Chloride	108	4.00	mg/L	100		108	80-120	7.69	20	
<b>Batch 7060101 - General Prep - Wet Chem</b>										
<b>Blank (7060101-BLK1)</b>				Prepared & Analyzed: 01-Jun-17						
Alkalinity, Carbonate	ND	1.00	mg/L							
Alkalinity, Bicarbonate	5.00	5.00	mg/L							
Alkalinity, Total	4.00	4.00	mg/L							
<b>LCS (7060101-BS1)</b>				Prepared & Analyzed: 01-Jun-17						
Alkalinity, Carbonate	ND	1.00	mg/L				80-120			
Alkalinity, Bicarbonate	137	5.00	mg/L				80-120			
Alkalinity, Total	112	4.00	mg/L	100		112	80-120			
<b>LCS Dup (7060101-BSD1)</b>				Prepared & Analyzed: 01-Jun-17						
Alkalinity, Carbonate	ND	1.00	mg/L				80-120		20	
Alkalinity, Bicarbonate	146	5.00	mg/L				80-120	6.36	20	
Alkalinity, Total	120	4.00	mg/L	100		120	80-120	6.90	20	

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 ETZ WATER STATION  
 PO BOX 6056  
 HOBBS NM, 88241

 Project: SCHUBERT FARMS  
 Project Number: ETZ SCHUBERT 7 WELL  
 Project Manager: BEN DONAHUE  
 Fax To:

 Reported:  
 16-Jun-17 11:48

**Total Recoverable Metals by ICP (E200.7) - Quality Control**
**Green Analytical Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B706035 - Total Rec. 200.7/200.8/200.2</b>										
<b>Blank (B706035-BLK1)</b>				Prepared: 06-Jun-17 Analyzed: 07-Jun-17						
Sodium	ND	1.00	mg/L							
Magnesium	ND	0.100	mg/L							
Potassium	ND	1.00	mg/L							
Calcium	ND	0.100	mg/L							
<b>LCS (B706035-BS1)</b>				Prepared: 06-Jun-17 Analyzed: 07-Jun-17						
Calcium	4.09	0.100	mg/L	4.00		102	85-115			
Magnesium	20.8	0.100	mg/L	20.0		104	85-115			
Potassium	8.16	1.00	mg/L	8.00		102	85-115			
Sodium	6.67	1.00	mg/L	6.48		103	85-115			
<b>LCS Dup (B706035-BSD1)</b>				Prepared: 06-Jun-17 Analyzed: 07-Jun-17						
Magnesium	20.6	0.100	mg/L	20.0		103	85-115	1.07	20	
Potassium	8.08	1.00	mg/L	8.00		101	85-115	0.987	20	
Sodium	6.60	1.00	mg/L	6.48		102	85-115	1.07	20	
Calcium	4.03	0.100	mg/L	4.00		101	85-115	1.41	20	

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Celey D. Keene, Lab Director/Quality Manager

**Notes and Definitions**

ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

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Celey D. Keene, Lab Director/Quality Manager





**CARDINAL**  
Laboratories

## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Marland, Hobbs, NM 88240

**(575) 393-2326 FAX (575) 393-2476**

[illegible]

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analysis. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated causes or otherwise.

Relinquished By: <i>Ben Donahue</i> Date: <i>5/26/17</i> Time: <i>3:37</i>		Received By: _____ Date: _____ Time: _____		Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No Add'l Phone #: _____ Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No Add'l Fax #: _____ REMARKS: <i>garymschubert@gmail.com</i>	
Relinquished By: _____ Date: <i>5-26-17</i> Time: <i>3:37</i>		Received By: <i>Jamara Oldaker</i> Date: _____ Time: _____		_____	
Delivered By: (Circle One) Sampler - UPS - Bus - Other: _____		Sample Condition Cool Intact <i>5.0e</i>		CHECKED BY: (Initials) <i>TO-#25</i>	

† Cardinal cannot accept verbal changes. Please fax written changes to (575) 393-2326



November 28, 2017

BEN DONAHUE

ETZ WATER STATION

PO BOX 6056

HOBBS, NM 88241

RE: SCHUBERT

Enclosed are the results of analyses for samples received by the laboratory on 11/16/17 10:19.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-17-9. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Total Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

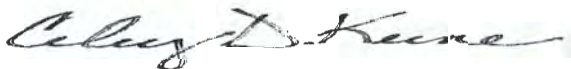
Cardinal Laboratories is accredited through the State of New Mexico Environment Department for:

Method SM 9223-B	Total Coliform and E. coli (Colilert MMO-MUG)
Method EPA 524.2	Regulated VOCs and Total Trihalomethanes (TTHM)
Method EPA 552.2	Total Haloacetic Acids (HAA-5)

Accreditation applies to public drinking water matrices for State of Colorado and New Mexico.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Celey D. Keene

Lab Director/Quality Manager

**Analytical Results For:**ETZ WATER STATION  
PO BOX 6056  
HOBBS NM, 88241Project: SCHUBERT  
Project Number: #7  
Project Manager: BEN DONAHUE  
Fax To:Reported:  
28-Nov-17 18:13

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BRINE WATER	H703206-01	Water	16-Nov-17 07:45	16-Nov-17 10:19
MONITOR WELL	H703206-02	Water	16-Nov-17 07:45	16-Nov-17 10:19
FRESH WATER	H703206-03	Water	16-Nov-17 07:45	16-Nov-17 10:19

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

ETZ WATER STATION  
PO BOX 6056  
HOBBS NM, 88241

Project: SCHUBERT  
Project Number: #7  
Project Manager: BEN DONAHUE  
Fax To:

Reported:  
28-Nov-17 18:13

**BRINE WATER**  
**H703206-01 (Water)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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**Cardinal Laboratories**
**Inorganic Compounds**

Alkalinity, Bicarbonate	195		5.00	mg/L	1	7110705	AC	17-Nov-17	310.1	
Alkalinity, Carbonate	<1.00		1.00	mg/L	1	7110705	AC	17-Nov-17	310.1	
Chloride*	172000		4.00	mg/L	1	7112001	AC	20-Nov-17	4500-Cl-B	
Conductivity*	494000		1.00	uS/cm	1	7111701	AC	17-Nov-17	120.1	
pH*	7.06		0.100	pH Units	1	7111701	AC	16-Nov-17	150.1	
Sulfate*	3960		500	mg/L	50	7112201	AC	22-Nov-17	375.4	
TDS*	257000		5.00	mg/L	1	7111608	AC	17-Nov-17	160.1	
Alkalinity, Total*	160		4.00	mg/L	1	7110705	AC	17-Nov-17	310.1	

**Green Analytical Laboratories**
**Total Recoverable Metals by ICP (E200.7)**

Calcium*	1220	9.12	30.0	mg/L	300	B711172	JDA	22-Nov-17	EPA200.7	
Magnesium*	285	22.6	30.0	mg/L	300	B711172	JDA	22-Nov-17	EPA200.7	
Potassium*	<63.0	63.0	300	mg/L	300	B711172	JDA	22-Nov-17	EPA200.7	
Sodium*	93500	51.4	300	mg/L	300	B711172	JDA	22-Nov-17	EPA200.7	

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 ETZ WATER STATION  
 PO BOX 6056  
 HOBBS NM, 88241

 Project: SCHUBERT  
 Project Number: #7  
 Project Manager: BEN DONAHUE  
 Fax To:

 Reported:  
 28-Nov-17 18:13

**MONITOR WELL**  
**H703206-02 (Water)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
---------	--------	-----	-----------------	-------	----------	-------	---------	----------	--------	-------

**Cardinal Laboratories**
**Inorganic Compounds**

Alkalinity, Bicarbonate	220		5.00	mg/L	1	7110705	AC	17-Nov-17	310.1	
Alkalinity, Carbonate	<1.00		1.00	mg/L	1	7110705	AC	17-Nov-17	310.1	
Chloride*	204		4.00	mg/L	1	7112001	AC	20-Nov-17	4500-Cl-B	
Conductivity*	1210		1.00	uS/cm	1	7111701	AC	17-Nov-17	120.1	
pH*	7.82		0.100	pH Units	1	7111701	AC	16-Nov-17	150.1	
Sulfate*	170		25.0	mg/L	2.5	7112201	AC	22-Nov-17	375.4	
TDS*	794		5.00	mg/L	1	7111608	AC	17-Nov-17	160.1	
Alkalinity, Total*	180		4.00	mg/L	1	7110705	AC	17-Nov-17	310.1	

**Green Analytical Laboratories**
**Total Recoverable Metals by ICP (E200.7)**

Calcium*	92.2	1.52	5.00	mg/L	50	B711172	JDA	22-Nov-17	EPA200.7	
Magnesium*	25.1	3.77	5.00	mg/L	50	B711172	JDA	22-Nov-17	EPA200.7	
Potassium*	<10.5	10.5	50.0	mg/L	50	B711172	JDA	22-Nov-17	EPA200.7	
Sodium*	123	8.57	50.0	mg/L	50	B711172	JDA	22-Nov-17	EPA200.7	

Cardinal Laboratories

\* = Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



**Analytical Results For:**

 ETZ WATER STATION  
 PO BOX 6056  
 HOBBS NM, 88241

 Project: SCHUBERT  
 Project Number: #7  
 Project Manager: BEN DONAHUE  
 Fax To:

 Reported:  
 28-Nov-17 18:13

**FRESH WATER**  
**H703206-03 (Water)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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**Cardinal Laboratories**
**Inorganic Compounds**

Alkalinity, Bicarbonate	283		5.00	mg/L	1	7110705	AC	17-Nov-17	310.1	
Alkalinity, Carbonate	<1.00		1.00	mg/L	1	7110705	AC	17-Nov-17	310.1	
Chloride*	224		4.00	mg/L	1	7112001	AC	20-Nov-17	4500-Cl-B	
Conductivity*	1420		1.00	uS/cm	1	7111701	AC	17-Nov-17	120.1	
pH*	7.98		0.100	pH Units	1	7111701	AC	16-Nov-17	150.1	
Sulfate*	195		25.0	mg/L	2.5	7112201	AC	22-Nov-17	375.4	
TDS*	896		5.00	mg/L	1	7111608	AC	17-Nov-17	160.1	
Alkalinity, Total*	232		4.00	mg/L	1	7110705	AC	17-Nov-17	310.1	

**Green Analytical Laboratories**
**Total Recoverable Metals by ICP (E200.7)**

Calcium*	119	1.52	5.00	mg/L	50	B711172	JDA	22-Nov-17	EPA200.7	
Magnesium*	25.6	3.77	5.00	mg/L	50	B711172	JDA	22-Nov-17	EPA200.7	
Potassium*	<10.5	10.5	50.0	mg/L	50	B711172	JDA	22-Nov-17	EPA200.7	
Sodium*	130	8.57	50.0	mg/L	50	B711172	JDA	22-Nov-17	EPA200.7	

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 ETZ WATER STATION  
 PO BOX 6056  
 HOBBS NM, 88241

 Project: SCHUBERT  
 Project Number: #7  
 Project Manager: BEN DONAHUE  
 Fax To:

 Reported:  
 28-Nov-17 18:13

**Inorganic Compounds - Quality Control**
**Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 7110705 - General Prep - Wet Chem**
**Blank (7110705-BLK1)**

Prepared &amp; Analyzed: 07-Nov-17

Alkalinity, Carbonate	ND	1.00	mg/L							
Alkalinity, Bicarbonate	5.00	5.00	mg/L							
Alkalinity, Total	4.00	4.00	mg/L							

**LCS (7110705-BS1)**

Prepared &amp; Analyzed: 07-Nov-17

Alkalinity, Carbonate	ND	2.50	mg/L				80-120			
Alkalinity, Bicarbonate	330	12.5	mg/L				80-120			
Alkalinity, Total	270	10.0	mg/L	250		108	80-120			

**LCS Dup (7110705-BSD1)**

Prepared &amp; Analyzed: 07-Nov-17

Alkalinity, Carbonate	ND	2.50	mg/L				80-120		20	
Alkalinity, Bicarbonate	355	12.5	mg/L				80-120	7.30	20	
Alkalinity, Total	290	10.0	mg/L	250		116	80-120	7.14	20	

**Batch 7111608 - Filtration**
**Blank (7111608-BLK1)**

Prepared: 16-Nov-17 Analyzed: 17-Nov-17

TDS	ND	5.00	mg/L							
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**LCS (7111608-BS1)**

Prepared: 16-Nov-17 Analyzed: 17-Nov-17

TDS	228	5.00	mg/L	213		107	80-120			
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**Duplicate (7111608-DUP1)**

Source: H703199-01

Prepared: 16-Nov-17 Analyzed: 17-Nov-17

TDS	9630	5.00	mg/L		9890			2.64	20	
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**Batch 7111701 - General Prep - Wet Chem**
**LCS (7111701-BS1)**

Prepared &amp; Analyzed: 16-Nov-17

pH	6.97		pH Units	7.00		99.6	90-110			
Conductivity	507		uS/cm	500		101	80-120			

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Celey D. Keene, Lab Director/Quality Manager



**Analytical Results For:**

 ETZ WATER STATION  
 PO BOX 6056  
 HOBBS NM, 88241

 Project: SCHUBERT  
 Project Number: #7  
 Project Manager: BEN DONAHUE  
 Fax To:

 Reported:  
 28-Nov-17 18:13

**Inorganic Compounds - Quality Control**
**Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
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**Batch 7111701 - General Prep - Wet Chem**
**Duplicate (7111701-DUP1)**

Source: H703206-01

Prepared &amp; Analyzed: 16-Nov-17

pH	7.07	0.100	pH Units		7.06		0.142	20	
Conductivity	501000	1.00	uS/cm		494000		1.46	20	

**Batch 7112001 - General Prep - Wet Chem**
**Blank (7112001-BLK1)**

Prepared &amp; Analyzed: 20-Nov-17

Chloride	ND	4.00	mg/L						
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**LCS (7112001-BS1)**

Prepared &amp; Analyzed: 20-Nov-17

Chloride	100	4.00	mg/L	100		100	80-120		
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**LCS Dup (7112001-BSD1)**

Prepared &amp; Analyzed: 20-Nov-17

Chloride	100	4.00	mg/L	100		100	80-120	0.00	20
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**Batch 7112201 - General Prep - Wet Chem**
**Blank (7112201-BLK1)**

Prepared &amp; Analyzed: 22-Nov-17

Sulfate	ND	10.0	mg/L						
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**LCS (7112201-BS1)**

Prepared &amp; Analyzed: 22-Nov-17

Sulfate	23.2	10.0	mg/L	20.0		116	80-120		
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**LCS Dup (7112201-BSD1)**

Prepared &amp; Analyzed: 22-Nov-17

Sulfate	23.6	10.0	mg/L	20.0		118	80-120	1.79	20
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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 ETZ WATER STATION  
 PO BOX 6056  
 HOBBS NM, 88241

 Project: SCHUBERT  
 Project Number: #7  
 Project Manager: BEN DONAHUE  
 Fax To:

 Reported:  
 28-Nov-17 18:13

**Total Recoverable Metals by ICP (E200.7) - Quality Control**
**Green Analytical Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	--------------------	-------	----------------	------------------	------	----------------	-----	--------------	-------

**Batch B711172 - Total Rec. 200.7/200.8/200.2**
**Blank (B711172-BLK1)**

Prepared: 20-Nov-17 Analyzed: 22-Nov-17

Calcium	ND	0.100	mg/L							
Sodium	ND	1.00	mg/L							
Magnesium	ND	0.100	mg/L							
Potassium	ND	1.00	mg/L							

**LCS (B711172-BS1)**

Prepared: 20-Nov-17 Analyzed: 22-Nov-17

Magnesium	20.8	0.100	mg/L	20.0		104	85-115			
Potassium	8.07	1.00	mg/L	8.00		101	85-115			
Sodium	6.68	1.00	mg/L	6.48		103	85-115			
Calcium	4.23	0.100	mg/L	4.00		106	85-115			

**LCS Dup (B711172-BSD1)**

Prepared: 20-Nov-17 Analyzed: 22-Nov-17

Potassium	8.22	1.00	mg/L	8.00		103	85-115	1.77	20	
Calcium	4.24	0.100	mg/L	4.00		106	85-115	0.215	20	
Sodium	6.66	1.00	mg/L	6.48		103	85-115	0.224	20	
Magnesium	20.8	0.100	mg/L	20.0		104	85-115	0.0742	20	

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Celey D. Keene, Lab Director/Quality Manager



**Notes and Definitions**

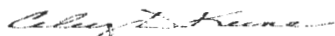
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C
	Samples reported on an as received basis (wet) unless otherwise noted on report

---

Cardinal Laboratories

\* = Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

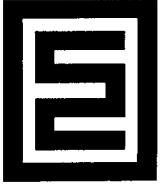


## Page 10 of 10

101 East Marland, Hobbs, NM 88240  
(575) 393-2326 FAX (575) 393-2476

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Relinquished By: 		Date: 11/16/17		Received By: 		Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No		Add'l Phone #:	
Relinquished By:		Time: 10:19 AM		Received By:		Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No		Add'l Fax #:	
Relinquished By:		Date:		Received By:		REMARKS: email. to : garymschubert@gmail.com			
Relinquished By:		Time:		Received By:					
Delivered By: (Circle One) 0.32				Sample Condition Cool Intact <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No		CHECKED BY: (Initials) JO. #75			
Sampler - UPS - Bus - Other: Permitted 0.55									



**HRC, INC.**  
**P. O. Box 5102**  
**Hobbs, NM 88241-5102**  
**Phone # (575) 393-6662**  
**Fax # (575) 393-6662**

RECEIVED  
2017 MAY 26 PM 3:07

**May 25, 2017**

**Mr. Carl J. Chavez, CHMM (#13099)**  
**New Mexico Oil Conservation Division**  
**Energy Minerals and Natural Resources Department**  
**1220 South St. Francis Drive**  
**Santa Fe, New Mexico 87505**

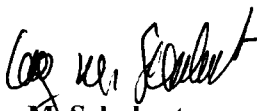
**Ref: 2016 Annual Report**  
**B-31 Schubert 7 – Well #1**

**Dear Mr. Chavez,**

**Enclosed please find the monthly freshwater injection and brine production numbers for the Hobbs facility for the year 2016.**  
**Included also are Cardinal Laboratories' results of analyses for samples for the month of February, May, and December, 2016.**

**Thank you,**

**Sincerely,**

  
**Gary M. Schubert**  
**GMS/br**

# **BW-31**

## **ANNUAL REPORT**

### **SCHUBERT 7 – WELL # 1**

1. **Summary of Class III well operations for year: 2016 Schubert 7 #1 (BW-31)**  
Well HRC Schubert 7 #1 Brine Well was operated over the past year to produce saturated brine for applications in oilfield services. No remedial or major work was undertaken during the year.
2. **Monthly fluid injection and brine production volume: See attached.**
3. **Injection pressure data;**  
230 psi pumps pressure.
4. **Quarterly chemical analyses with data summary and all QA/QC information; See attached reports (Cardinal Laboratory)**
5. **Copy of any mechanical integrity test chart, including the type of test, i.e., duration guage pressure, etc; Submitted 12-01-2016**
6. **Brief explanation describing deviations from the normal operations; NA**
7. **Results of any leaks and spill reports; NA**
8. **An Area of Review (AOR) update summary;**  
HRC, Inc. knows of no new wells, conduits, or any other device that penetrates or may penetrate the injection zone within a 1-mile radius.
9. **A summary with interpretation of MITs, surface subsidence surveys, cavern volume and geometry measurements with conclusion (s) and recommendations (s); MIT of 11-22-2016 approved. No subsidence as per attached reports.**
10. **A summary of the ratio of the volume of injected fluids to the volume of produced brine;**  
All measured flows of injected fluids to produced brine were within guidelines.
11. **A summary of all major Facility activities or events, which occurred during the year with any conclusions and recommendations; NA**
12. **Annual Certification in accordance with Permit Condition 2. B. 3.**  
HRC, Inc. certifies that continued salt solution mining will not cause cavern collapse, surface Subsidence, property damage, or otherwise threaten public health and the environment, based on geologic and engineering data.
13. **A summary of any new discoveries of ground water contamination with all leaks, spills, and releases and corrective actions taken; NA**



1. Summary of Class III well operations for the year:

Well HRC Schubert7 #1 Brine Well was operated over the past year to produce saturated brine for applications in oilfield services. No remedial or major work was undertaken during the year.

2. Monthly fluid injection and brine production volume;

2015 MAY 10  
08X  
2016  
2017  
THRU  
APR

Month	Brine (bbl)	Fresh Water (bbl)	Ratio %
2014 July	26167	26657	98%
August	25077	25138	100%
September	22883	22907	100%
October	24867	25436	98%
November	24267	24321	100%
December	24276	25500*	95%
2015 January	22483	22650	99%
February	20840	21043	99%
March	25417	25919	98%
April	20460	20441	100%

SEE ATTACHED

Note: December fresh water quantity is an estimate due to failure of the water meter.

3. Injection pressure data;

230 psi pump pressure.

4. Quarterly chemical analyses with data summary and all QA/QC information;

Data Summary

Injection Fluid

pH: 6.5-8.3  
Density: 8.3-8.5 lbs/gal  
TDS: <1000 ppm  
Chlorides: <250 ppm

SEE ATTACHED REPORTS

(CARDINAL LABORATORY)

Produced Brine:

pH: 6.5-7.5  
Density: 9.9-10.2 lbs/gal  
TDS: >260,000 ppm  
Chlorides: >190,000 ppm  
Sodium: >120,000 ppm

~~Additional data and QA/QC results in attached appendix.~~

5. Copy of any mechanical integrity test chart, including the type of test, i.e., duration, gauge pressure, etc.;

~~NA. Permit requires this test only once every 5 years.~~

SUBMITTED 12/1/2016

6. Brief explanation describing deviations from the normal operations;

The meter for injected fluids malfunctioned in December of 2014. Volumes of injected fluid for this month are estimated.

SEE N/A

7. Results of any leaks and spill reports; NA

- ✓ 8. An Area of Review (AOR) update summary;  
HRC, Inc knows of no new wells, conduits, or any other device that penetrates or may penetrate the injection zone within a 1-mile radius.
9. A summary with interpretation of MITs, surface subsidence surveys, cavern volume and geometry measurements with conclusion(s) and recommendation(s); ~~NA~~ MIT OF 11/22/16 APPROVED.  
NO SUBSIDENCE AS PER ATTACHED REPORTS
10. A summary of the ratio of the volume of injected fluids to the volume of produced brine;  
All measured flows of injected fluids to produced brine were 98% to 100%. An estimated ~~amount of injected fluid was reported for Dec 2014.~~ WITHIN GUIDELINES
- ✓ 11. A summary of all major Facility activities or events, which occurred during the year with any conclusions and recommendations; NA
- ✓ 12. Annual Certification in accordance with Permit Condition 2.B.3.  
HRC, Inc. certifies that continued salt solution mining will not cause cavern collapse, surface subsidence, property damage, or otherwise threaten public health and the environment, based on geologic and engineering data.
- ✓ 13. A summary of any new discoveries of ground water contamination with all leaks, spills and releases and corrective actions taken; NA

## **BW – 31**

### **SCHUBERT 7 – WELL # 1**

#### **2016 Report**

#### **Report of Fluid Injection and Production**

<b>MONTH</b>	<b>BRINE PRODUCTION (BY Meter)</b>	<b>FRESH WATER INJECTED (By Meter)</b>	<b>Ratio %</b>
<b>January</b>	<b>24,405</b>	<b>23,636</b>	<b>103</b>
<b>February</b>	<b>10,170</b>	<b>10,279</b>	<b>99</b>
<b>March</b>	<b>21,995</b>	<b>21,955</b>	<b>103</b>
<b>April</b>	<b>19,500</b>	<b>20,240</b>	<b>96</b>
<b>May</b>	<b>27,833</b>	<b>25,664</b>	<b>100</b>
<b>June</b>	<b>30,024</b>	<b>28,565</b>	<b>105</b>
<b>July</b>	<b>*** 24,200</b>	<b>23,700</b>	<b>102</b>
<b>August</b>	<b>25,310</b>	<b>24,233</b>	<b>104</b>
<b>September</b>	<b>20,905</b>	<b>21,531</b>	<b>97</b>
<b>October</b>	<b>*** 29,900</b>	<b>28,900</b>	<b>103</b>
<b>November</b>	<b>20,024</b>	<b>19,533</b>	<b>103</b>
<b>December</b>	<b>29,475</b>	<b>28,357</b>	<b>104</b>

**\*\*\*Estimated (Meter Power Failure)**

February 17, 2016

GARY SCHUBERT

ETZ WATER STATION

PO BOX 6056

HOBBS, NM 88241

RE: WATER SAMPLES

Enclosed are the results of analyses for samples received by the laboratory on 02/05/16 13:30.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-15-7. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Total Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

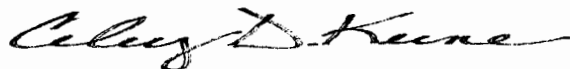
Cardinal Laboratories is accredited through the State of New Mexico Environment Department for:

Method SM 9223-B	Total Coliform and E. coli (Colilert MMO-MUG)
Method EPA 524.2	Regulated VOCs and Total Trihalomethanes (TTHM)
Method EPA 552.2	Total Haloacetic Acids (HAA-5)

Accreditation applies to public drinking water matrices for State of Colorado and New Mexico.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Celey D. Keene

Lab Director/Quality Manager



**Analytical Results For:**ETZ WATER STATION  
PO BOX 6056  
HOBBS NM, 88241Project: WATER SAMPLES  
Project Number: NADINE WATER #1  
Project Manager: GARY SCHUBERT  
Fax To:Reported:  
17-Feb-16 08:59

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
WATER SAMPLE	H600270-01	Water	04-Feb-16 00:00	05-Feb-16 13:30

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

### Analytical Results For:

ETZ WATER STATION  
PO BOX 6056  
HOBBS NM, 88241

Project: WATER SAMPLES  
Project Number: NADINE WATER #1  
Project Manager: GARY SCHUBERT  
Fax To:

Reported:  
17-Feb-16 08:59

### WATER SAMPLE H600270-01 (Water)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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### Cardinal Laboratories

#### Inorganic Compounds

Alkalinity, Bicarbonate	414		5.00	mg/L	1	6021206	AP	15-Feb-16	310.1	
Alkalinity, Carbonate	<1.00		1.00	mg/L	1	6021206	AP	15-Feb-16	310.1	
Chloride*	86000		4.00	mg/L	1	6021104	AP	11-Feb-16	4500-Cl-B	
Conductivity*	171000		0.250	uS/cm	1	6020902	AP	08-Feb-16	120.1	
Nitrate as N	3.20		1.00	mg/L	1	6020809	AP	05-Feb-16	353.3	
Nitrite as N	<0.05		0.05	mg/L	1	6020809	AP	05-Feb-16	354.1	
pH*	8.70		0.100	pH Units	1	6020813	AP	08-Feb-16	150.1	
Sulfate*	1340		500	mg/L	50	6021105	AP	11-Feb-16	375.4	
TDS*	147000		5.00	mg/L	1	6020808	AP	12-Feb-16	160.1	
Alkalinity, Total*	340		4.00	mg/L	1	6021206	AP	15-Feb-16	310.1	

#### VOLATILES BY GC/MS

Dichlorodifluoromethane*	<0.001		0.001	mg/L	1	6020903	MS	13-Feb-16	8260B	
Chloromethane*	0.002		0.001	mg/L	1	6020903	MS	13-Feb-16	8260B	
Vinyl chloride*	<0.001		0.001	mg/L	1	6020903	MS	13-Feb-16	8260B	
Bromomethane*	<0.001		0.001	mg/L	1	6020903	MS	13-Feb-16	8260B	
Chloroethane*	<0.001		0.001	mg/L	1	6020903	MS	13-Feb-16	8260B	
Trichlorofluoromethane*	<0.001		0.001	mg/L	1	6020903	MS	13-Feb-16	8260B	
1,1-Dichloroethene*	<0.001		0.001	mg/L	1	6020903	MS	13-Feb-16	8260B	
Carbon disulfide*	0.034		0.001	mg/L	1	6020903	MS	13-Feb-16	8260B	
Iodomethane	<0.001		0.001	mg/L	1	6020903	MS	13-Feb-16	8260B	
Acrolein*	<0.050		0.050	mg/L	1	6020903	MS	13-Feb-16	8260B	
Methylene chloride*	0.001		0.001	mg/L	1	6020903	MS	13-Feb-16	8260B	
Acetone*	<0.005		0.005	mg/L	1	6020903	MS	13-Feb-16	8260B	
trans-1,2-Dichloroethene*	<0.001		0.001	mg/L	1	6020903	MS	13-Feb-16	8260B	
Methyl t-Butyl Ether*	<0.001		0.001	mg/L	1	6020903	MS	13-Feb-16	8260B	
1,1-Dichloroethane*	<0.001		0.001	mg/L	1	6020903	MS	13-Feb-16	8260B	
Acrylonitrile*	<0.001		0.001	mg/L	1	6020903	MS	13-Feb-16	8260B	
Vinyl acetate*	<0.005		0.005	mg/L	1	6020903	MS	13-Feb-16	8260B	

Cardinal Laboratories

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Celey D. Keene, Lab Director/Quality Manager

### Analytical Results For:

ETZ WATER STATION  
PO BOX 6056  
HOBBS NM, 88241

Project: WATER SAMPLES  
Project Number: NADINE WATER #1  
Project Manager: GARY SCHUBERT  
Fax To:

Reported:  
17-Feb-16 08:59

### WATER SAMPLE H600270-01 (Water)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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### Cardinal Laboratories

#### VOLATILES BY GC/MS

cis-1,2-Dichloroethene*	<0.001		0.001	mg/L	1	6020903	MS	13-Feb-16	8260B	
2,2-Dichloropropane*	<0.001		0.001	mg/L	1	6020903	MS	13-Feb-16	8260B	
Bromochloromethane*	<0.001		0.001	mg/L	1	6020903	MS	13-Feb-16	8260B	
Chloroform*	<0.001		0.001	mg/L	1	6020903	MS	13-Feb-16	8260B	
Carbon tetrachloride*	<0.001		0.001	mg/L	1	6020903	MS	13-Feb-16	8260B	
1,1,1-Trichloroethane*	<0.001		0.001	mg/L	1	6020903	MS	13-Feb-16	8260B	
1,1-Dichloropropene*	<0.001		0.001	mg/L	1	6020903	MS	13-Feb-16	8260B	
2-Butanone*	<0.250		0.250	mg/L	50	6020903	MS	15-Feb-16	8260B	
<b>Benzene*</b>	<b>1.26</b>		0.050	mg/L	50	6020903	MS	15-Feb-16	8260B	
1,2-Dichloroethane*	<0.001		0.001	mg/L	1	6020903	MS	13-Feb-16	8260B	
Trichloroethene*	<0.001		0.001	mg/L	1	6020903	MS	13-Feb-16	8260B	
Dibromomethane*	<0.001		0.001	mg/L	1	6020903	MS	13-Feb-16	8260B	
1,2-Dichloropropane*	<0.001		0.001	mg/L	1	6020903	MS	13-Feb-16	8260B	
Bromodichloromethane*	<0.001		0.001	mg/L	1	6020903	MS	13-Feb-16	8260B	
cis-1,3-Dichloropropene*	<0.001		0.001	mg/L	1	6020903	MS	13-Feb-16	8260B	
<b>Toluene*</b>	<b>0.188</b>		0.050	mg/L	50	6020903	MS	15-Feb-16	8260B	
<b>4-Methyl-2-pentanone*</b>	<b>0.041</b>		0.005	mg/L	1	6020903	MS	13-Feb-16	8260B	
Tetrachloroethene*	<0.001		0.001	mg/L	1	6020903	MS	13-Feb-16	8260B	
trans-1,3-Dichloropropene*	<0.001		0.001	mg/L	1	6020903	MS	13-Feb-16	8260B	
1,1,2-Trichloroethane*	<0.001		0.001	mg/L	1	6020903	MS	13-Feb-16	8260B	
Dibromochloromethane*	<0.001		0.001	mg/L	1	6020903	MS	13-Feb-16	8260B	
1,3-Dichloropropane*	<0.001		0.001	mg/L	1	6020903	MS	13-Feb-16	8260B	
1,2-Dibromoethane*	<0.001		0.001	mg/L	1	6020903	MS	13-Feb-16	8260B	
<b>2-Hexanone*</b>	<b>0.012</b>		0.005	mg/L	1	6020903	MS	13-Feb-16	8260B	
Chlorobenzene*	<0.001		0.001	mg/L	1	6020903	MS	13-Feb-16	8260B	
<b>Ethylbenzene*</b>	<b>0.004</b>		0.001	mg/L	1	6020903	MS	13-Feb-16	8260B	
1,1,1,2-Tetrachloroethane*	<0.001		0.001	mg/L	1	6020903	MS	13-Feb-16	8260B	
<b>m+p - Xylene*</b>	<b>0.007</b>		0.002	mg/L	1	6020903	MS	13-Feb-16	8260B	
<b>o-Xylene*</b>	<b>0.005</b>		0.001	mg/L	1	6020903	MS	13-Feb-16	8260B	

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 ETZ WATER STATION  
 PO BOX 6056  
 HOBBS NM, 88241

 Project: WATER SAMPLES  
 Project Number: NADINE WATER #1  
 Project Manager: GARY SCHUBERT  
 Fax To:

 Reported:  
 17-Feb-16 08:59

**WATER SAMPLE  
 H600270-01 (Water)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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**Cardinal Laboratories**
**VOLATILES BY GC/MS**

<b>Total Xylenes*</b>	<b>0.012</b>		0.003	mg/L	1	6020903	MS	13-Feb-16	8260B	
Bromoform*	<0.001		0.001	mg/L	1	6020903	MS	13-Feb-16	8260B	
Styrene*	<0.001		0.001	mg/L	1	6020903	MS	13-Feb-16	8260B	
Isopropylbenzene*	<0.001		0.001	mg/L	1	6020903	MS	13-Feb-16	8260B	
Bromobenzene*	<0.001		0.001	mg/L	1	6020903	MS	13-Feb-16	8260B	
n-Propylbenzene*	<0.001		0.001	mg/L	1	6020903	MS	13-Feb-16	8260B	
1,1,2,2-Tetrachloroethane*	<0.001		0.001	mg/L	1	6020903	MS	13-Feb-16	8260B	
2-Chlorotoluene*	<0.001		0.001	mg/L	1	6020903	MS	13-Feb-16	8260B	
1,2,3-trichloropropane*	<0.001		0.001	mg/L	1	6020903	MS	13-Feb-16	8260B	
1,3,5-Trimethylbenzene*	<0.001		0.001	mg/L	1	6020903	MS	13-Feb-16	8260B	
<b>trans-1,4-Dichloro-2-butene</b>	<b>0.002</b>		0.001	mg/L	1	6020903	MS	13-Feb-16	8260B	
4-Chlorotoluene*	<0.001		0.001	mg/L	1	6020903	MS	13-Feb-16	8260B	
tert-Butylbenzene*	<0.001		0.001	mg/L	1	6020903	MS	13-Feb-16	8260B	
1,2,4-Trimethylbenzene*	<0.001		0.001	mg/L	1	6020903	MS	13-Feb-16	8260B	
sec-Butylbenzene*	<0.001		0.001	mg/L	1	6020903	MS	13-Feb-16	8260B	
p-Isopropyltoluene*	<0.001		0.001	mg/L	1	6020903	MS	13-Feb-16	8260B	
1,3-Dichlorobenzene*	<0.001		0.001	mg/L	1	6020903	MS	13-Feb-16	8260B	
1,4 Dichlorobenzene*	<0.001		0.001	mg/L	1	6020903	MS	13-Feb-16	8260B	
n-Butylbenzene*	<0.001		0.001	mg/L	1	6020903	MS	13-Feb-16	8260B	
1,2-Dichlorobenzene*	<0.001		0.001	mg/L	1	6020903	MS	13-Feb-16	8260B	
<b>1,2-Dibromo-3-chloropropane</b>	<b>0.001</b>		0.001	mg/L	1	6020903	MS	13-Feb-16	8260B	
*										
Hexachlorobutadiene*	<0.001		0.001	mg/L	1	6020903	MS	13-Feb-16	8260B	
1,2,4-Trichlorobenzene*	<0.001		0.001	mg/L	1	6020903	MS	13-Feb-16	8260B	
<b>Naphthalene*</b>	<b>0.001</b>		0.001	mg/L	1	6020903	MS	13-Feb-16	8260B	
1,2,3-Trichlorobenzene*	<0.001		0.001	mg/L	1	6020903	MS	13-Feb-16	8260B	
Surrogate: Dibromofluoromethane			90.9 %	86.5-122		6020903	MS	13-Feb-16	8260B	
Surrogate: Toluene-d8			99.3 %	85.7-112		6020903	MS	13-Feb-16	8260B	
Surrogate: 4-Bromofluorobenzene			108 %	86.3-117		6020903	MS	13-Feb-16	8260B	

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Celey D. Keene, Lab Director/Quality Manager





PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

**Analytical Results For:**

ETZ WATER STATION  
PO BOX 6056  
HOBBS NM, 88241

Project: WATER SAMPLES  
Project Number: NADINE WATER #1  
Project Manager: GARY SCHUBERT  
Fax To:

Reported:  
17-Feb-16 08:59

**WATER SAMPLE  
H600270-01 (Water)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 ETZ WATER STATION  
 PO BOX 6056  
 HOBBS NM, 88241

 Project: WATER SAMPLES  
 Project Number: NADINE WATER #1  
 Project Manager: GARY SCHUBERT  
 Fax To:

 Reported:  
 17-Feb-16 08:59

**Inorganic Compounds - Quality Control**
**Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 6020808 - Filtration**
**Blank (6020808-BLK1)**

Prepared: 08-Feb-16 Analyzed: 12-Feb-16

TDS ND 5.00 mg/L

**LCS (6020808-BS1)**

Prepared: 08-Feb-16 Analyzed: 11-Feb-16

TDS 556 5.00 mg/L 527 106 80-120

**Duplicate (6020808-DUP1)**

Source: H600257-03

Prepared: 08-Feb-16 Analyzed: 11-Feb-16

TDS 2070 5.00 mg/L 2040 1.07 20

**Batch 6020809 - General Prep - Wet Chem**
**Blank (6020809-BLK1)**

Prepared &amp; Analyzed: 05-Feb-16

Nitrite as N ND 0.05 mg/L

Nitrate as N ND 1.00 mg/L

**LCS (6020809-BS1)**

Prepared &amp; Analyzed: 05-Feb-16

Nitrate as N 5.00 1.00 mg/L 5.00 100 80-120

Nitrite as N 0.19 0.05 mg/L 0.200 94.5 80-120

**Duplicate (6020809-DUP1)**

Source: H600270-01

Prepared &amp; Analyzed: 05-Feb-16

Nitrate as N 3.20 1.00 mg/L 3.20 0.00 20

Nitrite as N 0.003 0.05 mg/L 0.003 0.00 20

**Batch 6020813 - General Prep - Wet Chem**
**LCS (6020813-BS1)**

Prepared &amp; Analyzed: 08-Feb-16

pH 7.03 pH Units 7.00 100 90-110

Cardinal Laboratories

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 ETZ WATER STATION  
 PO BOX 6056  
 HOBBS NM, 88241

 Project: WATER SAMPLES  
 Project Number: NADINE WATER #1  
 Project Manager: GARY SCHUBERT  
 Fax To:

 Reported:  
 17-Feb-16 08:59

**Inorganic Compounds - Quality Control**
**Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 6020813 - General Prep - Wet Chem**

<b>Duplicate (6020813-DUP1)</b>	<b>Source: H600269-01</b>		<b>Prepared &amp; Analyzed: 08-Feb-16</b>							
pH	12.1	0.100	pH Units		12.1			0.248	20	

**Batch 6020902 - General Prep - Wet Chem**

<b>LCS (6020902-BS1)</b>			<b>Prepared &amp; Analyzed: 09-Feb-16</b>							
Conductivity	504		uS/cm	500		101	80-120			
<b>Duplicate (6020902-DUP1)</b>	<b>Source: H600270-01</b>		<b>Prepared &amp; Analyzed: 09-Feb-16</b>							
Conductivity	153000	0.250	uS/cm		171000			10.8	20	

**Batch 6021104 - General Prep - Wet Chem**

<b>Blank (6021104-BLK1)</b>			<b>Prepared &amp; Analyzed: 11-Feb-16</b>							
Chloride	ND	4.00	mg/L							
<b>LCS (6021104-BS1)</b>			<b>Prepared &amp; Analyzed: 11-Feb-16</b>							
Chloride	96.0	4.00	mg/L	100		96.0	80-120			
<b>LCS Dup (6021104-BSD1)</b>			<b>Prepared &amp; Analyzed: 11-Feb-16</b>							
Chloride	104	4.00	mg/L	100		104	80-120	8.00	20	

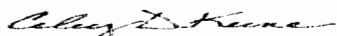
**Batch 6021105 - General Prep - Wet Chem**

<b>Blank (6021105-BLK1)</b>			<b>Prepared &amp; Analyzed: 11-Feb-16</b>							
Sulfate	ND	10.0	mg/L							

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

ETZ WATER STATION  
PO BOX 6056  
HOBBS NM, 88241

Project: WATER SAMPLES  
Project Number: NADINE WATER #1  
Project Manager: GARY SCHUBERT  
Fax To:

Reported:  
17-Feb-16 08:59

**Inorganic Compounds - Quality Control**
**Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 6021105 - General Prep - Wet Chem**
**LCS (6021105-BS1)**

Prepared &amp; Analyzed: 11-Feb-16

Sulfate	21.0	10.0	mg/L	20.0	105	80-120				
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**LCS Dup (6021105-BS1)**

Prepared &amp; Analyzed: 11-Feb-16

Sulfate	20.8	10.0	mg/L	20.0	104	80-120	0.956	20		
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**Batch 6021206 - General Prep - Wet Chem**
**Blank (6021206-BLK1)**

Prepared: 12-Feb-16 Analyzed: 15-Feb-16

Alkalinity, Carbonate	ND	0.00	mg/L							
Alkalinity, Bicarbonate	ND	5.00	mg/L							
Alkalinity, Total	ND	4.00	mg/L							

**LCS (6021206-BS1)**

Prepared: 12-Feb-16 Analyzed: 15-Feb-16

Alkalinity, Carbonate	ND	0.00	mg/L			80-120				
Alkalinity, Bicarbonate	126	5.00	mg/L			80-120				
Alkalinity, Total	104	4.00	mg/L	100	104	80-120				

**LCS Dup (6021206-BS1)**

Prepared: 12-Feb-16 Analyzed: 15-Feb-16

Alkalinity, Carbonate	ND	0.00	mg/L			80-120			20	
Alkalinity, Bicarbonate	131	5.00	mg/L			80-120	3.89	20		
Alkalinity, Total	108	4.00	mg/L	100	108	80-120	3.77	20		

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Celey D. Keene, Lab Director/Quality Manager



**Analytical Results For:**

 ETZ WATER STATION  
 PO BOX 6056  
 HOBBS NM, 88241

 Project: WATER SAMPLES  
 Project Number: NADINE WATER #1  
 Project Manager: GARY SCHUBERT  
 Fax To:

 Reported:  
 17-Feb-16 08:59

**VOLATILES BY GC/MS - Quality Control**
**Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 6020903 - Volatiles**
**Blank (6020903-BLK1)**

Prepared: 09-Feb-16 Analyzed: 12-Feb-16

Dichlorodifluoromethane	ND	0.001	mg/L
Chloromethane	ND	0.001	mg/L
Vinyl chloride	ND	0.001	mg/L
Bromomethane	ND	0.001	mg/L
Chloroethane	ND	0.001	mg/L
Trichlorofluoromethane	ND	0.001	mg/L
1,1-Dichloroethene	ND	0.001	mg/L
Carbon disulfide	ND	0.001	mg/L
Iodomethane	ND	0.001	mg/L
Acrolein	ND	0.050	mg/L
Methylene chloride	ND	0.001	mg/L
Acetone	ND	0.005	mg/L
trans-1,2-Dichloroethene	ND	0.001	mg/L
Methyl t-Butyl Ether	ND	0.001	mg/L
1,1-Dichloroethane	ND	0.001	mg/L
Acrylonitrile	ND	0.001	mg/L
Vinyl acetate	ND	0.005	mg/L
cis-1,2-Dichloroethene	ND	0.001	mg/L
2,2-Dichloropropane	ND	0.001	mg/L
Bromochloromethane	ND	0.001	mg/L
Chloroform	ND	0.001	mg/L
Carbon tetrachloride	ND	0.001	mg/L
1,1,1-Trichloroethane	ND	0.001	mg/L
1,1-Dichloropropene	ND	0.001	mg/L
2-Butanone	ND	0.005	mg/L
Benzene	ND	0.001	mg/L
1,2-Dichloroethane	ND	0.001	mg/L
Trichloroethene	ND	0.001	mg/L
Dibromomethane	ND	0.001	mg/L
1,2-Dichloropropane	ND	0.001	mg/L
Bromodichloromethane	ND	0.001	mg/L
cis-1,3-Dichloropropene	ND	0.001	mg/L

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

ETZ WATER STATION  
PO BOX 6056  
HOBBS NM, 88241

Project: WATER SAMPLES  
Project Number: NADINE WATER #1  
Project Manager: GARY SCHUBERT  
Fax To:

Reported:  
17-Feb-16 08:59

**VOLATILES BY GC/MS - Quality Control**
**Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 6020903 - Volatiles**
**Blank (6020903-BLK1)**

Prepared: 09-Feb-16 Analyzed: 12-Feb-16

Toluene	ND	0.001	mg/L
4-Methyl-2-pentanone	ND	0.005	mg/L
Tetrachloroethene	ND	0.001	mg/L
trans-1,3-Dichloropropene	ND	0.001	mg/L
1,1,2-Trichloroethane	ND	0.001	mg/L
Dibromochloromethane	ND	0.001	mg/L
1,3-Dichloropropane	ND	0.001	mg/L
1,2-Dibromoethane	ND	0.001	mg/L
2-Hexanone	ND	0.005	mg/L
Chlorobenzene	ND	0.001	mg/L
Ethylbenzene	ND	0.001	mg/L
1,1,1,2-Tetrachloroethane	ND	0.001	mg/L
m+p - Xylene	ND	0.002	mg/L
o-Xylene	ND	0.001	mg/L
Total Xylenes	ND	0.003	mg/L
Bromoform	ND	0.001	mg/L
Styrene	ND	0.001	mg/L
Isopropylbenzene	ND	0.001	mg/L
Bromobenzene	ND	0.001	mg/L
n-Propylbenzene	ND	0.001	mg/L
1,1,2,2-Tetrachloroethane	ND	0.001	mg/L
2-Chlorotoluene	ND	0.001	mg/L
1,2,3-trichloropropane	ND	0.001	mg/L
1,3,5-Trimethylbenzene	ND	0.001	mg/L
trans-1,4-Dichloro-2-butene	ND	0.001	mg/L
4-Chlorotoluene	ND	0.001	mg/L
tert-Butylbenzene	ND	0.001	mg/L
1,2,4-Trimethylbenzene	ND	0.001	mg/L
sec-Butylbenzene	ND	0.001	mg/L
p-Isopropyltoluene	ND	0.001	mg/L
1,3-Dichlorobenzene	ND	0.001	mg/L
1,4 Dichlorobenzene	ND	0.001	mg/L

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

ETZ WATER STATION  
PO BOX 6056  
HOBBS NM, 88241

Project: WATER SAMPLES  
Project Number: NADINE WATER #1  
Project Manager: GARY SCHUBERT  
Fax To:

Reported:  
17-Feb-16 08:59

**VOLATILES BY GC/MS - Quality Control**
**Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 6020903 - Volatiles**
**Blank (6020903-BLK1)**

Prepared: 09-Feb-16 Analyzed: 12-Feb-16

n-Butylbenzene	ND	0.001	mg/L							
1,2-Dichlorobenzene	ND	0.001	mg/L							
1,2-Dibromo-3-chloropropane	ND	0.001	mg/L							
Hexachlorobutadiene	ND	0.001	mg/L							
1,2,4-Trichlorobenzene	ND	0.001	mg/L							
Naphthalene	ND	0.001	mg/L							
1,2,3-Trichlorobenzene	ND	0.001	mg/L							
2-Chloroethylvinyl ether	ND	0.005	mg/L							
1,4-Dioxane	ND	0.125	mg/L							
Surrogate: Dibromofluoromethane	0.0102		mg/L	0.0100		102	86.5-122			
Surrogate: Toluene-d8	0.0102		mg/L	0.0100		102	85.7-112			
Surrogate: 4-Bromofluorobenzene	0.00994		mg/L	0.0100		99.4	86.3-117			

**LCS (6020903-BS1)**

Prepared: 09-Feb-16 Analyzed: 12-Feb-16

Dichlorodifluoromethane	0.055	0.001	mg/L	0.0200		275	58.8-146			BS1
Chloromethane	0.018	0.001	mg/L	0.0200		90.2	63.7-134			
Vinyl chloride	0.021	0.001	mg/L	0.0200		107	69.6-123			
Bromomethane	0.026	0.001	mg/L	0.0200		129	57.9-133			
Chloroethane	0.026	0.001	mg/L	0.0200		131	62.4-134			
Trichlorofluoromethane	0.028	0.001	mg/L	0.0200		142	62.6-142			
1,1-Dichloroethene	0.019	0.001	mg/L	0.0200		93.4	65-126			
Carbon disulfide	0.026	0.001	mg/L	0.0200		129	65-148			
Iodomethane	0.022	0.001	mg/L	0.0200		111	70.4-138			
Acrolein	0.096	0.050	mg/L	0.100		96.2	2.76-187			
Methylene chloride	0.019	0.001	mg/L	0.0200		96.2	43.1-162			
Acetone	0.021	0.005	mg/L	0.0200		103	43.2-175			
trans-1,2-Dichloroethene	0.019	0.001	mg/L	0.0200		92.8	76.6-122			
Methyl t-Butyl Ether	0.019	0.001	mg/L	0.0200		97.0	81.5-128			
1,1-Dichloroethane	0.019	0.001	mg/L	0.0200		97.4	80.9-121			
Acrylonitrile	0.020	0.001	mg/L	0.0200		102	44.6-163			
Vinyl acetate	0.021	0.005	mg/L	0.0200		106	19.7-207			
cis-1,2-Dichloroethene	0.020	0.001	mg/L	0.0200		97.6	76.8-126			

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 ETZ WATER STATION  
 PO BOX 6056  
 HOBBS NM, 88241

 Project: WATER SAMPLES  
 Project Number: NADINE WATER #1  
 Project Manager: GARY SCHUBERT  
 Fax To:

 Reported:  
 17-Feb-16 08:59

**VOLATILES BY GC/MS - Quality Control**
**Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 6020903 - Volatiles**
**LCS (6020903-BS1)**

Prepared: 09-Feb-16 Analyzed: 12-Feb-16

2,2-Dichloropropane	0.020	0.001	mg/L	0.0200		99.0	66.5-137			
Bromochloromethane	0.021	0.001	mg/L	0.0200		103	76.7-128			
Chloroform	0.020	0.001	mg/L	0.0200		99.1	82.5-123			
Carbon tetrachloride	0.021	0.001	mg/L	0.0200		105	77.5-136			
1,1,1-Trichloroethane	0.020	0.001	mg/L	0.0200		99.0	88.3-127			
1,1-Dichloropropene	0.021	0.001	mg/L	0.0200		105	82.4-122			
2-Butanone	0.022	0.005	mg/L	0.0200		109	55.2-151			
Benzene	0.019	0.001	mg/L	0.0200		96.2	84.9-121			
1,2-Dichloroethane	0.019	0.001	mg/L	0.0200		97.0	76.9-133			
Trichloroethene	0.020	0.001	mg/L	0.0200		100	82.8-120			
Dibromomethane	0.019	0.001	mg/L	0.0200		96.8	78.8-128			
1,2-Dichloropropane	0.020	0.001	mg/L	0.0200		99.4	80.2-126			
Bromodichloromethane	0.019	0.001	mg/L	0.0200		97.0	84.1-130			
cis-1,3-Dichloropropene	0.019	0.001	mg/L	0.0200		95.8	76.8-130			
Toluene	0.018	0.001	mg/L	0.0200		88.8	76.1-122			
4-Methyl-2-pentanone	0.021	0.005	mg/L	0.0200		106	54.5-143			
Tetrachloroethene	0.019	0.001	mg/L	0.0200		97.3	65.3-133			
trans-1,3-Dichloropropene	0.020	0.001	mg/L	0.0200		98.7	80.1-132			
1,1,2-Trichloroethane	0.019	0.001	mg/L	0.0200		97.0	82.3-117			
Dibromochloromethane	0.019	0.001	mg/L	0.0200		96.4	75.2-137			
1,3-Dichloropropane	0.020	0.001	mg/L	0.0200		99.8	82.9-118			
1,2-Dibromoethane	0.020	0.001	mg/L	0.0200		98.4	78.4-126			
2-Hexanone	0.020	0.005	mg/L	0.0200		102	52.1-149			
Chlorobenzene	0.019	0.001	mg/L	0.0200		95.4	76.8-125			
Ethylbenzene	0.019	0.001	mg/L	0.0200		93.2	78.5-126			
1,1,1,2-Tetrachloroethane	0.019	0.001	mg/L	0.0200		96.3	78.6-127			
m+p - Xylene	0.038	0.002	mg/L	0.0400		94.8	81.1-129			
o-Xylene	0.020	0.001	mg/L	0.0200		98.6	77.5-134			
Total Xylenes	0.058	0.003	mg/L	0.0600		96.0	80.2-130			
Bromoform	0.018	0.001	mg/L	0.0200		87.9	54.1-155			
Styrene	0.020	0.001	mg/L	0.0200		98.8	78-122			
Isopropylbenzene	0.018	0.001	mg/L	0.0200		90.0	80.2-122			

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

ETZ WATER STATION  
PO BOX 6056  
HOBBS NM, 88241

Project: WATER SAMPLES  
Project Number: NADINE WATER #1  
Project Manager: GARY SCHUBERT  
Fax To:

Reported:  
17-Feb-16 08:59

**VOLATILES BY GC/MS - Quality Control**
**Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 6020903 - Volatiles**
**LCS (6020903-BS1)**

Prepared: 09-Feb-16 Analyzed: 12-Feb-16

Bromobenzene	0.017	0.001	mg/L	0.0200		86.6	73.2-126			
n-Propylbenzene	0.018	0.001	mg/L	0.0200		88.8	76.8-123			
1,1,2,2-Tetrachloroethane	0.018	0.001	mg/L	0.0200		92.3	72.8-123			
2-Chlorotoluene	0.018	0.001	mg/L	0.0200		90.0	76.6-125			
1,2,3-trichloropropane	0.020	0.001	mg/L	0.0200		98.2	58.3-141			
1,3,5-Trimethylbenzene	0.016	0.001	mg/L	0.0200		82.1	80.8-118			
trans-1,4-Dichloro-2-butene	0.024	0.001	mg/L	0.0200		118	12.5-215			
4-Chlorotoluene	0.018	0.001	mg/L	0.0200		88.8	80.2-120			
tert-Butylbenzene	0.022	0.001	mg/L	0.0200		111	72-128			
1,2,4-Trimethylbenzene	0.016	0.001	mg/L	0.0200		81.5	77.2-128			
sec-Butylbenzene	0.016	0.001	mg/L	0.0200		81.8	74.2-121			
p-Isopropyltoluene	0.017	0.001	mg/L	0.0200		82.9	75-122			
1,3-Dichlorobenzene	0.017	0.001	mg/L	0.0200		87.2	69.5-126			
1,4 Dichlorobenzene	0.017	0.001	mg/L	0.0200		87.2	71.5-122			
n-Butylbenzene	0.018	0.001	mg/L	0.0200		89.4	72.7-128			
1,2-Dichlorobenzene	0.018	0.001	mg/L	0.0200		88.8	73.9-123			
1,2-Dibromo-3-chloropropane	0.018	0.001	mg/L	0.0200		87.6	53.1-145			
Hexachlorobutadiene	0.017	0.001	mg/L	0.0200		86.0	62.2-136			
1,2,4-Trichlorobenzene	0.017	0.001	mg/L	0.0200		84.8	69.2-123			
Naphthalene	0.018	0.001	mg/L	0.0200		91.9	64.4-132			
1,2,3-Trichlorobenzene	0.018	0.001	mg/L	0.0200		90.4	69.7-119			
2-Chloroethyl vinyl ether	ND	0.005	mg/L				0-200			
1,4-Dioxane	ND	0.125	mg/L				0-200			
Surrogate: Dibromofluoromethane	0.00993		mg/L	0.0100		99.3	86.5-122			
Surrogate: Toluene-d8	0.0100		mg/L	0.0100		100	85.7-112			
Surrogate: 4-Bromofluorobenzene	0.0108		mg/L	0.0100		108	86.3-117			

**LCS Dup (6020903-BS1)**

Prepared: 09-Feb-16 Analyzed: 12-Feb-16

Dichlorodifluoromethane	0.050	0.001	mg/L	0.0200		250	58.8-146	9.48	24.6	BS1
Chloromethane	0.017	0.001	mg/L	0.0200		87.0	63.7-134	3.67	20.9	
Vinyl chloride	0.021	0.001	mg/L	0.0200		104	69.6-123	3.27	16.7	
Bromomethane	0.025	0.001	mg/L	0.0200		125	57.9-133	2.95	33.2	

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Celey D. Keene, Lab Director/Quality Manager



**Analytical Results For:**

ETZ WATER STATION  
PO BOX 6056  
HOBBS NM, 88241

Project: WATER SAMPLES  
Project Number: NADINE WATER #1  
Project Manager: GARY SCHUBERT  
Fax To:

Reported:  
17-Feb-16 08:59

**VOLATILES BY GC/MS - Quality Control**
**Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6020903 - Volatiles</b>										
<b>LCS Dup (6020903-BSD1)</b> Prepared: 09-Feb-16 Analyzed: 12-Feb-16										
Chloroethane	0.025	0.001	mg/L	0.0200		127	62.4-134	3.52	29.5	
Trichlorofluoromethane	0.028	0.001	mg/L	0.0200		138	62.6-142	3.43	24.9	
1,1-Dichloroethene	0.018	0.001	mg/L	0.0200		89.3	65-126	4.49	15.4	
Carbon disulfide	0.025	0.001	mg/L	0.0200		124	65-148	3.44	22.4	
Iodomethane	0.018	0.001	mg/L	0.0200		91.2	70.4-138	19.4	13.2	QR-02
Acrolein	0.093	0.050	mg/L	0.100		92.6	2.76-187	3.87	75.4	
Methylene chloride	0.019	0.001	mg/L	0.0200		94.2	43.1-162	2.05	9.96	
Acetone	0.020	0.005	mg/L	0.0200		100	43.2-175	2.07	82.2	
trans-1,2-Dichloroethene	0.014	0.001	mg/L	0.0200		69.4	76.6-122	28.9	11.5	QR-02, BS2
Methyl t-Butyl Ether	0.018	0.001	mg/L	0.0200		92.4	81.5-128	4.75	11.7	
1,1-Dichloroethane	0.019	0.001	mg/L	0.0200		96.1	80.9-121	1.34	7.62	
Acrylonitrile	0.019	0.001	mg/L	0.0200		96.3	44.6-163	5.41	59.2	
Vinyl acetate	0.020	0.005	mg/L	0.0200		102	19.7-207	3.98	24.5	
cis-1,2-Dichloroethene	0.019	0.001	mg/L	0.0200		95.6	76.8-126	2.07	8.74	
2,2-Dichloropropane	0.019	0.001	mg/L	0.0200		96.4	66.5-137	2.71	14	
Bromochloromethane	0.020	0.001	mg/L	0.0200		100	76.7-128	2.85	8.39	
Chloroform	0.019	0.001	mg/L	0.0200		94.6	82.5-123	4.59	8.33	
Carbon tetrachloride	0.020	0.001	mg/L	0.0200		100	77.5-136	4.39	9.31	
1,1,1-Trichloroethane	0.020	0.001	mg/L	0.0200		97.6	88.3-127	1.47	7.44	
1,1-Dichloropropene	0.020	0.001	mg/L	0.0200		101	82.4-122	3.70	6.49	
2-Butanone	0.020	0.005	mg/L	0.0200		101	55.2-151	7.65	55	
Benzene	0.019	0.001	mg/L	0.0200		94.2	84.9-121	2.10	7.79	
1,2-Dichloroethane	0.019	0.001	mg/L	0.0200		94.0	76.9-133	3.19	8.3	
Trichloroethene	0.019	0.001	mg/L	0.0200		97.2	82.8-120	2.84	6.6	
Dibromomethane	0.019	0.001	mg/L	0.0200		93.0	78.8-128	3.95	11.7	
1,2-Dichloropropane	0.020	0.001	mg/L	0.0200		98.2	80.2-126	1.26	6.21	
Bromodichloromethane	0.019	0.001	mg/L	0.0200		95.5	84.1-130	1.61	7.88	
cis-1,3-Dichloropropene	0.019	0.001	mg/L	0.0200		94.2	76.8-130	1.68	10.6	
Toluene	0.018	0.001	mg/L	0.0200		89.6	76.1-122	0.897	9.78	
4-Methyl-2-pentanone	0.020	0.005	mg/L	0.0200		102	54.5-143	3.61	44.3	
Tetrachloroethene	0.019	0.001	mg/L	0.0200		97.3	65.3-133	0.00	21.1	
trans-1,3-Dichloropropene	0.020	0.001	mg/L	0.0200		98.8	80.1-132	0.152	12.4	

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

ETZ WATER STATION  
PO BOX 6056  
HOBBS NM, 88241

Project: WATER SAMPLES  
Project Number: NADINE WATER #1  
Project Manager: GARY SCHUBERT  
Fax To:

Reported:  
17-Feb-16 08:59

**VOLATILES BY GC/MS - Quality Control**
**Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6020903 - Volatiles</b>										
<b>LCS Dup (6020903-BSD1)</b>				Prepared: 09-Feb-16 Analyzed: 12-Feb-16						
1,1,2-Trichloroethane	0.019	0.001	mg/L	0.0200		95.4	82.3-117	1.56	12.7	
Dibromochloromethane	0.019	0.001	mg/L	0.0200		94.4	75.2-137	2.10	10.7	
1,3-Dichloropropane	0.019	0.001	mg/L	0.0200		96.3	82.9-118	3.57	13.4	
1,2-Dibromoethane	0.019	0.001	mg/L	0.0200		94.7	78.4-126	3.88	17.5	
2-Hexanone	0.020	0.005	mg/L	0.0200		100	52.1-149	1.58	50.1	
Chlorobenzene	0.019	0.001	mg/L	0.0200		95.5	76.8-125	0.105	10.9	
Ethylbenzene	0.018	0.001	mg/L	0.0200		91.8	78.5-126	1.51	8.74	
1,1,1,2-Tetrachloroethane	0.019	0.001	mg/L	0.0200		96.0	78.6-127	0.312	12.3	
m+p - Xylene	0.039	0.002	mg/L	0.0400		96.4	81.1-129	1.73	8.94	
o-Xylene	0.019	0.001	mg/L	0.0200		97.4	77.5-134	1.28	11.4	
Total Xylenes	0.058	0.003	mg/L	0.0600		96.7	80.2-130	0.709	9.04	
Bromoform	0.017	0.001	mg/L	0.0200		85.6	54.1-155	2.65	23.6	
Styrene	0.019	0.001	mg/L	0.0200		97.2	78-122	1.68	8.83	
Isopropylbenzene	0.018	0.001	mg/L	0.0200		88.7	80.2-122	1.51	11.3	
Bromobenzene	0.016	0.001	mg/L	0.0200		81.8	73.2-126	5.70	7.75	
n-Propylbenzene	0.017	0.001	mg/L	0.0200		85.0	76.8-123	4.32	7.13	
1,1,2,2-Tetrachloroethane	0.017	0.001	mg/L	0.0200		85.0	72.8-123	8.23	26	
2-Chlorotoluene	0.017	0.001	mg/L	0.0200		85.4	76.6-125	5.19	6.49	
1,2,3-trichloropropane	0.019	0.001	mg/L	0.0200		94.1	58.3-141	4.21	28.4	
1,3,5-Trimethylbenzene	0.016	0.001	mg/L	0.0200		79.0	80.8-118	3.79	7.59	BS2
trans-1,4-Dichloro-2-butene	0.022	0.001	mg/L	0.0200		112	12.5-215	5.28	49.1	
4-Chlorotoluene	0.017	0.001	mg/L	0.0200		85.0	80.2-120	4.38	6.92	
tert-Butylbenzene	0.021	0.001	mg/L	0.0200		106	72-128	5.35	9.03	
1,2,4-Trimethylbenzene	0.016	0.001	mg/L	0.0200		78.8	77.2-128	3.43	7.81	
sec-Butylbenzene	0.016	0.001	mg/L	0.0200		78.2	74.2-121	4.50	9.05	
p-Isopropyltoluene	0.016	0.001	mg/L	0.0200		79.3	75-122	4.44	6.88	
1,3-Dichlorobenzene	0.016	0.001	mg/L	0.0200		82.3	69.5-126	5.72	7.91	
1,4 Dichlorobenzene	0.017	0.001	mg/L	0.0200		82.6	71.5-122	5.48	7.03	
n-Butylbenzene	0.017	0.001	mg/L	0.0200		84.8	72.7-128	5.22	8.58	
1,2-Dichlorobenzene	0.017	0.001	mg/L	0.0200		85.6	73.9-123	3.61	9.07	
1,2-Dibromo-3-chloropropane	0.017	0.001	mg/L	0.0200		85.2	53.1-145	2.83	49	
Hexachlorobutadiene	0.016	0.001	mg/L	0.0200		79.8	62.2-136	7.42	10.3	

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 ETZ WATER STATION  
 PO BOX 6056  
 HOBBS NM, 88241

 Project: WATER SAMPLES  
 Project Number: NADINE WATER #1  
 Project Manager: GARY SCHUBERT  
 Fax To:

 Reported:  
 17-Feb-16 08:59

**VOLATILES BY GC/MS - Quality Control**
**Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6020903 - Volatiles</b>										
<b>LCS Dup (6020903-BSD1)</b>				Prepared: 09-Feb-16 Analyzed: 12-Feb-16						
1,2,4-Trichlorobenzene	0.016	0.001	mg/L	0.0200		80.9	69.2-123	4.65	14	
Naphthalene	0.017	0.001	mg/L	0.0200		86.1	64.4-132	6.52	26.4	
1,2,3-Trichlorobenzene	0.017	0.001	mg/L	0.0200		84.0	69.7-119	7.45	15.4	
2-Chloroethylvinyl ether	ND	0.005	mg/L				0-200		50	
1,4-Dioxane	ND	0.125	mg/L				0-200		50	
Surrogate: Dibromofluoromethane	0.00985		mg/L	0.0100		98.5	86.5-122			
Surrogate: Toluene-d8	0.0104		mg/L	0.0100		104	85.7-112			
Surrogate: 4-Bromofluorobenzene	0.0111		mg/L	0.0100		111	86.3-117			

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Celey D. Keene, Lab Director/Quality Manager

**Notes and Definitions**

QR-02	The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.
BS2	Blank spike recovery below laboratory acceptance criteria. Results for analyte potentially biased low.
BS1	Blank spike recovery above laboratory acceptance criteria. Results for analyte potentially biased high.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

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Celey D. Keene, Lab Director/Quality Manager







PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

May 24, 2016

BEN DONAHUE

ETZ WATER STATION

PO BOX 6056

HOBBS, NM 88241

RE: WATER SAMPLES

Enclosed are the results of analyses for samples received by the laboratory on 05/06/16 14:15.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-15-7. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Total Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Cardinal Laboratories is accredited through the State of New Mexico Environment Department for:

Method SM 9223-B	Total Coliform and E. coli (Colilert MMO-MUG)
Method EPA 524.2	Regulated VOCs and Total Trihalomethanes (TTHM)
Method EPA 552.2	Total Haloacetic Acids (HAA-5)

Accreditation applies to public drinking water matrices for State of Colorado and New Mexico.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Celey D. Keene

Lab Director/Quality Manager

### Analytical Results For:

ETZ WATER STATION  
PO BOX 6056  
HOBBS NM, 88241

Project: WATER SAMPLES  
Project Number: NONE GIVEN  
Project Manager: BEN DONAHUE  
Fax To:

Reported:  
24-May-16 15:18

### FRESH WATER

H601000-03 (Water)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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### Cardinal Laboratories

#### Inorganic Compounds

Alkalinity, Bicarbonate	244		5.00	mg/L	1	6042804	AP	12-May-16	310.1	
Alkalinity, Carbonate	<1.00		1.00	mg/L	1	6042804	AP	12-May-16	310.1	
Chloride*	116		4.00	mg/L	1	6050906	AP	10-May-16	4500-Cl-B	
Conductivity	992		1.00	uS/cm	1	6051218	AP	12-May-16	120.1	
pH*	8.30		0.100	pH Units	1	6051217	AP	12-May-16	150.1	
Sulfate*	166		25.0	mg/L	2.5	6050903	AP	10-May-16	375.4	
TDS*	728		5.00	mg/L	1	6050403	AP	17-May-16	160.1	
Alkalinity, Total*	200		4.00	mg/L	1	6042804	AP	12-May-16	310.1	

### Green Analytical Laboratories

#### Total Recoverable Metals by ICP (E200.7)

Calcium*	84.9		0.020	mg/L	1	B605200	LLG	20-May-16	EPA200.7	
Magnesium*	25.6		0.100	mg/L	1	B605200	LLG	20-May-16	EPA200.7	
Potassium*	3.83		1.00	mg/L	1	B605200	LLG	20-May-16	EPA200.7	
Sodium*	110		1.00	mg/L	1	B605200	LLG	20-May-16	EPA200.7	

Cardinal Laboratories

\*=Accredited Analyte

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*Celey D. Keene*

Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

**Analytical Results For:**ETZ WATER STATION  
PO BOX 6056  
HOBBS NM, 88241Project: WATER SAMPLES  
Project Number: NONE GIVEN  
Project Manager: BEN DONAHUE  
Fax To:Reported:  
24-May-16 15:18**Inorganic Compounds - Quality Control****Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%RE	%REC Limits	RPD	RPD Limit	Notes
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**Batch 6042804 - General Prep - Wet Chem****Blank (6042804-BLK1)**

Prepared &amp; Analyzed: 28-Apr-16

Alkalinity, Carbonate	ND	1.00	mg/L
Alkalinity, Bicarbonate	ND	5.00	mg/L
Alkalinity, Total	ND	4.00	mg/L

**LCS (6042804-BS1)**

Prepared &amp; Analyzed: 28-Apr-16

Alkalinity, Carbonate	ND	1.00	mg/L				80-120		
Alkalinity, Bicarbonate	126	5.00	mg/L				80-120		
Alkalinity, Total	104	4.00	mg/L	100		104	80-120		

**LCS Dup (6042804-BSD1)**

Prepared &amp; Analyzed: 28-Apr-16

Alkalinity, Carbonate	ND	1.00	mg/L				80-120		20
Alkalinity, Bicarbonate	126	5.00	mg/L				80-120	0.00	20
Alkalinity, Total	104	4.00	mg/L	100		104	80-120	0.00	20

**Batch 6050403 - Filtration****Blank (6050403-BLK1)**

Prepared: 04-May-16 Analyzed: 06-May-16

TDS	ND	5.00	mg/L
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**LCS (6050403-BS1)**

Prepared: 04-May-16 Analyzed: 06-May-16

TDS	502	5.00	mg/L	527		95.3	80-120		
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**Duplicate (6050403-DUP1)**

Source: H600965-02

Prepared: 04-May-16 Analyzed: 06-May-16

TDS	6070	5.00	mg/L	6260				3.08	20
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**Batch 6050903 - General Prep - Wet Chem****Blank (6050903-BLK1)**

Prepared: 09-May-16 Analyzed: 10-May-16

Sulfate	ND	10.0	mg/L
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\* = Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

ETZ WATER STATION  
PO BOX 6056  
HOBBS NM, 88241

Project: WATER SAMPLES  
Project Number: NONE GIVEN  
Project Manager: BEN DONAHUE  
Fax To:

Reported:  
24-May-16 15:18

**FRESH WATER**  
**H601000-03 (Water)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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**Cardinal Laboratories**
**Inorganic Compounds**

Alkalinity, Bicarbonate	244		5.00	mg/L	1	6042804	AP	12-May-16	310.1	
Alkalinity, Carbonate	<1.00		1.00	mg/L	1	6042804	AP	12-May-16	310.1	
Chloride*	116		4.00	mg/L	1	6050906	AP	10-May-16	4500-Cl-B	
Conductivity	992		1.00	uS/cm	1	6051218	AP	12-May-16	120.1	
pH*	8.30		0.100	pH Units	1	6051217	AP	12-May-16	150.1	
Sulfate*	166		25.0	mg/L	2.5	6050903	AP	10-May-16	375.4	
TDS*	728		5.00	mg/L	1	6050403	AP	17-May-16	160.1	
Alkalinity, Total*	200		4.00	mg/L	1	6042804	AP	12-May-16	310.1	

**Green Analytical Laboratories**
**Total Recoverable Metals by ICP (E200.7)**

Calcium*	84.9		0.020	mg/L	1	B605200	LLG	20-May-16	EPA200.7	
Magnesium*	25.6		0.100	mg/L	1	B605200	LLG	20-May-16	EPA200.7	
Potassium*	3.83		1.00	mg/L	1	B605200	LLG	20-May-16	EPA200.7	
Sodium*	110		1.00	mg/L	1	B605200	LLG	20-May-16	EPA200.7	

Cardinal Laboratories

\* = Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

May 24, 2016

BEN DONAHUE

ETZ WATER STATION

PO BOX 6056

HOBBS, NM 88241

RE: WATER SAMPLES

Enclosed are the results of analyses for samples received by the laboratory on 05/06/16 14:15.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-15-7. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Total Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Cardinal Laboratories is accredited through the State of New Mexico Environment Department for:

Method SM 9223-B	Total Coliform and E. coli (Colilert MMO-MUG)
Method EPA 524.2	Regulated VOCs and Total Trihalomethanes (TTHM)
Method EPA 552.2	Total Haloacetic Acids (HAA-5)

Accreditation applies to public drinking water matrices for State of Colorado and New Mexico.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Celey D. Keene". The signature is fluid and cursive, with a long horizontal stroke at the end.

Celey D. Keene

Lab Director/Quality Manager





**101 East Marland, Hobbs, NM 88240**  
**(575) 393-2326 FAX (575) 393-2476**

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† Cardinal cannot accept verbal changes. Please fax written changes to (575) 393-2326

#54



# CARDINAL

Laboratories

*FILE*

## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Marland, Hobbs, NM 88240

(575) 393-2326 FAX (575) 393-2476

Company Name: <u>ETZ Water Station</u>				<b>BILL TO</b>				<b>ANALYSIS REQUEST</b>																
Project Manager: <u>Gary Schubert</u>				P.O. #:				<div style="display: flex; flex-direction: column; align-items: center;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">Cation / Anion</div> <div>VOC 8260</div> <div>Ba, Cd, Cr, As, Pb</div> <div>Hg, Se, Ag</div> <div>Nitrate + Nitrite</div> </div>																
Address:				Company:																				
City:		State:		Zip:		Attn:																		
Phone #:		Fax #:		Address:																				
Project #:		Project Owner:		City:																				
Project Name: <u>Nadine Water</u>				State: Zip:																				
Project Location: <u>Lea County, NM</u>				Phone #:																				
Sampler Name: <u>Tony Taylor</u>				Fax #:																				
FOR LAB USE ONLY																								
Lab I.D.	Sample I.D.	(GRAB OR C)OMP.	# CONTAINERS	MATRIX				PRESERV.		SAMPLING														
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER	ACID/BASE	ICE / COOL	OTHER	DATE	TIME										
H600270	1 water sample	4	1		✓								4/4/16											

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Relinquished By: <u>[Signature]</u>	Date: <u>4/5/16</u>	Received By: <u>[Signature]</u>	Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Phone #:
Relinquished By: <u>[Signature]</u>	Time: <u>1:30</u>	Received By: <u>[Signature]</u>	Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Fax #:
Relinquished By: <u>[Signature]</u>	Date:	Received By: <u>[Signature]</u>	REMARKS:	
Relinquished By: <u>[Signature]</u>	Time:	Received By: <u>[Signature]</u>	512-968-4312	
Delivered By: (Circle One)	Sample Condition	CHECKED BY:	Tony	
Sampler - UPS - Bus - Other:	Cool <input checked="" type="checkbox"/> Intact <input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/>	(Initials)		

† Cardinal cannot accept verbal changes. Please fax written changes to (575) 393-2326

*#51*

December 16, 2016

BEN DONAHUE

ETZ WATER STATION

PO BOX 6056

HOBBS, NM 88241

RE: WATER SAMPLES

Enclosed are the results of analyses for samples received by the laboratory on 12/02/16 9:55.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-16-8. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Total Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

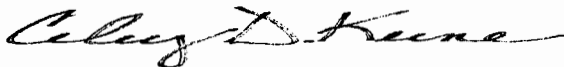
Cardinal Laboratories is accredited through the State of New Mexico Environment Department for:

Method SM 9223-B	Total Coliform and E. coli (Colilert MMO-MUG)
Method EPA 524.2	Regulated VOCs and Total Trihalomethanes (TTHM)
Method EPA 552.2	Total Haloacetic Acids (HAA-5)

Accreditation applies to public drinking water matrices for State of Colorado and New Mexico.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Celey D. Keene

Lab Director/Quality Manager

**Analytical Results For:**ETZ WATER STATION  
PO BOX 6056  
HOBBS NM, 88241Project: WATER SAMPLES  
Project Number: NONE GIVEN  
Project Manager: BEN DONAHUE  
Fax To:Reported:  
16-Dec-16 12:24

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MONITOR WELL	H602700-01	Water	30-Nov-16 16:30	02-Dec-16 09:55
FRESH WATER	H602700-02	Water	30-Nov-16 16:45	02-Dec-16 09:55
BRINE WATER	H602700-03	Water	30-Nov-16 16:45	02-Dec-16 09:55

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

ETZ WATER STATION  
PO BOX 6056  
HOBBS NM, 88241

Project: WATER SAMPLES  
Project Number: NONE GIVEN  
Project Manager: BEN DONAHUE  
Fax To:

Reported:  
16-Dec-16 12:24

**MONITOR WELL**  
**H602700-01 (Water)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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**Cardinal Laboratories**
**Inorganic Compounds**

Alkalinity, Bicarbonate	229		5.00	mg/L	1	6120110	AC	06-Dec-16	310.1	
Alkalinity, Carbonate	<1.00		1.00	mg/L	1	6120110	AC	06-Dec-16	310.1	
Chloride*	132		4.00	mg/L	1	6120202	AC	02-Dec-16	4500-Cl-B	
Conductivity*	846		1.00	uS/cm	1	6120604	AC	06-Dec-16	120.1	
pH*	7.57		0.100	pH Units	1	6120603	AC	06-Dec-16	150.1	
Sulfate*	69.2		10.0	mg/L	1	6120605	AC	06-Dec-16	375.4	
TDS*	486		5.00	mg/L	1	6112915	AC	07-Dec-16	160.1	
Alkalinity, Total*	188		4.00	mg/L	1	6120110	AC	06-Dec-16	310.1	

**Green Analytical Laboratories**
**Total Recoverable Metals by ICP (E200.7)**

Calcium*	57.0		1.00	mg/L	20	B612089	LLG	13-Dec-16	EPA200.7	
Magnesium*	17.4		2.00	mg/L	20	B612089	LLG	13-Dec-16	EPA200.7	
Potassium*	<20.0		20.0	mg/L	20	B612089	LLG	13-Dec-16	EPA200.7	
Sodium*	91.3		20.0	mg/L	20	B612089	LLG	13-Dec-16	EPA200.7	

Cardinal Laboratories

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Celey D. Keene, Lab Director/Quality Manager



**Analytical Results For:**

 ETZ WATER STATION  
 PO BOX 6056  
 HOBBS NM, 88241

 Project: WATER SAMPLES  
 Project Number: NONE GIVEN  
 Project Manager: BEN DONAHUE  
 Fax To:

 Reported:  
 16-Dec-16 12:24

**FRESH WATER**  
**H602700-02 (Water)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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**Cardinal Laboratories**
**Inorganic Compounds**

Alkalinity, Bicarbonate	224		5.00	mg/L	1	6120110	AC	06-Dec-16	310.1	
Alkalinity, Carbonate	<1.00		1.00	mg/L	1	6120110	AC	06-Dec-16	310.1	
Chloride*	128		4.00	mg/L	1	6120202	AC	02-Dec-16	4500-Cl-B	
Conductivity*	962		1.00	uS/cm	1	6120604	AC	06-Dec-16	120.1	
pH*	7.55		0.100	pH Units	1	6120603	AC	06-Dec-16	150.1	
Sulfate*	137		25.0	mg/L	2.5	6120605	AC	06-Dec-16	375.4	
TDS*	572		5.00	mg/L	1	6112915	AC	07-Dec-16	160.1	
Alkalinity, Total*	184		4.00	mg/L	1	6120110	AC	06-Dec-16	310.1	

**Green Analytical Laboratories**
**Total Recoverable Metals by ICP (E200.7)**

Calcium*	85.9		0.500	mg/L	10	B612086	LLG	13-Dec-16	EPA200.7	
Magnesium*	23.4		1.00	mg/L	10	B612086	LLG	13-Dec-16	EPA200.7	
Potassium*	<10.0		10.0	mg/L	10	B612086	LLG	13-Dec-16	EPA200.7	
Sodium*	81.7		10.0	mg/L	10	B612086	LLG	13-Dec-16	EPA200.7	

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 ETZ WATER STATION  
 PO BOX 6056  
 HOBBS NM, 88241

 Project: WATER SAMPLES  
 Project Number: NONE GIVEN  
 Project Manager: BEN DONAHUE  
 Fax To:

 Reported:  
 16-Dec-16 12:24

**BRINE WATER**
**H602700-03 (Water)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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**Cardinal Laboratories**
**Inorganic Compounds**

Alkalinity, Bicarbonate	93.0		5.00	mg/L	1	6120110	AC	06-Dec-16	310.1	
Alkalinity, Carbonate	<1.00		1.00	mg/L	1	6120110	AC	06-Dec-16	310.1	
Chloride*	188000		4.00	mg/L	1	6120202	AC	02-Dec-16	4500-Cl-B	
Conductivity*	490000		1.00	uS/cm	1	6120604	AC	06-Dec-16	120.1	
pH*	6.88		0.100	pH Units	1	6120603	AC	06-Dec-16	150.1	
Sulfate*	4440		833	mg/L	83.3	6120605	AC	06-Dec-16	375.4	
TDS*	312000		5.00	mg/L	1	6112915	AC	07-Dec-16	160.1	
Alkalinity, Total*	76.0		4.00	mg/L	1	6120110	AC	06-Dec-16	310.1	

**Green Analytical Laboratories**
**Total Recoverable Metals by ICP (E200.7)**

Calcium*	1800		10.0	mg/L	200	B612086	LLG	13-Dec-16	EPA200.7	
Magnesium*	459		20.0	mg/L	200	B612086	LLG	13-Dec-16	EPA200.7	
Potassium*	<200		200	mg/L	200	B612086	LLG	13-Dec-16	EPA200.7	
Sodium*	137000		200	mg/L	200	B612086	LLG	13-Dec-16	EPA200.7	

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

ETZ WATER STATION  
PO BOX 6056  
HOBBS NM, 88241

Project: WATER SAMPLES  
Project Number: NONE GIVEN  
Project Manager: BEN DONAHUE  
Fax To:

Reported:  
16-Dec-16 12:24

**Inorganic Compounds - Quality Control**
**Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 6112915 - Filtration**
**Blank (6112915-BLK1)**

Prepared: 29-Nov-16 Analyzed: 01-Dec-16

TDS ND 5.00 mg/L

**LCS (6112915-BS1)**

Prepared: 29-Nov-16 Analyzed: 01-Dec-16

TDS 522 527 99.1 80-120 mg/L

**Duplicate (6112915-DUP1)**

Source: H602655-01

Prepared: 29-Nov-16 Analyzed: 01-Dec-16

TDS 3890 5.00 mg/L 3780 2.87 20

**Batch 6120110 - General Prep - Wet Chem**
**Blank (6120110-BLK1)**

Prepared: 01-Dec-16 Analyzed: 07-Dec-16

Alkalinity, Carbonate ND 1.00 mg/L

Alkalinity, Bicarbonate 9.76 5.00 mg/L

Alkalinity, Total 8.00 4.00 mg/L

**LCS (6120110-BS1)**

Prepared: 01-Dec-16 Analyzed: 07-Dec-16

Alkalinity, Carbonate ND 1.00 mg/L 80-120

Alkalinity, Bicarbonate 137 5.00 mg/L 80-120

Alkalinity, Total 112 4.00 mg/L 100 112 80-120

**LCS Dup (6120110-BSD1)**

Prepared: 01-Dec-16 Analyzed: 07-Dec-16

Alkalinity, Carbonate ND 1.00 mg/L 80-120 20

Alkalinity, Bicarbonate 132 5.00 mg/L 80-120 3.72 20

Alkalinity, Total 108 4.00 mg/L 100 108 80-120 3.64 20

**Batch 6120202 - General Prep - Wet Chem**
**Blank (6120202-BLK1)**

Prepared &amp; Analyzed: 02-Dec-16

Chloride ND 4.00 mg/L

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

ETZ WATER STATION  
PO BOX 6056  
HOBBS NM, 88241

Project: WATER SAMPLES  
Project Number: NONE GIVEN  
Project Manager: BEN DONAHUE  
Fax To:

Reported:  
16-Dec-16 12:24

**Inorganic Compounds - Quality Control**
**Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6120202 - General Prep - Wet Chem</b>										
<b>LCS (6120202-BS1)</b>				Prepared & Analyzed: 02-Dec-16						
Chloride	104	4.00	mg/L	100		104	80-120			
<b>LCS Dup (6120202-BSD1)</b>				Prepared & Analyzed: 02-Dec-16						
Chloride	104	4.00	mg/L	100		104	80-120	0.00	20	
<b>Batch 6120603 - General Prep - Wet Chem</b>										
<b>LCS (6120603-BS1)</b>				Prepared & Analyzed: 06-Dec-16						
pH	7.17		pH Units	7.00		102	90-110			
<b>Duplicate (6120603-DUP1)</b>				Source: H602700-01 Prepared & Analyzed: 06-Dec-16						
pH	7.62	0.100	pH Units		7.57			0.658	20	
<b>Batch 6120604 - General Prep - Wet Chem</b>										
<b>LCS (6120604-BS1)</b>				Prepared & Analyzed: 06-Dec-16						
Conductivity	467		uS/cm	500		93.4	80-120			
<b>Duplicate (6120604-DUP1)</b>				Source: H602700-01 Prepared & Analyzed: 06-Dec-16						
Conductivity	841	1.00	uS/cm		846			0.593	20	
<b>Batch 6120605 - General Prep - Wet Chem</b>										
<b>Blank (6120605-BLK1)</b>				Prepared & Analyzed: 06-Dec-16						
Sulfate	ND	10.0	mg/L							

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 ETZ WATER STATION  
 PO BOX 6056  
 HOBBS NM, 88241

 Project: WATER SAMPLES  
 Project Number: NONE GIVEN  
 Project Manager: BEN DONAHUE  
 Fax To:

 Reported:  
 16-Dec-16 12:24

**Inorganic Compounds - Quality Control**
**Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 6120605 - General Prep - Wet Chem**
**LCS (6120605-BS1)**

Sulfate	23.3	10.0	mg/L	20.0		117	80-120			
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Prepared &amp; Analyzed: 06-Dec-16

**LCS Dup (6120605-BSD1)**

Sulfate	23.2	10.0	mg/L	20.0		116	80-120	0.387	20	
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Prepared &amp; Analyzed: 06-Dec-16

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Celey D. Keene, Lab Director/Quality Manager



**Analytical Results For:**

ETZ WATER STATION  
PO BOX 6056  
HOBBS NM, 88241

Project: WATER SAMPLES  
Project Number: NONE GIVEN  
Project Manager: BEN DONAHUE  
Fax To:

Reported:  
16-Dec-16 12:24

**Total Recoverable Metals by ICP (E200.7) - Quality Control**
**Green Analytical Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B612086 - Total Recoverable, Direct Analysis E200.7/E200.8**
**Blank (B612086-BLK1)**

Prepared: 12-Dec-16 Analyzed: 13-Dec-16

Sodium	ND	1.00	mg/L							
Magnesium	ND	0.100	mg/L							
Potassium	ND	1.00	mg/L							
Calcium	ND	0.050	mg/L							

**LCS (B612086-BS1)**

Prepared: 12-Dec-16 Analyzed: 13-Dec-16

Calcium	5.50	0.050	mg/L	5.00		110	85-115			
Sodium	8.83	1.00	mg/L	8.10		109	85-115			
Magnesium	27.5	0.100	mg/L	25.0		110	85-115			
Potassium	10.9	1.00	mg/L	10.0		109	85-115			

**LCS Dup (B612086-BSD1)**

Prepared: 12-Dec-16 Analyzed: 13-Dec-16

Sodium	7.86	1.00	mg/L	8.10		97.0	85-115	11.6	20	
Calcium	4.88	0.050	mg/L	5.00		97.6	85-115	11.9	20	
Potassium	9.77	1.00	mg/L	10.0		97.7	85-115	11.3	20	
Magnesium	24.4	0.100	mg/L	25.0		97.6	85-115	12.0	20	

**Batch B612089 - EPA 200.2 Total Rec.**
**Blank (B612089-BLK1)**

Prepared &amp; Analyzed: 13-Dec-16

Magnesium	ND	0.100	mg/L							
Potassium	ND	1.00	mg/L							
Calcium	ND	0.050	mg/L							
Sodium	ND	1.00	mg/L							

**LCS (B612089-BS1)**

Prepared &amp; Analyzed: 13-Dec-16

Potassium	7.67	1.00	mg/L	8.00		95.9	85-115			
Magnesium	18.8	0.100	mg/L	20.0		94.1	85-115			
Sodium	6.18	1.00	mg/L	6.48		95.4	85-115			
Calcium	3.80	0.050	mg/L	4.00		95.0	85-115			

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 ETZ WATER STATION  
 PO BOX 6056  
 HOBBS NM, 88241

 Project: WATER SAMPLES  
 Project Number: NONE GIVEN  
 Project Manager: BEN DONAHUE  
 Fax To:

 Reported:  
 16-Dec-16 12:24

**Total Recoverable Metals by ICP (E200.7) - Quality Control**
**Green Analytical Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B612089 - EPA 200.2 Total Rec.**
**LCS Dup (B612089-BSD1)**

Prepared &amp; Analyzed: 13-Dec-16

Magnesium	19.4	0.100	mg/L	20.0		96.9	85-115	2.93	20	
Potassium	7.94	1.00	mg/L	8.00		99.2	85-115	3.45	20	
Sodium	6.34	1.00	mg/L	6.48		97.8	85-115	2.48	20	
Calcium	3.93	0.050	mg/L	4.00		98.2	85-115	3.33	20	

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Celey D. Keene, Lab Director/Quality Manager

**Notes and Definitions**

ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

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Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



Page 12 of 12

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† Cardinal cannot accept verbal changes. Please fax written changes to (575) 393-2326

**HRC, Inc.**  
P.O. Box 1606  
Hobbs, NM 88241-6056  
(575) 393-6662 (575) 393-6662 Fax

RECEIVED OGD  
2012 JAN 26 P 1:00

January 20, 2012

Mr. Carl Chavez  
Environmental Bureau Chief  
Oil Conservation Division  
1220 South Saint Francis Drive  
Santa Fe, NM 87505

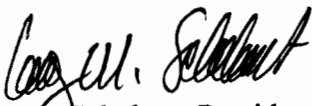
Ref: Annual Brine Well Report – BW-31  
Name of Operator: HRC – Schubert  
Date of Report: 1-20-2011

Mr. Chavez,

Please see attached information:

1. Copies of monthly brine water production and fresh water injection for the year 2011.
2. Analysis of injection fluid (2011)
3. Analysis of brine produced (2011)
4. Analysis of monitor well samples. (2011)
5. 2011 MIT TEST CHARTS

Sincerely,

  
Gary M. Schubert, President  
GMS/br

Enclosure



# **ANNUAL BRINE WELL REPORT**

**API# 30-025-36781**

**H.R.C. INC.**

**Gary M. Schubert**

**BW-31**

**January 27, 2012**

**BW – 31**  
**SCHUBERT 7 – WELL # 1**  
**YEAR 2011**

<b>MONTH</b>	<b>BRINE PRODUCTION (BY Meter)</b>	<b>FRESH WATER INJECTED (By Meter)</b>
January	34,390	37,121
February	26,653	27,131
March	31,870	32,821
April	35,172	36,426
May	35,766	36,794
June	28,147	27,429
July	37,842	37,155
August	28,805	29,498
September	34,852	35,519
October	33,969	36,438
November	37,140	38,305
December	31,672	33,800 ***
<b>Total</b>	<b>396,278</b>	<b>408,437</b>

\*\*\* Estimated (meter malfunction – actual reading @ 27,017 -- meter  
adjusted January 6, 2012)

**H. R. C., INC.**  
**SCHUBERT 7 WELL # 1**  
**(BW - 31)**

---

<b>YEAR</b>	<b>BRINE PRODUCTION</b>	<b>FRESH WATER INJECTED</b>
<b>2006</b>	<b>42,950</b>	<b>44,800</b>
<b>2007</b>	<b>312,800</b>	<b>315,000</b>
<b>2008</b>	<b>305,990</b>	<b>316,000</b>
<b>2009</b>	<b>212,779</b>	<b>226,058</b>
<b>2010</b>	<b>341,134</b>	<b>350,887</b>
<b>2011</b>	<b>396,278</b>	<b>401,654</b>
<b>Total Cumulative Production (Thru 12-31-2011)</b>	<b>1,611,931</b>	<b>1,654,399</b>

## SCHUBERT 7 - WELL # 1

[illegible]



PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

January 04, 2012

HRC

HRC

P. O. BOX 5011

HOBBS, NM 88241

RE: ETZ

Enclosed are the results of analyses for samples received by the laboratory on 12/30/11 13:55.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-11-3. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list on accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/ga/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/ga/lab_accred_certif.html).

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene". The signature is written in a cursive, flowing style.

Celey D. Keene

Lab Director/Quality Manager





PHONE (575) 393-2328 • 101 E. MARLAND • HOBBS, NM 88240

**Analytical Results For:**

HRC	Project: ETZ	Reported:
P. O. BOX 5011	Project Number: NONE GIVEN	04-Jan-12 15:00
HOBBS NM, 88241	Project Manager: HRC	
	Fax To: (575) 393-6662	

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
FRESH WATER INJECTION	H102797-01	Water	30-Dec-11 13:30	30-Dec-11 13:55
MONITOR WELL	H102797-02	Water	30-Dec-11 13:30	30-Dec-11 13:55
BRINE FILL LINE	H102797-03	Water	30-Dec-11 13:30	30-Dec-11 13:55

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

HRC  
P. O. BOX 5011  
HOBBS NM, 88241

Project: ETZ  
Project Number: NONE GIVEN  
Project Manager: HRC  
Fax To: (575) 393-6662

Reported:  
04-Jan-12 15:00

**FRESH WATER INJECTION**

H102797-01 (Water)

Analyte	Result	Reporting Unit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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**Cardinal Laboratories****Inorganic Compounds**

Alkalinity, Bicarbonate	239	5.00	mg/L	1	1122802	HIM	02-Jan-12	310.1M	
Calcium	119	1.60	mg/L	1	1121909	HIM	03-Jan-12	SM3500Ca-D	
Alkalinity, Carbonate	ND	0.00	mg/L	1	1122802	HIM	02-Jan-12	310.1M	
Chloride	236	4.00	mg/L	1	1122711	HIM	02-Jan-12	4500-Cl-B	
Conductivity	1380	1.00	uS/cm	1	2010203	HIM	02-Jan-12	120.1	
Magnesium	21.4	1.00	mg/L	1	1121909	HIM	03-Jan-12	SM3500Mg-E	
pH	7.16	0.100	pH Units	1	2010203	HIM	02-Jan-12	150.1	
Potassium	10.6	1.00	mg/L	1	1121909	HIM	03-Jan-12	HACH 8049	
Sodium	145	1.00	mg/L	1	1121909	HIM	03-Jan-12	Calculation	
Sulfate	179	10.0	mg/L	1	2010406	HIM	03-Jan-12	375.4	
TDS	948	5.00	mg/L	1	1122712	HIM	02-Jan-12	160.1	
Alkalinity, Total	196	4.00	mg/L	1	1122802	HIM	02-Jan-12	310.1M	

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Cecily D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

HRC  
P. O. BOX 5011  
HOBBS NM, 88241

Project: ETZ  
Project Number: NONE GIVEN  
Project Manager: HRC  
Fax To: (575) 393-6662

Reported:  
04-Jan-12 15:00

**MONITOR WELL**  
**H102797-02 (Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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**Cardinal Laboratories****Inorganic Compounds**

Alkalinity, Bicarbonate	210	5.00	mg/L	1	1122802	HM	02-Jan-12	310.1M	
Calcium	160	1.60	mg/L	1	1121909	HM	03-Jan-12	SM3500Ca-D	
Alkalinity, Carbonate	ND	0.00	mg/L	1	1122802	HM	02-Jan-12	310.1M	
Chloride	200	4.00	mg/L	1	1123711	HM	02-Jan-12	4500-Cl-B	
Conductivity	2120	1.00	uS/cm	1	2010203	HM	02-Jan-12	120.1	
Magnesium	41.8	1.00	mg/L	1	1121909	HM	03-Jan-12	SM3500Mg-E	
pH	7.62	0.100	pH Units	1	2010203	HM	02-Jan-12	150.1	
Potassium	2.70	1.00	mg/L	1	1121909	HM	03-Jan-12	HACH 8049	
Sodium	40.0	1.00	mg/L	1	1121909	HM	03-Jan-12	Calculation	
Sulfate	201	10.0	mg/L	1	2010406	HM	03-Jan-12	375.4	
TDS	1350	5.00	mg/L	1	1122712	HM	02-Jan-12	160.1	
Alkalinity, Total	172	4.00	mg/L	1	1122802	HM	02-Jan-12	310.1M	

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

HRC  
P. O. BOX 5011  
HOBBS NM, 88241

Project: ETZ  
Project Number: NONE GIVEN  
Project Manager: HRC  
Fax To: (575) 393-6662

Reported:  
04-Jan-12 15:00

**BRINE FILL LINE****H102797-03 (Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Note
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**Cardinal Laboratories****Inorganic Compounds**

Alkalinity, Bicarbonate	305	5.00	mg/L	1	1122802	HM	02-Jan-12	310.1M	
Calcium	1160	1.60	mg/L	1	1121909	HM	03-Jan-12	SM3500Ca-D	
Alkalinity, Carbonate	ND	0.00	mg/L	1	1122802	HM	02-Jan-12	310.1M	
Chloride	192000	4.00	mg/L	1	2010402	HM	02-Jan-12	4500-Cl-B	
Conductivity	551000	1.00	uS/cm	1	2010203	HM	02-Jan-12	120.1	
Magnesium	4710	1.00	mg/L	1	1121909	HM	03-Jan-12	SM3500Mg-E	
pH	6.59	0.100	pH Units	1	2010203	HM	02-Jan-12	150.1	
Potassium	1060	1.00	mg/L	1	1121909	HM	03-Jan-12	HACH 2049	
Sodium	118000	1.00	mg/L	1	1121909	HM	03-Jan-12	Calculation	
Sulfate	8630	10.0	mg/L	1	2010406	HM	03-Jan-12	375.4	
TDS	335000	5.00	mg/L	1	2010407	HM	03-Jan-12	160.1	
Alkalinity, Total	250	4.00	mg/L	1	1122802	HM	02-Jan-12	310.1M	

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

HRC  
P. O. BOX 5011  
HOBBS NM, 88241

Project: ETZ  
Project Number: NONE GIVEN  
Project Manager: HRC  
Fax To: (575) 393-6662

Reported:  
04-Jan-12 15:00

**Inorganic Compounds - Quality Control****Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 1121909 - \*\*\* DEFAULT PREP \*\*\*****Blank (1121909-BLK1)**

Prepared &amp; Analyzed: 19-Dec-11

Calcium	ND	1.60	mg/L							
Magnesium	ND	1.00	mg/L							
Potassium	ND	1.00	mg/L							
Sodium	ND	1.00	mg/L							

**LCS (1121909-BS1)**

Prepared &amp; Analyzed: 19-Dec-11

Calcium	22.4		mg/L	20.0		112	80-120			
Magnesium	51.3		mg/L	50.0		103	80-120			
Potassium	7.30		mg/L	8.00		91.2	80-120			

**Duplicate (1121909-DUP1)**

Source: H102619-01

Prepared &amp; Analyzed: 19-Dec-11

Calcium	9620	1.60	mg/L	9620				0.00	20	
Magnesium	2430	1.00	mg/L	2530				4.03	20	
Potassium	763	1.00	mg/L	678				12.1	20	

**Batch 1122711 - General Prep - Wet Chem****Blank (1122711-BLK1)**

Prepared &amp; Analyzed: 27-Dec-11

Chloride	ND	4.00	mg/L							
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**LCS (1122711-BS1)**

Prepared &amp; Analyzed: 27-Dec-11

Chloride	108	4.00	mg/L	100		108	80-120			
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**LCS Dup (1122711-BSD1)**

Prepared &amp; Analyzed: 27-Dec-11

Chloride	108	4.00	mg/L	100		108	80-120	0.00	20	
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**Duplicate (1122711-DUP1)**

Source: H102733-01

Prepared &amp; Analyzed: 27-Dec-11

Chloride	220	4.00	mg/L	220				0.00	20	
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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

HRC  
P. O. BOX 5011  
HOBBS NM, 88241

Project: ETZ  
Project Number: NONE GIVEN  
Project Manager: HRC  
Fax To: (575) 393-6662

Reported:  
04-Jan-12 15:00

**Inorganic Compounds - Quality Control****Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 1122711 - General Prep - Wet Chem****Matrix Spike (1122711-MS1)**

Source: H102733-01

Prepared &amp; Analyzed: 27-Dec-11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Chloride	328	4.00	mg/L	100	220	108	80-120			

**Batch 1122712 - Filtration****Blank (1122712-B1,K1)**

Prepared &amp; Analyzed: 21-Dec-11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
TDS	ND	5.00	mg/L							

**LCS (1122712-B51)**

Prepared &amp; Analyzed: 21-Dec-11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
TDS	224		mg/L	240		93.3	80-120			

**Duplicate (1122712-DUP1)**

Source: H102712-02

Prepared &amp; Analyzed: 21-Dec-11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
TDS	334000	5.00	mg/L		332000			0.601	20	

**Batch 1122802 - General Prep - Wet Chem****Blank (1122802-B1,K1)**

Prepared &amp; Analyzed: 27-Dec-11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Alkalinity, Carbonate	ND	0.00	mg/L							

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Alkalinity, Bicarbonate	ND	5.00	mg/L							

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Alkalinity, Total	ND	4.00	mg/L							

**LCS (1122802-B51)**

Prepared &amp; Analyzed: 27-Dec-11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Alkalinity, Carbonate	ND	0.00	mg/L				80-120			

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Alkalinity, Bicarbonate	137	5.00	mg/L				80-120			

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Alkalinity, Total	112	4.00	mg/L	100		112	80-120			

**LCS Dup (1122802-BSD1)**

Prepared &amp; Analyzed: 27-Dec-11

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Alkalinity, Carbonate	ND	0.00	mg/L				80-120		20	

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Alkalinity, Bicarbonate	132	5.00	mg/L				80-120	3.72	20	

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Alkalinity, Total	108	4.00	mg/L	100		108	80-120	3.64	20	

**Cardinal Laboratories**

\* - Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager







PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

**Analytical Results For:**

HRC  
P. O. BOX 5011  
HOBBS NM, 88241

Project: ETZ  
Project Number: NONE GIVEN  
Project Manager: HRC  
Fax To: (575) 393-6662

Reported:  
04-Jan-12 15:00

**Inorganic Compounds - Quality Control****Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
<b>Batch 2010402 - General Prep - Wet Chem</b>										
LCS Dup (2010402-RSD1)										Prepared & Analyzed: 02-Jan-12
Chloride	104	4.00	mg/L	100	104	80-120	3.92	20		
Duplicate (2010402-DUP1)										Prepared & Analyzed: 02-Jan-12
Chloride	190000	4.00	mg/L	192000			1.05	20		Source: H102797-03
Matrix Spike (2010402-MS1)										Prepared & Analyzed: 02-Jan-12
Chloride	240000	4.00	mg/L	50000	192000	96.0	80-120			Source: H102797-03
<b>Batch 2010406 - General Prep - Wet Chem</b>										
Blank (2010406-BL1K1)										Prepared: 03-Jan-12 Analyzed: 04-Jan-12
Sulfate	ND	10.0	mg/L							
LCS (2010406-BSD1)										Prepared: 03-Jan-12 Analyzed: 04-Jan-12
Sulfate	20.6	10.0	mg/L	20.0	103	80-120				
LCS Dup (2010406-BSD1)										Prepared & Analyzed: 03-Jan-12
Sulfate	21.3	10.0	mg/L	20.0	106	80-120	3.34	20		
Duplicate (2010406-DUP1)										Prepared & Analyzed: 03-Jan-12
Sulfate	1350	10.0	mg/L	1560			0.643	20		Source: H102766-01
Matrix Spike (2010406-MS1)										Prepared & Analyzed: 03-Jan-12
Sulfate	2020	10.0	mg/L	20.0	1560	NR	70-130			Source: H102766-01
<b>Batch 2010407 - Filtration</b>										
Blank (2010407-BL1K1)										Prepared: 02-Jan-12 Analyzed: 03-Jan-12
TDS	ND	5.00	mg/L							

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Coley D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

HRC  
P. O. BOX 5011  
HOBBS NM, 88241

Project: ETZ  
Project Number: NONE GIVEN  
Project Manager: HRC  
Fax To: (575) 393-6662

Reported:  
04-Jan-12 15:00

**Inorganic Compounds - Quality Control****Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
---------	--------	--------------------	-------	----------------	------------------	----------------	-----	--------------	-------

**Batch 2010407 - Filtration****LCS (2010407-BS1)**

Prepared: 02-Jan-12 Analyzed: 03-Jan-12

TDS	243	5.00	mg/L	240	101	80-120			
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**Duplicate (2010407-DUP1)**

Source: H1102797-03

Prepared: 02-Jan-12 Analyzed: 03-Jan-12

TDS	336000	5.00	mg/L	335000	0.260	20			
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Cardinal Laboratories

\* = Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

**Notes and Definitions**

- ND Analyte NOT DETECTED at or above the reporting limit
- RPD Relative Percent Difference
- >> Samples not received at proper temperature of 6°C or below.
- >>> Insufficient time to reach temperature.
- Chloride by SM4500Cl-B does not require samples be received at or below 6°C
- Samples reported on an as received basis (wet) unless otherwise noted on report

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\* = Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

**101 East Marland, Hobbs, NM 88240**  
**(575) 393-2326 FAX (575) 393-2476**

[illegible]

† Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2476.

3-2476  
#26

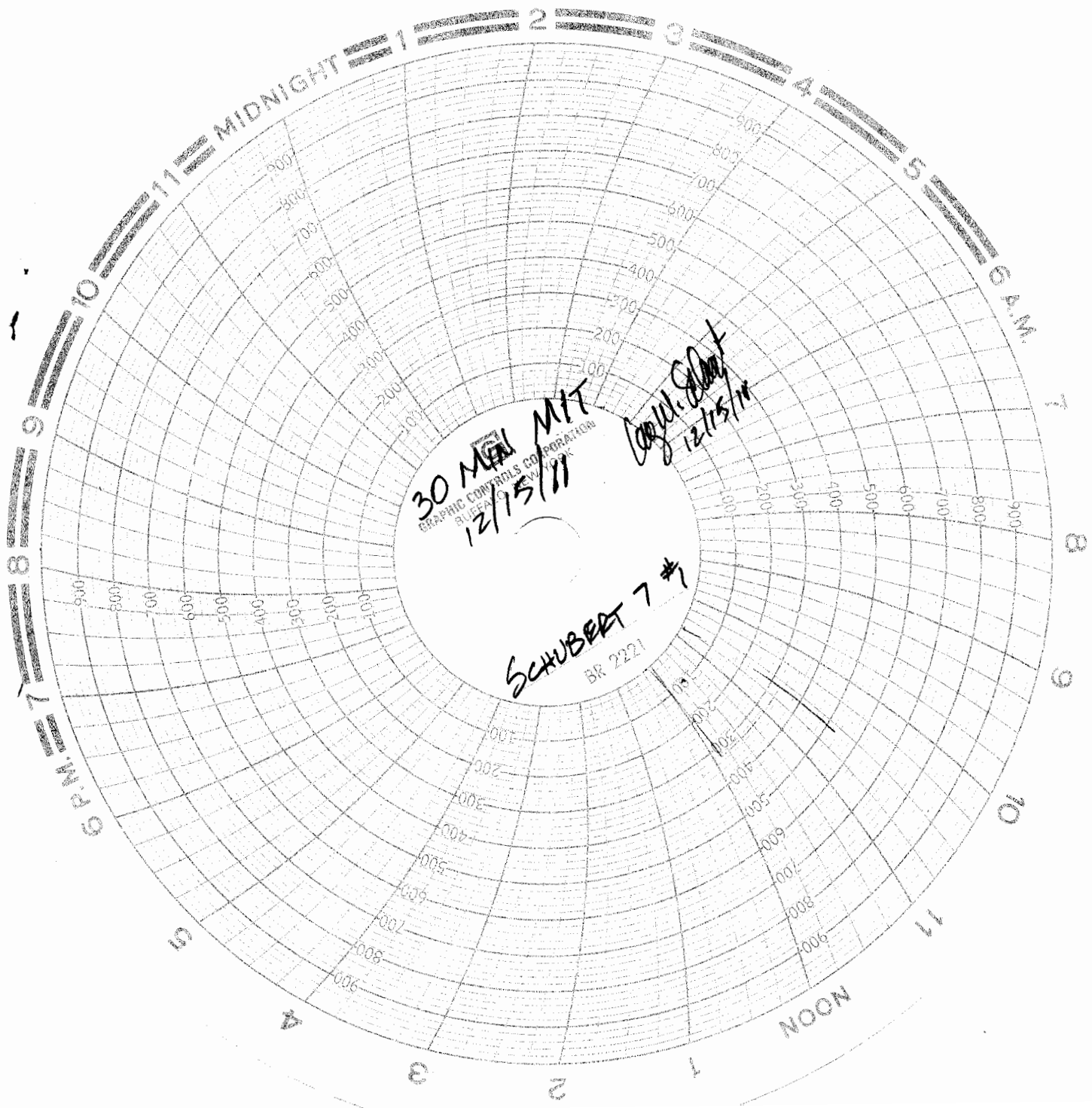
CHART RECORDER

SET @ 12 HR

PER REVOLUTION

10:30 AM TO  $\approx$  11:05 AM

12/15/11





# MACLASKEY OILFIELD SERVICES

5900 WEST LOVINGTON HWY. HOBBS, N.M. 88240

505-393-1016

THIS IS TO CERTIFY THAT:

DATE: 9-2-11

I, Albert Robinson METER TECHNICIAN FOR MACLASKEY OILFIELD  
SERVICES, INC. HAS CHECKED THE CALIBRATION ON THE FOLLOWING  
INSTRUMENT. 1000 PRESSURE RECORDER.

SERIAL NUMBER

11853

TESTED AT THESE POINTS.

	PRESSURE <u>500</u>	
TEST	AS FOUND	CORRECTED
<u>0</u>	<u>100</u>	<u>/</u>
<u>100</u>	<u>200</u>	<u>/</u>
<u>200</u>	<u>300</u>	<u>/</u>
<u>300</u>	<u>400</u>	<u>/</u>
<u>400</u>	<u>500</u>	<u>/</u>

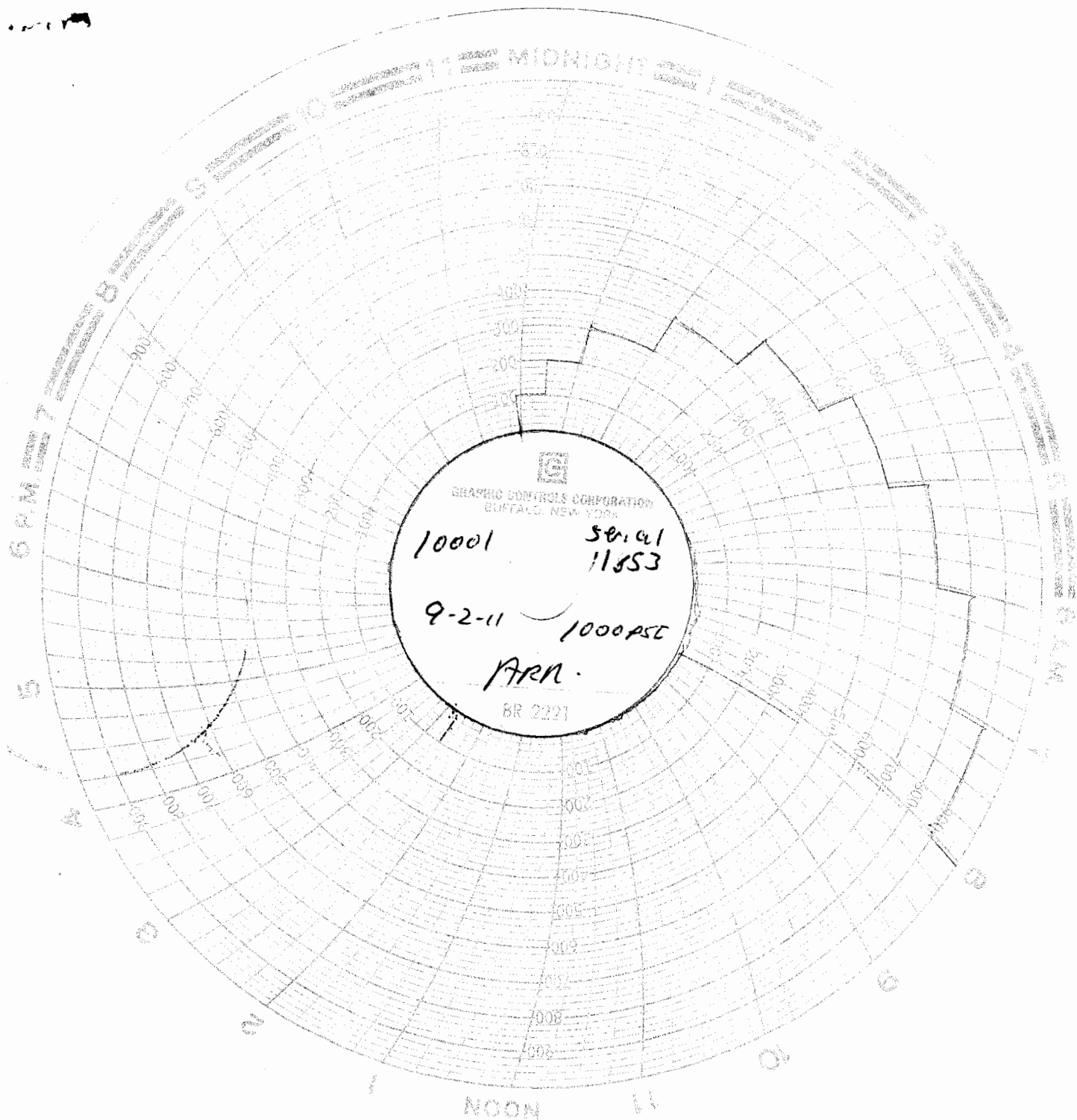
	PRESSURE <u>100</u>	
TEST	AS FOUND	CORRECT
<u>500</u>	<u>600</u>	<u>/</u>
<u>600</u>	<u>200</u>	<u>/</u>
<u>700</u>	<u>800</u>	<u>/</u>
<u>800</u>	<u>900</u>	<u>/</u>
<u>900</u>	<u>1000</u>	<u>/</u>

REMARKS: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

SIGNED: AR



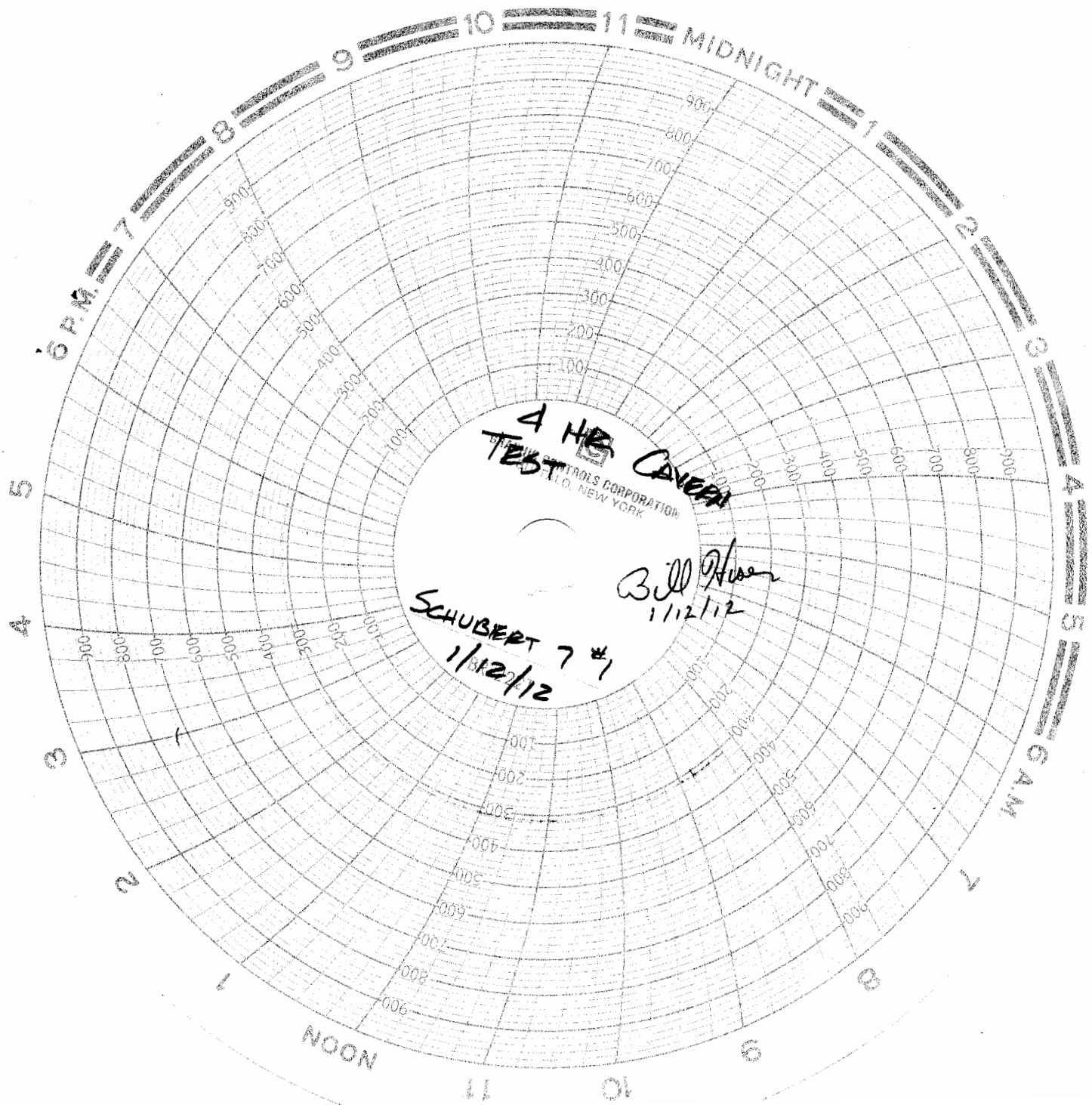
# CHART RECORDER

SET @ 12 HR.

PER REVOLUTION

8:30 AM TO 12:30 PM

1/12/12





**HRC, INC.**  
P. O. Box 5102  
Hobbs, NM 88241-5102  
Phone # (575) 393-6662  
Fax # (575) 393-6662

RECEIVED OGC  
2016 APR 25 P 3:17

**April 25, 2016**

**Jim Griswold  
Senior Hydrologist  
ENMRD/Oil Conservation Division  
1220 South St. Francis Drive  
Santa Fe, New Mexico 87505**

**Ref: 2015 Annual Report  
B-31 Schubert 7 – Well #1**

**Dear Mr. Griswold,**

**Enclosed please find the monthly freshwater injection and brine production numbers for the Hobbs facility for the year 2015.  
Included also are Cardinal Laboratories' results of analyses for samples for the month of May and December, 2015.**

**Thank you,**

**Sincerely,**

*Gary M. Schubert*

**Gary M. Schubert  
GMS/br**

**BW – 31**

**SCHUBERT 7 – WELL # 1**

**YEAR 2015**

<b>MONTH</b>	<b>BRINE PRODUCTION</b>	<b>FRESH WATER INJECTED</b>
January	22,483	22,650
February	20,840	21,043
March	25,417	25,919
April	20,460	20,441
May	21,462	20,838
June	24,012	24,640
July	26,952	24,317
August	29,071	29,776
September	25,880	25,327
October	24,977	25,012
November	24,792	24,793
December	24,859	24,900

December 07, 2015

BEN DONAHUE

ETZ WATER STATION

PO BOX 6056

HOBBS, NM 88241

RE: WATER SAMPLES

Enclosed are the results of analyses for samples received by the laboratory on 11/23/15 13:30.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-13-5. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Total Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

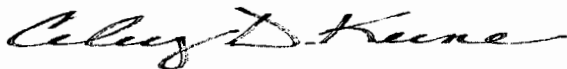
Cardinal Laboratories is accredited through the State of New Mexico Environment Department for:

Method SM 9223-B	Total Coliform and E. coli (Colilert MMO-MUG)
Method EPA 524.2	Regulated VOCs and Total Trihalomethanes (TTHM)
Method EPA 552.2	Total Haloacetic Acids (HAA-5)

Accreditation applies to public drinking water matrices for State of Colorado and New Mexico.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Celey D. Keene

Lab Director/Quality Manager



**Analytical Results For:**ETZ WATER STATION  
PO BOX 6056  
HOBBS NM, 88241Project: WATER SAMPLES  
Project Number: NONE GIVEN  
Project Manager: BEN DONAHUE  
Fax To:Reported:  
07-Dec-15 16:25

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BRINE WATER	H503087-01	Water	23-Nov-15 11:00	23-Nov-15 13:30
MONITOR WELL	H503087-02	Water	23-Nov-15 11:00	23-Nov-15 13:30
FRESH WATER	H503087-03	Water	23-Nov-15 11:00	23-Nov-15 13:30

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 ETZ WATER STATION  
 PO BOX 6056  
 HOBBS NM, 88241

 Project: WATER SAMPLES  
 Project Number: NONE GIVEN  
 Project Manager: BEN DONAHUE  
 Fax To:

 Reported:  
 07-Dec-15 16:25

**BRINE WATER**  
**H503087-01 (Water)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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**Cardinal Laboratories**
**Inorganic Compounds**

Alkalinity, Bicarbonate	112		5.00	mg/L	1	5112009	AP	02-Dec-15	310.1	
Alkalinity, Carbonate	<0.00		0.00	mg/L	1	5112009	AP	02-Dec-15	310.1	
Chloride*	184000		4.00	mg/L	1	5112001	AP	25-Nov-15	4500-Cl-B	
Conductivity*	389000		1.00	uS/cm	1	5120115	AP	03-Dec-15	120.1	
pH*	7.21		0.100	pH Units	1	5120117	AP	03-Dec-15	150.1	
Sulfate*	4560		1000	mg/L	100	5113005	AP	30-Nov-15	375.4	
TDS*	306000		5.00	mg/L	1	5112304	AP	01-Dec-15	160.1	
Alkalinity, Total*	92.0		4.00	mg/L	1	5112009	AP	02-Dec-15	310.1	

**Green Analytical Laboratories**
**Total Recoverable Metals by ICP (E200.7)**

Calcium*	1490		2.00	mg/L	100	B512007	JGS	01-Dec-15	EPA200.7	
Magnesium*	396		10.0	mg/L	100	B512007	JGS	01-Dec-15	EPA200.7	
Potassium*	171		100	mg/L	100	B512007	JGS	01-Dec-15	EPA200.7	
Sodium*	116000		1000	mg/L	500	B512007	JGS	02-Dec-15	EPA200.7	

Cardinal Laboratories

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 ETZ WATER STATION  
 PO BOX 6056  
 HOBBS NM, 88241

 Project: WATER SAMPLES  
 Project Number: NONE GIVEN  
 Project Manager: BEN DONAHUE  
 Fax To:

 Reported:  
 07-Dec-15 16:25

**MONITOR WELL**  
**H503087-02 (Water)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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**Cardinal Laboratories**
**Inorganic Compounds**

Alkalinity, Bicarbonate	214		5.00	mg/L	1	5120206	AP	02-Dec-15	310.1	
Alkalinity, Carbonate	<0.00		0.00	mg/L	1	5120206	AP	02-Dec-15	310.1	
Chloride*	152		4.00	mg/L	1	5112001	AP	25-Nov-15	4500-Cl-B	
Conductivity*	990		1.00	uS/cm	1	5120115	AP	03-Dec-15	120.1	
pH*	8.65		0.100	pH Units	1	5120117	AP	03-Dec-15	150.1	
Sulfate*	71.4		10.0	mg/L	1	5120203	AP	02-Dec-15	375.4	
TDS*	452		5.00	mg/L	1	5112304	AP	01-Dec-15	160.1	
Alkalinity, Total*	176		4.00	mg/L	1	5120206	AP	02-Dec-15	310.1	

**Green Analytical Laboratories**
**Total Recoverable Metals by ICP (E200.7)**

Calcium*	58.3		0.200	mg/L	10	B512007	JGS	01-Dec-15	EPA200.7	
Magnesium*	18.4		1.00	mg/L	10	B512007	JGS	01-Dec-15	EPA200.7	
Potassium*	<10.0		10.0	mg/L	10	B512007	JGS	01-Dec-15	EPA200.7	
Sodium*	143		20.0	mg/L	10	B512007	JGS	01-Dec-15	EPA200.7	

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 ETZ WATER STATION  
 PO BOX 6056  
 HOBBS NM, 88241

 Project: WATER SAMPLES  
 Project Number: NONE GIVEN  
 Project Manager: BEN DONAHUE  
 Fax To:

 Reported:  
 07-Dec-15 16:25

**FRESH WATER**  
**H503087-03 (Water)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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**Cardinal Laboratories**
**Inorganic Compounds**

Alkalinity, Bicarbonate	229		5.00	mg/L	1	5120206	AP	02-Dec-15	310.1	
Alkalinity, Carbonate	<0.00		0.00	mg/L	1	5120206	AP	02-Dec-15	310.1	
Chloride*	120		4.00	mg/L	1	5112001	AP	25-Nov-15	4500-Cl-B	
Conductivity*	1070		1.00	uS/cm	1	5120115	AP	03-Dec-15	120.1	
pH*	8.38		0.100	pH Units	1	5120117	AP	03-Dec-15	150.1	
Sulfate*	158		25.0	mg/L	2.5	5120203	AP	02-Dec-15	375.4	
TDS*	700		5.00	mg/L	1	5112304	AP	01-Dec-15	160.1	
Alkalinity, Total*	188		4.00	mg/L	1	5120206	AP	02-Dec-15	310.1	

**Green Analytical Laboratories**
**Total Recoverable Metals by ICP (E200.7)**

Calcium*	81.8		0.200	mg/L	10	B512007	JGS	01-Dec-15	EPA200.7	
Magnesium*	25.0		1.00	mg/L	10	B512007	JGS	01-Dec-15	EPA200.7	
Potassium*	<10.0		10.0	mg/L	10	B512007	JGS	01-Dec-15	EPA200.7	
Sodium*	112		20.0	mg/L	10	B512007	JGS	01-Dec-15	EPA200.7	

Cardinal Laboratories

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 ETZ WATER STATION  
 PO BOX 6056  
 HOBBS NM, 88241

 Project: WATER SAMPLES  
 Project Number: NONE GIVEN  
 Project Manager: BEN DONAHUE  
 Fax To:

 Reported:  
 07-Dec-15 16:25

**Inorganic Compounds - Quality Control**
**Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 5112001 - General Prep - Wet Chem**
**Blank (5112001-BLK1)**

Prepared &amp; Analyzed: 25-Nov-15

Chloride ND 4.00 mg/L

**LCS (5112001-BS1)**

Prepared &amp; Analyzed: 25-Nov-15

Chloride 120 4.00 mg/L 100 120 80-120

**LCS Dup (5112001-BSD1)**

Prepared: 25-Nov-15 Analyzed: 02-Dec-15

Chloride 104 4.00 mg/L 100 104 80-120 14.3 20

**Batch 5112009 - General Prep - Wet Chem**
**Blank (5112009-BLK1)**

Prepared &amp; Analyzed: 25-Nov-15

Alkalinity, Carbonate ND 0.00 mg/L

Alkalinity, Bicarbonate ND 5.00 mg/L

Alkalinity, Total ND 4.00 mg/L

**LCS (5112009-BS1)**

Prepared &amp; Analyzed: 25-Nov-15

Alkalinity, Carbonate ND 0.00 mg/L 80-120

Alkalinity, Bicarbonate 126 5.00 mg/L 80-120

Alkalinity, Total 104 4.00 mg/L 100 104 80-120

**LCS Dup (5112009-BSD1)**

Prepared &amp; Analyzed: 25-Nov-15

Alkalinity, Carbonate ND 0.00 mg/L 80-120 20

Alkalinity, Bicarbonate 126 5.00 mg/L 80-120 0.00 20

Alkalinity, Total 104 4.00 mg/L 100 104 80-120 0.00 20

**Batch 5112304 - Filtration**
**Blank (5112304-BLK1)**

Prepared: 23-Nov-15 Analyzed: 25-Nov-15

TDS ND 5.00 mg/L

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 ETZ WATER STATION  
 PO BOX 6056  
 HOBBS NM, 88241

 Project: WATER SAMPLES  
 Project Number: NONE GIVEN  
 Project Manager: BEN DONAHUE  
 Fax To:

 Reported:  
 07-Dec-15 16:25

**Inorganic Compounds - Quality Control**  
**Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 5112304 - Filtration**

LCS (5112304-BS1) Prepared: 23-Nov-15 Analyzed: 25-Nov-15

TDS	524	5.00	mg/L	527	99.4	80-120
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Duplicate (5112304-DUP1) Source: H503065-01 Prepared: 23-Nov-15 Analyzed: 25-Nov-15

TDS	1750	5.00	mg/L	1780	1.93	20
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**Batch 5113005 - General Prep - Wet Chem**

Blank (5113005-BLK1) Prepared &amp; Analyzed: 30-Nov-15

Sulfate	ND	10.0	mg/L
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LCS (5113005-BS1) Prepared &amp; Analyzed: 30-Nov-15

Sulfate	23.1	10.0	mg/L	20.0	116	80-120
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LCS Dup (5113005-BSD1) Prepared &amp; Analyzed: 30-Nov-15

Sulfate	21.3	10.0	mg/L	20.0	106	80-120	8.30	20
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**Batch 5120115 - NO PREP**

LCS (5120115-BS1) Prepared &amp; Analyzed: 03-Dec-15

Conductivity	511		uS/cm	500	102	80-120
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Duplicate (5120115-DUP1) Source: H503087-01 Prepared &amp; Analyzed: 03-Dec-15

Conductivity	422000	1.00	uS/cm	389000	8.14	20
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**Batch 5120117 - General Prep - Wet Chem**

LCS (5120117-BS1) Prepared &amp; Analyzed: 03-Dec-15

pH	7.14		pH Units	7.00	102	90-110
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Celey D. Keene, Lab Director/Quality Manager



**Analytical Results For:**

 ETZ WATER STATION  
 PO BOX 6056  
 HOBBS NM, 88241

 Project: WATER SAMPLES  
 Project Number: NONE GIVEN  
 Project Manager: BEN DONAHUE  
 Fax To:

 Reported:  
 07-Dec-15 16:25

**Inorganic Compounds - Quality Control**
**Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 5120117 - General Prep - Wet Chem**
**Duplicate (5120117-DUP1)**

Source: H503077-01

Prepared &amp; Analyzed: 03-Dec-15

pH	7.37	0.100	pH Units	7.32	0.681	20
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**Batch 5120203 - General Prep - Wet Chem**
**Blank (5120203-BLK1)**

Prepared &amp; Analyzed: 02-Dec-15

Sulfate	ND	10.0	mg/L
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**LCS (5120203-BS1)**

Prepared &amp; Analyzed: 02-Dec-15

Sulfate	20.4	10.0	mg/L	20.0	102	80-120
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**LCS Dup (5120203-BSD1)**

Prepared &amp; Analyzed: 02-Dec-15

Sulfate	19.9	10.0	mg/L	20.0	99.6	80-120	2.68	20
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**Batch 5120206 - General Prep - Wet Chem**
**Blank (5120206-BLK1)**

Prepared &amp; Analyzed: 02-Dec-15

Alkalinity, Carbonate	ND	0.00	mg/L
Alkalinity, Bicarbonate	ND	5.00	mg/L
Alkalinity, Total	ND	4.00	mg/L

**LCS (5120206-BS1)**

Prepared &amp; Analyzed: 02-Dec-15

Alkalinity, Carbonate	ND	0.00	mg/L		80-120
Alkalinity, Bicarbonate	126	5.00	mg/L		80-120
Alkalinity, Total	104	4.00	mg/L	100	104 80-120

**LCS Dup (5120206-BSD1)**

Prepared &amp; Analyzed: 02-Dec-15

Alkalinity, Carbonate	ND	0.00	mg/L		80-120		20
Alkalinity, Bicarbonate	126	5.00	mg/L		80-120	0.00	20
Alkalinity, Total	104	4.00	mg/L	100	104	80-120	0.00 20

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 ETZ WATER STATION  
 PO BOX 6056  
 HOBBS NM, 88241

 Project: WATER SAMPLES  
 Project Number: NONE GIVEN  
 Project Manager: BEN DONAHUE  
 Fax To:

 Reported:  
 07-Dec-15 16:25

**Total Recoverable Metals by ICP (E200.7) - Quality Control**
**Green Analytical Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B512007 - EPA 200.2</b>										
<b>Blank (B512007-BLK1)</b>										
Prepared & Analyzed: 01-Dec-15										
Calcium	0.035	0.020	mg/L							B1
Magnesium	ND	0.100	mg/L							
Sodium	1.26	1.00	mg/L							B3
Potassium	ND	1.00	mg/L							
<b>LCS (B512007-BS1)</b>										
Prepared & Analyzed: 01-Dec-15										
Magnesium	19.6	0.100	mg/L	20.0		97.9	85-115			
Sodium	7.20	1.00	mg/L	6.48		111	85-115			
Potassium	7.95	1.00	mg/L	8.00		99.3	85-115			
Calcium	4.06	0.020	mg/L	4.00		102	85-115			
<b>LCS Dup (B512007-BSD1)</b>										
Prepared & Analyzed: 01-Dec-15										
Magnesium	19.6	0.100	mg/L	20.0		97.8	85-115	0.0694	20	
Sodium	6.69	1.00	mg/L	6.48		103	85-115	7.27	20	
Calcium	4.08	0.020	mg/L	4.00		102	85-115	0.394	20	
Potassium	7.98	1.00	mg/L	8.00		99.8	85-115	0.465	20	

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Celey D. Keene, Lab Director/Quality Manager

**Notes and Definitions**

- B3 Target analyte detected in method blank or continuing calibration blank. Reporting limit elevated to account for blank result.
- B1 Target analyte detected in method blank at or above method reporting limit. Sample concentration found to be 10 times above the concentration found in the method blank or less than the reporting limit.
- ND Analyte NOT DETECTED at or above the reporting limit
- RPD Relative Percent Difference
- \*\* Samples not received at proper temperature of 6°C or below.
- \*\*\* Insufficient time to reach temperature.
- Chloride by SM4500Cl-B does not require samples be received at or below 6°C  
Samples reported on an as received basis (wet) unless otherwise noted on report

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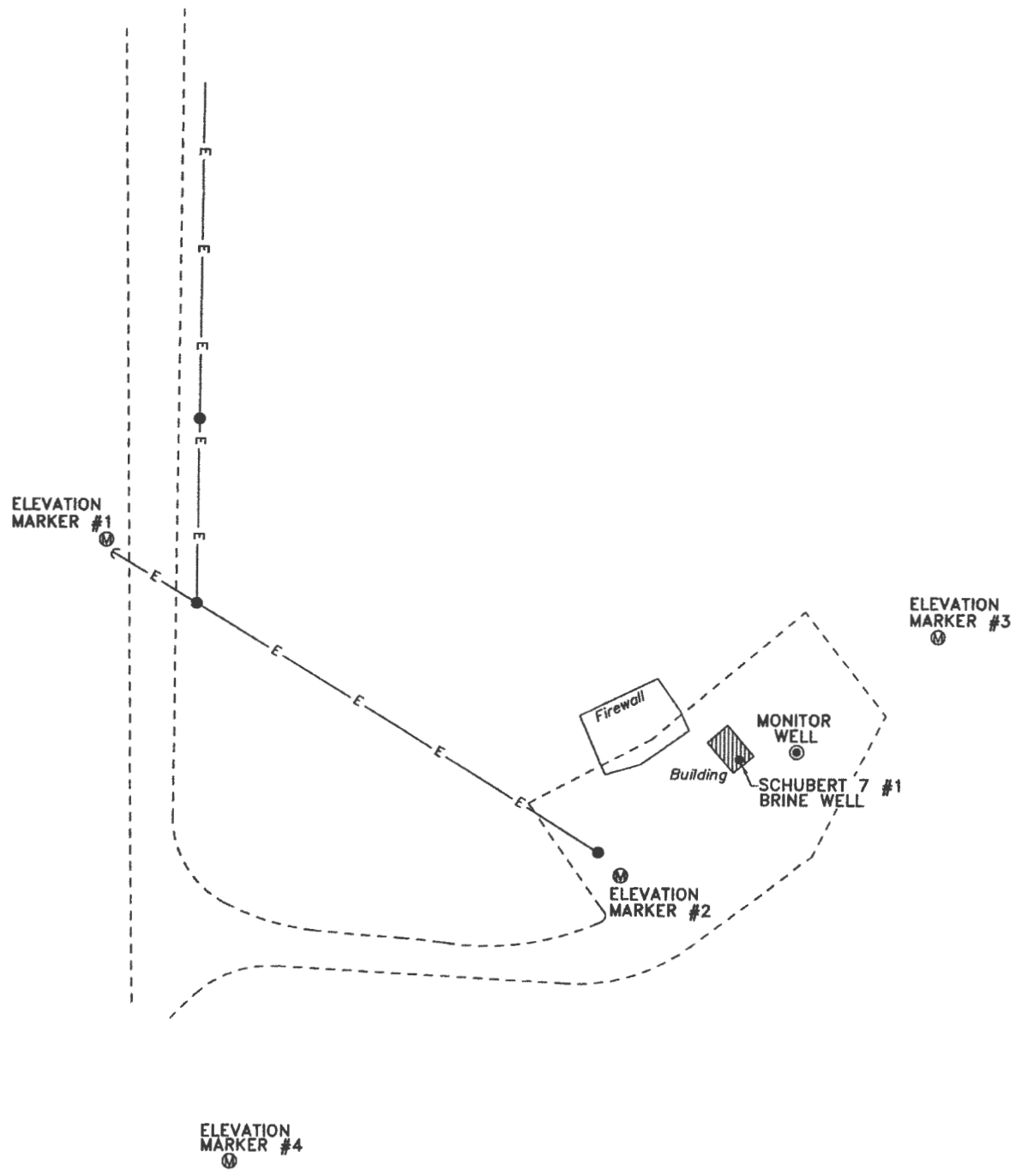


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Celey D. Keene, Lab Director/Quality Manager



SECTION 7, TOWNSHIP 19 SOUTH, RANGE 39 EAST, N.M.P.M.,  
LEA COUNTY, NEW MEXICO.

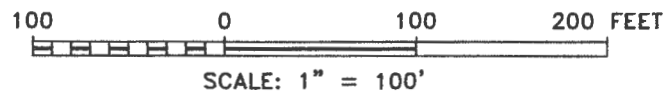


NOTE:  
ELEVATIONS ARE ON BLACK MARK  
ON NORTH SIDE OF PVC CASING.

NEW MEXICO STATE PLANE COORDINATES (NAD83)

WELL	NORTHING	EASTING	LATITUDE	LONGITUDE	ELEVATION
EM-1	611304.81	925484.92	32°40'27.52"	103°05'05.71"	3591.65
EM-2	611100.65	925800.11	32°40'25.46"	103°05'02.05"	3586.37
EM-3	611248.41	925991.42	32°40'26.90"	103°04'59.79"	3586.23
EM-4	610926.15	925561.84	32°40'23.76"	103°05'04.86"	3586.94

REVISION #	DATE	DESCRIPTION
1	SEPT. 9, 2015	ORIGINAL SURVEY
2	DEC. 15, 2015	RESURVEY-NO CHANGE IN ELEVATIONS



I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED  
FROM FIELD NOTES OF AN ACTUAL SURVEY AND  
MEETS OR EXCEEDS ALL REQUIREMENTS FOR LAND  
SURVEYS AS SPECIFIED BY THIS STATE.

**GARY L. JONES**  
GARY L. JONES, N.M.P.S. No. 7977  
Professional Land Surveyor No. 5074

<b>H.R.C. INC.</b>	
REF: ELEVATION MARKERS	
ELEVATION MARKERS LOCATED IN	
SECTION 7, TOWNSHIP 19 SOUTH, RANGE 39 EAST,	
N.M.P.M., LEA COUNTY, NEW MEXICO.	
W.O. Number: 31893	Drawn By: K. GOAD
Date: 12-16-2015	Disk: KJG - SCHUBERT MW 31893
Survey Date: 09-09-2015	Sheet 1 of 1 Sheets

**BASIN SURVEYS** P.O. BOX 1786 - HOBBS, NEW MEXICO

May 12, 2015

BEN DONAHUE

ETZ WATER STATION

PO BOX 6056

HOBBS, NM 88241

RE: WATER SAMPLES

Enclosed are the results of analyses for samples received by the laboratory on 05/01/15 12:35.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-13-5. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Total Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

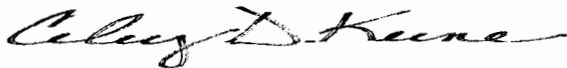
Cardinal Laboratories is accredited through the State of New Mexico Environment Department for:

Method SM 9223-B	Total Coliform and E. coli (Colilert MMO-MUG)
Method EPA 524.2	Regulated VOCs and Total Trihalomethanes (TTHM)
Method EPA 552.2	Total Haloacetic Acids (HAA-5)

Accreditation applies to public drinking water matrices for State of Colorado and New Mexico.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Celey D. Keene

Lab Director/Quality Manager



**Analytical Results For:**ETZ WATER STATION  
PO BOX 6056  
HOBBS NM, 88241Project: WATER SAMPLES  
Project Number: NONE GIVEN  
Project Manager: BEN DONAHUE  
Fax To:Reported:  
12-May-15 13:25

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
FRESH H2O	H501138-01	Water	01-May-15 08:15	01-May-15 12:35
BRINE H2O	H501138-02	Water	01-May-15 08:15	01-May-15 12:35
MONITOR WELL H2O	H501138-03	Water	01-May-15 08:15	01-May-15 12:35

Cardinal Laboratories

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 ETZ WATER STATION  
 PO BOX 6056  
 HOBBS NM, 88241

 Project: WATER SAMPLES  
 Project Number: NONE GIVEN  
 Project Manager: BEN DONAHUE  
 Fax To:

 Reported:  
 12-May-15 13:25

**FRESH H2O**  
**H501138-01 (Water)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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**Cardinal Laboratories**
**Inorganic Compounds**

Alkalinity, Bicarbonate	219		5.00	mg/L	1	5050510	AP	07-May-15	310.1	
Alkalinity, Carbonate	ND		0.00	mg/L	1	5050510	AP	07-May-15	310.1	
Chloride*	132		4.00	mg/L	1	5042913	AP	03-May-15	4500-Cl-B	
Conductivity*	1080		1.00	uS/cm	1	5050404	AP	05-May-15	120.1	
pH*	8.20		0.100	pH Units	1	5050403	AP	05-May-15	150.1	
Sulfate*	137		25.0	mg/L	2.5	5042911	AP	03-May-15	375.4	
TDS*	706		5.00	mg/L	1	5042902	AP	05-May-15	160.1	
Alkalinity, Total*	180		4.00	mg/L	1	5050510	AP	07-May-15	310.1	

**Green Analytical Laboratories**
**Total Recoverable Metals by ICP (E200.7)**

Calcium*	87.6		0.020	mg/L	1	B505032	JGS	06-May-15	EPA200.7	
Magnesium*	27.7		0.100	mg/L	1	B505032	JGS	06-May-15	EPA200.7	
Potassium*	4.28		1.00	mg/L	1	B505032	JGS	06-May-15	EPA200.7	
Sodium*	95.1		1.00	mg/L	1	B505032	JGS	06-May-15	EPA200.7	

Cardinal Laboratories

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 ETZ WATER STATION  
 PO BOX 6056  
 HOBBS NM, 88241

 Project: WATER SAMPLES  
 Project Number: NONE GIVEN  
 Project Manager: BEN DONAHUE  
 Fax To:

 Reported:  
 12-May-15 13:25

**BRINE H2O**  
**H501138-02 (Water)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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**Cardinal Laboratories**
**Inorganic Compounds**

Alkalinity, Bicarbonate	117		5.00	mg/L	1	5050510	AP	07-May-15	310.1	
Alkalinity, Carbonate	ND		0.00	mg/L	1	5050510	AP	07-May-15	310.1	
Chloride*	212000		4.00	mg/L	1	5050301	AP	03-May-15	4500-Cl-B	
Conductivity*	460000		1.00	uS/cm	1	5050404	AP	05-May-15	120.1	
pH*	6.92		0.100	pH Units	1	5050403	AP	05-May-15	150.1	
Sulfate*	2650		1000	mg/L	100	5042911	AP	03-May-15	375.4	
TDS*	313000		5.00	mg/L	1	5042902	AP	05-May-15	160.1	
Alkalinity, Total*	96.0		4.00	mg/L	1	5050510	AP	07-May-15	310.1	

**Green Analytical Laboratories**
**Total Recoverable Metals by ICP (E200.7)**

Calcium*	1520		5.00	mg/L	250	B505032	JGS	06-May-15	EPA200.7	
Magnesium*	447		25.0	mg/L	250	B505032	JGS	06-May-15	EPA200.7	
Potassium*	ND		250	mg/L	250	B505032	JGS	06-May-15	EPA200.7	
Sodium*	118000		250	mg/L	250	B505032	JGS	06-May-15	EPA200.7	

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

ETZ WATER STATION  
PO BOX 6056  
HOBBS NM, 88241

Project: WATER SAMPLES  
Project Number: NONE GIVEN  
Project Manager: BEN DONAHUE  
Fax To:

Reported:  
12-May-15 13:25

**MONITOR WELL H20**
**H501138-03 (Water)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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**Cardinal Laboratories**
**Inorganic Compounds**

Alkalinity, Bicarbonate	244		5.00	mg/L	1	5050510	AP	07-May-15	310.1	
Alkalinity, Carbonate	ND		0.00	mg/L	1	5050510	AP	07-May-15	310.1	
Chloride*	108		4.00	mg/L	1	5050301	AP	03-May-15	4500-Cl-B	
Conductivity*	807		1.00	uS/cm	1	5050404	AP	05-May-15	120.1	
pH*	8.25		0.100	pH Units	1	5050403	AP	05-May-15	150.1	
Sulfate*	45.8		10.0	mg/L	1	5042911	AP	03-May-15	375.4	
TDS*	528		5.00	mg/L	1	5042902	AP	05-May-15	160.1	
Alkalinity, Total*	200		4.00	mg/L	1	5050510	AP	07-May-15	310.1	

**Green Analytical Laboratories**
**Total Recoverable Metals by ICP (E200.7)**

Calcium*	53.7		0.020	mg/L	1	B505032	JGS	06-May-15	EPA200.7	
Magnesium*	18.4		0.100	mg/L	1	B505032	JGS	06-May-15	EPA200.7	
Potassium*	2.96		1.00	mg/L	1	B505032	JGS	06-May-15	EPA200.7	
Sodium*	84.2		1.00	mg/L	1	B505032	JGS	06-May-15	EPA200.7	

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

ETZ WATER STATION  
PO BOX 6056  
HOBBS NM, 88241

Project: WATER SAMPLES  
Project Number: NONE GIVEN  
Project Manager: BEN DONAHUE  
Fax To:

Reported:  
12-May-15 13:25

**Inorganic Compounds - Quality Control**
**Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 5042902 - Filtration**
**Blank (5042902-BLK1)**

Prepared: 29-Apr-15 Analyzed: 01-May-15

TDS ND 5.00 mg/L

**LCS (5042902-BS1)**

Prepared: 29-Apr-15 Analyzed: 01-May-15

TDS 512 5.00 mg/L 527 97.2 80-120

**Duplicate (5042902-DUP1)**

Source: H501092-02

Prepared: 29-Apr-15 Analyzed: 01-May-15

TDS 642 5.00 mg/L 628 2.20 20

**Batch 5042911 - General Prep - Wet Chem**
**Blank (5042911-BLK1)**

Prepared &amp; Analyzed: 03-May-15

Sulfate ND 10.0 mg/L

**LCS (5042911-BS1)**

Prepared &amp; Analyzed: 03-May-15

Sulfate 18.9 10.0 mg/L 20.0 94.4 80-120

**LCS Dup (5042911-BSD1)**

Prepared &amp; Analyzed: 03-May-15

Sulfate 19.1 10.0 mg/L 20.0 95.6 80-120 1.21 20

**Batch 5042913 - General Prep - Wet Chem**
**Blank (5042913-BLK1)**

Prepared &amp; Analyzed: 29-Apr-15

Chloride ND 4.00 mg/L

**LCS (5042913-BS1)**

Prepared &amp; Analyzed: 29-Apr-15

Chloride 108 4.00 mg/L 100 108 80-120

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

ETZ WATER STATION  
PO BOX 6056  
HOBBS NM, 88241

Project: WATER SAMPLES  
Project Number: NONE GIVEN  
Project Manager: BEN DONAHUE  
Fax To:

Reported:  
12-May-15 13:25

**Inorganic Compounds - Quality Control**
**Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 5042913 - General Prep - Wet Chem**
**LCS Dup (5042913-BSD1)**

Prepared &amp; Analyzed: 29-Apr-15

Chloride	112	4.00	mg/L	100		112	80-120	3.64	20	
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**Batch 5050301 - General Prep - Wet Chem**
**Blank (5050301-BLK1)**

Prepared &amp; Analyzed: 03-May-15

Chloride	ND	4.00	mg/L							
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**LCS (5050301-BS1)**

Prepared &amp; Analyzed: 03-May-15

Chloride	100	4.00	mg/L	100		100	80-120			
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**LCS Dup (5050301-BSD1)**

Prepared &amp; Analyzed: 03-May-15

Chloride	104	4.00	mg/L	100		104	80-120	3.92	20	
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**Batch 5050403 - General Prep - Wet Chem**
**LCS (5050403-BS1)**

Prepared: 04-May-15 Analyzed: 05-May-15

pH	7.15		pH Units	7.00		102	90-110			
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**Duplicate (5050403-DUP1)**

Source: H501138-01

Prepared: 04-May-15 Analyzed: 05-May-15

pH	8.19	0.100	pH Units	8.20				0.122	20	
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**Batch 5050404 - General Prep - Wet Chem**
**LCS (5050404-BS1)**

Prepared: 04-May-15 Analyzed: 05-May-15

Conductivity	993		uS/cm	1010		98.3	80-120			
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Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



**Analytical Results For:**

ETZ WATER STATION  
PO BOX 6056  
HOBBS NM, 88241

Project: WATER SAMPLES  
Project Number: NONE GIVEN  
Project Manager: BEN DONAHUE  
Fax To:

Reported:  
12-May-15 13:25

**Inorganic Compounds - Quality Control**
**Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 5050404 - General Prep - Wet Chem**
**Duplicate (5050404-DUP1)**

Source: H501116-03

Prepared: 04-May-15 Analyzed: 05-May-15

Conductivity	45.1	1.00	uS/cm		44.6			1.11	20	
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**Batch 5050510 - General Prep - Wet Chem**
**Blank (5050510-BLK1)**

Prepared: 05-May-15 Analyzed: 07-May-15

Alkalinity, Carbonate	ND	0.00	mg/L							
Alkalinity, Bicarbonate	ND	5.00	mg/L							
Alkalinity, Total	ND	4.00	mg/L							

**LCS (5050510-BS1)**

Prepared: 05-May-15 Analyzed: 07-May-15

Alkalinity, Carbonate	ND	0.00	mg/L				80-120			
Alkalinity, Bicarbonate	122	5.00	mg/L				80-120			
Alkalinity, Total	100	4.00	mg/L	100		100	80-120			

**LCS Dup (5050510-BSD1)**


Prepared: 05-May-15 Analyzed: 07-May-15

Alkalinity, Carbonate	ND	0.00	mg/L				80-120		20	
Alkalinity, Bicarbonate	122	5.00	mg/L				80-120	0.00	20	
Alkalinity, Total	100	4.00	mg/L	100		100	80-120	0.00	20	

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 ETZ WATER STATION  
 PO BOX 6056  
 HOBBS NM, 88241

 Project: WATER SAMPLES  
 Project Number: NONE GIVEN  
 Project Manager: BEN DONAHUE  
 Fax To:

 Reported:  
 12-May-15 13:25

**Total Recoverable Metals by ICP (E200.7) - Quality Control**
**Green Analytical Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

**Batch B505032 - EPA 200.2**
**Blank (B505032-BLK1)**

Prepared &amp; Analyzed: 06-May-15

Sodium	ND	1.00	mg/L							
Magnesium	ND	0.100	mg/L							
Calcium	0.026	0.020	mg/L							B1
Potassium	ND	1.00	mg/L							

**LCS (B505032-BS1)**

Prepared &amp; Analyzed: 06-May-15

Calcium	4.16	0.020	mg/L	4.00		104	85-115			
Potassium	8.58	1.00	mg/L	8.00		107	85-115			
Sodium	7.01	1.00	mg/L	6.48		108	85-115			
Magnesium	21.4	0.100	mg/L	20.0		107	85-115			

**LCS Dup (B505032-BSD1)**

Prepared &amp; Analyzed: 06-May-15

Potassium	8.40	1.00	mg/L	8.00		105	85-115	2.13	20	
Sodium	6.98	1.00	mg/L	6.48		108	85-115	0.517	20	
Calcium	4.13	0.020	mg/L	4.00		103	85-115	0.723	20	
Magnesium	21.1	0.100	mg/L	20.0		106	85-115	1.48	20	

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Celey D. Keene, Lab Director/Quality Manager

**Notes and Definitions**

- B1 Target analyte detected in method blank at or above method reporting limit. Sample concentration found to be 10 times above the concentration found in the method blank or less than the reporting limit.
- ND Analyte NOT DETECTED at or above the reporting limit
- RPD Relative Percent Difference
- \*\* Samples not received at proper temperature of 6°C or below.
- \*\*\* Insufficient time to reach temperature.
- Chloride by SM4500Cl-B does not require samples be received at or below 6°C  
Samples reported on an as received basis (wet) unless otherwise noted on report

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Celey D. Keene, Lab Director/Quality Manager





**HRC, INC.**  
**P. O. Box 5102**  
**Hobbs, NM 88241-5102**  
**Phone # (575) 393-6662**  
**Fax # (575) 393-6662**

RECEIVED OCD

2014 FEB -3 A 11: 23

**January 17, 2013**

**Jim Griswold**  
**Senior Hydrologist**  
**ENMRD/Oil Conservation Division**  
**1220 South St. Francis Drive**  
**Santa Fe, New Mexico 87505**

**Ref: 2013 Annual Report**  
**B-31 Schubert 7 – Well #1**

**Dear Mr. Griswold,**

**Enclosed please find the monthly freshwater injection and brine production numbers for the Hobbs facility for the year 2013.**  
**Included also are Cardinal Laboratories' results of analyses for samples for the month of May and November, 2013.**

**Thank you,**

**Sincerely,**

**Gary M. Schubert**  
**GMS/br**

**BW – 31**  
**SCHUBERT 7 – WELL # 1**  
**YEAR 2013**

<b>MONTH</b>	<b>BRINE PRODUCTION (BY Meter)</b>	<b>FRESH WATER INJECTED (By Meter)</b>
<hr/>		
<b>January</b>	<b>19,065</b>	<b>20,333</b>
<b>February</b>	<b>20,164</b>	<b>20,714</b>
<b>March</b>	<b>25,141</b>	<b>25,460</b>
<b>April</b>	<b>25,531</b>	<b>26,048</b>
<b>May</b>	<b>23,532</b>	<b>23,910</b>
<b>June</b>	<b>23,412</b>	<b>24,733</b>
<b>July</b>	<b>27,890</b>	<b>28,862</b>
<b>August</b>	<b>29,912</b>	<b>30,119</b>
<b>September</b>	<b>27,110</b>	<b>27,919</b>
<b>October</b>	<b>32,134</b>	<b>29,557</b>
<b>November</b>	<b>25,865</b>	<b>24,643</b>
<b>December</b>	<b>25,037</b>	<b>25,510</b>
<b>Total</b>		



**BW 31**  
**SCHUBERT 7 - WELL # 1**

<b>MONTH/YEAR 2013</b>	<b>ETZ BRINE WATER BBLs</b>	<b>PATE BRINE WATER BBLs</b>	<b>TOTAL BRINE WATER BBLs</b>	<b>FRESH WATER INJECTED BBLs</b>	<b>DATE FRESH WATER METER READ</b>	<b>FRESH WATER METER READING BY GALLONS (X 100)</b>	<b>FRESH WATER USED BY GALLONS (X 100)</b>	<b>TOTAL FRESH WATER BBLs</b>
Jan. 2013	18,870	195	19,065	20,333	1/31/2013	587,861	8,540	20,333
Feb. 2013	20,100	64	20,164	20,714	02/28/12	596,561	8,700	20,714
March. 2012	24,960	181	25,141	25,460	03/31/13	607,254	10,693	25,460
April. 2013	25,410	121	25,531	26,048	04/30/13	618,194	10,940	26,048
May. 2013	23,530	2	23,532	23,910	05/31/13	628,236	10,042	23,910
June. 2013	23,400	12	23,412	24,733	06/30/13	638,624	10,388	24,733
July. 2013	27,820	70	27,890	28,862	07/31/13	650,746	12,122	28,862
Aug. 2013	29,900	12	29,912	30,119	08/31/13	663,396	12,650	30,119
Sept. 2013	27,110	-	27,110	27,919	09/30/13	675,122	11,726	27,919
Oct. 2013	32,048	86	32,134	29,557	10/31/13	687,536	12,414	29,557
Nov. 2013	25,761	104	25,865	24,643	11/30/13	697,886	10,350	24,643
Dec. 2013	24,714	323	25,037	25,510	12/31/13	708,600	10,714	25,510

December 19, 2013

GARY SCHUBERT

SCHUBERT CONSTRUCTION

P. O. BOX 6056

HOBBS, NM 88241

RE: WATER WELL

Enclosed are the results of analyses for samples received by the laboratory on 11/18/13 15:35.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-13-5. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

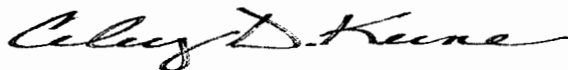
Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Celey D. Keene

Lab Director/Quality Manager

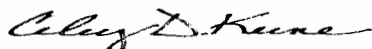
**Analytical Results For:**SCHUBERT CONSTRUCTION  
P. O. BOX 6056  
HOBBS NM, 88241Project: WATER WELL  
Project Number: ETZ  
Project Manager: GARY SCHUBERT  
Fax To: (575) 393-3194Reported:  
19-Dec-13 11:44

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MONITOR WELL	H302815-01	Water	23-May-13 09:00	18-Nov-13 15:35
BRINE WELL	H302815-02	Water	23-May-13 09:00	18-Nov-13 15:35
FRESH	H302815-03	Water	23-May-13 09:00	18-Nov-13 15:35
MONITOR WELL	H302815-04	Water	18-Nov-13 09:00	18-Nov-13 15:35
BRINE WELL	H302815-05	Water	18-Nov-13 09:00	18-Nov-13 15:35
FRESH	H302815-06	Water	18-Nov-13 09:00	18-Nov-13 15:35

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 SCHUBERT CONSTRUCTION  
 P. O. BOX 6056  
 HOBBS NM, 88241

 Project: WATER WELL  
 Project Number: ETZ  
 Project Manager: GARY SCHUBERT  
 Fax To: (575) 393-3194

 Reported:  
 19-Dec-13 11:44

**MONITOR WELL**
**H302815-01 (Water)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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**Cardinal Laboratories**
**Inorganic Compounds**

Alkalinity, Bicarbonate	215		5.00	mg/L	1	3112110	AP	25-Nov-13	310.1	I-02
Alkalinity, Carbonate	ND		0.00	mg/L	1	3112110	AP	25-Nov-13	310.1	I-02
Chloride*	409		4.00	mg/L	1	3112502	AP	25-Nov-13	4500-Cl-B	I-02
Conductivity*	1920		1.00	uS/cm	1	3112007	AP	20-Nov-13	120.1	I-02
pH*	7.98		0.100	pH Units	1	3112005	AP	20-Nov-13	9045	I-02
Sulfate*	181		25.0	mg/L	2.5	3112504	AP	25-Nov-13	375.4	I-02
TDS*	1150		5.00	mg/L	1	3112508	AP	25-Nov-13	160.1	I-02
Alkalinity, Total*	176		4.00	mg/L	1	3112110	AP	25-Nov-13	310.1	I-02


**Green Analytical Laboratories**
**Total Recoverable Metals by ICP (E200.7)**

Calcium*	148		5.00	mg/L	5	B311167	JGS	21-Nov-13	EPA200.7	H1
Magnesium*	41.7		5.00	mg/L	5	B311167	JGS	21-Nov-13	EPA200.7	H1
Potassium*	7.16		5.00	mg/L	5	B311167	JGS	21-Nov-13	EPA200.7	H1
Sodium*	210		5.00	mg/L	5	B311167	JGS	21-Nov-13	EPA200.7	H1

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

SCHUBERT CONSTRUCTION  
P. O. BOX 6056  
HOBBS NM, 88241

Project: WATER WELL  
Project Number: ETZ  
Project Manager: GARY SCHUBERT  
Fax To: (575) 393-3194

Reported:  
19-Dec-13 11:44

**BRINE WELL**  
**H302815-02 (Water)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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**Cardinal Laboratories**
**Inorganic Compounds**

Alkalinity, Bicarbonate	159		5.00	mg/L	1	3112110	AP	25-Nov-13	310.1	1-02
Alkalinity, Carbonate	ND		0.00	mg/L	1	3112110	AP	25-Nov-13	310.1	1-02
Chloride*	186000		4.00	mg/L	1	3112502	AP	25-Nov-13	4500-Cl-B	1-02
Conductivity*	463000		1.00	uS/cm	1	3112007	AP	20-Nov-13	120.1	1-02
pH*	6.84		0.100	pH Units	1	3112005	AP	20-Nov-13	9045	1-02
Sulfate*	4560		1000	mg/L	100	3112504	AP	25-Nov-13	375.4	1-02
TDS*	312000		5.00	mg/L	1	3112508	AP	25-Nov-13	160.1	1-02
Alkalinity, Total*	130		4.00	mg/L	1	3112110	AP	25-Nov-13	310.1	1-02

**Green Analytical Laboratories**
**Total Recoverable Metals by ICP (E200.7)**

Calcium*	1530		200	mg/L	200	B311167	JGS	17-Dec-13	EPA200.7	H1
Magnesium*	514		200	mg/L	200	B311167	JGS	17-Dec-13	EPA200.7	H1
Potassium*	244		200	mg/L	200	B311167	JGS	17-Dec-13	EPA200.7	H1
Sodium*	118000		200	mg/L	200	B311167	JGS	17-Dec-13	EPA200.7	H1

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 SCHUBERT CONSTRUCTION  
 P. O. BOX 6056  
 HOBBS NM, 88241

 Project: WATER WELL  
 Project Number: ETZ  
 Project Manager: GARY SCHUBERT  
 Fax To: (575) 393-3194

 Reported:  
 19-Dec-13 11:44

**FRESH**  
**H302815-03 (Water)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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**Cardinal Laboratories**
**Inorganic Compounds**

Alkalinity, Bicarbonate	195		5.00	mg/L	1	3112110	AP	25-Nov-13	310.1	I-02
Alkalinity, Carbonate	ND		0.00	mg/L	1	3112110	AP	25-Nov-13	310.1	I-02
Chloride*	176		4.00	mg/L	1	3112502	AP	25-Nov-13	4500-Cl-B	I-02
Conductivity*	1080		1.00	uS/cm	1	3112007	AP	20-Nov-13	120.1	I-02
pH*	8.07		0.100	pH Units	1	3112005	AP	20-Nov-13	9045	I-02
Sulfate*	110		25.0	mg/L	2.5	3112504	AP	25-Nov-13	375.4	I-02
TDS*	666		5.00	mg/L	1	3112508	AP	25-Nov-13	160.1	I-02
Alkalinity, Total*	160		4.00	mg/L	1	3112110	AP	25-Nov-13	310.1	I-02


**Green Analytical Laboratories**
**Total Recoverable Metals by ICP (E200.7)**

Calcium*	75.1		5.00	mg/L	5	B311167	JGS	21-Nov-13	EPA200.7	H1
Magnesium*	17.7		5.00	mg/L	5	B311167	JGS	21-Nov-13	EPA200.7	H1
Potassium*	14.4		5.00	mg/L	5	B311167	JGS	21-Nov-13	EPA200.7	H1
Sodium*	124		5.00	mg/L	5	B311167	JGS	21-Nov-13	EPA200.7	H1

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Celey D. Keene, Lab Director/Quality Manager



**Analytical Results For:**

SCHUBERT CONSTRUCTION  
P. O. BOX 6056  
HOBBS NM, 88241

Project: WATER WELL  
Project Number: ETZ  
Project Manager: GARY SCHUBERT  
Fax To: (575) 393-3194

Reported:  
19-Dec-13 11:44

**MONITOR WELL**  
**H302815-04 (Water)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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**Cardinal Laboratories**
**Inorganic Compounds**

Alkalinity, Bicarbonate	229		5.00	mg/L	1	3112110	AP	25-Nov-13	310.1	
Alkalinity, Carbonate	ND		0.00	mg/L	1	3112110	AP	25-Nov-13	310.1	
Chloride*	240		4.00	mg/L	1	3112502	AP	25-Nov-13	4500-Cl-B	
Conductivity*	1170		1.00	uS/cm	1	3112007	AP	20-Nov-13	120.1	
pH*	8.02		0.100	pH Units	1	3112005	AP	20-Nov-13	9045	
Sulfate*	65.6		10.0	mg/L	1	3112504	AP	25-Nov-13	375.4	
TDS*	719		5.00	mg/L	1	3112508	AP	25-Nov-13	160.1	
Alkalinity, Total*	188		4.00	mg/L	1	3112110	AP	25-Nov-13	310.1	

**Green Analytical Laboratories**
**Total Recoverable Metals by ICP (E200.7)**

Calcium*	75.6		5.00	mg/L	5	B311167	JGS	21-Nov-13	EPA200.7	
Magnesium*	23.3		5.00	mg/L	5	B311167	JGS	21-Nov-13	EPA200.7	
Potassium*	ND		5.00	mg/L	5	B311167	JGS	21-Nov-13	EPA200.7	
Sodium*	158		5.00	mg/L	5	B311167	JGS	21-Nov-13	EPA200.7	

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 SCHUBERT CONSTRUCTION  
 P. O. BOX 6056  
 HOBBS NM, 88241

 Project: WATER WELL  
 Project Number: ETZ  
 Project Manager: GARY SCHUBERT  
 Fax To: (575) 393-3194

 Reported:  
 19-Dec-13 11:44

**BRINE WELL**  
**H302815-05 (Water)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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**Cardinal Laboratories**
**Inorganic Compounds**

Alkalinity, Bicarbonate	117		5.00	mg/L	1	3112110	AP	25-Nov-13	310.1	
Alkalinity, Carbonate	ND		0.00	mg/L	1	3112110	AP	25-Nov-13	310.1	
Chloride*	184000		4.00	mg/L	1	3112502	AP	25-Nov-13	4500-Cl-B	
Conductivity*	402000		1.00	uS/cm	1	3112007	AP	20-Nov-13	120.1	
pH*	6.78		0.100	pH Units	1	3112005	AP	20-Nov-13	9045	
Sulfate*	4250		1000	mg/L	100	3112504	AP	25-Nov-13	375.4	
TDS*	312000		5.00	mg/L	1	3112508	AP	25-Nov-13	160.1	
Alkalinity, Total*	96.0		4.00	mg/L	1	3112110	AP	25-Nov-13	310.1	

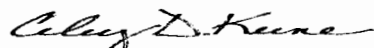
**Green Analytical Laboratories**
**Total Recoverable Metals by ICP (E200.7)**

Calcium*	1630		200	mg/L	200	B311167	JGS	17-Dec-13	EPA200.7	
Magnesium*	547		200	mg/L	200	B311167	JGS	17-Dec-13	EPA200.7	
Potassium*	310		200	mg/L	200	B311167	JGS	17-Dec-13	EPA200.7	
Sodium*	126000		200	mg/L	200	B311167	JGS	17-Dec-13	EPA200.7	

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

SCHUBERT CONSTRUCTION  
P. O. BOX 6056  
HOBBS NM, 88241

Project: WATER WELL  
Project Number: ETZ  
Project Manager: GARY SCHUBERT  
Fax To: (575) 393-3194

Reported:  
19-Dec-13 11:44

**FRESH**  
**H302815-06 (Water)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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**Cardinal Laboratories**
**Inorganic Compounds**

Alkalinity, Bicarbonate	268		5.00	mg/L	1	3112110	AP	25-Nov-13	310.1	
Alkalinity, Carbonate	ND		0.00	mg/L	1	3112110	AP	25-Nov-13	310.1	
Chloride*	240		4.00	mg/L	1	3112502	AP	25-Nov-13	4500-Cl-B	
Conductivity*	1360		1.00	uS/cm	1	3112008	AP	20-Nov-13	120.1	
pH*	8.07		0.100	pH Units	1	3112005	AP	20-Nov-13	9045	
Sulfate*	138		25.0	mg/L	2.5	3112504	AP	25-Nov-13	375.4	
TDS*	839		5.00	mg/L	1	3112508	AP	25-Nov-13	160.1	
Alkalinity, Total*	220		4.00	mg/L	1	3112110	AP	25-Nov-13	310.1	

**Green Analytical Laboratories**
**Total Recoverable Metals by ICP (E200.7)**

Calcium*	108		5.00	mg/L	5	B311167	JGS	21-Nov-13	EPA200.7	
Magnesium*	23.4		5.00	mg/L	5	B311167	JGS	21-Nov-13	EPA200.7	
Potassium*	17.5		5.00	mg/L	5	B311167	JGS	21-Nov-13	EPA200.7	
Sodium*	153		5.00	mg/L	5	B311167	JGS	21-Nov-13	EPA200.7	

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 SCHUBERT CONSTRUCTION  
 P. O. BOX 6056  
 HOBBS NM, 88241

 Project: WATER WELL  
 Project Number: ETZ  
 Project Manager: GARY SCHUBERT  
 Fax To: (575) 393-3194

 Reported:  
 19-Dec-13 11:44

**Inorganic Compounds - Quality Control**
**Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 3112005 - NO PREP**
**LCS (3112005-BS1)**

Prepared &amp; Analyzed: 20-Nov-13

pH	7.09		pH Units	7.00		101	90-110			
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**Duplicate (3112005-DUP1)**

Source: H302806-01

Prepared &amp; Analyzed: 20-Nov-13

pH	7.45	0.100	pH Units	7.39				0.809	20	
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**Batch 3112007 - General Prep - Wet Chem**
**LCS (3112007-BS1)**

Prepared &amp; Analyzed: 20-Nov-13

Conductivity	470		uS/cm	500		94.0	80-120			
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**Duplicate (3112007-DUP1)**

Source: H302806-01

Prepared &amp; Analyzed: 20-Nov-13

Conductivity	4120	1.00	uS/cm	4160				0.966	20	
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**Batch 3112008 - General Prep - Wet Chem**
**LCS (3112008-BS1)**

Prepared &amp; Analyzed: 20-Nov-13

Conductivity	471		uS/cm	500		94.2	80-120			
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**Duplicate (3112008-DUP1)**

Source: H302815-06

Prepared &amp; Analyzed: 20-Nov-13

Conductivity	1360	1.00	uS/cm	1360				0.147	20	
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**Batch 3112110 - General Prep - Wet Chem**
**Blank (3112110-BLK1)**


Prepared &amp; Analyzed: 21-Nov-13

Alkalinity, Carbonate	ND	0.00	mg/L							
Alkalinity, Bicarbonate	ND	5.00	mg/L							
Alkalinity, Total	ND	4.00	mg/L							

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 SCHUBERT CONSTRUCTION  
 P. O. BOX 6056  
 HOBBS NM, 88241

 Project: WATER WELL  
 Project Number: ETZ  
 Project Manager: GARY SCHUBERT  
 Fax To: (575) 393-3194

 Reported:  
 19-Dec-13 11:44

**Inorganic Compounds - Quality Control**
**Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 3112110 - General Prep - Wet Chem**
**LCS (3112110-BS1)**

Prepared &amp; Analyzed: 21-Nov-13

Alkalinity, Carbonate	ND	0.00	mg/L				80-120			
Alkalinity, Bicarbonate	122	5.00	mg/L				80-120			
Alkalinity, Total	100	4.00	mg/L	100		100	80-120			

**LCS Dup (3112110-BS1)**

Prepared &amp; Analyzed: 21-Nov-13

Alkalinity, Carbonate	ND	0.00	mg/L				80-120		20	
Alkalinity, Bicarbonate	136	5.00	mg/L				80-120	10.9	20	
Alkalinity, Total	112	4.00	mg/L	100		112	80-120	11.3	20	

**Batch 3112502 - General Prep - Wet Chem**
**Blank (3112502-BLK1)**

Prepared &amp; Analyzed: 25-Nov-13

Chloride	ND	4.00	mg/L							
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**LCS (3112502-BS1)**

Prepared &amp; Analyzed: 25-Nov-13

Chloride	100	4.00	mg/L	100		100	80-120			
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**LCS Dup (3112502-BS1)**

Prepared &amp; Analyzed: 25-Nov-13

Chloride	100	4.00	mg/L	100		100	80-120	0.00	20	
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**Batch 3112504 - General Prep - Wet Chem**
**Blank (3112504-BLK1)**

Prepared &amp; Analyzed: 25-Nov-13

Sulfate	ND	10.0	mg/L							
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**LCS (3112504-BS1)**


Prepared &amp; Analyzed: 25-Nov-13

Sulfate	19.8	10.0	mg/L	20.0		98.8	80-120			
---------	------	------	------	------	--	------	--------	--	--	--

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 SCHUBERT CONSTRUCTION  
 P. O. BOX 6056  
 HOBBS NM, 88241

 Project: WATER WELL  
 Project Number: ETZ  
 Project Manager: GARY SCHUBERT  
 Fax To: (575) 393-3194

 Reported:  
 19-Dec-13 11:44

**Inorganic Compounds - Quality Control**
**Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 3112504 - General Prep - Wet Chem</b>										
<b>LCS Dup (3112504-BSD1)</b>				Prepared & Analyzed: 25-Nov-13						
Sulfate	20.1	10.0	mg/L	20.0		101	80-120	1.86	20	
<b>Batch 3112508 - Filtration</b>										
<b>Blank (3112508-BLK1)</b>				Prepared: 21-Nov-13 Analyzed: 25-Nov-13						
TDS	ND	5.00	mg/L							
<b>LCS (3112508-BS1)</b>				Prepared: 21-Nov-13 Analyzed: 25-Nov-13						
TDS	245		mg/L	240		102	80-120			
<b>Duplicate (3112508-DUP1)</b>				Source: H302812-01 Prepared: 21-Nov-13 Analyzed: 25-Nov-13						
TDS	2080	5.00	mg/L		2080			0.0480	20	

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 SCHUBERT CONSTRUCTION  
 P. O. BOX 6056  
 HOBBS NM, 88241

 Project: WATER WELL  
 Project Number: ETZ  
 Project Manager: GARY SCHUBERT  
 Fax To: (575) 393-3194

 Reported:  
 19-Dec-13 11:44

**Total Recoverable Metals by ICP (E200.7) - Quality Control**
**Green Analytical Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

**Batch B311167 - EPA 200.2**
**Blank (B311167-BLK1)**

Prepared: 20-Nov-13 Analyzed: 21-Nov-13

Calcium	ND	1.00	mg/L							
Potassium	ND	1.00	mg/L							
Sodium	ND	1.00	mg/L							
Magnesium	ND	1.00	mg/L							

**LCS (B311167-BS1)**

Prepared: 20-Nov-13 Analyzed: 21-Nov-13

Magnesium	20.9	1.00	mg/L	20.0		105	85-115			
Potassium	7.61	1.00	mg/L	8.00		95.1	85-115			
Sodium	6.75	1.00	mg/L	6.48		104	85-115			
Calcium	4.11	1.00	mg/L	4.00		103	85-115			

**LCS Dup (B311167-BSD1)**

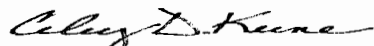
Prepared: 20-Nov-13 Analyzed: 21-Nov-13

Potassium	8.48	1.00	mg/L	8.00		106	85-115	10.8	20	
Magnesium	21.5	1.00	mg/L	20.0		107	85-115	2.59	20	
Sodium	7.35	1.00	mg/L	6.48		113	85-115	8.53	20	
Calcium	4.22	1.00	mg/L	4.00		105	85-115	2.60	20	

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Celey D. Keene, Lab Director/Quality Manager



**Notes and Definitions**

I-02            This result was analyzed outside of the EPA recommended holding time.

H1            Sample was received several days after collected and subsequently analyzed past hold time.

ND            Analyte NOT DETECTED at or above the reporting limit

RPD           Relative Percent Difference

\*\*            Samples not received at proper temperature of 6°C or below.

\*\*\*           Insufficient time to reach temperature.

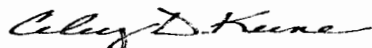
-            Chloride by SM4500Cl-B does not require samples be received at or below 6°C  
Samples reported on an as received basis (wet) unless otherwise noted on report

---

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Celey D. Keene, Lab Director/Quality Manager






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## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

**(575) 393-2326 FAX (575) 393-2476**

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Relinquished By: 		Date: 11/18/13		Received By: 		Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No		Add'l Phone #:	
		Time: 3:35				Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No		Add'l Fax #:	
Relinquished By:		Date:		Received By:		REMARKS: gary.m.schubert@gmail.com samples 1-3 past the EPA rec hold time.			
		Time:							
Delivered By: (Circle One)		5.80c		Sample Condition Cool <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Intact <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		CHECKED BY: (Initials) 			
Sampler - UPS - Bus - Other:									

† Cardinal cannot accept verbal changes. Please fax written changes to (575) 393-2926



## Page 14 of 14

Company Name: ETZ Schubert Construction				BILL TO				ANALYSIS REQUEST																					
Project Manager:				P.O. #:				Cation/Anion																					
Address: P.O. Box 16056				Company:																									
City: Hobbs State: NM Zip: 88241				Attn:																									
Phone #: 393-3194 Fax #: 393-6662				Address:																									
Project #: ETZ Project Owner:				City:																									
Project Name:				State: Zip:																									
Project Location:				Phone #:																									
Sampler Name: Ben Donahue				Fax #:																									
FOR LAB USE ONLY				MATRIX				PRESERV.				SAMPLING																	
Lab I.D.		Sample I.D.		(G)RAB OR (C)OMP. # CONTAINERS		GROUNDWATER		WASTEWATER		SOIL		OIL		SLUDGE		OTHER:		ACID/BASE:		ICE / COOL		OTHER:		DATE		TIME			
H302815																													
1 Monitor Well		G 1																						5/23/13		9:00		✓	
2 Brine Well		G 1																								9:00		✓	
3 Fresh		G 1																								9:00		✓	
4 Monitor Well		G 1																						11/18/13				✓	
5 Brine Well		G 1																										✓	
6 Fresh Well		G 1																										✓	
<p>PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.</p>																													
Relinquished By: [Signature]				Date: 5/18/13 Time: 3:35				Received By: Jodi Jensen				Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No				Add'l Phone #:				Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No				Add'l Fax #:					
Relinquished By:				Date:				Received By:				REMARKS:																	
Delivered By: (Circle One)				Time:																									
Sampler - UPS - Bus - Other:				5.8°C				Sample Condition Cool <input checked="" type="checkbox"/> Intact <input checked="" type="checkbox"/>				CHECKED BY: [Signature]																	
gary.m.schubert@gmail.com samples 1-3 past the EPA rec hold time.																													

† Cardinal cannot accept verbal changes. Please fax written changes to (575) 393-2926

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PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

**BILL TO**

SCHUBERT CONSTRUCTION  
P. O. BOX 6056  
HOBBS, NEW MEXICO 88241

*OK ETZ*

DATE : 12/19/2013

INVOICE NO. : H302815

LAB NUMBER : H302815

TERMS: DUE UPON RECEIPT

DESCRIPTION : ETZ

P.O. NO. : NONE GIVEN

NO. SAMPLES : 6

LOG IN DATE : 11/18/2013

QUANTITY	DESCRIPTION	PER SAMPLE	TOTAL
6	CATION/ANION FOR SOIL/WATER(CATIONS BY ICP)	150.00	900.00

*W 0 2 20*

**SUBTOTAL :** \$900.00

**SALES TAX : (6.8125%)** \$61.31

**PLEASE PAY THIS AMOUNT :** \$961.31

NOTE- Cardinal Laboratories is now accepting credit card payments! This service is available to all of our customers for a 3.5% service charge. Please call Jodi if you would like more information.

THANK YOU FOR YOUR BUSINESS!

## Chavez, Carl J, EMNRD

---

**From:** Chavez, Carl J, EMNRD  
**Sent:** Friday, February 12, 2010 2:48 PM  
**To:** 'Gary Schubert'  
**Cc:** VonGonten, Glenn, EMNRD; Griswold, Jim, EMNRD  
**Subject:** RE: BW-31 Annual Brine Well Report (Report)

Gary:

The OCD is in receipt of the requested information for the above subject.

The injection and production values indicate a relative percent difference (RPD) of 3%, which is good. RPDs exceeding 10% may indicate a well problem. The OCD encourages well operators to monitor injection and production values daily to determine when a well MIT problem occurs.

The ground water monitor well chloride (640 mg/L) and TDS (1440 mg/L) analytical data results seem elevated. If there is reason to believe that you may have a leak to the Ogallala fresh water aquifer at about 50 ft. bgl, please contact me. . Otherwise, OCD will revisit the water quality data next year.

Please contact me if you have questions. Thank you.

Carl J. Chavez, CHMM  
New Mexico Energy, Minerals & Natural Resources Dept.  
Oil Conservation Division, Environmental Bureau  
1220 South St. Francis Dr., Santa Fe, New Mexico 87505  
Office: (505) 476-3490  
Fax: (505) 476-3462  
E-mail: [CarlJ.Chavez@state.nm.us](mailto:CarlJ.Chavez@state.nm.us)  
Website: <http://www.emnrd.state.nm.us/ocd/index.htm>  
(Pollution Prevention Guidance is under "Publications")

---

**From:** Chavez, Carl J, EMNRD  
**Sent:** Thursday, January 21, 2010 4:47 PM  
**To:** 'Gary Schubert'  
**Subject:** FW: BW-31 Annual Brine Well Report (Report)

Gary:

Good afternoon. The OCD appreciates your efforts to comply with the terms and conditions of your discharge permit. Your OCD discharge permit requirements are:

6. Production/Injection Volumes/Annual Report: The volumes of fluids injected (fresh water) and produced (brine) will be recorded monthly and submitted to the OCD Santa Fe Office in an annual report due on the thirty-first (31) day of January of each year.
7. Analysis of Injection Fluid and Brine: Provide an analysis of the injection fluid and brine with each annual report. Analysis will be for General Chemistry (Method 40 CFR 136.3) using EPA methods.

25. Capacity/ Cavity Configuration and Subsidence Survey: The operator shall provide information on the size and extent of the solution cavern and geologic/engineering data demonstrating that continued brine extraction will not cause surface subsidence, collapse or damage to property, or become a threat to public health and the environment. This information shall be supplied in each annual report. OCD may require the operator to perform additional well surveys, test, and install subsidence monitoring in order to demonstrate the integrity of the system. If the operator cannot demonstrate the integrity of the system to the satisfaction of the Division then the operator may be required to shut-down, close the site and properly plug and abandoned the well.
26. Monitor Well: The monitor well shall be located along the local groundwater flow direction and directly down-gradient of the brine well and situated within 50 feet of the brine well. The well shall be constructed, developed, purged and samples analyzed pursuant to approved EPA methods. Except for the initial well sampling event as proposed in the discharge plan, the monitor well shall be sampled and analyzed for general chemistry twice a year with the results submitted in the annual report. Discovery of groundwater contamination shall be reported pursuant to Item #18 above.

You have addressed Item 6 above; however, the OCD requests the cumulative fresh water injection and brine production volumes to date in order help estimate the volume of your brine cavern. As I recall, the well is fairly new and was exempted from the recent OCD sonar test mandate due to this, but we do want to track total injection and production volumes. Please submit this information by 2/22/2010.

You partially addressed Item 7 above as you did not submit General Chemistry data, which need to be assayed for pH, total dissolved solids, anions and cations (fluoride, chloride, nitrate, nitrite, phosphorus, and sulfate) by Method 300, and dissolved metals (arsenic, barium, cadmium, calcium, chromium, lead, magnesium, potassium, selenium, silver, and sodium) by Method 6010. Please resubmit General Chemistry data by 2/22/2010.

You have been exempted from the sonar testing for the duration of your current discharge permit due to the age of your well; however, you are welcome to voluntarily perform a sonar test anytime between now and the renewal of your permit. The new permit will likely require a sonar test be run on your cavern.

Please confirm in Item 26 that you have installed the monitor well, and if so, provide the information to the OCD by 2/22/2010.

Please contact me if you have questions. Thank you.

Carl J. Chavez, CHMM  
New Mexico Energy, Minerals & Natural Resources Dept.  
Oil Conservation Division, Environmental Bureau  
1220 South St. Francis Dr., Santa Fe, New Mexico 87505  
Office: (505) 476-3490  
Fax: (505) 476-3462  
E-mail: [CarlJ.Chavez@state.nm.us](mailto:CarlJ.Chavez@state.nm.us)  
Website: <http://www.emnrd.state.nm.us/ocd/index.htm>  
(Pollution Prevention Guidance is under "Publications")

---

**From:** Chavez, Carl J, EMNRD  
**Sent:** Thursday, January 21, 2010 3:49 PM  
**To:** 'Gary Schubert'  
**Subject:** BW-31 Annual Brine Well Report (Report)

Gary:

Good afternoon. OCD is in receipt of your Report. OCD will contact you if we have questions or need to discuss your well in more detail.

Please contact me if you have questions. Thank you.

Carl J. Chavez, CHMM  
New Mexico Energy, Minerals & Natural Resources Dept.  
Oil Conservation Division, Environmental Bureau  
1220 South St. Francis Dr., Santa Fe, New Mexico 87505  
Office: (505) 476-3490  
Fax: (505) 476-3462  
E-mail: [CarlJ.Chavez@state.nm.us](mailto:CarlJ.Chavez@state.nm.us)  
Website: <http://www.emnrd.state.nm.us/ocd/index.htm>  
(Pollution Prevention Guidance is under "Publications")



RECEIVED  
2010 FEB 12 PM 1 49

**HRC, Inc.**  
P.O. Box 1606  
Hobbs, NM 88241-6056  
(575) 393-6662 (575) 393-6662 Fax

February 8<sup>th</sup>, 2010

Mr. Carl Chavez  
Environmental Bureau Chief  
Oil Conservation Division  
1220 South Saint Francis Drive  
Santa Fe, NM 87505

Ref: Analysis of Injection Fluid and Brine  
(General Chemistry Data)

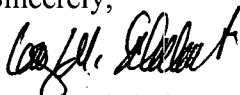
Mr. Chavez,

Please see information requested.

1. Total cumulative brine production and fresh water injection volumes.
2. Analytical lab results from brine tanks (samples 11/20/2009).
3. Analytical lab results from monitor well (sampled 11/20/2009).  
(The #20 sample is an unrelated sample)

\*The monitor well has been installed since 2006 and samples have been submitted since then (see attached well records).

Sincerely,



Gary M. Schubert, President  
GMS/br

Enclosure

**H. R. C., INC.**  
**SCHUBERT 7 WELL # 1**  
**(BW - 31)**

---

<b>YEAR</b>	<b>BRINE PRODUCTION</b>	<b>FRESH WATER INJECTED</b>
<b>2006</b>	<b>42,950</b>	<b>44,800</b>
<b>2007</b>	<b>312,800</b>	<b>315,000</b>
<b>2008</b>	<b>305,990</b>	<b>316,000</b>
<b>2009</b>	<b>212,779</b>	<b>226,058</b>
<b>Total Cumulative Production (Thru 12/31/2009)</b>	<b>874,519</b>	<b>901,858</b>

PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

---

February 1, 2010

Gary Schubert  
1720 N. Dal Paso  
Hobbs, NM 88241

Re: Water Samples

Enclosed are the results of analyses for sample number H19106, received by the laboratory on 01/20/10 at 2:00 pm.

Cardinal Laboratories is accredited through Texas NELAP for:

Method SW-846 8021	Benzene, Toluene, Ethyl Benzene, and Total Xylenes
Method SW-846 8260	Benzene, Toluene, Ethyl Benzene, and Total Xylenes
Method TX 1005	Total Petroleum Hydrocarbons

Certificate number T104704398-08-TX. Accreditation applies to solid and chemical materials and non-potable water matrices.

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.2	Regulated VOCs (V2, V3)

Accreditation applies to public drinking water matrices.

Total Number of Pages of Report: 3 (includes Chain of Custody)

Sincerely,

Cately D. Keene  
Laboratory Director

---

This report conforms with NELAP requirements.



PHONE (575) 393-2328 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR  
 GARY SCHUBERT  
 1720 N. DAL PASO  
 HOBBS, NM 88241  
 FAX TO: (575) 393-6662

Receiving Date: 01/20/10  
 Reporting Date: 02/01/10  
 Project Number: NOT GIVEN  
 Project Name: NOT GIVEN  
 Project Location: NOT GIVEN

Sampling Date: 01/20/10  
 Sample Type: WATER  
 Sample Condition: INTACT @ 19°C  
 Sample Received By: JH  
 Analyzed By: HM

LAB NUMBER	SAMPLE ID	Na (mg/L)	Ca (mg/L)	Mg (mg/L)	K (mg/L)	Conductivity (u S/cm)	T-Alkalinity (mgCaCO <sub>3</sub> /L)
ANALYSIS DATE:		01/26/10	01/26/10	01/26/10	01/26/10	01/22/10	01/22/10
H19106-1	#20 SAMPLE	106	115	32.0	3.7	1,300	160
H19106-2	BRINE	124,000	1,810	692	229	354,000	140
H19106-3	MONITOR WELL	266	161	45.9	3.7	2,660	168
Quality Control		8.38	5.19	4.93	10.3	1,420	NR
True Value QC		8.10	5.00	5.00	10.0	1,413	NR
% Recovery		103	104	98.6	103	100	NR
Relative Percent Difference		2.8	3.0	2.6	1.4	0.8	NR

METHODS: 200.7 200.7 200.7 200.7 120.1 310.1

	Cl (mg/L)	SO <sub>4</sub> (mg/L)	CO <sub>3</sub> (mg/L)	HCO <sub>3</sub> (mg/L)	pH (s.u.)	TDS (mg/L)
ANALYSIS DATE:	02/01/10	01/27/10	01/22/10	01/22/10	01/22/10	01/26/10
H19106-1 #20 SAMPLE	164	215	0	195	8.14	843
H19106-2 BRINE	188,000	4,420	0	171	7.06	303,000
H19106-3 MONITOR WELL	640	82.0	0	205	7.76	1,440
Quality Control	510	37.7	NR	976	7.02	NR
True Value QC	500	40.0	NR	1000	7.00	NR
% Recovery	102	94	NR	97.6	100	NR
Relative Percent Difference	2.0	3.6	NR	1.2	< 0.1	8.9

METHODS: SM4500-Cl-B 375.4 310.1 310.1 150.1 160.1

*Calif. Heene*  
 Chemist

*02/01/10*  
 Date

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above-stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



Revised June

# STATE ENGINEER OFFICE WELL RECORD

## Section 1. GENERAL INFORMATION

(A) Owner of well Gary Schubert Owner's Well No. \_\_\_\_\_  
 Street or Post Office Address Stanolind Road  
 City and State Hobbs, New Mexico

Well was drilled under Permit No. \_\_\_\_\_ Monitor Well \_\_\_\_\_ and is located in the:

- a. 1/4 1/4 1/4 of Section \_\_\_\_\_ Township \_\_\_\_\_ Range \_\_\_\_\_ N.M.P.M.  
 b. Tract No. \_\_\_\_\_ of Map No. \_\_\_\_\_ of the \_\_\_\_\_  
 c. Lot No. \_\_\_\_\_ of Block No. \_\_\_\_\_ of the \_\_\_\_\_  
 Subdivision, recorded in Lea County.  
 d. X= \_\_\_\_\_ feet, Y= \_\_\_\_\_ feet, N.M. Coordinate System \_\_\_\_\_ Zone in  
 the \_\_\_\_\_ Grant.

(B) Drilling Contractor A & K Water Well Drilling, Kristopher Glasspoole, License No. WD-1641

Address 601 West Cope Place, Hobbs, New Mexico 88242-8053

Drilling began 11-12-06 Completed 11-19-06 Type Tools Cable Size of Hole 8-1/2"

Elevation of land surface or \_\_\_\_\_ at well is \_\_\_\_\_ ft. Total depth of well 177 ft.

Completed well is X Shallow \_\_\_\_\_ Artesian. Depth of water upon completion of well 89 ft.

## Section 2. PRINCIPAL WATER-BEARING STRATA

Depth in Feet		Thickness in feet	Description of Water-Bearing Formation	Estimated Yield (gallons per minute)
From	To			
89	177	88	Water Sand - Medium Brown	35 gpm

## Section 3. RECORD OF CASING

Diameter (inches)	Pounds per foot	Threads per inch.	Depth in Feet		Length (feet)	Type of Shoe	Perforations	
			Top	Bottom			From	To
5-1/2"		None	+18"	177'	178' 6"	None	89	177

## Section 4. RECORD OF MUDDING AND CEMENTING

Depth in Feet		Hole Diameter	Sacks of Mud	Cubic Feet of Cement	Method of Placement
From	To				
0	177	8-1/2"	5 sacks		

## Section 6. RECORD OF FORMATION

Depth in Feet		Thickness in Feet	Color & Type of Material Encountered
From	To		
0	14	14	Dk. Brown - Top Soil
14	27	13	Lt. Brown - Caliche
27	30	3	Lt. Brown/ Red - Red Sand
30	35	5	Lt. Brown - Rock
35	45	10	Lt. Brown - Caliche
45	48	3	Med. Brown/ Red - Red Sand
48	73	25	Med. Brown - Sand Stone/ Rock
73	89	16	Med. Brown - Sand Stone
89	124	35	Med. Brown - Water Stone
124	145	21	Med. Brown - Water Sand w/Red Clay
145	177	32	Med. Brown - Water Sand

## Section 7. REMARKS AND ADDITIONAL INFORMATION



HP LaserJet 3050

# Fax Call Report



GARY SCHUBERT'S OFFICE  
5753936662  
Feb-9-2010 14:15

Job	Date	Time	Type	Identification	Duration	Pages	Result
3395	2/ 9/2010	14:14:33	Receive	5753922241	1:00	2	Comm Error 283

02/09/2010 02:15 5753922241 A & K WATERWELL PAGE 01

Revised None

## STATE ENGINEER OFFICE WELL RECORD

### Section 1. GENERAL INFORMATION

(A) Owner of well Gary Schubert Owner's Well No. \_\_\_\_\_  
Street or Post Office Address Stanford Road  
City and State Hobbs, New Mexico

Well was drilled under Permit No. Monitor Well and is located in the:

a. 1/4 1/4 1/4 of Section        Township        Range        N.M.P.M

b. Tract No.        of Map No.        of the       

c. Lot No.        of Block No.        of the         
Subdivision, recorded in Lea County.

d. X=        feet, Y=        feet, N.M. Coordinate System        Zone in  
the        Grant.

(B) Drilling Contractor A & K Water Well Drilling, Kristopher Glasspoole, License No. WD-1641

Address 601 West Cope Place, Hobbs, New Mexico 88242-8053

Drilling began 11-12-06, Completed 11-19-06, Type Tools Cable, Size of Hole 8-1/2"

Elevation of land surface or        at well is        ft. Total depth of well 177 ft.

Completed well is X Shallow        Artesian. Depth of water upon completion of well 89 ft.

### Section 2. PRINCIPAL WATER-BEARING STRATA

Depth in Feet		Thickness in feet	Description of Water-Bearing Formation	Estimated Yield (gallons per minute)
From	To			
89	177	88	Water Sand - Medium Brown	35 gpm

### Section 3. RECORD OF CASING

Diameter (inches)	Pounds per foot	Threads per inch	Depth in Feet		Length (feet)	Type of Shoe	Perforations	
			Top	Bottom			From	To
5-1/2"		None	+18"	177	178' 6"	None	89	177

### Section 4. RECORD OF MUDDING AND CEMENTING

Depth in Feet		Hole Diameter	Sacks of Mud	Cubic Feet of Cement	Method of Placement
From	To				
0	177	8-1/2"	5 sacks		

### Section 5. PLUGGING RECORD

Plugging Contractor	Address	Plugging Method	Date Well Plugged	Plugging approved by:	No.	Depth in Feet		Cubic Feet
						Top	Bottom	
					1			
					2			
					3			
					4			

State Engineer Representative

Date Received

FOR USE OF STATE ENGINEER ONLY

Quad        FWL        FSL

## Chavez, Carl J, EMNRD

---

**From:** Chavez, Carl J, EMNRD  
**Sent:** Thursday, January 21, 2010 4:47 PM  
**To:** 'Gary Schubert'  
**Subject:** FW: BW-31 Annual Brine Well Report (Report)

Gary:

Good afternoon. The OCD appreciates your efforts to comply with the terms and conditions of your discharge permit. Your OCD discharge permit requirements are:

6. **Production/Injection Volumes/Annual Report:** The volumes of fluids injected (fresh water) and produced (brine) will be recorded monthly and submitted to the OCD Santa Fe Office in an annual report due on the thirty-first (31) day of January of each year.
7. **Analysis of Injection Fluid and Brine:** Provide an analysis of the injection fluid and brine with each annual report. Analysis will be for General Chemistry (Method 40 CFR 136.3) using EPA methods.
25. **Capacity/ Cavity Configuration and Subsidence Survey:** The operator shall provide information on the size and extent of the solution cavern and geologic/engineering data demonstrating that continued brine extraction will not cause surface subsidence, collapse or damage to property, or become a threat to public health and the environment. This information shall be supplied in each annual report. OCD may require the operator to perform additional well surveys, test, and install subsidence monitoring in order to demonstrate the integrity of the system. If the operator cannot demonstrate the integrity of the system to the satisfaction of the Division then the operator may be required to shut-down, close the site and properly plug and abandoned the well.
26. **Monitor Well:** The monitor well shall be located along the local groundwater flow direction and directly down-gradient of the brine well and situated within 50 feet of the brine well. The well shall be constructed, developed, purged and samples analyzed pursuant to approved EPA methods. Except for the initial well sampling event as proposed in the discharge plan, the monitor well shall be sampled and analyzed for general chemistry twice a year with the results submitted in the annual report. Discovery of groundwater contamination shall be reported pursuant to Item #18 above.

You have addressed Item 6 above; however, the OCD requests the cumulative fresh water injection and brine production volumes to date in order help estimate the volume of your brine cavern. As I recall, the well is fairly new and was exempted from the recent OCD sonar test mandate due to this, but we do want to track total injection and production volumes. Please submit this information by 2/22/2010.

You partially addressed Item 7 above as you did not submit General Chemistry data, which need to be assayed for pH, total dissolved solids, anions and cations (fluoride, chloride, nitrate, nitrite, phosphorus, and sulfate) by Method 300, and dissolved metals (arsenic, barium, cadmium, calcium, chromium, lead, magnesium, potassium, selenium, silver, and sodium) by Method 6010. Please resubmit General Chemistry data by 2/22/2010.

You have been exempted from the sonar testing for the duration of your current discharge permit due to the age of your well; however, you are welcome to voluntarily perform a sonar test anytime between now and the renewal of your permit. The new permit will likely require a sonar test be run on your cavern.

Please confirm in Item 26 that you have installed the monitor well, and if so, provide the information to the OCD by 2/22/2010.

Please contact me if you have questions. Thank you.

Carl J. Chavez, CHMM  
New Mexico Energy, Minerals & Natural Resources Dept.  
Oil Conservation Division, Environmental Bureau  
1220 South St. Francis Dr., Santa Fe, New Mexico 87505  
Office: (505) 476-3490  
Fax: (505) 476-3462  
E-mail: [CarlJ.Chavez@state.nm.us](mailto:CarlJ.Chavez@state.nm.us)  
Website: <http://www.emnrd.state.nm.us/ocd/index.htm>  
(Pollution Prevention Guidance is under "Publications")

---

**From:** Chavez, Carl J, EMNRD  
**Sent:** Thursday, January 21, 2010 3:49 PM  
**To:** 'Gary Schubert'  
**Subject:** BW-31 Annual Brine Well Report (Report)

Gary:

Good afternoon. OCD is in receipt of your Report. OCD will contact you if we have questions or need to discuss your well in more detail.

Please contact me if you have questions. Thank you.

Carl J. Chavez, CHMM  
New Mexico Energy, Minerals & Natural Resources Dept.  
Oil Conservation Division, Environmental Bureau  
1220 South St. Francis Dr., Santa Fe, New Mexico 87505  
Office: (505) 476-3490  
Fax: (505) 476-3462  
E-mail: [CarlJ.Chavez@state.nm.us](mailto:CarlJ.Chavez@state.nm.us)  
Website: <http://www.emnrd.state.nm.us/ocd/index.htm>  
(Pollution Prevention Guidance is under "Publications")

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**HRC, Inc.**

P.O. Box 1606

2010 JAN 21 PM 2 43

Hobbs, NM 88241-6056

(575) 393-6662

(575) 393-6662 Fax

January 19, 2010

Mr. Carl Chavez  
Environmental Bureau Chief  
Oil Conservation Division  
1220 South Saint Francis Drive  
Santa Fe, NM 87505

Ref: Annual Brine Well Report – BW-31  
Name of Operator: HRC – Schubert  
Date of Report: 1-19-2010


Mr. Chavez,

Please see attached information:

1. Copies of monthly brine water production and fresh water injection for the year 2009.
2. Analysis of injection fluid (2009)
3. Analysis of brine produced (2009)\*
4. Analysis of monitor well samples. (2009)\*

\*Although I am sending the report today, I am awaiting the lab results from the November sampling. I expect to have you that information by January 31, 2010.

Sincerely,



Gary M. Schubert, President  
GMS/br

Enclosure

# **ANNUAL BRINE WELL REPORT**

**API# 30-025-36781**

**H.R.C. INC.**

**Gary M. Schubert**

**BW-31**

**January 19, 2010**

**BW – 31**

**SCHUBERT 7 – WELL # 1**

**YEAR 2009**

<b>MONTH</b>	<b>BRINE PRODUCTION (BY Meter)</b>	<b>FRESH WATER INJECTED (By Meter)</b>
January	29,196	30,947*
February	17,626	19,038
March	8,385	9,521
April	11,213	10,376
May	16,182	16,145
June	16,742	19,045
July	24,802*	26,381
August	11,679	13,271
September	13,182	14,819
October	17,009	18,590
November	16,808	17,492
December	<u>29,955</u>	<u>30,433</u>
Total	212,779	226,058

\*Corrected from previous report, mathematical error.

**SCHUBERT 7 - WELL # 1**

[illegible]





PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

✓

ANALYTICAL RESULTS FOR  
HRC  
ATTN: GARY SCHUBERT  
1720 N. TURNER  
HOBBS, NM 88240

Receiving Date: 08/17/09  
Reporting Date: 08/17/09  
Project Owner: NOT GIVEN  
Project Name: MAY-09 SAMPLING  
Project Location: NOT GIVEN

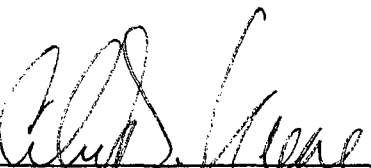
Analysis Date: 08/17/08  
Sampling Date: MAY-09 ✓  
Sample Type: WATER  
Sample Condition: INTACT @ 24°C  
Sample Received By: AB  
Analyzed By: AB

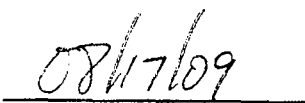
LAB NO.	SAMPLE ID	Cl <sup>-</sup> (mg/L)
H18014-1	BRINE WEST TANKS	188,000
H18014-2	BRINE EAST TANKS	192,000
H18014-3	MONITOR WELL	760
Quality Control		500
True Value QC		500
% Recovery		100
Relative Percent Difference		< 0.1

METHOD: Standard Methods

4500-Cl<sup>-</sup>B

Samples analyzed outside the EPA recommended hold time of 28 days.

  
Chemist

  
Date

H18014 HRC

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above-stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

# City of Hobbs Wastewater Reclamation Facility

## JUNCTION BOX EFFLUENT (S&H FARMS) 2009

MONTH	FLOW (MG)	TKN (mg/l)	NO3-N (mg/l)	TOTAL-N (mg/l)	TDS (mg/l)	CL (mg/l)	BOD (mg/l)			FECALS (cfu/100 mls)		
							MAX	AVG	# TESTS	MAX	AVG	# TESTS
JAN	109.563	3.0	14.60	17.60	748	165	29.6	24.9	12	2048	21.6	37
FEB	89.000	29.6	0.00	29.60	874	280	36.5	29.9	12	864	52.4	30
MAR	99.997	32.1	0.01	32.11	871	290	44.7	24.9	12	256	34.5	31
APR	101.421	6.1	4.71	10.81	704	260	17.3	10.0	14	1196	32.2	30
MAY	105.744	1.1	4.80	5.90	828	185	12.5	7.8	14	313	26.4	31
JUN	112.440	1.4	4.39	5.79	750	270	8.7	7.2	13	648	17.9	30
JUL	115.930	1.9	4.34	6.24	750	235	5.9	4.6	15	504	16.8	30
AUG	113.953	3.2	1.66	4.86	718	235	6.5	3.7	12	83	14.2	30
SEP	100.438	1.0	4.97	5.97	793	255	4.4	3.5	12	267	9.7	29
OCT	96.798	0.9	6.46	7.36	734	245	4.5	3.3	14	216	3.1	30
NOV	79.614	0.6	4.41	5.01	703	235	5.0	3.2	11	60	1.8	30
DEC	85.619	1.4	3.86	5.26	665	220	3.6	2.9	15	220	7.6	31
TOTAL	1210.517											
AVG	100.876	6.86	4.52	11.38	761.5	239.6	14.9	10.5	13.0	556.3	19.9	31

ANALYSIS OF  
INJECTION FLUID  
2009  
BW-31

## Chavez, Carl J, EMNRD

---

**From:** Chavez, Carl J, EMNRD  
**Sent:** Wednesday, November 18, 2009 7:02 AM  
**To:** 'Prather, Steve'; 'gandy2@leaco.net'; 'James Millett'; 'Clay Wilson'; 'Bob Patterson'; 'David Pyeatt'; 'garymschubert@aol.com'; 'Gary Schubert'  
**Cc:** Griswold, Jim, EMNRD; VonGonten, Glenn, EMNRD; Sanchez, Daniel J., EMNRD  
**Subject:** UIC Class III Well Annual Report Schedule for Submittal & Content REMINDER- 2010  
**Attachments:** Annual Reports 2010.xls

Gentlemen:

Good morning. You may recall an e-mail message from me this past Summer alerting you to the reporting provision of your current discharge permit (permit) and how the New Mexico Oil Conservation Division (OCD) is stepping up its efforts to track reporting under issued permits.

Please find attached a spreadsheet listing the dates that OCD expects to receive your Annual Reports and/or any reporting requirements from your permit. If you are an operator with limited reporting requirements based on your permit, you are welcome to follow the format and content required from more recent permit renewals issued by the OCD, which are more comprehensive and constitute a report. Any renewed permits will likely require similar content anyway.

Please plan on meeting the Annual Report submittal dates in January of 2010 as failure to submit the report will constitute a violation under the Federal Underground Injection Control (UIC) Program and reporting to the United States Environmental Protection Agency, which could result in the shut-in and/or plug and abandonment of your brine production well.

Please contact me if you have questions. Thank you in advance for your cooperation in this matter.

Carl J. Chavez, CHMM  
New Mexico Energy, Minerals & Natural Resources Dept.  
Oil Conservation Division, Environmental Bureau  
1220 South St. Francis Dr., Santa Fe, New Mexico 87505  
Office: (505) 476-3490  
Fax: (505) 476-3462  
E-mail: [CarlJ.Chavez@state.nm.us](mailto:CarlJ.Chavez@state.nm.us)  
Website: <http://www.emnrd.state.nm.us/ocd/index.htm>  
(Pollution Prevention Guidance is under "Publications")

CC: Brine Well File "Annual Reporting"

## NMOCD UIC Annual Reports

11/18/09

Permit ID	Operator	Annual Rpt. Due Date	Submitted	Annual Report Contents
BW-2	Basic Energy	01/31/10		<p>L. Annual Report: All operators shall submit an annual report due on January 31 of each year. The report shall include the following information:</p> <ol style="list-style-type: none"> <li>1. Cover sheet marked as "Annual Brine Well Report, name of operator, permit #, API# of well(s), date of report, and person submitting report.</li> <li>2. Brief summary of brine wells operations including description and reason for any remedial or major work on the well. Copy of C- 103.</li> <li>3. Production volumes as required above in 21 .G. including a running total should be carried over to each year. The maximum and average injection pressure.</li> <li>4. A copy of the chemical analysis as required above in 21 .1-l.</li> <li>5. A copy of any mechanical integrity test chart, including the type of test, i.e. open to formation or easing test.</li> <li>6. Brief explanation describing deviations from normal production methods.</li> <li>7. A copy of any leaks and spills reports.</li> <li>8. If applicable, results of any groundwater monitoring.</li> <li>9. Information required from cavity/subsidence 21 .F. above.</li> <li>10. An Area of Review (AOR) summary.</li> <li>11. Sign-off requirements pursuant to WQCC Subsection G 20.6.2.5101.</li> </ol>

BW-4                      Gandy Corp.                      01/31/10

L. Annual Report: All operators shall submit an annual report due on January 31 of each year. The report shall include the following information:

1. Cover sheet marked as "Annual Brine Well Report, name of operator, BW permit #, API# of well(s), date of report, and person submitting report.
2. Brief summary of brine wells operations including description and reason for any remedial or major work on the well. Copy of C- 103.
3. Production volumes as required above in 21 .G. including a running total should be carried over to each year. The maximum and average injection pressure.
4. A copy of the chemical analysis as required above in 21 .1-I.
5. A copy of any mechanical integrity test chart, including the type of test, i.e. open to formation or easing test.
6. Brief explanation describing deviations from normal production methods.
7. A copy of any leaks and spills reports.
8. If applicable, results of any groundwater monitoring.
9. Information required from cavity/subsidence 21 .F. above.
10. An Area of Review (AOR) summary.
11. Sign-off requirements pursuant to WQCC Subsection G 20.6.2.5101.

BW-8                      PAB- Salty Dog                      Mo. w/ Qtly Rpts.

BW-22	Gandy Corp.	01/31/10	<p>L. Annual Report: All operators shall submit an annual report due on January 31 of each year. The report shall include the following information:</p> <ol style="list-style-type: none"> <li>1. Cover sheet marked as "Annual Brine Well Report, name of operator, BW permit #, API# of well(s), date of report, and person submitting report.</li> <li>2. Brief summary of brine wells operations including description and reason for any remedial or major work on the well. Copy of C-103.</li> <li>3. Production volumes as required above in 21 .G. including a running total should be carried over to each year. The maximum and average injection pressure.</li> <li>4. A copy of the chemical analysis as required above in 21.H.</li> <li>5. A copy of any mechanical integrity test chart, including the type of test, i.e. open to formation or casing test.</li> <li>6. Brief explanation describing deviations from normal production methods.</li> <li>7. A copy of any leaks and spills reports.</li> <li>8. If applicable, results of any groundwater monitoring.</li> <li>9. Information required from cavity/subsidence 21 .F. above.</li> <li>10. An Area of Review (AOR) summary.</li> <li>11. Sign-off requirements pursuant to WQCC Subsection G 20.6.2.5101.</li> </ol>
BW-25	Basic Energy	01/31/10	<ol style="list-style-type: none"> <li>6. Production/Injection Volumes/Annual Report: The volumes of fluids injected (fresh water) and produced (brine) will be recorded monthly and submitted to the OCD Santa Fe Office in an annual report due on the thirty-first (31) day of January of each year.</li> </ol>

BW-27 Mesquite 01/01/10

7. Production/Injection Volumes: The volumes of fluids injected (fresh water) and produced (brine) will be recorded monthly and submitted to the OCD Sanla Fe Office in an annual report due on the first day of January of each year.

BW-28 ey Ernergy Services LI 01/31/10

L. Annual Report: All operators shall submit an annual report due on January 31 of each year. The report shall include the following information:

1. Cover sheet marked as "Annual Brine Well Report, name of operator, BW permit #, API# of well(s), date of report, and person submitting report.
2. Brief summary of brine wells operations including description and reason for any remedial or major work on the well. Copy of C-103.
3. Production volumes as required above in 21 .G. including a running total should be carried over to each year. The maximum and average injection pressure.
4. A copy of the chemical analysis as required above in 21 .H.
5. A copy of any mechanical integrity test chart, including the type of test, i.e. open to formation or casing test.
6. Brief explanation describing deviations from normal production methods.
7. A copy of any leaks and spills reports.
8. If applicable, results of any groundwater monitoring.
9. Information required from cavity/subsidence 21 .F. above.
10. An Area of Review (AOR) summary.
11. Sign-off requirements pursuant to WQCC Subsection G 20.6.2.5101.



BW-30      Liquid Resources      01/31/10

L. Annual Report: All operators shall submit an annual report due on January 31 of each year. The report shall include the following information:

1. Cover sheet marked as "Annual Brine Well Report, name of operator, BW permit ~, API~ of well(s), date of report, and person submitting report.
2. Brief summary of brine wells operations including description and reason for any remedial or major work on the well. Copy of C-103.
3. Production volumes as required above in 21 .G. including a running total should be carried over to each year. The maximum and average injection pressure.
4. A copy of the chemical analysis as required above in 21 .H.
5. A copy of any mechanical integrity test chart, including the type of test, i.e. open to formation or casing test.
6. Brief explanation describing deviations from normal production methods.
7. A copy of any leaks and spills reports.
8. If applicable, results of any groundwater monitoring.
9. Information required from cavity/subsidence 21 .F. above.
10. An Area of Review (AOR) summary.
11. Sign-off requirements pursuant to WQCC Subsection G 20.6.2.5 101.

BW-31      HRC- Schubert      01/31/10

6. Production/Injection Volumes/Annual Report: The volumes of fluids injected (fresh water) and produced (brine) will be recorded monthly and submitted to the OCD Santa Fe Office in an annual report due on the thirty-first (31) day of January of each year.

## Chavez, Carl J, EMNRD

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**From:** Chavez, Carl J, EMNRD  
**Sent:** Friday, September 25, 2009 1:48 PM  
**To:** 'Prather, Steve'; 'gandy2@leaco.net'; 'James Millett'; 'Clay Wilson'; 'Bob Patterson'; 'Blevins, Sam'; 'David Pyeatt'; 'garymschubert@aol.com'  
**Cc:** Sanchez, Daniel J., EMNRD; VonGonten, Glenn, EMNRD; Griswold, Jim, EMNRD; Jones, William V., EMNRD  
**Subject:** New Mexico Oil Conservation Division Class III Solution Mining Well Operator Notice-- ANNUAL REPORTS

Gentlemen:

**Re: Annual Reporting**

You are receiving this message because you are currently operating a Underground Injection Control (UIC) Class III Solution Mining Well in New Mexico under an Oil Conservation Division (OCD) Discharge Permit. You may be aware of the most recent events related to OCD Class III Wells in New Mexico and can find out more by visiting the OCD's Website at <http://www.emnrd.state.nm.us/OCD/brinewells.htm> and OCD Brine Well Work Group Website at <http://ocdimage.emnrd.state.nm.us/imaging/AEOrderFileView.aspx?appNo=pCJC0906359521>.

The OCD is writing to inform you that it will be monitoring the receipt of your "Annual Reports" under the applicable section of your OCD discharge permit. The OCD has been deficient in tracking reporting obligations in the past; however, the OCD has recently upgraded our online system to track operators who are not meeting the reporting requirements specified in OCD Discharge Permits. Please plan on submitting the report with the required information by the date required in your discharge permit.

To access your OCD Discharge Permit Online for the date of submittal and contents of the report, please go to OCD Online at <http://ocdimage.emnrd.state.nm.us/imaging/AEOrderCriteria.aspx> (enter "Order Type" as BW and your "Order Number"). If you have not submitted an Annual Report (report) for your well, a historical review of your injection and production records will be required in order to provide cumulative injection and production information in this year's report.

Please contact me if you have questions or need assistance.

Thank you in advance for your cooperation in this matter.

Copy: Brine Well Files BWs 2, 4, 8, 22, 25, 27, 28, 30 & 31

Carl J. Chavez, CHMM  
New Mexico Energy, Minerals & Natural Resources Dept.  
Oil Conservation Division, Environmental Bureau  
1220 South St. Francis Dr., Santa Fe, New Mexico 87505  
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Fax: (505) 476-3462  
E-mail: [CarlJ.Chavez@state.nm.us](mailto:CarlJ.Chavez@state.nm.us)  
Website: <http://www.emnrd.state.nm.us/ocd/index.htm>  
(Pollution Prevention Guidance is under "Publications")