

# R. T. HICKS CONSULTANTS, LTD.

Midland, TX ▲ Durango, CO ▲ Carlsbad, NM ▲ Artesia, NM

901 Rio Grande Blvd NW ▲ Suite F-142 ▲ Albuquerque, NM 87104 ▲ 505.266.5004 ▲ Fax: 505.266-0745

October 14, 2015

Mr. Mike Bratcher  
New Mexico Oil Conservation Division  
811 South First Street  
Artesia, New Mexico 88210

RE: Final Closure Report  
Staley State 20 Release Site, LRE Operating LLC  
T17S R28E Section 29 Unit Letter M, Eddy County NM

Dear Mr. Bratcher:

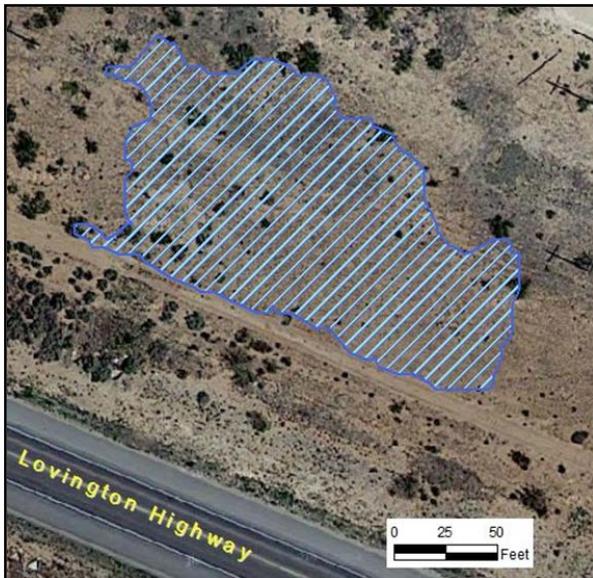
On behalf of VanGuard Natural Resources, LLC, R.T. Hicks Consultants (Hicks Consultants) is pleased to present the following Final Closure Report for the Staley State No.20 release site.

## ***Incident History***

The release, associated with the Staley State No.20 well, occurred on May 5, 2015. Plate 1 shows the release area relative to nearby wells and topography. The release area is located in Unit M Sec. 29, T17S-R28E.

The source of the release was a 10” transfer line moving treated waters from the NW State 19 Recycling containment to the Staley State No.20 well. Service work was being performed on the well at the time of the release. A valve on the transfer line vibrated shut, maximum operating pressure for the 10” line was exceeded, and the line ruptured. As Blue Water Transfer Personnel were at the site monitoring the water transfer; the line was immediately

shut-in, a vacuum truck was brought to the location, standing water in the 10” transfer line was removed, and free fluids were recovered from the impacted area.

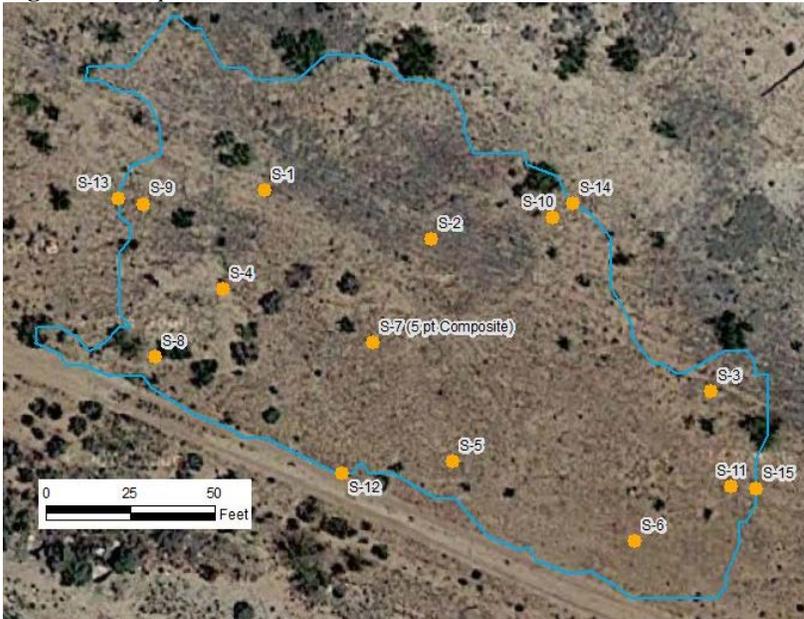


The release volume was 65 bbls with an estimated 5-10 bbls being recovered. The release waters coming from the NW State 19 Recycling Containment had been treated to remove hydrocarbons and consisted only of brine water. The impacted area was pasture land next to the transfer line. The impacted area measures 195 feet by 108 feet.

**Figure 1:** Cross hatched area is the release area. North is up the page.

On May 15, 2015, Hicks Consultants collected soil samples from the release area. Locations are shown on Figure 2. The area was divided into six grid sections with each having dimensions of about 65 feet by 36 feet. Utilizing a backhoe, soil samples were collected from trenches configured in a five (5) spot pattern within each grid section. The samples were collected from the surface to 4-feet below ground surface (bgs). Soil samples were transported to Cardinal Laboratories located in Hobbs, New Mexico for analysis.

**Figure 2:** *Sample locations*



### **Laboratory Results**

Table 1 presents Lab results for samples collected on May 15, 2015. Analytical results demonstrate that the chloride impact from the release to be less than 1-foot bgs in the majority of the impacted area. Greatest depth of impact was observed at sample location S-2. Soil samples were analyzed for BTEX in sample location S-1 1' and S-2 1', analytical results reported for BTEX were less than 0.300 mg/kg, the method-detection limit. Benzene was reported as ND. Appendix A has the laboratory results.

**Table 1:** *Laboratory results from the six trench sample locations.*

Sample Location and Depth	Chloride	BTEX	Sample Location and Depth	Chloride	BTEX	Sample Location and Depth	Chloride
	mg/kg			mg/kg			mg/kg
S-1, 0.0'	12900		S-2, 0.0'	26400		S-3, 0.0'	15200
S-1, 0.5'	4280		S-2, 0.5'	4960		S-3, 0.5'	2200
S-1, 1.0'	496	<0.300	S-2, 1.0'	3920	<0.300	S-3, 1.0'	736
S-1, 2.0'	960		S-2, 2.0'	144		S-3, 2.0'	160
S-1, 3.0'	128		S-2, 3.0'	144		S-3, 3.0'	112
S-1, 4.0'	48		S-2, 4.0'	96		S-3, 4.0'	80
S-4, 0.0'	15600		S-5, 0.0'	18800		S-6, 0.0'	16600
S-4, 0.5'	64		S-5, 0.5'	272		S-6, 0.5'	
S-4, 1.0'	112		S-5, 1.0'	672		S-6, 1.0'	160
S-4, 2.0'	80		S-5, 2.0'	48		S-6, 2.0'	128
S-4, 3.0'	64		S-5, 3.0'	80		S-6, 3.0'	112
S-4, 4.0'	48		S-5, 4.0'	80		S-6, 4.0'	128
Background	<16.0						

Table 2 presents laboratory results from five-point composite samples taken from the walls and floor of the excavated release area. After initial excavation, chloride concentrations of the samples from the west, north, and east walls of the excavated area exceeded 7000 mg/kg (results in Appendix A). The excavation footprint was extended approximately five-feet further in each of these directions. After the additional excavation, no wall concentration exceeded 225 mg/kg.

The laboratory concentration for the composite sample taken from the excavated material (stockpiled soil) was 2720 mg/kg (Table 2).

**Table 2:** Laboratory results from the wall and floor of the excavation and from the excavated material.

Sample Location (all samples are 5-point composites)	Chloride in mg/kg			
	Sample Location	May 26	Sample Location	May 29
West Wall	S-9	11600	S-13	48
North Wall	S-10	7040	S-14	64
East Wall	S-11	8800	S-15	224
South wall	S-12	48		
Excavation Floor	S-8	480		
Stockpiled Material	S-7	2720		

### ***Hydrogeologic Data***

A review of the New Mexico Office of the State Engineer waters data base found no water wells located in Township 17S Range 28E. R.T. Hicks Consultants performed extensive research for ground water located in Township 17S Range 28E during the permitting for the NW 19 Fluid Containment pit. The Staley State No.20 release is approximately one mile west of the NW 19 Fluid Containment pit.

#### **Geology**

The Staley State 20 release site is located in the Great Plains physiographic province. The Plains are considered a Cenozoic depositional feature composed of erosional materials from the eastern front of the Rocky Mountains and similarly aligned Basin and Range mountain chains further to the south. Cenozoic erosional materials (Quaternary alluvium and piedmont deposits) are unconformably deposited on top of the Permian Salado Formation (Psl on Plate 1) and the Permian Rustler Formation (Pr) near the release location (Plate 1).

Much of the Plains material that comprises the surface was deposited between 40 and 50 million years ago (ma). With some uplift of the Plains, depositional rates slowed or stopped from 30 to 40 ma. Beginning 30 ma, additional deposition spreading from the north to the south and reworking of the earlier materials resulted in the deposition of the Ogallala formation. The later formation of the Pecos Valley by headward erosion due to either uplift to the west or solution/subsidence of the valley resulted in partial stripping of material from the fronts of the mountains (Reeves, 1972). This action has left the Great Plains isolated from the mountain fronts.

The release location is between the Mescalero rim (the western edge of the Ogallala formation) and the Pecos River. The above mentioned development of the Pecos Drainage removed and reworked the remnants of the Ogallala formation between the Mescalero rim and the Pecos River. This surface is called the Mescalero Plain and is composed of relatively thin pediment deposits and alluvium of fluvial and eolian origins deposited on top of the older Triassic and Permian formations.

As shown on Plate 1, the release location is in the eastern edge of an area mapped as Salado Formation. Immediately east is an area mapped as Older Alluvium (Qoa), a relatively thin deposit of newer materials. To the north and northeast this alluvium overlies the Rustler Formation (Pr).

At the release site, our foot survey did not identify any exposed bedrock that would permit a determination if the mapped Older Alluvium to the east overlies the upper Salado or lower Rustler. As the Salado is not considered a potable aquifer, the location of two wells (Misc-60 and Misc-59) about 1.5 miles south of the release location suggests that bedrock in that area is probably lower Rustler Formation.

### Site Characteristics

- The release site location is in the southwestern quarter of Section 29 on a relatively flat area that drains to the northwest.
- Plate 2 presents a potentiometric surface based upon USGS and Open File 95<sup>1</sup> well data. Surface elevation of the release site is about 3640 feet (asl). Interpolation from Plate 2 suggests a ground water elevation of about 3390 feet (asl). Hence depth to ground water is about 250 feet.
- The closest “intermittent stream” is more than 0.8 miles to the southwest. The nearest “Lake/Pond” is 1.1 miles to the east- southeast. See Plate 3.
- The nearest surface body of water is an intermittent “Freshwater Pond” about 1.15 miles southeast of the release location. See Plate 4. These “pond” features are playas that have developed within the alluvium overlaying the Permian Salado and Rustler Formations.
- Plate 5 is a map of karst potential for the area around the release site. The surrounding area is mapped as having either “high potential “or “medium” potential”. The boundaries are generalized as is obvious from the straight line character of the contact between the two regions. As chance would have it, the release maps into a corner on the “high potential” side of the contact. Comparison with Plate 1 explains that the area of “high potential” karst is an approximation of the contact between the Permian Salado formation and the Quaternary alluvium.
- There are no water wells located within one-thousand feet of the release area (Plate 1).

### **REMEDIATION ACTIONS**

- Impacted material in the release area was excavated to a depth of .5 to 1-foot and stockpiled.
- On May 26, 2015 a five spot composite soil sample was collected from the stockpiled material and submitted to Cardinal Laboratories. (Appendix A)
- The analytical results are that Chloride in the stockpiled material is 2720 ppm.
- On May 27, 2015 and May 29, 2015 confirmation samples were collected from the excavated area and submitted to Cardinal Laboratories. (Table 2)
- The analytical results reported the Chloride in the excavated area to be west side wall Cl.-48 ppm, north side wall Cl.-64 ppm, east side wall Cl.-224 ppm, south side wall Cl.-48 ppm and excavation floor 480 ppm.
- The stockpiled material from the release was transported to Lea Land LLC for disposal.
- The excavated area was recon toured to match the surrounding terrain.
- On October 12, 2015 the recon toured area was reseeded using BLM seed mix No.2.

VanGuard Natural Resources, LLC began operating the Staley State 20 lease on October 6, 2015. VanGuard Natural Resources, LLC is requesting closure for the release that occurred on May 5, 2015 at the Staley State No.20. Please contact me if further information is required.

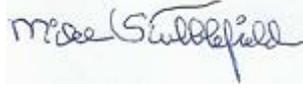
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<sup>1</sup> [http://geoinfo.nmt.edu/publications/openfile/downloads/0-99/95/ofr\\_95.pdf](http://geoinfo.nmt.edu/publications/openfile/downloads/0-99/95/ofr_95.pdf)

October 14, 2015

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Sincerely,  
R.T. Hicks Consultants, Ltd.

A handwritten signature in blue ink that reads "Mike Stubblefield". The signature is written in a cursive style and is positioned above the typed name.

Mike Stubblefield  
Project Manager

Copy: Dennis Howard, VanGuard Natural Resources, LLC

## **References**

Reeves, C.C., Jr., 1972, Tertiary-Quaternary Stratigraphy and Geomorphology of West Texas and Southeastern New Mexico, In Guidebook, East-Central New Mexico, ed. V.C. Kelley and F. D. Trauger, 103-17, New Mexico Geological Society 23

May 20, 2015

MIKE STUBBLEFIELD

R T HICKS CONSULTANTS

901 RIO GRANDE BLVD SUITE F-142

ALBUQUERQUE, NM 87104

RE: STALEY STATE NO. 20

Enclosed are the results of analyses for samples received by the laboratory on 05/18/15 13:03.

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:**

 R T HICKS CONSULTANTS  
 MIKE STUBBLEFIELD  
 901 RIO GRANDE BLVD SUITE F-142  
 ALBUQUERQUE NM, 87104  
 Fax To: NONE

Received:	05/18/2015	Sampling Date:	05/15/2015
Reported:	05/20/2015	Sampling Type:	Soil
Project Name:	STALEY STATE NO. 20	Sampling Condition:	** (See Notes)
Project Number:	30-015-40983	Sample Received By:	Jodi Henson
Project Location:	UT M SEC. 29 -T175- R30E		

**Sample ID: S - 1 0 ' (H501260-01)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>12900</b>	16.0	05/20/2015	ND	400	100	400	3.92	

**Sample ID: S- 1 .5 ' (H501260-02)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>4280</b>	16.0	05/20/2015	ND	400	100	400	3.92	

**Sample ID: S- 1 1 ' (H501260-03)**

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	05/19/2015	ND	1.81	90.7	2.00	1.58	
Toluene*	<0.050	0.050	05/19/2015	ND	1.97	98.4	2.00	3.91	
Ethylbenzene*	<0.050	0.050	05/19/2015	ND	1.86	93.0	2.00	3.46	
Total Xylenes*	<0.150	0.150	05/19/2015	ND	5.54	92.3	6.00	4.12	
Total BTEX	<0.300	0.300	05/19/2015	ND					

Surrogate: 4-Bromofluorobenzene (PID) 110 % 61-154

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>496</b>	16.0	05/18/2015	ND	400	100	400	0.00	

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 R T HICKS CONSULTANTS  
 MIKE STUBBLEFIELD  
 901 RIO GRANDE BLVD SUITE F-142  
 ALBUQUERQUE NM, 87104  
 Fax To: NONE

 Received: 05/18/2015  
 Reported: 05/20/2015  
 Project Name: STALEY STATE NO. 20  
 Project Number: 30-015-40983  
 Project Location: UT M SEC. 29 -T175- R30E

 Sampling Date: 05/15/2015  
 Sampling Type: Soil  
 Sampling Condition: \*\* (See Notes)  
 Sample Received By: Jodi Henson

**Sample ID: S - 1 2 ' (H501260-04)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	960	16.0	05/18/2015	ND	400	100	400	0.00	

**Sample ID: S - 1 3 ' (H501260-05)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	128	16.0	05/18/2015	ND	400	100	400	0.00	

**Sample ID: S - 1 4 ' (H501260-06)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	05/18/2015	ND	400	100	400	0.00	

**Sample ID: S - 2 0 ' (H501260-08)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	26400	16.0	05/20/2015	ND	400	100	400	3.92	

**Sample ID: S - 2 .5 ' (H501260-09)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	4960	16.0	05/20/2015	ND	400	100	400	3.92	

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 R T HICKS CONSULTANTS  
 MIKE STUBBLEFIELD  
 901 RIO GRANDE BLVD SUITE F-142  
 ALBUQUERQUE NM, 87104  
 Fax To: NONE

Received:	05/18/2015	Sampling Date:	05/15/2015
Reported:	05/20/2015	Sampling Type:	Soil
Project Name:	STALEY STATE NO. 20	Sampling Condition:	** (See Notes)
Project Number:	30-015-40983	Sample Received By:	Jodi Henson
Project Location:	UT M SEC. 29 -T175- R30E		

**Sample ID: S - 2 1 ' (H501260-10)**

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	05/19/2015	ND	1.81	90.7	2.00	1.58	
Toluene*	<0.050	0.050	05/19/2015	ND	1.97	98.4	2.00	3.91	
Ethylbenzene*	<0.050	0.050	05/19/2015	ND	1.86	93.0	2.00	3.46	
Total Xylenes*	<0.150	0.150	05/19/2015	ND	5.54	92.3	6.00	4.12	
Total BTEX	<0.300	0.300	05/19/2015	ND					

Surrogate: 4-Bromofluorobenzene (PID) 110 % 61-154

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	3920	16.0	05/18/2015	ND	400	100	400	0.00	

**Sample ID: S - 2 2 ' (H501260-11)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	144	16.0	05/18/2015	ND	400	100	400	0.00	

**Sample ID: S - 2 3 ' (H501260-12)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	144	16.0	05/18/2015	ND	400	100	400	0.00	

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Celey D. Keene, Lab Director/Quality Manager

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R T HICKS CONSULTANTS  
 MIKE STUBBLEFIELD  
 901 RIO GRANDE BLVD SUITE F-142  
 ALBUQUERQUE NM, 87104  
 Fax To: NONE

Received: 05/18/2015  
 Reported: 05/20/2015  
 Project Name: STALEY STATE NO. 20  
 Project Number: 30-015-40983  
 Project Location: UT M SEC. 29 -T175- R30E

Sampling Date: 05/15/2015  
 Sampling Type: Soil  
 Sampling Condition: \*\* (See Notes)  
 Sample Received By: Jodi Henson

**Sample ID: S - 2 4 ' (H501260-13)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	96.0	16.0	05/18/2015	ND	400	100	400	3.92	

**Sample ID: S - 3 0 ' (H501260-14)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	15200	16.0	05/20/2015	ND	400	100	400	3.92	

**Sample ID: S - 3 .5 ' (H501260-15)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	2200	16.0	05/20/2015	ND	400	100	400	3.92	

**Sample ID: S - 3 1 ' (H501260-16)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	736	16.0	05/18/2015	ND	400	100	400	3.92	

**Sample ID: S - 3 2 ' (H501260-17)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	160	16.0	05/18/2015	ND	400	100	400	3.92	

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 R T HICKS CONSULTANTS  
 MIKE STUBBLEFIELD  
 901 RIO GRANDE BLVD SUITE F-142  
 ALBUQUERQUE NM, 87104  
 Fax To: NONE

 Received: 05/18/2015  
 Reported: 05/20/2015  
 Project Name: STALEY STATE NO. 20  
 Project Number: 30-015-40983  
 Project Location: UT M SEC. 29 -T175- R30E

 Sampling Date: 05/15/2015  
 Sampling Type: Soil  
 Sampling Condition: \*\* (See Notes)  
 Sample Received By: Jodi Henson

**Sample ID: S - 3 3 ' (H501260-18)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	112	16.0	05/18/2015	ND	400	100	400	3.92	

**Sample ID: S - 3 4 ' (H501260-19)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	80.0	16.0	05/18/2015	ND	400	100	400	3.92	

**Sample ID: S - 4 0 ' (H501260-20)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	15600	16.0	05/20/2015	ND	400	100	400	3.92	

**Sample ID: S - 4 .5 ' (H501260-21)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	05/20/2015	ND	400	100	400	3.92	

**Sample ID: S - 4 1 ' (H501260-22)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	112	16.0	05/18/2015	ND	400	100	400	3.92	

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 R T HICKS CONSULTANTS  
 MIKE STUBBLEFIELD  
 901 RIO GRANDE BLVD SUITE F-142  
 ALBUQUERQUE NM, 87104  
 Fax To: NONE

 Received: 05/18/2015  
 Reported: 05/20/2015  
 Project Name: STALEY STATE NO. 20  
 Project Number: 30-015-40983  
 Project Location: UT M SEC. 29 -T175- R30E

 Sampling Date: 05/15/2015  
 Sampling Type: Soil  
 Sampling Condition: \*\* (See Notes)  
 Sample Received By: Jodi Henson

**Sample ID: S - 4 2' (H501260-23)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	80.0	16.0	05/18/2015	ND	400	100	400	3.92	

**Sample ID: S - 4 3' (H501260-24)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	05/18/2015	ND	400	100	400	3.92	

**Sample ID: S - 4 4' (H501260-25)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	05/18/2015	ND	400	100	400	3.92	

**Sample ID: S - 5 0' (H501260-26)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	18800	16.0	05/20/2015	ND	400	100	400	3.92	

**Sample ID: S - 5 .5' (H501260-27)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	272	16.0	05/20/2015	ND	400	100	400	3.92	

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

R T HICKS CONSULTANTS  
 MIKE STUBBLEFIELD  
 901 RIO GRANDE BLVD SUITE F-142  
 ALBUQUERQUE NM, 87104  
 Fax To: NONE

Received: 05/18/2015  
 Reported: 05/20/2015  
 Project Name: STALEY STATE NO. 20  
 Project Number: 30-015-40983  
 Project Location: UT M SEC. 29 -T175- R30E

Sampling Date: 05/15/2015  
 Sampling Type: Soil  
 Sampling Condition: \*\* (See Notes)  
 Sample Received By: Jodi Henson

**Sample ID: S - 5 1 ' (H501260-28)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	672	16.0	05/18/2015	ND	400	100	400	3.92	

**Sample ID: S - 5 2 ' (H501260-29)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	05/18/2015	ND	400	100	400	3.92	

**Sample ID: S - 5 3 ' (H501260-30)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	80.0	16.0	05/18/2015	ND	400	100	400	3.92	

**Sample ID: S - 5 4 ' (H501260-31)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	80.0	16.0	05/18/2015	ND	400	100	400	3.92	

**Sample ID: S - 6 0 ' (H501260-32)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16600	16.0	05/20/2015	ND	400	100	400	3.92	

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 R T HICKS CONSULTANTS  
 MIKE STUBBLEFIELD  
 901 RIO GRANDE BLVD SUITE F-142  
 ALBUQUERQUE NM, 87104  
 Fax To: NONE

 Received: 05/18/2015  
 Reported: 05/20/2015  
 Project Name: STALEY STATE NO. 20  
 Project Number: 30-015-40983  
 Project Location: UT M SEC. 29 -T175- R30E

 Sampling Date: 05/15/2015  
 Sampling Type: Soil  
 Sampling Condition: \*\* (See Notes)  
 Sample Received By: Jodi Henson

**Sample ID: S - 6 1 ' (H501260-33)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	160	16.0	05/18/2015	ND	400	100	400	3.92	

**Sample ID: S - 6 2 ' (H501260-34)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	128	16.0	05/18/2015	ND	400	100	400	3.92	

**Sample ID: S - 6 3 ' (H501260-35)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	112	16.0	05/18/2015	ND	400	100	400	3.92	

**Sample ID: S - 6 4 ' (H501260-36)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	128	16.0	05/18/2015	ND	400	100	400	3.92	

**Sample ID: BACKGROUND (H501260-37)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	05/18/2015	ND	400	100	400	3.92	

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 R T HICKS CONSULTANTS  
 MIKE STUBBLEFIELD  
 901 RIO GRANDE BLVD SUITE F-142  
 ALBUQUERQUE NM, 87104  
 Fax To: NONE

 Received: 05/18/2015  
 Reported: 05/20/2015  
 Project Name: STALEY STATE NO. 20  
 Project Number: 30-015-40983  
 Project Location: UT M SEC. 29 -T175- R30E

 Sampling Date: 05/15/2015  
 Sampling Type: Soil  
 Sampling Condition: \*\* (See Notes)  
 Sample Received By: Jodi Henson

**Sample ID: S - 6 .5 ' (H501260-38)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>1280</b>	16.0	05/20/2015	ND	400	100	400	3.92	

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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

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

Company Name: **AT Hicks Consultants**

Project Manager: **Mike Strublefield**

Address: **2411 South 13th Street**

City: **Artesia** State: **N.M.** Zip: **88210**

Phone #: **505-365-5034** Fax #:

Project #: **30-015-40983** Project Owner: **LRE Operating, LLC**

Project Name: **Staley State No. 20**

Project Location: **URM sec. 29-T195-R30E**

Sampler Name: **Mike Strublefield**

FOR LAB USE ONLY

**BILL TO**

P.O. #:

Company: **LRE Operating, LLC**

Attn: **Mike Barnett**

Address:

City:

State: Zip:

Phone #:

Fax #:

**ANALYSIS REQUEST**

Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX						DATE	TIME	ANALYSIS REQUEST
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :			
1	5-1 0' 3.2519950-104.20561	C 1	1	/	/	/	/	/	5/15/15	2:00P	8021 BTEX	
2	5-1 0' 5'	C 1	1	/	/	/	/	/	5/15/15	2:03P	hold	
3	5-1 1'	C 1	1	/	/	/	/	/	5/15/15	2:02P	hold	
4	5-1 2'	C 1	1	/	/	/	/	/	5/15/15	2:15P	hold	
5	5-1 3'	C 1	1	/	/	/	/	/	5/15/15	2:21P	hold	
6	5-1 4'	C 1	1	/	/	/	/	/	5/15/15	2:22P	hold	
7	5-1 10'	C 1	1	/	/	/	/	/	5/15/15	2:35P	hold	
8	5-2 0' 32.99944-104.20541	C 1	1	/	/	/	/	/	5/15/15	2:36P	hold	
9	5-2 5'	C 1	1	/	/	/	/	/	5/15/15	2:40P	hold	
10	5-2 1'	C 1	1	/	/	/	/	/	5/15/15	2:44P	hold	

Cl- added 5/20

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Relinquished By: **Mike Strublefield** Date: **5/18/15** Time: **13:03**

Received By: **Mike Barnett**

Relinquished By: **Mike Strublefield**

Received By: **Mike Barnett**

Delivered By: (Circle One)  
 Sampler - UPS - Bus - Other: **Other**

10:40e

Sample Condition  
 Cool Intact  Yes  No  
 Sample Condition  Yes  No

CHECKED BY: **[Signature]**

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

**RUSH!!!**

+ Cardinal cannot accept verbal changes. Please fax written changes to (575) 393-2326 #54

# CARDINAL LABORATORIES

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

## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

### BILL TO ANALYSIS REQUEST

Company Name: **R.T. Hicks CONSULTANTS**  
 Project Manager: **Mike Stubbfield**  
 Address: **2411 South 13th Street**  
 City: **Artesia** State: **NM** Zip: **88210**  
 Phone #: \_\_\_\_\_ Fax #: \_\_\_\_\_  
 Project #: **20-015-40983** Project Owner: **LRE Operating LLC**  
 Project Name: **Staley State No. 20**  
 Project Location: **vt. m sec. 29-T105-R30 E**  
 Sampler Name: **Mike Stubbfield**  
 P.O. #: \_\_\_\_\_  
 Company: **LRE Operating, LLC**  
 Attn: **Mike Barrett**  
 Address: \_\_\_\_\_  
 City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_  
 Phone #: \_\_\_\_\_  
 Fax #: \_\_\_\_\_

Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX							DATE	TIME	ANALYSIS REQUEST							
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	ACID/BASE:				ICE / COOL	OTHER :					
<b>HS01360</b>																				
11	S-2 2'	C		/	/	/	/	/	/	/	5/15/15	2:53P								
12	S-2 3'	C		/	/	/	/	/	/	/	5/15/15	3:03P								
13	S-2 4'	C		/	/	/	/	/	/	/	5/15/15	3:14P								
14	S-3 0' 32.94993-104.20522	C		/	/	/	/	/	/	/	5/15/15	3:19P								
15	S-3 5'	C		/	/	/	/	/	/	/	5/15/15	3:23P								
16	S-3 1'	C		/	/	/	/	/	/	/	5/15/15	3:30P								
17	S-3 2'	C		/	/	/	/	/	/	/	5/15/15	3:35P								
18	S-3 3'	C		/	/	/	/	/	/	/	5/15/15	3:42P								
19	S-3 4'	C		/	/	/	/	/	/	/	5/15/15	3:46P								
20	S-3 6' 32.94993-104.20522	C		/	/	/	/	/	/	/	5/15/15									

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Relinquished By: **Mike Stubbfield**  
 Date: **5/15/15**  
 Time: \_\_\_\_\_  
 Received By: **[Signature]**  
 Date: **5/15/15**  
 Time: **13:03**

Delivered By: (Circle One) **Other**  
 Sampler - UPS - Bus - **Other**  
 Sample Condition:  Cool  Intact  
 Yes  No  
 Yes  No  
 CHECKED BY: **[Signature]**  
 Phone Result:  Yes  No  Add'l Phone #: \_\_\_\_\_  
 Fax Result:  Yes  No  Add'l Fax #: \_\_\_\_\_  
 REMARKS:

8015 BTEX  
 Total Chlorides  
 Cl- added 5/20  
**PUSH!**

## 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: R.I. Hicks Consulting  
 Project Manager: Mike Stobbe  
 Address: 2411 South 1st Street  
 City: Altoona State: NM Zip: 88210  
 Phone #: 505-365-5034 Fax #: \_\_\_\_\_  
 Project #: 30-015-40983 Project Owner: \_\_\_\_\_  
 Project Name: Staley Strat No. 20  
 Project Location: vt. m sec. 29. Tms R36E  
 Sampler Name: Mike Stobbe  
 P.O. #: \_\_\_\_\_  
 Company: LRE Operator, LLC  
 Attn: Mike Barrett  
 Address: \_\_\_\_\_  
 City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_  
 Phone #: \_\_\_\_\_ Fax #: \_\_\_\_\_

Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX						DATE	TIME	ANALYSIS	REMARKS	
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :					
<u>H501860</u>	<u>21</u>	<u>C</u>		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>5/15/15</u>	<u>4:45P</u>	<u>8021 BTEV</u>						
	<u>22</u>	<u>C</u>		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>5/15/15</u>	<u>4:47P</u>	<u>Total Chlorides</u>	<u>hold</u>					
	<u>23</u>	<u>C</u>		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>5/15/15</u>	<u>4:51P</u>							
	<u>24</u>	<u>C</u>		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>5/15/15</u>	<u>4:53P</u>							
	<u>25</u>	<u>C</u>		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>5/15/15</u>	<u>4:59P</u>							
	<u>26</u>	<u>C</u>		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>5/15/15</u>	<u>5:02P</u>							
	<u>27</u>	<u>C</u>		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>5/15/15</u>	<u>5:18P</u>							
	<u>28</u>	<u>C</u>		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>5/15/15</u>	<u>5:21P</u>							
	<u>29</u>	<u>C</u>		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>5/15/15</u>	<u>5:24P</u>							
	<u>30</u>	<u>C</u>		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>5/15/15</u>	<u>5:28P</u>							

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Relinquished By: Mike Stobbe Date: 5/18/15 Time: 13:03  
 Received By: [Signature]  
 Delivered By: (Circle One) UPS  
 Sampler - UPS - Bus - Other  
 Sample Condition: Cool  Intact   
 Checked By: [Signature]  
 Phone Result:  Yes  No  No  No  
 Add'l Phone #: \_\_\_\_\_  
 Add'l Fax #: \_\_\_\_\_  
 REMARKS: RUH

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





May 27, 2015

MIKE STUBBLEFIELD

R T HICKS CONSULTANTS

901 RIO GRANDE BLVD SUITE F-142

ALBUQUERQUE, NM 87104

RE: STALEY STATE NO. 20

Enclosed are the results of analyses for samples received by the laboratory on 05/26/15 16:20.

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,

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

Celey D. Keene

Lab Director/Quality Manager

**Analytical Results For:**

 R T HICKS CONSULTANTS  
 MIKE STUBBLEFIELD  
 901 RIO GRANDE BLVD SUITE F-142  
 ALBUQUERQUE NM, 87104  
 Fax To: NONE

Received:	05/26/2015	Sampling Date:	05/26/2015
Reported:	05/27/2015	Sampling Type:	Soil
Project Name:	STALEY STATE NO. 20	Sampling Condition:	** (See Notes)
Project Number:	30-015-40983	Sample Received By:	Jodi Henson
Project Location:	UT M SEC. 29 -T17S- R30E		

**Sample ID: S-7 STOCKPILED MATERIAL (H501309-01)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>2720</b>	16.0	05/27/2015	ND	416	104	400	3.92	

Cardinal Laboratories

\*=Accredited Analyte

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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





May 28, 2015

MIKE STUBBLEFIELD

R T HICKS CONSULTANTS

901 RIO GRANDE BLVD SUITE F-142

ALBUQUERQUE, NM 87104

RE: STALEY STATE NO. 20

Enclosed are the results of analyses for samples received by the laboratory on 05/27/15 16:00.

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,

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

Celey D. Keene

Lab Director/Quality Manager

**Analytical Results For:**

 R T HICKS CONSULTANTS  
 MIKE STUBBLEFIELD  
 901 RIO GRANDE BLVD SUITE F-142  
 ALBUQUERQUE NM, 87104  
 Fax To: NONE

Received:	05/27/2015	Sampling Date:	05/27/2015
Reported:	05/28/2015	Sampling Type:	Soil
Project Name:	STALEY STATE NO. 20	Sampling Condition:	** (See Notes)
Project Number:	30-015-40983	Sample Received By:	Jodi Henson
Project Location:	UT M SEC. 29 -T17S- R30E		

**Sample ID: S-8 BOTTOM (H501329-01)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>480</b>	16.0	05/28/2015	ND	416	104	400	0.00	

**Sample ID: S-9 WESTSIDE WALL (H501329-02)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>11600</b>	16.0	05/28/2015	ND	416	104	400	0.00	

**Sample ID: S-10 NORTH SIDEWALL (H501329-03)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>7040</b>	16.0	05/28/2015	ND	416	104	400	0.00	

**Sample ID: S-11 EAST SIDEWALL (H501329-04)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>8800</b>	16.0	05/28/2015	ND	416	104	400	0.00	

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 R T HICKS CONSULTANTS  
 MIKE STUBBLEFIELD  
 901 RIO GRANDE BLVD SUITE F-142  
 ALBUQUERQUE NM, 87104  
 Fax To: NONE

Received:	05/27/2015	Sampling Date:	05/27/2015
Reported:	05/28/2015	Sampling Type:	Soil
Project Name:	STALEY STATE NO. 20	Sampling Condition:	** (See Notes)
Project Number:	30-015-40983	Sample Received By:	Jodi Henson
Project Location:	UT M SEC. 29 -T17S- R30E		

**Sample ID: S-12 SOUTH SIDEWALL (H501329-05)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>48.0</b>	16.0	05/28/2015	ND	416	104	400	0.00	

Cardinal Laboratories

\*=Accredited Analyte

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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

### BILL TO

### ANALYSIS REQUEST

Company Name: R.T. Hicks Consultants  
 Project Manager: Mike Stubbelfield  
 Address: 2411 South 13th Street  
 City: Artesia State: NM, Zip: 88218  
 Phone #: 505-365-5034 Fax #: \_\_\_\_\_  
 Project #: 30-015-40983 Project Owner: LRP operating  
 Project Name: Stacy State No. 20  
 Project Location: VT M sec 29. T19S R30E  
 Sampler Name: Mike Stubbelfield  
 P.O. #: \_\_\_\_\_  
 Company: LRP operating, LLC  
 Attn: Mike Barrett  
 Address: \_\_\_\_\_  
 City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_  
 Phone #: \_\_\_\_\_ Fax #: \_\_\_\_\_

Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX							DATE	TIME	ANALYSIS
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	ACID/BASE:			
<u>H501329</u>	<u>1-5-8 bottom</u>	<u>C</u>	<u>1</u>								<u>11/21/15</u>	<u>11:06A</u>	<u>Total chloride</u>
	<u>2-5-9 west side wall</u>	<u>C</u>	<u>1</u>								<u>11/21/15</u>	<u>11:15A</u>	
	<u>3-5-10 north side wall</u>	<u>C</u>	<u>1</u>								<u>11/21/15</u>	<u>11:21A</u>	
	<u>4-5-11 east side wall</u>	<u>C</u>	<u>1</u>								<u>11/22/15</u>	<u>11:32A</u>	
	<u>5-12 south side wall</u>	<u>C</u>	<u>1</u>								<u>11/22/15</u>	<u>11:40A</u>	

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Relinquished By: Mike Stubbelfield  
 Date: 11/21/15  
 Time: \_\_\_\_\_  
 Received By: [Signature]  
 Date: 11/21/15  
 Time: 10:00  
 REMARKS: RUSH...

Delivered By: (Circle One)  
 Sampler - UPS - Bus - Other: Other  
 Sample Condition  
 Cool  Intact   
 Yes  Yes   
 No  No   
 CHECKED BY: [Signature]  
 Phone Result:  Yes  No  Add'l Phone #: \_\_\_\_\_  
 Fax Result:  Yes  No  Add'l Fax #: \_\_\_\_\_

† Cardinal cannot accept verbal changes. Please fax written changes to (575) 393-2326  
RUSH...  
RUSH11



June 01, 2015

MIKE STUBBLEFIELD

R T HICKS CONSULTANTS

901 RIO GRANDE BLVD SUITE F-142

ALBUQUERQUE, NM 87104

RE: STALEY STATE NO. 20

Enclosed are the results of analyses for samples received by the laboratory on 05/29/15 16:35.

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).

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Method EPA 524.2	Total Trihalomethanes (TTHM)
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Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene".

Celey D. Keene

Lab Director/Quality Manager

**Analytical Results For:**

 R T HICKS CONSULTANTS  
 MIKE STUBBLEFIELD  
 901 RIO GRANDE BLVD SUITE F-142  
 ALBUQUERQUE NM, 87104  
 Fax To: NONE

Received:	05/29/2015	Sampling Date:	05/29/2015
Reported:	06/01/2015	Sampling Type:	Soil
Project Name:	STALEY STATE NO. 20	Sampling Condition:	** (See Notes)
Project Number:	30-015-40983	Sample Received By:	Celey D. Keene
Project Location:	UT M SEC. 29 -T17S- R28E		

**Sample ID: S-13 WESTSIDE WALL (H501386-01)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>48.0</b>	16.0	06/01/2015	ND	416	104	400	0.00	

**Sample ID: S-14 NORTHSIDE WALL (H501386-02)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>64.0</b>	16.0	06/01/2015	ND	416	104	400	0.00	

**Sample ID: S-15 EASTSIDE WALL (H501386-03)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>224</b>	16.0	06/01/2015	ND	416	104	400	0.00	

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

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- RPD Relative Percent Difference
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- \*\*\* Insufficient time to reach temperature.
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Samples reported on an as received basis (wet) unless otherwise noted on report



---

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

Company Name: <b>R.T. Hicks Consulting</b> Project Manager: <b>Mike Stuydfield</b> Address: <b>2411 South 13th Street</b> City: <b>Albion</b> State: <b>NM</b> Zip: <b>88210</b> Phone #: <b>505-365-5034</b> Fax #: <b>30-015-40983</b> Project #: <b>30-015-40983</b> Project Owner: <b>LRE Operating LLC</b> Project Name: <b>Stacey State 20</b> Project Location: <b>U1 Hwy sec 29-T195-R28E</b> Sampler Name: <b>Mike Stuydfield</b>		<b>BILL TO</b> P.O. #: Company: <b>LRE Operating LLC</b> Attn: <b>Mike Burnett</b> Address: City: State: Zip:	
Lab I.D.: <b>H501386</b> Sample I.D.:		MATRIX (G)RAB OR (C)OMP. # CONTAINERS GROUNDWATER WASTEWATER SOIL OIL SLUDGE OTHER : ACID/BASE: ICE / COOL OTHER :	
FOR LAB USE ONLY DATE TIME 5/29/15 11:19A 5/29/15 11:23A 5/29/15 11:31A		ANALYSIS REQUEST <b>Total Chlorides</b>	

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 interruption, 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.

Relinquished By: **Mike Stuydfield** Date: **5/29/15** Time: **4:35**  
 Received By: **Chad Greene**

Delivered By: (Circle One)  Bus  Other  
 Sampler - UPS - Bus  Other  
 Sample Condition: Cool  Intact  Yes  No  
 Checked By: **WCB**

REMARKS: **Rush !!**

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