

Republic Backhoe Service, LLC

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District I

1625 N. French Drive

Hobbs, NM 88240

Subject: Site Assessment/Soil Remediation Work Plan for Lucy Federal #2, Lea County, New Mexico.

On behalf of Read and Stevens, Inc. Republic Backhoe Service, LLC. (RBS) prepared this Release Notification, Site Assessment / Work Plan, and Closure Report associated with Lucy Federal #2. The site is located in Unit L, Section 14, Township 20 South, Range 24 East, NMNM78273, Lea County, New Mexico, on private land. Attachment #1 and #2 illustrates the vicinity and location of the site. Eolian and Piedmont deposits from the Holocene to the Pleistocene age make up the subsurface of the area (mrdata.usgs.gov, Table 7). The surface is comprised of Pyote and Maljamar soils, which consist of light brown fine sand. In places, it is loamy fine sand. The subsoil is fine loam about 18 inches thick. It is reddish yellow in the upper part and light brown in the lower part. The substratum, at a depth of 48 to 60 inches, is pink fine sandy loam. Indurated caliche is found at depths greater than 4 feet (Soil Survey Lea County 1974). The site is not within a 100-year floodplain (FEMA FIRMetMap, Attachment #5). The surface is privately owned by Kenneth Smith.

Table 1. below, summarizes information regarding the release.

Nature and Volume of Release

Material(s) Released (Select all that apply and attach calculations or specific justification for the volumes provided below)		
<input type="checkbox"/> Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
<input checked="" type="checkbox"/> Produced Water	Volume Released (bbls) 100 bbls	Volume Recovered (bbls) 4 bbls
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	<input type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> Condensate	Volume Released (bbls)	Volume Recovered (bbls)
<input type="checkbox"/> Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
<input type="checkbox"/> Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)
Cause of Release Lightning struck by the water tanks and caused an explosion and fire.		

Regulatory Guidelines

New Mexico Oil Conservation Division (NMOCD) regulates surface impacts from unauthorized releases of crude oil, gases, produced water, condensate or other oil field waste in accordance with 19.15.29 of the New Mexico Administrative Code (NMAC). In accordance to NMAC 19.15.29 the Lucy Federal #2 is assessed by the following guidelines: Table 2 below.

Site Assessment/Characterization

This information must be provided to the appropriate district office no later than 90 days after the release discovery date.

What is the shallowest depth to groundwater beneath the area affected by the release?	<u>185</u> (ft bgs)
Did this release impact groundwater or surface water?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a wetland?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying a subsurface mine?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying an unstable area such as karst geology?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within a 100-year floodplain?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Did the release impact areas not on an exploration, development, production, or storage site?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

Groundwater Depth

A search of a groundwater database maintained by The New Mexico Office of the State Engineer (NMOSE) was conducted to determine the average depth to groundwater within 2,000 meters (Attachment #4). The search was inconclusive. Depth to ground water is 185' bgs (Information obtained from private landowner Kenneth Smith).

Wellhead Protection Area

A search of a groundwater database maintained by NMOSE identified registered wells within 2,000 meters of the release at the site (Attachment #3). The search determined that the nearest registered water well is 1,050'.

Closure Criteria

According to ground water depth findings and distance of nearest wells, the following table explains the NMOCD permissible levels for the site: Table 3 below.

Table I Closure Criteria for Soils Impacted by a Release			
Minimum depth below any point within the horizontal boundary of the release to ground water less than 10,000 mg/l TDS	Constituent	Method*	Limit**
≤ 50 feet	Chloride***	EPA 300.0 or SM4500 Cl B	600 mg/kg
	TPH (GRO+DRO+MRO)	EPA SW-846 Method 8015M	100 mg/kg
	BTEX	EPA SW-846 Method 8021B or 8260B	50 mg/kg
	Benzene	EPA SW-846 Method 8021B or 8260B	10 mg/kg
51 feet-100 feet	Chloride***	EPA 300.0 or SM4500 Cl B	10,000 mg/kg
	TPH (GRO+DRO+MRO)	EPA SW-846 Method 8015M	2,500 mg/kg
	GRO+DRO	EPA SW-846 Method 8015M	1,000 mg/kg
	BTEX	EPA SW-846 Method 8021B or 8260B	50 mg/kg
	Benzene	EPA SW-846 Method 8021B or 8260B	10 mg/kg
>100 feet	Chloride***	EPA 300.0 or SM4500 Cl B	20,000 mg/kg
	TPH (GRO+DRO+MRO)	EPA SW-846 Method 8015M	2,500 mg/kg
	GRO+DRO	EPA SW-846 Method 8015M	1,000 mg/kg
	BTEX	EPA SW-846 Method 8021B or 8260B	50 mg/kg
	Benzene	EPA SW-846 Method 8021B or 8260B	10 mg/kg

*Or other test methods approved by the division.

**Numerical limits or natural background level, whichever is greater.

***This applies to releases of produced water or other fluids, which may contain chloride.

[19.15.29.12 NMAC - N, 8/14/2018]

Site Assessment/Delineation

On October 02, 2019, RBS went to the location to delineate the site. The release poses no threat to ground water as laboratory results concluded that no TPH/Benzene/BTEX/Chloride concentrations were found at 4’ (bgs). Furthermore, soil samples collected and analyzed at 5’ (bgs) show constituent level significantly lower than NMOCD permissible levels. A backhoe was used to dig a total of 23 trenches at the site. Samples were collected at 2 feet (bgs), 3 feet (bgs), 4 feet (bgs), 6 feet (bgs), 8 feet (bgs), 10 feet (bgs), and 12 feet (bgs). The following table summarizes the laboratory analytical results from the soil samples collected during the site assessment. Table 4 below.

**Site Assessment Soil Samples:
Laboratory Analytical Result
(Table 4)**

Laboratory Analysis (Table 4)

Name	Date	Depth	Chloride	TPH	BTEX	Lithology	Soil	Pad/Pasture	GPS
A-2	10/08/2019	2	3160	--	--	Sandy	ML	Pad	32.570980
A-4	10/08/2019	4	128	--	--	Loam	CL		-103.538071
A-6	10/08/2019	6	96	--	--	Caliche	GM		
A-8	10/08/2019	8	64	--	--	Caliche	GM		
A-10	10/08/2019	10	32	--	--	Caliche	GM		
B-2	10/08/2019	2	2560	--	--	Sandy	ML	Pad	32.571018
B3-3	10/21/2019	3	528	--	--	Loam	CL		-103.538281
B-4	10/08/2019	4	48	--	--	Caliche	GM		
B-6	10/08/2019	6	48	--	--	Caliche	GM		
B-8	10/08/2019	8	96	--	--	Caliche	GM		
B-10	10/08/2019	10	<16	--	--	Caliche	GM		
BB-2	10/17/2019	2	2880	<10	<0.30	Sandy	ML	Pad	32.571018
BB-4	10/17/2019	4	320	<10	<0.30	Loam	CL		-103.538281
BB-5	10/17/2019	5	80	<10	<0.30	Caliche	GM		
BB-10	10/17/2019	10	112	<10	<0.30	Caliche	GM		
C-2	10/08/2019	2	4640	--	--	Sandy	ML	Pad	32.571018
C-4	10/08/2019	4	440	--	--	Loam	CL		-103.538522
C-6	10/08/2019	6	64	--	--	Caliche	GM		
C-8	10/08/2019	8	32	--	--	Caliche	GM		
C-10	10/08/2019	10	16	--	--	Caliche	GM		
CC-2	10/17/2019	2	208	<10	<0.30	Sandy	ML	Pad	32.571018
CC-4	10/17/2019	4	16	<10	<0.30	Loam	CL		-103.538522
CC-5	10/17/2019	5	16	<10	<0.30	Caliche	GM		
CC-10	10/17/2019	10	32	<10	<0.30	Caliche	GM		
D-2	10/08/2019	2	3320	--	--	Sandy	ML	Pad	32.571081
D-4	10/08/2019	4	496	--	--	Loam	CL		-103.538403
D-6	10/08/2019	6	160	--	--	Caliche	GM		
D-8	10/08/2019	8	272	--	--	Caliche	GM		
D-10	10/08/2019	10	384	--	--	Caliche	GM		
DD-2	10/17/2019	2	1120	<10	<0.30	Sandy	ML	Pad	32.571081
DD-4	10/17/2019	4	560	<10	<0.30	Loam	CL		-103.538403
DD-5	10/17/2019	5	544	<10	<0.30	Caliche	GM		
DD-10	10/17/2019	10	208	<10	<0.30	Caliche	GM		
E-2	10/08/2019	2	4080	--	--	Sandy	ML	Pad	32.571021
E-4	10/08/2019	4	720	--	--	Loam	CL		-103.538135
E-6	10/08/2019	6	160	--	--	Caliche	GM		
E-8	10/08/2019	8	16	--	--	Caliche	GM		
E-10	10/08/2019	10	32	--	--	Caliche	GM		
F-2	10/08/2019	2	4200	--	--	Sandy	ML	Pasture	32.570950
F-4	10/08/2019	4	1010	--	--	Loam	CL		-103.538260
F-6	10/08/2019	6	1310	--	--	Caliche	GM		
F-8	10/08/2019	8	928	--	--	Caliche	GM		
F-10	10/08/2019	10	64	--	--	Caliche	GM		
G-2	10/08/2019	2	1920	--	--	Sandy	ML	Pad	32.570979
G-4	10/08/2019	4	208	--	--	Loam	CL		-103.538460
G-6	10/08/2019	6	32	--	--	Caliche	GM		

Name	Date	Depth	Chloride	TPH	BTEX	Lithology	Soil	Pad/Pasture	GPS
G-8	10/08/2019	8	16	--	--	Caliche	GM		
G-10	10/08/2019	10	16	--	--	Caliche	GM		
H-2	10/14/2019	2	16	--	--	Sandy	ML	Pasture	32.570967
H-4	10/14/2019	4	<16	--	--	Loam	CL		-103.538360
H-6	10/14/2019	6	32	--	--	Caliche	GM		
H-8	10/14/2019	8	272	--	--	Caliche	GM		
H-10	10/14/2019	10	64	--	--	Caliche	GM		
I-2	10/14/2019	2	1400	--	--	Sandy	ML	Pasture	32.570889
I-3	10/21/2019	3	480	--	--	Loam	CL		-103.538508
I-4	10/14/2019	4	48	--	--	Loam	CL		
I-6	10/14/2019	6	96	--	--	Caliche	GM		
I-8	10/14/2019	8	16	--	--	Caliche	GM		
I-10	10/14/2019	10	64	--	--	Caliche	GM		
J-2	10/14/2019	2	320	--	--	Sandy	ML	Pad	32.571033
J-4	10/14/2019	4	176	--	--	Loam	CL		-103.538595
J-6	10/14/2019	6	208	--	--	Caliche	GM		
J-8	10/14/2019	8	32	--	--	Caliche	GM		
J-10	10/14/2019	10	16	--	--	Caliche	GM		
K-2	10/14/2019	2	96	--	--	Sandy	ML	Pad	32.571251
K-4	10/14/2019	4	16	--	--	Loam	CL		-103.538897
K-6	10/14/2019	6	161	--	--	Caliche	GM		
K-8	10/14/2019	8	304	--	--	Caliche	GM		
K-10	10/14/2019	10	32	--	--	Caliche	GM		
L-2	10/14/2019	2	32	--	--	Sandy	ML	Pasture	32.571302
L-4	10/14/2019	4	128	--	--	Loam	CL		-103.538947
L-6	10/14/2019	6	16	--	--	Caliche	GM		
L-8	10/14/2019	8	<16	--	--	Caliche	GM		
L-10	10/14/2019	10	<16	--	--	Caliche	GM		
M-2	10/14/2019	2	368	--	--	Sandy	ML	Pad	32.571406
M-4	10/14/2019	4	16	--	--	Loam	CL		-103.538907
M-6	10/14/2019	6	48	--	--	Caliche	GM		
M-8	10/14/2019	8	32	--	--	Caliche	GM		
M-10	10/14/2019	10	32	--	--	Caliche	GM		
M-12	10/14/2019	12	48	--	--	Caliche	GM		
N1-2	10/14/2019	2	1960	--	--	Sandy	ML	Pasture	32.571268
N1-3	10/21/2019	3	480	--	--	Loam	CL		-103.539008
N1-4	10/14/2019	4	16	--	--	Loam	CL		
N1-6	10/14/2019	6	64	--	--	Caliche	GM		
N1-8	10/14/2019	8	32	--	--	Caliche	GM		
N1-10	10/14/2019	10	16	--	--	Caliche	GM		
N1-12	10/14/2019	12	16	--	--	Caliche	GM		
N2-2	10/14/2019	2	1600	--	--	Sandy	ML	Pasture	32.571383
N2-3	10/21/2019	3	520	--	--	Loam	CL		-103.539020
N2-4	10/14/2019	4	16	--	--	Loam	CL		
N2-6	10/14/2019	6	16	--	--	Caliche	GM		
N2-8	10/14/2019	8	32	--	--	Caliche	GM		
N2-10	10/14/2019	10	32	--	--	Caliche	GM		
N2-12	10/14/2019	12	16	--	--	Caliche	GM		
O-2	10/14/2019	2	<16	--	--	Sandy	ML	Pad	32.571062

Name	Date	Depth	Chloride	TPH	BTEX	Lithology	Soil	Pad/Pasture	GPS
O-4	10/14/2019	4	48	--	--	Loam	CL		-103.538567
O-6	10/14/2019	6	48	--	--	Caliche	GM		
O-8	10/14/2019	8	48	--	--	Caliche	GM		
O-10	10/14/2019	10	48	--	--	Caliche	GM		
O-12	10/14/2019	12	48	--	--	Caliche	GM		
P-2	10/14/2019	2	<16	--	--	Sandy	ML	Pad	32.571070
P-4	10/14/2019	4	48	--	--	Loam	CL		-103.538313
P-6	10/14/2019	6	32	--	--	Caliche	GM		
P-8	10/14/2019	8	48	--	--	Caliche	GM		
P-10	10/14/2019	10	48	--	--	Caliche	GM		
P-12	10/14/2019	12	48	--	--	Caliche	GM		
Q-2	10/14/2019	2	<16	--	--	Sandy	ML	Pad	32.571069
Q-4	10/14/2019	4	64	--	--	Loam	CL		-103.538074
Q-6	10/14/2019	6	48	--	--	Caliche	GM		
Q-8	10/14/2019	8	32	--	--	Caliche	GM		
Q-10	10/14/2019	10	48	--	--	Caliche	GM		
Q-12	10/14/2019	12	48	--	--	Caliche	GM		
R-2	10/14/2019	2	16	--	--	Sandy	ML	Pasture	32.571027
R-4	10/14/2019	4	48	--	--	Loam	CL		-103.537980
R-6	10/14/2019	6	32	--	--	Caliche	GM		
R-8	10/14/2019	8	48	--	--	Caliche	GM		
R-10	10/14/2019	10	48	--	--	Caliche	GM		
R-12	10/14/2019	12	48	--	--	Caliche	GM		
S-1	10/14/2019	1	16	--	--	Sandy	ML	Pasture	32.570891
S-4	10/14/2019	4	48	--	--	Loam	CL		-103.538242
S-6	10/14/2019	6	32	--	--	Caliche	GM		
S-8	10/14/2019	8	48	--	--	Caliche	GM		
S-10	10/14/2019	10	48	--	--	Caliche	GM		
S-12	10/14/2019	12	32	--	--	Caliche	GM		

**Closure Soil Samples:
Laboratory Analytical Results
(Table 5)**

Closure Samples:

Name	Date	Depth	Chloride	TPH	BTEX	Lithology	Soil	Pad/Pasture	GPS
N3-2	11/22/2019	2	352	--	--	Sandy	ML	Pasture	32.571331
N3-5	11/22/2019	5	784	--	--	Loam	CL		-103.538997
N3-10	11/22/2019	10	960	--	--	Caliche	GM		
N4-2	11/22/2019	2	176	--	--	Sandy	ML	Pasture	32.571335
N4-5	11/22/2019	5	96	--	--	Loam	CL		-103.539046
N4-10	11/22/2019	10	240	--	--	Caliche	GM		
1A-2	11/25/2019	2	16	--	--	Sandy	ML	Pasture	32.570890
1A-5	11/25/2019	5	80	--	--	Loam	CL		-103.538297
1A-10	11/25/2019	10	64	--	--	Caliche	GM		
2A-2	11/25/2019	2	432	--	--	Sandy	ML	Pasture	32.570942
2A-5	11/25/2019	5	96	--	--	Loam	CL		-103.538322
2A-10	11/25/2019	10	80	--	--	Caliche	GM		
3A-2	11/25/2019	2	80	--	--	Sandy	ML	Pasture	32.570905
3A-5	11/25/2019	5	992	--	--	Loam	CL		-103.538461
3A-10	11/25/2019	10	<16	--	--	Caliche	GM		
4A-3	11/25/2019	3	352	--	--	Sandy	ML	Pasture	32.570958
4A-5	11/25/2019	5	768	--	--	Loam	CL		-103.538536
4A-10	11/25/2019	10	16	--	--	Caliche	GM		
5A-2	11/25/2019	2	80	--	--	Sandy	ML	Pasture	32.570907
5A-5	11/25/2019	5	64	--	--	Loam	CL		-103.538559
5A-10	11/25/2019	10	<16	--	--	Caliche	GM		
6A-2	11/25/2019	2	48	--	--	Sandy	ML	Pasture	32.570961
6A-5	11/25/2019	5	48	--	--	Loam	CL		-103.538625
6A-10	11/25/2019	10	64	--	--	Caliche	GM		
7A-2	11/25/2019	2	112	--	--	Sandy	ML	Pad	32.571146
7A-5	11/25/2019	5	16	--	--	Loam	CL		-103.538752
7A-10	11/25/2019	10	<16	--	--	Caliche	GM		
8A-4	11/25/2019	4	592	--	--	Loam	CL	Pasture	32.570858
8A-5	11/25/2019	5	352	--	--	Loam	CL		-103.538496
8A-10	11/25/2019	10	16	--	--	Caliche	GM		
9A-2	11/25/2019	2	16	--	--	Sandy	ML	Pasture	32.570851
9A-5	11/25/2019	5	16	--	--	Loam	CL		-103.538251
9A-10	11/25/2019	10	16	--	--	Caliche	GM		
10A-2	11/25/2019	2	80	--	--	Sandy	ML	Pasture	32.570892
10A-5	11/25/2019	5	<16	--	--	Loam	CL		-103.538193
10A-10	11/25/2019	10	720	--	--	Caliche	GM		
11A-2	11/25/2019	2	192	--	--	Sandy	ML	Pasture	32.570934
11A-5	11/25/2019	5	320	--	--	Loam	CL		-103.538115
11A-10	11/25/2019	10	304	--	--	Caliche	GM		
12A-2	11/25/2019	2	<16	--	--	Sandy	ML	Pasture	32.570942
12A-5	11/25/2019	5	176	--	--	Loam	CL		-103.537981
12A-10	11/25/2019	10	192	--	--	Caliche	GM		
13A-2	11/25/2019	2	304	--	--	Sandy	ML	Pasture	32.570989
13A-5	11/25/2019	5	272	--	--	Loam	CL		-103.537968
13A-10	11/25/2019	10	224	--	--	Caliche	GM		

Name	Date	Depth	Chloride	TPH	BTEX	Lithology	Soil	Pad/Pasture	GPS
14A-2	11/25/2019	2	304	--	--	Sandy	ML	Pasture	32.571071
14A-5	11/25/2019	5	336	--	--	Loam	CL		-103.537962
14A-10	11/25/2019	10	32	--	--	Caliche	GM		
15A-2	11/25/2019	2	16	--	--	Sandy	ML	Pasture	32.571099
15A-5	11/25/2019	5	<16	--	--	Loam	CL		-103.538004
15A-10	11/25/2019	10	<16	--	--	Caliche	GM		
16A-3	11/25/2019	3	48	--	--	Loam	CL	Pasture	32.570951
16A-5	11/25/2019	5	496	--	--	Loam	CL		-103.538035
16A-10	11/25/2019	10	256	--	--	Caliche	GM		
17A-4	11/25/2019	4	320	--	--	Loam	CL	Pasture	32.570945
17A-5	11/25/2019	5	848	--	--	Loam	CL		-103.538428
17A-10	11/25/2019	10	2720	--	--	Caliche	GM		

Soil Description (Table 6)

Description	USCS	Porosity [-]			Reference
		min	max	Specific value	
Well graded gravel, sandy gravel, with little or no fines	GW	0.21	0.32		[1].
Poorly graded gravel, sandy gravel, with little or no fines	GP	0.21	0.32		[1].
Silty gravels, silty sandy gravels	GM	0.15	0.22		[1].
Gravel	(GW-GP)	0.23	0.38		[2].
Clayey gravels, clayey sandy gravels	GC	0.17	0.27		[1].
Glacial till, very mixed grained	(GC)	-	-	0.20	[4 cited in 5]
Well graded sands, gravelly sands, with little or no fines	SW	0.22	0.42		[1], [2].
Coarse sand	(SW)	0.26	0.43		[2].
Fine sand	(SW)	0.29	0.46		[2].
Poorly graded sands, gravelly sands, with little or no fines	SP	0.23	0.43		[1], [2].
Silty sands	SM	0.25	0.49		[1], [2].
Clayey sands	SC	0.15	0.37		[1].
Inorganic silts, silty or clayey fine sands, with slight plasticity	ML	0.21	0.56		[1].
Uniform inorganic silt	(ML)	0.29	0.52		[3].
Inorganic clays, silty clays, sandy clays of low plasticity	CL	0.29	0.41		[1].
Organic silts and organic silty clays of low plasticity	OL	0.42	0.68		[1], [3].
Silty or sandy clay	(CL-OL)	0.20	0.64		[3].
Inorganic silts of high plasticity	MH	0.53	0.68		[1].
Inorganic clays of high plasticity	CH	0.39	0.59		[1].
Soft glacial clay	-	-	-	0.55	[4 cited in 5]
Stiff glacial clay	-	-	-	0.38	[4 cited in 5]
Organic clays of high plasticity	OH	0.50	0.75		[1], [3].
Soft slightly organic clay	(OH-OL)	-	-	0.66	[4] cited in [5]
Peat and other highly organic soils	Pt	-	-		[4 cited in 5]
soft very organic clay	(Pt)	-	-	0.75	[4] cited in [5]

REFERENCES

1. Swiss Standard SN 670 010b, Characteristic Coefficients of soils, Association of Swiss Road and Traffic Engineers
2. Das, B., Advanced Soil Mechanics, Taylor & Francis, London & New York, 2008.
3. Hough, B., Basic soil engineering, Ronald Press Company, New York, 1969.
4. Terzaghi, K., Peck, R., and Mesri, G., Soil Mechanics in Engineering Practice, Wiley, New York, 1996.
5. Obrzud R. & Truty, A. THE HARDENING SOIL MODEL - A PRACTICAL GUIDEBOOK Z Soil.PC 100701 report, revised 31.01.2012

Citation :

Geotechdata.info, Soil void ratio, <http://geotechdata.info/parameter/soil-void-ratio.html> (as of November 16, 2013).

Subsurface Geology (Table 7)

Scientific data near [32.57192,-103.53942]

Search area extends approximately 1.0 km east-west and 1.0 km north-south.

Narrower

Wider

JSON

XML

Geographic context

Counties, states, countries, continents, or oceans

Lea	county
New Mexico	state
United States	country
North America	continent
Land	continent

Map quadrangles, from USGS or Canadian NTS

Lea	quadrangle 1:24,000 scale
Hobbs	quadrangle 1:100,000 scale
Hobbs	quadrangle 1:250,000 scale

Watershed boundaries (USGS hydrologic units)

Upper Pecos-Black	hydrologic unit
Upper Pecos	hydrologic accounting unit
Upper Pecos	hydrologic subregion
Rio Grande	hydrologic region

Geology of US states

Digital geologic maps of the US states with consistent lithology, age, GIS database structure, and format

Database Home

Unit	State	Lithology
Eolian and piedmont deposits	NM	Holocene to middle Pleistocene

Excavation Logs (Table 8)

Site Name: Lucy Fed #2 Date: 10/12/2019Sample N¹

Soil Profile

Description	ft. bgs
Top Soil	1
	2
	3
Caliche	4
	5
	6
	7
	8
	9
	10
	11
Caliche	12
	13
	14

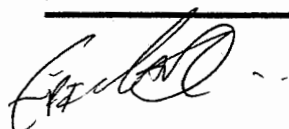


Site Name: Lucy Fed #2 Date: 10/07/2019

Sample D

Soil Profile

Description	ft. bgs
Top Soil	1
	2
	3
Caliche	4
	5
	6
	7
	8
	9
Caliche	10
	11
	12
	13
	14



Remediation/ Closure

Commencement Date: October 02, 2019

Completion Date: December 05, 2019

The following remedial activities are in accordance with 19.15.29.12 NMAC, remediation of releases on oil well pads. The remedial activities took place on the Lucy Federal #2 pad and surrounding pasture near the release. The release poses no threat to ground water.

The preliminary site delineation began on October 4, 2019, and concluded that the vertical extent of the release was approximately 2 feet to 4 feet (bgs). Samples at 4 feet, 6 feet, 10 feet, and 12 feet (bgs) further confirmed these results. Sample F was contaminated at 4 feet (GPS 32.570950, -103.538260). An estimated 1,820 cubic yards were excavated from the location and hauled to an NMOCD approved disposal site (See Attachment 6)

On October 15, 2019, a conversation was had with the NMOCD Environmental Bureau Chief, Jim Griswold, in regards to completing remediation, and backfilling the excavated area on the pad in order to commence rebuilding of the tank battery at the location. Per this conversation, bottom hole samples were taken in the location where the battery was to be rebuilt to ensure NMOCD regulations are met, which included Chloride, BTEX, and THP testing results.

After reviewing bottom hole samples BB, CC, and DD, which were collected on the pad where the tank battery is intended to be rebuilt, it was determined that NMOCD closure criteria had been met. That area of the pad was then back filled, and the tank battery was rebuilt on the location.

On November 11, 2019, notice was given to NMOCD of intent to complete closure samples for the remainder of the excavated area in the pasture surrounding the location. After receiving results for closure samples N3, N4, and 1A through 17A it was determined that results met NMOCD closure criteria (See Table 5). An area of approximately 14,290 sq. feet was backfilled with approximately 1,520 yards of caliche, and covered with 1080 yards of top soil. Back fill material was hauled in from the land owner's property (See Attachment 7)

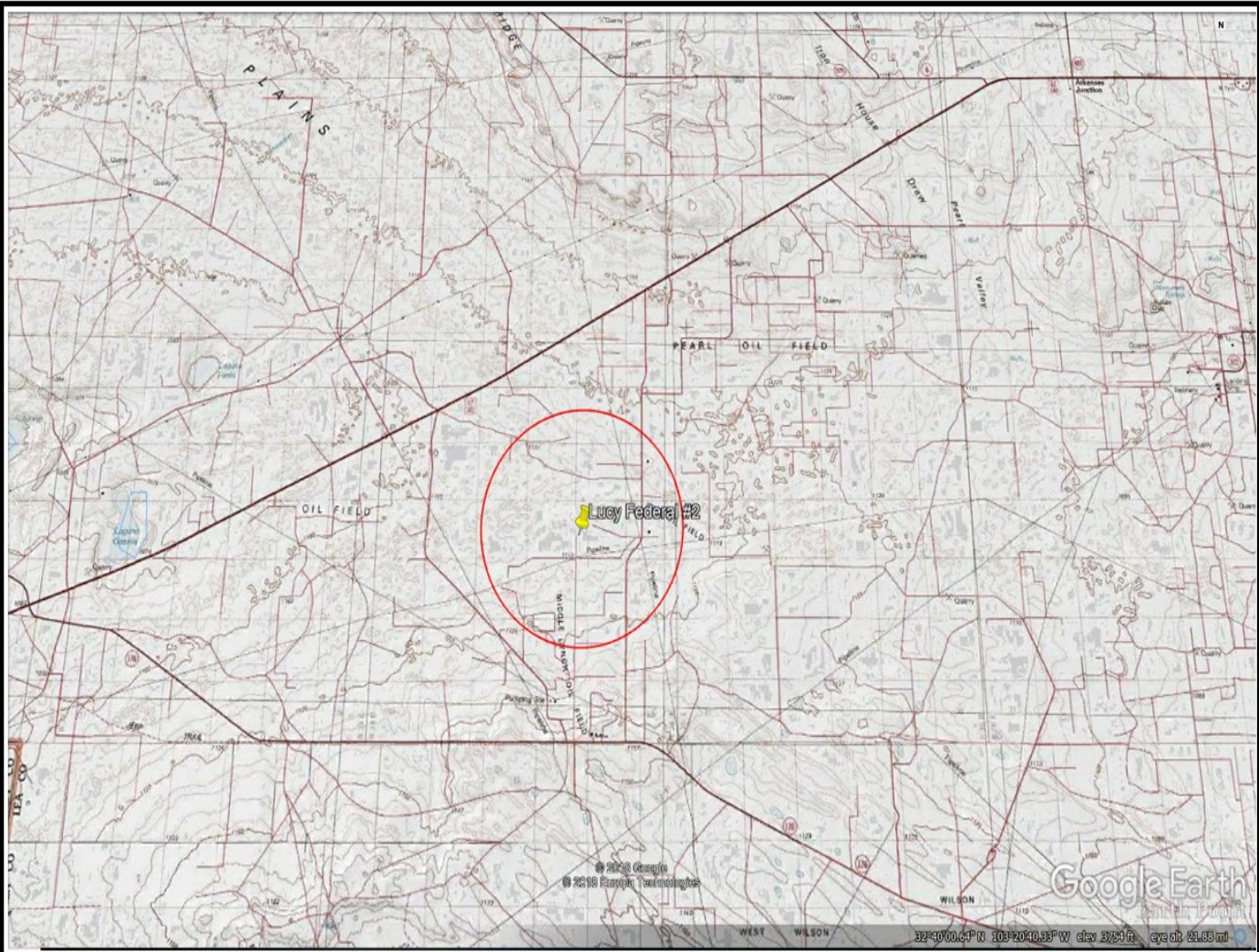
On October 4, 2019, trucks began hauling caliche to the location. Caliche hauling ended on October 22, 2019. Trucks began hauling top soil on October 24, 2019. Top soil hauling ended on November 18, 2019. The pasture will be seeded in the spring of 2020 with warm mixture seed, and was approved by the private landowner.



Eric Garcia
Republic Backhoe Service, LLC

Attachment #1 and #2:

Vicinity Maps



Read & Stevens Inc.

Lucy Federal #2

Section 14 T20S R34E 1980' FSL 330' FWL

GPS: 32.571347, -103.538483

Lea County, NM

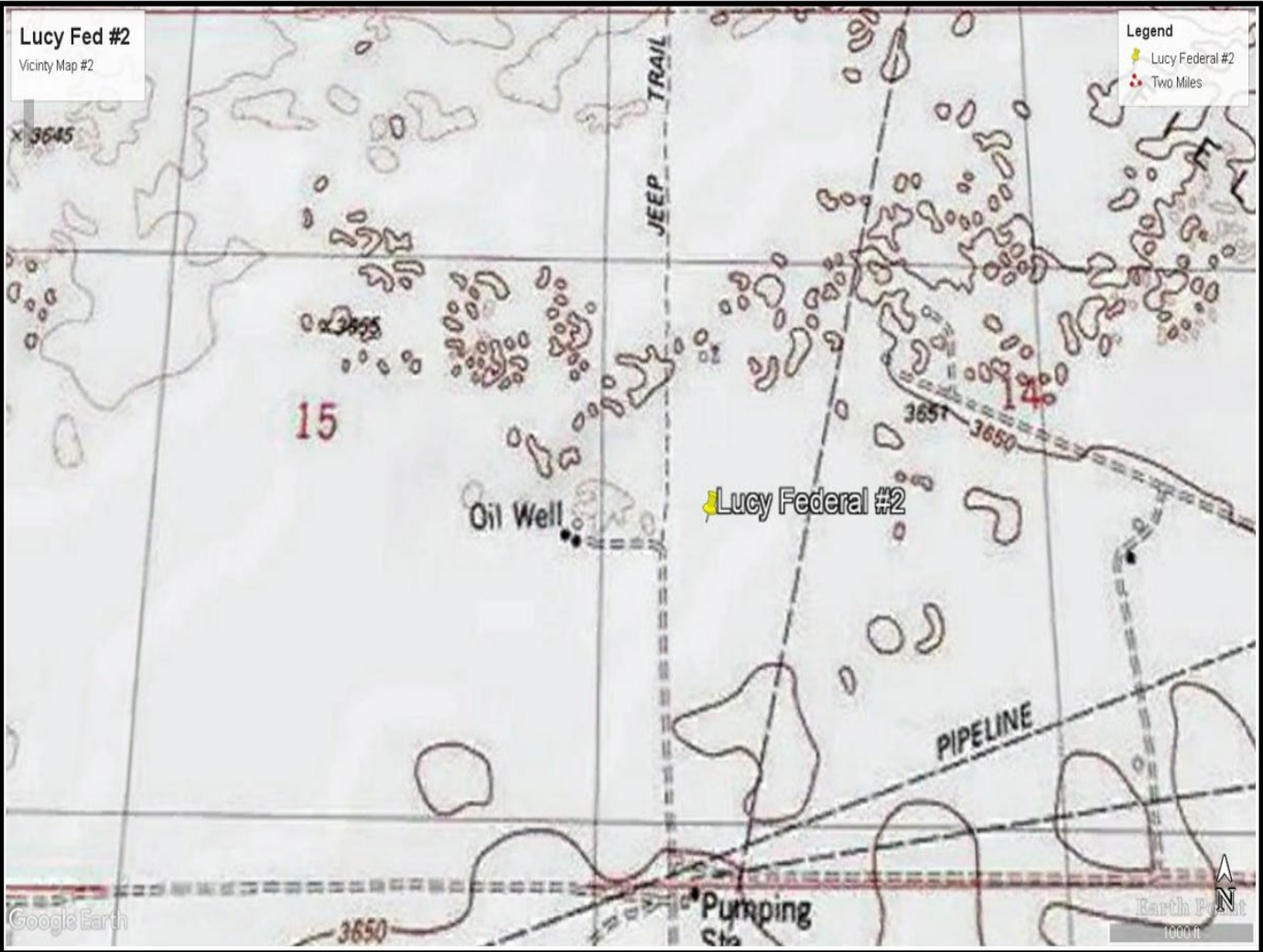
Republic Backhoe Service, LLC

47 E. Dickens Rd.

Lovington, NM 88260

Lucy Fed #2

Vicinity Map #1



Read & Stevens Inc.

Lucy Federal #2

Section 14 T20S R34E 1980' FSL 330' FWL

GPS: 32.571347, -103.538483

Lea County, NM

Republic Backhoe Service, LLC

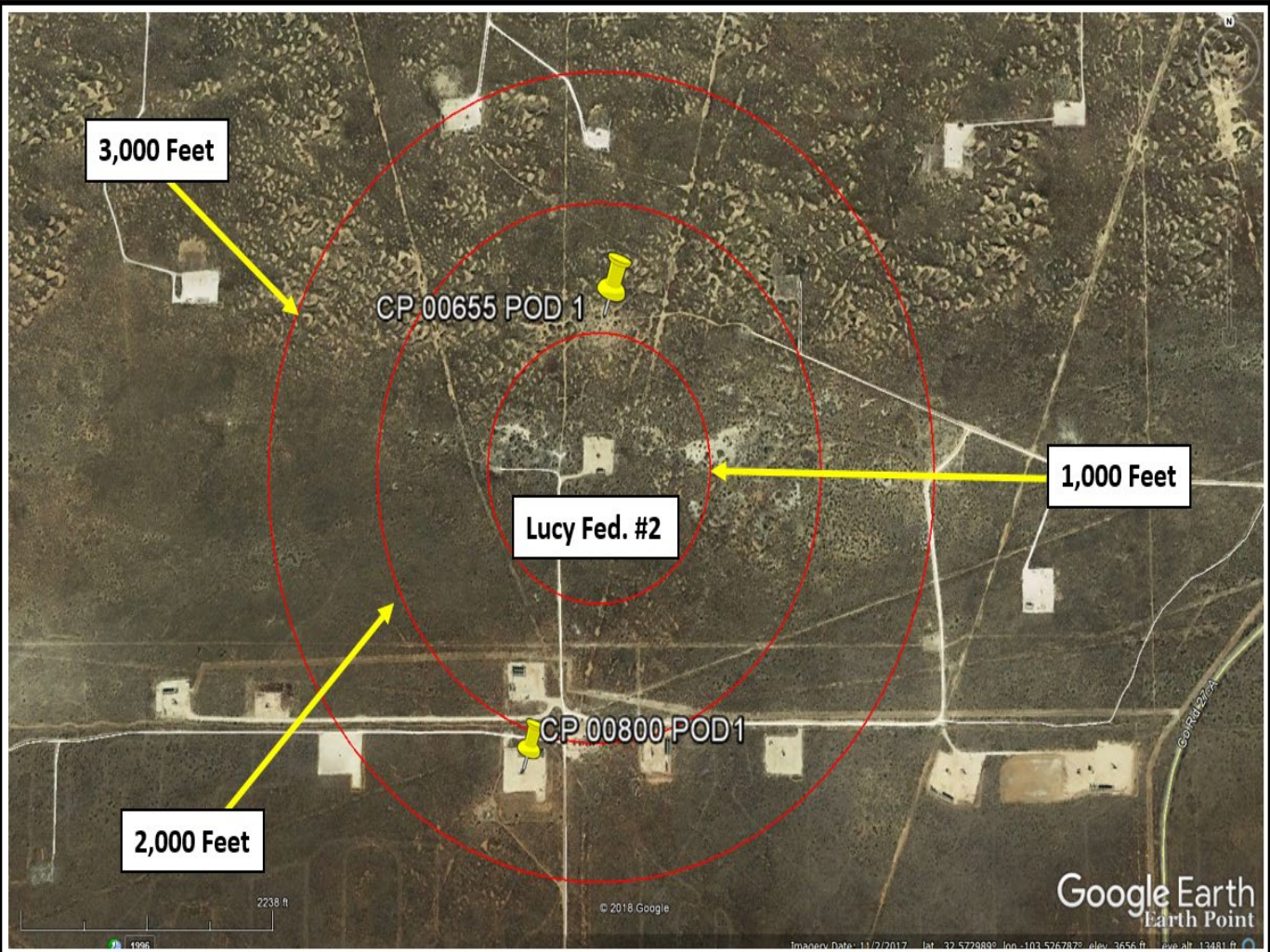
47 E. Dickens Rd.

Lovington, NM 88260

Lucy Fed #2

Vicinity Map #2

Attachment #3:
Nearest Pod Locations



<p>Read & Stevens Inc.</p> <p>Lucy Federal #2</p> <p>Section 14 T20S R34E 1980' FSL 330' FWL</p> <p>GPS: 32.571347, -103.538483</p> <p>Lea County, NM</p>	<p>Republic Backhoe Service, LLC</p> <p>47 E. Dickens Rd.</p> <p>Lovington, NM 88260</p>	<p>Lucy Fed #2</p> <p>Fresh Water Wells</p>
---	--	---

Attachment #4:
Average Depth to Water



New Mexico Office of the State Engineer Water Column/Average Depth to Water

(A CLW##### in the POD suffix indicates the POD has been replaced & no longer serves a water right file.)

(R=POD has been replaced,
O=orphaned,
C=the file is closed)

(quarters are 1=NW 2=NE 3=SW 4=SE)

(quarters are smallest to largest) (NAD83 UTM in meters)

(In feet)

POD Number	Code	POD Sub-basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	DepthWell	DepthWater	Water Column
CP 00655 POD1		CP	LE	3	1	14	20S	34E	637294	3605108*		443	210		
CP 00800 POD1		CP	LE	2	2	22	20S	34E	637007	3603994*		707	220		

Average Depth to Water: --

Minimum Depth: --

Maximum Depth: --

Record Count: 2

UTMNAD83 Radius Search (in meters):

Easting (X): 637201.235

Northing (Y): 3604674.111

Radius: 2500

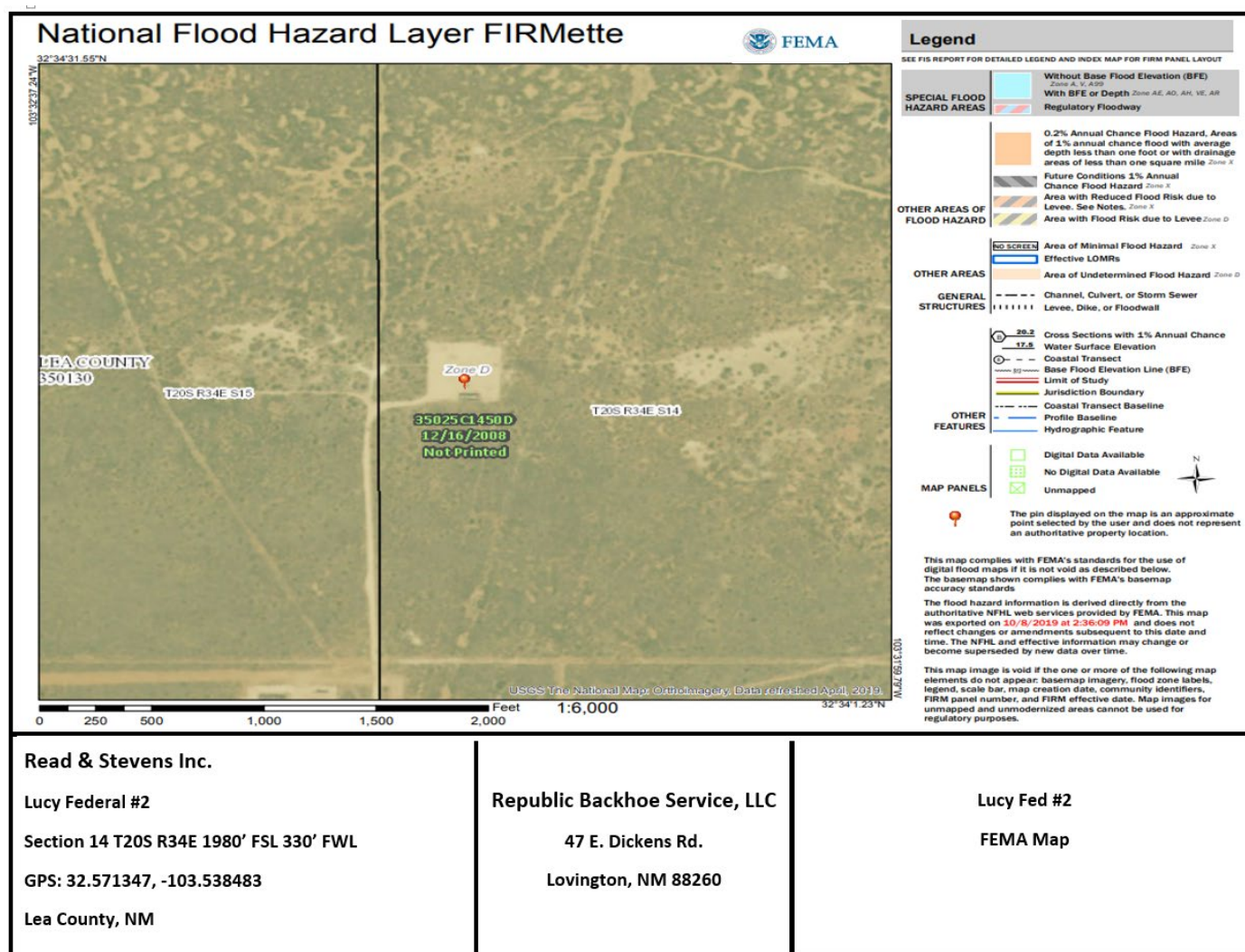
*UTM location was derived from PLSS - see Help

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

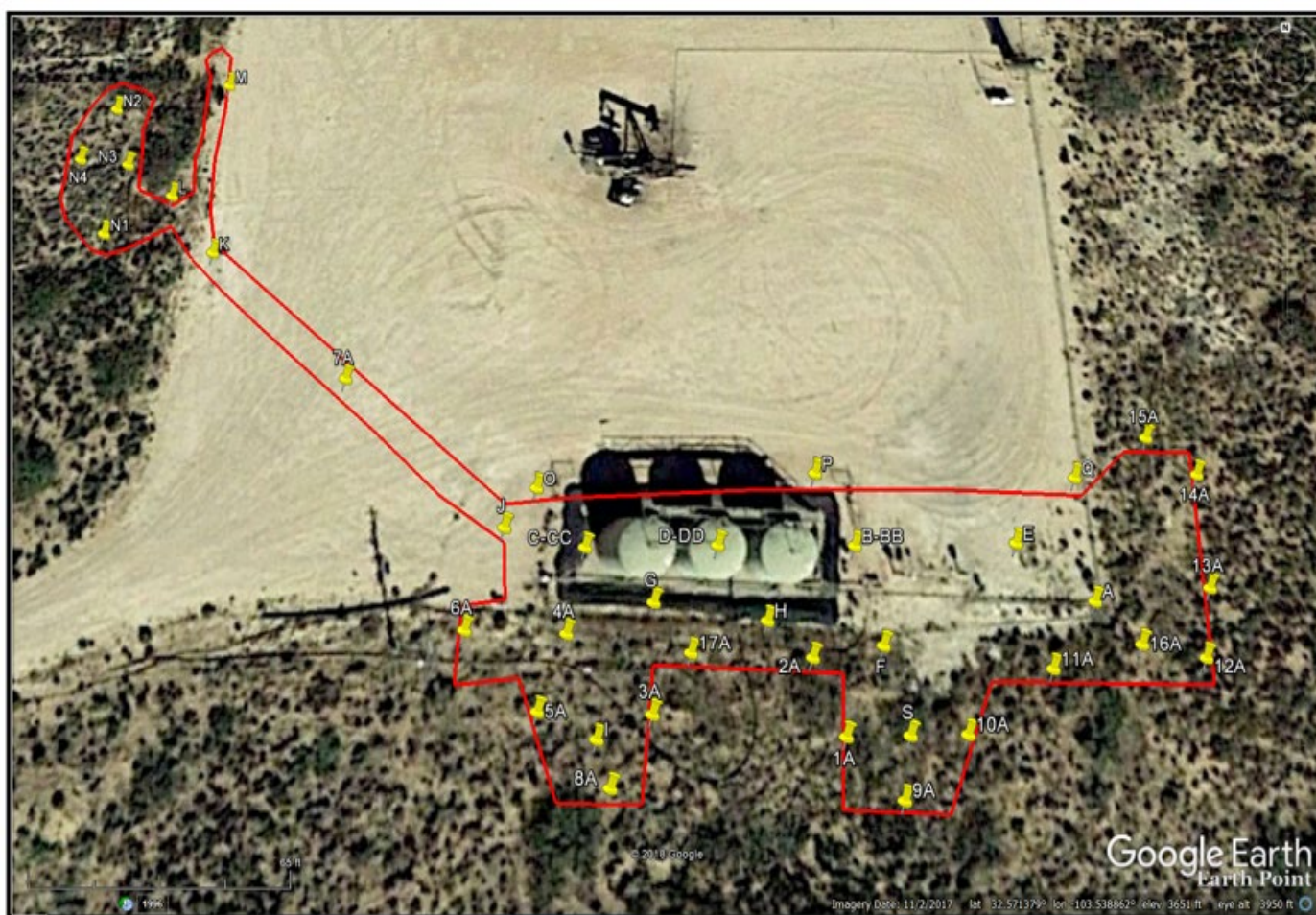
10/8/19 11:33 AM

WATER COLUMN/ AVERAGE DEPTH TO
WATER.

**Attachment #5:
National Flood Hazard Layer Firmette**



Attachment #6
Site Map



Read & Stevens Inc.

Lucy Federal #2

Section 14 T20S R34E 1980' FSL 330' FWL

GPS: 32.571347, -103.538483

Lea County, NM

Republic Backhoe Service, LLC

47 E. Dickens Rd.

Lovington, NM 88260

Lucy Fed #2

Spill Area/Sample Location Points

Attachment #7
Excavation Map



<p>Read & Stevens Inc.</p> <p>Lucy Federal #2</p> <p>Section 14 T20S R34E 1980' FSL 330' FWL</p> <p>GPS: 32.571347, -103.538483</p> <p>Lea County, NM</p>	<p>Republic Backhoe Service, LLC</p> <p>47 E. Dickens Rd.</p> <p>Lovington, NM 88260</p>	<p>Excavation Map: Depth</p> <div><div><div></div><div></div><div></div></div><div><div>2'</div><div>3'</div><div>4'</div></div></div>
---	--	--

Attachment #8
C-141

Received by OCD: 10/3/2019 3:35:24 PM

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural
Resources Department

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised August 24, 2018
Submit to appropriate OCD District office

Incident ID	NRM1927736783
District RP	1RP-5728
Facility ID	
Application ID	pRM1927737297

Release Notification

Responsible Party

Responsible Party Read & Stevens, Inc.	OGRID 18917
Contact Name Kelly Barajas	Contact Telephone 575-624-3760
Contact email kbarajas@read-stevens.com	Incident # (assigned by OCD)
Contact mailing address PO Box 1518, Roswell, NM 88202	

Location of Release Source

Latitude 32.57121 N Longitude -103.53794 W
(NAD 83 in decimal degrees to 5 decimal places)

Site Name Lucy Federal #2	Site Type Oil Lease
Date Release Discovered 10/02/2019 12:00 AM	API# (if applicable) 30-025-40055

Unit Letter	Section	Township	Range	County
L	14	20S	34E	Lea County, NM

Surface Owner: ☐ State ☒ Federal ☐ Tribal ☒ Private (Name: _____)
rnm/10/4/2019

Nature and Volume of Release

Material(s) Released (Select all that apply and attach calculations or specific justification for the volumes provided below)

<input type="checkbox"/> Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
<input checked="" type="checkbox"/> Produced Water	Volume Released (bbls) 100 bbls	Volume Recovered (bbls) 4 bbls
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	<input type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> Condensate	Volume Released (bbls)	Volume Recovered (bbls)
<input type="checkbox"/> Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
<input type="checkbox"/> Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release

Lightning striked by the water tanks and caused an explosion and fire.

Form C-141

Page 2

State of New Mexico
Oil Conservation Division

Incident ID	NRM1927736783
District RP	1RP-5728
Facility ID	
Application ID	pRM1927737297

Was this a major release as defined by 19.15.29.7(A) NMAC? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If YES, for what reason(s) does the responsible party consider this a major release? Volumed released exceeds the minimum 25 bbls. Lightning strike resulted in the fire.
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? Notice was given to Robert Hamlet of the NMOCD Artesia by Nichole Calahan of Republic Backhoe Services, LLC via phone at 2:23 pm, and email at 2:30 pm on 10/2/2019.	

Initial Response

The responsible party must undertake the following actions immediately unless they could create a safety hazard that would result in injury

<input checked="" type="checkbox"/> The source of the release has been stopped. <input checked="" type="checkbox"/> The impacted area has been secured to protect human health and the environment. <input checked="" type="checkbox"/> Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices. <input checked="" type="checkbox"/> All free liquids and recoverable materials have been removed and managed appropriately.	
If all the actions described above have <u>not</u> been undertaken, explain why:	
Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.	
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.	
Printed Name: Joe Tovar Signature: <i>Kelly Barajas for Joe Tovar</i> email: jtovar@read-stevens.com	Title: Manager, Production and Operations Date: 10/3/2019 Telephone: 575-390-2425
<u>OCD Only</u> Received by: Ramona Marcus Date: 10/04/2019	

Form C-141

Page 3

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

Site Assessment/Characterization*This information must be provided to the appropriate district office no later than 90 days after the release discovery date.*

What is the shallowest depth to groundwater beneath the area affected by the release?	185 (ft bgs)
Did this release impact groundwater or surface water?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a wetland?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying a subsurface mine?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying an unstable area such as karst geology?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within a 100-year floodplain?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Did the release impact areas not on an exploration, development, production, or storage site?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

Attach a comprehensive report (electronic submittals in .pdf format are preferred) demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined. Refer to 19.15.29.11 NMAC for specifics.

Characterization Report Checklist: *Each of the following items must be included in the report.*

- ☒ Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.
- ☒ Field data
- ☒ Data table of soil contaminant concentration data
- ☒ Depth to water determination
- ☒ Determination of water sources and significant watercourses within 1/2-mile of the lateral extents of the release
- ☒ Boring or excavation logs
- ☒ Photographs including date and GIS information
- ☒ Topographic/Aerial maps
- ☒ Laboratory data including chain of custody

If the site characterization report does not include completed efforts at remediation of the release, the report must include a proposed remediation plan. That plan must include the estimated volume of material to be remediated, the proposed remediation technique, proposed sampling plan and methods, anticipated timelines for beginning and completing the remediation. The closure criteria for a release are contained in Table 1 of 19.15.29.12 NMAC, however, use of the table is modified by site- and release-specific parameters.

Form C-141

Page 4

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Printed Name: Joe TOVAR Title: Manager, Production & Operations
Signature: [Signature] Date: 12-31-19
email: JOVAR@road-stations.com Telephone: 575-390-2425

OCD Only

Received by: _____ Date: _____

Form C-141

Page 5

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

Remediation Plan**Remediation Plan Checklist:** Each of the following items must be included in the plan.

- ☒ Detailed description of proposed remediation technique
- ☒ Scaled sitemap with GPS coordinates showing delineation points
- ☒ Estimated volume of material to be remediated
- ☒ Closure criteria is to Table 1 specifications subject to 19.15.29.12(C)(4) NMAC
- ☒ Proposed schedule for remediation (note if remediation plan timeline is more than 90 days OCD approval is required)

Deferral Requests Only: Each of the following items must be confirmed as part of any request for deferral of remediation.

- ☐ Contamination must be in areas immediately under or around production equipment where remediation could cause a major facility deconstruction.
- ☐ Extents of contamination must be fully delineated.
- ☐ Contamination does not cause an imminent risk to human health, the environment, or groundwater.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Printed Name: Joe TowerTitle: Manager, Production & OperationsSignature: [Signature]Date: 12-31-19email: jtower@rend-stevens.comTelephone: 575-390-2425**OCD Only**

Received by: _____ Date: _____

☐ Approved
 ☐ Approved with Attached Conditions of Approval
 ☐ Denied
 ☐ Deferral Approved

Signature: _____ Date: _____

Form C-141

Page 6

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

Closure

The responsible party must attach information demonstrating they have complied with all applicable closure requirements and any conditions or directives of the OCD. This demonstration should be in the form of a comprehensive report (electronic submittals in .pdf format are preferred) including a scaled site map, sampling diagrams, relevant field notes, photographs of any excavation prior to backfilling, laboratory data including chain of custody documents of final sampling, and a narrative of the remedial activities. Refer to 19.15.29.12 NMAC.

Closure Report Attachment Checklist: *Each of the following items must be included in the closure report.*

- ☒ A scaled site and sampling diagram as described in 19.15.29.11 NMAC
- ☒ Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)
- ☒ Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)
- ☒ Description of remediation activities

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations. The responsible party acknowledges they must substantially restore, reclaim, and re-vegetate the impacted surface area to the conditions that existed prior to the release or their final land use in accordance with 19.15.29.13 NMAC including notification to the OCD when reclamation and re-vegetation are complete.

Printed Name: Joe Tovar Title: Manager, Production & Operations
 Signature: [Signature] Date: 12-31-19
 email: jtovar@read-stevens.com Telephone: 575-390-2425

OCD Only

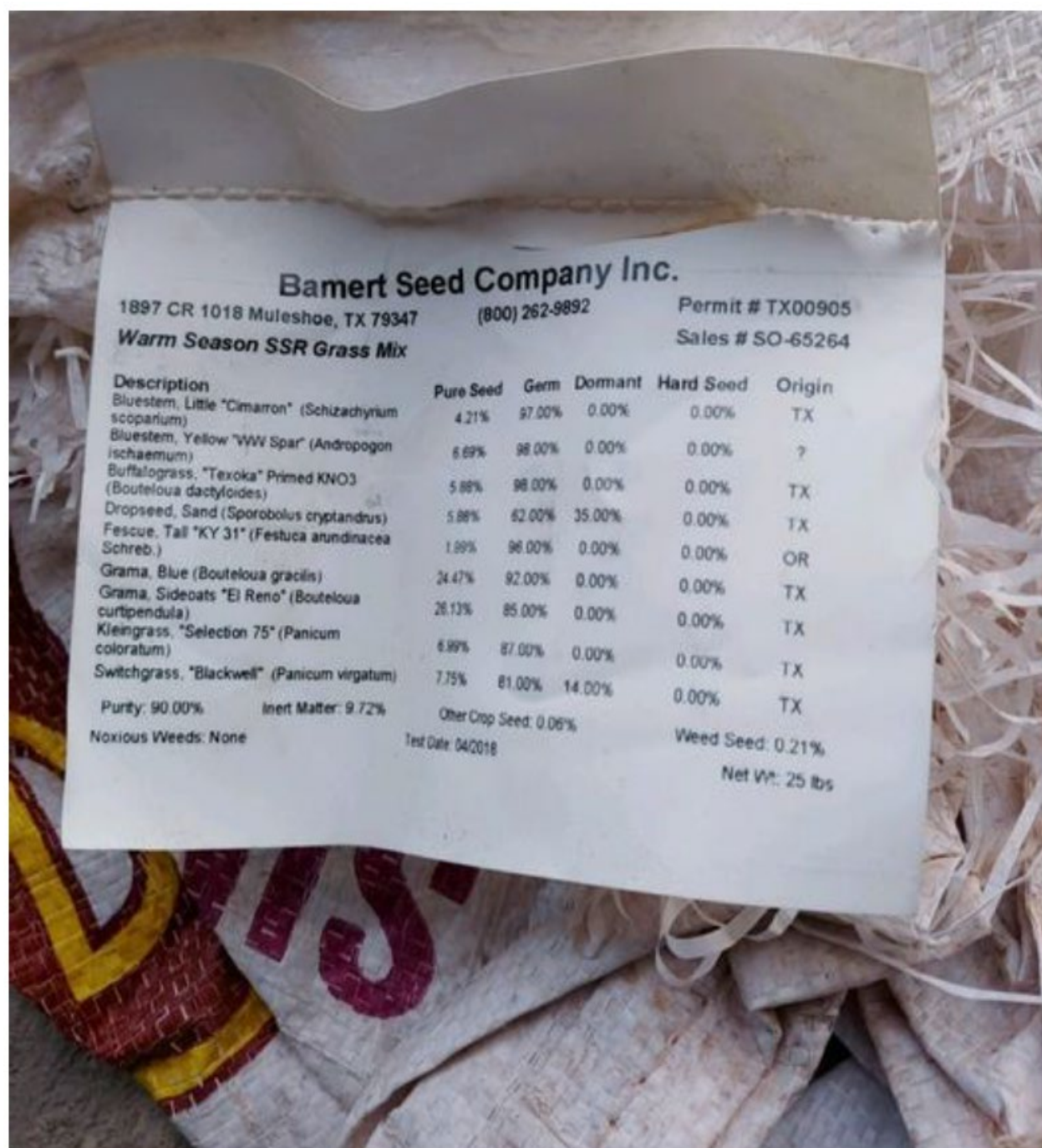
Received by: _____ Date: _____

Closure approval by the OCD does not relieve the responsible party of liability should their operations have failed to adequately investigate and remediate contamination that poses a threat to groundwater, surface water, human health, or the environment nor does not relieve the responsible party of compliance with any other federal, state, or local laws and/or regulations.

Closure Approved by: _____ Date: _____

Printed Name: _____ Title: _____

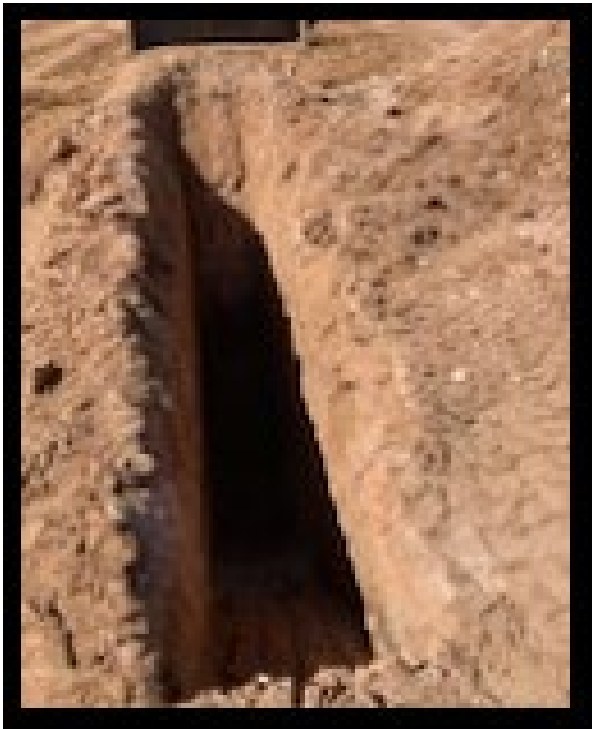
**Attachment #8
Seed Mixture**



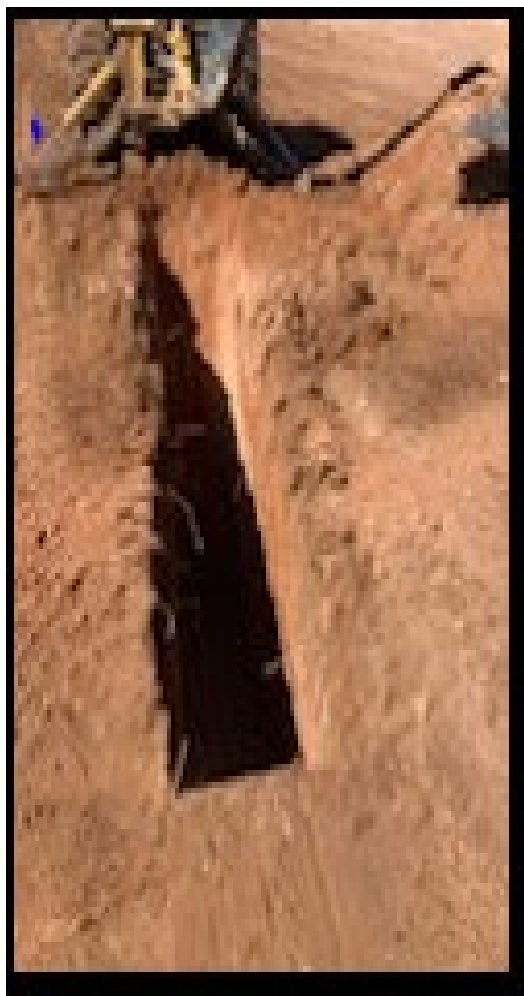
Attachment #9
Photos



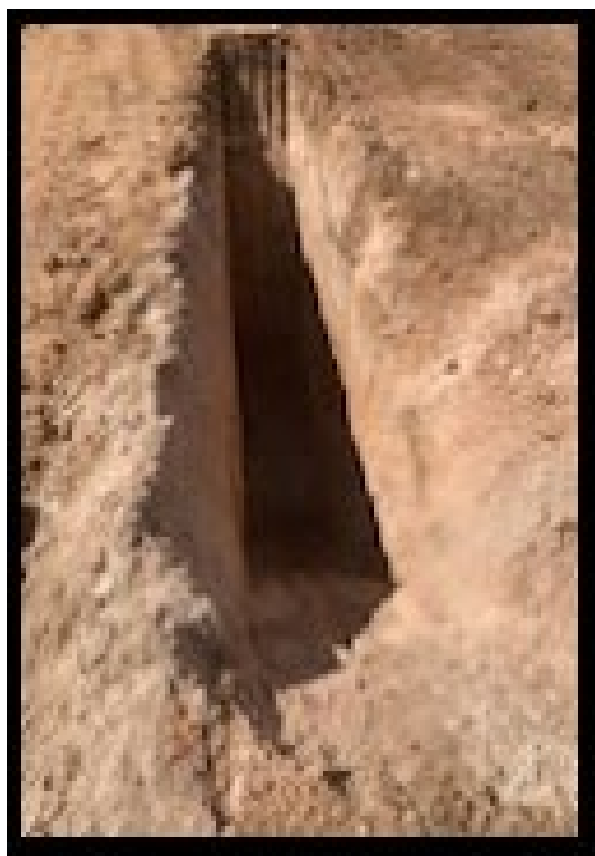
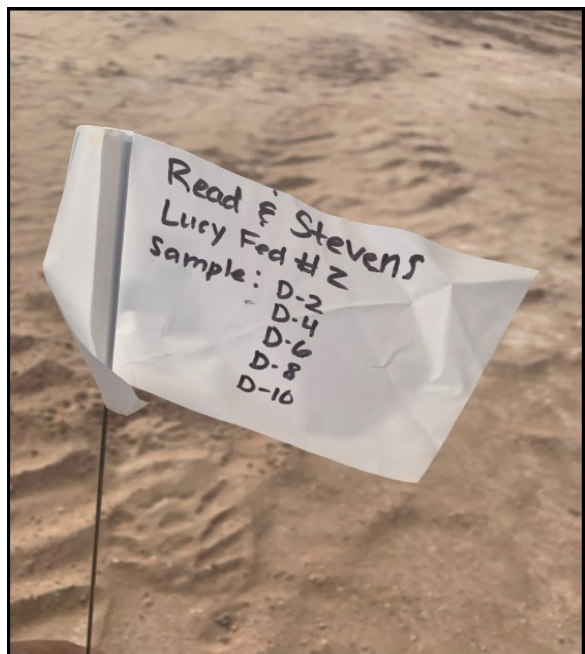




Sample C



Sample D



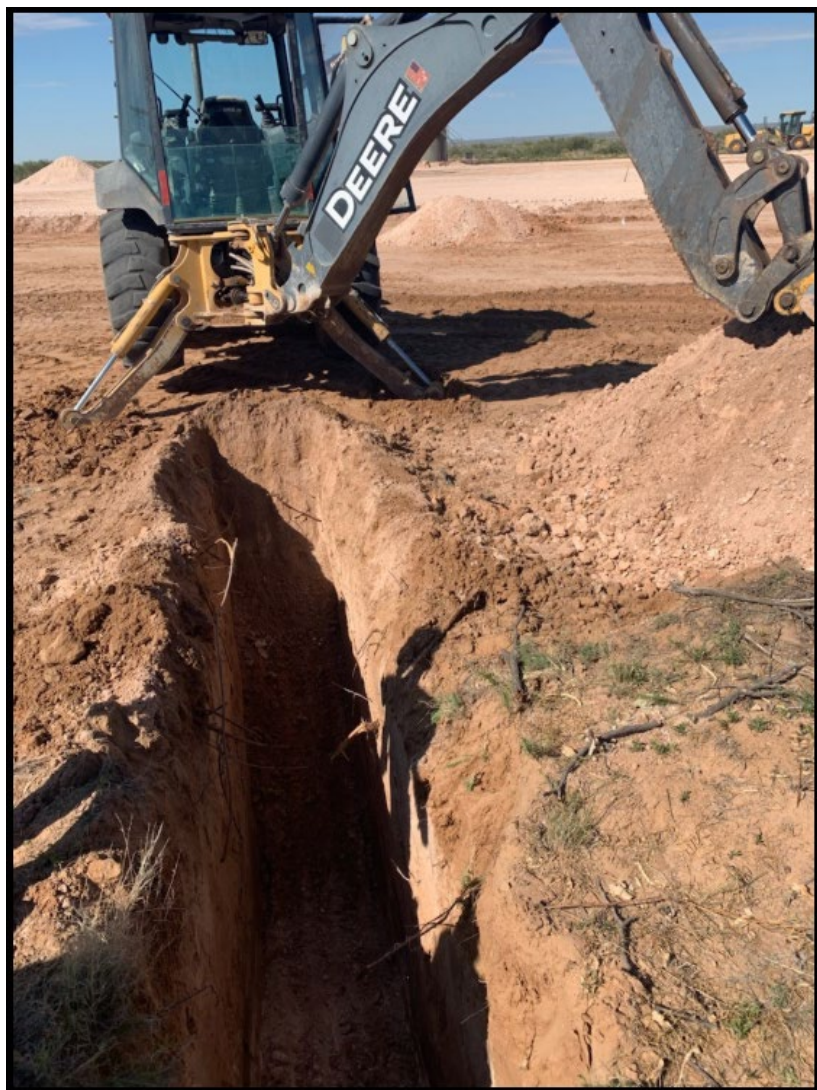
Sample E



Sample F



Sample G



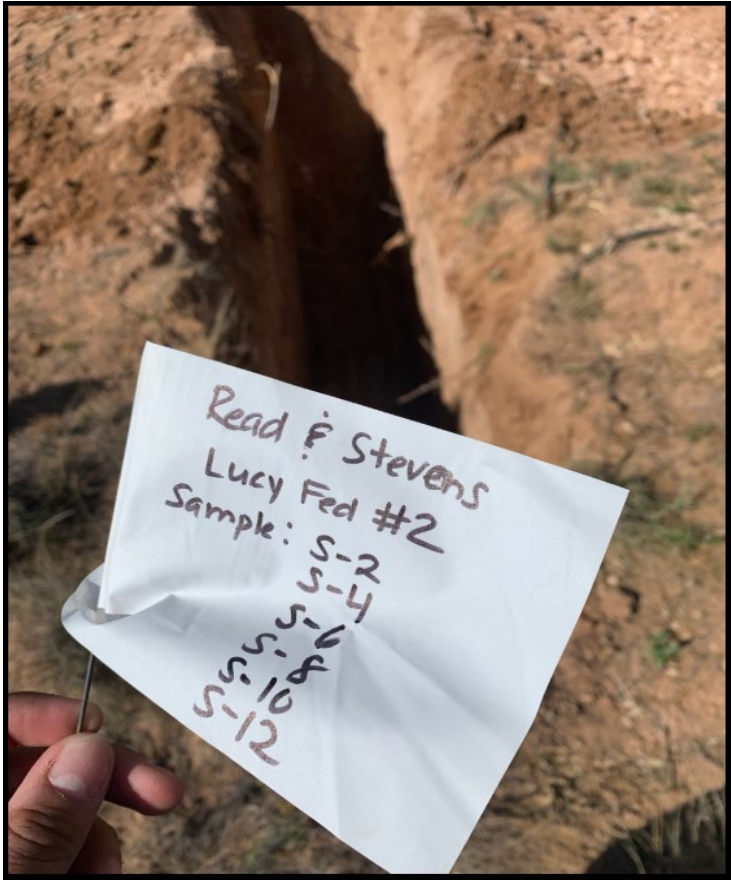












Closure Samples:



















Sample 7A













































Attachment #10
Laboratory Analysis



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

October 17, 2019

ERIC GARCIA

REPUBLIC BACKHOE SERVICES

47 E. DICKENS RD

LOVINGTON, NM 88260

RE: LUCY FEDERAL #2

Enclosed are the results of analyses for samples received by the laboratory on 10/14/19 8:15.

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/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 cursive script that reads "Celey D. Keene".

Celey D. Keene

Lab Director/Quality Manager



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

Analytical Results For:

REPUBLIC BACKHOE SERVICES
 ERIC GARCIA
 47 E. DICKENS RD
 LOVINGTON NM, 88260
 Fax To: NONE

Received:	10/14/2019	Sampling Date:	10/11/2019
Reported:	10/17/2019	Sampling Type:	Soil
Project Name:	LUCY FEDERAL #2	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	READ & STEVENS - LEA CO NM		

Sample ID: H - 2 (H903474-01)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	16.0	16.0	10/16/2019	ND	416	104	400	3.77		

Sample ID: H - 4 (H903474-02)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	10/16/2019	ND	416	104	400	3.77		

Sample ID: H - 6 (H903474-03)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	10/16/2019	ND	416	104	400	3.77		

Sample ID: H - 8 (H903474-04)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	272	16.0	10/16/2019	ND	416	104	400	3.77	

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Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

REPUBLIC BACKHOE SERVICES
 ERIC GARCIA
 47 E. DICKENS RD
 LOVINGTON NM, 88260
 Fax To: NONE

Received:	10/14/2019	Sampling Date:	10/11/2019
Reported:	10/17/2019	Sampling Type:	Soil
Project Name:	LUCY FEDERAL #2	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	READ & STEVENS - LEA CO NM		

Sample ID: H - 10 (H903474-05)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	10/16/2019	ND	416	104	400	3.77	

Sample ID: I - 2 (H903474-06)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1400	16.0	10/16/2019	ND	416	104	400	3.77	

Sample ID: I - 4 (H903474-07)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	48.0	16.0	10/16/2019	ND	416	104	400	3.77		

Sample ID: I - 6 (H903474-08)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	96.0	16.0	10/16/2019	ND	416	104	400	3.77	

Sample ID: I - 8 (H903474-09)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	16.0	16.0	10/16/2019	ND	416	104	400	3.77		

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Analytical Results For:

REPUBLIC BACKHOE SERVICES
 ERIC GARCIA
 47 E. DICKENS RD
 LOVINGTON NM, 88260
 Fax To: NONE

Received:	10/14/2019	Sampling Date:	10/11/2019
Reported:	10/17/2019	Sampling Type:	Soil
Project Name:	LUCY FEDERAL #2	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	READ & STEVENS - LEA CO NM		

Sample ID: I - 10 (H903474-10)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	10/16/2019	ND	416	104	400	3.77	

Sample ID: J - 2 (H903474-11)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	320	16.0	10/16/2019	ND	416	104	400	3.77	

Sample ID: J - 4 (H903474-12)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	176	16.0	10/16/2019	ND	416	104	400	3.77	

Sample ID: J - 6 (H903474-13)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	208	16.0	10/16/2019	ND	416	104	400	3.77	

Sample ID: J - 8 (H903474-14)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	10/16/2019	ND	416	104	400	3.77		

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Analytical Results For:

REPUBLIC BACKHOE SERVICES
 ERIC GARCIA
 47 E. DICKENS RD
 LOVINGTON NM, 88260
 Fax To: NONE

Received:	10/14/2019	Sampling Date:	10/11/2019
Reported:	10/17/2019	Sampling Type:	Soil
Project Name:	LUCY FEDERAL #2	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	READ & STEVENS - LEA CO NM		

Sample ID: J - 10 (H903474-15)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	16.0	16.0	10/16/2019	ND	416	104	400	3.77		

Sample ID: K - 2 (H903474-16)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	96.0	16.0	10/16/2019	ND	416	104	400	3.77	

Sample ID: K - 4 (H903474-17)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	16.0	16.0	10/16/2019	ND	416	104	400	3.77		

Sample ID: K - 6 (H903474-18)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	16.0	16.0	10/16/2019	ND	416	104	400	3.77		

Sample ID: K - 8 (H903474-19)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	304	16.0	10/16/2019	ND	416	104	400	3.77	

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Analytical Results For:

REPUBLIC BACKHOE SERVICES
 ERIC GARCIA
 47 E. DICKENS RD
 LOVINGTON NM, 88260
 Fax To: NONE

Received:	10/14/2019	Sampling Date:	10/11/2019
Reported:	10/17/2019	Sampling Type:	Soil
Project Name:	LUCY FEDERAL #2	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	READ & STEVENS - LEA CO NM		

Sample ID: K - 10 (H903474-20)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	10/16/2019	ND	416	104	400	3.77	

Sample ID: L - 2 (H903474-21)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	10/16/2019	ND	416	104	400	3.77	

Sample ID: L - 4 (H903474-22)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	128	16.0	10/16/2019	ND	416	104	400	3.77	

Sample ID: L - 6 (H903474-23)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	10/16/2019	ND	416	104	400	3.77	

Sample ID: L - 8 (H903474-24)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	10/16/2019	ND	416	104	400	3.77		

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Analytical Results For:

REPUBLIC BACKHOE SERVICES
 ERIC GARCIA
 47 E. DICKENS RD
 LOVINGTON NM, 88260
 Fax To: NONE

Received: 10/14/2019
 Reported: 10/17/2019
 Project Name: LUCY FEDERAL #2
 Project Number: NONE GIVEN
 Project Location: READ & STEVENS - LEA CO NM

Sampling Date: 10/11/2019
 Sampling Type: Soil
 Sampling Condition: ** (See Notes)
 Sample Received By: Tamara Oldaker

Sample ID: L - 10 (H903474-25)

Chloride, SM4500Cl-B	mg/kg	Analyzed By: AC							
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	10/16/2019	ND	416	104	400	3.77	

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

Caley D. Keene, Lab Director/Quality Manager

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Republic Backhoe Service

Company Name: Republic Backhoe Service
Project Manager: Eric Garcia

Address: 47 E. Dickens Rd

City: **Livingston** State: **NM** Zip: **88260**

Phone #: 575-631-0131 **Fax #:**

Project #: _____
Project Owner: Reed & Stevens

Project Name: Lucy Federal #2

Project Location: Lea County

Sampler Name: Eric Garcia

FOR LAB USE ONLY

100

三

Lab I.D. _____
Sample I.D. _____

11-21-201

4905414

7-12

4-7

23 L-4

8-7-74

01-4-28

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[illegible]

Figure 1. The effect of the number of trials on the mean accuracy of the responses. The error bars represent the standard error of the mean.

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service. In no event shall Cardinal be liable for incidental or consequential damages or successors arising out of or related to the performance of services.

Relinquished By:	Date:
------------------	-------

Time

Belinairnished Bv.

...inquiries by...

time

Delivered By: (Circle One) 16.7c

Sampler - UPS - Bus - Other:

† Cardinal cannot accept verbal change

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



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October 18, 2019

ERIC GARCIA

REPUBLIC BACKHOE SERVICES

47 E. DICKENS RD

LOVINGTON, NM 88260

RE: LUCY FEDERAL #2

Enclosed are the results of analyses for samples received by the laboratory on 10/14/19 8:15.

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/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,

Celey D. Keene

Lab Director/Quality Manager



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Analytical Results For:

REPUBLIC BACKHOE SERVICES
 ERIC GARCIA
 47 E. DICKENS RD
 LOVINGTON NM, 88260
 Fax To: NONE

Received:	10/14/2019	Sampling Date:	10/12/2019
Reported:	10/18/2019	Sampling Type:	Soil
Project Name:	LUCY FEDERAL #2	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	READ & STEVENS - LEA CO NM		

Sample ID: N 1 - 2 (H903475-01)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1960	16.0	10/17/2019	ND	432	108	400	3.77		

Sample ID: N 1 - 4 (H903475-02)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	16.0	16.0	10/17/2019	ND	432	108	400	3.77		

Sample ID: N 1 - 6 (H903475-03)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	64.0	16.0	10/17/2019	ND	432	108	400	3.77		

Sample ID: N 1 - 8 (H903475-04)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	10/17/2019	ND	432	108	400	3.77		

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Analytical Results For:

REPUBLIC BACKHOE SERVICES
 ERIC GARCIA
 47 E. DICKENS RD
 LOVINGTON NM, 88260
 Fax To: NONE

Received:	10/14/2019	Sampling Date:	10/12/2019
Reported:	10/18/2019	Sampling Type:	Soil
Project Name:	LUCY FEDERAL #2	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	READ & STEVENS - LEA CO NM		

Sample ID: N 1 - 10 (H903475-05)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	16.0	16.0	10/17/2019	ND	432	108	400	3.77		

Sample ID: N 1 - 12 (H903475-06)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	16.0	16.0	10/17/2019	ND	432	108	400	3.77		

Sample ID: M - 2 (H903475-07)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	368	16.0	10/17/2019	ND	432	108	400	3.77		

Sample ID: M - 4 (H903475-08)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	10/17/2019	ND	432	108	400	3.77	

Sample ID: M - 6 (H903475-09)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	48.0	16.0	10/17/2019	ND	432	108	400	3.77		

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Analytical Results For:

REPUBLIC BACKHOE SERVICES
 ERIC GARCIA
 47 E. DICKENS RD
 LOVINGTON NM, 88260
 Fax To: NONE

Received:	10/14/2019	Sampling Date:	10/12/2019
Reported:	10/18/2019	Sampling Type:	Soil
Project Name:	LUCY FEDERAL #2	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	READ & STEVENS - LEA CO NM		

Sample ID: M - 8 (H903475-10)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	10/17/2019	ND	432	108	400	3.77		

Sample ID: M - 10 (H903475-11)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	10/17/2019	ND	432	108	400	3.77		

Sample ID: M - 12 (H903475-12)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	10/17/2019	ND	432	108	400	3.77	

Sample ID: O - 2 (H903475-13)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	10/17/2019	ND	432	108	400	3.77		

Sample ID: O - 4 (H903475-14)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	48.0	16.0	10/17/2019	ND	416	104	400	3.77		

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Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

REPUBLIC BACKHOE SERVICES
 ERIC GARCIA
 47 E. DICKENS RD
 LOVINGTON NM, 88260
 Fax To: NONE

Received:	10/14/2019	Sampling Date:	10/12/2019
Reported:	10/18/2019	Sampling Type:	Soil
Project Name:	LUCY FEDERAL #2	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	READ & STEVENS - LEA CO NM		

Sample ID: O - 6 (H903475-15)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	10/17/2019	ND	416	104	400	3.77	

Sample ID: O - 8 (H903475-16)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	48.0	16.0	10/17/2019	ND	416	104	400	3.77		

Sample ID: O - 10 (H903475-17)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	10/17/2019	ND	416	104	400	3.77	

Sample ID: O - 12 (H903475-18)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	10/17/2019	ND	416	104	400	3.77	

Sample ID: P - 2 (H903475-19)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	10/17/2019	ND	416	104	400	3.77		

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Analytical Results For:

REPUBLIC BACKHOE SERVICES
 ERIC GARCIA
 47 E. DICKENS RD
 LOVINGTON NM, 88260
 Fax To: NONE

Received:	10/14/2019	Sampling Date:	10/12/2019
Reported:	10/18/2019	Sampling Type:	Soil
Project Name:	LUCY FEDERAL #2	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	READ & STEVENS - LEA CO NM		

Sample ID: P - 4 (H903475-20)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	48.0	16.0	10/17/2019	ND	416	104	400	3.77		

Sample ID: P - 6 (H903475-21)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	10/17/2019	ND	416	104	400	3.77		

Sample ID: P - 8 (H903475-22)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	10/17/2019	ND	416	104	400	3.77	

Sample ID: P - 10 (H903475-23)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	10/17/2019	ND	416	104	400	3.77	

Sample ID: P - 12 (H903475-24)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	10/17/2019	ND	416	104	400	3.77	

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

REPUBLIC BACKHOE SERVICES
 ERIC GARCIA
 47 E. DICKENS RD
 LOVINGTON NM, 88260
 Fax To: NONE

Received:	10/14/2019	Sampling Date:	10/12/2019
Reported:	10/18/2019	Sampling Type:	Soil
Project Name:	LUCY FEDERAL #2	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	READ & STEVENS - LEA CO NM		

Sample ID: Q - 2 (H903475-25)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	10/17/2019	ND	416	104	400	3.77		

Sample ID: Q - 4 (H903475-26)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	64.0	16.0	10/17/2019	ND	416	104	400	3.77		

Sample ID: Q - 6 (H903475-27)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	10/17/2019	ND	416	104	400	3.77	

Sample ID: Q - 8 (H903475-28)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	10/17/2019	ND	416	104	400	3.77		

Sample ID: Q - 10 (H903475-29)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	10/17/2019	ND	416	104	400	3.77	

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Analytical Results For:

REPUBLIC BACKHOE SERVICES
 ERIC GARCIA
 47 E. DICKENS RD
 LOVINGTON NM, 88260
 Fax To: NONE

Received:	10/14/2019	Sampling Date:	10/12/2019
Reported:	10/18/2019	Sampling Type:	Soil
Project Name:	LUCY FEDERAL #2	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	READ & STEVENS - LEA CO NM		

Sample ID: Q - 12 (H903475-30)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	10/17/2019	ND	416	104	400	3.77	

Sample ID: R - 2 (H903475-31)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	16.0	16.0	10/17/2019	ND	416	104	400	3.77		

Sample ID: R - 4 (H903475-32)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	10/17/2019	ND	416	104	400	3.77	

Sample ID: R - 6 (H903475-33)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	10/17/2019	ND	416	104	400	3.77		

Sample ID: R - 8 (H903475-34)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	48.0	16.0	10/17/2019	ND	400	100	400	0.00		

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Analytical Results For:

REPUBLIC BACKHOE SERVICES
 ERIC GARCIA
 47 E. DICKENS RD
 LOVINGTON NM, 88260
 Fax To: NONE

Received:	10/14/2019	Sampling Date:	10/12/2019
Reported:	10/18/2019	Sampling Type:	Soil
Project Name:	LUCY FEDERAL #2	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	READ & STEVENS - LEA CO NM		

Sample ID: R - 10 (H903475-35)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	10/17/2019	ND	400	100	400	0.00	

Sample ID: R - 12 (H903475-36)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	10/17/2019	ND	400	100	400	0.00	

Sample ID: S - 1 (H903475-37)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	16.0	16.0	10/17/2019	ND	400	100	400	0.00		

Sample ID: S - 4 (H903475-38)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	10/17/2019	ND	400	100	400	0.00	

Sample ID: S - 6 (H903475-39)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	10/17/2019	ND	400	100	400	0.00		

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Analytical Results For:

REPUBLIC BACKHOE SERVICES
 ERIC GARCIA
 47 E. DICKENS RD
 LOVINGTON NM, 88260
 Fax To: NONE

Received:	10/14/2019	Sampling Date:	10/12/2019
Reported:	10/18/2019	Sampling Type:	Soil
Project Name:	LUCY FEDERAL #2	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	READ & STEVENS - LEA CO NM		

Sample ID: S - 8 (H903475-40)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	10/17/2019	ND	400	100	400	0.00	

Sample ID: S - 10 (H903475-41)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	10/17/2019	ND	400	100	400	0.00	

Sample ID: S - 12 (H903475-42)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	10/17/2019	ND	400	100	400	0.00	

Sample ID: N 2 - 2 (H903475-43)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1600	16.0	10/17/2019	ND	400	100	400	0.00	

Sample ID: N 2 - 4 (H903475-44)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	10/17/2019	ND	400	100	400	0.00	

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Analytical Results For:

REPUBLIC BACKHOE SERVICES
 ERIC GARCIA
 47 E. DICKENS RD
 LOVINGTON NM, 88260
 Fax To: NONE

Received:	10/14/2019	Sampling Date:	10/12/2019
Reported:	10/18/2019	Sampling Type:	Soil
Project Name:	LUCY FEDERAL #2	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	READ & STEVENS - LEA CO NM		

Sample ID: N 2 - 6 (H903475-45)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	16.0	16.0	10/17/2019	ND	400	100	400	0.00		

Sample ID: N 2 - 8 (H903475-46)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	10/17/2019	ND	400	100	400	0.00	

Sample ID: N 2 - 10 (H903475-47)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	10/17/2019	ND	400	100	400	0.00		

Sample ID: N 2 - 12 (H903475-48)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	10/17/2019	ND	400	100	400	0.00	

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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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Page 13 of 17



CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

Company Name: Republic Backhoe Service

Project Manager: Eric Garcia

Address: 47 E. Dickens Rd.

City: Lovington

State: NM Zip: 88260

Phone #: 575-631-0131

Fax #:

Project #:

Project Owner: Read Stevens

Project Name: Lucy Federal #2

Project Location: Lea County

Sampler Name: Eric Garcia

FOR LAB USE ONLY

(G)RAB OR (C)OMP.

CONTAINERS

GROUNDWATER

WASTEWATER

SOIL

OIL

SLUDGE

OTHER :

ACID/BASE:

ICE / COOL

OTHER :

DATE

TIME

ANALYSIS REQUEST

Chloride

Lab I.D.

Sample I.D.

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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

Company Name: Republic Backhoe Service
Project Manager: Eric Garcia

Address: 47 E. Dickens Rd.

City: Lovington

Phone #: 575-631-0131

Project #:

Project Name: Lucy Federal #2

Project Location: Lea County

Sampler Name: Eric Garcia

FOR LAB USE ONLY

Lab I.D. Sample I.D.

H903475

11 M-10

12 M-12

13 O-2

14 O-4

15 O-6

16 O-8

17 O-10

18 O-12

19 P-2

20 P-4

(G)RAB OR (C)OMP.

CONTAINERS

GROUNDWATER

WASTEWATER

SOIL

OIL

SLUDGE

OTHER :

ACID/BASE:

ICE / COOL

OTHER :

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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

Company Name: Republic Backhoe Service

Project Manager: Eric Garcia

Address: 47 E. Dickens Rd.

City: Lovington

State: NM Zip: 88260

Phone #: 575-631-0131

Fax #:

Project #:

Project Owner: Read Stevens

Project Name: Lucy Federal #2

Project Location: Lea County

Sampler Name: Eric Garcia

FOR LAB USE ONLY

Matrix

Preserv

Sampling

Lab I.D.

Sample I.D.

1903475

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P-6

P-8

P-10

P-12

Q-2

Q-4

Q-6

Q-8

Q-10

Q-12

(G)RAB OR (C)OMP.

CONTAINERS

GROUNDWATER

WASTEWATER

SOIL

OIL

SLUDGE

OTHER :

ACID/BASE:

ICE / COOL

OTHER :

DATE

TIME

Chloride

ANALYSIS REQUEST

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Relinquished By:

Date: 10-14-19

Received By:

Signature

Relinquished By:

Date: 0815

Received By:

Signature

Delivered By: (Circle One) 16-76 #97

Sampler - UPS - Bus - Other: Collected 17/12

Sample Condition Cool Intact Yes No

CHECKED BY: (Initials) VQ

Phone Result: ☐ Yes ☐ No Add'l Phone #:
 Fax Result: ☐ Yes ☐ No Add'l Fax #:
 REMARKS: email results to: ericgarcia@b2bhotmail.com

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



CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

Company Name: Republic Backhoe Service		P.O. #:	
Project Manager: Eric Garcia		Company: Reed & Stevens	
Address: 47 E. Dickens Rd.		Attn: Joe Toovar	
City: Lovington	State: NM Zip: 88260	Address: PO Box 1518	
Phone #: 575-631-0131	Fax #:	City: Roswell	
Project #:	Project Owner: Reed & Stevens	State: NM Zip: 88202	
Project Name: Lucy Federal #2	Project Location: Lea County	Phone #: 575-390-2425	
Sampler Name: Eric Garcia	Fax #:		

Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX						DATE	TIME	ANALYSIS REQUEST
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :			
H903475	R-2	G	1							10/12/19	3:30	X Chloride
31	R-4									10/12/19	3:40	
32	R-6									10/12/19	3:50	
33	R-8									10/12/19	4:00	
34	R-10									10/12/19	4:10	
35	R-12									10/12/19	4:20	
36	S-7									10/12/19	4:40	
37	S-4									10/12/19	4:50	
38	S-6									10/12/19	5:00	
39	S-8									10/12/19	5:10	

Relinquished By:	Date: 10-14-19	Received By:	Date: 10-14-19
Relinquished By:	Time: 0815	Received By:	Time: 0815

Delivered By: (Circle One) 16-76 #97	Sample Condition	CHECKED BY: (Initials)
Sampler - UPS - Bus - Other: Protected 17.18	Cool <input type="checkbox"/> Intact <input checked="" type="checkbox"/>	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>

REMARKS: email results to: ericgarcia2@hotmail.com

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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

email results to:
ericgarcia2@hotmail.com



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

October 17, 2019

ERIC GARCIA

REPUBLIC BACKHOE SERVICES

47 E. DICKENS RD

LOVINGTON, NM 88260

RE: LUCY FEDERAL #2

Enclosed are the results of analyses for samples received by the laboratory on 10/17/19 9:10.

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/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".

Celey D. Keene

Lab Director/Quality Manager



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

Analytical Results For:

REPUBLIC BACKHOE SERVICES
 ERIC GARCIA
 47 E. DICKENS RD
 LOVINGTON NM, 88260
 Fax To: NONE

Received:	10/17/2019	Sampling Date:	10/16/2019
Reported:	10/17/2019	Sampling Type:	Soil
Project Name:	LUCY FEDERAL #2	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	READ & STEVENS - LEA CO NM		

Sample ID: BB - 2 (H903529-01)

BTEX 8021B			mg/kg		Analyzed By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	10/17/2019	ND	1.63	81.3	2.00	4.43		
Toluene*	<0.050	0.050	10/17/2019	ND	1.67	83.3	2.00	3.54		
Ethylbenzene*	<0.050	0.050	10/17/2019	ND	1.61	80.7	2.00	3.07		
Total Xylenes*	<0.150	0.150	10/17/2019	ND	4.89	81.5	6.00	2.55		
Total BTEX	<0.300	0.300	10/17/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 102 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	2880	16.0	10/17/2019	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	10/17/2019	ND	214	107	200	2.23	
DRO >C10-C28*	<10.0	10.0	10/17/2019	ND	214	107	200	0.219	
EXT DRO >C28-C36	<10.0	10.0	10/17/2019	ND					

Surrogate: 1-Chlorooctane 103 % 41-142

Surrogate: 1-Chlorooctadecane 92.1 % 37.6-147

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

REPUBLIC BACKHOE SERVICES
 ERIC GARCIA
 47 E. DICKENS RD
 LOVINGTON NM, 88260
 Fax To: NONE

Received:	10/17/2019	Sampling Date:	10/16/2019
Reported:	10/17/2019	Sampling Type:	Soil
Project Name:	LUCY FEDERAL #2	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	READ & STEVENS - LEA CO NM		

Sample ID: BB - 4 (H903529-02)

BTEX 8021B			mg/kg		Analyzed By: BF				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/17/2019	ND	1.63	81.3	2.00	4.43	
Toluene*	<0.050	0.050	10/17/2019	ND	1.67	83.3	2.00	3.54	
Ethylbenzene*	<0.050	0.050	10/17/2019	ND	1.61	80.7	2.00	3.07	
Total Xylenes*	<0.150	0.150	10/17/2019	ND	4.89	81.5	6.00	2.55	
Total BTEX	<0.300	0.300	10/17/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 103 % 73.3-129

Chloride, SM4500Cl-B			mg/kg		Analyzed By: AC				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	320	16.0	10/17/2019	ND	432	108	400	0.00	

TPH 8015M			mg/kg		Analyzed By: MS				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	10/17/2019	ND	214	107	200	2.23	
DRO >C10-C28*	<10.0	10.0	10/17/2019	ND	214	107	200	0.219	
EXT DRO >C28-C36	<10.0	10.0	10/17/2019	ND					

Surrogate: 1-Chlorooctane 99.4 % 41-142

Surrogate: 1-Chlorooctadecane 91.4 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

REPUBLIC BACKHOE SERVICES
 ERIC GARCIA
 47 E. DICKENS RD
 LOVINGTON NM, 88260
 Fax To: NONE

Received:	10/17/2019	Sampling Date:	10/16/2019
Reported:	10/17/2019	Sampling Type:	Soil
Project Name:	LUCY FEDERAL #2	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	READ & STEVENS - LEA CO NM		

Sample ID: BB - 5 (H903529-03)

BTEX 8021B			mg/kg		Analyzed By: BF				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/17/2019	ND	1.63	81.3	2.00	4.43	
Toluene*	<0.050	0.050	10/17/2019	ND	1.67	83.3	2.00	3.54	
Ethylbenzene*	<0.050	0.050	10/17/2019	ND	1.61	80.7	2.00	3.07	
Total Xylenes*	<0.150	0.150	10/17/2019	ND	4.89	81.5	6.00	2.55	
Total BTEX	<0.300	0.300	10/17/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 103 % 73.3-129

Chloride, SM4500Cl-B			mg/kg		Analyzed By: AC				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	80.0	16.0	10/17/2019	ND	432	108	400	0.00	

TPH 8015M			mg/kg		Analyzed By: MS				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	10/17/2019	ND	214	107	200	2.23	
DRO >C10-C28*	<10.0	10.0	10/17/2019	ND	214	107	200	0.219	
EXT DRO >C28-C36	<10.0	10.0	10/17/2019	ND					

Surrogate: 1-Chlorooctane 99.3 % 41-142

Surrogate: 1-Chlorooctadecane 87.7 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

REPUBLIC BACKHOE SERVICES
 ERIC GARCIA
 47 E. DICKENS RD
 LOVINGTON NM, 88260
 Fax To: NONE

Received:	10/17/2019	Sampling Date:	10/16/2019
Reported:	10/17/2019	Sampling Type:	Soil
Project Name:	LUCY FEDERAL #2	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	READ & STEVENS - LEA CO NM		

Sample ID: BB - 10 (H903529-04)

BTEx 8021B		mg/kg		Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	10/17/2019	ND	1.63	81.3	2.00	4.43		
Toluene*	<0.050	0.050	10/17/2019	ND	1.67	83.3	2.00	3.54		
Ethylbenzene*	<0.050	0.050	10/17/2019	ND	1.61	80.7	2.00	3.07		
Total Xylenes*	<0.150	0.150	10/17/2019	ND	4.89	81.5	6.00	2.55		
Total BTEx	<0.300	0.300	10/17/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 101 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	112	16.0	10/17/2019	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	10/17/2019	ND	214	107	200	2.23	
DRO >C10-C28*	<10.0	10.0	10/17/2019	ND	214	107	200	0.219	
EXT DRO >C28-C36	<10.0	10.0	10/17/2019	ND					

Surrogate: 1-Chlorooctane 104 % 41-142

Surrogate: 1-Chlorooctadecane 96.6 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

REPUBLIC BACKHOE SERVICES
 ERIC GARCIA
 47 E. DICKENS RD
 LOVINGTON NM, 88260
 Fax To: NONE

Received:	10/17/2019	Sampling Date:	10/16/2019
Reported:	10/17/2019	Sampling Type:	Soil
Project Name:	LUCY FEDERAL #2	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	READ & STEVENS - LEA CO NM		

Sample ID: DD - 2 (H903529-05)

BTEX 8021B			mg/kg		Analyzed By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	10/17/2019	ND	1.63	81.3	2.00	4.43		
Toluene*	<0.050	0.050	10/17/2019	ND	1.67	83.3	2.00	3.54		
Ethylbenzene*	<0.050	0.050	10/17/2019	ND	1.61	80.7	2.00	3.07		
Total Xylenes*	<0.150	0.150	10/17/2019	ND	4.89	81.5	6.00	2.55		
Total BTEX	<0.300	0.300	10/17/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 99.2 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1120	16.0	10/17/2019	ND	432	108	400	0.00	

TPH 8015M			mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	10/17/2019	ND	214	107	200	2.23		
DRO >C10-C28*	<10.0	10.0	10/17/2019	ND	214	107	200	0.219		
EXT DRO >C28-C36	<10.0	10.0	10/17/2019	ND						

Surrogate: 1-Chlorooctane 104 % 41-142

Surrogate: 1-Chlorooctadecane 92.1 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

REPUBLIC BACKHOE SERVICES
 ERIC GARCIA
 47 E. DICKENS RD
 LOVINGTON NM, 88260
 Fax To: NONE

Received:	10/17/2019	Sampling Date:	10/16/2019
Reported:	10/17/2019	Sampling Type:	Soil
Project Name:	LUCY FEDERAL #2	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	READ & STEVENS - LEA CO NM		

Sample ID: DD - 4 (H903529-06)

BTEX 8021B			mg/kg		Analyzed By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	10/17/2019	ND	1.63	81.3	2.00	4.43		
Toluene*	<0.050	0.050	10/17/2019	ND	1.67	83.3	2.00	3.54		
Ethylbenzene*	<0.050	0.050	10/17/2019	ND	1.61	80.7	2.00	3.07		
Total Xylenes*	<0.150	0.150	10/17/2019	ND	4.89	81.5	6.00	2.55		
Total BTEX	<0.300	0.300	10/17/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 100 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	560	16.0	10/17/2019	ND	432	108	400	0.00	

TPH 8015M			mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	10/17/2019	ND	214	107	200	2.23		
DRO >C10-C28*	<10.0	10.0	10/17/2019	ND	214	107	200	0.219		
EXT DRO >C28-C36	<10.0	10.0	10/17/2019	ND						

Surrogate: 1-Chlorooctane 105 % 41-142

Surrogate: 1-Chlorooctadecane 93.4 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

REPUBLIC BACKHOE SERVICES
 ERIC GARCIA
 47 E. DICKENS RD
 LOVINGTON NM, 88260
 Fax To: NONE

Received:	10/17/2019	Sampling Date:	10/16/2019
Reported:	10/17/2019	Sampling Type:	Soil
Project Name:	LUCY FEDERAL #2	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	READ & STEVENS - LEA CO NM		

Sample ID: DD - 5 (H903529-07)

BTEX 8021B			mg/kg		Analyzed By: BF				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/17/2019	ND	1.59	79.3	2.00	0.819	
Toluene*	<0.050	0.050	10/17/2019	ND	1.58	78.8	2.00	1.02	
Ethylbenzene*	<0.050	0.050	10/17/2019	ND	1.61	80.3	2.00	0.941	
Total Xylenes*	<0.150	0.150	10/17/2019	ND	4.82	80.4	6.00	0.635	
Total BTEX	<0.300	0.300	10/17/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 98.8 % 73.3-129

Chloride, SM4500Cl-B			mg/kg		Analyzed By: AC				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	544	16.0	10/17/2019	ND	432	108	400	0.00	

TPH 8015M			mg/kg		Analyzed By: MS				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	10/17/2019	ND	213	107	200	0.0685	
DRO >C10-C28*	<10.0	10.0	10/17/2019	ND	217	109	200	4.96	
EXT DRO >C28-C36	<10.0	10.0	10/17/2019	ND					

Surrogate: 1-Chlorooctane 87.9 % 41-142

Surrogate: 1-Chlorooctadecane 93.6 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

REPUBLIC BACKHOE SERVICES
 ERIC GARCIA
 47 E. DICKENS RD
 LOVINGTON NM, 88260
 Fax To: NONE

Received:	10/17/2019	Sampling Date:	10/16/2019
Reported:	10/17/2019	Sampling Type:	Soil
Project Name:	LUCY FEDERAL #2	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	READ & STEVENS - LEA CO NM		

Sample ID: DD - 10 (H903529-08)

BTEX 8021B			mg/kg		Analyzed By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	10/17/2019	ND	1.59	79.3	2.00	0.819		
Toluene*	<0.050	0.050	10/17/2019	ND	1.58	78.8	2.00	1.02		
Ethylbenzene*	<0.050	0.050	10/17/2019	ND	1.61	80.3	2.00	0.941		
Total Xylenes*	<0.150	0.150	10/17/2019	ND	4.82	80.4	6.00	0.635		
Total BTEX	<0.300	0.300	10/17/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 98.3 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	208	16.0	10/17/2019	ND	400	100	400	3.92	

TPH 8015M			mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	10/17/2019	ND	213	107	200	0.0685		
DRO >C10-C28*	<10.0	10.0	10/17/2019	ND	217	109	200	4.96		
EXT DRO >C28-C36	<10.0	10.0	10/17/2019	ND						

Surrogate: 1-Chlorooctane 87.4 % 41-142

Surrogate: 1-Chlorooctadecane 92.5 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

REPUBLIC BACKHOE SERVICES
 ERIC GARCIA
 47 E. DICKENS RD
 LOVINGTON NM, 88260
 Fax To: NONE

Received:	10/17/2019	Sampling Date:	10/16/2019
Reported:	10/17/2019	Sampling Type:	Soil
Project Name:	LUCY FEDERAL #2	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	READ & STEVENS - LEA CO NM		

Sample ID: CC - 2 (H903529-09)

BTEX 8021B			mg/kg		Analyzed By: BF				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/17/2019	ND	1.59	79.3	2.00	0.819	
Toluene*	<0.050	0.050	10/17/2019	ND	1.58	78.8	2.00	1.02	
Ethylbenzene*	<0.050	0.050	10/17/2019	ND	1.61	80.3	2.00	0.941	
Total Xylenes*	<0.150	0.150	10/17/2019	ND	4.82	80.4	6.00	0.635	
Total BTEX	<0.300	0.300	10/17/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 97.7 % 73.3-129

Chloride, SM4500Cl-B			mg/kg		Analyzed By: AC				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	208	16.0	10/17/2019	ND	400	100	400	3.92	

TPH 8015M			mg/kg		Analyzed By: MS				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	10/17/2019	ND	213	107	200	0.0685	
DRO >C10-C28*	<10.0	10.0	10/17/2019	ND	217	109	200	4.96	
EXT DRO >C28-C36	<10.0	10.0	10/17/2019	ND					

Surrogate: 1-Chlorooctane 93.7 % 41-142

Surrogate: 1-Chlorooctadecane 98.7 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

REPUBLIC BACKHOE SERVICES
 ERIC GARCIA
 47 E. DICKENS RD
 LOVINGTON NM, 88260
 Fax To: NONE

Received:	10/17/2019	Sampling Date:	10/16/2019
Reported:	10/17/2019	Sampling Type:	Soil
Project Name:	LUCY FEDERAL #2	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	READ & STEVENS - LEA CO NM		

Sample ID: CC - 4 (H903529-10)

BTEX 8021B			mg/kg		Analyzed By: BF				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/17/2019	ND	1.59	79.3	2.00	0.819	
Toluene*	<0.050	0.050	10/17/2019	ND	1.58	78.8	2.00	1.02	
Ethylbenzene*	<0.050	0.050	10/17/2019	ND	1.61	80.3	2.00	0.941	
Total Xylenes*	<0.150	0.150	10/17/2019	ND	4.82	80.4	6.00	0.635	
Total BTEX	<0.300	0.300	10/17/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 98.8 % 73.3-129

Chloride, SM4500Cl-B			mg/kg		Analyzed By: AC				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	10/17/2019	ND	400	100	400	3.92	

TPH 8015M			mg/kg		Analyzed By: MS				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	10/17/2019	ND	213	107	200	0.0685	
DRO >C10-C28*	<10.0	10.0	10/17/2019	ND	217	109	200	4.96	
EXT DRO >C28-C36	<10.0	10.0	10/17/2019	ND					

Surrogate: 1-Chlorooctane 91.9 % 41-142

Surrogate: 1-Chlorooctadecane 97.3 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

REPUBLIC BACKHOE SERVICES
 ERIC GARCIA
 47 E. DICKENS RD
 LOVINGTON NM, 88260
 Fax To: NONE

Received:	10/17/2019	Sampling Date:	10/16/2019
Reported:	10/17/2019	Sampling Type:	Soil
Project Name:	LUCY FEDERAL #2	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	READ & STEVENS - LEA CO NM		

Sample ID: CC - 5 (H903529-11)

BTEX 8021B			mg/kg		Analyzed By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	10/17/2019	ND	1.59	79.3	2.00	0.819		
Toluene*	<0.050	0.050	10/17/2019	ND	1.58	78.8	2.00	1.02		
Ethylbenzene*	<0.050	0.050	10/17/2019	ND	1.61	80.3	2.00	0.941		
Total Xylenes*	<0.150	0.150	10/17/2019	ND	4.82	80.4	6.00	0.635		
Total BTEX	<0.300	0.300	10/17/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 98.1 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	10/17/2019	ND	400	100	400	3.92	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	10/17/2019	ND	213	107	200	0.0685	
DRO >C10-C28*	<10.0	10.0	10/17/2019	ND	217	109	200	4.96	
EXT DRO >C28-C36	<10.0	10.0	10/17/2019	ND					

Surrogate: 1-Chlorooctane 87.0 % 41-142

Surrogate: 1-Chlorooctadecane 92.4 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

REPUBLIC BACKHOE SERVICES
 ERIC GARCIA
 47 E. DICKENS RD
 LOVINGTON NM, 88260
 Fax To: NONE

Received:	10/17/2019	Sampling Date:	10/16/2019
Reported:	10/17/2019	Sampling Type:	Soil
Project Name:	LUCY FEDERAL #2	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	READ & STEVENS - LEA CO NM		

Sample ID: CC - 10 (H903529-12)

BTEX 8021B			mg/kg		Analyzed By: BF				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/17/2019	ND	1.59	79.3	2.00	0.819	
Toluene*	<0.050	0.050	10/17/2019	ND	1.58	78.8	2.00	1.02	
Ethylbenzene*	<0.050	0.050	10/17/2019	ND	1.61	80.3	2.00	0.941	
Total Xylenes*	<0.150	0.150	10/17/2019	ND	4.82	80.4	6.00	0.635	
Total BTEX	<0.300	0.300	10/17/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 98.6 % 73.3-129

Chloride, SM4500Cl-B			mg/kg		Analyzed By: AC				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	10/17/2019	ND	400	100	400	3.92	

TPH 8015M			mg/kg		Analyzed By: MS				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	10/17/2019	ND	213	107	200	0.0685	
DRO >C10-C28*	<10.0	10.0	10/17/2019	ND	217	109	200	4.96	
EXT DRO >C28-C36	<10.0	10.0	10/17/2019	ND					

Surrogate: 1-Chlorooctane 81.9 % 41-142

Surrogate: 1-Chlorooctadecane 89.6 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Notes and Definitions

QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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



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

October 24, 2019

ERIC GARCIA

REPUBLIC BACKHOE SERVICES

47 E. DICKENS RD

LOVINGTON, NM 88260

RE: LUCY FEDERAL #2

Enclosed are the results of analyses for samples received by the laboratory on 10/21/19 13:55.

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/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 "Coley D. Keene". The signature is written in a cursive style with a large, stylized 'C' and 'K'.

Celey D. Keene

Lab Director/Quality Manager



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

Analytical Results For:

REPUBLIC BACKHOE SERVICES
 ERIC GARCIA
 47 E. DICKENS RD
 LOVINGTON NM, 88260
 Fax To: NONE

Received:	10/21/2019	Sampling Date:	10/19/2019
Reported:	10/24/2019	Sampling Type:	Soil
Project Name:	LUCY FEDERAL #2	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	READ & STEVENS - LEA CO NM		

Sample ID: B3 - 3 (H903587-01)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	528	16.0	10/23/2019	ND	448	112	400	0.00		

Sample ID: I- 3 (H903587-02)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	480	16.0	10/23/2019	ND	448	112	400	0.00		

Sample ID: N1- 3 (H903587-03)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	480	16.0	10/23/2019	ND	448	112	400	0.00		

Sample ID: N-2 - 3 (H903587-04)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	520	16.0	10/23/2019	ND	448	112	400	0.00	

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Celey D. Keene, Lab Director/Quality Manager



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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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A handwritten signature in black ink, reading "Celey D. Keene".

Celey D. Keene, Lab Director/Quality Manager



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

October 08, 2019

ERIC GARCIA

REPUBLIC BACKHOE SERVICES

47 E. DICKENS RD

LOVINGTON, NM 88260

RE: LUCY FEDERAL #2

Enclosed are the results of analyses for samples received by the laboratory on 10/08/19 11:05.

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/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,

Celey D. Keene

Lab Director/Quality Manager



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

Analytical Results For:

REPUBLIC BACKHOE SERVICES
 ERIC GARCIA
 47 E. DICKENS RD
 LOVINGTON NM, 88260
 Fax To: NONE

Received:	10/08/2019	Sampling Date:	10/07/2019
Reported:	10/08/2019	Sampling Type:	Soil
Project Name:	LUCY FEDERAL #2	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	READ & STEVENS - LEA CO NM		

Sample ID: B - 2 (H903410-01)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	2560	16.0	10/08/2019	ND	416	104	400	0.00	

Sample ID: B - 4 (H903410-02)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	10/08/2019	ND	400	100	400	7.69	

Sample ID: B - 6 (H903410-03)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	10/08/2019	ND	400	100	400	7.69	

Sample ID: B - 8 (H903410-04)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	96.0	16.0	10/08/2019	ND	400	100	400	7.69	

Cardinal Laboratories

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Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

REPUBLIC BACKHOE SERVICES
 ERIC GARCIA
 47 E. DICKENS RD
 LOVINGTON NM, 88260
 Fax To: NONE

Received:	10/08/2019	Sampling Date:	10/07/2019
Reported:	10/08/2019	Sampling Type:	Soil
Project Name:	LUCY FEDERAL #2	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	READ & STEVENS - LEA CO NM		

Sample ID: B - 10 (H903410-05)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	10/08/2019	ND	400	100	400	7.69	

Sample ID: C - 2 (H903410-06)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	4640	16.0	10/08/2019	ND	400	100	400	7.69	

Sample ID: C - 4 (H903410-07)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	440	16.0	10/08/2019	ND	400	100	400	7.69	

Sample ID: C - 6 (H903410-08)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	10/08/2019	ND	400	100	400	7.69	

Sample ID: C - 8 (H903410-09)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	10/08/2019	ND	400	100	400	7.69	

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

REPUBLIC BACKHOE SERVICES
 ERIC GARCIA
 47 E. DICKENS RD
 LOVINGTON NM, 88260
 Fax To: NONE

Received:	10/08/2019	Sampling Date:	10/07/2019
Reported:	10/08/2019	Sampling Type:	Soil
Project Name:	LUCY FEDERAL #2	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	READ & STEVENS - LEA CO NM		

Sample ID: C - 10 (H903410-10)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	10/08/2019	ND	400	100	400	7.69	

Sample ID: D - 2 (H903410-11)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	3320	16.0	10/08/2019	ND	400	100	400	7.69	

Sample ID: D - 4 (H903410-12)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	496	16.0	10/08/2019	ND	400	100	400	7.69	

Sample ID: D - 6 (H903410-13)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	160	16.0	10/08/2019	ND	400	100	400	7.69	

Sample ID: D - 8 (H903410-14)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	272	16.0	10/08/2019	ND	400	100	400	7.69		

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Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

REPUBLIC BACKHOE SERVICES
 ERIC GARCIA
 47 E. DICKENS RD
 LOVINGTON NM, 88260
 Fax To: NONE

Received: 10/08/2019
 Reported: 10/08/2019
 Project Name: LUCY FEDERAL #2
 Project Number: NONE GIVEN
 Project Location: READ & STEVENS - LEA CO NM

Sampling Date: 10/07/2019
 Sampling Type: Soil
 Sampling Condition: ** (See Notes)
 Sample Received By: Tamara Oldaker

Sample ID: D - 10 (H903410-15)

Chloride, SM4500Cl-B	mg/kg	Analyzed By: AC							
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	384	16.0	10/08/2019	ND	400	100	400	7.69	

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Celey D. Keene, Lab Director/Quality Manager



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

Caley D. Keene, Lab Director/Quality Manager

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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

Company Name: Republic Backhoe Service		P.O. #:	
Project Manager: Eric Garcia		Company: Read and Stevens	
Address: 47 E. Dickens Rd.		Attn: Joe Taylor	
City: Lovington State: NM Zip: 88260		Address: PO Box 1518	
Phone #: 575-631-0131 Fax #:		City: Roswell	
Project #:		State: NM Zip: 88202	
Project Name: Lucy Federal #2		Phone #: 575-390-2425	
Project Location: Lea County		Fax #:	
Sampler Name: Eric Garcia			

Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX						DATE	TIME	ANALYSIS REQUEST
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :			
H903410	B-2	G								10/7/19	12:00	Chloride
	B-4									10/7/19	12:05	
	B-4									10/7/19	12:15	
	B-8									10/7/19	12:25	
	B-10									10/7/19	12:40	
	C-2									10/7/19	2:00	
	C-4									10/7/19	2:10	
	C-6									10/7/19	2:25	
	C-8									10/7/19	2:40	
	C-10									10/7/19	2:55	

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Relinquished By: *[Signature]* Date: 10-8-19 Time: 11:05 Received By: *[Signature]*

Relinquished By: *[Signature]* Date: *[Blank]* Time: *[Blank]* Received By: *[Signature]*

Delivered By: (Circle One) 16.12 #97 Sample Condition: Cool Intact ☒ Yes ☐ No CHECKED BY: (Initials) *[Initials]*

Sampler - UPS - Bus - Other: *Consented 16.58* ☐ Yes ☒ No *SC*

Phone Result: ☐ Yes ☐ No Add'l Phone #: *[Blank]*
 Fax Result: ☐ Yes ☐ No Add'l Fax #: *[Blank]*

REMARKS: email results to: eric.garcia@cardinal-lab.com
Push!

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

8 jo 8 eba



CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

Company Name: Republic Backhoe Service

Project Manager: Eric Garcia

Address: 47 E. Dickens Rd.

City: Lovington State: NM Zip: 88260

Phone #: 575-631-0131

Fax #:

Project #:

Project Owner:

Project Name: Lucy Federal #2

Project Location: Lea County

Sampler Name: Eric Garcia

FOR LAB USE ONLY

Lab I.D. Sample I.D.

H903410

11 D-2

12 D-4

13 D-6

14 D-8

15 D-10

(G)RAB OR (C)OMP.

CONTAINERS

GROUNDWATER

WASTEWATER

SOIL

OIL

SLUDGE

OTHER :

ACID/BASE:

ICE / COOL

OTHER :

DATE

TIME

10/7/19 3:30

10/7/19 3:40

10/7/19 3:50

10/7/19 4:05

10/7/19 4:15

10/7/19

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10/7/19

10/7/19

Chloride

ANALYSIS REQUEST

P.O. #:

Company: Read and Stevens

Attn: Joe Toyar

Address: PO Box 1518

City: Roswell

State: NM Zip: 88202

Phone #: 575-390-2425

Fax #:

PRESERV.

SAMPLING

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Relinquished By:

Date: 10-8-19

Received By:

Phone Result: ☐ Yes ☐ No

REMARKS:

email results to:

ericgarcia62@hotmail.com

Push!!

Relinquished By:

Date: 11-05

Received By:

Sample Condition

CHECKED BY:

Delivered By: (Circle One) 16.12

Sample Condition

Sample Condition

Sample Condition

Sample Condition

Sample Condition

Sample Condition

Delivered By: (Circle One) 16.12

Date: 11-05

Received By:

Sample Condition

CHECKED BY:

Delivered By: (Circle One) 16.12

Sample Condition

Sample Condition

Sample Condition

Sample Condition

Sample Condition

Sample Condition

Delivered By: (Circle One) 16.12

Date: 11-05

Received By:

Sample Condition

CHECKED BY:

Delivered By: (Circle One) 16.12

Sample Condition

Sample Condition

Sample Condition

Sample Condition

Sample Condition

Sample Condition

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



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

October 10, 2019

ERIC GARCIA

REPUBLIC BACKHOE SERVICES

47 E. DICKENS RD

LOVINGTON, NM 88260

RE: LUCY FEDERAL #2

Enclosed are the results of analyses for samples received by the laboratory on 10/08/19 11:05.

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/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,

Celey D. Keene

Lab Director/Quality Manager



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

Analytical Results For:

REPUBLIC BACKHOE SERVICES
 ERIC GARCIA
 47 E. DICKENS RD
 LOVINGTON NM, 88260
 Fax To: NONE

Received:	10/08/2019	Sampling Date:	10/07/2019
Reported:	10/10/2019	Sampling Type:	Soil
Project Name:	LUCY FEDERAL #2	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	READ & STEVENS - LEA CO NM		

Sample ID: F - 2 (H903411-01)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	4200	16.0	10/09/2019	ND	432	108	400	0.00	

Sample ID: F - 4 (H903411-02)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1010	16.0	10/09/2019	ND	432	108	400	0.00	

Sample ID: F - 6 (H903411-03)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1310	16.0	10/09/2019	ND	432	108	400	0.00	

Sample ID: F - 8 (H903411-04)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	928	16.0	10/09/2019	ND	432	108	400	0.00	

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

REPUBLIC BACKHOE SERVICES
 ERIC GARCIA
 47 E. DICKENS RD
 LOVINGTON NM, 88260
 Fax To: NONE

Received:	10/08/2019	Sampling Date:	10/07/2019
Reported:	10/10/2019	Sampling Type:	Soil
Project Name:	LUCY FEDERAL #2	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	READ & STEVENS - LEA CO NM		

Sample ID: F - 10 (H903411-05)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	10/09/2019	ND	432	108	400	0.00	

Sample ID: A - 2 (H903411-06)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	3160	16.0	10/09/2019	ND	432	108	400	0.00	

Sample ID: A - 4 (H903411-07)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	128	16.0	10/09/2019	ND	432	108	400	0.00		

Sample ID: A - 6 (H903411-08)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	96.0	16.0	10/09/2019	ND	432	108	400	0.00		

Sample ID: A - 8 (H903411-09)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	64.0	16.0	10/09/2019	ND	432	108	400	0.00		

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Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

REPUBLIC BACKHOE SERVICES
 ERIC GARCIA
 47 E. DICKENS RD
 LOVINGTON NM, 88260
 Fax To: NONE

Received:	10/08/2019	Sampling Date:	10/07/2019
Reported:	10/10/2019	Sampling Type:	Soil
Project Name:	LUCY FEDERAL #2	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	READ & STEVENS - LEA CO NM		

Sample ID: A - 10 (H903411-10)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	10/09/2019	ND	432	108	400	0.00	

Sample ID: E - 2 (H903411-11)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	4080	16.0	10/09/2019	ND	432	108	400	0.00	

Sample ID: E - 4 (H903411-12)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	720	16.0	10/09/2019	ND	432	108	400	0.00		

Sample ID: E - 6 (H903411-13)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	160	16.0	10/09/2019	ND	432	108	400	0.00	

Sample ID: E - 8 (H903411-14)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	16.0	16.0	10/09/2019	ND	432	108	400	0.00		

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

REPUBLIC BACKHOE SERVICES
 ERIC GARCIA
 47 E. DICKENS RD
 LOVINGTON NM, 88260
 Fax To: NONE

Received:	10/08/2019	Sampling Date:	10/07/2019
Reported:	10/10/2019	Sampling Type:	Soil
Project Name:	LUCY FEDERAL #2	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	READ & STEVENS - LEA CO NM		

Sample ID: E - 10 (H903411-15)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	10/09/2019	ND	432	108	400	0.00	

Sample ID: G - 2 (H903411-16)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1920	16.0	10/09/2019	ND	432	108	400	0.00		

Sample ID: G - 4 (H903411-17)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	208	16.0	10/09/2019	ND	432	108	400	0.00		

Sample ID: G - 6 (H903411-18)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	10/09/2019	ND	432	108	400	0.00	

Sample ID: G - 8 (H903411-19)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	16.0	16.0	10/09/2019	ND	416	104	400	0.00		

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Analytical Results For:

REPUBLIC BACKHOE SERVICES
 ERIC GARCIA
 47 E. DICKENS RD
 LOVINGTON NM, 88260
 Fax To: NONE

Received: 10/08/2019
 Reported: 10/10/2019
 Project Name: LUCY FEDERAL #2
 Project Number: NONE GIVEN
 Project Location: READ & STEVENS - LEA CO NM

Sampling Date: 10/07/2019
 Sampling Type: Soil
 Sampling Condition: ** (See Notes)
 Sample Received By: Tamara Oldaker

Sample ID: G - 10 (H903411-20)

Chloride, SM4500Cl-B	mg/kg	Analyzed By: AC							
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	10/09/2019	ND	416	104	400	0.00	

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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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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

Company Name: Republic Backhoe Service		P.O. #:	
Project Manager: Eric Garcia		Company: Read and Stevens	
Address: 47 E. Dickens Rd.		Attn: Joe Toyer	
City: Lovington	State: NM Zip: 88260	Address: PO Box 1518	
Phone #: 575-631-0131	Fax #:	City: Roswell	
Project #:	Project Owner:	State: NM Zip: 88202	
Project Name: Lucy Federal #2	Project Location: Lea County	Phone #: 575-390-2425	
Sample Name: Eric Garcia	Fax #:		

Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX						DATE	TIME	ANALYSIS REQUEST
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :			
H903411												
11	E-2	G								10/7/19	5:00	X
12	E-4									10/7/19	5:10	
13	E-6									10/7/19	5:20	
14	E-8									10/7/19	5:35	
15	E-10									10/7/19	5:45	
16	G-2									10/7/19	6:00	
17	G-4									10/7/19	6:15	
18	G-6									10/7/19	6:25	
19	G-8									10/7/19	6:35	
20	G-10									10/7/19	6:50	

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Relinquished By: <i>[Signature]</i>	Date: 10-8-19	Received By: <i>[Signature]</i>	Date: 11-05-19
Relinquished By: <i>[Signature]</i>	Date: <i>[Blank]</i>	Received By: <i>[Signature]</i>	Date: <i>[Blank]</i>

Delivered By: (Circle One) <i>16.1c</i>	Sample Condition: <i>#97</i>	CHECKED BY: <i>[Signature]</i>
Sampler - UPS - Bus - Other: <i>Consolidated 16.5c</i>	Cool Intact <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	(Initials)

REMARKS: email results to: eric.garcia@cardinallab.com

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



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

December 02, 2019

ERIC GARCIA

REPUBLIC BACKHOE SERVICES

47 E. DICKENS RD

LOVINGTON, NM 88260

RE: LUCY FEDERAL #2

Enclosed are the results of analyses for samples received by the laboratory on 11/25/19 11:40.

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/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 cursive script that reads "Coley D. Keene".

Celey D. Keene

Lab Director/Quality Manager



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

Analytical Results For:

REPUBLIC BACKHOE SERVICES
 ERIC GARCIA
 47 E. DICKENS RD
 LOVINGTON NM, 88260
 Fax To: NONE

Received:	11/25/2019	Sampling Date:	11/21/2019
Reported:	12/02/2019	Sampling Type:	Soil
Project Name:	LUCY FEDERAL #2	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	READ & STEVENS - LEA CO NM		

Sample ID: 8 A - 4 (H903997-01)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	592	16.0	11/27/2019	ND	432	108	400	0.00		

Sample ID: 8 A - 5 (H903997-02)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	352	16.0	11/27/2019	ND	432	108	400	0.00		

Sample ID: 8 A - 10 (H903997-03)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	16.0	16.0	11/27/2019	ND	432	108	400	0.00		

Sample ID: 9 A - 2 (H903997-04)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	11/27/2019	ND	432	108	400	0.00	

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Analytical Results For:

REPUBLIC BACKHOE SERVICES
 ERIC GARCIA
 47 E. DICKENS RD
 LOVINGTON NM, 88260
 Fax To: NONE

Received:	11/25/2019	Sampling Date:	11/21/2019
Reported:	12/02/2019	Sampling Type:	Soil
Project Name:	LUCY FEDERAL #2	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	READ & STEVENS - LEA CO NM		

Sample ID: 9 A - 5 (H903997-05)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	16.0	16.0	11/27/2019	ND	432	108	400	0.00		

Sample ID: 9 A - 10 (H903997-06)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	16.0	16.0	11/27/2019	ND	432	108	400	0.00		

Sample ID: 10 A - 2 (H903997-07)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	80.0	16.0	11/27/2019	ND	432	108	400	0.00		

Sample ID: 10 A - 5 (H903997-08)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	11/27/2019	ND	432	108	400	0.00		

Sample ID: 10 A - 10 (H903997-09)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	720	16.0	11/27/2019	ND	432	108	400	0.00		

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Analytical Results For:

REPUBLIC BACKHOE SERVICES
 ERIC GARCIA
 47 E. DICKENS RD
 LOVINGTON NM, 88260
 Fax To: NONE

Received:	11/25/2019	Sampling Date:	11/21/2019
Reported:	12/02/2019	Sampling Type:	Soil
Project Name:	LUCY FEDERAL #2	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	READ & STEVENS - LEA CO NM		

Sample ID: 11 A - 2 (H903997-10)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	192	16.0	11/27/2019	ND	432	108	400	0.00		

Sample ID: 11 A - 5 (H903997-11)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	320	16.0	11/27/2019	ND	432	108	400	0.00		

Sample ID: 11 A - 10 (H903997-12)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	304	16.0	11/27/2019	ND	432	108	400	0.00		

Sample ID: 12 A - 2 (H903997-13)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	11/27/2019	ND	432	108	400	0.00		

Sample ID: 12 A - 5 (H903997-14)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	176	16.0	11/27/2019	ND	432	108	400	0.00		

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Analytical Results For:

REPUBLIC BACKHOE SERVICES
 ERIC GARCIA
 47 E. DICKENS RD
 LOVINGTON NM, 88260
 Fax To: NONE

Received:	11/25/2019	Sampling Date:	11/21/2019
Reported:	12/02/2019	Sampling Type:	Soil
Project Name:	LUCY FEDERAL #2	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	READ & STEVENS - LEA CO NM		

Sample ID: 12 A - 10 (H903997-15)

Chloride, SM4500Cl-B	mg/kg	Analyzed By: AC							
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	192	16.0	11/27/2019	ND	432	108	400	0.00	

Sample ID: 13 A - 2 (H903997-16)

Chloride, SM4500Cl-B	mg/kg	Analyzed By: AC							
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	304	16.0	11/27/2019	ND	432	108	400	0.00	

Sample ID: 13 A - 5 (H903997-17)

Chloride, SM4500Cl-B	mg/kg	Analyzed By: AC							
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	272	16.0	11/27/2019	ND	432	108	400	0.00	

Sample ID: 13 A - 10 (H903997-18)

Chloride, SM4500Cl-B	mg/kg	Analyzed By: AC							
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	224	16.0	11/27/2019	ND	432	108	400	0.00	

Sample ID: 14 A - 2 (H903997-19)

Chloride, SM4500Cl-B	mg/kg	Analyzed By: AC							
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	304	16.0	11/27/2019	ND	432	108	400	0.00	

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Analytical Results For:

REPUBLIC BACKHOE SERVICES
 ERIC GARCIA
 47 E. DICKENS RD
 LOVINGTON NM, 88260
 Fax To: NONE

Received:	11/25/2019	Sampling Date:	11/21/2019
Reported:	12/02/2019	Sampling Type:	Soil
Project Name:	LUCY FEDERAL #2	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	READ & STEVENS - LEA CO NM		

Sample ID: 14 A - 5 (H903997-20)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	336	16.0	11/27/2019	ND	432	108	400	0.00	

Sample ID: 14 A - 10 (H903997-21)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	11/27/2019	ND	432	108	400	0.00	

Sample ID: 15 A - 2 (H903997-22)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	16.0	16.0	11/27/2019	ND	432	108	400	0.00		

Sample ID: 15 A - 5 (H903997-23)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	11/27/2019	ND	432	108	400	0.00		

Sample ID: 15 A - 10 (H903997-24)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	11/27/2019	ND	432	108	400	0.00		

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Analytical Results For:

REPUBLIC BACKHOE SERVICES
 ERIC GARCIA
 47 E. DICKENS RD
 LOVINGTON NM, 88260
 Fax To: NONE

Received:	11/25/2019	Sampling Date:	11/21/2019
Reported:	12/02/2019	Sampling Type:	Soil
Project Name:	LUCY FEDERAL #2	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	READ & STEVENS - LEA CO NM		

Sample ID: 16 A - 3 (H903997-25)

Chloride, SM4500Cl-B	mg/kg	Analyzed By: AC							
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	11/27/2019	ND	400	100	400	7.69	

Sample ID: 16 A - 5 (H903997-26)

Chloride, SM4500Cl-B	mg/kg	Analyzed By: AC							
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	496	16.0	11/27/2019	ND	400	100	400	7.69	

Sample ID: 16 A - 10 (H903997-27)

Chloride, SM4500Cl-B	mg/kg	Analyzed By: AC							
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	256	16.0	11/27/2019	ND	400	100	400	7.69	

Sample ID: 17 A - 4 (H903997-28)

Chloride, SM4500Cl-B	mg/kg	Analyzed By: AC							
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	320	16.0	11/27/2019	ND	400	100	400	7.69	

Sample ID: 17 A - 5 (H903997-29)

Chloride, SM4500Cl-B	mg/kg	Analyzed By: AC							
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	848	16.0	11/27/2019	ND	400	100	400	7.69	

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Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

REPUBLIC BACKHOE SERVICES
 ERIC GARCIA
 47 E. DICKENS RD
 LOVINGTON NM, 88260
 Fax To: NONE

Received: 11/25/2019
 Reported: 12/02/2019
 Project Name: LUCY FEDERAL #2
 Project Number: NONE GIVEN
 Project Location: READ & STEVENS - LEA CO NM

Sampling Date: 11/21/2019
 Sampling Type: Soil
 Sampling Condition: ** (See Notes)
 Sample Received By: Tamara Oldaker

Sample ID: 17 A - 10 (H903997-30)

Chloride, SM4500Cl-B	mg/kg	Analyzed By: AC							
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	2720	16.0	11/27/2019	ND	400	100	400	7.69	

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Celey D. Keene, Lab Director/Quality Manager



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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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

Company Name: Republic Backhoe Service		P.O. #:		
Project Manager: Eric Garcia		Company: Read & Stevens		
Address: 47 E Dickens Rd		Attn: Joe Tovar		
City: Lovington	State: NM	Zip: 88260		
Phone #: 575-631-0131	Fax #:	Address: PO Box 1518		
Project #:	Project Owner: Lead & Stevens	City: Roswell		
Project Name: Lucan Federal #2	State: NM	Zip: 88202		
Project Location: Lea County	Phone #: 575-390-2425			
Sampler Name: Eric Garcia	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		

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Relinquished By:	Date: 11-25-19	Received By:	Date: 11-25-19
Relinquished By:	Date:	Received By:	Date:
Delivered By: (Circle One)	Time:	Sample Condition	CHECKED BY: (Initials)
Sampler - UPS - Bus - Other:		<input type="checkbox"/> Cool <input checked="" type="checkbox"/> Intact	
		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	

REMARKS:

email results to: ericgarcia62@hotmail.com

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

21 of 21 page



CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

Company Name: Republic Backhoe Service

Project Manager: Eric Garcia

Address: 47 E. Dickens Rd.

City: Lovington

Phone #: 575-631-0131

Project #:

Project Name: Lucn Federal #2

Project Location: Lea County

Sample Name: Eric Garcia

FOR LAB USE ONLY

Lab I.D.

Sample I.D.

H9D3997

21

22

23

24

25

26

27

28

29

30

14A-10

15A-2

15A-5

15A-10

16A-5

16A-5

16A-10

17A-4

17A-5

17A-10

(G)RAB OR (C)OMP.

CONTAINERS

GROUNDWATER

WASTEWATER

SOIL

OIL

SLUDGE

OTHER :

ACID/BASE:

ICE / COOL

OTHER :

DATE

TIME

11/21/19 1:50

11/21/19 2:30

11/21/19 2:40

11/21/19 2:50

11/21/19 3:15

11/21/19 3:25

11/21/19 3:40

11/21/19 4:00

11/21/19 4:10

11/21/19 4:20

Chloride

ANALYSIS REQUEST

P.O. #:

Company: Read E Stevens

Attn: Joe Tovar

Address: PO Box 1518

City: Roswell

State: NM Zip: 88202

Phone #: 575-390-2425

Fax #:

Relinquished By:

Relinquished By:

Relinquished By:

Relinquished By:

Relinquished By:

Relinquished By:

Relinquished By:

Relinquished By:

Relinquished By:

Date: 11-25-19

Time: 11:40

Date: 11-25-19

Time: 11:40

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Phone Result:

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Fax Result:

Phone Result:

Fax Result:

Phone Result:

Fax Result:

Phone Result:

Yes ☐ No ☐

Yes ☐ No ☐

Yes ☐ No ☐

Yes ☐ No ☐

Yes ☐ No ☐

Yes ☐ No ☐

Yes ☐ No ☐

Yes ☐ No ☐

Yes ☐ No ☐

Add'l Phone #:

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REMARKS:

email results to: ericgarcia62@hotmail.com

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



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

December 02, 2019

ERIC GARCIA

REPUBLIC BACKHOE SERVICES

47 E. DICKENS RD

LOVINGTON, NM 88260

RE: LUCY FEDERAL #2

Enclosed are the results of analyses for samples received by the laboratory on 11/25/19 11:40.

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/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,

Celey D. Keene

Lab Director/Quality Manager



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

Analytical Results For:

REPUBLIC BACKHOE SERVICES
 ERIC GARCIA
 47 E. DICKENS RD
 LOVINGTON NM, 88260
 Fax To: NONE

Received:	11/25/2019	Sampling Date:	11/20/2019
Reported:	12/02/2019	Sampling Type:	Soil
Project Name:	LUCY FEDERAL #2	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	READ & STEVENS - LEA CO NM		

Sample ID: 1 A - 2 (H903996-01)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	16.0	16.0	11/27/2019	ND	400	100	400	7.69		

Sample ID: 1 A - 5 (H903996-02)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	80.0	16.0	11/27/2019	ND	400	100	400	7.69		

Sample ID: 1 A - 10 (H903996-03)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	64.0	16.0	11/27/2019	ND	400	100	400	7.69		

Sample ID: 2 A - 2 (H903996-04)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	432	16.0	11/27/2019	ND	400	100	400	7.69	

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

REPUBLIC BACKHOE SERVICES
 ERIC GARCIA
 47 E. DICKENS RD
 LOVINGTON NM, 88260
 Fax To: NONE

Received:	11/25/2019	Sampling Date:	11/20/2019
Reported:	12/02/2019	Sampling Type:	Soil
Project Name:	LUCY FEDERAL #2	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	READ & STEVENS - LEA CO NM		

Sample ID: 2 A - 5 (H903996-05)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	96.0	16.0	11/27/2019	ND	400	100	400	7.69	

Sample ID: 2 A - 10 (H903996-06)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	80.0	16.0	11/27/2019	ND	432	108	400	0.00	

Sample ID: 3 A - 2 (H903996-07)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	80.0	16.0	11/27/2019	ND	432	108	400	0.00		

Sample ID: 3 A - 5 (H903996-08)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	992	16.0	11/27/2019	ND	432	108	400	0.00		

Sample ID: 3 A - 10 (H903996-09)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	11/27/2019	ND	432	108	400	0.00		

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

REPUBLIC BACKHOE SERVICES
 ERIC GARCIA
 47 E. DICKENS RD
 LOVINGTON NM, 88260
 Fax To: NONE

Received:	11/25/2019	Sampling Date:	11/20/2019
Reported:	12/02/2019	Sampling Type:	Soil
Project Name:	LUCY FEDERAL #2	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	READ & STEVENS - LEA CO NM		

Sample ID: 4 A - 3 (H903996-10)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	352	16.0	11/27/2019	ND	432	108	400	0.00		

Sample ID: 4 A - 5 (H903996-11)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	768	16.0	11/27/2019	ND	432	108	400	0.00	

Sample ID: 4 A - 10 (H903996-12)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	16.0	16.0	11/27/2019	ND	432	108	400	0.00		

Sample ID: 5 A - 2 (H903996-13)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	80.0	16.0	11/27/2019	ND	432	108	400	0.00	

Sample ID: 5 A - 5 (H903996-14)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	64.0	16.0	11/27/2019	ND	432	108	400	0.00		

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

REPUBLIC BACKHOE SERVICES
 ERIC GARCIA
 47 E. DICKENS RD
 LOVINGTON NM, 88260
 Fax To: NONE

Received:	11/25/2019	Sampling Date:	11/20/2019
Reported:	12/02/2019	Sampling Type:	Soil
Project Name:	LUCY FEDERAL #2	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	READ & STEVENS - LEA CO NM		

Sample ID: 5 A - 10 (H903996-15)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	11/27/2019	ND	432	108	400	0.00	

Sample ID: 6 A - 2 (H903996-16)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	11/27/2019	ND	432	108	400	0.00	

Sample ID: 6 A - 5 (H903996-17)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	11/27/2019	ND	432	108	400	0.00	

Sample ID: 6 A - 10 (H903996-18)

Chloride, SM4500Cl-B	mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	11/27/2019	ND	432	108	400	0.00	

Sample ID: 7 A - 2 (H903996-19)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	112	16.0	11/27/2019	ND	432	108	400	0.00	

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Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

REPUBLIC BACKHOE SERVICES
 ERIC GARCIA
 47 E. DICKENS RD
 LOVINGTON NM, 88260
 Fax To: NONE

Received:	11/25/2019	Sampling Date:	11/20/2019
Reported:	12/02/2019	Sampling Type:	Soil
Project Name:	LUCY FEDERAL #2	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	READ & STEVENS - LEA CO NM		

Sample ID: 7 A - 5 (H903996-20)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	16.0	16.0	11/27/2019	ND	432	108	400	0.00		

Sample ID: 7 A - 10 (H903996-21)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	11/27/2019	ND	432	108	400	0.00		

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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

Cardinal Laboratories

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A handwritten signature in black ink, appearing to read "Caley D. Keene".

Caley D. Keene, Lab Director/Quality Manager

Page 6 of 10

CARDINAL Laboratories

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

Company Name: Republic Backhoe Service

Project Manager: Eric Garcia

Address: 47 E Dickens Rd

City: Lovington

Phone #: 575-631-0131

Project #:

Project Name: Lucy Federal #2

Project Location: Lea County

Sampler Name: Eric Garcia

P.O. #:

Company: Read E Stevens

Attn: Joe Tovar

Address: PO Box 1518

City: Roswell

State: NM Zip: 88202

Phone #: 575-390-2425

FOR LAB USE ONLY

Lab I.D.

Sample I.D.

HA-5

HA-10

HA-2

HA-5

HA-10

HA-2

HA-5

HA-10

HA-2

HA-5

HA-10

HA-2

HA-5

HA-10

HA-2

HA-5

HA-10

HA-2

HA-5

HA-10

HA-2

(G)RAB OR (C)OMP.

CONTAINERS

GROUNDWATER

WASTEWATER

SOIL

OIL

SLUDGE

OTHER :

ACID/BASE:

ICE / COOL

OTHER :

DATE

TIME

DATE

TIME

DATE

TIME

DATE

TIME

DATE

TIME

DATE

TIME

DATE

TIME

DATE

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Chloride

ANALYSIS REQUEST

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. In no event shall Cardinal be liable 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 analysis. 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 any/your hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Relinquished By:

Date: 11-25-19

Received By:

Date: 11-25-19

Received By:

Date: 11-25-19

Received By:

Date: 11-25-19

Received By:

Date: 11-25-19

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Date: 11-25-19

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Relinquished By:

Date: 11-25-19

Received By:

Date: 11-25-19

Received By:

Date: 11-25-19

Received By:

Date: 11-25-19

Received By:

Date: 11-25-19

Received By:

Date: 11-25-19

Received By:

Delivered By: (Circle One) 1988

1988

1988

1988

1988

1988

1988

1988

1988

1988

1988

1988

1988

1988

Sampler - UPS - Bus - Other: 1988

1988

1988

1988

1988

1988

1988

1988

1988

1988

1988

1988

1988

1988

Sample Condition

Cool Intact

Yes Yes

No No

Yes Yes

No No

Yes Yes

No No

Yes Yes

No No

Checked By: (Initials)

1988

1988

1988

1988

1988

1988

1988

1988

1988

1988

1988

1988

1988

email results to: ericgarcia@cardinal.com

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

01 of 01 page



CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

Company Name: Republic Backhoe Service		P.O. #:		ANALYSIS REQUEST	
Project Manager: Eric Garcia		Company: Read & Stevens			
Address: 47 E Dickens Rd		Attn: Joe Tovar			
City: Lovington		Address: PO Box 1518			
Phone #: 575-631-0131		City: Roswell			
Project #:		State: NM Zip: 88202			
Project Name: Lucy Federal #2		Phone #: 575-390-2425			
Project Location: Lea County		Fax #:			
Sampler Name: Eric Garcia					
FOR LAB USE ONLY					
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.			
		# CONTAINERS			
H9D3496 21 7A-10		GROUNDWATER			
		WASTEWATER			
		SOIL	X		
		OIL			
		SLUDGE			
		OTHER :			
		ACID/BASE:			
		ICE / COOL			
		OTHER :			
		DATE	TIME		
11/20/19	4:30	X Chloride			
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Relinquished By: <i>[Signature]</i>		Received By: <i>[Signature]</i>		Date: 11-25-19	
Time: 11:48		Time: 11:48			
Delivered By: (Circle One) 19.8		Sample Condition: Cool Intact		CHECKED BY: (Initials) Yea	
Sampler - UPS - Bus - Other: <i>Consolidated 20.2</i>		Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>			
† Cardinal cannot accept verbal changes. Please Fax written changes to (575) 393-2326		REMARKS: email results to: ericgarcia@cardinalnm.com			



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

November 26, 2019

ERIC GARCIA
REPUBLIC BACKHOE SERVICES
47 E. DICKENS RD
LOVINGTON, NM 88260

RE: LUCY FEDERAL #2

Enclosed are the results of analyses for samples received by the laboratory on 11/22/19 11:20.

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/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,

Mike Snyder For Celey D. Keene
Lab Director/Quality Manager



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

Analytical Results For:

REPUBLIC BACKHOE SERVICES
 ERIC GARCIA
 47 E. DICKENS RD
 LOVINGTON NM, 88260
 Fax To: NONE

Received: 11/22/2019
 Reported: 11/26/2019
 Project Name: LUCY FEDERAL #2
 Project Number: NONE GIVEN
 Project Location: READ & STEVENS - LEA CO NM

Sampling Date: 11/19/2019
 Sampling Type: Soil
 Sampling Condition: ** (See Notes)
 Sample Received By: Tamara Oldaker

Sample ID: N 3 - 2 (H903973-01)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	352	16.0	11/26/2019	ND	416	104	400	0.00		

Sample ID: N 3 - 5 (H903973-02)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	784	16.0	11/26/2019	ND	416	104	400	0.00		

Sample ID: N 3 - 10 (H903973-03)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	960	16.0	11/26/2019	ND	416	104	400	0.00		

Sample ID: N 4 - 2 (H903973-04)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	176	16.0	11/26/2019	ND	416	104	400	0.00		

Cardinal Laboratories

*=Accredited Analyte

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

REPUBLIC BACKHOE SERVICES
 ERIC GARCIA
 47 E. DICKENS RD
 LOVINGTON NM, 88260
 Fax To: NONE

Received:	11/22/2019	Sampling Date:	11/19/2019
Reported:	11/26/2019	Sampling Type:	Soil
Project Name:	LUCY FEDERAL #2	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	READ & STEVENS - LEA CO NM		

Sample ID: N 4 - 5 (H903973-05)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	96.0	16.0	11/26/2019	ND	416	104	400	0.00		

Sample ID: N 4 - 10 (H903973-06)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	240	16.0	11/26/2019	ND	416	104	400	0.00	

Cardinal Laboratories

*=Accredited Analyte

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



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Notes and Definitions

QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
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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A handwritten signature in black ink, appearing to read "Mike Snyder", is written over a horizontal line.

Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: Republic Backhoe Service Project Manager: Eric Garcia Address: 47 E. Dickens Rd. City: Lovington State: NM Zip: 88260 Phone #: 575-631-0131 Fax #: Project #: Project Name: Lucy Federal #2 Project Location: Lea County Sampler Name: Eric Garcia		P.O. #: Company: Reed and Stevens Attn: Joe Tovar Address: PO Box 151X City: Roswell State: NM Zip: 88202 Phone #: 575-390-2425 Fax #:	
BILL TO			
Lab I.D. H903973		Sample I.D. 1 N3-2 2 N3-5 3 N3-10 4 N4-2 5 N4-5 6 N4-10	
(G)RAB OR (C)OMP. # CONTAINERS GROUNDWATER WASTEWATER SOIL OIL SLUDGE OTHER : ACID/BASE: ICE / COOL OTHER :		MATRIX PRESERV SAMPLING	
DATE TIME		Chloride	
Relinquished By: [Signature] Date: 11-22-19 Time: 11:20		Received By: [Signature] Date: 11-22-19 Time: 11:20	
Relinquished By: [Signature] Date: 11-22-19 Time: 11:20		Received By: [Signature]	
Delivered By: (Circle One) 17.42 #47 Sampler - UPS - Bus - Other: Corrected 17.82		Sample Condition Cool Intact Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Checked By: (Initials) TO-	
Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Add'l Phone #: Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Add'l Fax #:		REMARKS: email results to: ericgarcia@hotmail.com	

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