

# Initial Application Part I

*This application is placed in file for record. It MAY or MAY NOT have been reviewed to be determined Administratively Complete*

RECEIVED: <u>05/31/2019</u>	REVIEWER:	TYPE: <u>SWD</u>	APP NO: <u>PMA11915651300</u>
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ABOVE THIS TABLE FOR OCD DIVISION USE ONLY

**NEW MEXICO OIL CONSERVATION DIVISION**  
- Geological & Engineering Bureau -  
1220 South St. Francis Drive, Santa Fe, NM 87505



**ADMINISTRATIVE APPLICATION CHECKLIST**

THIS CHECKLIST IS MANDATORY FOR ALL ADMINISTRATIVE APPLICATIONS FOR EXCEPTIONS TO DIVISION RULES AND REGULATIONS WHICH REQUIRE PROCESSING AT THE DIVISION LEVEL IN SANTA FE

Applicant: 3Bear Field Services, LLC OGRID Number: 372603  
 Well Name: Grama State SWD No. 2 API: \_\_\_\_\_  
 Pool: SWD; Devonian-Silurian Pool Code: 97869

**SUBMIT ACCURATE AND COMPLETE INFORMATION REQUIRED TO PROCESS THE TYPE OF APPLICATION INDICATED BELOW**

- 1) **TYPE OF APPLICATION:** Check those which apply for [A]
- A. Location – Spacing Unit – Simultaneous Dedication  
 NSL     NSP (PROJECT AREA)     NSP (PRORATION UNIT)     SD
- B. Check one only for [ I ] or [ II ]
- [ I ] Commingling – Storage – Measurement  
 DHC     CTB     PLC     PC     OLS     OLM
- [ II ] Injection – Disposal – Pressure Increase – Enhanced Oil Recovery  
 WFX     PMX     SWD     IPI     EOR     PPR

- 2) **NOTIFICATION REQUIRED TO:** Check those which apply.
- A.  Offset operators or lease holders  
 B.  Royalty, overriding royalty owners, revenue owners  
 C.  Application requires published notice  
 D.  Notification and/or concurrent approval by SLO  
 E.  Notification and/or concurrent approval by BLM  
 F.  Surface owner  
 G.  For all of the above, proof of notification or publication is attached, and/or,  
 H.  No notice required

FOR OCD ONLY	
<input type="checkbox"/>	Notice Complete
<input type="checkbox"/>	Application Content Complete

3) **CERTIFICATION:** I hereby certify that the information submitted with this application for administrative approval is **accurate** and **complete** to the best of my knowledge. I also understand that **no action** will be taken on this application until the required information and notifications are submitted to the Division.

Note: Statement must be completed by an individual with managerial and/or supervisory capacity.

May 21, 2019

Ramona Hovey – Agent of 3Bear Field Service

Print or Type Name

Ramona Hovey  
Signature

Date

(512) 600-1777

Phone Number

ramona@lonquist.com

e-mail Address



# LONQUIST & CO. LLC

PETROLEUM  
ENGINEERS

ENERGY  
ADVISORS

AUSTIN · HOUSTON · WICHITA · DENVER · CALGARY

May 21, 2019

New Mexico Energy, Minerals, and Natural Resources Department  
Oil Conservation Division District IV  
1220 South St. Francis Drive  
Santa Fe, New Mexico 87505  
(505) 476-3440

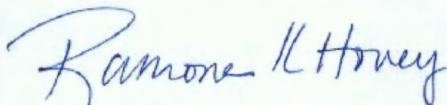
**RE: GRAMA STATE SWD NO. 2 AUTHORIZATION TO INJECT**

To Whom It May Concern:

Attached for your review is Form C-108, Application for Authorization to Inject, and its supplemental documents prepared for 3Bear Field Service, LLC's (3Bear") Grama State SWD No. 2. In addition, Forms C-101 and C-102 have also been included with this package. Notices have been sent to offset, operators, leaseholders and the surface owner. Proof of notice will be sent to the OCD upon receipt.

Any questions should be directed towards 3Bear Field Services, LLC's agent Lonquist & Co., LLC.

Regards,



Ramona K. Hovey  
Sr. Petroleum Engineer  
Lonquist & Co., LLC

(512) 600-1777  
[ramona@lonquist.com](mailto:ramona@lonquist.com)

**APPLICATION FOR AUTHORIZATION TO INJECT**

- I. PURPOSE: Secondary Recovery Pressure Maintenance  Disposal Storage  
Application qualifies for administrative approval?  Yes No
- II. OPERATOR: 3Bear Field Services, LLC  
ADDRESS: 415 W. Wall St., Suite 1212  
CONTACT PARTY: Kevin Burns PHONE: 432-686-2973
- III. WELL DATA: Complete the data required on the reverse side of this form for each well proposed for injection.  
Additional sheets may be attached if necessary.
- IV. Is this an expansion of an existing project? Yes  No  
If yes, give the Division order number authorizing the project: \_\_\_\_\_
- V. Attach a map that identifies all wells and leases within two miles of any proposed injection well with a one-half mile radius circle drawn around each proposed injection well. This circle identifies the well's area of review.
- VI. Attach a tabulation of data on all wells of public record within the area of review which penetrate the proposed injection zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of completion, and a schematic of any plugged well illustrating all plugging detail.
- VII. Attach data on the proposed operation, including:
1. Proposed average and maximum daily rate and volume of fluids to be injected;
  2. Whether the system is open or closed;
  3. Proposed average and maximum injection pressure;
  4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and,
  5. If injection is for disposal purposes into a zone not productive of oil or gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water (may be measured or inferred from existing literature, studies, nearby wells, etc.).
- \*VIII. Attach appropriate geologic data on the injection zone including appropriate lithologic detail, geologic name, thickness, and depth. Give the geologic name, and depth to bottom of all underground sources of drinking water (aquifers containing waters with total dissolved solids concentrations of 10,000 mg/l or less) overlying the proposed injection zone as well as any such sources known to be immediately underlying the injection interval.
- IX. Describe the proposed stimulation program, if any.
- \*X. Attach appropriate logging and test data on the well. (If well logs have been filed with the Division, they need not be resubmitted).
- \*XI. Attach a chemical analysis of fresh water from two or more fresh water wells (if available and producing) within one mile of any injection or disposal well showing location of wells and dates samples were taken.
- XII. Applicants for disposal wells must make an affirmative statement that they have examined available geologic and engineering data and find no evidence of open faults or any other hydrologic connection between the disposal zone and any underground sources of drinking water.
- XIII. Applicants must complete the "Proof of Notice" section on the reverse side of this form.
- XIV. Certification: I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.
- NAME: Ramona Hovey TITLE: Consulting Engineer – Agent for 3Bear Field Service  
SIGNATURE: Ramona K Hovey DATE: 5/21/2019  
E-MAIL ADDRESS: ramona@lonquist.com
- \* If the information required under Sections VI, VIII, X, and XI above has been previously submitted, it need not be resubmitted. Please show the date and circumstances of the earlier submittal: \_\_\_\_\_



### III. WELL DATA

A. The following well data must be submitted for each injection well covered by this application. The data must be both in tabular and schematic form and shall include:

- (1) Lease name; Well No.; Location by Section, Township and Range; and footage location within the section.
- (2) Each casing string used with its size, setting depth, sacks of cement used, hole size, top of cement, and how such top was determined.
- (3) A description of the tubing to be used including its size, lining material, and setting depth.
- (4) The name, model, and setting depth of the packer used or a description of any other seal system or assembly used.

Division District Offices have supplies of Well Data Sheets which may be used or which may be used as models for this purpose. Applicants for several identical wells may submit a "typical data sheet" rather than submitting the data for each well.

B. The following must be submitted for each injection well covered by this application. All items must be addressed for the initial well. Responses for additional wells need be shown only when different. Information shown on schematics need not be repeated.

- (1) The name of the injection formation and, if applicable, the field or pool name.
- (2) The injection interval and whether it is perforated or open-hole.
- (3) State if the well was drilled for injection or, if not, the original purpose of the well.
- (4) Give the depths of any other perforated intervals and detail on the sacks of cement or bridge plugs used to seal off such perforations.
- (5) Give the depth to and the name of the next higher and next lower oil or gas zone in the area of the well, if any.

### XIV. PROOF OF NOTICE

All applicants must furnish proof that a copy of the application has been furnished, by certified or registered mail, to the owner of the surface of the land on which the well is to be located and to each leasehold operator within one-half mile of the well location.

Where an application is subject to administrative approval, a proof of publication must be submitted. Such proof shall consist of a copy of the legal advertisement which was published in the county in which the well is located. The contents of such advertisement must include:

- (1) The name, address, phone number, and contact party for the applicant;
- (2) The intended purpose of the injection well; with the exact location of single wells or the Section, Township, and Range location of multiple wells;
- (3) The formation name and depth with expected maximum injection rates and pressures; and,
- (4) A notation that interested parties must file objections or requests for hearing with the Oil Conservation Division, 1220 South St. Francis Dr., Santa Fe, New Mexico 87505, within 15 days.

**NO ACTION WILL BE TAKEN ON THE APPLICATION UNTIL PROPER PROOF OF NOTICE HAS BEEN SUBMITTED.**

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**NOTICE:** Surface owners or offset operators must file any objections or requests for hearing of administrative applications within 15 days from the date this application was mailed to them.



Side 1

### INJECTION WELL DATA SHEET

OPERATOR: 3Bear Field Services, LLC

WELL NAME & NUMBER: Grama State SWD No. 2

WELL LOCATION: 351' FNL & 215' FWL  
FOOTAGE LOCATION

LOT 4  
UNIT LETTER

2  
SECTION

22S  
TOWNSHIP

34E  
RANGE

#### WELLBORE SCHEMATIC

#### WELL CONSTRUCTION DATA

##### Surface Casing

Hole Size: 26.000"

Casing Size: 20.00"

Cemented with 3,010 sacks.

or     ft<sup>3</sup>

Top of Cement: surface

Method Determined: circulation

##### 1<sup>st</sup> Intermediate Casing

Hole Size: 17.500"

Casing Size: 13.375"

Cemented with 3,115 sacks.

or     ft<sup>3</sup>

Top of Cement: surface

Method Determined: circulation

##### 2<sup>nd</sup> Intermediate Casing

Hole Size: 12.250"

Casing Size: 9.625"

Cemented with 2,530 sacks.

or     ft<sup>3</sup>

Top of Cement: surface

Method Determined: circulation

##### Production Liner

Hole Size: 8.750"

Casing Size: 7.625"

Cemented with 320 sacks.

or     ft<sup>3</sup>

Top of Cement: 10,800'

Method Determined: calculation

Total Depth: 15,500'

##### Injection Interval

14,400 feet to 15,500 feet

(Open Hole)



**INJECTION WELL DATA SHEET**

Tubing Size: 5.5", 20 lb/ft, HCL-80, BTC from 0' - 14,350'

Lining Material: Duoline

Type of Packer: 7-5/8" X 5-1/2" Permanent Packer with High Temperature Elastomer and Full Inconel 925 Trim

Packer Setting Depth: 14,350'

Other Type of Tubing/Casing Seal (if applicable): \_\_\_\_\_

Additional Data

1. Is this a new well drilled for injection?        X   Yes      \_\_\_\_\_ No

If no, for what purpose was the well originally drilled?

\_\_\_\_\_

2. Name of the Injection Formation: Devonian, Fusselman

3. Name of Field or Pool (if applicable): SWD; Devonian-Silurian (Pool Code: 97869)

4. Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail, i.e. sacks of cement or plug(s) used.

No, new drill.

5. Give the name and depths of any oil or gas zones underlying or overlying the proposed injection zone in this area:

Yates: 3,948'

Bone Spring: 8,328'

Wolfcamp: 11,143'

Strawn: 11,668'

Morrow: 12,513'





3Bear Field Services, LLC

Grama State SWD No. 2

**FORM C-108 Supplemental Information**

III. Well Data

A. Wellbore Information

1.

Well information	
Lease Name	Grama State SWD
Well No.	2
Location	S-2 T-22S R-34E
Footage Location	351' FNL & 215' FWL

2.

a. Wellbore Description

Casing Information				
Type	Conductor	Surface	Production	Liner
OD	20"	13.375"	9.625"	7.625"
WT	0.438"	0.480"	0.395"	0.500"
ID	19.124"	12.415"	8.835"	6.625"
Drift ID	18.936"	12.259"	8.679"	6.500"
COD	21"	14.375"	10.625"	7.625"
Weight	94 lb/ft	68 lb/ft	40 lb/ft	39 lb/ft
Grade	J-55 BTC	J-55 BTC	P-110 BTC	P-110 UFJ
Hole Size	26"	17.5"	12.25"	8.75"
Depth Set	1,750'	5,660'	11,175'	10,950'-14,400'



b. Cementing Program

<b>Cement Information</b>				
<b>Casing String</b>	Conductor	Surface	Production	Liner
<b>Lead Cement</b>	Class C	Class C	Class H	
<b>Lead Cement Volume</b>	1,885 sks	Stage 1: 550 sks Stage 2: 2,030 sks	1,405 sks	
<b>Lead Cement Density</b>	12.8 ppg	Stage 1: 11.5 ppg Stage 2: 11.5 ppg	11.5 ppg	
<b>Tail Cement</b>	Class C	Class C	Class H	Class H
<b>Tail Cement Volume</b>	1,125 sks	Stage 1: 535 sks	1,125 sks	320 sks
<b>Tail Cement Density</b>	14.8 ppg	Stage 1: 14.8 ppg	14.8 ppg	14.5 ppg
<b>Cement Excess</b>	100%	Stage 1: 100% Stage: 200%	50%	10%
<b>Total Sacks</b>	3,010 sks	3,115 sks	2,530 sks	320 sks
<b>TOC</b>	Surface	Surface	Surface	10,800'
<b>Method</b>	Circulate to Surface	Circulate to Surface	Circulate to Surface	Logged

3. Tubing Description

<b>Tubing Information</b>	
<b>OD</b>	5.5"
<b>WT</b>	0.361"
<b>ID</b>	4.778"
<b>Drift ID</b>	4.653"
<b>COD</b>	6.050"
<b>Weight</b>	20 lb/ft
<b>Grade</b>	HCL-80 BTC
<b>Depth Set</b>	0-14,350'

Tubing will be lined with Duoline.

4. Packer Description

7-5/8" x 5-1/2" Permanent Packer with High Temp Elastomer and Full Inconel 925 trim

B. Completion Information



1. Injection Formation: Devonian, Silurian, Fusselman
2. Gross Injection Interval: 14,400'-15,500'  
Completion Type: Open Hole
3. Drilled for injection.
4. See the attached wellbore schematic.
5. Oil and Gas Bearing Zones within area of well:

Formation	Depth
Yates	3,948'
Bone Spring	8,328'
Wolfcamp	11,143'
Strawn	11,668'
Morrow	12,513'

#### VI. Area of Review

No wells within the area of review penetrate the proposed injection zone.

#### VII. Proposed Operation Data

1. Proposed Daily Rate of Fluids to be Injection:  
Average Volume: 20,000 BPD  
Maximum Volume: 25,000 BPD
2. Closed System
3. Anticipated Injection Pressure:  
Average Injection Pressure: 2,160 PSI (surface pressure)  
Maximum Injection Pressure: 2,880 PSI (surface pressure)
4. The injection fluid is to be locally produced water. It is expected that the source water will predominantly be from the Bone Spring and Artesia formations. Attached are produced water sample analyses taken from the closest wells that feature samples from the Artesia, Bone Spring, Delaware, Grayburn/San Andreas, Morrow, Pennsylvanian, and Strawn formations.
5. The disposal interval is non-productive. No water samples are available from the surrounding area.



## VIII. Geological Data

### Devonian Formation Lithology:

The Devonian formation is a dolomitic ramp carbonate that occurs below the Woodford shale and above the Fusselman formation. Strata found in the Devonian formation include two major groups, the Wristen Buildups and the Thirtyone Deepwater Chert, with the Wristen being more abundant. The Wristen Groups is composed of mixed limestone and dolomites with mudstone to grainstone and boundstone textures. Porosity in the Wristen group is a result of both primary and secondary development. Present are moldic, vugular, karstic (including collapse breccia) features that allow for higher porosities and permeabilities. The Thirtyone Formation contains two end-member reservoir facies, skeletal packstones/grainstones and spiculitic chert, with most of the porosity and permeability found in the coarsely crystalline cherty dolomite. These particular characteristics allow for this formation to be a tremendous Salt Water Disposal horizon.

### Fusselman Formation Lithology:

The Silurian/Ordovician Fusselman Formation is stratigraphically below the Wristen Group and is above and separated from the Montoya Formation by the Sylvan Shale. The Sylvan Shale is the lower confining layer for the proposed Grama State SWD No. 2 well. Fusselman facies include a laminated skeletal wackestone in the upper part and a buildup complex in the lower part composed of ooid and bryozoan grainstones. These grainstones can also be potentially prolific zones for disposal.

A. Injection Zone: Devonian-Silurian Formation

Formation	Depth
Rustler	1,678'
Yates	3,948'
Capitan Reef	4,338'
Delaware	5,560'
Cherry Canyon	5,818'
Bone Spring	8,328'
1 <sup>st</sup> Bone Spring Sandstone	9,438'
2 <sup>nd</sup> Bone Spring Sandstone	10,008'
3 <sup>rd</sup> Bone Spring Carbonate	10,288'
3 <sup>rd</sup> Bone Spring Sandstone	10,888'
Wolfcamp	11,143'
Pennsylvanian Shale	11,378'
Strawn	11,668'
Morrow	12,513'
Mississippian Lime	13,808'
Woodford	14,228'
Devonian	14,373'

B. Underground Sources of Drinking Water

One water well exists within the proposed well. The water well has a depth of 109 feet. Across the area, fresh water wells are usually drilled between 45' and 368' in depth. The Rustler is known to exist in this general area and may also be another USDW and will be protected by setting surface casing at 1,750'.

IX. Proposed Stimulation Program

No stimulation program planned.

X. Logging and Test Data on the Well

There are no logs or test data on the well. During the process of drilling and completion resistivity, gamma ray, and density logs will be run.

XI. Chemical Analysis of Fresh Water Wells

Attached is a map of the one (1) water well that exists within one-mile of the well location. Samples from the well were obtained and attached is a water sample report performed by Cardinal Laboratories. A Water Right Summary from the New Mexico Office of the State Engineer is attached for water well CP-00944-POD1.



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

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

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

**District IV**  
1220 S. St. Francis Dr., Santa Fe, NM 87505  
Phone (505) 476-3460 Fax (505) 476-3462

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

Form C-101  
Revised July 18, 2013

AMENDED REPORT

**APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE**

<sup>1</sup> Operator Name and Address 3BEAR FIELD SERVICES, LLC 415 W. WALL ST, STE 1212 MIDLAND, TX 79701		<sup>2</sup> OGRID Number 372603
		<sup>3</sup> API Number
<sup>4</sup> Property Code	<sup>5</sup> Property Name GRAMA STATE SWD	<sup>6</sup> Well No. 2

**<sup>7</sup> Surface Location**

UL - Lot LOT 4	Section 2	Township 22S	Range 34E	Lot Idn 4	Feet from 351	N/S Line NORTH	Feet From 215	E/W Line WEST	County LEA
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**<sup>8</sup> Proposed Bottom Hole Location**

UL - Lot	Section	Township	Range	Lot Idn	Feet from	N/S Line	Feet From	E/W Line	County
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**<sup>9</sup> Pool Information**

Pool Name SWD; DEVONIAN-SILURIAN	Pool Code 97869
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**Additional Well Information**

<sup>11</sup> Work Type N	<sup>12</sup> Well Type SWD	<sup>13</sup> Cable/Rotary R	<sup>14</sup> Lease Type STATE	<sup>15</sup> Ground Level Elevation 3611'
<sup>16</sup> Multiple N	<sup>17</sup> Proposed Depth 15,500'	<sup>18</sup> Formation DEVONIAN-SILURIAN	<sup>19</sup> Contractor PATRIOT	<sup>20</sup> Spud Date 08/01/2019
Depth to Ground water		Distance from nearest fresh water well		Distance to nearest surface water

We will be using a closed-loop system in lieu of lined pits

**<sup>21</sup> Proposed Casing and Cement Program**

Type	Hole Size	Casing Size	Casing Weight/ft	Setting Depth	Sacks of Cement	Estimated TOC
SURFACE	26"	20"	94.0# J-55	1750'	3010	0
INT 1	17.5"	13.375"	68# J-55	5660'	3115	0
INT 2	12...25"	9.625"	40# P-110	11175	2530	0

**Casing/Cement Program: Additional Comments**

DV TOOL SET @ 3700' PLEASE SEE ADDITIONAL CASING INFO AND BOP INFO ON ATTACHED SHEET W/WBD

**<sup>22</sup> Proposed Blowout Prevention Program**

Type	Working Pressure	Test Pressure	Manufacturer

<sup>23</sup> I hereby certify that the information given above is true and complete to the best of my knowledge and belief.  
I further certify that I have complied with 19.15.14.9 (A) NMAC  and/or 19.15.14.9 (B) NMAC , if applicable.  
Signature: *Jennifer Elrod*

**OIL CONSERVATION DIVISION**

Approved By:

Printed name: JENNIFER ELROD

Title:

Title: SR. REGULATORY ANALYST

Approved Date:

Expiration Date:

E-mail Address: JELROD@CHISHOLMENERGY.COM

Date: 05/09/2019

Phone: 817-953-3728

Conditions of Approval Attached



District I  
1625 N. French Dr., Hobbs, NM 88240  
Phone: (575) 393-6161 Fax: (575) 393-0720  
District II  
811 S. First St., Artesia, NM 88210  
Phone: (575) 748-1283 Fax: (575) 748-9720  
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1000 Rio Brazos Road, Aztec, NM 87410  
Phone: (505) 334-6178 Fax: (505) 334-6170  
District IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505  
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico  
Energy, Minerals & Natural Resources Department  
OIL CONSERVATION DIVISION  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

Form C-102  
Revised August 1, 2011  
Submit one copy to appropriate  
District Office

AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

<sup>1</sup> API Number	<sup>2</sup> Pool Code 97869	<sup>3</sup> Pool Name SWD; DEVONIAN-SILURIAN
<sup>4</sup> Property Code	<sup>5</sup> Property Name GRAMA STATE SWD	<sup>6</sup> Well Number 2
<sup>7</sup> OGRID No. 372603	<sup>8</sup> Operator Name 3BEAR FIELD SERVICES, LLC	<sup>9</sup> Elevation 3611'

<sup>10</sup> Surface Location

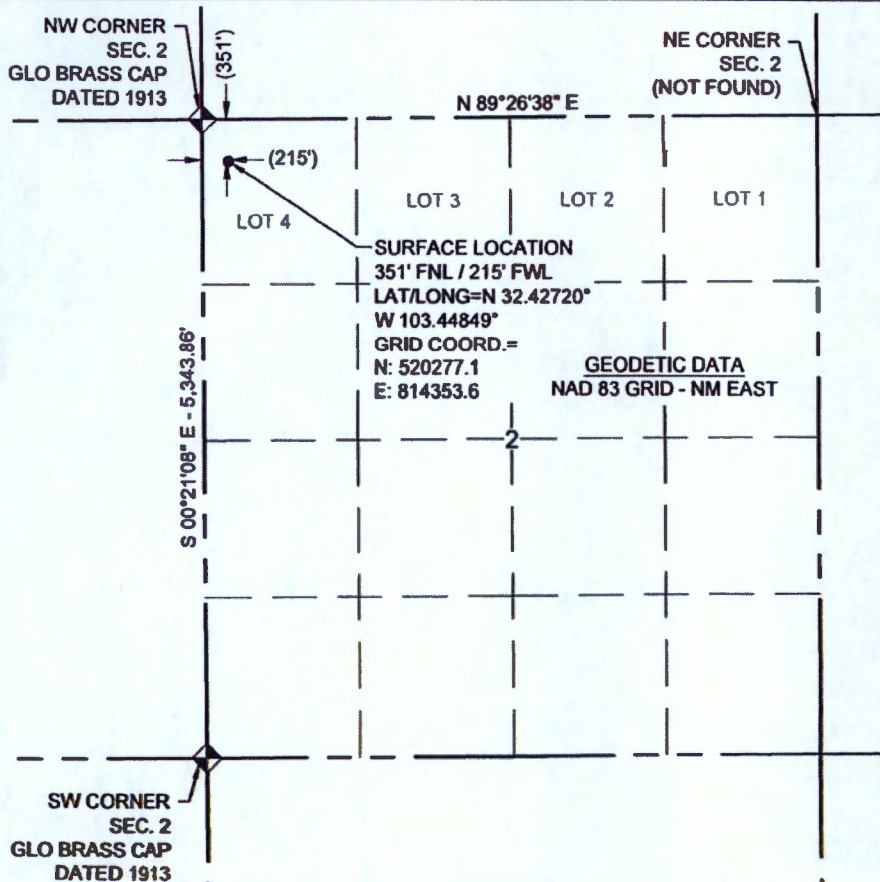
UL or lot no.	Section	Township	Range	Lot Ida	Feet from the	North/South line	Feet from the	East/West line	County
LOT 4	2	22S	34E		351	NORTH	215	WEST	LEA

<sup>11</sup> Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Ida	Feet from the	North/South line	Feet from the	East/West line	County

<sup>12</sup> Dedicated Acres	<sup>13</sup> Joint or Infill	<sup>14</sup> Consolidation Code	<sup>15</sup> Order No.

No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.



**<sup>17</sup> OPERATOR CERTIFICATION**  
I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Signature: *Jennifer Elrod* Date: 05/09/19

JENNIFER ELROD  
Printed Name

JELROD@CHISHOLMENERGY.COM  
E-mail Address

**<sup>18</sup> SURVEYOR CERTIFICATION**  
I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my knowledge and belief.

SURFACE LOCATION ON: [Blank]

Date of Survey: 04/01/19

Signature and Seal of Professional Surveyor: *Thomas G. Carlson*

THOMAS G. CARLSON  
NEW MEXICO  
22896  
4-1-19  
PROFESSIONAL SURVEYOR

22896  
Certificate Number



PROPOSED CASING AND CEMENT PROGRAM (CONTD)

TYPE	HOLE SIZE	CASING SIZE	CASING WEIGHT/FT	SETTING DEPTH	SACKS OF CEMENT	ESTIMATED TOC
LINER	8.75"	7.625"	39# P-110 FJ/HDL	10950'-14400'	320	10800
OPEN HOLE	6.125"	5.5" TBNG		14350'		

TYPE	WORKING PRESSURE	TEST PRESSURE	MAUFACTURER
ANNULAR	2500	2500	TBD
DOUBLE RAM	5000	5000	TBD
SINGLE RAM	5000	5000	TBD



**Casing Program:** Grama State SWD 2 - Minimum Pipe Requirements

Open Hole Size (Inches)	Casing Depth: From (ft)	Casing Setting Depth (ft) MD	Casing Setting Depth (ft) TVD	Casing Size (Inches)	Casing Weight (lb/ft)	Casing Grade	Thread	Condition	Anticipated Mud Weight (ppg)	Burst (psi)	Burst SF (1.125)	Collapse (psi)	Collapse SF (1.125)	Pipe Body Tension (lbs)	Joint Tension (lbs)	Air Weight (lbs)	Bouyant Weight (lbs)	Pipe Body Tension SF (1.8)	Joint Tension SF (1.8)
Surface																			
20	0	1,600'	1,600'	20	94.0	J-55	BTC	New	8.8	2,110	2.88	520	1.42	1,480,000	1,402,000	150,400	130,175	11.37	10.77
Intermediate 1																			
17.5	0	5,700'	5,700'	13 3/8"	68	J55	BTC	New	10.2	3,450	1.14	1,950	2.58	1,241,000	1,241,000	387,600	327,186	3.79	3.79
Intermediate 2																			
12.25"	0	11,050'	11,050'	9 5/8"	40	P-110	BTC	New	9	7,910	1.53	3,470	2.01	1,260,000	1,266,000	442,000	381,211	3.31	3.32
Production																			
8.75"	10800	14,675'	14,675'	7 5/8"	39	P-110	UFJ	New	12	12,640	1.38	11,080	1.21	1,231,000	1,231,000	151,125	123,413	9.97	9.97

**Casing Design Criteria and Casing Loading Assumptions:**

Surface

Tension A 1.8 design factor with effects of buoyancy with a fluid equal to a mud weight of: 8.8 ppg  
 Collapse A 1.125 design factor with 1/2 internal evacuation and collapse force equal to a mud gradient of: 8.8 ppg  
 Burst A 1.125 design factor with full external evacuation and burst force equal to a mud gradient of: 8.8 ppg

Intermediate 1

Tension A 1.8 design factor with effects of buoyancy with a fluid equal to a mud weight of: 10.2 ppg  
 Collapse A 1.125 design factor with 1/4 TVD internal evacuation and collapse force equal to a mud gradient of: 10.2 ppg  
 Burst A 1.125 design factor with full external evacuation and burst force equal to a mud gradient of: 10.2 ppg

Intermediate 2

Tension A 1.8 design factor with effects of buoyancy with a fluid equal to a mud weight of: 9 ppg  
 Collapse A 1.125 design factor with 1/3 TVD internal evacuation and collapse force equal to a mud gradient of: 9 ppg  
 Burst A 1.125 design factor with full external evacuation and burst force equal to a mud gradient of: 9 ppg

Production

Tension A 1.8 design factor with effects of buoyancy with a fluid equal to a mud weight of: 12 ppg  
 Collapse A 1.125 design factor with full internal evacuation and collapse force equal to a mud gradient of: 12 ppg  
 Burst A 1.125 design factor with full external evacuation and burst force equal to a mud gradient of: 12 ppg





**GEOLOGICAL PROGNOSIS**

Well Name: **Gramma 34 SWD 1**  
 State: **New Mexico**  
 County: **Lea**  
 Section: **34**  
 Township: **21S**  
 Range: **34E**  
 Field Name:

API No.: **30-025-**  
 SL: **522 ft FEL & 220 ft FSL (32.4286359, -103.4503892 NAD 27)**  
 Approx LP:  
 BHL:  
 Surface Elevation: **3628 FT**  
 KB Elevation: **3653 FT**  
 PTD: **est 15500 FT**

Well Objective: **Devonian & Silurian**  
 Target Line:

FORMATION	MD, ft	TVD, ft	TVDSS, ft	LITHOLOGY	RES OBJ/CONTENTS
Rustler		1678	1950	Anhy & Salt	
Yates		3948	-320	SS & SH	
Capitan Reef		4338	-710	Dol & LS	
Cherry Canyon		5818	-2190	SS, SLTST, & SH	
Bone Spring		8328	-4700	LS & SH	
1st Bone Spring SS		9438	-5810	SS, SLTST, & SH	
2nd Bone Spring SS		10008	-6380	SS, SLTST, & SH	
3rd Bone Spring CARB		10288	-6660	SS, SLTST, & SH	
3rd Bone Spring SS		10888	-7260	SS, SLTST, & SH	
Wolfcamp		11143	-7515	SLTST, LS, & SH	
Penn Shale		11378	-7750	SS & SH	
Strawn		11668	-8040	LS	
Morrow		12513	-8885	SS & SH	
Miss Lime		13808	-10180	LS	
Woodford		14228	-10600	SH	
Silurian		14373	-10745	SH	

Evaluation: **Quad Combo from TD to intermediate casing**

Geologist **SCP** Date: **1/31/2019**



# Patriot Drilling, LLC

## RIG NO. 5

### **Annular Preventer**

13-3/8" 5,000 PSI WP

### **Ram Preventers**

13-3/8" 5,000 PSI WP Double Ram

13-3/8" 5,000 PSI WP Single Ram

Test the pipe rams, blind rams, floor valves (IBOP and/or upper Kelly valve), choke lines and manifold to 250 psi/5,000 psi with a test plug and a test pump.

Test the annular to 250 psi/2,500 psi with same as above.



AFFIRMATIVE STATEMENT OF EXAMINATION OF GEOLOGIC AND ENGINEERING DATA

Based on the available engineering, geologic, and seismic data, we find no evidence of open faults or any other hydrologic connection between the disposal zone (in the proposed Grama State 2 SWD #1) and any underground sources of drinking water.

NAME: Steve Poe

TITLE: Chief Geophysicist

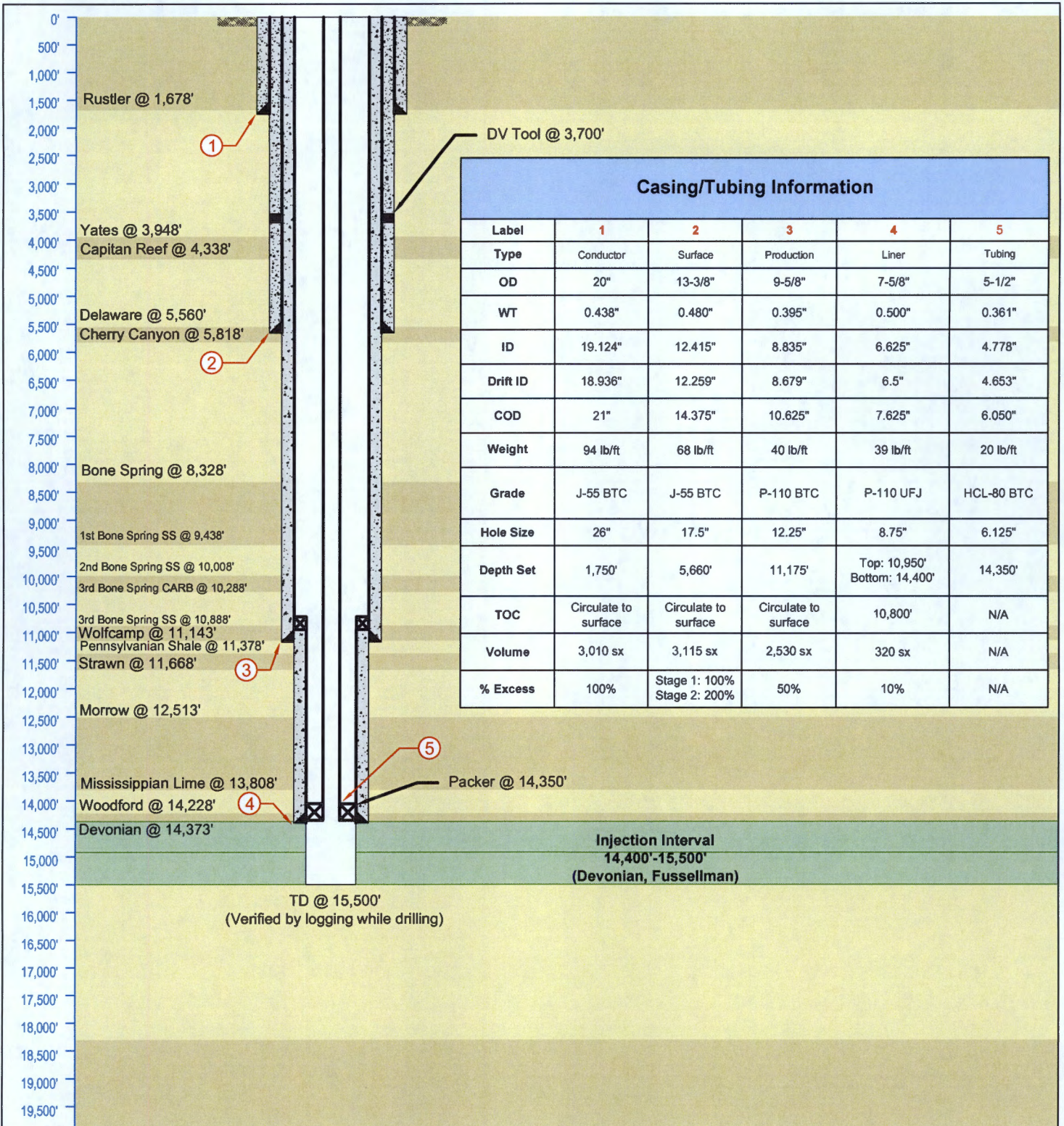
COMPANY: Chisholm Energy Operating, LLC

SIGNATURE:

A handwritten signature in dark ink, appearing to read "Steve Poe". The signature is written in a cursive style with a large, looped initial "S".

Date: 5-16-2019





Casing/Tubing Information					
Label	1	2	3	4	5
Type	Conductor	Surface	Production	Liner	Tubing
OD	20"	13-3/8"	9-5/8"	7-5/8"	5-1/2"
WT	0.438"	0.480"	0.395"	0.500"	0.361"
ID	19.124"	12.415"	8.835"	6.625"	4.778"
Drift ID	18.936"	12.259"	8.679"	6.5"	4.653"
COD	21"	14.375"	10.625"	7.625"	6.050"
Weight	94 lb/ft	68 lb/ft	40 lb/ft	39 lb/ft	20 lb/ft
Grade	J-55 BTC	J-55 BTC	P-110 BTC	P-110 UFJ	HCL-80 BTC
Hole Size	26"	17.5"	12.25"	8.75"	6.125"
Depth Set	1,750'	5,660'	11,175'	Top: 10,950' Bottom: 14,400'	14,350'
TOC	Circulate to surface	Circulate to surface	Circulate to surface	10,800'	N/A
Volume	3,010 sx	3,115 sx	2,530 sx	320 sx	N/A
% Excess	100%	Stage 1: 100% Stage 2: 200%	50%	10%	N/A

<b>LONQUIST &amp; CO. LLC</b> PETROLEUM ENGINEERS   ENERGY ADVISORS HOUSTON   CALGARY AUSTIN   WICHITA   DENVER	3Bear Field Services, LLC	Grama State SWD No. 2	
	Country: USA	State/Province: New Mexico	County/Parish: Lea
Location:	Site: 351 FNL, 215 FWL	Survey: S2-T22S-R34E	
API No: N/A	Field: Devonian-Silurian	Well Type/Status: SWD	
Texas License F-9147	NMOC District No: 1	Project No: 2009	Date: 04/30/2019
12912 Hill Country Blvd. Ste F-200 Austin, Texas 78738 Tel: 512.732.9812 Fax: 512.732.9816	Drawn: TFM	Reviewed:	Approved:
	Rev No: 1	Notes:	



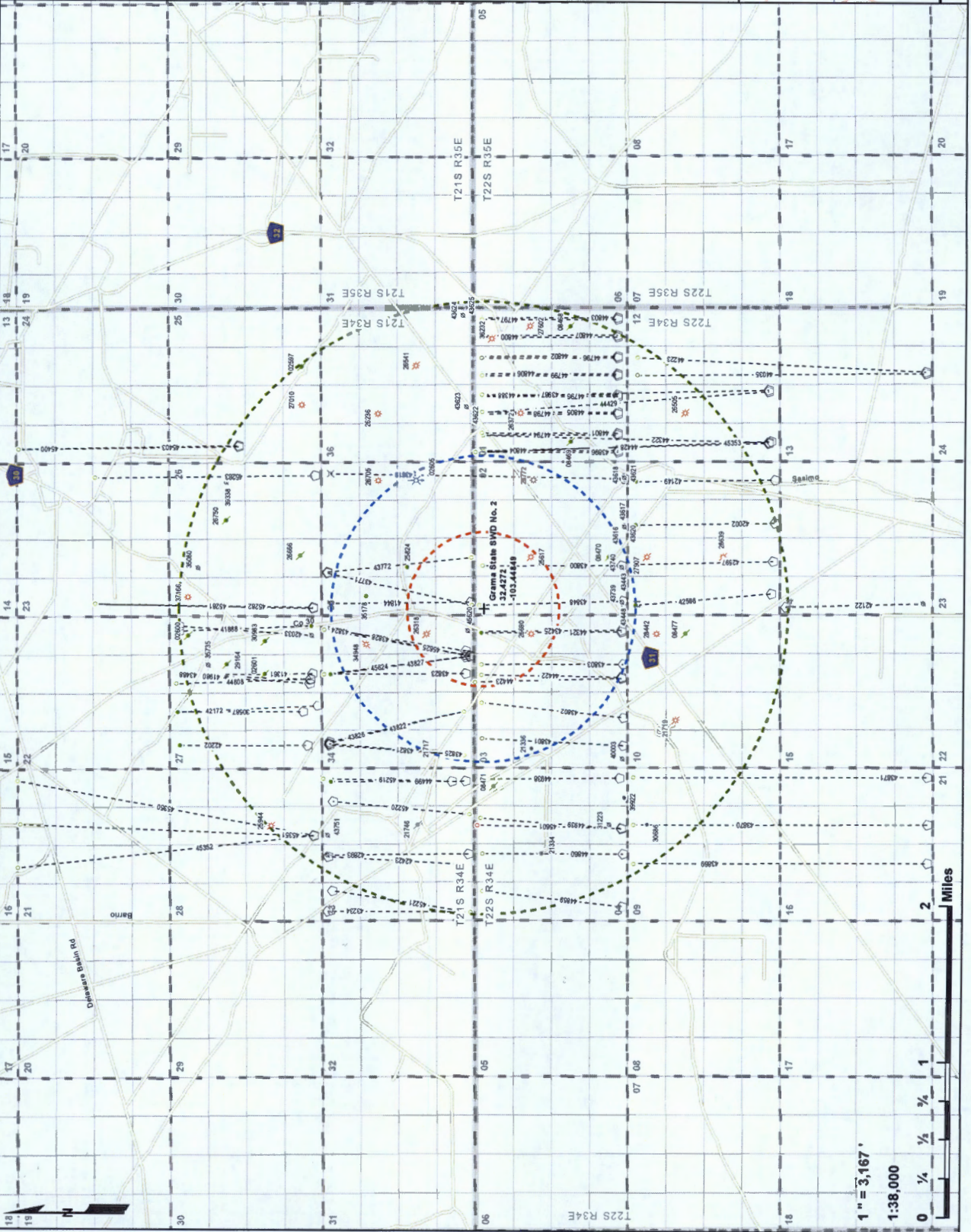
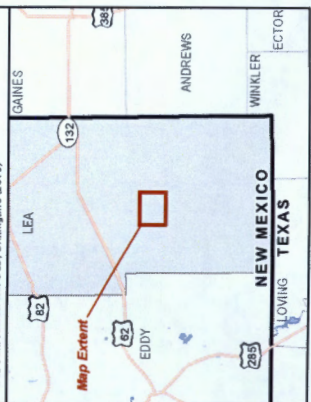
**Grama State SWD No. 2**  
**2 Mile Area of Review**  
**3 Bear Field Services LLC**  
 Lea County, NM

PCS: NAD 1983 SPCS NM-E RIPS 3001 (US FL)  
 Drawn by: SJL Date: 5/7/2019 Approved by: CBW

**LONGQUIST & CO. LLC**  
 PREVIOUSLY  
**BERNS**  
**ENGINEERS**  
**ARCHITECTS**

ALBUQUERQUE • HOUSTON • SALT LAKE CITY • DENVER • COLORADO SPRINGS • BUTTE • BOULDER • FORT COLLINS

- Grama State SWD No. 2**
- 1/2 Mile Radius
  - 1 Mile Radius
  - 2 Mile Radius
  - OO-Section (NM-PLSS 2nd Div.)
  - Section (NM-PLSS 1st Div.)
  - Township/Range (NM-PLSS)
  - Laterals
- API (30-025-...) SHL Status - Type (Count)**
- Horizontal Surface Location (83)
  - Active - Oil (2)
  - Active - Gas (8)
  - Active - Miscellaneous (4)
  - Approved TA - Salt Water Disposal (1)
  - Plugged (Not Released) - Gas (1)
  - Plugged (Not Released) - Oil (12)
  - Plugged (Site Released) - Gas (10)
  - Plugged (Site Released) - Oil (10)
  - Plugged (Site Released) - Miscellaneous (2)
  - Cancelled Location (20)
- API (30-025-...) BHL Status - Type (Count)**
- Active - Oil (16)
  - Permitted - Oil (58)
  - Permitted - Gas (1)
  - Never Drilled - Oil (1)
  - Cancelled Location (7)
- \*Well Data Source: NM-OCED, DrillingInfo (2019)





Granna State SWD No 2  
1 Mile Area of Review List

API #	WELL NAME	WELL TYPE	STATUS	OPERATOR	TVD (FT.)	LAITUDE (NAD83 DD)	LONGITUDE (NAD83 DD)	SPUD DATE	FIELD
02605	STATE AA #001	S	T	MARATHON OIL PERMIAN LLC	4250	32.43357470	-103.43413540	10/7/1956	[96590] SWD, YATES
21376	STATE BU #001	O	P	V-F PETROLEUM INC	4002	32.41523740	-103.44271850	9/13/1962	[96397] SAN SIMON, YATES, WEST
04830	GRM UNIT #001	M	A	ENSTOR GRAMA RIDGE STORAGE AND TRANSPORTATION	13257	32.42265410	-103.46410370	6/7/1985	[77680] GRAMA RIDGE, MORROW (GAS)
25617	GETTY 2 STATE COM #001	G	P	DEVON ENERGY OPERATING COMPANY LP	13381	32.42267230	-103.44269560	11/14/1989	[77706] GRAMA RIDGE, STRAWN, EAST (GAS)
25824	GETTY 35 STATE COM #001	O	A	MARATHON OIL PERMIAN LLC	13355	32.43446350	-103.44376370	3/15/1978	[77690] GRAMA RIDGE, MORROW, EAST (GAS); [77706] GRAMA RIDGE, STRAWN, EAST (GAS)
26318	LLANO 34 STATE #001	G	P	EGG RESOURCES INC	13280	32.43262630	-103.45124820	11/30/1979	[77690] GRAMA RIDGE, MORROW, EAST (GAS)
26590	LLANO 3 STATE COM #001	G	A	MORROW OIL CO	13310	32.42262700	-103.45124820	11/30/1980	[77690] GRAMA RIDGE, MORROW, EAST (GAS)
26772	SAN SIMON 2 STATE #001	G	A	MARATHON OIL PERMIAN LLC	13350	32.42241290	-103.43412780	5/28/1980	[77690] GRAMA RIDGE, MORROW, EAST (GAS)
34948	GRAMA RIDGE EAST 34 STATE #001	G	H	CHISHOLM ENERGY OPERATING, LLC	13500	32.43837740	-103.45233920	10/5/2000	[28435] GRAMA RIDGE, MORROW, EAST (GAS); [77690] GRAMA RIDGE, MORROW, EAST (GAS)
35178	BURGUNDY 20005 JV-P #001	O	A	BITA OIL PRODUCERS, LLC	13353	32.43838880	-103.44698330	10/5/2000	[28435] GRAMA RIDGE, MORROW, EAST (GAS); [97393] GRAMA RIDGE, WOLFECAMP, WEST
41844	BURGUNDY 20005 JV-P #002C	O	C	BITA OIL PRODUCERS, LLC	0	32.42843630	-103.44770810	-	[96553] OIO CHISO, BONE SPRING, NE
43425	RAM 3 BZPA STATE COM #001H	O	A	MORROW OIL CO	11111	32.41400070	-103.45087200	2/1/2018	[96553] OIO CHISO, BONE SPRING
43448	SQUEEZE STATE COM #001C	O	C	GMT EXPLORATION COMPANY LLC	0	32.41402730	-103.44387940	-	[96553] OIO CHISO, BONE SPRING
43488	PUCKER RAPID STATE COM #001C	O	C	GMT EXPLORATION COMPANY LLC	0	32.41402730	-103.44387940	-	[96553] OIO CHISO, BONE SPRING
43619	GRAMA RIDGE STATE COM #001C	O	C	MARATHON OIL PERMIAN LLC	0	32.41376500	-103.43400200	-	[28435] GRAMA RIDGE, BONE SPRING, NE
43739	GRAMA RIDGE STATE COM #001H	O	C	MARATHON OIL PERMIAN LLC	0	32.41402730	-103.44778650	-	[96553] OIO CHISO, BONE SPRING
43771	SQUEEZE STATE COM #001H	O	C	CENTENNIAL RESOURCE PRODUCTION, LLC	0	32.41402730	-103.44387940	-	[96553] OIO CHISO, BONE SPRING
43772	SQUEEZE STATE COM #003H	O	N	CENTENNIAL RESOURCE PRODUCTION, LLC	0	32.44202930	-103.44451200	-	[28435] GRAMA RIDGE, BONE SPRING
43801	BURGUNDY 20005 JV-P #003H	O	N	BITA OIL PRODUCERS, LLC	0	32.44202930	-103.44451200	-	[28435] GRAMA RIDGE, BONE SPRING
43802	BURGUNDY 20005 JV-P #003H	O	N	BITA OIL PRODUCERS, LLC	0	32.44202930	-103.44451200	-	[28435] GRAMA RIDGE, BONE SPRING
43803	CONION KNIGHT STATE #205H	O	N	CENTENNIAL RESOURCE PRODUCTION, LLC	0	32.41386936	-103.46380734	-	[96553] OIO CHISO, BONE SPRING
43804	CONION KNIGHT STATE #205H	O	N	CENTENNIAL RESOURCE PRODUCTION, LLC	0	32.41386936	-103.46380734	-	[96553] OIO CHISO, BONE SPRING
43805	CONION KNIGHT STATE #206H	O	N	MORROW OIL CO	0	32.41386936	-103.46380734	-	[96553] OIO CHISO, BONE SPRING
43806	CONION KNIGHT STATE #206H	O	N	MORROW OIL CO	0	32.41386936	-103.46380734	-	[96553] OIO CHISO, BONE SPRING
43807	CONION KNIGHT STATE #207H	O	N	MORROW OIL CO	0	32.41386936	-103.46380734	-	[96553] OIO CHISO, BONE SPRING
43808	CONION KNIGHT STATE #207H	O	N	MORROW OIL CO	0	32.41386936	-103.46380734	-	[96553] OIO CHISO, BONE SPRING
43821	GRAMA RIDGE EAST 34 STATE BBS #006H	O	N	CHISHOLM ENERGY OPERATING, LLC	0	32.44192500	-103.45647665	-	[96553] OIO CHISO, BONE SPRING; [97393] OIO CHISO, BONE SPRING, SOUTH
43822	GRAMA RIDGE EAST 34 STATE BBS #006H	O	N	CHISHOLM ENERGY OPERATING, LLC	0	32.44192500	-103.45647665	-	[28435] GRAMA RIDGE, BONE SPRING, NE
43823	GRAMA RIDGE EAST 34 STATE COM BBS #008H	O	N	CHISHOLM ENERGY OPERATING, LLC	0	32.44192500	-103.45647665	-	[28435] GRAMA RIDGE, BONE SPRING, NE
43824	GRAMA RIDGE EAST 34 STATE COM BBS #008H	O	A	CHISHOLM ENERGY OPERATING, LLC	10343	32.44192500	-103.45647665	6/20/2018	[28435] GRAMA RIDGE, BONE SPRING, NE
43825	GRAMA RIDGE EAST 34 STATE COM BBS #008H	O	N	CHISHOLM ENERGY OPERATING, LLC	0	32.47897400	-103.45067300	-	[28435] GRAMA RIDGE, BONE SPRING, NE
43826	GRAMA RIDGE EAST 34 STATE COM BBS #008H	O	A	CHISHOLM ENERGY OPERATING, LLC	11323	32.44191200	-103.46324800	4/7/2018	[28435] GRAMA RIDGE, BONE SPRING, NE
43827	GRAMA RIDGE EAST 34 STATE COM BBS #008H	O	N	CHISHOLM ENERGY OPERATING, LLC	0	32.44191200	-103.46324800	-	[28435] GRAMA RIDGE, BONE SPRING, NE
43828	GRAMA RIDGE EAST 34 STATE BBS #005C	O	C	CHISHOLM ENERGY OPERATING, LLC	0	32.42892400	-103.45376100	-	[28435] GRAMA RIDGE, BONE SPRING, NE
43848	GRAMA RIDGE EAST 34 STATE BBS #005C	O	C	CHISHOLM ENERGY OPERATING, LLC	0	32.42892400	-103.45376100	-	[28435] GRAMA RIDGE, BONE SPRING, NE
44321	PUCKER RAPID STATE COM #002H	O	N	CENTENNIAL RESOURCE PRODUCTION, LLC	0	32.41391400	-103.45357300	-	[96553] OIO CHISO, BONE SPRING
44322	RAM 3 BZPA STATE COM #002H	O	A	MORROW OIL CO	10247	32.41404079	-103.45103524	2/1/2018	[96553] OIO CHISO, BONE SPRING
44423	RAM 3 BZOB STATE COM #001H	O	N	MORROW OIL CO	0	32.41404079	-103.45103524	-	[96553] OIO CHISO, BONE SPRING
45620	GRAMA 34 STATE SWD #001C	S	C	MORROW OIL CO	0	32.41404190	-103.45623300	-	[96553] OIO CHISO, BONE SPRING
45624	GRAMA RIDGE EAST 34 STATE COM BBS #004H	O	N	3BEAR FIELD SERVICES, LLC	0	32.42876000	-103.45618640	-	[97869] SWD, DEVONIAN-SILURIAN
45625	GRAMA RIDGE EAST 34 STATE COM BBS #004H	O	N	CHISHOLM ENERGY OPERATING, LLC	0	32.42854900	-103.45371800	-	[28435] GRAMA RIDGE, BONE SPRING, NE
45626	GRAMA RIDGE EAST 34 STATE COM BBS #005H	O	N	CHISHOLM ENERGY OPERATING, LLC	0	32.42854900	-103.45371800	-	[28435] GRAMA RIDGE, BONE SPRING, NE



**Grama State SWD No. 2**  
**1 Mile Offset Operators**  
**3 Bear Field Services LLC**  
 Lea County, NM

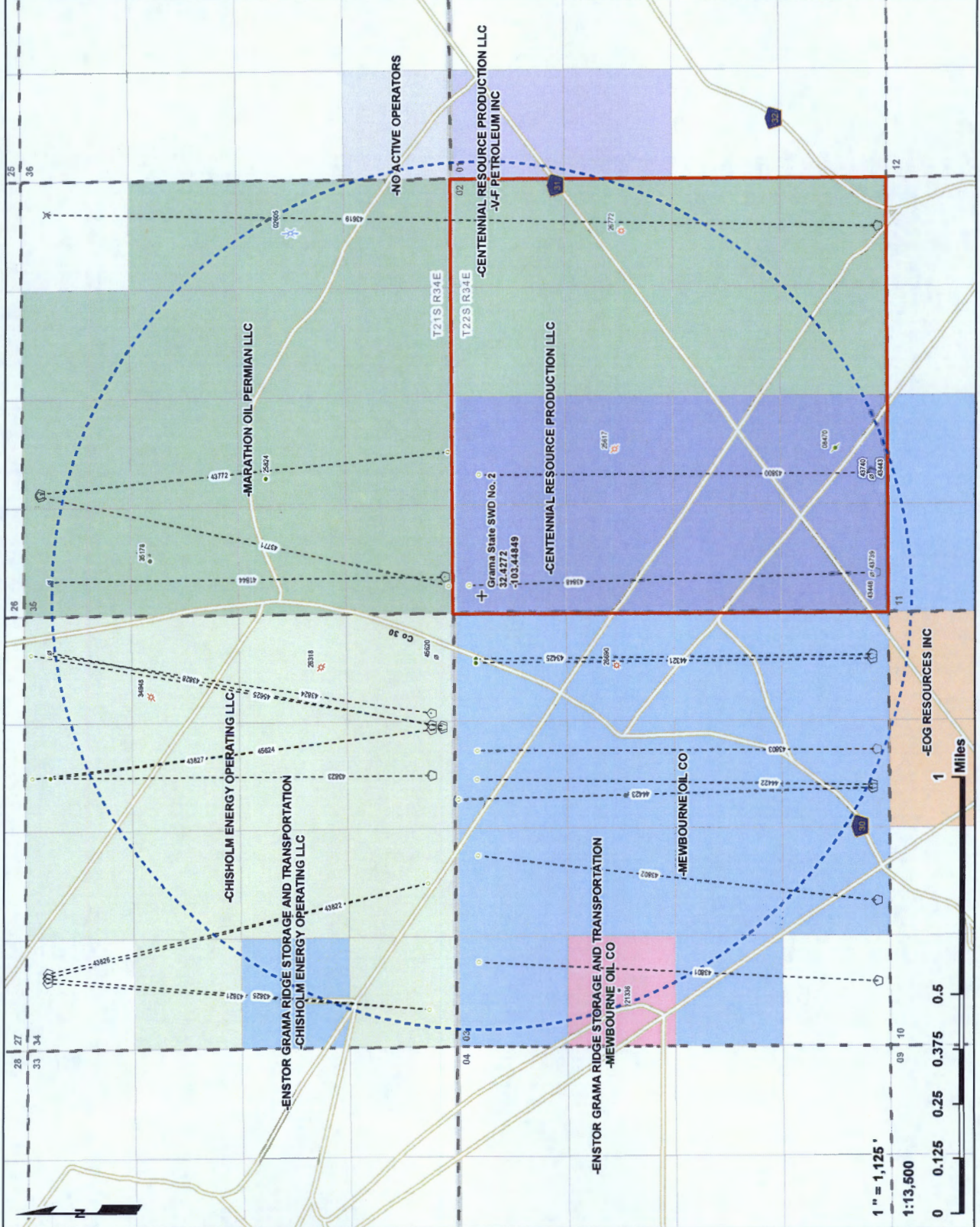
PCS: NAD 1983 SPCS NM-E FIPS 3001 (US FL)  
 Date: 5/8/2019 | Approved by: CBW

Drawn by: SJL

**LONQUIST & CO. LLC**  
 PETROLEUM ENGINEERS  
 ENERGY ADVISORS

AUSTIN | HOUSTON | CALHART | WICHITA  
 DENVER | COLLEGE STATION | AUSTIN | BOULDER | FORT WORTH

- Grama State SWD No. 2
- 1 Mile Radius
  - OO-Section (NM-PLSS 2nd Div.)
  - Section (NM-PLSS 1st Div.)
  - Township/Range (NM-PLSS)
  - Surface Owner (MERCHANT LIVESTOCK)
  - Laterals
- API (30-025...) SHL Status - Type (Count)
- Horizontal Surface Location (23)
  - Active - Oil (2)
  - Active - Gas (2)
  - Active - Miscellaneous (1)
  - Approved TA - Salt Water Disposal (1)
  - Plugged (Not Released) - Gas (1)
  - Plugged (Site Released) - Oil (1)
  - Plugged (Site Released) - Gas (2)
  - Canceled Location (5)
- API (30-025...) BHL Status - Type (Count)
- Active - Oil (4)
  - Permitted - Oil (15)
  - Newer Drilled - Oil (1)
  - Canceled Location (3)
- Operators
- CENTENNIAL RESOURCE PRODUCTION LLC
  - CENTENNIAL RESOURCE PRODUCTION LLC - V-F
  - PETROLEUM INC
  - CHISHOLM ENERGY OPERATING LLC
  - ENSTOR GRAMA RIDGE STORAGE AND TRANSPORTATION; -CHISHOLM ENERGY OPERATING LLC
  - ENSTOR GRAMA RIDGE STORAGE AND TRANSPORTATION; -MEWBOURNE OIL CO
  - EOG RESOURCES INC
  - MARATHON OIL PERMIAN LLC
  - MEWBOURNE OIL CO
  - NO ACTIVE OPERATORS





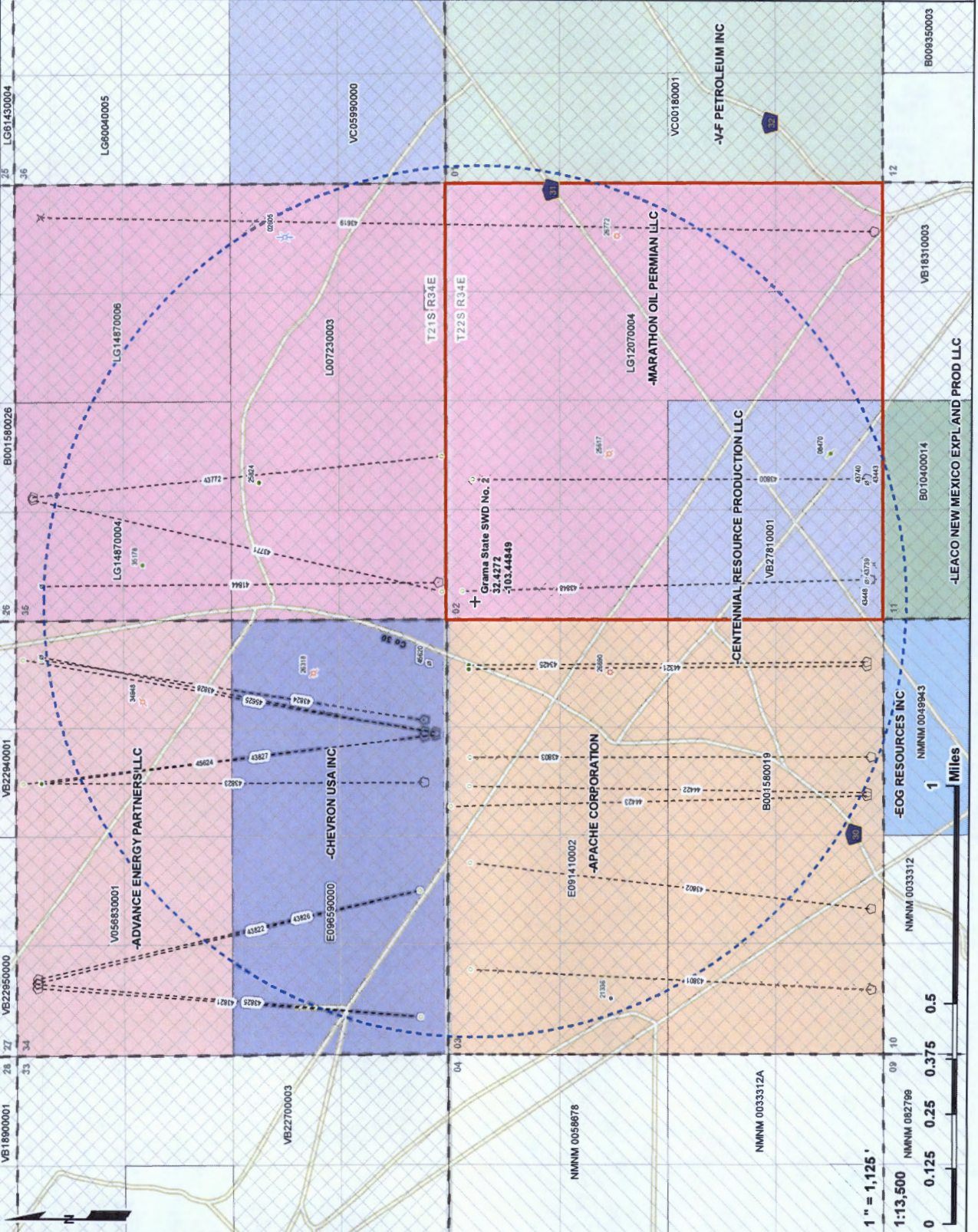
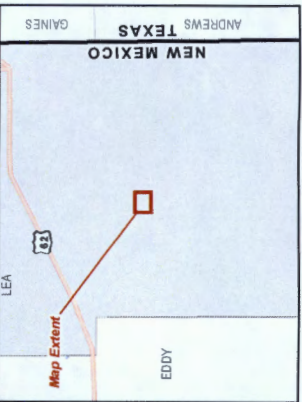
**Grama State SWD No. 2**  
**1 Mile Offset Lessees**  
**3Bear Field Services LLC**  
 Lea County, NM

PCS: NAD 1983 SPCS NM-E FIPS 3001 (US Ft.)  
 Drawn by: SJL Date: 5/8/2019 Approved by: CBW

**LONQUIST & CO. LLC**  
 PETROLEUM ENGINEERS  
 ENERGY ADVISORS

ARISTON • HOUSTON • CALGARY • WICHITA  
 DENVER • COLLEGE STATION • BAYTOWN ROAD • FORTWORTH

- Grama State SWD No. 2**
- 1 Mile Radius
  - QQ-Section (NM-PLSS 2nd Div.)
  - Section (NM-PLSS 1st Div.)
  - Township/Range (NM-PLSS)
  - Surface Owner (MERCHANT LIVESTOCK)
  - NM - BLM (C&G Leases)
  - NM - SLO (C&G Leases)
  - Laterals
  - API (30-025-...) SHL Status - Type (Count)
  - Horizontal Surface Location (23)
  - Active - Oil (2)
  - Active - Gas (2)
  - Active - Miscellaneous (1)
  - Approved TA - Salt Water Disposal (1)
  - Plugged (Not Released) - Gas (1)
  - Plugged (Site Released) - Oil (1)
  - Plugged (Site Released) - Gas (2)
  - Cancelled Location (5)
  - API (30-025-...) BHL Status - Type (Count)
  - Active - Oil (4)
  - Permitted - Oil (15)
  - Never Drilled - Oil (1)
  - Cancelled Location (3)
- Lessees**
- ADVANCE ENERGY PARTNERS LLC
  - APACHE CORPORATION
  - CENTENNIAL RESOURCE PRODUCTION LLC
  - CHEVRON USA INC
  - EOG RESOURCES INC
  - LEACO NEW MEXICO EXPLAND PROD LLC
  - MARATHON OIL PERMIAN LLC
  - VF PETROLEUM INC
- \*Well Data Source: NM-OD, DrillingInfo (2019)





Grama State SWD No. 2  
1 Mile Offset Operators and Lessees List

S/IR	QQ UNIT LETTER(S)	OPERATOR	MINERAL LESSEE	MINERAL OWNER	SURFACE OWNER	ADDRESS 1	ADDRESS 2
34/21S/34E	A,B,C,E,F,G,H,I,J,K,L,M,N,O,P	CHISHOLM ENERGY OPERATING LLC	-	-	-	801 CHERRY STREET	FORT WORTH, TX 76102
	L	CHISHOLM ENERGY OPERATING LLC	-	-	-	801 CHERRY STREET	FORT WORTH, TX 76102
36/21S/34E	B,C,D,E,F,G,H,I,J,K,L,M,N,O,P	ENSTOR GRAMA RIDGE STORAGE AND TRANSPORTATION	-	-	-	10375 RICHMOND AVE SUITE 1000	HOUSTON, TX 77042
36/21S/34E	M	MARATHON OIL PERMAN LLC	-	-	-	5655 SAN FELIPE ST	HOUSTON, TX 77056
1/22S/34E	D,E	CENTENNIAL RESOURCE PRODUCTION LLC	CENTENNIAL RESOURCE PRODUCTION LLC	-	-	1001 17TH STREET SUITE 1800	DENVER, CO 80202
2/22S/34E	A,B,G,H,I,J,O,P	V-F PETROLEUM INC	-	-	-	1001 17TH STREET SUITE 1800	DENVER, CO 80202
	C,D,E,F,K,L,M,N	MARATHON OIL PERMAN LLC	-	-	-	PO BOX 1889	MIDLAND, TX 79702
3/22S/34E	A,B,C,D,F,G,H,I,J,K,L,N,O,P	CENTENNIAL RESOURCE PRODUCTION LLC	-	-	-	5655 SAN FELIPE ST	HOUSTON, TX 77056
	E	MEWBOURNE OIL CO	-	-	-	1001 17TH STREET SUITE 1800	DENVER, CO 80202
10/22S/34E	A,B	ENSTOR GRAMA RIDGE STORAGE AND TRANSPORTATION	-	-	-	PO BOX 5270	HOBBBS, NM 88241
11/22S/34E	C,D	EOG RESOURCES INC	-	-	-	10975 RICHMOND AVE SUITE 1900	HOUSTON, TX 77042
Surface Location		MEWBOURNE OIL CO	-	-	-	PO BOX 2267	MIDLAND, TX 79702
			-	-	-	PO BOX 5270	HOBBBS, NM 88241
			-	-	-	PO BOX 1105	EUNICE, NM 88231







**Grama State SWD No. 2**  
**1 Mile Offset Water Wells**  
**38ear Field Services LLC**  
 Lea County, NM

PCS: NAD 1983 SPCS NM-E FIPS 3001 (US FL)

Drawn by: SJL Date: 5/7/2019 Approved by: CBW

**LONGQUIST & CO. LLC**

PEITROLEUM  
 ENGINEERS  
 ADVISORS

AUSTIN • HOUSTON • DALLAS • WICHITA  
 DENVER • CHICAGO • SALT LAKE CITY • BOZEMAN • EDMONTON

+ Grama State SWD No. 2

• Water Well (1)

○ 1 Mile Radius

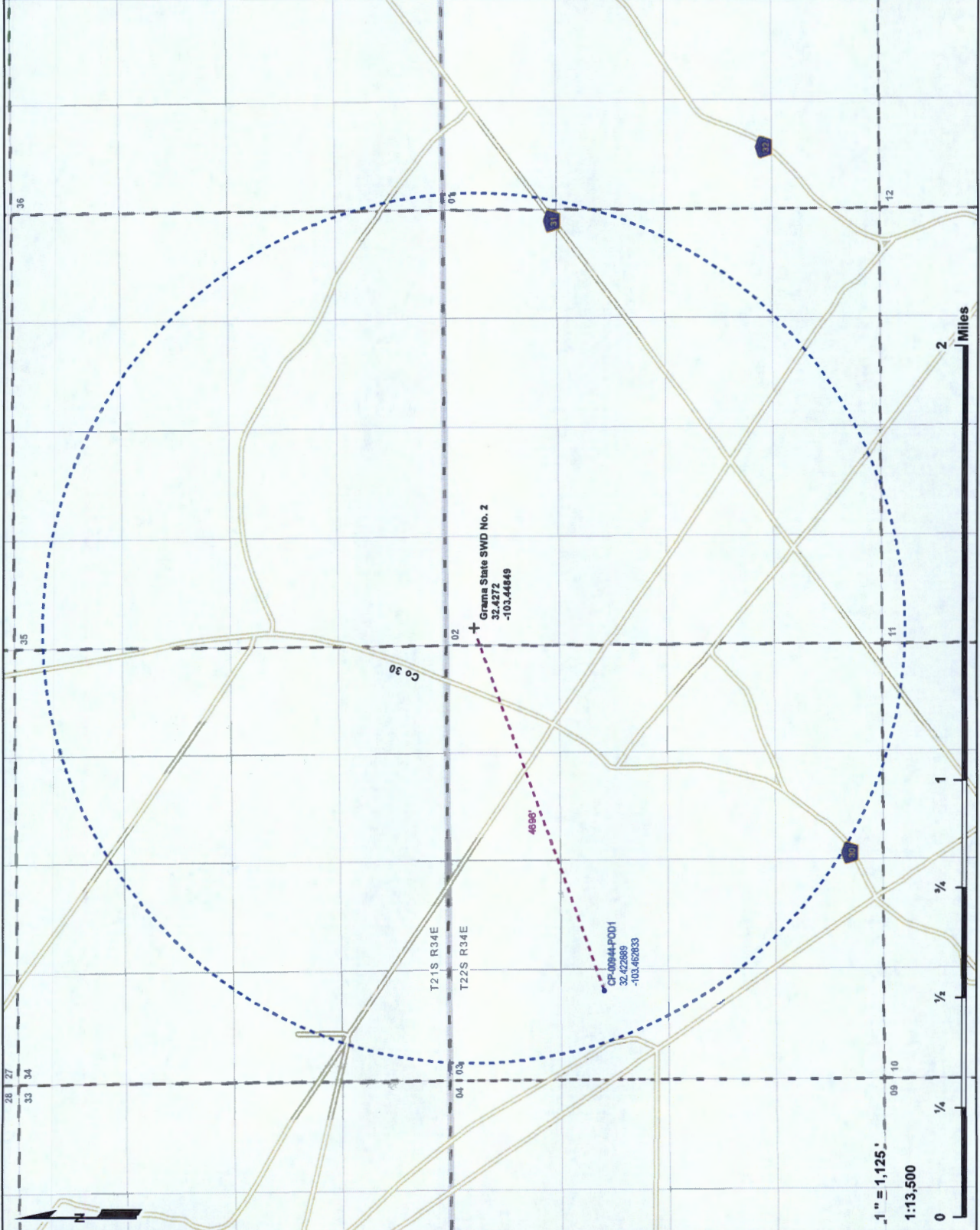
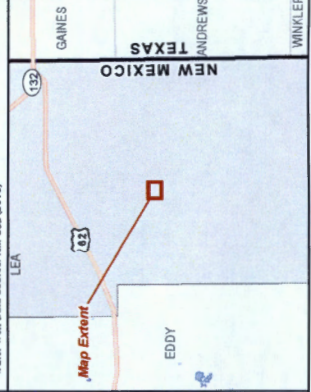
- - - Distance Cell

□ OO-Section (NM-PLSS 2nd Div.)

▬ Section (NM-PLSS 1st Div.)

▭ Township/Range (NM-PLSS)

\*Water Well Data Source: NM-OSE (2019)

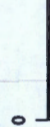


+ Grama State SWD No. 2  
 32.4272  
 -103.44849

CS-00944-P001  
 32.422889  
 -103.462833

T21S R34E  
 T22S R34E

1" = 1,125'  
 1:13,500

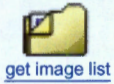






# New Mexico Office of the State Engineer

## Water Right Summary



**WR File Number:** CP 00964      **Subbasin:** CP      **Cross Reference:** -  
**Primary Purpose:** SAN 72-12-1 SANITARY IN CONJUNCTION WITH A COMMERCIAL USE  
**Primary Status:** PMT PERMIT  
**Total Acres:** 0      **Subfile:** -  
**Total Diversion:** 1      **Cause/Case:** -  
**Agent:** ENSTOR GRAMA RIDGE TRANSPORATION AND STORAGE LLC  
**Contact:** RON ROUTLEDGE

### Documents on File

Trn #	Doc	File/Act	Status		Transaction Desc.	From/	Acres	Diversion	Consumptive
			1	2		To			
<a href="#">550914</a>	<a href="#">72121</a>	<a href="#">2007-05-10</a>	PMT	APR	CP 00964	T		1	

### Current Points of Diversion

POD Number	Well Tag	Source	Q Q Q			(NAD83 UTM in meters)		Other Location Desc	
			64 16 4	Sec	Tws	Rng	X		Y
<a href="#">CP 00944 POD1</a>		Shallow	3	1	03	22S	34E	644531	3588351

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.





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

---

March 11, 2019

TYLER MOEHLMAN  
Lonquist Field Services, LLC  
3345 Bee Cave Road, Suite 201  
Austin, TX 78746

RE: WATER SAMPLES

Enclosed are the results of analyses for samples received by the laboratory on 03/04/19 15:40.

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

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

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

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

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

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

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

Sincerely,

Celey D. Keene  
Lab Director/Quality Manager



**Analytical Results For:**

Lonquist Field Services, LLC 3345 Bee Cave Road, Suite 201 Austin TX, 78746	Project: WATER SAMPLES Project Number: GRAMA34 SWD#1 /32.422889-103 Project Manager: TYLER MOEHLMAN Fax To: (512) 732-9816	Reported: 11-Mar-19 10:18
-----------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------	------------------------------

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
CP-00944- POD 1	H900853-01	Water	01-Mar-19 14:17	04-Mar-19 15:40

Cardinal Laboratories

\* = Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



**Analytical Results For:**

Lonquist Field Services, LLC 3345 Bee Cave Road, Suite 201 Austin TX, 78746	Project: WATER SAMPLES Project Number: GRAMA34 SWD#1 /32.422889-103 Project Manager: TYLER MOEHLMAN Fax To: (512) 732-9816	Reported: 11-Mar-19 10:18
-----------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------	------------------------------

**CP-00944- POD 1**  
**H900853-01 (Water)**

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

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

Alkalinity, Bicarbonate	259		5.00	mg/L	1	9030407	AC	05-Mar-19	310.1	
Alkalinity, Carbonate	<1.00		1.00	mg/L	1	9030407	AC	05-Mar-19	310.1	
Chloride*	64.0		4.00	mg/L	1	9030504	AC	05-Mar-19	4500-Cl-B	
Conductivity*	650		1.00	uS/cm	1	9030501	AC	05-Mar-19	120.1	
pH*	7.59		0.100	pH Units	1	9030501	AC	05-Mar-19	150.1	
Resistivity	15.4			Ohms/m	1	9030501	AC	05-Mar-19	120.1	
Specific Gravity @ 60° F	1.000		0.000	[blank]	1	9030509	AC	06-Mar-19	SM 2710F	
Sulfate*	77.3		10.0	mg/L	1	9030601	AC	06-Mar-19	375.4	
TDS*	245		5.00	mg/L	1	9030416	AC	07-Mar-19	160.1	
Alkalinity, Total*	212		4.00	mg/L	1	9030407	AC	05-Mar-19	310.1	
Sulfide, total	<0.0100		0.0100	mg/L	1	9030505	AC	05-Mar-19	376.2	


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

Barium*	0.075		0.050	mg/L	1	B903037	AES	06-Mar-19	EPA200.7	
Calcium*	58.4		0.100	mg/L	1	B903037	AES	06-Mar-19	EPA200.7	
Iron*	<0.050		0.050	mg/L	1	B903037	AES	06-Mar-19	EPA200.7	
Magnesium*	17.0		0.100	mg/L	1	B903037	AES	06-Mar-19	EPA200.7	
Potassium*	3.45		1.00	mg/L	1	B903037	AES	06-Mar-19	EPA200.7	
Sodium*	50.2		1.00	mg/L	1	B903037	AES	06-Mar-19	EPA200.7	

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\* = Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



**Analytical Results For:**

Lonquist Field Services, LLC 3345 Bee Cave Road, Suite 201 Austin TX, 78746	Project: WATER SAMPLES Project Number: GRAMA34 SWD#1 /32.422889-103 Project Manager: TYLER MOEHLMAN Fax To: (512) 732-9816	Reported: 11-Mar-19 10:18
-----------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------	------------------------------

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

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

**Batch 9030407 - General Prep - Wet Chem**

Blank (9030407-BLK1) Prepared: 04-Mar-19 Analyzed: 05-Mar-19										
Alkalinity, Carbonate	ND	1.00	mg/L							
Alkalinity, Bicarbonate	5.00	5.00	mg/L							
Alkalinity, Total	4.00	4.00	mg/L							
LCS (9030407-BS1) Prepared: 04-Mar-19 Analyzed: 05-Mar-19										
Alkalinity, Carbonate	ND	2.50	mg/L				80-120			
Alkalinity, Bicarbonate	318	12.5	mg/L				80-120			
Alkalinity, Total	260	10.0	mg/L	250		104	80-120			
LCS Dup (9030407-BSD1) Prepared: 04-Mar-19 Analyzed: 05-Mar-19										
Alkalinity, Carbonate	ND	2.50	mg/L				80-120		20	
Alkalinity, Bicarbonate	318	12.5	mg/L				80-120	0.00	20	
Alkalinity, Total	260	10.0	mg/L	250		104	80-120	0.00	20	

**Batch 9030416 - Filtration**

Blank (9030416-BLK1) Prepared: 05-Mar-19 Analyzed: 07-Mar-19										
TDS	ND	5.00	mg/L							
LCS (9030416-BS1) Prepared: 05-Mar-19 Analyzed: 07-Mar-19										
TDS	509		mg/L	527		96.6	80-120			
Duplicate (9030416-DUP1) Source: H900795-01 Prepared: 05-Mar-19 Analyzed: 07-Mar-19										
TDS	94400	5.00	mg/L		95100			0.770	20	

**Batch 9030501 - General Prep - Wet Chem**

LCS (9030501-BS1) Prepared & Analyzed: 05-Mar-19										
Conductivity	50200		uS/cm	50000		100	80-120			
pH	7.04		pH Units	7.00		101	90-110			

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



**Analytical Results For:**

Lonquist Field Services, LLC 3345 Bee Cave Road, Suite 201 Austin TX, 78746	Project: WATER SAMPLES Project Number: GRAMA34 SWD#1 /32.422889-103 Project Manager: TYLER MOEHLMAN Fax To: (512) 732-9816	Reported: 11-Mar-19 10:18
-----------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------	------------------------------

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

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

**Batch 9030501 - General Prep - Wet Chem**

Duplicate (9030501-DUP1)	Source: H900828-01			Prepared & Analyzed: 05-Mar-19						
Conductivity	1230	1.00	uS/cm		1240			0.648	20	
pH	7.66	0.100	pH Units		7.64			0.261	20	
Resistivity	8.12		Ohms/m		8.07			0.648	20	

**Batch 9030504 - General Prep - Wet Chem**

Blank (9030504-BLK1)	Prepared & Analyzed: 05-Mar-19									
Chloride	ND	4.00	mg/L							
LCS (9030504-BS1)	Prepared & Analyzed: 05-Mar-19									
Chloride	108	4.00	mg/L	100	108	80-120				
LCS Dup (9030504-BSD1)	Prepared & Analyzed: 05-Mar-19									
Chloride	104	4.00	mg/L	100	104	80-120	3.77		20	

**Batch 9030505 - General Prep - Wet Chem**

Blank (9030505-BLK1)	Prepared & Analyzed: 05-Mar-19									
Sulfide, total	ND	0.0100	mg/L							
Duplicate (9030505-DUP1)	Source: H900853-01			Prepared & Analyzed: 05-Mar-19						
Sulfide, total	0.000900	0.0100	mg/L		0.000900			0.00	20	

**Batch 9030509 - General Prep - Wet Chem**

Duplicate (9030509-DUP1)	Source: H900785-01			Prepared: 05-Mar-19 Analyzed: 06-Mar-19						
Specific Gravity @ 60° F	1.079	0.000	[blank]		1.088			0.848	20	

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Celey D. Keene, Lab Director/Quality Manager



**Analytical Results For:**

Lonquist Field Services, LLC 3345 Bee Cave Road, Suite 201 Austin TX, 78746	Project: WATER SAMPLES Project Number: GRAMA34 SWD#1 /32.422889-103 Project Manager: TYLER MOEHLMAN Fax To: (512) 732-9816	Reported: 11-Mar-19 10:18
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**Inorganic Compounds - Quality Control**
**Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 9030601 - General Prep - Wet Chem</b>										
<b>Blank (9030601-BLK1)</b>				Prepared & Analyzed: 06-Mar-19						
Sulfate	ND	10.0	mg/L							
<b>LCS (9030601-BS1)</b>				Prepared & Analyzed: 06-Mar-19						
Sulfate	23.2	10.0	mg/L	20.0		116	80-120			
<b>LCS Dup (9030601-BSD1)</b>				Prepared & Analyzed: 06-Mar-19						
Sulfate	23.1	10.0	mg/L	20.0		115	80-120	0.303	20	

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Celey D. Keene, Lab Director/Quality Manager



**Analytical Results For:**

Lonquist Field Services, LLC 3345 Bee Cave Road, Suite 201 Austin TX, 78746	Project: WATER SAMPLES Project Number: GRAMA34 SWD#1 /32.422889-103 Project Manager: TYLER MOEHLMAN Fax To: (512) 732-9816	Reported: 11-Mar-19 10:18
-----------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------	------------------------------

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

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

**Batch B903037 - Total Rec. 200.7/200.8/200.2**
**Blank (B903037-BLK1)**

Prepared: 05-Mar-19 Analyzed: 07-Mar-19

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

**LCS (B903037-BS1)**

Prepared: 05-Mar-19 Analyzed: 07-Mar-19

Sodium	3.29	1.00	mg/L	3.24		102	85-115			
Potassium	8.53	1.00	mg/L	8.00		107	85-115			
Magnesium	20.9	0.100	mg/L	20.0		105	85-115			
Iron	4.15	0.050	mg/L	4.00		104	85-115			
Calcium	4.21	0.100	mg/L	4.00		105	85-115			
Barium	2.05	0.050	mg/L	2.00		103	85-115			

**LCS Dup (B903037-BSD1)**

Prepared: 05-Mar-19 Analyzed: 07-Mar-19

Magnesium	20.6	0.100	mg/L	20.0		103	85-115	1.84	20	
Potassium	8.47	1.00	mg/L	8.00		106	85-115	0.723	20	
Calcium	4.13	0.100	mg/L	4.00		103	85-115	1.88	20	
Sodium	3.22	1.00	mg/L	3.24		99.3	85-115	2.22	20	
Barium	2.04	0.050	mg/L	2.00		102	85-115	0.785	20	
Iron	4.10	0.050	mg/L	4.00		102	85-115	1.34	20	

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Celey D. Keene, Lab Director/Quality Manager



**Notes and Definitions**

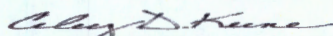
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received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

---

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Celey D. Keene, Lab Director/Quality Manager







**CARDINAL LABORATORIES**  
**SCALE INDEX WATER ANALYSIS REPORT**

Company : LONQUIST FIELD SERVICES  
 Lease Name : GRAMA 34 SWD #1  
 Well Number : CP-00944-POD1 (H900853-01)  
 Location : 32.422889 -103.462833

Date Sampled : 03/04/19  
 Company Rep. : TYLER MOEHLMAN

**ANALYSIS**

1. pH	7.59			
2. Specific Gravity @ 60/60 F.	1.0000			
3. CaCO3 Saturation Index @ 80 F. @ 140 F.	-0.268 +0.432			'Calcium Carbonate Scale Possible'

**Dissolved Gasses**

4. Hydrogen Sulfide	0.000	PPM
5. Carbon Dioxide	ND	PPM
6. Dissolved Oxygen	ND	PPM

**Cations**

		/	Eq. Wt.	=	MEQ/L
7. Calcium (Ca++)	58.40	/	20.1	=	2.91
8. Magnesium (Mg++)	17.00	/	12.2	=	1.39
9. Sodium (Na+)	50	/	23.0	=	3.33
10. Barium (Ba++)	0.075	/	68.7	=	0.00

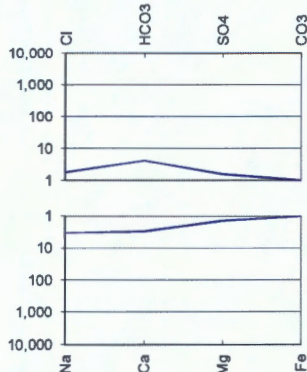
**Anions**

11. Hydroxyl (OH-)	0	/	17.0	=	0.00
12. Carbonate (CO3=)	0	/	30.0	=	0.00
13. Bicarbonate (HCO3-)	259	/	61.1	=	4.24
14. Sulfate (SO4=)	77	/	48.8	=	1.58
15. Chloride (Cl-)	64	/	35.5	=	1.80

**Other**

16. Total Iron (Fe)	0.000	/	18.2	=	0.00
17. Total Dissolved Solids	245				
18. Total Hardness As CaCO3	216.0				
19. Calcium Sulfate Solubility @ 90 F.	1,472				
20. Resistivity (Measured)	15.400	Ohm/Meters	@ 77	Degrees (F)	

Logarithmic Water Pattern



**PROBABLE MINERAL COMPOSITION**

COMPOUND	Eq. Wt.	X	MEQ/L	=	mg/L
Ca(HCO3)2	81.04	X	2.91	=	235
CaSO4	68.07	X	0.00	=	0
CaCl2	55.50	X	0.00	=	0
Mg(HCO3)2	73.17	X	1.33	=	98
MgSO4	60.19	X	0.00	=	0
MgCl2	47.62	X	0.06	=	3
NaHCO3	84.00	X	0.00	=	0
NaSO4	71.03	X	1.58	=	113
NaCl	58.46	X	1.74	=	102

ND = Not Determined

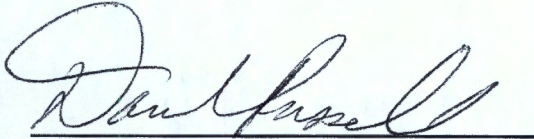


# Affidavit of Publication

STATE OF NEW MEXICO  
COUNTY OF LEA

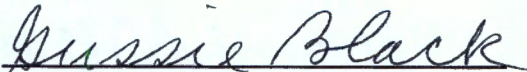
I, Daniel Russell, Publisher of the Hobbs News-Sun, a newspaper published at Hobbs, New Mexico, solemnly swear that the clipping attached hereto was published in the regular and entire issue of said newspaper, and not a supplement thereof for a period of 1 issue(s).

Beginning with the issue dated  
May 05, 2019  
and ending with the issue dated  
May 05, 2019.



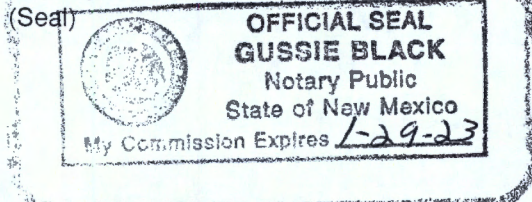
Publisher

Sworn and subscribed to before me this  
5th day of May 2019.



Business Manager

My commission expires  
January 29, 2023



This newspaper is duly qualified to publish legal notices or advertisements within the meaning of Section 3, Chapter 167, Laws of 1937 and payment of fees for said

## LEGAL NOTICE MAY 5, 2018

3Bear Field Services LLC, 415 W. Wall St., Suite 1212, Midland, Texas 79701, is filing Form C-108 (Application for Authorization to Inject) with the New Mexico Oil Conservation Division for administrative approval for its salt water disposal well Grama State 2 SWD No. 1. The proposed well will be located at 351' FNL & 215' FWL in Section 2, Township 22S, Range 34E in Lea County, New Mexico. Disposal water will be sourced from area production, and will be injected into the Devonian-Silurian Formation (determined by offset log analysis) through an open hole completion between an applied for top of 14,400' feet to a maximum depth of 15,500' feet. The maximum surface injection pressure will not exceed 2,880 psi with a maximum rate of 25,000 BWP. Interested parties opposing the action must file objections or requests for hearing with the Oil Conservation Division, 1220 South St. Francis Drive, Santa Fe, New Mexico 87505, within 15 days. Additional information can be obtained from the applicant's agent, Lonquist & Co., LLC, at (512) 600-1774. #34113

67112661

00227955

LONQUIST & CO., LLC  
12912 HILL COUNTRY BLVD, STE F200  
AUSTIN, TX 78738



**2009 - Grama State SWD No. 2**  
**3Bear Field Services, LLC**


TRACT ID	COUNTY CLERK	MAILING ADDRESS	PHONE	TRACKING #	DATE SHIPPED	DATE RECEIVED
	OIL CONSERVATION DIVISION DISTRICT I	1625 N. FRENCH DR., HOBBS, NM 88240		USPS - 7018 3090 0002 2009 8926	5/21/2019	
	OIL CONSERVATION DIVISION DISTRICT IV	1220 S ST FRANCIS DR, SANTA FE NM 87505		FEDEX - 7752 7160 9591	5/21/2019	
	<b>SURFACE LANDOWNER</b>	<b>MAILING ADDRESS</b>				
	MERCHANT LIVESTOCK	PO BOX 1105, EUNICE, NM 88231		USPS - 7018 3090 0002 2009 8933	5/21/2019	
	<b>GOVERNMENT AGENCY</b>	<b>MAILING ADDRESS</b>				
	BUREAU OF LAND MANAGEMENT	620 E. GREEN ST., CALSBAD, NM 88220		USPS - 7018 3090 0002 2009 8940	5/21/2019	
	NEW MEXICO STATE LAND OFFICE	310 OLD SANTA FE TRAIL, P.O. BOX 1148, SANTA FE, NM 87504-1148		USPS - 7018 3090 0002 2009 8957	5/21/2019	
	<b>AFFECTED PARTIES</b>	<b>MAILING ADDRESS</b>				
	CENTENNIAL RESOURCE PRODUCTION LLC	1001 17TH STREET SUITE 1800, DENVER, CO 80202		USPS - 7018 3090 0002 2009 8964	5/21/2019	
	CHISHOLM ENERGY OPERATING LLC	801 CHERRY STREET, FORT WORTH, TX 76102		USPS - 7018 3090 0002 2009 8971	5/21/2019	
	ENSTOR GRAMA RIDGE STORAGE AND TRANSPORTATION	10375 RICHMAN AVE SUITE 1900, HOUSTON, TX 77042		USPS - 7018 3090 0002 2009 8988	5/21/2019	
	EOG RESOURCES INC	PO BOX 2267, MIDLAND, TX 79702		USPS - 7018 3090 0002 2009 9022	5/21/2019	
	MARATHON OIL PERMIAN LLC	5555 SAN FELIPE ST HOUSTON, TX 77056		USPS - 7018 3090 0002 2009 8995	5/21/2019	
	MEWBOURNE OIL CO	PO BOX 5270 HOBBS, NM 88241		USPS - 7018 3090 0002 2009 9008	5/21/2019	
	V-F PETROLEUM INC	PO BOX 1889, MIDLAND, TX 79702		USPS - 7018 3090 0002 2009 9015	5/21/2019	

Notices were sent for the Grama State SWD No. 2 application by mailing them a copy of Form C-108 on 5/21/2019



Tyler F. Muehlen  
 Petroleum Engineer / Lonquist & Co., LLC  
 Agent for 3Bear Field Services, LLC



SENDER: COMPLETE THIS SECTION	COMPLETE THIS SECTION ON DELIVERY
<ul style="list-style-type: none"> <li>Complete items 1, 2, and 3.</li> <li>Print your name and address on the reverse so that we can return the card to you.</li> <li>Attach this card to the back of the mailpiece, or on the front if space permits.</li> </ul>	<p>A. Signature <span style="float: right;"><input type="checkbox"/> Agent <input type="checkbox"/> Addressee</span></p> <p><b>X</b></p> <p>B. Received by (<i>Printed Name</i>) <span style="float: right;">C. Date of Delivery</span></p>
<p style="text-align: center;"><b>OIL CONSERVATION DIVISION DISTRICT I 1625 N FRENCH DR HOBBS NM 88240 2009 GRAMA STATE SWD #2</b></p>  <p style="text-align: center;">9590 9402 4809 8344 2979 49</p>	<p>D. Is delivery address different from Item 1? <input type="checkbox"/> Yes If YES, enter delivery address below: <input type="checkbox"/> No</p>
<p>2 Article Number (<i>Transfer from service label</i>) <b>7018 3090 0002 2009 8926</b></p>	<p>3. Service Type <span style="float: right;"><input type="checkbox"/> Priority Mail Express® <input type="checkbox"/> Registered Mail™</span></p> <p><input checked="" type="checkbox"/> Adult Signature <span style="float: right;"><input type="checkbox"/> Registered Mail Restricted Delivery</span></p> <p><input type="checkbox"/> Adult Signature Restricted Delivery <span style="float: right;"><input type="checkbox"/> Return Receipt for Merchandise</span></p> <p><input checked="" type="checkbox"/> Certified Mail® <span style="float: right;"><input type="checkbox"/> Signature Confirmation™</span></p> <p><input type="checkbox"/> Certified Mail Restricted Delivery <span style="float: right;"><input type="checkbox"/> Signature Confirmation Restricted Delivery</span></p> <p><input type="checkbox"/> Collect on Delivery <span style="float: right;"><input type="checkbox"/> Insured Mail</span></p> <p><input type="checkbox"/> Collect on Delivery Restricted Delivery <span style="float: right;"><input type="checkbox"/> Insured Mail Restricted Delivery (over \$500)</span></p>
<p>PS Form 3811, July 2015 PSN 7530-02-000-9053 <span style="float: right;">Domestic Return Receipt</span></p>	

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For delivery information, visit our website at <a href="http://www.usps.com">www.usps.com</a> ®.	
<b>OFFICIAL USE</b>	
<p>Certified Mail Fee \$ _____</p> <p>Extra Services &amp; Fees (<i>check box, add fee as appropriate</i>)</p> <p><input type="checkbox"/> Return Receipt (hardcopy) \$ _____</p> <p><input type="checkbox"/> Return Receipt (electronic) \$ _____</p> <p><input type="checkbox"/> Certified Mail Restricted Delivery \$ _____</p> <p><input type="checkbox"/> Adult Signature Required \$ _____</p> <p><input type="checkbox"/> Adult Signature Restricted Delivery \$ _____</p>	<p>Postmark Here</p>
<p>Postage \$ _____</p> <p>Total \$ _____</p> <p>Sent \$ _____</p> <p>Street _____</p> <p>City, _____</p>	<p style="text-align: center;"><b>OIL CONSERVATION DIVISION DISTRICT I 1625 N FRENCH DR HOBBS NM 88240 2009 GRAMA STATE SWD #2</b></p>
<p>PS Form 3800, April 2015 PSN 7530-02-000-9047 <span style="float: right;">See Reverse for Instructions</span></p>	

PLACE STICKER AT TOP OF ENVELOPE TO THE RIGHT OF THE RETURN ADDRESS. FOLD AT DOTTED LINE.  
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7018 3090 0002 2009 8926  
 7018 3090 0002 2009 8926



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- Complete items 1, 2, and 3.
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- Attach this card to the back of the mailpiece, or on the front if space permits.

**MERCHANT LIVESTOCK  
PO BOX 1105  
EUNICE NM 88231**

**2009 GRAMA STATE SWD #2**



9590 9402 4809 8344 2979 32

2. Article Number (Transfer from service label)

**7018 3090 0002 2009 8933**

PS Form 3811, July 2015 PSN 7530-02-000-9053

**COMPLETE THIS SECTION ON DELIVERY**

A. Signature

**X**

- Agent
- Addressee

B. Received by (Printed Name)

C. Date of Delivery

D. Is delivery address different from item 1?  Yes  
If YES, enter delivery address below:  No

3. Service Type

- Adult Signature
- Adult Signature Restricted Delivery
- Certified Mail®
- Certified Mail Restricted Delivery
- Collect on Delivery
- Collect on Delivery Restricted Delivery
- Insured Mail
- Insured Mail Restricted Delivery (over \$500)
- Priority Mail Express®
- Registered Mail™
- Registered Mail Restricted Delivery
- Return Receipt for Merchandise
- Signature Confirmation™
- Signature Confirmation Restricted Delivery

Domestic Return Receipt

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Extra Services & Fees (check box, add fee as appropriate)

- Return Receipt (hardcopy) \$ \_\_\_\_\_
- Return Receipt (electronic) \$ \_\_\_\_\_
- Certified Mail Restricted Delivery \$ \_\_\_\_\_
- Adult Signature Required \$ \_\_\_\_\_
- Adult Signature Restricted Delivery \$ \_\_\_\_\_

Postage

\$

Total

\$

Sen

Stre

City

Postmark  
Here

**MERCHANT LIVESTOCK  
PO BOX 1105  
EUNICE NM 88231**

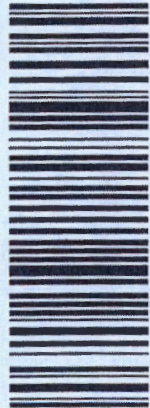
**2009 GRAMA STATE SWD #2**

PS Form 3800, April 2015 PSN 7530-02-000-9047

See Reverse for Instructions

PLACE STICKER AT TOP OF ENVELOPE TO THE RIGHT OF THE RETURN ADDRESS. FOLD AT DOTTED LINE.

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7018 3090 0002 2009 8933

7018 3090 0002 2009 8933

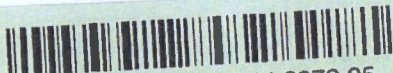


**SENDER: COMPLETE THIS SECTION**

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

**BUREAU OF LAND MANAGEMENT**  
**620 E GREENE STREET**  
**CARLSBAD NM 88220**

**2009 GRAMA STATE SWD #2**



9590 9402 4809 8344 2979 25

Article Number (Transfer from service label)  
**7018 3090 0002 2009 8940**

PS Form 3811, July 2015 PSN 7530-02-000-9053

**COMPLETE THIS SECTION ON DELIVERY**

A. Signature  Agent  
 Addressee

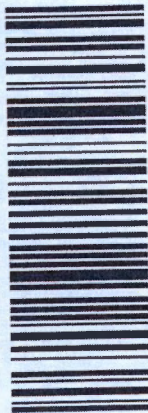
B. Received by (Printed Name) C. Date of Delivery

D. Is delivery address different from item 1?  Yes  
 If YES, enter delivery address below:  No

3. Service Type
- Adult Signature
  - Adult Signature Restricted Delivery
  - Certified Mail®
  - Certified Mail Restricted Delivery
  - Collect on Delivery
  - Collect on Delivery Restricted Delivery
  - Insured Mail
  - Insured Mail Restricted Delivery (over \$500)
  - Priority Mail Express®
  - Registered Mail™
  - Registered Mail Restricted Delivery
  - Return Receipt for Merchandise
  - Signature Confirmation™
  - Signature Confirmation Restricted Delivery

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Certified Mail Fee	\$
Extra Services & Fees (check box, add fee as appropriate)	
<input type="checkbox"/> Return Receipt (hardcopy)	\$
<input type="checkbox"/> Return Receipt (electronic)	\$
<input type="checkbox"/> Certified Mail Restricted Delivery	\$
<input type="checkbox"/> Adult Signature Required	\$
<input type="checkbox"/> Adult Signature Restricted Delivery	\$

Postmark  
Here

Postage  
 \$ Total P  
 \$ Sent To  
 Street #  
 City, St

**BUREAU OF LAND MANAGEMENT**  
**620 E GREENE STREET**  
**CARLSBAD NM 88220**  
  
**2009 GRAMA STATE SWD #2**

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions



**SENDER: COMPLETE THIS SECTION**

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

**NEW MEXICO STATE LAND OFFICE  
310 OLD STANTA FE TRAIL  
PO BOX 1148  
SANTA FE NM 87405-1148  
2009 GRAMA STATE SWD #2**



9590 9402 4809 8344 2979 18

2. Article Number (Transfer from service label)

7018 3090 0002 2009 8957

PS Form 3811, July 2015 PSN 7530-02-000-9053

**COMPLETE THIS SECTION ON DELIVERY**

A. Signature  Agent  
 Addressee  
**X**

B. Received by (Printed Name) C. Date of Delivery

D. Is delivery address different from item 1?  Yes  
If YES, enter delivery address below:  No

3. Service Type
- |                                                                        |                                                                     |
|------------------------------------------------------------------------|---------------------------------------------------------------------|
| <input checked="" type="checkbox"/> Adult Signature                    | <input type="checkbox"/> Priority Mail Express®                     |
| <input type="checkbox"/> Adult Signature Restricted Delivery           | <input type="checkbox"/> Registered Mail™                           |
| <input type="checkbox"/> Certified Mail®                               | <input type="checkbox"/> Registered Mail Restricted Delivery        |
| <input type="checkbox"/> Certified Mail Restricted Delivery            | <input type="checkbox"/> Return Receipt for Merchandise             |
| <input type="checkbox"/> Collect on Delivery                           | <input type="checkbox"/> Signature Confirmation™                    |
| <input type="checkbox"/> Collect on Delivery Restricted Delivery       | <input type="checkbox"/> Signature Confirmation Restricted Delivery |
| <input type="checkbox"/> Insured Mail                                  |                                                                     |
| <input type="checkbox"/> Insured Mail Restricted Delivery (over \$500) |                                                                     |

Domestic Return Receipt

PLACE STICKER AT TOP OF ENVELOPE TO THE RIGHT OF THE RETURN ADDRESS. FOLD AT DOTTED LINE.

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- Extra Services & Fees (check box, add fee as appropriate)
- |                                                              |          |
|--------------------------------------------------------------|----------|
| <input type="checkbox"/> Return Receipt (hardcopy)           | \$ _____ |
| <input type="checkbox"/> Return Receipt (electronic)         | \$ _____ |
| <input type="checkbox"/> Certified Mail Restricted Delivery  | \$ _____ |
| <input type="checkbox"/> Adult Signature Required            | \$ _____ |
| <input type="checkbox"/> Adult Signature Restricted Delivery | \$ _____ |

Postmark Here

Postage

\$ \_\_\_\_\_

Total Pk

\$ \_\_\_\_\_

Sent To

Street a

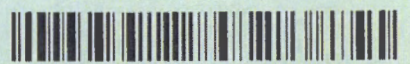
City, St

**NEW MEXICO STATE LAND OFFICE  
310 OLD STANTA FE TRAIL  
PO BOX 1148  
SANTA FE NM 87405-1148  
2009 GRAMA STATE SWD #2**

PS Form 3800, April 2015 PSN 7530-02-000-9047

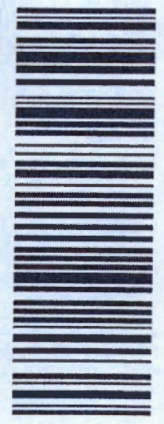
See Reverse for Instructions



SENDER: COMPLETE THIS SECTION	COMPLETE THIS SECTION ON DELIVERY																
<ul style="list-style-type: none"> <li>Complete Items 1, 2, and 3.</li> <li>Print your name and address on the reverse so that we can return the card to you.</li> <li>Attach this card to the back of the mailpiece, or on the front if space permits.</li> </ul> <p><b>CENTENNIAL RESOURCE PROD LLC</b>  <b>1001 17<sup>TH</sup> STREET STE 1800</b>  <b>DENVER CO 80202</b></p> <p><b>2009 GRAMA STATE SWD #2</b></p>  <p>9590 9402 4809 8344 2978 33</p>	<p>A. Signature <input checked="" type="checkbox"/> Agent  <input checked="" type="checkbox"/> Addressee</p> <p>B. Received by (Printed Name) _____ C. Date of Delivery _____</p> <p>D. Is delivery address different from item 1? <input type="checkbox"/> Yes  If YES, enter delivery address below: <input type="checkbox"/> No</p>																
<p>2. Article Number (Transfer from service label)  <b>7018 3090 0002 2009 8964</b></p>	<p>3. Service Type</p> <table border="0"> <tr> <td><input checked="" type="checkbox"/> Adult Signature</td> <td><input type="checkbox"/> Priority Mail Express®</td> </tr> <tr> <td><input type="checkbox"/> Adult Signature Restricted Delivery</td> <td><input type="checkbox"/> Registered Mail™</td> </tr> <tr> <td><input checked="" type="checkbox"/> Certified Mail®</td> <td><input type="checkbox"/> Registered Mail Restricted Delivery</td> </tr> <tr> <td><input type="checkbox"/> Certified Mail Restricted Delivery</td> <td><input type="checkbox"/> Return Receipt for Merchandise</td> </tr> <tr> <td><input type="checkbox"/> Collect on Delivery</td> <td><input type="checkbox"/> Signature Confirmation™</td> </tr> <tr> <td><input type="checkbox"/> Collect on Delivery Restricted Delivery</td> <td><input type="checkbox"/> Signature Confirmation Restricted Delivery</td> </tr> <tr> <td><input type="checkbox"/> Insured Mail</td> <td></td> </tr> <tr> <td><input type="checkbox"/> Insured Mail Restricted Delivery (over \$500)</td> <td></td> </tr> </table>	<input checked="" type="checkbox"/> Adult Signature	<input type="checkbox"/> Priority Mail Express®	<input type="checkbox"/> Adult Signature Restricted Delivery	<input type="checkbox"/> Registered Mail™	<input checked="" type="checkbox"/> Certified Mail®	<input type="checkbox"/> Registered Mail Restricted Delivery	<input type="checkbox"/> Certified Mail Restricted Delivery	<input type="checkbox"/> Return Receipt for Merchandise	<input type="checkbox"/> Collect on Delivery	<input type="checkbox"/> Signature Confirmation™	<input type="checkbox"/> Collect on Delivery Restricted Delivery	<input type="checkbox"/> Signature Confirmation Restricted Delivery	<input type="checkbox"/> Insured Mail		<input type="checkbox"/> Insured Mail Restricted Delivery (over \$500)	
<input checked="" type="checkbox"/> Adult Signature	<input type="checkbox"/> Priority Mail Express®																
<input type="checkbox"/> Adult Signature Restricted Delivery	<input type="checkbox"/> Registered Mail™																
<input checked="" type="checkbox"/> Certified Mail®	<input type="checkbox"/> Registered Mail Restricted Delivery																
<input type="checkbox"/> Certified Mail Restricted Delivery	<input type="checkbox"/> Return Receipt for Merchandise																
<input type="checkbox"/> Collect on Delivery	<input type="checkbox"/> Signature Confirmation™																
<input type="checkbox"/> Collect on Delivery Restricted Delivery	<input type="checkbox"/> Signature Confirmation Restricted Delivery																
<input type="checkbox"/> Insured Mail																	
<input type="checkbox"/> Insured Mail Restricted Delivery (over \$500)																	
<p>PS Form 3811, July 2015 PSN 7530-02-000-9053</p>	<p>Domestic Return Receipt</p>																

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<b>OFFICIAL USE</b>	
<p>Certified Mail Fee \$ _____</p> <p>Extra Services &amp; Fees (check box, add fee as appropriate)</p> <p><input type="checkbox"/> Return Receipt (hardcopy) \$ _____</p> <p><input type="checkbox"/> Return Receipt (electronic) \$ _____</p> <p><input type="checkbox"/> Certified Mail Restricted Delivery \$ _____</p> <p><input type="checkbox"/> Adult Signature Required \$ _____</p> <p><input type="checkbox"/> Adult Signature Restricted Delivery \$ _____</p>	<p>Postmark Here</p>
<p>Postage \$ _____</p> <p>Total Pk \$ _____</p> <p>Sent To _____</p> <p>Street # _____</p> <p>City, St _____</p>	<p><b>CENTENNIAL RESOURCE PROD LLC</b>  <b>1001 17<sup>TH</sup> STREET STE 1800</b>  <b>DENVER CO 80202</b></p> <p><b>2009 GRAMA STATE SWD #2</b></p>
<p>PS Form 3800, April 2015 PSN 7530-02-000-8047 See Reverse for Instructions</p>	

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 7018 3090 0002 2009 8964



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**CHISHOLM ENERGY OPERATING LLC  
801 CHERRY STREET  
FT WORTH TX 76102**

**2009 GRAMA STATE SWD #2**



9590 9402 4809 8344 2978 26

2 Article Number (Transfer from service label)

**7018 3090 0002 2009 8971**

PS Form 3811, July 2015 PSN 7530-02-000-9053

**COMPLETE THIS SECTION ON DELIVERY**

A. Signature

**X**

- Agent
- Addressee

B. Received by (Printed Name)

C. Date of Delivery

D. Is delivery address different from item 1?  Yes  
If YES, enter delivery address below:  No

3. Service Type
- Adult Signature
  - Adult Signature Restricted Delivery
  - Certified Mail®
  - Certified Mail Restricted Delivery
  - Collect on Delivery
  - Collect on Delivery Restricted Delivery
  - Insured Mail
  - Insured Mail Restricted Delivery (over \$500)
  - Priority Mail Express®
  - Registered Mail™
  - Registered Mail Restricted Delivery
  - Return Receipt for Merchandise
  - Signature Confirmation™
  - Signature Confirmation Restricted Delivery

Domestic Return Receipt

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7018 3090 0002 2009 8971

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Extra Services & Fees (check box, add fee as appropriate)

- Return Receipt (hardcopy) \$ \_\_\_\_\_
- Return Receipt (electronic) \$ \_\_\_\_\_
- Certified Mail Restricted Delivery \$ \_\_\_\_\_
- Adult Signature Required \$ \_\_\_\_\_
- Adult Signature Restricted Delivery \$ \_\_\_\_\_

Postmark  
Here

Postage

\$

Total P

\$

Sent To

Street:

City, S

**CHISHOLM ENERGY OPERATING LLC  
801 CHERRY STREET  
FT WORTH TX 76102**

**2009 GRAMA STATE SWD #2**

PS Form 3800, April 2015 PSN 7530-02-000-9047

See Reverse for Instructions



**SENDER: COMPLETE THIS SECTION**

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

**ENSTOR GRAMA RIDGE STORAGE  
AND TRANSPORTATION  
10375 RICHMOND STE 1900  
HOUSTON TX 77042  
2009 GRAMA STATE SWD #2**



9590 9402 4809 8344 2978 19

2. Article Number (Transfer from service label)

7018 3090 0002 2009 8988

PS Form 3811, July 2015 PSN 7530-02-000-9053

**COMPLETE THIS SECTION ON DELIVERY**

A. Signature

X

- Agent
- Addressee

B. Received by (Printed Name)

C. Date of Delivery

D. Is delivery address different from item 1?  Yes  
If YES, enter delivery address below:  No

3. Service Type

- Adult Signature
- Adult Signature Restricted Delivery
- Certified Mail®
- Certified Mail Restricted Delivery
- Collect on Delivery
- Collect on Delivery Restricted Delivery
- Insured Mail
- Insured Mail Restricted Delivery (over \$500)
- Priority Mail Express®
- Registered Mail™
- Registered Mail Restricted Delivery
- Return Receipt for Merchandise
- Signature Confirmation™
- Signature Confirmation Restricted Delivery

Domestic Return Receipt

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Extra Services & Fees (check box, add fee as appropriate)

- Return Receipt (hardcopy) \$ \_\_\_\_\_
- Return Receipt (electronic) \$ \_\_\_\_\_
- Certified Mail Restricted Delivery \$ \_\_\_\_\_
- Adult Signature Required \$ \_\_\_\_\_
- Adult Signature Restricted Delivery \$ \_\_\_\_\_

Postmark  
Here

Postage

\$

Total Price

\$

Sent To

Street

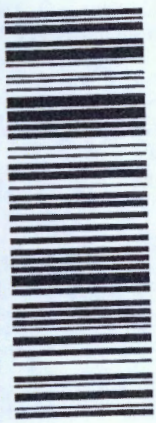
City, State

**ENSTOR GRAMA RIDGE STORAGE  
AND TRANSPORTATION  
10375 RICHMOND STE 1900  
HOUSTON TX 77042  
2009 GRAMA STATE SWD #2**

PS Form 3800, April 2015 PSN 7530-02-000-9047

See Reverse for Instructions

PLACE STICKER AT TOP OF ENVELOPE TO THE RIGHT OF THE RETURN ADDRESS. FOLD AT DOTTED LINE.  
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7018 3090 0002 2009 8988  
7018 3090 0002 2009 8988



**SENDER: COMPLETE THIS SECTION**

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- Attach this card to the back of the mailpiece, or on the front if space permits.

**EOG RESOURCES INC  
PO BOX 2267  
MIDLAND TX 79702**

**2009 GRAMA STATE SWD#2**



9590 9402 4809 8344 2862 95

2. Article Number (Transfer from service label)

**7018 3090 0002 2009 9022**

PS Form 3811, July 2015 PSN 7530-02-000-9053

**COMPLETE THIS SECTION ON DELIVERY**

A. Signature  Agent  
 Addressee  
**X**

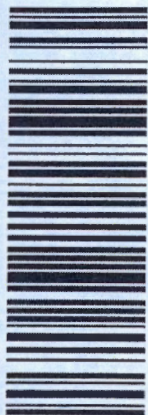
B. Received by (Printed Name) C. Date of Delivery

D. Is delivery address different from item 1?  Yes  
If YES, enter delivery address below:  No

3. Service Type
- |                                                                        |                                                                     |
|------------------------------------------------------------------------|---------------------------------------------------------------------|
| <input checked="" type="checkbox"/> Adult Signature                    | <input type="checkbox"/> Priority Mail Express®                     |
| <input type="checkbox"/> Adult Signature Restricted Delivery           | <input type="checkbox"/> Registered Mail™                           |
| <input checked="" type="checkbox"/> Certified Mail®                    | <input type="checkbox"/> Registered Mail Restricted Delivery        |
| <input type="checkbox"/> Certified Mail Restricted Delivery            | <input type="checkbox"/> Return Receipt for Merchandise             |
| <input type="checkbox"/> Collect on Delivery                           | <input type="checkbox"/> Signature Confirmation™                    |
| <input type="checkbox"/> Collect on Delivery Restricted Delivery       | <input type="checkbox"/> Signature Confirmation Restricted Delivery |
| <input type="checkbox"/> Insured Mail                                  |                                                                     |
| <input type="checkbox"/> Insured Mail Restricted Delivery (over \$500) |                                                                     |

Domestic Return Receipt

PLACE STICKER AT TOP OF ENVELOPE TO THE RIGHT OF THE RETURN ADDRESS. FOLD AT DOTTED LINE.  
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7018 3090 0002 2009 9022  
7018 3090 0002 2009 9022

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**OFFICIAL USE**

Certified Mail Fee \$ \_\_\_\_\_  
Extra Services & Fees (check box, add fee as appropriate)  
 Return Receipt (hardcopy) \$ \_\_\_\_\_  
 Return Receipt (electronic) \$ \_\_\_\_\_  
 Certified Mail Restricted Delivery \$ \_\_\_\_\_  
 Adult Signature Required \$ \_\_\_\_\_  
 Adult Signature Restricted Delivery \$ \_\_\_\_\_

Postmark Here

Postage \$ \_\_\_\_\_  
Total Po \$ \_\_\_\_\_  
Sent To \_\_\_\_\_  
Street a/c \_\_\_\_\_  
City, Sta \_\_\_\_\_

**EOG RESOURCES INC  
PO BOX 2267  
MIDLAND TX 79702**

**2009 GRAMA STATE SWD#2**

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions



**SENDER: COMPLETE THIS SECTION**

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

**MARATHON OIL PERMIAN LLC  
5555 SAN FELIPE ST  
HOUSTON TX 77056**

**2009 GRAMA STATE SWD #2**



9590 9402 4809 8344 2862 64

2. Article Number (Transfer from service label)

**7018 3090 0002 2009 8995**

**COMPLETE THIS SECTION ON DELIVERY**

A. Signature

**X**

- Agent
- Addressee

B. Received by (Printed Name)

C. Date of Delivery

D. Is delivery address different from item 1?  Yes  
If YES, enter delivery address below:  No

3. Service Type

- Adult Signature
- Adult Signature Restricted Delivery
- Certified Mail®
- Certified Mail Restricted Delivery
- Collect on Delivery
- Collect on Delivery Restricted Delivery
- Insured Mail
- Insured Mail Restricted Delivery (over \$500)
- Priority Mail Express®
- Registered Mail™
- Registered Mail Restricted Delivery
- Return Receipt for Merchandise
- Signature Confirmation™
- Signature Confirmation Restricted Delivery

PS Form 3811, July 2015 PSN 7530-02-000-9053

Domestic Return Receipt

PLACE STICKER AT TOP OF ENVELOPE TO THE RIGHT OF THE RETURN ADDRESS, FOLD AT DOTTED LINE

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7018 3090 0002 2009 8995

7018 3090 0002 2009 8995

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Certified Mail Fee

\$

Extra Services & Fees (check box, add fee as appropriate)

- Return Receipt (hardcopy) \$ \_\_\_\_\_
- Return Receipt (electronic) \$ \_\_\_\_\_
- Certified Mail Restricted Delivery \$ \_\_\_\_\_
- Adult Signature Required \$ \_\_\_\_\_
- Adult Signature Restricted Delivery \$ \_\_\_\_\_

Postage

\$

Total P

\$

Sent To

Street

City, St

**MARATHON OIL PERMIAN LLC  
5555 SAN FELIPE ST  
HOUSTON TX 77056**

**2009 GRAMA STATE SWD #2**

Postmark  
Here

PS Form 3800, April 2015 PSN 7530-02-000-9047

See Reverse for Instructions



**SENDER: COMPLETE THIS SECTION**

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

**MEWBOURNE OIL CO  
PO BOX 5270  
HOBBS NM 88241**

**2009 GRAMA STATE SWD #2**



9590 9402 4809 8344 2862 71

2. Article Number (Transfer from service label)

**7018 3090 0002 2009 9008**

**COMPLETE THIS SECTION ON DELIVERY**

A. Signature

**X**

- Agent
- Addressee

B. Received by (Printed Name)

C. Date of Delivery

D. Is delivery address different from item 1?  Yes  
If YES, enter delivery address below:  No

3. Service Type

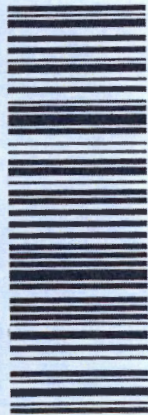
- Adult Signature
- Adult Signature Restricted Delivery
- Certified Mail®
- Certified Mail Restricted Delivery
- Collect on Delivery
- Collect on Delivery Restricted Delivery
- Insured Mail
- Insured Mail Restricted Delivery (over \$500)
- Priority Mail Express®
- Registered Mail™
- Registered Mail Restricted Delivery
- Return Receipt for Merchandise
- Signature Confirmation™
- Signature Confirmation Restricted Delivery

PS Form 3811, July 2015 PSN 7530-02-000-9053

Domestic Return Receipt

PLACE STICKER AT TOP OF ENVELOPE TO THE RIGHT OF THE RETURN ADDRESS. FOLLOW DOTTED LINE.

**CERTIFIED MAIL®**



7018 3090 0002 2009 9008  
7018 3090 0002 2009 9008

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Extra Services & Fees (check box, add fee as appropriate)

- Return Receipt (hardcopy) \$ \_\_\_\_\_
- Return Receipt (electronic) \$ \_\_\_\_\_
- Certified Mail Restricted Delivery \$ \_\_\_\_\_
- Adult Signature Required \$ \_\_\_\_\_
- Adult Signature Restricted Delivery \$ \_\_\_\_\_

Postmark  
Here

Postage

\$

Total

\$

Sent

Street

City

**MEWBOURNE OIL CO  
PO BOX 5270  
HOBBS NM 88241**

**2009 GRAMA STATE SWD #2**

PS Form 3800, April 2015 PSN 7530-02-000-9047

See Reverse for instructions



**SENDER: COMPLETE THIS SECTION**

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

V-F PETROLEUM INC  
PO BOX 1889  
MIDLAND TX 79702

2009 GRAMA STATE SWD #2



9590 9402 4809 8344 2862 88

2 Article Number (Transfer from service label)

7018 3090 0002 2009 9015

PS Form 3811, July 2015 PSN 7530-02-000-9053

**COMPLETE THIS SECTION ON DELIVERY**

A. Signature

X

- Agent
- Addressee

B. Received by (Printed Name)

C. Date of Delivery

D. Is delivery address different from item 1?  Yes  
If YES, enter delivery address below:  No

3. Service Type

- Adult Signature
- Adult Signature Restricted Delivery
- Certified Mail®
- Certified Mail Restricted Delivery
- Collect on Delivery
- Collect on Delivery Restricted Delivery
- Insured Mail
- Insured Mail Restricted Delivery (over \$500)
- Priority Mail Express®
- Registered Mail™
- Registered Mail Restricted Delivery
- Return Receipt for Merchandise
- Signature Confirmation™
- Signature Confirmation Restricted Delivery

Domestic Return Receipt

U.S. Postal Service™  
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For delivery information, visit our website at [www.usps.com](http://www.usps.com)®

**OFFICIAL USE**

Certified Mail Fee

\$

Extra Services & Fees (check box, add fee as appropriate)

- Return Receipt (hardcopy) \$ \_\_\_\_\_
- Return Receipt (electronic) \$ \_\_\_\_\_
- Certified Mail Restricted Delivery \$ \_\_\_\_\_
- Adult Signature Required \$ \_\_\_\_\_
- Adult Signature Restricted Delivery \$ \_\_\_\_\_

Postmark  
Here

Postage

\$

Total

\$

Sent

Street

City, State

V-F PETROLEUM INC  
PO BOX 1889  
MIDLAND TX 79702

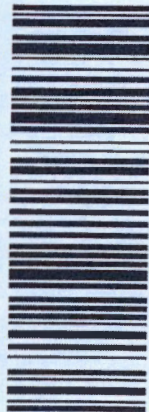
2009 GRAMA STATE SWD #2

PS Form 3800, April 2015 PSN 7530-02-000-9047

See Reverse for Instructions

PLACE STICKER AT TOP OF ENVELOPE TO THE RIGHT OF THE RETURN ADDRESS. FOLD AT DOTTED LINE.

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7018 3090 0002 2009 9015  
7018 3090 0002 2009 9015



# LONQUIST & CO. LLC

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PETROLEUM  
ENGINEERS

ENERGY  
ADVISORS

WICHITA  
CALGARY

[www.lonquist.com](http://www.lonquist.com)

May 21, 2019

BUREAU OF LAND MANAGEMENT  
620 E. GREEN ST., CARLSBAD, NM 88220

**Subject: Grama State SWD No. 2 Authorization to Inject**

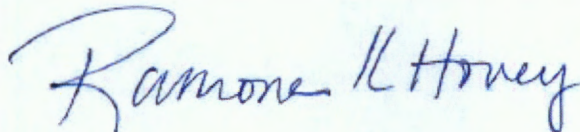
To Whom It May Concern:

Attached for your review is Form C-108, Application for Authorization to Inject, and its supplemental documents prepared for 3Bear Field Services LLC's Grama State SWD No. 2 well. Section XIV of Form C-108 requires that the surface land owner on which the well is located and each leasehold operator within a one-half mile radius of the proposed well location be furnished with the application. The notice of application has been extended to a one-mile radius

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Any questions should be directed towards 3Bear Field Services LLC's agent, Lonquist & Co., LLC.

Regards,



Ramona K. Hovey  
Sr. Petroleum Engineer  
Lonquist & Co., LLC

(512) 600-1777  
[steve@lonquist.com](mailto:steve@lonquist.com)



# LONQUIST & CO. LLC

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ENGINEERS

ENERGY  
ADVISORS

WICHITA  
CALGARY

[www.lonquist.com](http://www.lonquist.com)

May 21, 2019

CENTENNIAL RESOURCE PRODUCTION LLC  
1001 17TH STREET SUITE 1800, DENVER, CO 80202

**Subject: Grama State SWD No. 2 Authorization to Inject**

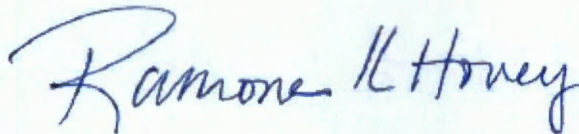
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Regards,



Ramona K. Hovey  
Sr. Petroleum Engineer  
Lonquist & Co., LLC

(512) 600-1777  
[steve@lonquist.com](mailto:steve@lonquist.com)



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ADVISORS

WICHITA  
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May 21, 2019

CHISHOLM ENERGY OPERATING LLC  
801 CHERRY STREET, FORT WORTH, TX 76102

**Subject: Grama State SWD No. 2 Authorization to Inject**

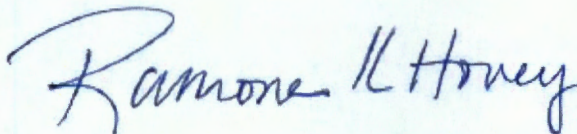
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Regards,



Ramona K. Hovey  
Sr. Petroleum Engineer  
Lonquist & Co., LLC

(512) 600-1777  
[steve@lonquist.com](mailto:steve@lonquist.com)



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ADVISORS

WICHITA  
CALGARY

[www.lonquist.com](http://www.lonquist.com)

May 21, 2019

ENSTOR GRAMA RIDGE STORAGE AND TRANSPORTATION  
10375 RICHMAN AVE SUITE 1900, HOUSTON, TX 77042

**Subject: Grama State SWD No. 2 Authorization to Inject**

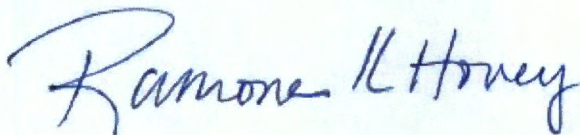
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Regards,



Ramona K. Hovey  
Sr. Petroleum Engineer  
Lonquist & Co., LLC

(512) 600-1777  
[steve@lonquist.com](mailto:steve@lonquist.com)



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WICHITA  
CALGARY

[www.lonquist.com](http://www.lonquist.com)

May 21, 2019

EOG RESOURCES INC  
PO BOX 2267, MIDLAND, TX 79702

**Subject: Grama State SWD No. 2 Authorization to Inject**

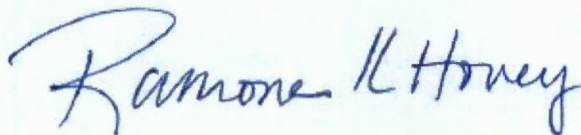
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Regards,



Ramona K. Hovey  
Sr. Petroleum Engineer  
Lonquist & Co., LLC

(512) 600-1777  
[steve@lonquist.com](mailto:steve@lonquist.com)



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ADVISORS

WICHITA  
CALGARY

[www.lonquist.com](http://www.lonquist.com)

May 21, 2019

MARATHON OIL PERMIAN LLC  
5555 SAN FELIPE ST HOUSTON, TX 77056

**Subject: Grama State SWD No. 2 Authorization to Inject**

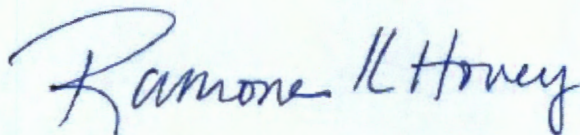
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Regards,



Ramona K. Hovey  
Sr. Petroleum Engineer  
Lonquist & Co., LLC

(512) 600-1777  
[steve@lonquist.com](mailto:steve@lonquist.com)



# LONQUIST & CO. LLC

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HOUSTON

PETROLEUM  
ENGINEERS

ENERGY  
ADVISORS

WICHITA  
CALGARY

[www.lonquist.com](http://www.lonquist.com)

May 21, 2019

MERCHANT LIVESTOCK  
PO BOX 1105, EUNICE, NM 88231

**Subject: Grama State SWD No. 2 Authorization to Inject**

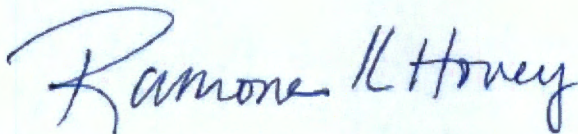
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Regards,



Ramona K. Hovey  
Sr. Petroleum Engineer  
Lonquist & Co., LLC

(512) 600-1777  
[steve@lonquist.com](mailto:steve@lonquist.com)



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HOUSTON

PETROLEUM  
ENGINEERS

ENERGY  
ADVISORS

WICHITA  
CALGARY

[www.lonquist.com](http://www.lonquist.com)

May 21, 2019

MEWBOURNE OIL CO  
PO BOX 5270 HOBBS, NM 88241

**Subject: Grama State SWD No. 2 Authorization to Inject**

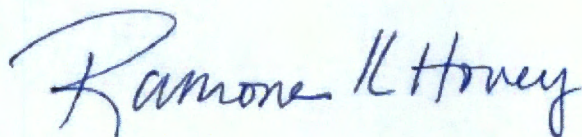
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Regards,



Ramona K. Hovey  
Sr. Petroleum Engineer  
Lonquist & Co., LLC

(512) 600-1777  
[steve@lonquist.com](mailto:steve@lonquist.com)



# LONQUIST & CO. LLC

AUSTIN  
HOUSTON

PETROLEUM  
ENGINEERS

ENERGY  
ADVISORS

WICHITA  
CALGARY

[www.lonquist.com](http://www.lonquist.com)

May 21, 2019

NEW MEXICO STATE LAND OFFICE  
310 OLD SANTA FE TRAIL, P.O. BOX 1148, SANTA FE, NM 87504-1148

**Subject: Grama State SWD No. 2 Authorization to Inject**

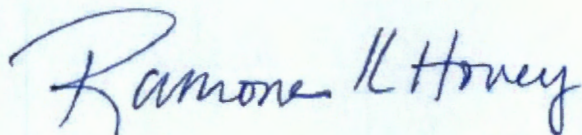
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Ramona K. Hovey  
Sr. Petroleum Engineer  
Lonquist & Co., LLC

(512) 600-1777  
[steve@lonquist.com](mailto:steve@lonquist.com)



# LONQUIST & CO. LLC

AUSTIN  
HOUSTON

PETROLEUM  
ENGINEERS

ENERGY  
ADVISORS

WICHITA  
CALGARY

[www.lonquist.com](http://www.lonquist.com)

May 21, 2019

OIL CONSERVATION DIVISION DISTRICT I  
1625 N. FRENCH DR., HOBBS, NM 88240

**Subject: Grama State SWD No. 2 Authorization to Inject**

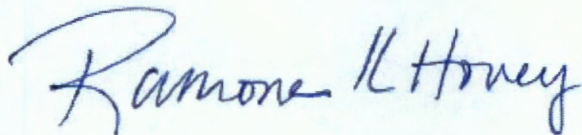
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Sr. Petroleum Engineer  
Lonquist & Co., LLC

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[steve@lonquist.com](mailto:steve@lonquist.com)



# LONQUIST & CO. LLC

AUSTIN  
HOUSTON

PETROLEUM  
ENGINEERS

ENERGY  
ADVISORS

WICHITA  
CALGARY

[www.lonquist.com](http://www.lonquist.com)

May 21, 2019

V-F PETROLEUM INC  
PO BOX 1889, MIDLAND, TX 79702

**Subject: Grama State SWD No. 2 Authorization to Inject**

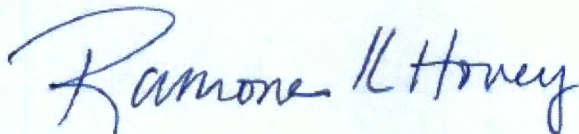
To Whom It May Concern:

Attached for your review is Form C-108, Application for Authorization to Inject, and its supplemental documents prepared for 3Bear Field Services LLC's Grama State SWD No. 2 well. Section XIV of Form C-108 requires that the surface land owner on which the well is located and each leasehold operator within a one-half mile radius of the proposed well location be furnished with the application. The notice of application has been extended to a one-mile radius

According to the New Mexico Oil Conservation Division, surface owners or offset operators must file any objections or requests for hearing of administrative applications within 15 days from the date in which this application was mailed to them.

Any questions should be directed towards 3Bear Field Services LLC's agent, Lonquist & Co., LLC.

Regards,



Ramona K. Hovey  
Sr. Petroleum Engineer  
Lonquist & Co., LLC

(512) 600-1777  
[steve@lonquist.com](mailto:steve@lonquist.com)



**APPLICATION FOR AUTHORIZATION TO INJECT**

- I. PURPOSE: \_\_\_\_\_ Secondary Recovery \_\_\_\_\_ Pressure Maintenance \_\_\_\_\_  Disposal \_\_\_\_\_ Storage  
Application qualifies for administrative approval? \_\_\_\_\_  Yes \_\_\_\_\_ No
- II. OPERATOR: 3Bear Field Services, LLC  
ADDRESS: 415 W. Wall St., Suite 1212  
CONTACT PARTY: Kevin Burns PHONE: 432-686-2973
- III. WELL DATA: Complete the data required on the reverse side of this form for each well proposed for injection.  
Additional sheets may be attached if necessary.
- IV. Is this an expansion of an existing project? \_\_\_\_\_ Yes \_\_\_\_\_  No  
If yes, give the Division order number authorizing the project: \_\_\_\_\_
- V. Attach a map that identifies all wells and leases within two miles of any proposed injection well with a one-half mile radius circle drawn around each proposed injection well. This circle identifies the well's area of review.
- VI. Attach a tabulation of data on all wells of public record within the area of review which penetrate the proposed injection zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of completion, and a schematic of any plugged well illustrating all plugging detail.
- VII. Attach data on the proposed operation, including:
1. Proposed average and maximum daily rate and volume of fluids to be injected;
  2. Whether the system is open or closed;
  3. Proposed average and maximum injection pressure;
  4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and,
  5. If injection is for disposal purposes into a zone not productive of oil or gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water (may be measured or inferred from existing literature, studies, nearby wells, etc.).
- \*VIII. Attach appropriate geologic data on the injection zone including appropriate lithologic detail, geologic name, thickness, and depth. Give the geologic name, and depth to bottom of all underground sources of drinking water (aquifers containing waters with total dissolved solids concentrations of 10,000 mg/l or less) overlying the proposed injection zone as well as any such sources known to be immediately underlying the injection interval.
- IX. Describe the proposed stimulation program, if any.
- \*X. Attach appropriate logging and test data on the well. (If well logs have been filed with the Division, they need not be resubmitted).
- \*XI. Attach a chemical analysis of fresh water from two or more fresh water wells (if available and producing) within one mile of any injection or disposal well showing location of wells and dates samples were taken.
- XII. Applicants for disposal wells must make an affirmative statement that they have examined available geologic and engineering data and find no evidence of open faults or any other hydrologic connection between the disposal zone and any underground sources of drinking water.
- XIII. Applicants must complete the "Proof of Notice" section on the reverse side of this form.
- XIV. Certification: I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.

NAME: Ramona Hovey

TITLE: Consulting Engineer – Agent for 3Bear Field Service

SIGNATURE: \_\_\_\_\_

DATE: 5/21/2019

E-MAIL ADDRESS: ramona@lonquist.com

- \* If the information required under Sections VI, VIII, X, and XI above has been previously submitted, it need not be resubmitted. Please show the date and circumstances of the earlier submittal: \_\_\_\_\_



### III. WELL DATA

A. The following well data must be submitted for each injection well covered by this application. The data must be both in tabular and schematic form and shall include:

- (1) Lease name; Well No.; Location by Section, Township and Range; and footage location within the section.
- (2) Each casing string used with its size, setting depth, sacks of cement used, hole size, top of cement, and how such top was determined.
- (3) A description of the tubing to be used including its size, lining material, and setting depth.
- (4) The name, model, and setting depth of the packer used or a description of any other seal system or assembly used.

Division District Offices have supplies of Well Data Sheets which may be used or which may be used as models for this purpose. Applicants for several identical wells may submit a "typical data sheet" rather than submitting the data for each well.

B. The following must be submitted for each injection well covered by this application. All items must be addressed for the initial well. Responses for additional wells need be shown only when different. Information shown on schematics need not be repeated.

- (1) The name of the injection formation and, if applicable, the field or pool name.
- (2) The injection interval and whether it is perforated or open-hole.
- (3) State if the well was drilled for injection or, if not, the original purpose of the well.
- (4) Give the depths of any other perforated intervals and detail on the sacks of cement or bridge plugs used to seal off such perforations.
- (5) Give the depth to and the name of the next higher and next lower oil or gas zone in the area of the well, if any.

### XIV. PROOF OF NOTICE

All applicants must furnish proof that a copy of the application has been furnished, by certified or registered mail, to the owner of the surface of the land on which the well is to be located and to each leasehold operator within one-half mile of the well location.

Where an application is subject to administrative approval, a proof of publication must be submitted. Such proof shall consist of a copy of the legal advertisement which was published in the county in which the well is located. The contents of such advertisement must include:

- (1) The name, address, phone number, and contact party for the applicant;
- (2) The intended purpose of the injection well; with the exact location of single wells or the Section, Township, and Range location of multiple wells;
- (3) The formation name and depth with expected maximum injection rates and pressures; and,
- (4) A notation that interested parties must file objections or requests for hearing with the Oil Conservation Division, 1220 South St. Francis Dr., Santa Fe, New Mexico 87505, within 15 days.

NO ACTION WILL BE TAKEN ON THE APPLICATION UNTIL PROPER PROOF OF NOTICE HAS BEEN SUBMITTED.

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NOTICE: Surface owners or offset operators must file any objections or requests for hearing of administrative applications within 15 days from the date this application was mailed to them.



Side 1

### INJECTION WELL DATA SHEET

OPERATOR: 3Bear Field Services, LLC

WELL NAME & NUMBER: Grama State SWD No. 2

WELL LOCATION: 351' FNL & 215' FWL  
FOOTAGE LOCATION

LOT 4  
UNIT LETTER

2  
SECTION

22S  
TOWNSHIP

34E  
RANGE

#### WELLBORE SCHEMATIC

#### WELL CONSTRUCTION DATA

##### Surface Casing

Hole Size: 26.000"

Casing Size: 20.00"

Cemented with 3,010 sacks.

or \_\_\_ ft<sup>3</sup>

Top of Cement: surface

Method Determined: circulation

##### 1<sup>st</sup> Intermediate Casing

Hole Size: 17.500"

Casing Size: 13.375"

Cemented with 3,115 sacks.

or \_\_\_ ft<sup>3</sup>

Top of Cement: surface

Method Determined: circulation

##### 2<sup>nd</sup> Intermediate Casing

Hole Size: 12.250"

Casing Size: 9.625"

Cemented with 2,530 sacks.

or \_\_\_ ft<sup>3</sup>

Top of Cement: surface

Method Determined: circulation

##### Production Liner

Hole Size: 8.750"

Casing Size: 7.625"

Cemented with 320 sacks.

or \_\_\_ ft<sup>3</sup>

Top of Cement: 10,800'

Method Determined: calculation

Total Depth: 15,500'

##### Injection Interval

14,400 feet to 15,500 feet

(Open Hole)



**INJECTION WELL DATA SHEET**

Tubing Size: 5.5", 20 lb/ft, HCL-80, BTC from 0' - 14,350'

Lining Material: Duoline

Type of Packer: 7-5/8" X 5-1/2" Permanent Packer with High Temperature Elastomer and Full Inconel 925 Trim

Packer Setting Depth: 14,350'

Other Type of Tubing/Casing Seal (if applicable): \_\_\_\_\_

Additional Data

1. Is this a new well drilled for injection?        X   Yes             No

If no, for what purpose was the well originally drilled?

\_\_\_\_\_

2. Name of the Injection Formation: Devonian, Fusselman,

3. Name of Field or Pool (if applicable): SWD; Devonian-Silurian (Pool Code: 97869)

4. Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail, i.e. sacks of cement or plug(s) used.

No, new drill.

5. Give the name and depths of any oil or gas zones underlying or overlying the proposed injection zone in this area:

Yates: 3,948'

Bone Spring: 8,328'

Wolfcamp: 11,143'

Strawn: 11,668'

Morrow: 12,513'



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

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

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

**District IV**  
1220 S. St. Francis Dr., Santa Fe, NM 87505  
Phone: (505) 476-3460 Fax: (505) 476-3462

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

Form C-101  
Revised July 18, 2013

AMENDED REPORT

**APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE**

<sup>1</sup> Operator Name and Address <b>3BEAR FIELD SERVICES, LLC</b> <b>415 W. WALL ST, STE 1212</b> <b>MIDLAND, TX 79701</b>		<sup>2</sup> OGRID Number <b>372603</b>
		<sup>3</sup> API Number
<sup>4</sup> Property Code	<sup>5</sup> Property Name <b>GRAMA STATE SWD</b>	<sup>6</sup> Well No. <b>2</b>

**<sup>7</sup> Surface Location**

UL - Lot	Section	Township	Range	Lot Idn	Feet from	N/S Line	Feet From	E/W Line	County
LOT 4	2	22S	34E	4	351	NORTH	215	WEST	LEA

**<sup>8</sup> Proposed Bottom Hole Location**

UL - Lot	Section	Township	Range	Lot Idn	Feet from	N/S Line	Feet From	E/W Line	County

**<sup>9</sup> Pool Information**

Pool Name <b>SWD; DEVONIAN-SILURIAN</b>	Pool Code <b>97869</b>
--------------------------------------------	---------------------------

**Additional Well Information**

<sup>11</sup> Work Type <b>N</b>	<sup>12</sup> Well Type <b>SWD</b>	<sup>13</sup> Cable/Rotary <b>R</b>	<sup>14</sup> Lease Type <b>STATE</b>	<sup>15</sup> Ground Level Elevation <b>3611'</b>
<sup>16</sup> Multiple <b>N</b>	<sup>17</sup> Proposed Depth <b>15,500'</b>	<sup>18</sup> Formation <b>DEVONIAN-SILURIAN</b>	<sup>19</sup> Contractor <b>PATRIOT</b>	<sup>20</sup> Spud Date <b>08/01/2019</b>
Depth to Ground water		Distance from nearest fresh water well		Distance to nearest surface water

We will be using a closed-loop system in lieu of lined pits

**<sup>21</sup> Proposed Casing and Cement Program**

Type	Hole Size	Casing Size	Casing Weight/ft	Setting Depth	Sacks of Cement	Estimated TOC
SURFACE	26"	20"	94.0# J-55	1750'	3010	0
INT 1	17.5"	13.375"	68# J-55	5660'	3115	0
INT 2	12..25"	9.625"	40# P-110	11175	2530	0

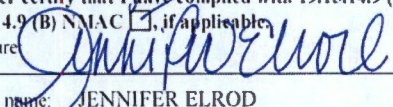
**Casing/Cement Program: Additional Comments**

DV TOOL SET @ 3700' PLEASE SEE ADDITIONAL CASING INFO AND BOP INFO ON ATTACHED SHEET W/WBD

**<sup>22</sup> Proposed Blowout Prevention Program**

Type	Working Pressure	Test Pressure	Manufacturer

<sup>23</sup> I hereby certify that the information given above is true and complete to the best of my knowledge and belief.  
 I further certify that I have complied with 19.15.14.9 (A) NMAC  and/or 19.15.14.9 (B) NMAC , if applicable.

Signature:   
 Printed name: JENNIFER ELROD  
 Title: SR. REGULATORY ANALYST  
 E-mail Address: JELROD@CHISHOLMENERGY.COM  
 Date: 05/09/2019      Phone: 817-953-3728

<b>OIL CONSERVATION DIVISION</b>	
Approved By:	
Title:	
Approved Date:	Expiration Date:
Conditions of Approval Attached	



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1625 N. French Dr., Hobbs, NM 88240  
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District IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505  
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico  
Energy, Minerals & Natural Resources Department  
**OIL CONSERVATION DIVISION**  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

Form C-102  
Revised August 1, 2011  
Submit one copy to appropriate  
District Office  
 AMENDED REPORT

**WELL LOCATION AND ACREAGE DEDICATION PLAT**

<sup>1</sup> API Number		<sup>2</sup> Pool Code 97869		<sup>3</sup> Pool Name SWD; DEVONIAN-SILURIAN	
<sup>4</sup> Property Code		<sup>5</sup> Property Name GRAMA STATE SWD		<sup>6</sup> Well Number 2	
<sup>7</sup> OGRID No. 372603		<sup>8</sup> Operator Name 3BEAR FIELD SERVICES, LLC		<sup>9</sup> Elevation 3611'	

**" Surface Location**

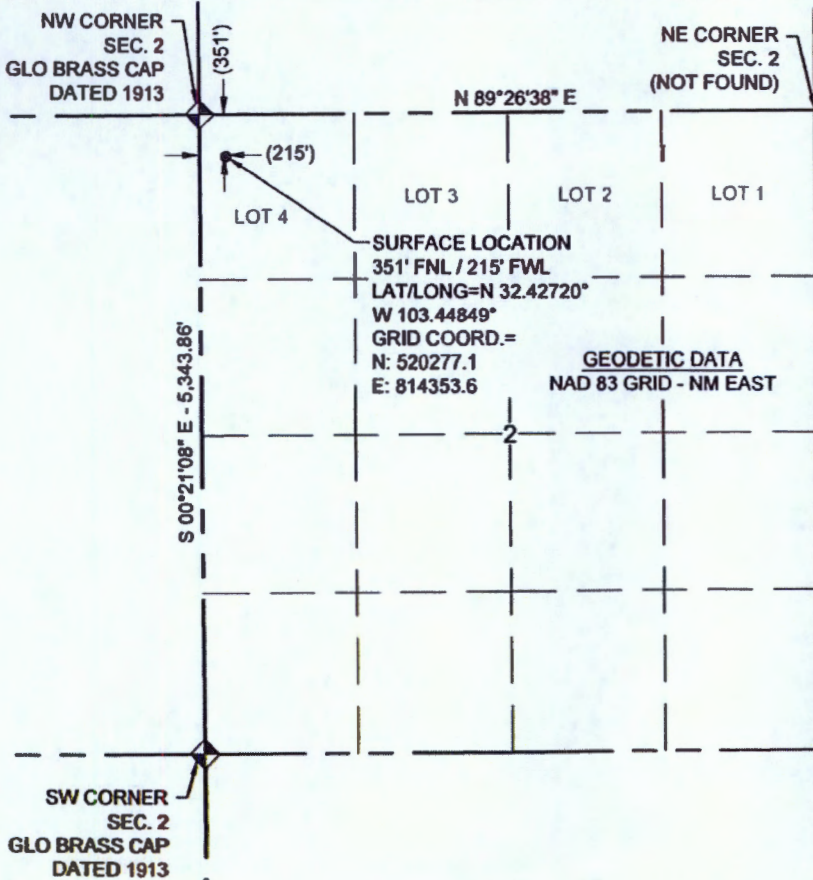
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
LOT 4	2	22S	34E		351	NORTH	215	WEST	LEA

**" Bottom Hole Location If Different From Surface**

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County

<sup>12</sup> Dedicated Acres	<sup>13</sup> Joint or Infill	<sup>14</sup> Consolidation Code	<sup>15</sup> Order No.

No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.



**" OPERATOR CERTIFICATION**

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or undivided mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order here (before entered by the division)

*Jennifer Elrod* 05/09/19  
Signature Date

JENNIFER ELROD  
Printed Name

JELROD@CHISHOLMENERGY.COM  
E-mail Address

**" SURVEYOR CERTIFICATION**

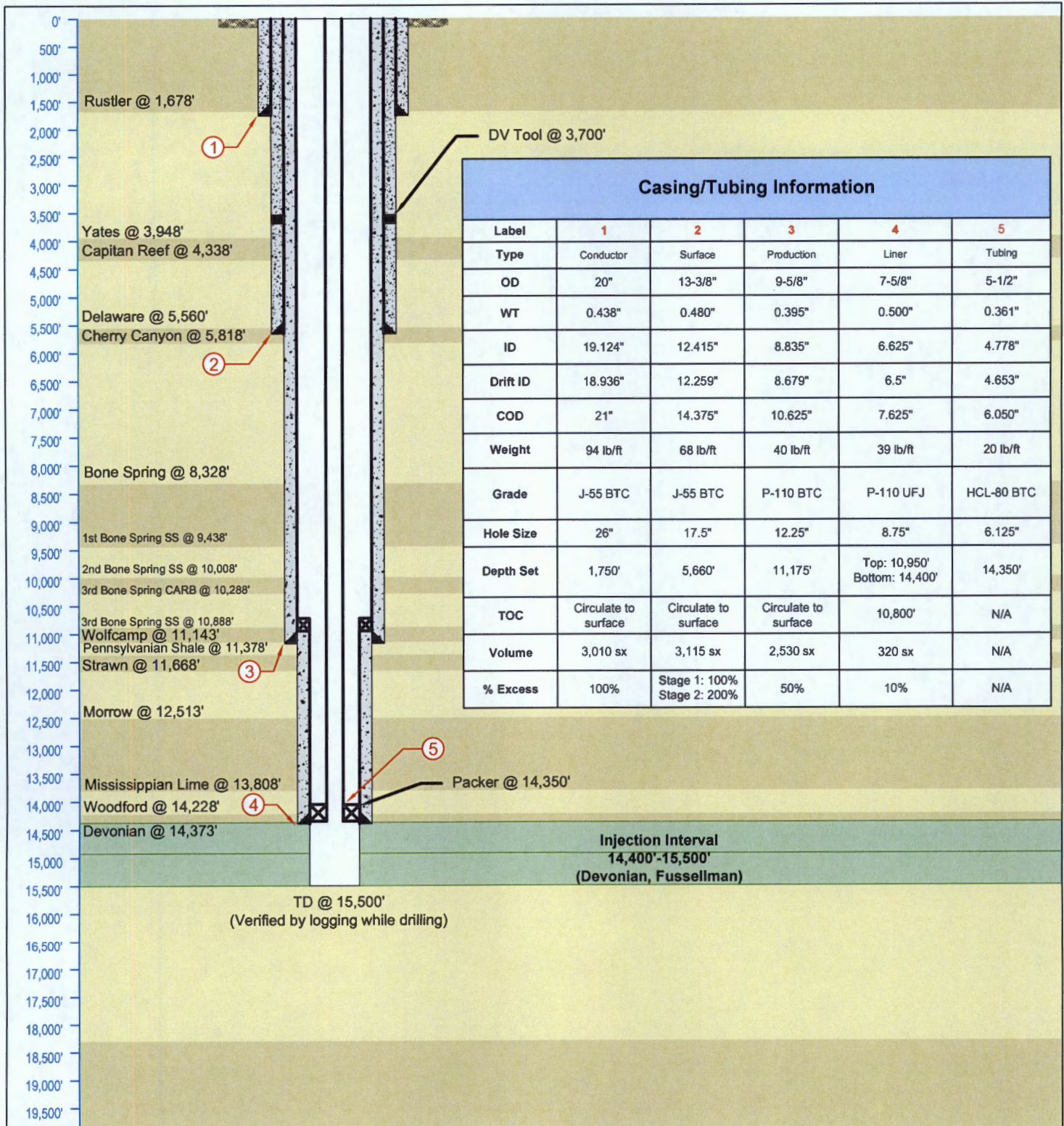
I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision and that the same is true and correct to the best of my knowledge and belief.

THOMAS G. CARLSON  
SURFACE LOCATION ON 04/01/19  
Date of Survey

*Thomas G. Carlson*  
Signature and Seal of Professional Surveyor 22896

22896  
Certificate Number





<b>LONQUIST &amp; CO. LLC</b> PETROLEUM ENGINEERS ENERGY ADVISORS HOUSTON   CALGARY AUSTIN   WICHITA   DENVER	3Bear Field Services, LLC	<b>Grama State SWD No. 2</b>	
	Country: USA	State/Province: New Mexico	County/Parish: Lea
Location:	Site: 351 FNL, 215 FWL	Survey: S2-T22S-R34E	
API No: N/A	Field: Devonian-Silurian	Well Type/Status: SWD	
Texas License F-9147	NMOCD District No: 1	Project No: 2009	Date: 04/30/2019
12912 Hill Country Blvd. Ste F-200 Austin, Texas 78738 Tel: 512.732.9812 Fax: 512.732.9816	Drawn: TFM	Reviewed:	Approved:
	Rev No: 1	Notes:	



AFFIRMATIVE STATEMENT OF EXAMINATION OF GEOLOGIC AND ENGINEERING DATA

Based on the available engineering, geologic, and seismic data, we find no evidence of open faults or any other hydrologic connection between the disposal zone (in the proposed Grama State 2 SWD #1) and any underground sources of drinking water.

NAME: Steve Poe

TITLE: Chief Geophysicist

COMPANY: Chisholm Energy Operating, LLC

SIGNATURE:

A handwritten signature in dark ink, appearing to read "Steve Poe". The signature is written in a cursive, somewhat stylized font.

Date: 5-16-2019





3Bear Field Services, LLC

Grama State SWD No. 2

**FORM C-108 Supplemental Information**

**III. Well Data**

**A. Wellbore Information**

1.

Well information	
<b>Lease Name</b>	Grama State SWD
<b>Well No.</b>	2
<b>Location</b>	S-2 T-22S R-34E
<b>Footage Location</b>	351' FNL & 215' FWL

2.

**a. Wellbore Description**

Casing Information				
Type	Conductor	Surface	Production	Liner
<b>OD</b>	20"	13.375"	9.625"	7.625"
<b>WT</b>	0.438"	0.480"	0.395"	0.500"
<b>ID</b>	19.124"	12.415"	8.835"	6.625"
<b>Drift ID</b>	18.936"	12.259"	8.679"	6.500"
<b>COD</b>	21"	14.375"	10.625"	7.625"
<b>Weight</b>	94 lb/ft	68 lb/ft	40 lb/ft	39 lb/ft
<b>Grade</b>	J-55 BTC	J-55 BTC	P-110 BTC	P-110 UFJ
<b>Hole Size</b>	26"	17.5"	12.25"	8.75"
<b>Depth Set</b>	1,750'	5,660'	11,175'	10,950'-14,400'



b. Cementing Program

Cement Information				
Casing String	Conductor	Surface	Production	Liner
Lead Cement	Class C	Class C	Class H	
Lead Cement Volume	1,885 sks	Stage 1: 550 sks Stage 2: 2,030 sks	1,405 sks	
Lead Cement Density	12.8 ppg	Stage 1: 11.5 ppg Stage 2: 11.5 ppg	11.5 ppg	
Tail Cement	Class C	Class C	Class H	Class H
Tail Cement Volume	1,125 sks	Stage 1: 535 sks	1,125 sks	320 sks
Tail Cement Density	14.8 ppg	Stage 1: 14.8 ppg	14.8 ppg	14.5 ppg
Cement Excess	100%	Stage 1: 100% Stage: 200%	50%	10%
Total Sacks	3,010 sks	3,115 sks	2,530 sks	320 sks
TOC	Surface	Surface	Surface	10,800'
Method	Circulate to Surface	Circulate to Surface	Circulate to Surface	Logged

3. Tubing Description

Tubing Information	
OD	5.5"
WT	0.361"
ID	4.778"
Drift ID	4.653"
COD	6.050"
Weight	20 lb/ft
Grade	HCL-80 BTC
Depth Set	0-14,350'

Tubing will be lined with Duoline.

4. Packer Description

7-5/8" x 5-1/2" Permanent Packer with High Temp Elastomer and Full Inconel 925 trim

B. Completion Information



1. Injection Formation: Devonian, Silurian, Fusselman

2. Gross Injection Interval: 14,400'-15,500'

Completion Type: Open Hole

3. Drilled for injection.

4. See the attached wellbore schematic.

5. Oil and Gas Bearing Zones within area of well:

Formation	Depth
Yates	3,948'
Bone Spring	8,328'
Wolfcamp	11,143'
Strawn	11,668'
Morrow	12,513'

#### VI. Area of Review

No wells within the area of review penetrate the proposed injection zone.

#### VII. Proposed Operation Data

1. Proposed Daily Rate of Fluids to be Injection:

Average Volume: 20,000 BPD  
Maximum Volume: 25,000 BPD

2. Closed System

3. Anticipated Injection Pressure:

Average Injection Pressure: 2,160 PSI (surface pressure)  
Maximum Injection Pressure: 2,880 PSI (surface pressure)

4. The injection fluid is to be locally produced water. It is expected that the source water will predominantly be from the Bone Spring and Artesia formations. Attached are produced water sample analyses taken from the closest wells that feature samples from the Artesia, Bone Spring, Delaware, Grayburn/San Andreas, Morrow, Pennsylvanian, and Strawn formations.

5. The disposal interval is non-productive. No water samples are available from the surrounding area.



## VIII. Geological Data

### Devonian Formation Lithology:

The Devonian formation is a dolomitic ramp carbonate that occurs below the Woodford shale and above the Fusselman formation. Strata found in the Devonian formation include two major groups, the Wristen Buildups and the Thirtyone Deepwater Chert, with the Wristen being more abundant. The Wristen Groups is composed of mixed limestone and dolomites with mudstone to grainstone and boundstone textures. Porosity in the Wristen group is a result of both primary and secondary development. Present are moldic, vugular, karstic (including collapse breccia) features that allow for higher porosities and permeabilities. The Thirtyone Formation contains two end-member reservoir facies, skeletal packstones/grainstones and spiculitic chert, with most of the porosity and permeability found in the coarsely crystalline cherty dolomite. These particular characteristics allow for this formation to be a tremendous Salt Water Disposal horizon.

### Fusselman Formation Lithology:

The Silurian/Ordovician Fusselman Formation is stratigraphically below the Wristen Group and is above and separated from the Montoya Formation by the Sylvan Shale. The Sylvan Shale is the lower confining layer for the proposed Grama State SWD No. 2 well. Fusselman facies include a laminated skeletal wackestone in the upper part and a buildup complex in the lower part composed of ooid and bryozoan grainstones. These grainstones can also be potentially prolific zones for disposal.



A. Injection Zone: Devonian-Silurian Formation

<b>Formation</b>	<b>Depth</b>
Rustler	1,678'
Yates	3,948'
Capitan Reef	4,338'
Delaware	5,560'
Cherry Canyon	5,818'
Bone Spring	8,328'
1 <sup>st</sup> Bone Spring Sandstone	9,438'
2 <sup>nd</sup> Bone Spring Sandstone	10,008'
3 <sup>rd</sup> Bone Spring Carbonate	10,288'
3 <sup>rd</sup> Bone Spring Sandstone	10,888'
Wolfcamp	11,143'
Pennsylvanian Shale	11,378'
Strawn	11,668'
Morrow	12,513'
Mississippian Lime	13,808'
Woodford	14,228'
Devonian	14,373'

B. Underground Sources of Drinking Water

One water well exists within the proposed well. The water well has a depth of 109 feet. Across the area, fresh water wells are usually drilled between 45' and 368' in depth. The Rustler is known to exist in this general area and may also be another USDW and will be protected by setting surface casing at 1,750'.

IX. Proposed Stimulation Program

No stimulation program planned.

X. Logging and Test Data on the Well

There are no logs or test data on the well. During the process of drilling and completion resistivity, gamma ray, and density logs will be run.

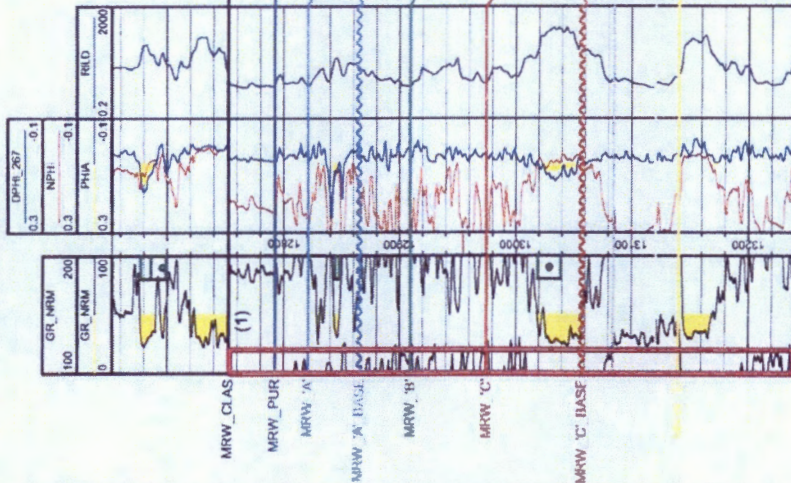
XI. Chemical Analysis of Fresh Water Wells

Attached is a map of the one (1) water well that exists within one-mile of the well location. Samples from the well were obtained and attached is a water sample report performed by Cardinal Laboratories. A Water Right Summary from the New Mexico Office of the State Engineer is attached for water well CP-00944-POD1.





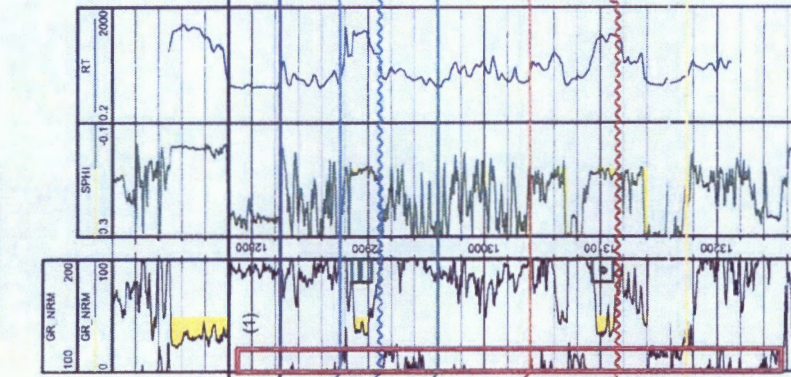
**BTA #1**  
GRAMA RIDGE FEDERAL 1  
22S 34E Sec 9 NW NE



PROD\_ZONE : MRW 'C'  
CUMGAS : 8,800,000 MCF  
PROD\_ZONE\_2 : MRW LS & pass. 'C'  
CUMGAS\_2 : 2,100,000 MCF  
PROD\_ZONE\_3 : MRW LS, 'A', & 'C'  
CUMGAS\_3 : 220,814 MCF  
(1) Show: STORAGE INTERVAL 12754-13258



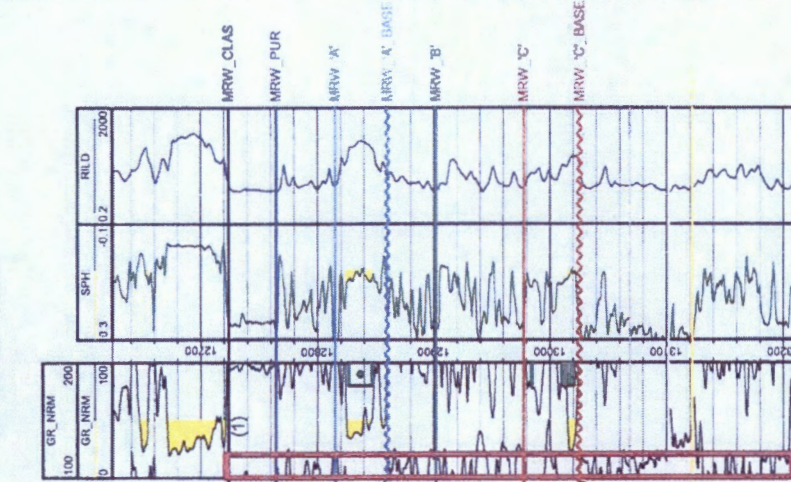
**GRU #4**  
FEDERAL GR-4 1  
22S 34E Sec 4 SE NW



PROD\_ZONE : MRW 'A' & 'C'  
CUMGAS : 2,641,051 MCF  
(1) Show: BLM STORAGE INTERVAL 12788-13255



**GRU #1**  
STATE GRA 1  
22S 34E Sec 3 SW NW



PROD\_ZONE : MRW 'A' & 'C'  
CUMGAS : 6,987,911 MCF  
(1) Show: NM STORAGE INTERVAL 12722-13208



**GRAMA RIDGE PROJECT**  
MORROW CLASTICS  
STORAGE INTERVALS  
MORROW LS TO MORROW 'D'

Horizontal Scale = 1000.5  
Vertical Scale = 100.0  
Vertical Exaggeration = 10.1x

0	100	LOO CURVES
100	200	GR_NRM CUTOFF = 80.00
0.3	-0.1	GR_NRM CUTOFF = 100.00
0.3	-0.1	SPH CUTOFF = 0.06
0.3	-0.1	PHA CUTOFF = 0.06
0.3	-0.1	NPFI
0.3	-0.1	DPHI_267
0.2	2,000	RT

By: Vicki V. Devine  
April 23, 2009 8:11 AM



