

Form 3160-3  
(June 2015)UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

## APPLICATION FOR PERMIT TO DRILL OR REENTER

FORM APPROVED  
OMB No. 1004-0137  
Expires: January 31, 2018

|   |   |  |
|---|---|--|
| 1a. Type of work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER  |   | 5. Lease Serial No.<br>NMNM16640B  |
| 1b. Type of Well: <input checked="" type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other   |   | 6. If Indian, Allottee or Tribe Name                                       |
| 1c. Type of Completion: <input type="checkbox"/> Hydraulic Fracturing <input checked="" type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone  |   | 7. If Unit or CA Agreement, Name and No.                                   |
| 2. Name of Operator<br>EARTHSTONE OPERATING LLC   |   | 8. Lease Name and Well No.<br>PAKSE SOUTH FED COM                          |
| 3a. Address<br>1400 WOODLOCH FOREST DRIVE SUITE 300, THE WC   |   | 9. API Well No.<br>224H<br>30-025-51448                                    |
| 3b. Phone No. (include area code)<br>(281) 298-4240   |   | 10. Field and Pool, or Exploratory<br>WC-025 G-08 S213304D; Bone Spring/Bc |
| 4. Location of Well (Report location clearly and in accordance with any State requirements. *)<br>At surface NENE / 261 FNL / 1279 FEL / LAT 32.5652071 / LONG -103.715284<br>At proposed prod. zone SENE / 2631 FNL / 330 FEL / LAT 32.5441573 / LONG -103.7122078 |   | 11. Sec., T. R. M. or Blk. and Survey or Area<br>SEC 24/T20S/R32E/NMP      |
| 14. Distance in miles and direction from nearest town or post office*   |   | 12. County or Parish<br>LEA  |
|   |   | 13. State<br>NM  |
| 15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)<br>261 feet   | 16. No of acres in lease                            | 17. Spacing Unit dedicated to this well<br>240.0                           |
| 18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.<br>30 feet   | 19. Proposed Depth<br>10094 feet / 17698 feet       | 20. BLM/BIA Bond No. in file<br>FED: NMB002110                             |
| 21. Elevations (Show whether DF, KDB, RT, GL, etc.)<br>3545 feet  | 22. Approximate date work will start*<br>05/01/2021 | 23. Estimated duration<br>45 days  |
| 24. Attachments   |   |  |

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, and the Hydraulic Fracturing rule per 43 CFR 3162.3-3 (as applicable)

- |  |   |
|--|---|
| 1. Well plat certified by a registered surveyor.   | 4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above). |
| 2. A Drilling Plan.  | 5. Operator certification.  |
| 3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office). | 6. Such other site specific information and/or plans as may be requested by the BLM.            |

|  |  |                    |
|--|--|--------------------|
| 25. Signature<br>(Electronic Submission)                                   | Name (Printed/Typed)<br>RYAN DELONG / Ph: (281) 298-4240 | Date<br>11/02/2020 |
| Title<br>Regulatory Manager  |  |                    |
| Approved by (Signature)<br>(Electronic Submission)                         | Name (Printed/Typed)<br>CODY LAYTON / Ph: (575) 234-5959 | Date<br>12/02/2022 |
| Title<br>Assistant Field Manager Lands & Minerals<br>Carlsbad Field Office |  |                    |

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.  
Conditions of approval, if any, are attached.

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

**APPROVED WITH CONDITIONS**

Approval Date: 12/02/2022

(Continued on page 2)

\*(Instructions on page 2)

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 & 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

|                                     |   |  |
|-------------------------------------|---|--|
| 1 API Number<br><b>30-025-51448</b> | 2 Pool Code<br><b>53560</b>                         | 3 Pool Name<br><b>Salt Lake; Bone Spring</b> |
| 4 Property Code<br><b>333575</b>    | 5 Property Name<br><b>PAKSE SOUTH FED COM</b>       | 6 Well Number<br><b>224H</b>                 |
| 7 OGRID No.<br><b>331165</b>        | 8 Operator Name<br><b>EARTHSTONE OPERATING, LLC</b> | 9 Elevation<br><b>3545'</b>                  |

" Surface Location

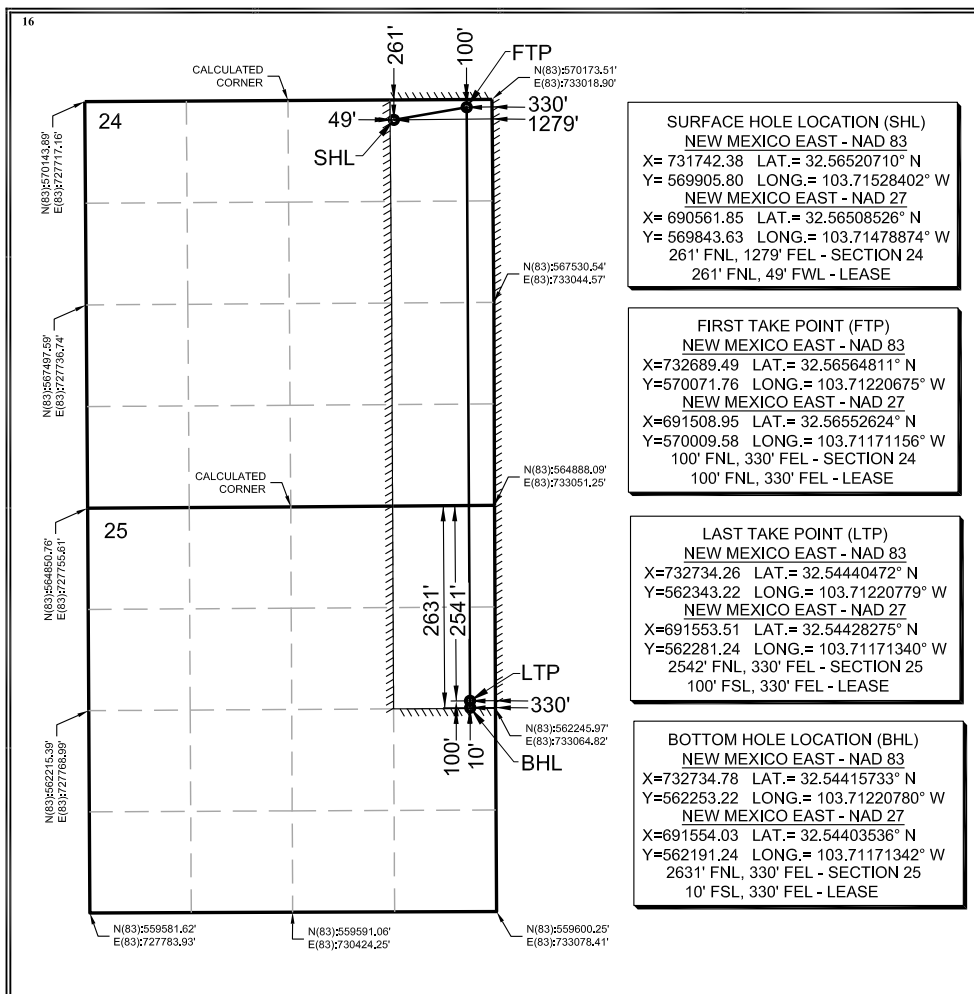
| UL or lot no. | Section | Township | Range | Lot Idn | Feet from the | North/South line | Feet from the | East/West line | County |
|---------------|---------|----------|-------|---------|---------------|------------------|---------------|----------------|--------|
| A             | 24      | 20-S     | 32-E  |         | 261'          | NORTH            | 1279'         | EAST           | 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 |
|---------------|---------|----------|-------|---------|---------------|------------------|---------------|----------------|--------|
| H             | 25      | 20-S     | 32-E  |         | 2631'         | NORTH            | 330'          | EAST           | LEA    |

| 12 Dedicated Acres | 13 Joint or Infill | 14 Consolidation Code | 15 Order No. |
|--------------------|--------------------|-----------------------|--------------|
| 240                | Y                  |                       |              |

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.



17 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]* 10/30/2020  
Signature Date

JENNIFER ELROD

Printed Name

JELROD@EARTHSTONEENERGY.COM

E-mail Address

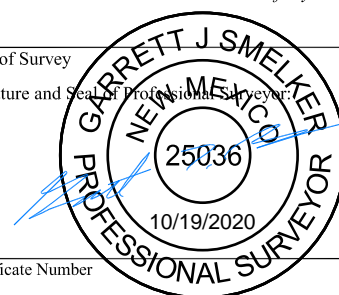
18 SURVEYOR CERTIFICATION

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 belief.

Date of Survey

Signature and Seal of Professional Surveyor

Certificate Number



State of New Mexico  
Energy, Minerals and Natural Resources Department

Submit Electronically  
Via E-permitting

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

## NATURAL GAS MANAGEMENT PLAN

This Natural Gas Management Plan must be submitted with each Application for Permit to Drill (APD) for a new or recompleted well.

### Section 1 – Plan Description

Effective May 25, 2021

**I. Operator:** EARTHSTONE OPERATING, LLC \_\_ OGRID: 331165 \_\_\_\_\_ **Date:** \_03/28/2022

**II. Type:** ☒ Original ☐ Amendment due to ☐ 19.15.27.9.D(6)(a) NMAC ☐ 19.15.27.9.D(6)(b) NMAC ☐ Other.

If Other, please describe: \_\_\_\_\_

**III. Well(s):** Provide the following information for each new or recompleted well or set of wells proposed to be drilled or proposed to be recompleted from a single well pad or connected to a central delivery point.

|                     | API |  | Footages | Anticipated<br>Oil BBL/D | Anticipated<br>Gas MCF/D | Anticipated Produced<br>Water BBL/D |
|---------------------|-----|--|----------|--------------------------|--------------------------|-------------------------------------|
| *SEE ATTACHED LIST* |     |  |          |                          |                          |                                     |
|                     |     |  |          |                          |                          |                                     |
|                     |     |  |          |                          |                          |                                     |

**IV. Central Delivery Point Name:** PAKSE SOUTH CTB \_\_\_\_\_ [See 19.15.27.9(D)(1) NMAC]

**V. Anticipated Schedule:** Provide the following information for each new or recompleted well or set of wells proposed to be drilled or proposed to be recompleted from a single well pad or connected to a central delivery point.

| Well Name           | API | Spud Date | TD Reached<br>Date | Completion<br>Commencement Date | Initial Flow<br>Back Date | First Production |
|---------------------|-----|-----------|--------------------|---------------------------------|---------------------------|------------------|
| *SEE ATTACHED LIST* |     |           |                    |                                 |                           |                  |
|                     |     |           |                    |                                 |                           |                  |
|                     |     |           |                    |                                 |                           |                  |

**VI. Separation Equipment:** ☒ Attach a complete description of how Operator will size separation equipment to optimize gas capture.

**VII. Operational Practices:** ☒ Attach a complete description of the actions Operator will take to comply with the requirements of Subsection A through F of 19.15.27.8 NMAC.

**VIII. Best Management Practices:** ☒ Attach a complete description of Operator's best management practices to minimize venting during active and planned maintenance.

| WELL NAME                  | API | UL/SECT/T/R  | FOOTAGES           | ANTICIPATED OIL BBL/D | ANTICIPATED GAS MCF/D | ANTICIPATED WATER BBL/D |
|----------------------------|-----|--------------|--------------------|-----------------------|-----------------------|-------------------------|
| PAKSE SOUTH 3 FED COM 112H |     | C-24-20S-32E | 264 FNL, 1918 FWL  | 1400 BBL/D            | 3000 MCF/D            | 4000 BBL/D              |
| PAKSE SOUTH 3 FED COM 322H |     | C-24-20S-32E | 264 FNL, 1948 FWL  | 1400 BBL/D            | 2000 MCF/D            | 4000 BBL/D              |
| PAKSE SOUTH 3 FED COM 212H |     | C-24-20S-32E | 264 FNL, 2008 FWL  | 1400 BBL/D            | 2000 MCF/D            | 4000 BBL/D              |
| PAKSE SOUTH 3 FED COM 302H |     | C-24-20S-32E | 264 FNL, 1978 FWL  | 1400 BBL/D            | 2000 MCF/D            | 4000 BBL/D              |
| PAKSE SOUTH 3 FED COM 432H |     | C-24-20S-32E | 264 FNL, 2038 FWL  | 1400 BBL/D            | 2000 MCF/D            | 4000 BBL/D              |
| PAKSE SOUTH 3 FED COM 113H |     | B-24-20S-32E | 263 FNL, 1999 FEL  | 1400 BBL/D            | 3000 MCF/D            | 4000 BBL/D              |
| PAKSE SOUTH 3 FED COM 323H |     | B-24-20S-32E | 263 FNL, 1969 FWL  | 1400 BBL/D            | 2000 MCF/D            | 4000 BBL/D              |
| PAKSE SOUTH 3 FED COM 223H |     | B-24-20S-32E | 263 FNL, 1909 FEL  | 1400 BBL/D            | 2000 MCF/D            | 4000 BBL/D              |
| PAKSE SOUTH 3 FED COM 303H |     | B-24-20S-32E | 263 FNL, 1939 FWL  | 1400 BBL/D            | 2000 MCF/D            | 4000 BBL/D              |
| PAKSE SOUTH 3 FED COM 433H |     | B-24-20S-32E | 263 FNL, 1879 FEL  | 1400 BBL/D            | 2000 MCF/D            | 4000 BBL/D              |
| PAKSE SOUTH 3 FED COM 114H |     | A-24-20S-32E | 351 FNL, 1279' FEL | 1400 BBL/D            | 3000 MCF/D            | 4000 BBL/D              |
| PAKSE SOUTH 3 FED COM 324H |     | A-24-20S-32E | 321 FNL, 1279 FEL  | 1400 BBL/D            | 2000 MCF/D            | 4000 BBL/D              |
| PAKSE SOUTH 3 FED COM 224H |     | A-24-20S-32E | 261 FNL, 1279 FEL  | 1400 BBL/D            | 2000 MCF/D            | 4000 BBL/D              |
| PAKSE SOUTH 3 FED COM 304H |     | A-24-20S-32E | 291 FNL, 1279 FEL  | 1400 BBL/D            | 2000 MCF/D            | 4000 BBL/D              |
| PAKSE SOUTH 3 FED COM 434H |     | A-24-20S-32E | 231 FNL, 1279 FEL  | 1400 BBL/D            | 2000 MCF/D            | 4000 BBL/D              |

| WELL NAME                  | API | SPUD      | TD        | COMPLETION DATE | FLOW BACK DATE | FIRST PRODUCTION |
|----------------------------|-----|-----------|-----------|-----------------|----------------|------------------|
| PAKSE SOUTH 3 FED COM 112H |     | 2-Mar-24  | 30-Mar-24 | 20-Jul-24       | 22-Nov-24      | 23-Nov-24        |
| PAKSE SOUTH 3 FED COM 322H |     | 31-Mar-24 | 28-Apr-24 | 20-Jul-24       | 22-Nov-24      | 23-Nov-24        |
| PAKSE SOUTH 3 FED COM 212H |     | 29-Apr-24 | 27-May-24 | 20-Jul-24       | 22-Nov-24      | 23-Nov-24        |
| PAKSE SOUTH 3 FED COM 302H |     | 28-May-24 | 25-Jun-24 | 20-Jul-24       | 22-Nov-24      | 23-Nov-24        |
| PAKSE SOUTH 3 FED COM 432H |     | 27-Jun-24 | 24-Jul-24 | 20-Jul-24       | 22-Nov-24      | 23-Nov-24        |
| PAKSE SOUTH 3 FED COM 113H |     | 7-Apr-24  | 30-Apr-24 | 20-Jul-24       | 22-Nov-24      | 23-Nov-24        |
| PAKSE SOUTH 3 FED COM 323H |     | 1-May-24  | 24-May-24 | 20-Jul-24       | 22-Nov-24      | 23-Nov-24        |
| PAKSE SOUTH 3 FED COM 223H |     | 25-May-24 | 17-Jun-24 | 20-Jul-24       | 22-Nov-24      | 23-Nov-24        |
| PAKSE SOUTH 3 FED COM 303H |     | 18-Jun-24 | 11-Jul-24 | 20-Jul-24       | 22-Nov-24      | 23-Nov-24        |
| PAKSE SOUTH 3 FED COM 433H |     | 10-Jul-24 | 1-Aug-24  | 20-Jul-24       | 22-Nov-24      | 23-Nov-24        |
| PAKSE SOUTH 3 FED COM 114H |     | 10-Mar-24 | 2-Apr-24  | 20-Jul-24       | 22-Nov-24      | 23-Nov-24        |
| PAKSE SOUTH 3 FED COM 324H |     | 3-Apr-24  | 26-Apr-24 | 20-Jul-24       | 22-Nov-24      | 23-Nov-24        |
| PAKSE SOUTH 3 FED COM 224H |     | 27-Apr-24 | 20-May-24 | 20-Jul-24       | 22-Nov-24      | 23-Nov-24        |
| PAKSE SOUTH 3 FED COM 304H |     | 21-May-24 | 13-Jun-24 | 20-Jul-24       | 22-Nov-24      | 23-Nov-24        |
| PAKSE SOUTH 3 FED COM 434H |     | 16-Jun-24 | 7-Jul-24  | 20-Jul-24       | 22-Nov-24      | 23-Nov-24        |

**Section 2 – Enhanced Plan**  
**EFFECTIVE APRIL 1, 2022**

Beginning April 1, 2022, an operator that is not in compliance with its statewide natural gas capture requirement for the applicable reporting area must complete this section.

☒ Operator certifies that it is not required to complete this section because Operator is in compliance with its statewide natural gas capture requirement for the applicable reporting area.

**IX. Anticipated Natural Gas Production:**

| Well | API | Anticipated Average Natural Gas Rate MCF/D | Anticipated Volume of Natural Gas for the First Year MCF |
|------|-----|--|--|
|      |     |  |  |
|      |     |  |  |

**X. Natural Gas Gathering System (NGGS):**

| Operator | System | ULSTR of Tie-in | Anticipated Gathering Start Date | Available Maximum Daily Capacity of System Segment Tie-in |
|----------|--------|-----------------|----------------------------------|---|
|          |        |                 |                                  |   |
|          |        |                 |                                  |   |

**XI. Map.** ☐ Attach an accurate and legible map depicting the location of the well(s), the anticipated pipeline route(s) connecting the production operations to the existing or planned interconnect of the natural gas gathering system(s), and the maximum daily capacity of the segment or portion of the natural gas gathering system(s) to which the well(s) will be connected.

**XII. Line Capacity.** The natural gas gathering system ☐ will ☐ will not have capacity to gather 100% of the anticipated natural gas production volume from the well prior to the date of first production.

**XIII. Line Pressure.** Operator ☐ does ☐ does not anticipate that its existing well(s) connected to the same segment, or portion, of the natural gas gathering system(s) described above will continue to meet anticipated increases in line pressure caused by the new well(s).

☐ Attach Operator's plan to manage production in response to the increased line pressure.

**XIV. Confidentiality:** ☐ Operator asserts confidentiality pursuant to Section 71-2-8 NMSA 1978 for the information provided in Section 2 as provided in Paragraph (2) of Subsection D of 19.15.27.9 NMAC, and attaches a full description of the specific information for which confidentiality is asserted and the basis for such assertion.

### **Section 3 - Certifications**

**Effective May 25, 2021**

Operator certifies that, after reasonable inquiry and based on the available information at the time of submittal:

☒ Operator will be able to connect the well(s) to a natural gas gathering system in the general area with sufficient capacity to transport one hundred percent of the anticipated volume of natural gas produced from the well(s) commencing on the date of first production, taking into account the current and anticipated volumes of produced natural gas from other wells connected to the pipeline gathering system; or

☐ Operator will not be able to connect to a natural gas gathering system in the general area with sufficient capacity to transport one hundred percent of the anticipated volume of natural gas produced from the well(s) commencing on the date of first production, taking into account the current and anticipated volumes of produced natural gas from other wells connected to the pipeline gathering system.

***If Operator checks this box, Operator will select one of the following:***

**Well Shut-In.** ☐ Operator will shut-in and not produce the well until it submits the certification required by Paragraph (4) of Subsection D of 19.15.27.9 NMAC; or

**Venting and Flaring Plan.** ☐ Operator has attached a venting and flaring plan that evaluates and selects one or more of the potential alternative beneficial uses for the natural gas until a natural gas gathering system is available, including:

- (a) power generation on lease;
- (b) power generation for grid;
- (c) compression on lease;
- (d) liquids removal on lease;
- (e) reinjection for underground storage;
- (f) reinjection for temporary storage;
- (g) reinjection for enhanced oil recovery;
- (h) fuel cell production; and
- (i) other alternative beneficial uses approved by the division.

### **Section 4 - Notices**

1. If, at any time after Operator submits this Natural Gas Management Plan and before the well is spud:

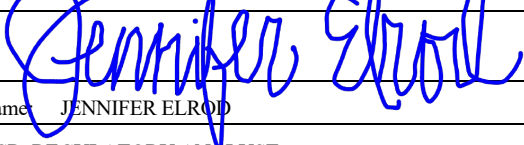
(a) Operator becomes aware that the natural gas gathering system it planned to connect the well(s) to has become unavailable or will not have capacity to transport one hundred percent of the production from the well(s), no later than 20 days after becoming aware of such information, Operator shall submit for OCD's approval a new or revised venting and flaring plan containing the information specified in Paragraph (5) of Subsection D of 19.15.27.9 NMAC; or

(b) Operator becomes aware that it has, cumulatively for the year, become out of compliance with its baseline natural gas capture rate or natural gas capture requirement, no later than 20 days after becoming aware of such information, Operator shall submit for OCD's approval a new or revised Natural Gas Management Plan for each well it plans to spud during the next 90 days containing the information specified in Paragraph (2) of Subsection D of 19.15.27.9 NMAC, and shall file an update for each Natural Gas Management Plan until Operator is back in compliance with its baseline natural gas capture rate or natural gas capture requirement.

2. OCD may deny or conditionally approve an APD if Operator does not make a certification, fails to submit an adequate venting and flaring plan which includes alternative beneficial uses for the anticipated volume of natural gas produced, or if OCD determines that Operator will not have adequate natural gas takeaway capacity at the time a well will be spud.

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I certify that, after reasonable inquiry, the statements in and attached to this Natural Gas Management Plan are true and correct to the best of my knowledge and acknowledge that a false statement may be subject to civil and criminal penalties under the Oil and Gas Act.

|                 |   |
|-----------------|---|
| Signature:      |  |
| Printed Name:   | JENNIFER ELROD  |
| Title:          | SR. REGULATORY ANALYST  |
| E-mail Address: | JELROD@EARTHSTONEENERGY.COM   |
| Date:           | 02/28/2023  |
| Phone:          | (940)452-6214   |

**OIL CONSERVATION DIVISION**  
**(Only applicable when submitted as a standalone form)**

|                         |
|-------------------------|
| Approved By:            |
| Title:                  |
| Approval Date:          |
| Conditions of Approval: |



**ESTE Natural Gas Management Plan  
Items VI-VIII****VI. Separation Equipment: Attach a complete description of how Operator will size separation equipment to optimize gas capture.**

- Separation equipment will be sized to provide adequate separation for anticipated rates.
- Adequate separation relates to retention time for Liquid – Liquid separation and velocity for Gas-Liquid separation.
- Collection systems are appropriately sized to handle facility production rates on all (3) phases.
- Ancillary equipment and metering are selected to be serviced without flow interruptions or the need to release gas from the well.

**VII. Operational Practices: Attach a complete description of the actions Operator will take to comply with the requirements of Subsection A through F 19.15.27.8 NMAC.****Drilling Operations**

- All flare stacks will be properly sized. The flare stacks will be located at a minimum 100' from the nearest surface hole location on the pad.
- All-natural gas produced during drilling operations will be flared, unless there is an equipment malfunction and/or to avoid risk of an immediate and substantial adverse impact on safety and the environment, at which point the gas will be vented.

**Completions/Recompletions Operations**

- New wells will not be flowed back until they are connected to a properly sized gathering system.
- The facility will be built/sized for maximum anticipated flowrates and pressures to minimize waste.
- For flowback operations, multiple stages of separation will be used as well as excess VRU and blowers to make sure waste is minimized off the storage tanks and facility.
- During initial flowback, the well stream will be routed to separation equipment.
- At an existing facility, when necessary, post separation natural gas will be flared until it meets pipeline specifications, at which point it will be turned into a collection system.
- At a new facility, post separation natural gas will be vented until storage tanks can safely function, at which point it will be flared until it meets pipeline spec.

**Production Operations**

- Weekly AVOs will be performed on all facilities.
- All flares will be equipped with auto-ignition systems and continuous pilot operations.
- After a well is stabilized from liquid unloading, the well will be turned back into the collection system.
- All tanks will have sight glasses installed, but no electronic gauging equipment.
- Leaking thief hatches found during AVOs will be cleaned and properly re-sealed.
- There will be no gas re-injection for underground storage, temporary storage, or for enhanced oil recovery; however, gas injection will be used for gas lift applications in which the gas would be circulated through a closed loop system.
- If H2S is encountered, gas will be treated to pipeline spec to avoid shut-in's and/or flaring.

**Performance Standards**

- Production equipment will be designed to handle maximum anticipated rates and pressure.

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- All flared gas will be combusted in a flare stack that is properly sized and designed to ensure proper combustion.
- Weekly AVOs will be performed on all wells and facilities that produce more than 50MCFPD.

Measurement & Estimation

- All volume that is flared or vented that is not measured will be estimated.
- All measurement equipment for flared volumes will conform to API 14.10.
- No meter bypasses will be installed.
- When metering is not practical due to low pressure/low rate, the vented or flared volume will be estimated.

**VIII. Best Management Practices: Attach a complete description of Operator's best management practices to minimize venting during active and planned maintenance.**

- During downhole well maintenance, ESTE will use best management practices to vent as minimally as possible.
- After downhole well maintenance, natural gas will be flared until it reaches pipeline specification.

**Operator Name:** EARTHSTONE OPERATING LLC**Well Name:** PAKSE SOUTH FED COM**Well Number:** 224H**Choke Diagram Attachment:**

3M\_\_H\_P\_614\_\_BOP\_CHOKE\_FLEX\_HOSE\_APD\_INFORMATION\_\_1\_\_20201101100155.pdf

**BOP Diagram Attachment:**

3M\_\_H\_P\_614\_\_BOP\_CHOKE\_FLEX\_HOSE\_APD\_INFORMATION\_\_1\_\_20201101100203.pdf

**Section 3 - Casing**

| Casing ID | String Type  | Hole Size | Csg Size | Condition | Standard | Tapered String | Top Set MD | Bottom Set MD | Top Set TVD | Bottom Set TVD | Top Set MSL | Bottom Set MSL | Calculated casing length MD | Grade | Weight | Joint Type | Collapse SF | Burst SF | Joint SF Type | Joint SF | Body SF Type | Body SF |
|-----------|--------------|-----------|----------|-----------|----------|----------------|------------|---------------|-------------|----------------|-------------|----------------|-----------------------------|-------|--------|------------|-------------|----------|---------------|----------|--------------|---------|
| 1         | SURFACE      | 18.125    | 16.0     | NEW       | API      | N              | 0          | 1125          | 0           | 1125           | 3545        | 2420           | 1125                        | J-55  | 75     | BUTT       | 1.98        | 2.04     | DRY           | 13.96    | DRY          | 13.96   |
| 2         | INTERMEDIATE | 14.75     | 11.75    | NEW       | API      | N              | 0          | 3000          | 0           | 3000           | 3546        | 545            | 3000                        | L-80  | 47     | BUTT       | 1.4         | 3.41     | DRY           | 8.08     | DRY          | 8.08    |
| 3         | INTERMEDIATE | 10.625    | 8.625    | NEW       | API      | N              | 0          | 4700          | 0           | 4700           | 3546        | -1155          | 4700                        | L-80  | 32     | BUTT       | 1.33        | 1.45     | DRY           | 3.34     | DRY          | 3.34    |
| 4         | PRODUCTION   | 7.875     | 5.5      | NEW       | API      | N              | 0          | 17698         | 0           | 17698          | 3546        | -14153         | 17698                       | P-110 | 17     | LT&C       | 1.52        | 2.71     | DRY           | 3.18     | DRY          | 3.18    |

**Casing Attachments****Casing ID:** 1 **String** SURFACE**Inspection Document:****Spec Document:****Tapered String Spec:****Casing Design Assumptions and Worksheet(s):**

Casing\_Assumptions\_\_Shallow\_Wells\_20201101100610.pdf

**Operator Name:** EARTHSTONE OPERATING LLC**Well Name:** PAKSE SOUTH FED COM**Well Number:** 224H**Casing Attachments****Casing ID:** 2      **String**      INTERMEDIATE**Inspection Document:****Spec Document:****Tapered String Spec:****Casing Design Assumptions and Worksheet(s):****Casing ID:** 3      **String**      INTERMEDIATE**Inspection Document:****Spec Document:****Tapered String Spec:****Casing Design Assumptions and Worksheet(s):**

Casing\_Assumptions\_\_\_Shallow\_Wells\_20201101101332.pdf

**Casing ID:** 4      **String**      PRODUCTION**Inspection Document:****Spec Document:****Tapered String Spec:****Casing Design Assumptions and Worksheet(s):**

Casing\_Assumptions\_\_\_Shallow\_Wells\_20201101101224.pdf

**Section 4 - Cement**

**Operator Name:** EARTHSTONE OPERATING LLC**Well Name:** PAKSE SOUTH FED COM**Well Number:** 224H

| String Type  | Lead/Tail | Stage Tool Depth | Top MD | Bottom MD | Quantity(sx) | Yield | Density | Cu Ft | Excess% | Cement type           | Additives                     |
|--------------|-----------|------------------|--------|-----------|--------------|-------|---------|-------|---------|-----------------------|-------------------------------|
| SURFACE      | Lead      |                  | 0      | 1125      | 250          | 1.75  | 13.5    | 438   | 50      | Class C               | 4% Gel + 1% CaCl <sub>2</sub> |
| SURFACE      | Tail      |                  | 0      | 1125      | 250          | 1.34  | 14.8    | 335   | 50      | Class C               | 2% CaCl <sub>2</sub>          |
| INTERMEDIATE | Lead      |                  | 0      | 3000      | 700          | 2     | 12.7    | 1400  | 50      | 35:65:6 C Blend       | N/A                           |
| INTERMEDIATE | Tail      |                  | 0      | 3000      | 250          | 1.34  | 14.8    | 335   | 50      | Class C               | 2% CaCl                       |
| INTERMEDIATE | Lead      | 3500             | 0      | 4700      | 200          | 2     | 12.7    | 400   | 50      | 35:65:6 C Blend       | N/A                           |
| INTERMEDIATE | Tail      |                  | 0      | 4700      | 250          | 1.34  | 14.8    | 335   | 50      | Class C               | 2% CaCl                       |
| INTERMEDIATE | Lead      | 3500             | 0      | 4700      | 450          | 1.75  | 13.5    | 787.5 | 50      | Class C               | 4% Gel + 1% CaCl <sub>2</sub> |
| INTERMEDIATE | Tail      |                  | 0      | 4700      | 100          | 1.34  | 14.8    | 135   | 50      | Class C               | 2% CaCl <sub>2</sub>          |
| PRODUCTION   | Lead      |                  | 0      | 1769<br>8 | 1170         | 2.5   | 11.9    | 2925  | 25      | 50:50:10 H Blend      | N/A                           |
| PRODUCTION   | Tail      |                  | 0      | 1769<br>8 | 1440         | 1.24  | 14.4    | 1786  | 25      | 50:50:2 Class H Blend | N/A                           |

### Section 5 - Circulating Medium

**Mud System Type:** Closed**Will an air or gas system be Used?** NO**Description of the equipment for the circulating system in accordance with Onshore Order #2:****Diagram of the equipment for the circulating system in accordance with Onshore Order #2:****Describe what will be on location to control well or mitigate other conditions:** Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept on location at all times.**Describe the mud monitoring system utilized:** PVT/Pason/Visual Monitoring

### Circulating Medium Table

**Operator Name:** EARTHSTONE OPERATING LLC**Well Name:** PAKSE SOUTH FED COM**Well Number:** 224H

| Top Depth | Bottom Depth | Mud Type                | Min Weight (lbs/gal) | Max Weight (lbs/gal) | Density (lbs/cu ft) | Gel Strength (lbs/100 sqft) | PH | Viscosity (CP) | Salinity (ppm) | Filtration (cc) | Additional Characteristics |
|-----------|--------------|-------------------------|----------------------|----------------------|---------------------|-----------------------------|----|----------------|----------------|-----------------|----------------------------|
| 0         | 1125         | OTHER : FRESH WATER GEL | 8.6                  | 8.8                  |                     |                             |    |                |                |                 |                            |
| 1125      | 3000         | OTHER : SATURATED BRINE | 10                   | 10.2                 |                     |                             |    |                |                |                 |                            |
| 3000      | 4700         | OTHER : FRESH WATER     | 8.4                  | 8.6                  |                     |                             |    |                |                |                 |                            |
| 4700      | 10094        | OTHER : CUT BRINE       | 8.6                  | 9.4                  |                     |                             |    |                |                |                 |                            |

### Section 6 - Test, Logging, Coring

**List of production tests including testing procedures, equipment and safety measures:**

Will run GR/CNL from TD to surface (horizontal well vertical portion of hole). Stated logs run will be in the Completion Report and submitted to the BLM.

**List of open and cased hole logs run in the well:**

DIRECTIONAL SURVEY,

**Coring operation description for the well:**

N/A

### Section 7 - Pressure

**Anticipated Bottom Hole Pressure:** 4860

**Anticipated Surface Pressure:** 2639

**Anticipated Bottom Hole Temperature(F):** 155

**Anticipated abnormal pressures, temperatures, or potential geologic hazards?** NO

**Describe:**

**Contingency Plans geohazards description:**

**Contingency Plans geohazards**

**Hydrogen Sulfide drilling operations plan required?** YES

**Hydrogen sulfide drilling operations**

H2S\_Plans\_Pakse\_South\_Fed\_Com\_224H\_20201102133626.pdf

**Operator Name:** EARTHSTONE OPERATING LLC

**Well Name:** PAKSE SOUTH FED COM

**Well Number:** 224H

## Section 8 - Other Information

### Proposed horizontal/directional/multi-lateral plan submission:

Egg\_Roll\_Fed\_Com\_223H\_\_\_APD\_AC\_20201101105125.pdf

Egg\_Roll\_Fed\_Com\_223H\_\_\_APD\_\_\_Plot\_20201101105117.pdf

Egg\_Roll\_Fed\_Com\_223H\_\_\_Dir\_Plan\_20201101105110.pdf

### Other proposed operations facets description:

APD DRILLING PORTION

GAS CAPTURE PLAN

INTERMEDIATE CASING SPEC SHEETS

### Other proposed operations facets attachment:

Pakse\_South\_Egg\_Roll\_CTB\_\_\_Gas\_Capture\_Plan\_20201101212600.docx

Egg\_Roll\_Fed\_Com\_224H\_\_\_APD\_Drilling\_Portion\_20210311115333.pdf

Pipe\_Body\_and\_API\_Connections\_Performance\_Data\_8.6250\_32.0000\_0.3520\_\_\_L80\_20210311115353.pdf

Pipe\_Body\_and\_API\_Connections\_Performance\_Data\_11.7500\_47.0000\_0.3750\_\_\_L80\_20210311115353.pdf

### Other Variance attachment:

2M\_\_\_H\_P\_614\_\_\_BOP\_\_\_CHOKE\_\_\_FLEX\_HOSE\_APD\_INFORMATION\_\_\_1\_\_\_20201101105203.pdf

3M\_\_\_H\_P\_614\_\_\_BOP\_\_\_CHOKE\_\_\_FLEX\_HOSE\_APD\_INFORMATION\_\_\_1\_\_\_20201101105200.pdf





Titus Oil & Gas Production, LLC  
Project: Lea County, NM (NAD83-NME)  
Site: A07\_Egg Roll  
Well: Egg Roll Fed Com 223H  
Wellbore: Permit  
Plan: APD-Rev0

WELL DETAILS: Egg Roll Fed Com 223H

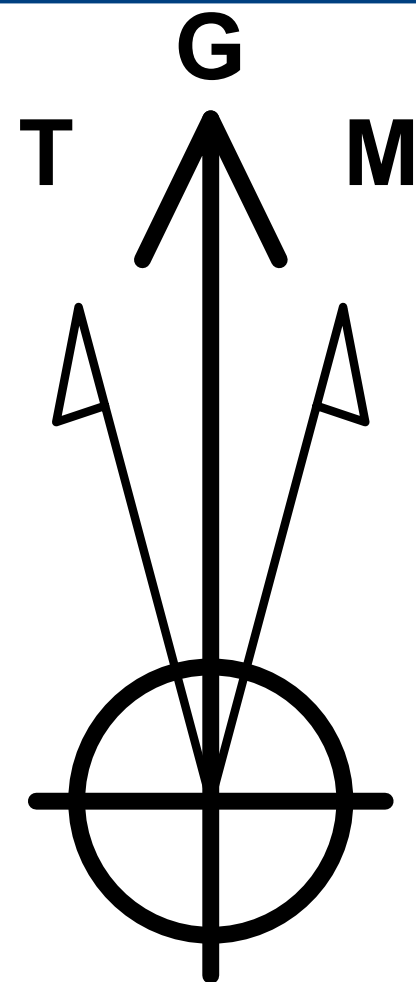
| Northing  | Easting   | Latittude   | Longitude     |
|-----------|-----------|-------------|---------------|
| 569705.44 | 731714.12 | 32.56465683 | -103.71537953 |

Section Details

| Sec | MD       | Inc   | Azi    | TVD     | +N/-S    | +E/-W    | Dleg  | TFace  | VSect    |
|-----|----------|-------|--------|---------|----------|----------|-------|--------|----------|
| 1   | 0.00     | 0.00  | 0.00   | 0.00    | 0.00     | 0.00     | 0.00  | 0.00   | 0.00     |
| 2   | 1350.00  | 0.00  | 0.00   | 1350.00 | 0.00     | 0.00     | 0.00  | 0.00   | 0.00     |
| 3   | 1819.86  | 7.05  | 270.00 | 1818.68 | 0.00     | -28.86   | 1.50  | 270.00 | 0.19     |
| 4   | 8684.37  | 7.05  | 270.00 | 8631.32 | 0.00     | -871.14  | 0.00  | 0.00   | 5.63     |
| 5   | 9154.24  | 0.00  | 0.00   | 9100.00 | 0.00     | -900.00  | 1.50  | 180.00 | 5.81     |
| 6   | 9469.24  | 0.00  | 0.00   | 9415.00 | 0.00     | -900.00  | 0.00  | 0.00   | 5.81     |
| 7   | 10217.15 | 89.75 | 353.10 | 9892.46 | 471.94   | -957.11  | 12.00 | 353.10 | 478.11   |
| 8   | 10467.15 | 89.75 | 353.10 | 9893.55 | 720.13   | -987.14  | 0.00  | 0.00   | 726.49   |
| 9   | 10793.49 | 89.75 | 359.63 | 9894.97 | 1045.63  | -1007.83 | 2.00  | 90.01  | 1052.11  |
| 10  | 20770.38 | 89.75 | 359.63 | 9938.39 | 11022.21 | -1072.82 | 0.00  | 0.00   | 11028.91 |

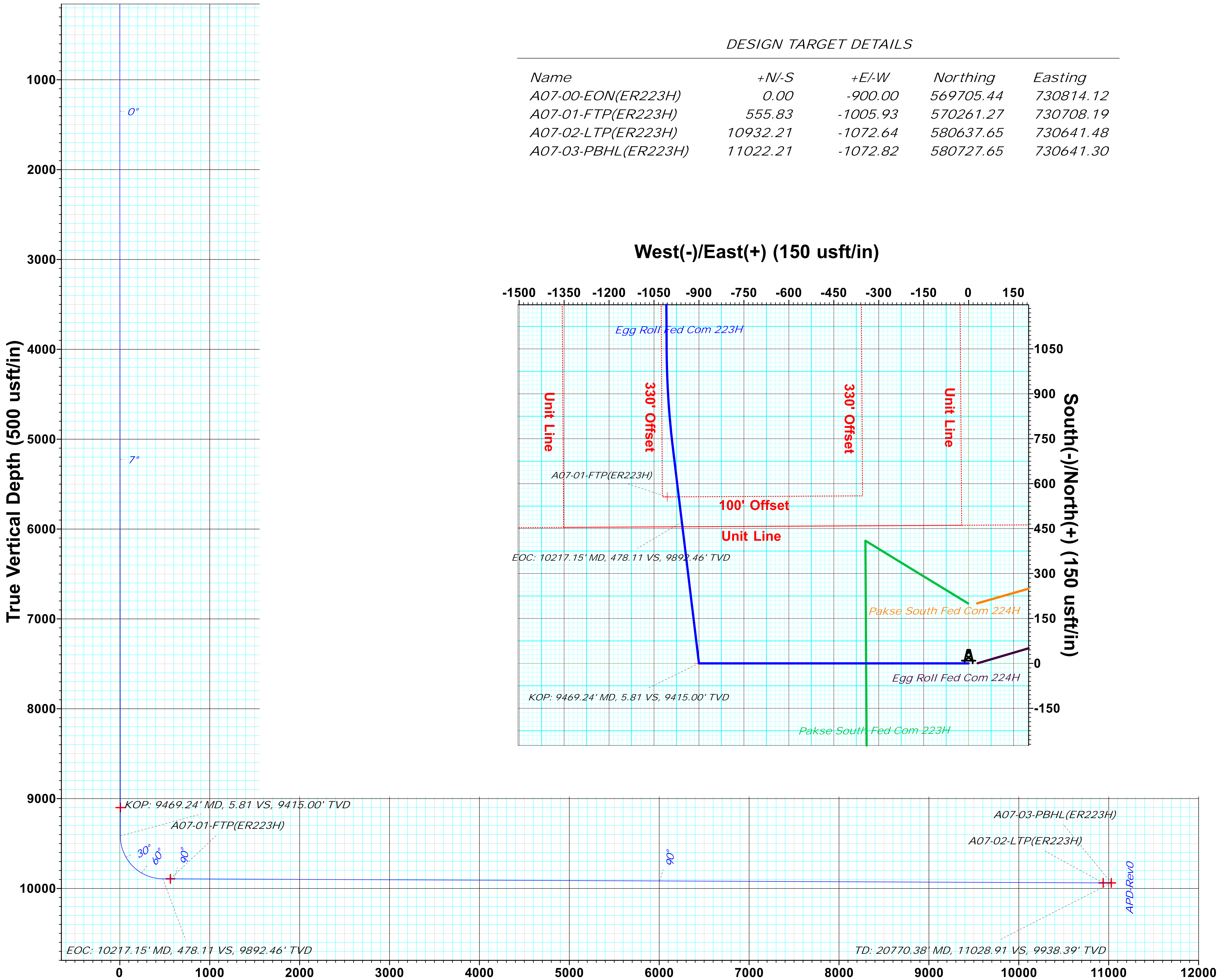
DESIGN TARGET DETAILS

| Name                | +N/-S    | +E/-W    | Northing  | Easting   |
|---------------------|----------|----------|-----------|-----------|
| A07-00-EON(ER223H)  | 0.00     | -900.00  | 569705.44 | 730814.12 |
| A07-01-FTP(ER223H)  | 555.83   | -1005.93 | 570261.27 | 730708.19 |
| A07-02-LTP(ER223H)  | 10932.21 | -1072.64 | 580637.65 | 730641.48 |
| A07-03-PBHL(ER223H) | 11022.21 | -1072.82 | 580727.65 | 730641.30 |

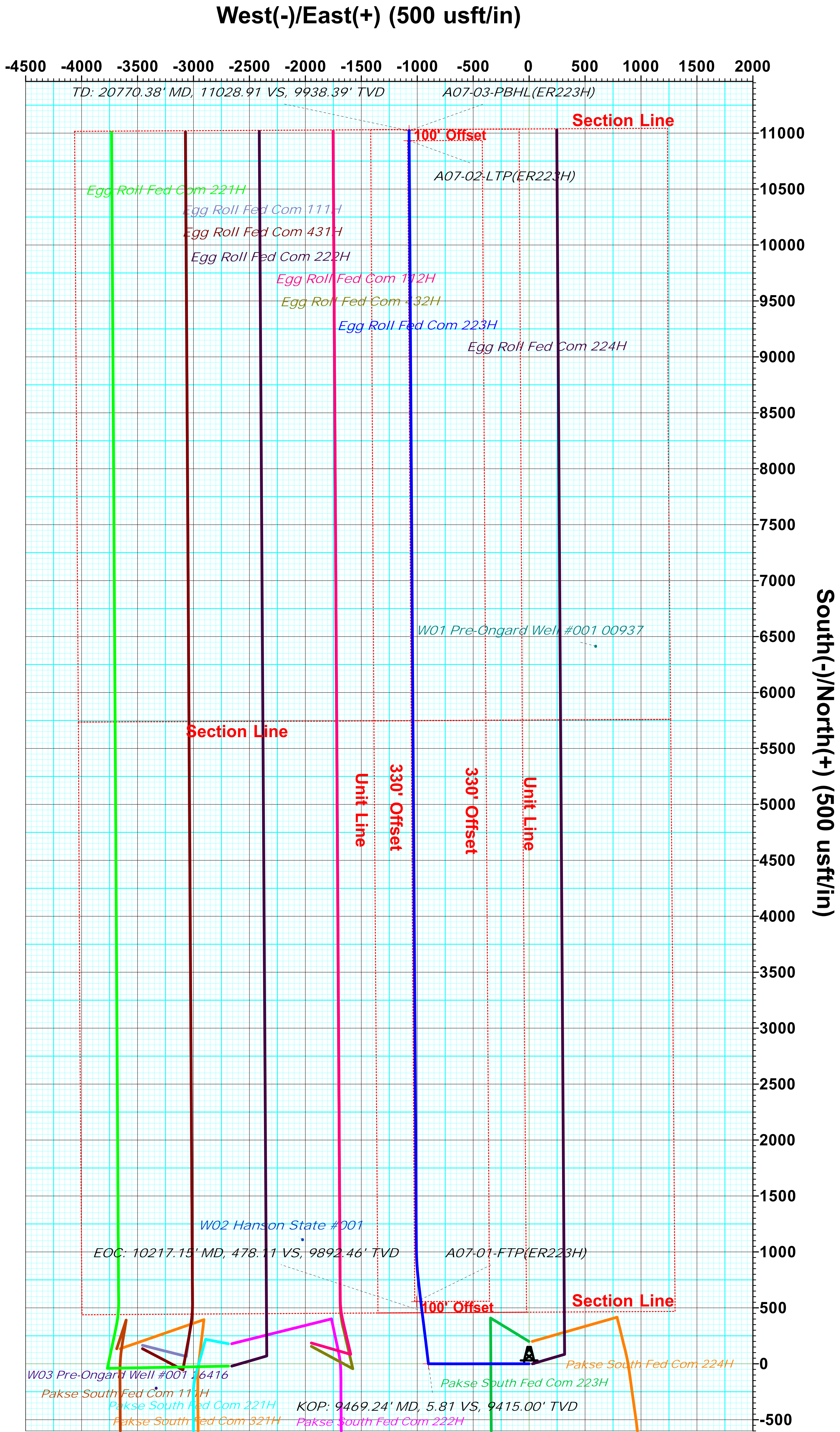


Azimuths to Grid North  
True North: -0.33°  
Magnetic North: 6.38°  
  
Magnetic Field  
Strength: 47747.1snT  
Dip Angle: 60.21°  
Date: 10/22/2020  
Model: IGRF2020

PROJECT DETAILS: Lea County, NM (NAD83-NME)  
Geodetic System: US State Plane 1983  
Datum: North American Datum 1983  
Ellipsoid: GRS 1980  
Zone: New Mexico Eastern Zone  
System Datum: Mean Sea Level  
Local North: Grid  
Grid Convergence: 0.33° West  
KB Elevation: 3546+25 @ 3571.00usft  
Elevation: 3546.00



Vertical Section at 359.63° (500 usft/in)







## **Titus Oil & Gas Production, LLC**

**Lea County, NM (NAD83-NME)**

**A07\_Egg Roll**

**Egg Roll Fed Com 223H**

**Permit**

**Plan: APD-Rev0**

## **Standard Planning Report**

**23 October, 2020**



## Planning Report

|                  |                                 |                                     |                            |
|------------------|---------------------------------|-------------------------------------|----------------------------|
| <b>Database:</b> | EDM 5000.14 Single User Db      | <b>Local Co-ordinate Reference:</b> | Well Egg Roll Fed Com 223H |
| <b>Company:</b>  | Titus Oil & Gas Production, LLC | <b>TVD Reference:</b>               | 3546+25 @ 3571.00usft      |
| <b>Project:</b>  | Lea County, NM (NAD83-NME)      | <b>MD Reference:</b>                | 3546+25 @ 3571.00usft      |
| <b>Site:</b>     | A07_Egg Roll                    | <b>North Reference:</b>             | Grid                       |
| <b>Well:</b>     | Egg Roll Fed Com 223H           | <b>Survey Calculation Method:</b>   | Minimum Curvature          |
| <b>Wellbore:</b> | Permit                          |                                     |                            |
| <b>Design:</b>   | APD-Rev0                        |                                     |                            |

|                    |                            |                      |                |
|--------------------|----------------------------|----------------------|----------------|
| <b>Project</b>     | Lea County, NM (NAD83-NME) |                      |                |
| <b>Map System:</b> | US State Plane 1983        | <b>System Datum:</b> | Mean Sea Level |
| <b>Geo Datum:</b>  | North American Datum 1983  |                      |                |
| <b>Map Zone:</b>   | New Mexico Eastern Zone    |                      |                |

|                       |              |              |                 |                   |               |
|-----------------------|--------------|--------------|-----------------|-------------------|---------------|
| Site                  | A07_Egg Roll |              |                 |                   |               |
| Site Position:        |              | Northing:    | 569,870.59 usft | Latitude:         | 32.56516541   |
| From:                 | Map          | Easting:     | 728,258.32 usft | Longitude:        | -103.72659330 |
| Position Uncertainty: | 0.00 usft    | Slot Radius: | 13-3/16 "       | Grid Convergence: | 0.33 °        |

| Well                 | Egg Roll Fed Com 223H |               |                     |                 |               |               |
|----------------------|-----------------------|---------------|---------------------|-----------------|---------------|---------------|
| Well Position        | +N/-S                 | -165.15 usft  | Northing:           | 569,705.44 usft | Latitude:     | 32.56465683   |
|                      | +E/-W                 | 3,455.80 usft | Easting:            | 731,714.12 usft | Longitude:    | -103.71537953 |
| Position Uncertainty | 0.00 usft             |               | Wellhead Elevation: |                 | Ground Level: | 3,546.00 usft |

|                  |                   |                    |                        |                      |                            |
|------------------|-------------------|--------------------|------------------------|----------------------|----------------------------|
| <b>Wellbore</b>  | Permit            |                    |                        |                      |                            |
| <b>Magnetics</b> | <b>Model Name</b> | <b>Sample Date</b> | <b>Declination (°)</b> | <b>Dip Angle (°)</b> | <b>Field Strength (nT)</b> |
|                  | IGRF2020          | 10/22/2020         | 6.71                   | 60.21                | 47,747.14447891            |

|                          |                                |                     |                     |                      |      |
|--------------------------|--------------------------------|---------------------|---------------------|----------------------|------|
| <b>Design</b>            | APD-Rev0                       |                     |                     |                      |      |
| <b>Audit Notes:</b>      |                                |                     |                     |                      |      |
| <b>Version:</b>          |                                | <b>Phase:</b>       | PLAN                | <b>Tie On Depth:</b> | 0.00 |
| <b>Vertical Section:</b> | <b>Depth From (TVD) (usft)</b> | <b>+N/-S (usft)</b> | <b>+E/-W (usft)</b> | <b>Direction (°)</b> |      |
|                          | 0.00                           | 0.00                | 0.00                | 359.63               |      |

|                                 |                        |                          |                   |                           |  |
|---------------------------------|------------------------|--------------------------|-------------------|---------------------------|--|
| <b>Plan Survey Tool Program</b> | <b>Date</b>            | 10/23/2020               |                   |                           |  |
| <b>Depth From (usft)</b>        | <b>Depth To (usft)</b> | <b>Survey (Wellbore)</b> | <b>Tool Name</b>  | <b>Remarks</b>            |  |
| 1                               | 0.00                   | 20,770.38                | APD-Rev0 (Permit) | MWD+IFR1+SAG+MS           |  |
|                                 |                        |                          |                   | OWSG MWD + IFR1 + Sag + M |  |



## Planning Report

|                  |                                 |                                     |                            |
|------------------|---------------------------------|-------------------------------------|----------------------------|
| <b>Database:</b> | EDM 5000.14 Single User Db      | <b>Local Co-ordinate Reference:</b> | Well Egg Roll Fed Com 223H |
| <b>Company:</b>  | Titus Oil & Gas Production, LLC | <b>TVD Reference:</b>               | 3546+25 @ 3571.00usft      |
| <b>Project:</b>  | Lea County, NM (NAD83-NME)      | <b>MD Reference:</b>                | 3546+25 @ 3571.00usft      |
| <b>Site:</b>     | A07_Egg Roll                    | <b>North Reference:</b>             | Grid                       |
| <b>Well:</b>     | Egg Roll Fed Com 223H           | <b>Survey Calculation Method:</b>   | Minimum Curvature          |
| <b>Wellbore:</b> | Permit                          |                                     |                            |
| <b>Design:</b>   | APD-Rev0                        |                                     |                            |

| Plan Sections         |                 |             |                       |              |              |                         |                        |                       |         |                     |
|-----------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|------------------------|-----------------------|---------|---------------------|
| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) | TFO (°) | Target              |
| 0.00                  | 0.00            | 0.00        | 0.00                  | 0.00         | 0.00         | 0.00                    | 0.00                   | 0.00                  | 0.00    |                     |
| 1,350.00              | 0.00            | 0.00        | 1,350.00              | 0.00         | 0.00         | 0.00                    | 0.00                   | 0.00                  | 0.00    |                     |
| 1,819.86              | 7.05            | 270.00      | 1,818.68              | 0.00         | -28.86       | 1.50                    | 1.50                   | 0.00                  | 270.00  |                     |
| 8,684.37              | 7.05            | 270.00      | 8,631.32              | 0.00         | -871.14      | 0.00                    | 0.00                   | 0.00                  | 0.00    |                     |
| 9,154.24              | 0.00            | 0.00        | 9,100.00              | 0.00         | -900.00      | 1.50                    | -1.50                  | 0.00                  | 180.00  | A07-00-EON(ER223H)  |
| 9,469.24              | 0.00            | 0.00        | 9,415.00              | 0.00         | -900.00      | 0.00                    | 0.00                   | 0.00                  | 0.00    |                     |
| 10,217.15             | 89.75           | 353.10      | 9,892.46              | 471.94       | -957.11      | 12.00                   | 12.00                  | 0.00                  | 353.10  |                     |
| 10,467.15             | 89.75           | 353.10      | 9,893.55              | 720.13       | -987.14      | 0.00                    | 0.00                   | 0.00                  | 0.00    |                     |
| 10,793.49             | 89.75           | 359.63      | 9,894.97              | 1,045.63     | -1,007.83    | 2.00                    | 0.00                   | 2.00                  | 90.01   |                     |
| 20,770.38             | 89.75           | 359.63      | 9,938.39              | 11,022.21    | -1,072.82    | 0.00                    | 0.00                   | 0.00                  | 0.00    | A07-03-PBHL(ER223H) |



## Planning Report

|                  |                                 |                                     |                            |
|------------------|---------------------------------|-------------------------------------|----------------------------|
| <b>Database:</b> | EDM 5000.14 Single User Db      | <b>Local Co-ordinate Reference:</b> | Well Egg Roll Fed Com 223H |
| <b>Company:</b>  | Titus Oil & Gas Production, LLC | <b>TVD Reference:</b>               | 3546+25 @ 3571.00usft      |
| <b>Project:</b>  | Lea County, NM (NAD83-NME)      | <b>MD Reference:</b>                | 3546+25 @ 3571.00usft      |
| <b>Site:</b>     | A07_Egg Roll                    | <b>North Reference:</b>             | Grid                       |
| <b>Well:</b>     | Egg Roll Fed Com 223H           | <b>Survey Calculation Method:</b>   | Minimum Curvature          |
| <b>Wellbore:</b> | Permit                          |                                     |                            |
| <b>Design:</b>   | APD-Rev0                        |                                     |                            |

| Planned Survey        |                 |             |                       |              |              |                         |                         |                        |                       |
|-----------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-------------------------|------------------------|-----------------------|
| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
| 0.00                  | 0.00            | 0.00        | 0.00                  | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 100.00                | 0.00            | 0.00        | 100.00                | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 200.00                | 0.00            | 0.00        | 200.00                | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 300.00                | 0.00            | 0.00        | 300.00                | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 400.00                | 0.00            | 0.00        | 400.00                | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 500.00                | 0.00            | 0.00        | 500.00                | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 600.00                | 0.00            | 0.00        | 600.00                | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 700.00                | 0.00            | 0.00        | 700.00                | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 800.00                | 0.00            | 0.00        | 800.00                | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 900.00                | 0.00            | 0.00        | 900.00                | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 1,000.00              | 0.00            | 0.00        | 1,000.00              | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 1,100.00              | 0.00            | 0.00        | 1,100.00              | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 1,200.00              | 0.00            | 0.00        | 1,200.00              | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 1,300.00              | 0.00            | 0.00        | 1,300.00              | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 1,350.00              | 0.00            | 0.00        | 1,350.00              | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 1,400.00              | 0.75            | 270.00      | 1,400.00              | 0.00         | -0.33        | 0.00                    | 1.50                    | 1.50                   | 0.00                  |
| 1,500.00              | 2.25            | 270.00      | 1,499.96              | 0.00         | -2.94        | 0.02                    | 1.50                    | 1.50                   | 0.00                  |
| 1,600.00              | 3.75            | 270.00      | 1,599.82              | 0.00         | -8.18        | 0.05                    | 1.50                    | 1.50                   | 0.00                  |
| 1,700.00              | 5.25            | 270.00      | 1,699.51              | 0.00         | -16.02       | 0.10                    | 1.50                    | 1.50                   | 0.00                  |
| 1,800.00              | 6.75            | 270.00      | 1,798.96              | 0.00         | -26.48       | 0.17                    | 1.50                    | 1.50                   | 0.00                  |
| 1,819.86              | 7.05            | 270.00      | 1,818.68              | 0.00         | -28.86       | 0.19                    | 1.50                    | 1.50                   | 0.00                  |
| 1,900.00              | 7.05            | 270.00      | 1,898.21              | 0.00         | -38.70       | 0.25                    | 0.00                    | 0.00                   | 0.00                  |
| 2,000.00              | 7.05            | 270.00      | 1,997.45              | 0.00         | -50.97       | 0.33                    | 0.00                    | 0.00                   | 0.00                  |
| 2,100.00              | 7.05            | 270.00      | 2,096.70              | 0.00         | -63.24       | 0.41                    | 0.00                    | 0.00                   | 0.00                  |
| 2,200.00              | 7.05            | 270.00      | 2,195.94              | 0.00         | -75.51       | 0.49                    | 0.00                    | 0.00                   | 0.00                  |
| 2,300.00              | 7.05            | 270.00      | 2,295.19              | 0.00         | -87.78       | 0.57                    | 0.00                    | 0.00                   | 0.00                  |
| 2,400.00              | 7.05            | 270.00      | 2,394.43              | 0.00         | -100.05      | 0.65                    | 0.00                    | 0.00                   | 0.00                  |
| 2,500.00              | 7.05            | 270.00      | 2,493.68              | 0.00         | -112.32      | 0.73                    | 0.00                    | 0.00                   | 0.00                  |
| 2,600.00              | 7.05            | 270.00      | 2,592.92              | 0.00         | -124.59      | 0.80                    | 0.00                    | 0.00                   | 0.00                  |
| 2,700.00              | 7.05            | 270.00      | 2,692.17              | 0.00         | -136.86      | 0.88                    | 0.00                    | 0.00                   | 0.00                  |
| 2,800.00              | 7.05            | 270.00      | 2,791.41              | 0.00         | -149.13      | 0.96                    | 0.00                    | 0.00                   | 0.00                  |
| 2,900.00              | 7.05            | 270.00      | 2,890.65              | 0.00         | -161.40      | 1.04                    | 0.00                    | 0.00                   | 0.00                  |
| 3,000.00              | 7.05            | 270.00      | 2,989.90              | 0.00         | -173.67      | 1.12                    | 0.00                    | 0.00                   | 0.00                  |
| 3,100.00              | 7.05            | 270.00      | 3,089.14              | 0.00         | -185.94      | 1.20                    | 0.00                    | 0.00                   | 0.00                  |
| 3,200.00              | 7.05            | 270.00      | 3,188.39              | 0.00         | -198.21      | 1.28                    | 0.00                    | 0.00                   | 0.00                  |
| 3,300.00              | 7.05            | 270.00      | 3,287.63              | 0.00         | -210.48      | 1.36                    | 0.00                    | 0.00                   | 0.00                  |
| 3,400.00              | 7.05            | 270.00      | 3,386.88              | 0.00         | -222.75      | 1.44                    | 0.00                    | 0.00                   | 0.00                  |
| 3,500.00              | 7.05            | 270.00      | 3,486.12              | 0.00         | -235.02      | 1.52                    | 0.00                    | 0.00                   | 0.00                  |
| 3,600.00              | 7.05            | 270.00      | 3,585.36              | 0.00         | -247.29      | 1.60                    | 0.00                    | 0.00                   | 0.00                  |
| 3,700.00              | 7.05            | 270.00      | 3,684.61              | 0.00         | -259.56      | 1.68                    | 0.00                    | 0.00                   | 0.00                  |
| 3,800.00              | 7.05            | 270.00      | 3,783.85              | 0.00         | -271.83      | 1.76                    | 0.00                    | 0.00                   | 0.00                  |
| 3,900.00              | 7.05            | 270.00      | 3,883.10              | 0.00         | -284.10      | 1.83                    | 0.00                    | 0.00                   | 0.00                  |
| 4,000.00              | 7.05            | 270.00      | 3,982.34              | 0.00         | -296.37      | 1.91                    | 0.00                    | 0.00                   | 0.00                  |
| 4,100.00              | 7.05            | 270.00      | 4,081.59              | 0.00         | -308.64      | 1.99                    | 0.00                    | 0.00                   | 0.00                  |
| 4,200.00              | 7.05            | 270.00      | 4,180.83              | 0.00         | -320.91      | 2.07                    | 0.00                    | 0.00                   | 0.00                  |
| 4,300.00              | 7.05            | 270.00      | 4,280.08              | 0.00         | -333.18      | 2.15                    | 0.00                    | 0.00                   | 0.00                  |
| 4,400.00              | 7.05            | 270.00      | 4,379.32              | 0.00         | -345.45      | 2.23                    | 0.00                    | 0.00                   | 0.00                  |
| 4,500.00              | 7.05            | 270.00      | 4,478.56              | 0.00         | -357.72      | 2.31                    | 0.00                    | 0.00                   | 0.00                  |
| 4,600.00              | 7.05            | 270.00      | 4,577.81              | 0.00         | -369.99      | 2.39                    | 0.00                    | 0.00                   | 0.00                  |
| 4,700.00              | 7.05            | 270.00      | 4,677.05              | 0.00         | -382.26      | 2.47                    | 0.00                    | 0.00                   | 0.00                  |
| 4,800.00              | 7.05            | 270.00      | 4,776.30              | 0.00         | -394.53      | 2.55                    | 0.00                    | 0.00                   | 0.00                  |
| 4,900.00              | 7.05            | 270.00      | 4,875.54              | 0.00         | -406.80      | 2.63                    | 0.00                    | 0.00                   | 0.00                  |
| 5,000.00              | 7.05            | 270.00      | 4,974.79              | 0.00         | -419.07      | 2.71                    | 0.00                    | 0.00                   | 0.00                  |
| 5,100.00              | 7.05            | 270.00      | 5,074.03              | 0.00         | -431.34      | 2.79                    | 0.00                    | 0.00                   | 0.00                  |



## Planning Report

|                  |                                 |                                     |                            |
|------------------|---------------------------------|-------------------------------------|----------------------------|
| <b>Database:</b> | EDM 5000.14 Single User Db      | <b>Local Co-ordinate Reference:</b> | Well Egg Roll Fed Com 223H |
| <b>Company:</b>  | Titus Oil & Gas Production, LLC | <b>TVD Reference:</b>               | 3546+25 @ 3571.00usft      |
| <b>Project:</b>  | Lea County, NM (NAD83-NME)      | <b>MD Reference:</b>                | 3546+25 @ 3571.00usft      |
| <b>Site:</b>     | A07_Egg Roll                    | <b>North Reference:</b>             | Grid                       |
| <b>Well:</b>     | Egg Roll Fed Com 223H           | <b>Survey Calculation Method:</b>   | Minimum Curvature          |
| <b>Wellbore:</b> | Permit                          |                                     |                            |
| <b>Design:</b>   | APD-Rev0                        |                                     |                            |

| Planned Survey                                 |                 |             |                       |              |              |                         |                         |                        |                       |
|--|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-------------------------|------------------------|-----------------------|
| Measured Depth (usft)                          | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
| 5,200.00                                       | 7.05            | 270.00      | 5,173.28              | 0.00         | -443.61      | 2.86                    | 0.00                    | 0.00                   | 0.00                  |
| 5,300.00                                       | 7.05            | 270.00      | 5,272.52              | 0.00         | -455.88      | 2.94                    | 0.00                    | 0.00                   | 0.00                  |
| 5,400.00                                       | 7.05            | 270.00      | 5,371.76              | 0.00         | -468.15      | 3.02                    | 0.00                    | 0.00                   | 0.00                  |
| 5,500.00                                       | 7.05            | 270.00      | 5,471.01              | 0.00         | -480.42      | 3.10                    | 0.00                    | 0.00                   | 0.00                  |
| 5,600.00                                       | 7.05            | 270.00      | 5,570.25              | 0.00         | -492.69      | 3.18                    | 0.00                    | 0.00                   | 0.00                  |
| 5,700.00                                       | 7.05            | 270.00      | 5,669.50              | 0.00         | -504.96      | 3.26                    | 0.00                    | 0.00                   | 0.00                  |
| 5,800.00                                       | 7.05            | 270.00      | 5,768.74              | 0.00         | -517.22      | 3.34                    | 0.00                    | 0.00                   | 0.00                  |
| 5,900.00                                       | 7.05            | 270.00      | 5,867.99              | 0.00         | -529.49      | 3.42                    | 0.00                    | 0.00                   | 0.00                  |
| 6,000.00                                       | 7.05            | 270.00      | 5,967.23              | 0.00         | -541.76      | 3.50                    | 0.00                    | 0.00                   | 0.00                  |
| 6,100.00                                       | 7.05            | 270.00      | 6,066.47              | 0.00         | -554.03      | 3.58                    | 0.00                    | 0.00                   | 0.00                  |
| 6,200.00                                       | 7.05            | 270.00      | 6,165.72              | 0.00         | -566.30      | 3.66                    | 0.00                    | 0.00                   | 0.00                  |
| 6,300.00                                       | 7.05            | 270.00      | 6,264.96              | 0.00         | -578.57      | 3.74                    | 0.00                    | 0.00                   | 0.00                  |
| 6,400.00                                       | 7.05            | 270.00      | 6,364.21              | 0.00         | -590.84      | 3.82                    | 0.00                    | 0.00                   | 0.00                  |
| 6,500.00                                       | 7.05            | 270.00      | 6,463.45              | 0.00         | -603.11      | 3.89                    | 0.00                    | 0.00                   | 0.00                  |
| 6,600.00                                       | 7.05            | 270.00      | 6,562.70              | 0.00         | -615.38      | 3.97                    | 0.00                    | 0.00                   | 0.00                  |
| 6,700.00                                       | 7.05            | 270.00      | 6,661.94              | 0.00         | -627.65      | 4.05                    | 0.00                    | 0.00                   | 0.00                  |
| 6,800.00                                       | 7.05            | 270.00      | 6,761.19              | 0.00         | -639.92      | 4.13                    | 0.00                    | 0.00                   | 0.00                  |
| 6,900.00                                       | 7.05            | 270.00      | 6,860.43              | 0.00         | -652.19      | 4.21                    | 0.00                    | 0.00                   | 0.00                  |
| 7,000.00                                       | 7.05            | 270.00      | 6,959.67              | 0.00         | -664.46      | 4.29                    | 0.00                    | 0.00                   | 0.00                  |
| 7,100.00                                       | 7.05            | 270.00      | 7,058.92              | 0.00         | -676.73      | 4.37                    | 0.00                    | 0.00                   | 0.00                  |
| 7,200.00                                       | 7.05            | 270.00      | 7,158.16              | 0.00         | -689.00      | 4.45                    | 0.00                    | 0.00                   | 0.00                  |
| 7,300.00                                       | 7.05            | 270.00      | 7,257.41              | 0.00         | -701.27      | 4.53                    | 0.00                    | 0.00                   | 0.00                  |
| 7,400.00                                       | 7.05            | 270.00      | 7,356.65              | 0.00         | -713.54      | 4.61                    | 0.00                    | 0.00                   | 0.00                  |
| 7,500.00                                       | 7.05            | 270.00      | 7,455.90              | 0.00         | -725.81      | 4.69                    | 0.00                    | 0.00                   | 0.00                  |
| 7,600.00                                       | 7.05            | 270.00      | 7,555.14              | 0.00         | -738.08      | 4.77                    | 0.00                    | 0.00                   | 0.00                  |
| 7,700.00                                       | 7.05            | 270.00      | 7,654.38              | 0.00         | -750.35      | 4.85                    | 0.00                    | 0.00                   | 0.00                  |
| 7,800.00                                       | 7.05            | 270.00      | 7,753.63              | 0.00         | -762.62      | 4.92                    | 0.00                    | 0.00                   | 0.00                  |
| 7,900.00                                       | 7.05            | 270.00      | 7,852.87              | 0.00         | -774.89      | 5.00                    | 0.00                    | 0.00                   | 0.00                  |
| 8,000.00                                       | 7.05            | 270.00      | 7,952.12              | 0.00         | -787.16      | 5.08                    | 0.00                    | 0.00                   | 0.00                  |
| 8,100.00                                       | 7.05            | 270.00      | 8,051.36              | 0.00         | -799.43      | 5.16                    | 0.00                    | 0.00                   | 0.00                  |
| 8,200.00                                       | 7.05            | 270.00      | 8,150.61              | 0.00         | -811.70      | 5.24                    | 0.00                    | 0.00                   | 0.00                  |
| 8,300.00                                       | 7.05            | 270.00      | 8,249.85              | 0.00         | -823.97      | 5.32                    | 0.00                    | 0.00                   | 0.00                  |
| 8,400.00                                       | 7.05            | 270.00      | 8,349.10              | 0.00         | -836.24      | 5.40                    | 0.00                    | 0.00                   | 0.00                  |
| 8,500.00                                       | 7.05            | 270.00      | 8,448.34              | 0.00         | -848.51      | 5.48                    | 0.00                    | 0.00                   | 0.00                  |
| 8,600.00                                       | 7.05            | 270.00      | 8,547.58              | 0.00         | -860.78      | 5.56                    | 0.00                    | 0.00                   | 0.00                  |
| 8,684.37                                       | 7.05            | 270.00      | 8,631.32              | 0.00         | -871.14      | 5.63                    | 0.00                    | 0.00                   | 0.00                  |
| 8,700.00                                       | 6.81            | 270.00      | 8,646.83              | 0.00         | -873.02      | 5.64                    | 1.50                    | -1.50                  | 0.00                  |
| 8,800.00                                       | 5.31            | 270.00      | 8,746.27              | 0.00         | -883.59      | 5.71                    | 1.50                    | -1.50                  | 0.00                  |
| 8,900.00                                       | 3.81            | 270.00      | 8,845.95              | 0.00         | -891.54      | 5.76                    | 1.50                    | -1.50                  | 0.00                  |
| 9,000.00                                       | 2.31            | 270.00      | 8,945.80              | 0.00         | -896.89      | 5.79                    | 1.50                    | -1.50                  | 0.00                  |
| 9,100.00                                       | 0.81            | 270.00      | 9,045.76              | 0.00         | -899.61      | 5.81                    | 1.50                    | -1.50                  | 0.00                  |
| 9,154.24                                       | 0.00            | 0.00        | 9,100.00              | 0.00         | -900.00      | 5.81                    | 1.50                    | -1.50                  | 0.00                  |
| <b>A07-00-EON(ER223H)</b>                      |                 |             |                       |              |              |                         |                         |                        |                       |
| 9,200.00                                       | 0.00            | 0.00        | 9,145.76              | 0.00         | -900.00      | 5.81                    | 0.00                    | 0.00                   | 0.00                  |
| 9,300.00                                       | 0.00            | 0.00        | 9,245.76              | 0.00         | -900.00      | 5.81                    | 0.00                    | 0.00                   | 0.00                  |
| 9,400.00                                       | 0.00            | 0.00        | 9,345.76              | 0.00         | -900.00      | 5.81                    | 0.00                    | 0.00                   | 0.00                  |
| 9,469.24                                       | 0.00            | 0.00        | 9,415.00              | 0.00         | -900.00      | 5.81                    | 0.00                    | 0.00                   | 0.00                  |
| <b>KOP: 9469.24' MD, 5.81 VS, 9415.00' TVD</b> |                 |             |                       |              |              |                         |                         |                        |                       |
| 9,475.00                                       | 0.69            | 353.10      | 9,420.76              | 0.03         | -900.00      | 5.85                    | 12.00                   | 12.00                  | 0.00                  |
| 9,500.00                                       | 3.69            | 353.10      | 9,445.74              | 0.98         | -900.12      | 6.80                    | 12.00                   | 12.00                  | 0.00                  |
| 9,525.00                                       | 6.69            | 353.10      | 9,470.64              | 3.23         | -900.39      | 9.04                    | 12.00                   | 12.00                  | 0.00                  |
| 9,550.00                                       | 9.69            | 353.10      | 9,495.38              | 6.76         | -900.82      | 12.58                   | 12.00                   | 12.00                  | 0.00                  |
| 9,575.00                                       | 12.69           | 353.10      | 9,519.90              | 11.58        | -901.40      | 17.40                   | 12.00                   | 12.00                  | 0.00                  |



## Planning Report

|                  |                                 |                                     |                            |
|------------------|---------------------------------|-------------------------------------|----------------------------|
| <b>Database:</b> | EDM 5000.14 Single User Db      | <b>Local Co-ordinate Reference:</b> | Well Egg Roll Fed Com 223H |
| <b>Company:</b>  | Titus Oil & Gas Production, LLC | <b>TVD Reference:</b>               | 3546+25 @ 3571.00usft      |
| <b>Project:</b>  | Lea County, NM (NAD83-NME)      | <b>MD Reference:</b>                | 3546+25 @ 3571.00usft      |
| <b>Site:</b>     | A07_Egg Roll                    | <b>North Reference:</b>             | Grid                       |
| <b>Well:</b>     | Egg Roll Fed Com 223H           | <b>Survey Calculation Method:</b>   | Minimum Curvature          |
| <b>Wellbore:</b> | Permit                          |                                     |                            |
| <b>Design:</b>   | APD-Rev0                        |                                     |                            |

| Planned Survey                                    |                 |             |                       |              |              |                         |                         |                        |                       |  |
|---|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-------------------------|------------------------|-----------------------|--|
| Measured Depth (usft)                             | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |  |
| 9,600.00  | 15.69           | 353.10      | 9,544.13              | 17.67        | -902.14      | 23.49                   | 12.00                   | 12.00                  | 0.00                  |  |
| 9,625.00  | 18.69           | 353.10      | 9,568.01              | 25.00        | -903.03      | 30.83                   | 12.00                   | 12.00                  | 0.00                  |  |
| 9,650.00  | 21.69           | 353.10      | 9,591.48              | 33.57        | -904.06      | 39.40                   | 12.00                   | 12.00                  | 0.00                  |  |
| 9,675.00  | 24.69           | 353.10      | 9,614.45              | 43.34        | -905.24      | 49.18                   | 12.00                   | 12.00                  | 0.00                  |  |
| 9,700.00  | 27.69           | 353.10      | 9,636.88              | 54.29        | -906.57      | 60.14                   | 12.00                   | 12.00                  | 0.00                  |  |
| 9,725.00  | 30.69           | 353.10      | 9,658.71              | 66.39        | -908.03      | 72.26                   | 12.00                   | 12.00                  | 0.00                  |  |
| 9,750.00  | 33.69           | 353.10      | 9,679.86              | 79.62        | -909.63      | 85.49                   | 12.00                   | 12.00                  | 0.00                  |  |
| 9,775.00  | 36.69           | 353.10      | 9,700.29              | 93.92        | -911.37      | 99.80                   | 12.00                   | 12.00                  | 0.00                  |  |
| 9,800.00  | 39.69           | 353.10      | 9,719.93              | 109.26       | -913.22      | 115.16                  | 12.00                   | 12.00                  | 0.00                  |  |
| 9,825.00  | 42.69           | 353.10      | 9,738.75              | 125.60       | -915.20      | 131.51                  | 12.00                   | 12.00                  | 0.00                  |  |
| 9,850.00  | 45.69           | 353.10      | 9,756.67              | 142.90       | -917.29      | 148.82                  | 12.00                   | 12.00                  | 0.00                  |  |
| 9,875.00  | 48.69           | 353.10      | 9,773.66              | 161.11       | -919.50      | 167.04                  | 12.00                   | 12.00                  | 0.00                  |  |
| 9,900.00  | 51.69           | 353.10      | 9,789.66              | 180.17       | -921.80      | 186.12                  | 12.00                   | 12.00                  | 0.00                  |  |
| 9,925.00  | 54.69           | 353.10      | 9,804.64              | 200.04       | -924.21      | 206.00                  | 12.00                   | 12.00                  | 0.00                  |  |
| 9,950.00  | 57.69           | 353.10      | 9,818.55              | 220.66       | -926.70      | 226.64                  | 12.00                   | 12.00                  | 0.00                  |  |
| 9,975.00  | 60.69           | 353.10      | 9,831.35              | 241.97       | -929.28      | 247.97                  | 12.00                   | 12.00                  | 0.00                  |  |
| 10,000.00   | 63.69           | 353.10      | 9,843.01              | 263.92       | -931.94      | 269.94                  | 12.00                   | 12.00                  | 0.00                  |  |
| 10,025.00   | 66.69           | 353.10      | 9,853.50              | 286.45       | -934.66      | 292.48                  | 12.00                   | 12.00                  | 0.00                  |  |
| 10,050.00   | 69.69           | 353.10      | 9,862.78              | 309.49       | -937.45      | 315.54                  | 12.00                   | 12.00                  | 0.00                  |  |
| 10,075.00   | 72.69           | 353.10      | 9,870.84              | 332.98       | -940.30      | 339.05                  | 12.00                   | 12.00                  | 0.00                  |  |
| 10,100.00   | 75.69           | 353.10      | 9,877.65              | 356.86       | -943.18      | 362.94                  | 12.00                   | 12.00                  | 0.00                  |  |
| 10,125.00   | 78.69           | 353.10      | 9,883.20              | 381.06       | -946.11      | 387.16                  | 12.00                   | 12.00                  | 0.00                  |  |
| 10,150.00   | 81.69           | 353.10      | 9,887.45              | 405.51       | -949.07      | 411.63                  | 12.00                   | 12.00                  | 0.00                  |  |
| 10,175.00   | 84.69           | 353.10      | 9,890.42              | 430.15       | -952.05      | 436.29                  | 12.00                   | 12.00                  | 0.00                  |  |
| 10,200.00   | 87.69           | 353.10      | 9,892.08              | 454.91       | -955.05      | 461.07                  | 12.00                   | 12.00                  | 0.00                  |  |
| 10,217.15   | 89.75           | 353.10      | 9,892.46              | 471.93       | -957.11      | 478.11                  | 12.00                   | 12.00                  | 0.00                  |  |
| <b>EOC: 10217.15' MD, 478.11 VS, 9892.46' TVD</b> |                 |             |                       |              |              |                         |                         |                        |                       |  |
| 10,300.00   | 89.75           | 353.10      | 9,892.82              | 554.18       | -967.06      | 560.42                  | 0.00                    | 0.00                   | 0.00                  |  |
| 10,306.30   | 89.75           | 353.10      | 9,892.85              | 560.44       | -967.82      | 566.68                  | 0.00                    | 0.00                   | 0.00                  |  |
| <b>A07-01-FTP(ER223H)</b>                         |                 |             |                       |              |              |                         |                         |                        |                       |  |
| 10,400.00   | 89.75           | 353.10      | 9,893.26              | 653.46       | -979.08      | 659.77                  | 0.00                    | 0.00                   | 0.00                  |  |
| 10,467.15   | 89.75           | 353.10      | 9,893.55              | 720.13       | -987.14      | 726.49                  | 0.00                    | 0.00                   | 0.00                  |  |
| 10,500.00   | 89.75           | 353.76      | 9,893.69              | 752.75       | -990.90      | 759.14                  | 2.00                    | 0.00                   | 2.00                  |  |
| 10,600.00   | 89.75           | 355.76      | 9,894.13              | 852.33       | -1,000.04    | 858.77                  | 2.00                    | 0.00                   | 2.00                  |  |
| 10,700.00   | 89.75           | 357.76      | 9,894.57              | 952.16       | -1,005.70    | 958.64                  | 2.00                    | 0.00                   | 2.00                  |  |
| 10,793.49   | 89.75           | 359.63      | 9,894.97              | 1,045.63     | -1,007.83    | 1,052.11                | 2.00                    | 0.00                   | 2.00                  |  |
| 10,800.00   | 89.75           | 359.63      | 9,895.00              | 1,052.13     | -1,007.87    | 1,058.62                | 0.00                    | 0.00                   | 0.00                  |  |
| 10,900.00   | 89.75           | 359.63      | 9,895.44              | 1,152.13     | -1,008.53    | 1,158.62                | 0.00                    | 0.00                   | 0.00                  |  |
| 11,000.00   | 89.75           | 359.63      | 9,895.87              | 1,252.13     | -1,009.18    | 1,258.62                | 0.00                    | 0.00                   | 0.00                  |  |
| 11,100.00   | 89.75           | 359.63      | 9,896.31              | 1,352.13     | -1,009.83    | 1,358.62                | 0.00                    | 0.00                   | 0.00                  |  |
| 11,200.00   | 89.75           | 359.63      | 9,896.74              | 1,452.12     | -1,010.48    | 1,458.62                | 0.00                    | 0.00                   | 0.00                  |  |
| 11,300.00   | 89.75           | 359.63      | 9,897.18              | 1,552.12     | -1,011.13    | 1,558.62                | 0.00                    | 0.00                   | 0.00                  |  |
| 11,400.00   | 89.75           | 359.63      | 9,897.61              | 1,652.12     | -1,011.78    | 1,658.62                | 0.00                    | 0.00                   | 0.00                  |  |
| 11,500.00   | 89.75           | 359.63      | 9,898.05              | 1,752.11     | -1,012.43    | 1,758.61                | 0.00                    | 0.00                   | 0.00                  |  |
| 11,600.00   | 89.75           | 359.63      | 9,898.48              | 1,852.11     | -1,013.09    | 1,858.61                | 0.00                    | 0.00                   | 0.00                  |  |
| 11,700.00   | 89.75           | 359.63      | 9,898.92              | 1,952.11     | -1,013.74    | 1,958.61                | 0.00                    | 0.00                   | 0.00                  |  |
| 11,800.00   | 89.75           | 359.63      | 9,899.35              | 2,052.10     | -1,014.39    | 2,058.61                | 0.00                    | 0.00                   | 0.00                  |  |
| 11,900.00   | 89.75           | 359.63      | 9,899.79              | 2,152.10     | -1,015.04    | 2,158.61                | 0.00                    | 0.00                   | 0.00                  |  |
| 12,000.00   | 89.75           | 359.63      | 9,900.23              | 2,252.10     | -1,015.69    | 2,258.61                | 0.00                    | 0.00                   | 0.00                  |  |
| 12,100.00   | 89.75           | 359.63      | 9,900.66              | 2,352.09     | -1,016.34    | 2,358.61                | 0.00                    | 0.00                   | 0.00                  |  |
| 12,200.00   | 89.75           | 359.63      | 9,901.10              | 2,452.09     | -1,016.99    | 2,458.61                | 0.00                    | 0.00                   | 0.00                  |  |
| 12,300.00   | 89.75           | 359.63      | 9,901.53              | 2,552.09     | -1,017.65    | 2,558.61                | 0.00                    | 0.00                   | 0.00                  |  |
| 12,400.00   | 89.75           | 359.63      | 9,901.97              | 2,652.09     | -1,018.30    | 2,658.61                | 0.00                    | 0.00                   | 0.00                  |  |
| 12,500.00   | 89.75           | 359.63      | 9,902.40              | 2,752.08     | -1,018.95    | 2,758.61                | 0.00                    | 0.00                   | 0.00                  |  |



## Planning Report

|                  |                                 |                                     |                            |
|------------------|---------------------------------|-------------------------------------|----------------------------|
| <b>Database:</b> | EDM 5000.14 Single User Db      | <b>Local Co-ordinate Reference:</b> | Well Egg Roll Fed Com 223H |
| <b>Company:</b>  | Titus Oil & Gas Production, LLC | <b>TVD Reference:</b>               | 3546+25 @ 3571.00usft      |
| <b>Project:</b>  | Lea County, NM (NAD83-NME)      | <b>MD Reference:</b>                | 3546+25 @ 3571.00usft      |
| <b>Site:</b>     | A07_Egg Roll                    | <b>North Reference:</b>             | Grid                       |
| <b>Well:</b>     | Egg Roll Fed Com 223H           | <b>Survey Calculation Method:</b>   | Minimum Curvature          |
| <b>Wellbore:</b> | Permit                          |                                     |                            |
| <b>Design:</b>   | APD-Rev0                        |                                     |                            |

| Planned Survey        |                 |             |                       |              |              |                         |                         |                        |                       |  |
|-----------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-------------------------|------------------------|-----------------------|--|
| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |  |
| 12,600.00             | 89.75           | 359.63      | 9,902.84              | 2,852.08     | -1,019.60    | 2,858.60                | 0.00                    | 0.00                   | 0.00                  |  |
| 12,700.00             | 89.75           | 359.63      | 9,903.27              | 2,952.08     | -1,020.25    | 2,958.60                | 0.00                    | 0.00                   | 0.00                  |  |
| 12,800.00             | 89.75           | 359.63      | 9,903.71              | 3,052.07     | -1,020.90    | 3,058.60                | 0.00                    | 0.00                   | 0.00                  |  |
| 12,900.00             | 89.75           | 359.63      | 9,904.14              | 3,152.07     | -1,021.55    | 3,158.60                | 0.00                    | 0.00                   | 0.00                  |  |
| 13,000.00             | 89.75           | 359.63      | 9,904.58              | 3,252.07     | -1,022.21    | 3,258.60                | 0.00                    | 0.00                   | 0.00                  |  |
| 13,100.00             | 89.75           | 359.63      | 9,905.01              | 3,352.06     | -1,022.86    | 3,358.60                | 0.00                    | 0.00                   | 0.00                  |  |
| 13,200.00             | 89.75           | 359.63      | 9,905.45              | 3,452.06     | -1,023.51    | 3,458.60                | 0.00                    | 0.00                   | 0.00                  |  |
| 13,300.00             | 89.75           | 359.63      | 9,905.88              | 3,552.06     | -1,024.16    | 3,558.60                | 0.00                    | 0.00                   | 0.00                  |  |
| 13,400.00             | 89.75           | 359.63      | 9,906.32              | 3,652.05     | -1,024.81    | 3,658.60                | 0.00                    | 0.00                   | 0.00                  |  |
| 13,500.00             | 89.75           | 359.63      | 9,906.75              | 3,752.05     | -1,025.46    | 3,758.60                | 0.00                    | 0.00                   | 0.00                  |  |
| 13,600.00             | 89.75           | 359.63      | 9,907.19              | 3,852.05     | -1,026.11    | 3,858.59                | 0.00                    | 0.00                   | 0.00                  |  |
| 13,700.00             | 89.75           | 359.63      | 9,907.62              | 3,952.05     | -1,026.76    | 3,958.59                | 0.00                    | 0.00                   | 0.00                  |  |
| 13,800.00             | 89.75           | 359.63      | 9,908.06              | 4,052.04     | -1,027.42    | 4,058.59                | 0.00                    | 0.00                   | 0.00                  |  |
| 13,900.00             | 89.75           | 359.63      | 9,908.49              | 4,152.04     | -1,028.07    | 4,158.59                | 0.00                    | 0.00                   | 0.00                  |  |
| 14,000.00             | 89.75           | 359.63      | 9,908.93              | 4,252.04     | -1,028.72    | 4,258.59                | 0.00                    | 0.00                   | 0.00                  |  |
| 14,100.00             | 89.75           | 359.63      | 9,909.36              | 4,352.03     | -1,029.37    | 4,358.59                | 0.00                    | 0.00                   | 0.00                  |  |
| 14,200.00             | 89.75           | 359.63      | 9,909.80              | 4,452.03     | -1,030.02    | 4,458.59                | 0.00                    | 0.00                   | 0.00                  |  |
| 14,300.00             | 89.75           | 359.63      | 9,910.23              | 4,552.03     | -1,030.67    | 4,558.59                | 0.00                    | 0.00                   | 0.00                  |  |
| 14,400.00             | 89.75           | 359.63      | 9,910.67              | 4,652.02     | -1,031.32    | 4,658.59                | 0.00                    | 0.00                   | 0.00                  |  |
| 14,500.00             | 89.75           | 359.63      | 9,911.10              | 4,752.02     | -1,031.98    | 4,758.59                | 0.00                    | 0.00                   | 0.00                  |  |
| 14,600.00             | 89.75           | 359.63      | 9,911.54              | 4,852.02     | -1,032.63    | 4,858.59                | 0.00                    | 0.00                   | 0.00                  |  |
| 14,700.00             | 89.75           | 359.63      | 9,911.97              | 4,952.02     | -1,033.28    | 4,958.58                | 0.00                    | 0.00                   | 0.00                  |  |
| 14,800.00             | 89.75           | 359.63      | 9,912.41              | 5,052.01     | -1,033.93    | 5,058.58                | 0.00                    | 0.00                   | 0.00                  |  |
| 14,900.00             | 89.75           | 359.63      | 9,912.84              | 5,152.01     | -1,034.58    | 5,158.58                | 0.00                    | 0.00                   | 0.00                  |  |
| 15,000.00             | 89.75           | 359.63      | 9,913.28              | 5,252.01     | -1,035.23    | 5,258.58                | 0.00                    | 0.00                   | 0.00                  |  |
| 15,100.00             | 89.75           | 359.63      | 9,913.72              | 5,352.00     | -1,035.88    | 5,358.58                | 0.00                    | 0.00                   | 0.00                  |  |
| 15,200.00             | 89.75           | 359.63      | 9,914.15              | 5,452.00     | -1,036.54    | 5,458.58                | 0.00                    | 0.00                   | 0.00                  |  |
| 15,300.00             | 89.75           | 359.63      | 9,914.59              | 5,552.00     | -1,037.19    | 5,558.58                | 0.00                    | 0.00                   | 0.00                  |  |
| 15,400.00             | 89.75           | 359.63      | 9,915.02              | 5,651.99     | -1,037.84    | 5,658.58                | 0.00                    | 0.00                   | 0.00                  |  |
| 15,500.00             | 89.75           | 359.63      | 9,915.46              | 5,751.99     | -1,038.49    | 5,758.58                | 0.00                    | 0.00                   | 0.00                  |  |
| 15,600.00             | 89.75           | 359.63      | 9,915.89              | 5,851.99     | -1,039.14    | 5,858.58                | 0.00                    | 0.00                   | 0.00                  |  |
| 15,700.00             | 89.75           | 359.63      | 9,916.33              | 5,951.98     | -1,039.79    | 5,958.57                | 0.00                    | 0.00                   | 0.00                  |  |
| 15,800.00             | 89.75           | 359.63      | 9,916.76              | 6,051.98     | -1,040.44    | 6,058.57                | 0.00                    | 0.00                   | 0.00                  |  |
| 15,900.00             | 89.75           | 359.63      | 9,917.20              | 6,151.98     | -1,041.10    | 6,158.57                | 0.00                    | 0.00                   | 0.00                  |  |
| 16,000.00             | 89.75           | 359.63      | 9,917.63              | 6,251.98     | -1,041.75    | 6,258.57                | 0.00                    | 0.00                   | 0.00                  |  |
| 16,100.00             | 89.75           | 359.63      | 9,918.07              | 6,351.97     | -1,042.40    | 6,358.57                | 0.00                    | 0.00                   | 0.00                  |  |
| 16,200.00             | 89.75           | 359.63      | 9,918.50              | 6,451.97     | -1,043.05    | 6,458.57                | 0.00                    | 0.00                   | 0.00                  |  |
| 16,300.00             | 89.75           | 359.63      | 9,918.94              | 6,551.97     | -1,043.70    | 6,558.57                | 0.00                    | 0.00                   | 0.00                  |  |
| 16,400.00             | 89.75           | 359.63      | 9,919.37              | 6,651.96     | -1,044.35    | 6,658.57                | 0.00                    | 0.00                   | 0.00                  |  |
| 16,500.00             | 89.75           | 359.63      | 9,919.81              | 6,751.96     | -1,045.00    | 6,758.57                | 0.00                    | 0.00                   | 0.00                  |  |
| 16,600.00             | 89.75           | 359.63      | 9,920.24              | 6,851.96     | -1,045.65    | 6,858.57                | 0.00                    | 0.00                   | 0.00                  |  |
| 16,700.00             | 89.75           | 359.63      | 9,920.68              | 6,951.95     | -1,046.31    | 6,958.57                | 0.00                    | 0.00                   | 0.00                  |  |
| 16,800.00             | 89.75           | 359.63      | 9,921.11              | 7,051.95     | -1,046.96    | 7,058.56                | 0.00                    | 0.00                   | 0.00                  |  |
| 16,900.00             | 89.75           | 359.63      | 9,921.55              | 7,151.95     | -1,047.61    | 7,158.56                | 0.00                    | 0.00                   | 0.00                  |  |
| 17,000.00             | 89.75           | 359.63      | 9,921.98              | 7,251.94     | -1,048.26    | 7,258.56                | 0.00                    | 0.00                   | 0.00                  |  |
| 17,100.00             | 89.75           | 359.63      | 9,922.42              | 7,351.94     | -1,048.91    | 7,358.56                | 0.00                    | 0.00                   | 0.00                  |  |
| 17,200.00             | 89.75           | 359.63      | 9,922.85              | 7,451.94     | -1,049.56    | 7,458.56                | 0.00                    | 0.00                   | 0.00                  |  |
| 17,300.00             | 89.75           | 359.63      | 9,923.29              | 7,551.94     | -1,050.21    | 7,558.56                | 0.00                    | 0.00                   | 0.00                  |  |
| 17,400.00             | 89.75           | 359.63      | 9,923.72              | 7,651.93     | -1,050.87    | 7,658.56                | 0.00                    | 0.00                   | 0.00                  |  |
| 17,500.00             | 89.75           | 359.63      | 9,924.16              | 7,751.93     | -1,051.52    | 7,758.56                | 0.00                    | 0.00                   | 0.00                  |  |
| 17,600.00             | 89.75           | 359.63      | 9,924.59              | 7,851.93     | -1,052.17    | 7,858.56                | 0.00                    | 0.00                   | 0.00                  |  |
| 17,700.00             | 89.75           | 359.63      | 9,925.03              | 7,951.92     | -1,052.82    | 7,958.56                | 0.00                    | 0.00                   | 0.00                  |  |
| 17,800.00             | 89.75           | 359.63      | 9,925.46              | 8,051.92     | -1,053.47    | 8,058.56                | 0.00                    | 0.00                   | 0.00                  |  |
| 17,900.00             | 89.75           | 359.63      | 9,925.90              | 8,151.92     | -1,054.12    | 8,158.55                | 0.00                    | 0.00                   | 0.00                  |  |



## Planning Report

|                  |                                 |                                     |                            |
|------------------|---------------------------------|-------------------------------------|----------------------------|
| <b>Database:</b> | EDM 5000.14 Single User Db      | <b>Local Co-ordinate Reference:</b> | Well Egg Roll Fed Com 223H |
| <b>Company:</b>  | Titus Oil & Gas Production, LLC | <b>TVD Reference:</b>               | 3546+25 @ 3571.00usft      |
| <b>Project:</b>  | Lea County, NM (NAD83-NME)      | <b>MD Reference:</b>                | 3546+25 @ 3571.00usft      |
| <b>Site:</b>     | A07_Egg Roll                    | <b>North Reference:</b>             | Grid                       |
| <b>Well:</b>     | Egg Roll Fed Com 223H           | <b>Survey Calculation Method:</b>   | Minimum Curvature          |
| <b>Wellbore:</b> | Permit                          |                                     |                            |
| <b>Design:</b>   | APD-Rev0                        |                                     |                            |

| Planned Survey  |                 |             |                       |              |              |                         |                         |                        |                       |
|---|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-------------------------|------------------------|-----------------------|
| Measured Depth (usft)   | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
| 18,000.00   | 89.75           | 359.63      | 9,926.33              | 8,251.91     | -1,054.77    | 8,258.55                | 0.00                    | 0.00                   | 0.00                  |
| 18,100.00   | 89.75           | 359.63      | 9,926.77              | 8,351.91     | -1,055.43    | 8,358.55                | 0.00                    | 0.00                   | 0.00                  |
| 18,200.00   | 89.75           | 359.63      | 9,927.20              | 8,451.91     | -1,056.08    | 8,458.55                | 0.00                    | 0.00                   | 0.00                  |
| 18,300.00   | 89.75           | 359.63      | 9,927.64              | 8,551.90     | -1,056.73    | 8,558.55                | 0.00                    | 0.00                   | 0.00                  |
| 18,400.00   | 89.75           | 359.63      | 9,928.08              | 8,651.90     | -1,057.38    | 8,658.55                | 0.00                    | 0.00                   | 0.00                  |
| 18,500.00   | 89.75           | 359.63      | 9,928.51              | 8,751.90     | -1,058.03    | 8,758.55                | 0.00                    | 0.00                   | 0.00                  |
| 18,600.00   | 89.75           | 359.63      | 9,928.95              | 8,851.90     | -1,058.68    | 8,858.55                | 0.00                    | 0.00                   | 0.00                  |
| 18,700.00   | 89.75           | 359.63      | 9,929.38              | 8,951.89     | -1,059.33    | 8,958.55                | 0.00                    | 0.00                   | 0.00                  |
| 18,800.00   | 89.75           | 359.63      | 9,929.82              | 9,051.89     | -1,059.99    | 9,058.55                | 0.00                    | 0.00                   | 0.00                  |
| 18,900.00   | 89.75           | 359.63      | 9,930.25              | 9,151.89     | -1,060.64    | 9,158.54                | 0.00                    | 0.00                   | 0.00                  |
| 19,000.00   | 89.75           | 359.63      | 9,930.69              | 9,251.88     | -1,061.29    | 9,258.54                | 0.00                    | 0.00                   | 0.00                  |
| 19,100.00   | 89.75           | 359.63      | 9,931.12              | 9,351.88     | -1,061.94    | 9,358.54                | 0.00                    | 0.00                   | 0.00                  |
| 19,200.00   | 89.75           | 359.63      | 9,931.56              | 9,451.88     | -1,062.59    | 9,458.54                | 0.00                    | 0.00                   | 0.00                  |
| 19,300.00   | 89.75           | 359.63      | 9,931.99              | 9,551.87     | -1,063.24    | 9,558.54                | 0.00                    | 0.00                   | 0.00                  |
| 19,400.00   | 89.75           | 359.63      | 9,932.43              | 9,651.87     | -1,063.89    | 9,658.54                | 0.00                    | 0.00                   | 0.00                  |
| 19,500.00   | 89.75           | 359.63      | 9,932.86              | 9,751.87     | -1,064.54    | 9,758.54                | 0.00                    | 0.00                   | 0.00                  |
| 19,600.00   | 89.75           | 359.63      | 9,933.30              | 9,851.86     | -1,065.20    | 9,858.54                | 0.00                    | 0.00                   | 0.00                  |
| 19,700.00   | 89.75           | 359.63      | 9,933.73              | 9,951.86     | -1,065.85    | 9,958.54                | 0.00                    | 0.00                   | 0.00                  |
| 19,800.00   | 89.75           | 359.63      | 9,934.17              | 10,051.86    | -1,066.50    | 10,058.54               | 0.00                    | 0.00                   | 0.00                  |
| 19,900.00   | 89.75           | 359.63      | 9,934.60              | 10,151.86    | -1,067.15    | 10,158.54               | 0.00                    | 0.00                   | 0.00                  |
| 20,000.00   | 89.75           | 359.63      | 9,935.04              | 10,251.85    | -1,067.80    | 10,258.53               | 0.00                    | 0.00                   | 0.00                  |
| 20,100.00   | 89.75           | 359.63      | 9,935.47              | 10,351.85    | -1,068.45    | 10,358.53               | 0.00                    | 0.00                   | 0.00                  |
| 20,200.00   | 89.75           | 359.63      | 9,935.91              | 10,451.85    | -1,069.10    | 10,458.53               | 0.00                    | 0.00                   | 0.00                  |
| 20,300.00   | 89.75           | 359.63      | 9,936.34              | 10,551.84    | -1,069.76    | 10,558.53               | 0.00                    | 0.00                   | 0.00                  |
| 20,400.00   | 89.75           | 359.63      | 9,936.78              | 10,651.84    | -1,070.41    | 10,658.53               | 0.00                    | 0.00                   | 0.00                  |
| 20,500.00   | 89.75           | 359.63      | 9,937.21              | 10,751.84    | -1,071.06    | 10,758.53               | 0.00                    | 0.00                   | 0.00                  |
| 20,600.00   | 89.75           | 359.63      | 9,937.65              | 10,851.83    | -1,071.71    | 10,858.53               | 0.00                    | 0.00                   | 0.00                  |
| 20,680.38   | 89.75           | 359.63      | 9,938.00              | 10,932.21    | -1,072.23    | 10,938.91               | 0.00                    | 0.00                   | 0.00                  |
| A07-02-LTP(ER223H)  |                 |             |                       |              |              |                         |                         |                        |                       |
| 20,700.00   | 89.75           | 359.63      | 9,938.08              | 10,951.83    | -1,072.36    | 10,958.53               | 0.00                    | 0.00                   | 0.00                  |
| 20,770.38   | 89.75           | 359.63      | 9,938.39              | 11,022.21    | -1,072.82    | 11,028.91               | 0.00                    | 0.00                   | 0.00                  |
| TD: 20770.38' MD, 11028.91 VS, 9938.39' TVD - A07-03-PBHL(ER223H) |                 |             |                       |              |              |                         |                         |                        |                       |

| Design Targets  |               |              |            |              |              |                 |                |             |               |
|---|---------------|--------------|------------|--------------|--------------|-----------------|----------------|-------------|---------------|
| Target Name<br>- hit/miss target<br>- Shape   | Dip Angle (°) | Dip Dir. (°) | TVD (usft) | +N/-S (usft) | +E/-W (usft) | Northing (usft) | Easting (usft) | Latitude    | Longitude     |
| A07-00-EON(ER223H)<br>- plan hits target center<br>- Point  | 0.00          | 0.00         | 9,100.00   | 0.00         | -900.00      | 569,705.44      | 730,814.12     | 32.56467116 | -103.71830075 |
| A07-01-FTP(ER223H)<br>- plan misses target center by 38.39usft at 10306.30usft MD (9892.85 TVD, 560.44 N, -967.82 E)<br>- Point   | 0.00          | 0.00         | 9,893.00   | 555.83       | -1,005.93    | 570,261.27      | 730,708.19     | 32.56620059 | -103.71863415 |
| A07-02-LTP(ER223H)<br>- plan misses target center by 0.41usft at 20680.38usft MD (9938.00 TVD, 10932.21 N, -1072.23 E)<br>- Point | 0.00          | 0.00         | 9,938.00   | 10,932.21    | -1,072.64    | 580,637.65      | 730,641.48     | 32.59472210 | -103.71865611 |
| A07-03-PBHL(ER223H)<br>- plan hits target center<br>- Point   | 0.00          | 0.00         | 9,938.39   | 11,022.21    | -1,072.82    | 580,727.65      | 730,641.30     | 32.59496947 | -103.71865500 |





## Planning Report

|                  |                                 |                                     |                            |
|------------------|---------------------------------|-------------------------------------|----------------------------|
| <b>Database:</b> | EDM 5000.14 Single User Db      | <b>Local Co-ordinate Reference:</b> | Well Egg Roll Fed Com 223H |
| <b>Company:</b>  | Titus Oil & Gas Production, LLC | <b>TVD Reference:</b>               | 3546+25 @ 3571.00usft      |
| <b>Project:</b>  | Lea County, NM (NAD83-NME)      | <b>MD Reference:</b>                | 3546+25 @ 3571.00usft      |
| <b>Site:</b>     | A07_Egg Roll                    | <b>North Reference:</b>             | Grid                       |
| <b>Well:</b>     | Egg Roll Fed Com 223H           | <b>Survey Calculation Method:</b>   | Minimum Curvature          |
| <b>Wellbore:</b> | Permit                          |                                     |                            |
| <b>Design:</b>   | APD-Rev0                        |                                     |                            |

| Plan Annotations            |                             |                   |                 |   |  |
|-----------------------------|-----------------------------|-------------------|-----------------|---|--|
| Measured<br>Depth<br>(usft) | Vertical<br>Depth<br>(usft) | Local Coordinates |                 | Comment                                     |  |
|                             |                             | +N/-S<br>(usft)   | +E/-W<br>(usft) |   |  |
| 9,469.24                    | 9,415.00                    | 0.00              | -900.00         | KOP: 9469.24' MD, 5.81 VS, 9415.00' TVD     |  |
| 10,217.15                   | 9,892.46                    | 471.93            | -957.11         | EOC: 10217.15' MD, 478.11 VS, 9892.46' TVD  |  |
| 20,770.38                   | 9,938.39                    | 11,022.21         | -1,072.82       | TD: 20770.38' MD, 11028.91 VS, 9938.39' TVD |  |

## PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

|                         |                                    |
|-------------------------|------------------------------------|
| <b>OPERATOR'S NAME:</b> | <b>Earthstone</b>                  |
| <b>LEASE NO.:</b>       | <b>NMNM16640B</b>                  |
| <b>LOCATION:</b>        | Section 24, T.20 S., R.32 E., NMPM |
| <b>COUNTY:</b>          | Lea County, New Mexico             |

|                              |                          |
|------------------------------|--------------------------|
| <b>WELL NAME &amp; NO.:</b>  | Pakse South Fed Com 224H |
| <b>SURFACE HOLE FOOTAGE:</b> | 261'N & 1279'E           |
| <b>BOTTOM HOLE FOOTAGE:</b>  | 2631'N & 330'E           |

COA

|                      |   |  |  |
|----------------------|---|--|--|
| H2S                  | <input checked="" type="radio"/> Yes              | <input type="radio"/> No                         |  |
| Potash               | <input type="radio"/> None                        | <input type="radio"/> Secretary                  | <input checked="" type="radio"/> R-111-P |
| Cave/Karst Potential | <input checked="" type="radio"/> Low              | <input type="radio"/> Medium                     | <input type="radio"/> High               |
| Cave/Karst Potential | <input type="radio"/> Critical                    |  |  |
| Variance             | <input type="radio"/> None                        | <input checked="" type="radio"/> Flex Hose       | <input type="radio"/> Other              |
| Wellhead             | <input type="radio"/> Conventional                | <input checked="" type="radio"/> Multibowl       | <input type="radio"/> Both               |
| Other                | <input checked="" type="checkbox"/> 4 String Area | <input checked="" type="checkbox"/> Capitan Reef | <input type="checkbox"/> WIPP            |
| Other                | <input type="checkbox"/> Fluid Filled             | <input type="checkbox"/> Cement Squeeze          | <input type="checkbox"/> Pilot Hole      |
| Special Requirements | <input type="checkbox"/> Water Disposal           | <input checked="" type="checkbox"/> COM          | <input type="checkbox"/> Unit            |

### A. HYDROGEN SULFIDE

A Hydrogen Sulfide (H2S) Drilling Plan shall be activated 500 feet prior to drilling into the **Delaware** formation. As a result, the Hydrogen Sulfide area must meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, please provide measured values and formations to the BLM.

### B. CASING

1. The **16** inch surface casing shall be set at approximately **1160** feet (a minimum of **25 feet (Lea County)** into the Rustler Anhydrite and above the salt) and cemented to the surface.
  - a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.
  - b. Wait on cement (WOC) time for a primary cement job will be a minimum of

**24 hours in the Potash Area** or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement)

- c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
  - d. If cement falls back, remedial cementing will be done prior to drilling out that string.
2. The minimum required fill of cement behind the **11.75** inch intermediate casing is:
- Cement to surface. If cement does not circulate see B.1.a, c-d above.
- Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst or potash.**

- ❖ In R111 Potash Areas if cement does not circulate to surface on the first two salt protection casing strings, the cement on the 3rd casing string must come to surface.
- ❖ In Capitan Reef Areas if cement does not circulate to surface on the first two casing strings, the cement on the 3rd casing string must come to surface.
- ❖ **Special Capitan Reef requirements.** If lost circulation (50% or greater) occurs below the Base of the Salt, the operator shall do the following:  
**(Use this for 3 string wells in the Capitan Reef, if 4 string well ensure FW based mud used across the capitan interval)**
  - Switch to fresh water mud to protect the Capitan Reef and use fresh water mud until setting the intermediate casing. The appropriate BLM office is to be notified for a PET to witness the switch to fresh water.
  - Daily drilling reports from the Base of the Salt to the setting of the intermediate casing are to be submitted to the BLM CFO engineering staff via e-mail by 0800 hours each morning. Any lost circulation encountered is to be recorded on these drilling reports. The daily drilling report should show mud volume per shift/tour. Failure to submit these reports will result in an Incidence of Non-Compliance being issued for failure to comply with the Conditions of Approval. If not already planned, the operator shall run a caliper survey for the intermediate well bore and submit to the appropriate BLM office.

3. The minimum required fill of cement behind the **8-5/8** inch intermediate casing is:
  - Operator has proposed a DV tool, the depth may be adjusted as long as the cement is changed proportionally. The DV tool may be cancelled if cement circulates to surface on the first stage.
    - a. First stage to DV tool: Cement to circulate. If cement does not circulate off the DV tool, contact the appropriate BLM office before proceeding with second stage cement job.
    - b. Second stage above DV tool: Cement to surface. If cement does not circulate see B.1.a, c-d above. **Excess calculates to 6%. Additional cement maybe required.**  
**Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst, potash or capitan reef.**

4. The minimum required fill of cement behind the **5-1/2** inch production casing is:
  - Cement should tie-back at least **50 feet(3487 ft )** on top of Capitan Reef top. If cement does not circulate see B.1.a, c-d above.  
**Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst, potash or capitan reef.**

### C. PRESSURE CONTROL

1. **Variance approved to use flex line from BOP to choke manifold. Manufacturer's specification to be readily available. No external damage to flex line. Flex line to be installed as straight as possible (no hard bends).**
2. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface and 1<sup>st</sup> intermediate casing shoe shall be **2000 (2M)** psi.
3. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the 2<sup>nd</sup> intermediate casing shoe shall be **3000 (3M)** psi.
  - a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
  - b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
  - c. Manufacturer representative shall install the test plug for the initial BOP test.
  - d. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
  - e. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.

**D. SPECIAL REQUIREMENT (S)****Communitization Agreement**

- The operator will submit a Communitization Agreement to the Santa Fe Office, 301 Dinosaur Trail Santa Fe, New Mexico 87508, at least 90 days before the anticipated date of first production from a well subject to a spacing order issued by the New Mexico Oil Conservation Division. The Communitization Agreement will include the signatures of all working interest owners in all Federal and Indian leases subject to the Communitization Agreement (i.e., operating rights owners and lessees of record), or certification that the operator has obtained the written signatures of all such owners and will make those signatures available to the BLM immediately upon request.
- If the operator does not comply with this condition of approval, the BLM may take enforcement actions that include, but are not limited to, those specified in 43 CFR 3163.1.
- In addition, the well sign shall include the surface and bottom hole lease numbers. When the Communitization Agreement number is known, it shall also be on the sign.

**GENERAL REQUIREMENTS**

The BLM is to be notified in advance for a representative to witness:

- a. Spudding well (minimum of 24 hours)
- b. Setting and/or Cementing of all casing strings (minimum of 4 hours)
- c. BOPE tests (minimum of 4 hours)

☒ Eddy County

Call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220,  
(575) 361-2822

☒ Lea County

Call the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240, (575)  
689-5981

1. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.
  - a. In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure

- rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).
- b. When the operator proposes to set surface casing with Spudder Rig
    - Notify the BLM when moving in and removing the Spudder Rig.
    - Notify the BLM when moving in the 2<sup>nd</sup> Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
    - BOP/BOPE test to be conducted per Onshore Oil and Gas Order No. 2 as soon as 2nd Rig is rigged up on well.
  2. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.
  3. The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.

#### A. CASING

1. Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.
2. Wait on cement (WOC) for Potash Areas: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi for all cement blends, 2) until cement has been in place at least 24 hours. WOC time will be recorded in the driller's log. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.
3. Wait on cement (WOC) for Water Basin: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.

4. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.
5. No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.
6. On that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Formation at the shoe shall be tested to a minimum of the mud weight equivalent anticipated to control the formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.
7. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.
8. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.

**B. PRESSURE CONTROL**

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.
2. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: The flex line must meet the requirements of API 16C. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.
3. 5M or higher system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.
4. If the operator has proposed a multi-bowl wellhead assembly in the APD. The following requirements must be met:
  - a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.

- b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
  - c. Manufacturer representative shall install the test plug for the initial BOP test.
  - d. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.
  - e. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
- a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).
  - b. In potash areas, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. For all casing strings, casing cut-off and BOP installation can be initiated at twelve hours after bumping the plug. However, **no tests** shall commence until the cement has had a minimum of 24 hours setup time, except the casing pressure test can be initiated immediately after bumping the plug (only applies to single stage cement jobs).
  - c. The tests shall be done by an independent service company utilizing a test plug not a cup or J-packer. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to Onshore Order 2 with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for water basin (8 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).
  - d. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall



have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.

- e. The results of the test shall be reported to the appropriate BLM office.
- f. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.
- g. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.
- h. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the Wolfcamp formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.

#### C. DRILLING MUD

Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, shall be operating before drilling into the Wolfcamp formation, and shall be used until production casing is run and cemented.

#### D. WASTE MATERIAL AND FLUIDS

All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of drilling operations and completion operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location or surrounding area.

Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.

**ZS102422**

**PECOS DISTRICT  
SURFACE USE  
CONDITIONS OF APPROVAL**

|   |   |
|---|---|
| OPERATOR'S NAME:<br>WELL NAME & NO.:<br>SURFACE HOLE FOOTAGE:<br>BOTTOM HOLE FOOTAGE:<br>LOCATION:<br>COUNTY: | TITUS OIL AND GAS PRODUCTION, LLC<br>Pakse South Fed Com 111H<br>306'/N & 309'/W<br>2631'/N & 335'/W<br>Section 24 T.20 S., R.32 E., NMP<br>Lea County, New Mexico  |
| OPERATOR'S NAME:<br>WELL NAME & NO.:<br>SURFACE HOLE FOOTAGE:<br>BOTTOM HOLE FOOTAGE:<br>LOCATION:<br>COUNTY: | TITUS OIL AND GAS PRODUCTION, LLC<br>Pakse South Fed Com 321H<br>306'/N & 339'/W<br>2631'/N & 1030'/W<br>Section 24 T.20 S., R.32 E., NMP<br>Lea County, New Mexico |
| OPERATOR'S NAME:<br>WELL NAME & NO.:<br>SURFACE HOLE FOOTAGE:<br>BOTTOM HOLE FOOTAGE:<br>LOCATION:<br>COUNTY: | TITUS OIL AND GAS PRODUCTION, LLC<br>Egg Roll Fed Com 111H<br>276'/N & 539'/W<br>10'/N & 990'/W<br>Section 24 T.20 S., R.32 E., NMP<br>Lea County, New Mexico       |
| OPERATOR'S NAME:<br>WELL NAME & NO.:<br>SURFACE HOLE FOOTAGE:<br>BOTTOM HOLE FOOTAGE:<br>LOCATION:<br>COUNTY: | TITUS OIL AND GAS PRODUCTION, LLC<br>Egg Roll Fed Com 431H<br>306'/N & 539'/W<br>10'/N & 990'/W<br>Section 24 T.20 S., R.32 E., NMP<br>Lea County, New Mexico       |
| OPERATOR'S NAME:<br>WELL NAME & NO.:<br>SURFACE HOLE FOOTAGE:<br>BOTTOM HOLE FOOTAGE:<br>LOCATION:<br>COUNTY: | TITUS OIL AND GAS PRODUCTION, LLC<br>Pakse South Fed Com 221H<br>267'/N & 1307'/W<br>10'/N & 990'/W<br>Section 24 T.20 S., R.32 E., NMP<br>Lea County, New Mexico   |
| OPERATOR'S NAME:<br>WELL NAME & NO.:<br>SURFACE HOLE FOOTAGE:<br>BOTTOM HOLE FOOTAGE:<br>LOCATION:<br>COUNTY: | TITUS OIL AND GAS PRODUCTION, LLC<br>Pakse South Fed Com 222H<br>267'/N & 1337'/W<br>10'/N & 2310'/W<br>Section 24 T.20 S., R.32 E., NMP<br>Lea County, New Mexico  |
| OPERATOR'S NAME:<br>WELL NAME & NO.:<br>SURFACE HOLE FOOTAGE:<br>BOTTOM HOLE FOOTAGE:<br>LOCATION:<br>COUNTY: | TITUS OIL AND GAS PRODUCTION, LLC<br>Egg Roll Fed Com 221H<br>467'/N & 1306'/W<br>10'/N & 330'/W<br>Section 24 T.20 S., R.32 E., NMP<br>Lea County, New Mexico      |

|   |  |
|---|--|
| OPERATOR'S NAME:<br>WELL NAME & NO.:<br>SURFACE HOLE FOOTAGE:<br>BOTTOM HOLE FOOTAGE:<br>LOCATION:<br>COUNTY: | TITUS OIL AND GAS PRODUCTION, LLC<br>Egg Roll Fed Com 222H<br>467'/N & 1336'/W<br>10'/N & 1650'/W<br>Section 24 T.20 S., R.32 E., NMP<br>Lea County, New Mexico      |
| OPERATOR'S NAME:<br>WELL NAME & NO.:<br>SURFACE HOLE FOOTAGE:<br>BOTTOM HOLE FOOTAGE:<br>LOCATION:<br>COUNTY: | TITUS OIL AND GAS PRODUCTION, LLC<br>Egg Roll Fed Com 112H<br>264'/N & 2048'/W<br>10'/N & 2310'/W<br>Section 24 T.20 S., R.32 E., NMP<br>Lea County, New Mexico      |
| OPERATOR'S NAME:<br>WELL NAME & NO.:<br>SURFACE HOLE FOOTAGE:<br>BOTTOM HOLE FOOTAGE:<br>LOCATION:<br>COUNTY: | TITUS OIL AND GAS PRODUCTION, LLC<br>Egg Roll Fed Com 432H<br>294'/N & 2048'/W<br>10'/N & 2310'/W<br>Section 24 T.20 S., R.32 E., NMP<br>Lea County, New Mexico      |
| OPERATOR'S NAME:<br>WELL NAME & NO.:<br>SURFACE HOLE FOOTAGE:<br>BOTTOM HOLE FOOTAGE:<br>LOCATION:<br>COUNTY: | TITUS OIL AND GAS PRODUCTION, LLC<br>Pakse South Fed Com 223H<br>261'/N & 1309'/E<br>2629'/N & 1650'/E<br>Section 24 T.20 S., R.32 E., NMP<br>Lea County, New Mexico |
| OPERATOR'S NAME:<br>WELL NAME & NO.:<br>SURFACE HOLE FOOTAGE:<br>BOTTOM HOLE FOOTAGE:<br>LOCATION:<br>COUNTY: | TITUS OIL AND GAS PRODUCTION, LLC<br>Pakse South Fed Com 224H<br>261'/N & 1279'/E<br>2631'/N & 330'/E<br>Section 24 T.20 S., R.32 E., NMP<br>Lea County, New Mexico  |
| OPERATOR'S NAME:<br>WELL NAME & NO.:<br>SURFACE HOLE FOOTAGE:<br>BOTTOM HOLE FOOTAGE:<br>LOCATION:<br>COUNTY: | TITUS OIL AND GAS PRODUCTION, LLC<br>Egg Roll Fed Com 223H<br>461'/N & 1309'/E<br>10'/N & 2310'/E<br>Section 24 T.20 S., R.32 E., NMP<br>Lea County, New Mexico      |
| OPERATOR'S NAME:<br>WELL NAME & NO.:<br>SURFACE HOLE FOOTAGE:<br>BOTTOM HOLE FOOTAGE:<br>LOCATION:<br>COUNTY: | TITUS OIL AND GAS PRODUCTION, LLC<br>Egg Roll Fed Com 224H<br>461'/N & 1279'/E<br>10'/N & 990'/E<br>Section 24 T.20 S., R.32 E., NMP<br>Lea County, New Mexico       |

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Standard Conditions of Approval (COA) apply to this APD. If any deviations to these standards exist or special COAs are required, the section with the deviation or requirement will be checked below.

- ☐ **General Provisions**
- ☐ **Permit Expiration**
- ☐ **Archaeology, Paleontology, and Historical Sites**
- ☐ **Noxious Weeds**
- ☒ **Special Requirements**
  - Lesser Prairie-Chicken Timing Stipulations
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  - Federal Mineral Material Pits
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  - Well Structures & Facilities
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## **I. GENERAL PROVISIONS**

The approval of the Application For Permit To Drill (APD) is in compliance with all applicable laws and regulations: 43 Code of Federal Regulations 3160, the lease terms, Onshore Oil and Gas Orders, Notices To Lessees, New Mexico Oil Conservation Division (NMOCD) Rules, National Historical Preservation Act As Amended, and instructions and orders of the Authorized Officer. Any request for a variance shall be submitted to the Authorized Officer on Form 3160-5, Sundry Notices and Report on Wells.

## **II. PERMIT EXPIRATION**

If the permit terminates prior to drilling and drilling cannot be commenced within 60 days after expiration, an operator is required to submit Form 3160-5, Sundry Notices and Reports on Wells, requesting surface reclamation requirements for any surface disturbance. However, if the operator will be able to initiate drilling within 60 days after the expiration of the permit, the operator must have set the conductor pipe in order to allow for an extension of 60 days beyond the expiration date of the APD. (Filing of a Sundry Notice is required for this 60 day extension.)

## **III. ARCHAEOLOGICAL, PALEONTOLOGY & HISTORICAL SITES**

Any cultural and/or paleontological resource discovered by the operator or by any person working on the operator's behalf shall immediately report such findings to the Authorized Officer. The operator is fully accountable for the actions of their contractors and subcontractors. The operator shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery shall be made by the Authorized Officer to determine the appropriate actions that shall be required to prevent the loss of significant cultural or scientific values of the discovery. The operator shall be held responsible for the cost of the proper mitigation measures that the Authorized Officer assesses after consultation with the operator on the evaluation and decisions of the discovery. Any unauthorized collection or disturbance of cultural or paleontological resources may result in a shutdown order by the Authorized Officer.

## **IV. NOXIOUS WEEDS**

The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes the roads, pads, associated pipeline corridor, and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

## V. SPECIAL REQUIREMENT(S)

### **Timing Limitation Stipulation / Condition of Approval for lesser prairie-chicken:**

Oil and gas activities including 3-D geophysical exploration, and drilling will not be allowed in lesser prairie-chicken habitat during the period from March 1st through June 15th annually. During that period, other activities that produce noise or involve human activity, such as the maintenance of oil and gas facilities, pipeline, road, and well pad construction, will be allowed except between 3:00 am and 9:00 am. The 3:00 am to 9:00 am restriction will not apply to normal, around-the-clock operations, such as venting, flaring, or pumping, which do not require a human presence during this period. Additionally, no new drilling will be allowed within up to 200 meters of leks known at the time of permitting. Normal vehicle use on existing roads will not be restricted. Exhaust noise from pump jack engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 feet from the source of the noise.

**Ground-level Abandoned Well Marker to avoid raptor perching:** Upon the plugging and subsequent abandonment of the well, the well marker will be installed at ground level on a plate containing the pertinent information for the plugged well. For more installation details, contact the Carlsbad Field Office at 575-234-5972.

### **Timing Limitation Exceptions:**

The Carlsbad Field Office will publish an annual map of where the LPC timing and noise stipulations and conditions of approval (Limitations) will apply for the identified year (between March 1 and June 15) based on the latest survey information. The LPC Timing Area map will identify areas which are Habitat Areas (HA), Isolated Population Area (IPA), and Primary Population Area (PPA). The LPC Timing Area map will also have an area in red crosshatch. The red crosshatch area is the only area where an operator is required to submit a request for exception to the LPC Limitations. If an operator is operating outside the red crosshatch area, the LPC Limitations do not apply for that year and an exception to LPC Limitations is not required.

### **Potash Resources**

Lessees must comply with the 2012 Secretarial Potash Order. The Order is designed to manage the efficient development of oil, gas, and potash resources. Section 6 of the Order provides general provisions which must be followed to minimize conflict between the industries and ensure the safety of operations.

To minimize impacts to potash resources, the proposed well is confined within the boundaries of the established Tetris Anise Drill Island.

### **Hydrology**

The entire well pad will be bermed to prevent oil, salt, and other chemical contaminants from leaving the well pad. Topsoil shall not be used to construct the berm. No water flow from the uphill side(s) of the pad shall be allowed to enter the well pad. The berm shall be maintained through the life of the well and after interim reclamation has been completed.

Any water erosion that may occur due to the construction of the well pad during the life of the well will be quickly corrected and proper measures will be taken to prevent future erosion.

Tank battery locations will be lined and bermed. A 20 mil permanent liner will be installed with a 4 oz. felt backing to prevent tears or punctures. Tank battery berms must be large enough to contain 1 ½ times the content of the largest tank.

## **VI. CONSTRUCTION**

### **A. NOTIFICATION**

The BLM shall administer compliance and monitor construction of the access road and well pad. Notify the Carlsbad Field Office at (575) 234-5909 at least 3 working days prior to commencing construction of the access road and/or well pad.

When construction operations are being conducted on this well, the operator shall have the approved APD and Conditions of Approval (COA) on the well site and they shall be made available upon request by the Authorized Officer.

### **B. TOPSOIL**

The operator shall strip the top portion of the soil (root zone) from the entire well pad area and stockpile the topsoil along the edge of the well pad as depicted in the APD. The root zone is typically six (6) inches in depth. All the stockpiled topsoil will be redistributed over the interim reclamation areas. Topsoil shall not be used for berming the pad or facilities. For final reclamation, the topsoil shall be spread over the entire pad area for seeding preparation.

Other subsoil (below six inches) stockpiles must be completely segregated from the topsoil stockpile. Large rocks or subsoil clods (not evident in the surrounding terrain) must be buried within the approved area for interim and final reclamation.

### **C. CLOSED LOOP SYSTEM**

Tanks are required for drilling operations: No Pits.

The operator shall properly dispose of drilling contents at an authorized disposal site.

### **D. FEDERAL MINERAL MATERIALS PIT**

Payment shall be made to the BLM prior to removal of any federal mineral materials. Call the Carlsbad Field Office at (575) 234-5972.

### **E. WELL PAD SURFACING**

Surfacing of the well pad is not required.

If the operator elects to surface the well pad, the surfacing material may be required to be removed at the time of reclamation. The well pad shall be constructed in a manner which creates the smallest possible surface disturbance, consistent with safety and operational needs.

### **F. EXCLOSURE FENCING (CELLARS & PITS)**

**Exclosure Fencing**



The operator will install and maintain enclosure fencing for all open well cellars to prevent access to public, livestock, and large forms of wildlife before and after drilling operations until the pit is free of fluids and the operator initiates backfilling. (For examples of enclosure fencing design, refer to BLM's Oil and Gas Gold Book, Enclosure Fence Illustrations, Figure 1, Page 18.)

## **G. ON LEASE ACCESS ROADS**

### **Road Width**

The access road shall have a driving surface that creates the smallest possible surface disturbance and does not exceed fourteen (14) feet in width. The maximum width of surface disturbance, when constructing the access road, shall not exceed thirty (30) feet.

### **Surfacing**

Surfacing material is not required on the new access road driving surface. If the operator elects to surface the new access road or pad, the surfacing material may be required to be removed at the time of reclamation.

Where possible, no improvements should be made on the unsurfaced access road other than to remove vegetation as necessary, road irregularities, safety issues, or to fill low areas that may sustain standing water.

The Authorized Officer reserves the right to require surfacing of any portion of the access road at any time deemed necessary. Surfacing may be required in the event the road deteriorates, erodes, road traffic increases, or it is determined to be beneficial for future field development. The surfacing depth and type of material will be determined at the time of notification.

### **Crowning**

Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

### **Ditching**

Ditching shall be required on both sides of the road.

### **Turnouts**

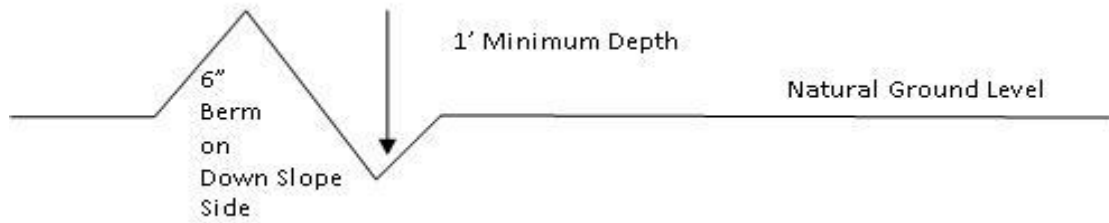
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall conform to Figure 1; cross section and plans for typical road construction.

### **Drainage**

Drainage control systems shall be constructed on the entire length of road (e.g. ditches, sidehill outslowing and inslaping, lead-off ditches, culvert installation, and low water crossings).

A typical lead-off ditch has a minimum depth of 1 foot below and a berm of 6 inches above natural ground level. The berm shall be on the down-slope side of the lead-off ditch.

### Cross Section of a Typical Lead-off Ditch



All lead-off ditches shall be graded to drain water with a 1 percent minimum to 3 percent maximum ditch slope. The spacing interval are variable for lead-off ditches and shall be determined according to the formula for spacing intervals of lead-off ditches, but may be amended depending upon existing soil types and centerline road slope (in %);

### Formula for Spacing Interval of Lead-off Ditches

Example - On a 4% road slope that is 400 feet long, the water flow shall drain water into a lead-off ditch. Spacing interval shall be determined by the following formula:

$$400 \text{ foot road with } 4\% \text{ road slope: } \frac{400'}{4\%} + 100' = 200' \text{ lead-off ditch interval}$$

### Cattle guards

An appropriately sized cattle guard sufficient to carry out the project shall be installed and maintained at fence/road crossings. Any existing cattle guards on the access road route shall be repaired or replaced if they are damaged or have deteriorated beyond practical use. The operator shall be responsible for the condition of the existing cattle guards that are in place and are utilized during lease operations.

### Fence Requirement

Where entry is granted across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting. The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fences.

### Livestock Watering Requirement

Any damage to structures that provide water to livestock throughout the life of the well, caused by operations from the well site, must be immediately corrected by the operator. The operator must notify the BLM office (575-234-5972) and the private surface landowner or the grazing allotment holder if any damage occurs to structures that provide water to livestock.

### Public Access

Public access on this road shall not be restricted by the operator without specific written approval granted by the Authorized Officer.

**Construction Steps**

1. Salvage topsoil
2. Construct road

3. Redistribute topsoil
4. Revegetate slopes



Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

## VII. PRODUCTION (POST DRILLING)

### A. WELL STRUCTURES & FACILITIES

#### **Placement of Production Facilities**

Production facilities should be placed on the well pad to allow for maximum interim recontouring and revegetation of the well location.

#### **Exclosure Netting (Open-top Tanks)**

Immediately following active drilling or completion operations, the operator will take actions necessary to prevent wildlife and livestock access, including avian wildlife, to all open-topped tanks that contain or have the potential to contain salinity sufficient to cause harm to wildlife or livestock, hydrocarbons, or Resource Conservation and Recovery Act of 1976-exempt hazardous substances. At a minimum, the operator will net, screen, or cover open-topped tanks to exclude wildlife and livestock and prevent mortality. If the operator uses netting, the operator will cover and secure the open portion of the tank to prevent wildlife entry. The operator will net, screen, or cover the tanks until the operator removes the tanks from the location or the tanks no longer contain substances that could be harmful to wildlife or livestock. Use a maximum netting mesh size of 1 ½ inches. The netting must not be in contact with fluids and must not have holes or gaps.

#### **Chemical and Fuel Secondary Containment and Exclosure Screening**

The operator will prevent all hazardous, poisonous, flammable, and toxic substances from coming into contact with soil and water. At a minimum, the operator will install and maintain an impervious secondary containment system for any tank or barrel containing hazardous, poisonous, flammable, or toxic substances sufficient to contain the contents of the tank or barrel and any drips, leaks, and anticipated precipitation. The operator will dispose of fluids within the containment system that do not meet applicable state or U. S. Environmental Protection Agency livestock water standards in accordance with state law; the operator must not drain the fluids to the soil or ground. The operator will design, construct, and maintain all secondary containment systems to prevent wildlife and livestock exposure to harmful substances. At a minimum, the operator will install effective wildlife and livestock exclosure systems such as fencing, netting, expanded metal mesh, lids, and grate covers. Use a maximum netting mesh size of 1 ½ inches.

#### **Open-Vent Exhaust Stack Exclosures**

The operator will construct, modify, equip, and maintain all open-vent exhaust stacks on production equipment to prevent birds and bats from entering, and to discourage perching, roosting, and nesting. (*Recommended exclosure structures on open-vent exhaust stacks are in the shape of a cone.*) Production equipment includes, but may not be limited to, tanks, heater-treaters, separators, dehydrators, flare stacks, in-line units, and compressor mufflers.

#### **Containment Structures**

Proposed production facilities such as storage tanks and other vessels will have a secondary containment structure that is constructed to hold the capacity of 1.5 times the

largest tank, plus freeboard to account for precipitation, unless more stringent protective requirements are deemed necessary.

### **Painting Requirement**

All above-ground structures including meter housing that are not subject to safety requirements shall be painted a flat non-reflective paint color, **Shale Green** from the BLM Standard Environmental Color Chart (CC-001: June 2008).

## **B. BURIED PIPELINES STIPULATIONS**

A copy of the application (Grant, APD, or Sundry Notice) and attachments, including conditions of approval, survey plat and/or map, will be on location during construction. BLM personnel may request to you a copy of your permit during construction to ensure compliance with all stipulations.

Holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer:

1. The Holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.
2. The Holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 et seq. (1982) with regards to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.
3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, et seq.) on the Right-of-Way (unless the release or threatened release is wholly unrelated to the Right-of-Way holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way holder on the Right-of-Way. This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

4. If, during any phase of the construction, operation, maintenance, or termination of the pipeline, any oil or other pollutant should be discharged from the pipeline system, impacting Federal lands, the control and total removal, disposal, and cleaning up of such oil or other pollutant, wherever found, shall be the responsibility of holder, regardless of fault. Upon failure of holder to control, dispose of, or clean up such discharge on or affecting Federal lands, or to repair all damages resulting therefrom, on the Federal lands, the Authorized Officer may take such measures as he deems necessary to control and clean up the discharge and restore the area, including where appropriate, the aquatic environment and fish and wildlife habitats, at the full expense of the holder. Such action by the Authorized Officer shall not relieve holder of any responsibility as provided herein.

5. All construction and maintenance activity will be confined to the authorized right-of-way.

6. The pipeline will be buried with a minimum cover of 36 inches between the top of the pipe and ground level.

7. The maximum allowable disturbance for construction in this right-of-way will be 30 feet:

- Blading of vegetation within the right-of-way will be allowed: maximum width of blading operations will not exceed 20 feet. The trench is included in this area. (*Blading is defined as the complete removal of brush and ground vegetation.*)
- Clearing of brush species within the right-of-way will be allowed: maximum width of clearing operations will not exceed 30 feet. The trench and bladed area are included in this area. (*Clearing is defined as the removal of brush while leaving ground vegetation (grasses, weeds, etc.) intact. Clearing is best accomplished by holding the blade 4 to 6 inches above the ground surface.*)
- The remaining area of the right-of-way (if any) shall only be disturbed by compressing the vegetation. (*Compressing can be caused by vehicle tires, placement of equipment, etc.*)

8. The holder shall stockpile an adequate amount of topsoil where blading is allowed. The topsoil to be stripped is approximately 6 inches in depth. The topsoil will be segregated from other spoil piles from trench construction. The topsoil will be evenly distributed over the bladed area for the preparation of seeding.

9. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the owner of any improvements prior to disturbing them. When



necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting of the fence. No permanent gates will be allowed unless approved by the Authorized Officer.

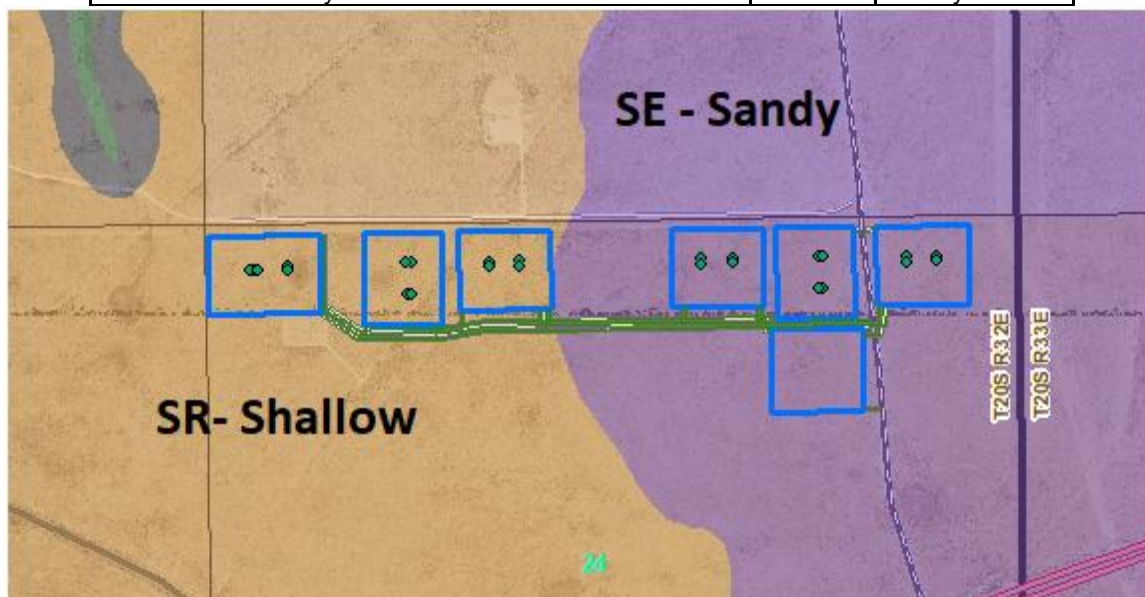
10. Vegetation, soil, and rocks left as a result of construction or maintenance activity will be randomly scattered on this right-of-way and will not be left in rows, piles, or berms, unless otherwise approved by the Authorized Officer. The entire right-of-way shall be recontoured to match the surrounding landscape. The backfilled soil shall be compacted and a 6 inch berm will be left over the ditch line to allow for settling back to grade.

11. In those areas where erosion control structures are required to stabilize soil conditions, the holder will install such structures as are suitable for the specific soil conditions being encountered and which are in accordance with sound resource management practices.

12. The holder will reseed all disturbed areas. Seeding will be done according to the attached seeding requirements, using the following seed mix.

- |  |  |
|--|--|
| <input type="checkbox"/> seed mixture 1            | <input checked="" type="checkbox"/> seed mixture 3 |
| <input checked="" type="checkbox"/> seed mixture 2 | <input type="checkbox"/> seed mixture 4            |
| <input type="checkbox"/> seed mixture 2/LPC        | <input type="checkbox"/> Aplomado Falcon Mixture   |

| Map Unit                 | Abbrev. | Soil Type |
|--------------------------|---------|-----------|
| Simona Upton Association | SR      | Shallow   |
| Simona Fine Sandy Loam   | SE      | Sandy     |





13. All above-ground structures not subject to safety requirements shall be painted by the holder to blend with the natural color of the landscape. The paint used shall be color which simulates "Standard Environmental Colors" – **Shale Green**, Munsell Soil Color No. 5Y 4/2.

14. The pipeline will be identified by signs at the point of origin and completion of the right-of-way and at all road crossings. At a minimum, signs will state the holder's name, BLM serial number, and the product being transported. All signs and information thereon will be posted in a permanent, conspicuous manner, and will be maintained in a legible condition for the life of the pipeline.

15. The holder shall not use the pipeline route as a road for purposes other than routine maintenance as determined necessary by the Authorized Officer in consultation with the holder before maintenance begins. The holder will take whatever steps are necessary to ensure that the pipeline route is not used as a roadway. As determined necessary during the life of the pipeline, the Authorized Officer may ask the holder to construct temporary deterrence structures.

16. Any cultural and/or paleontological resources (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the Authorized Officer. Holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery will be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the Authorized Officer after consulting with the holder.

17. The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes associated roads, pipeline corridor and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

18. Escape Ramps - The operator will construct and maintain pipeline/utility trenches that are not otherwise fenced, screened, or netted to prevent livestock, wildlife, and humans from becoming entrapped. At a minimum, the operator will construct and maintain escape ramps, ladders, or other methods of avian and terrestrial wildlife escape in the trenches according to the following criteria:

- a. Any trench left open for eight (8) hours or less is not required to have escape ramps; however, before the trench is backfilled, the contractor/operator shall

- inspect the trench for wildlife, remove all trapped wildlife, and release them at least 100 yards from the trench.
- b. For trenches left open for eight (8) hours or more, earthen escape ramps (built at no more than a 30 degree slope and spaced no more than 500 feet apart) shall be placed in the trench.

19. Special Stipulations:

**Range:**

**Cattleguards**

Where a permanent cattlegaurd is approved, an appropriately sized cattleguard(s) sufficient to carry out the project shall be installed and maintained at fence crossing(s). Any existing cattleguard(s) on the access road shall be repaired or replaced if they are damaged or have deteriorated beyond practical use. The operator shall be responsible for the condition of the existing cattleguard(s) that are in place and are utilized during lease operations. A gate shall be constructed on one side of the cattleguard and fastened securely to H-braces.

**Fence Requirement**

Where entry granted across a fence line, the fence must be braced and tied off on both sides of the passageway prior to cutting. Once the work is completed, the fence will be restored to its prior condition, or better. The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fence(s).

**Livestock Watering Requirement**

Any damage to structures that provide water to livestock throughout the life of the well, caused by operations from the well site, must be immediately corrected by the operator. The operator must notify the BLM office (575-234-5972) and the private surface landowner or the grazing allotment holder if any damage occurs to structures that provide water to livestock.

**Wildlife:**

*Lesser Prairie-Chicken*

Oil and gas activities will not be allowed in lesser prairie-chicken habitat during the period from March 1st through June 15th annually. During that period, other activities that produce noise or involve human activity, such as the maintenance of oil and gas facilities, geophysical exploration other than 3-D operations, and pipeline, road, and well pad construction, will be allowed except between 3:00 am and 9:00 am. The 3:00 am to 9:00 am restriction will not apply to normal, around-the-clock operations, such as venting, flaring, or pumping, which do not require a human presence during this period. Normal vehicle use on existing roads will not be restricted. Exhaust noise from pump jack engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 ft. from the source of the noise.

This authorization is subject to your Certificate of Participation and/or Certificate of Inclusion under the New Mexico Candidate Conservation Agreement. Because it

involves surface disturbing activities covered under your Certificate, your Habitat Conservation Fund Account with the Center of Excellence for Hazardous Materials Management (CEHMM) will be debited according to Exhibit B Part 2 of the Certificate of Participation.

### **C. ELECTRIC LINES STIPULATIONS**

**A copy of the grant and attachments, including stipulations, survey plat and/or map, will be on location during construction. BLM personnel may request to you a copy of your permit during construction to ensure compliance with all stipulations.**

Holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer:

1. The holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.
2. The holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 et seq. (1982) with regards to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR, Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.
3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, et seq.) on the Right-of-Way (unless the release or threatened release is wholly unrelated to the Right-of-Way holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way holder on the Right-of-Way. This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.
4. There will be no clearing or blading of the right-of-way unless otherwise agreed to in writing by the Authorized Officer.
5. Power lines shall be constructed and designed in accordance to standards outlined in "Suggested Practices for Avian Protection on Power lines: The State of the Art in 2006" Edison Electric Institute, APLIC, and the California Energy Commission 2006 . The holder shall assume the burden and expense of proving that pole designs not shown in the above publication deter raptor perching, roosting, and nesting. Such proof shall be

provided by a raptor expert approved by the Authorized Officer. The BLM reserves the right to require modification or additions to all powerline structures placed on this right-of-way, should they be necessary to ensure the safety of large perching birds. Such modifications and/or additions shall be made by the holder without liability or expense to the United States.

Raptor deterrence will consist of but not limited to the following: triangle perch discouragers shall be placed on each side of the cross arms and a nonconductive perching deterrence shall be placed on all vertical poles that extend past the cross arms.

6. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting the fence. No permanent gates will be allowed unless approved by the Authorized Officer.

7. The BLM serial number assigned to this authorization shall be posted in a permanent, conspicuous manner where the power line crosses roads and at all serviced facilities. Numbers will be at least two inches high and will be affixed to the pole nearest the road crossing and at the facilities served.

8. Upon cancellation, relinquishment, or expiration of this grant, the holder shall comply with those abandonment procedures as prescribed by the Authorized Officer.

9. All surface structures (poles, lines, transformers, etc.) shall be removed within 180 days of abandonment, relinquishment, or termination of use of the serviced facility or facilities or within 180 days of abandonment, relinquishment, cancellation, or expiration of this grant, whichever comes first. This will not apply where the power line extends service to an active, adjoining facility or facilities.

10. Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the Authorized Officer. Holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery will be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the Authorized Officer after consulting with the holder.

11. Special Stipulations:

**Hydrology:**

Any water erosion that may occur due to the construction of overhead electric line and during the life of the power line will be quickly corrected and proper measures will be taken to prevent future erosion. A power pole should not be placed in drainages, playas,

wetlands, riparian areas, or floodplains and must span across the features at a distance away that would not promote further erosion

**Wildlife:**

*Timing Limitation Stipulation/Condition of Approval for Lesser Prairie-Chicken:*

Oil and gas activities including 3-D geophysical exploration, and drilling will not be allowed in lesser prairie-chicken habitat during the period from March 1st through June 15th annually. During that period, other activities that produce noise or involve human activity, such as the maintenance of oil and gas facilities, geophysical exploration other than 3-D operations, and pipeline, road, and well pad construction, will be allowed except between 3:00 am and 9:00 am. The 3:00 am to 9:00 am restriction will not apply to normal, around-the-clock operations, such as venting, flaring, or pumping, which do not require a human presence during this period. Additionally, no new drilling will be allowed within up to 200 meters of leks known at the time of permitting. Normal vehicle use on existing roads will not be restricted. Exhaust noise from pump jack engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 ft. from the source of the noise.

This authorization is subject to your Certificate of Participation and/or Certificate of Inclusion under the New Mexico Candidate Conservation Agreement. Because it involves surface disturbing activities covered under your Certificate, your Habitat Conservation Fund Account with the Center of Excellence for Hazardous Materials Management (CEHMM) will be debited according to Exhibit B Part 2 of the Certificate of Participation.

**Range:**

**Cattleguards**

Where a permanent cattlegaurd is approved, an appropriately sized cattleguard(s) sufficient to carry out the project shall be installed and maintained at fence crossing(s). Any existing cattleguard(s) on the access road shall be repaired or replaced if they are damaged or have deteriorated beyond practical use. The operator shall be responsible for the condition of the existing cattleguard(s) that are in place and are utilized during lease operations. A gate shall be constructed on one side of the cattleguard and fastened securely to H-braces.

**Fence Requirement**

Where entry granted across a fence line, the fence must be braced and tied off on both sides of the passageway prior to cutting. Once the work is completed, the fence will be restored to its prior condition, or better. The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fence(s).

**Livestock Watering Requirement**

Any damage to structures that provide water to livestock throughout the life of the well, caused by operations from the well site, must be immediately corrected by the operator. The operator must notify the BLM office (575-234-5972) and the private surface landowner or the grazing allotment holder if any damage occurs to structures that provide water to livestock.

**D. OIL AND GAS RELATED SITES STIPULATIONS**

A copy of the application (Grant/Sundry Notice) and attachments, including stipulations and map, will be on location during construction. BLM personnel may request to view a copy of your permit during construction to ensure compliance with all stipulations.

The holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer, BLM.

1. The holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant and for all response costs, penalties, damages, claims, and other costs arising from the provisions of the Resource Conservation and Recovery Act (RCRA), 42 U.S.C. Chap. 82, Section 6901 et. seq., from the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), 42 U.S.C. Chap. 109, Section 9601 et. seq., and from other applicable environmental statutes.
2. The holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976, as amended (15 U.S.C. 2601, et. seq.) with regard to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized by this grant. (See 40 CFR, Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation and Liability Act, Section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the Authorized Officer concurrent with the filing of the reports to the involved Federal agency or State government.
3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et. seq. or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, et. seq.) on the right-of-way (unless the release or threatened release is wholly unrelated to the right-of-way holder's activity on the right-of-way). This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.
4. If, during any phase of the construction, operation, maintenance, or termination of the site or related pipeline(s), any oil or other pollutant should be discharged from site facilities, the pipeline(s) or from containers or vehicles impacting Federal lands, the control and total removal, disposal, and cleanup of such oil or other pollutant, wherever found, shall be the responsibility of the holder, regardless of fault. Upon failure of the holder to control, dispose of, or clean up such discharge on or affecting Federal lands, or to repair all damages to Federal lands resulting therefrom, the Authorized Officer may take such measures as deemed necessary to control and cleanup the discharge and restore the area, including, where appropriate, the aquatic environment and fish and wildlife



habitats, at the full expense of the holder. Such action by the Authorized Officer shall not relieve the holder of any liability or responsibility.

5. Sites shall be maintained in an orderly, sanitary condition at all times. Waste materials, both liquid and solid, shall be disposed of promptly at an appropriate, authorized waste disposal facility in accordance with all applicable State and Federal laws. "Waste" means all discarded matter including, but not limited to, human waste, trash, garbage, refuse, petroleum products, brines, chemicals, oil drums, ashes, and equipment.
6. The operator will notify the Bureau of Land Management (BLM) authorized officer and nearest Fish and Wildlife Service (FWS) Law Enforcement office within 24 hours, if the operator discovers a dead or injured federally protected species (i.e., migratory bird species, bald or golden eagle, or species listed by the FWS as threatened or endangered) in or adjacent to a pit, trench, tank, exhaust stack, or fence. (If the operator is unable to contact the FWS Law Enforcement office, the operator must contact the nearest FWS Ecological Services office.)
7. All above-ground structures not subject to safety requirements shall be painted by the holder to blend with the natural color of the landscape. The paint used shall be a color which simulates "Standard Environmental Colors" designated by the Rocky Mountain Five-State Interagency Committee. The color selected for this project is **Shale Green**, Munsell Soil Color Chart Number 5Y 4/2.
8. Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on the holder's behalf, on public or Federal land shall be immediately reported to the Authorized Officer. The holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery will be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to the proper mitigation measures will be made by the Authorized Officer after consulting with the holder.
9. A sales contract for removal of mineral material (caliche, sand, gravel, fill dirt) from an authorized pit, site, or on location must be obtained from the BLM prior to commencing construction. There are several options available for purchasing mineral material: contact the BLM office (575-234-5972).
10. The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes the roads, pads, associated pipeline corridor, and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

11. Once the site is no longer in service or use, the site must undergo final abandonment. At final abandonment, the site and access roads must undergo "final" reclamation so that the character and productivity of the land are restored. Earthwork for final reclamation must be completed within six (6) months of the abandonment of the site. All pads and facility locations and roads must be reclaimed to a satisfactory revegetated, safe, and stable condition, unless an agreement is made with the landowner or BLM to keep the road and/or pad intact. After all disturbed areas have been satisfactorily prepared, these areas need to be revegetated with the seed mixture provided. Seeding should be accomplished by drilling on the contour whenever practical or by other approved methods. Seeding may need to be repeated until revegetation is successful, as determined by the BLM.

Operators shall contact a BLM surface protection specialist prior to surface abandonment operations for site specific objectives (Jim Amos: 575-234-5909).

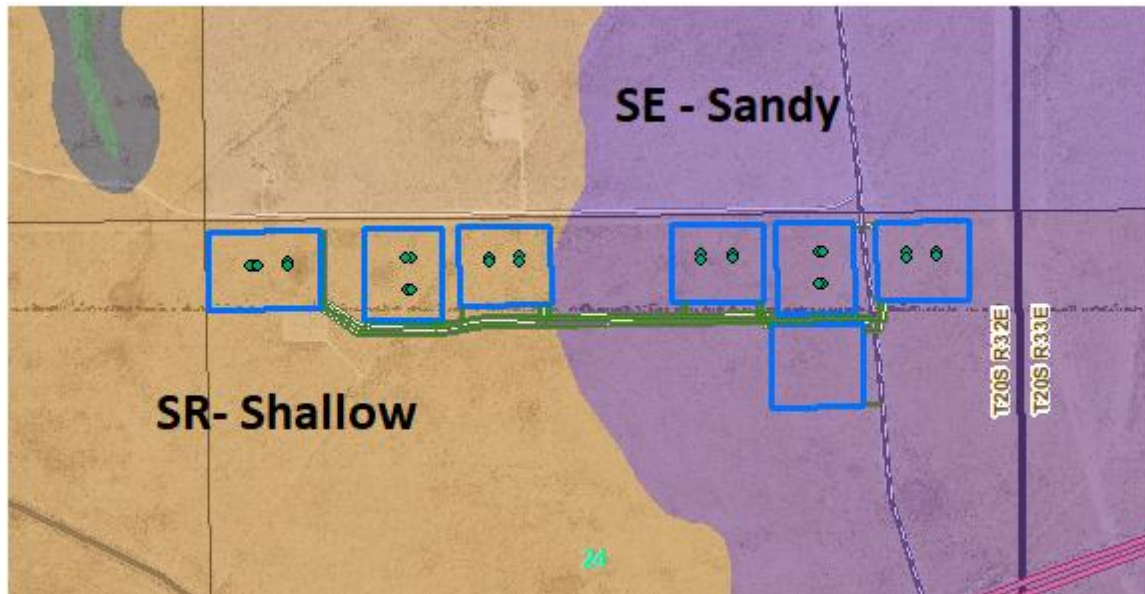
12. The holder shall stockpile an adequate amount of topsoil where blading occurs. The topsoil to be stripped is approximately \_\_\_6\_\_\_ inches in depth. The topsoil will be segregated from other spoil piles. The topsoil will be used for final reclamation.

13. The holder will reseed all disturbed areas. Seeding will be done according to the attached seeding requirements, using the following seed mix.

- |  |  |
|--|--|
| <input type="checkbox"/> seed mixture 1            | <input checked="" type="checkbox"/> seed mixture 3 |
| <input checked="" type="checkbox"/> seed mixture 2 | <input type="checkbox"/> seed mixture 4            |
| <input type="checkbox"/> seed mixture 2/LPC        | <input type="checkbox"/> Aplomado Falcon Mixture   |

| Map Unit                 | Abbrev. | Soil Type |
|--------------------------|---------|-----------|
| Simona Upton Association | SR      | Shallow   |
| Simona Fine Sandy Loam   | SE      | Sandy     |





14. In those areas where erosion control structures are required to stabilize soil conditions, the holder shall install such structures as are suitable for the specific soil conditions being encountered and which are in accordance with sound management practices. Any earth work will require prior approval by the Authorized Officer.

15. Open-topped Tanks - The operator will take actions necessary to prevent wildlife and livestock access, including avian wildlife, to all open-topped tanks that contain or have the potential to contain salinity sufficient to cause harm to wildlife or livestock, hydrocarbons, or Resource Conservation and Recovery Act of 1976-exempt hazardous substances. At a minimum, the operator will net, screen, or cover open-topped tanks to exclude wildlife and livestock and prevent mortality. If the operator uses netting, the operator will cover and secure the open portion of the tank to prevent wildlife entry. The operator will net, screen, or cover the tanks until the operator removes the tanks from the location or the tanks no longer contain substances that could be harmful to wildlife or livestock. Use a maximum netting mesh size of 1 ½ inches. The netting must not be in contact with fluids and must not have holes or gaps

16. The operator will prevent all hazardous, poisonous, flammable, and toxic substances from coming into contact with soil and water. At a minimum, the operator will install and maintain an

impervious secondary containment system for any tank or barrel containing hazardous, poisonous, flammable, or toxic substances sufficient to contain the contents of the tank or barrel and any drips, leaks, and anticipated precipitation. The operator will dispose of fluids within the containment system that do not meet applicable state or U. S. Environmental Protection Agency livestock water standards in accordance with state law; the operator must not drain the fluids to the soil or ground. The operator will design, construct, and maintain all secondary containment systems to prevent wildlife and livestock exposure to harmful substances. At a minimum, the operator will install

effective wildlife and livestock enclosure systems such as fencing, netting, expanded metal mesh, lids, and grate covers. Use a maximum netting mesh size of 1 ½ inches.

17. Open-Vent Exhaust Stack Enclosures – The operator will construct, modify, equip, and maintain all open-vent exhaust stacks on production equipment to prevent birds and bats from entering, and to discourage perching, roosting, and nesting. (Recommended enclosure structures on open-vent exhaust stacks are in the shape of a cone.) Production equipment includes, but may not be limited to, tanks, heater-treaters, separators, dehydrators, flare stacks, in-line units, and compressor mufflers.

18. Containment Structures - Proposed production facilities such as storage tanks and other vessels will have a secondary containment structure that is constructed to hold the capacity of 1.5 times the largest tank, plus freeboard to account for precipitation, unless more stringent protective requirements are deemed necessary.

19. Special Stipulations:

**Hydrology:**

The entire well pad(s) will be bermed to prevent oil, salt, and other chemical contaminants from leaving the well pad. The compacted berm shall be constructed at a minimum of 12 inches with impermeable mineral material (e.g. caliche). Topsoil shall not be used to construct the berm. No water flow from the uphill side(s) of the pad shall be allowed to enter the well pad. The integrity of the berm shall be maintained around the surfaced pad throughout the life of the well and around the downsized pad after interim reclamation has been completed. Any water erosion that may occur due to the construction of the well pad during the life of the well will be quickly corrected and proper measures will be taken to prevent future erosion. Stockpiling of topsoil is required. The top soil shall be stockpiled in an appropriate location to prevent loss of soil due to water or wind erosion and not used for berming or erosion control. If fluid collects within the bermed area, the fluid must be vacuumed into a safe container and disposed of properly at a state approved facility.

Any water erosion that may occur due to the construction of the well pad during the life of the well will be quickly corrected and proper measures will be taken to prevent future erosion.

Tank battery locations will be lined and bermed. A 20-mil permanent liner will be installed with a 4 oz. felt backing to prevent tears or punctures. Tank battery berms must be large enough to contain 1 ½ times the content of the largest tank.

Automatic shut off, check valves, or similar systems will be installed for tanks to minimize the effects of catastrophic line failures used in production or drilling.

**Wildlife:**

*Timing Limitation Stipulation/Condition of Approval for Lesser Prairie-Chicken:*

Oil and gas activities including 3-D geophysical exploration, and drilling will not be allowed in lesser prairie-chicken habitat during the period from March 1st through June

15th annually. During that period, other activities that produce noise or involve human activity, such as the maintenance of oil and gas facilities, geophysical exploration other than 3-D operations, and pipeline, road, and well pad construction, will be allowed except between 3:00 am and 9:00 am. The 3:00 am to 9:00 am restriction will not apply to normal, around-the-clock operations, such as venting, flaring, or pumping, which do not require a human presence during this period. Additionally, no new drilling will be allowed within up to 200 meters of leaks known at the time of permitting. Normal vehicle use on existing roads will not be restricted. Exhaust noise from pump jack engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 ft. from the source of the noise.

This authorization is subject to your Certificate of Participation and/or Certificate of Inclusion under the New Mexico Candidate Conservation Agreement. Because it involves surface disturbing activities covered under your Certificate, your Habitat Conservation Fund Account with the Center of Excellence for Hazardous Materials Management (CEHMM) will be debited according to Exhibit B Part 2 of the Certificate of Participation.

**Range:**

**Cattleguards**

Where a permanent cattlegaurd is approved, an appropriately sized cattleguard(s) sufficient to carry out the project shall be installed and maintained at fence crossing(s). Any existing cattleguard(s) on the access road shall be repaired or replaced if they are damaged or have deteriorated beyond practical use. The operator shall be responsible for the condition of the existing cattleguard(s) that are in place and are utilized during lease operations. A gate shall be constructed on one side of the cattleguard and fastened securely to H-braces.

**Fence Requirement**

Where entry granted across a fence line, the fence must be braced and tied off on both sides of the passageway prior to cutting. Once the work is completed, the fence will be restored to its prior condition, or better. The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fence(s).

**Livestock Watering Requirement**

Any damage to structures that provide water to livestock throughout the life of the well, caused by operations from the well site, must be immediately corrected by the operator. The operator must notify the BLM office (575-234-5972) and the private surface landowner or the grazing allotment holder if any damage occurs to structures that provide water to livestock.

## **VIII. INTERIM RECLAMATION**

During the life of the development, all disturbed areas not needed for active support of production operations should undergo interim reclamation in order to minimize the environmental impacts of development on other resources and uses.

Within six (6) months of well completion, operators should work with BLM surface management specialists (Jim Amos: 575-234-5909) to devise the best strategies to reduce the size of the location. Interim reclamation should allow for remedial well operations, as well as safe and efficient removal of oil and gas.

During reclamation, the removal of caliche is important to increasing the success of revegetating the site. Removed caliche that is free of contaminants may be used for road repairs, fire walls or for building other roads and locations. In order to operate the well or complete workover operations, it may be necessary to drive, park and operate on restored interim vegetation within the previously disturbed area. Disturbing revegetated areas for production or workover operations will be allowed. If there is significant disturbance and loss of vegetation, the area will need to be revegetated. Communicate with the appropriate BLM office for any exceptions/exemptions if needed.

All disturbed areas after they have been satisfactorily prepared need to be reseeded with the seed mixture provided below.

Upon completion of interim reclamation, the operator shall submit a Sundry Notices and Reports on Wells, Subsequent Report of Reclamation (Form 3160-5).

## **IX. FINAL ABANDONMENT & RECLAMATION**

At final abandonment, well locations, production facilities, and access roads must undergo "final" reclamation so that the character and productivity of the land are restored.

Earthwork for final reclamation must be completed within six (6) months of well plugging. All pads, pits, facility locations and roads must be reclaimed to a satisfactory revegetated, safe, and stable condition, unless an agreement is made with the landowner or BLM to keep the road and/or pad intact.

After all disturbed areas have been satisfactorily prepared, these areas need to be revegetated with the seed mixture provided below. Seeding should be accomplished by drilling on the contour whenever practical or by other approved methods. Seeding may need to be repeated until revegetation is successful, as determined by the BLM.

Operators shall contact a BLM surface protection specialist prior to surface abandonment operations for site specific objectives (Jim Amos: 575-234-5909).

**Seed Mixture 2, for Sandy Sites**

The holder shall seed all disturbed areas with the seed mixture listed below. The seed mixture shall be planted in the amounts specified in pounds of pure live seed (PLS)\* per acre. There shall be no primary or secondary noxious weeds in the seed mixture. Seed will be tested and the viability testing of seed will be done in accordance with State law (s) and within nine (9) months prior to purchase. Commercial seed will be either certified or registered seed. The seed container will be tagged in accordance with State law(s) and available for inspection by the authorized officer.

Seed will be planted using a drill equipped with a depth regulator to ensure proper depth of planting where drilling is possible. The seed mixture will be evenly and uniformly planted over the disturbed area (smaller/heavier seeds have a tendency to drop the bottom of the drill and are planted first). The holder shall take appropriate measures to ensure this does not occur. Where drilling is not possible, seed will be broadcast and the area shall be raked or chained to cover the seed. When broadcasting the seed, the pounds per acre are to be doubled. The seeding will be repeated until a satisfactory stand is established as determined by the authorized officer. Evaluation of growth will not be made before completion of at least one full growing season after seeding.

Species to be planted in pounds of pure live seed\* per acre:

Species

lb/acre

|   |     |
|---|-----|
| Sand dropseed ( <i>Sporobolus cryptandrus</i> )     | 1.0 |
| Sand love grass ( <i>Eragrostis trichodes</i> )     | 1.0 |
| Plains bristlegrass ( <i>Setaria macrostachya</i> ) | 2.0 |

\*Pounds of pure live seed:

Pounds of seed x percent purity x percent germination = pounds pure live seed

### Seed Mixture 3, for Shallow Sites

The holder shall seed all disturbed areas with the seed mixture listed below. The seed mixture shall be planted in the amounts specified in pounds of pure live seed (PLS)\* per acre. There shall be no primary or secondary noxious weeds in the seed mixture. Seed will be tested and the viability testing of seed will be done in accordance with State law(s) and within nine (9) months prior to purchase. Commercial seed will be either certified or registered seed. The seed container will be tagged in accordance with State law(s) and available for inspection by the authorized officer.

Seed will be planted using a drill equipped with a depth regulator to ensure proper depth of planting where drilling is possible. The seed mixture will be evenly and uniformly planted over the disturbed area (smaller/heavier seeds have a tendency to drop the bottom of the drill and are planted first). The holder shall take appropriate measures to ensure this does not occur. Where drilling is not possible, seed will be broadcast and the area shall be raked or chained to cover the seed. When broadcasting the seed, the pounds per acre are to be doubled. The seeding will be repeated until a satisfactory stand is established as determined by the authorized officer. Evaluation of growth will not be made before completion of at least one full growing season after seeding.

Species to be planted in pounds of pure live seed\* per acre:

|   | <u>Species</u><br><u>lb/acre</u> |
|---|----------------------------------|
| Plains Bristlegrass ( <i>Setaria macrostachya</i> ) | 1.0                              |

|  |     |
|--|-----|
| Green Sprangletop ( <i>Leptochloa dubia</i> )    | 2.0 |
| Sideoats Grama ( <i>Bouteloua curtipendula</i> ) | 5.0 |

\*Pounds of pure live seed:

Pounds of seed x percent purity x percent germination = pounds pure live seed

## **Earthstone Operating, LLC**

1400 Woodloch Forest Drive, Suite 300  
The Woodlands, TX 77380  
Phone: (281) 298-4246  
Fax: (832) 823-0478

## **H2S Contingency Plan**

### **Lea County, NM**



## Escape

Crews shall escape upwind of escaping gas in the event of an emergency release of gas. Escape can be facilitated from the location entrance road. Crew should then block entrance to the location from the lease road so as not to allow anyone traversing into a hazardous area. The blockade should be at a safe distance outside of the ROE. There are NO homes or buildings in or near the ROE.

Assumed 100 ppm ROE = 3000'  
100 ppm H<sub>2</sub>S concentration shall trigger activation of this plan

## Emergency Procedures

In the event of a release of gas containing H<sub>2</sub>S, the first responder(s) must:

- « Isolate the area and prevent entry by other persons into the 100 ppm ROE.
- « Evacuate any public places encompassed by the 100 ppm ROE.
- « Be equipped with H<sub>2</sub>S monitors and air packs in order to control the release.
- « Use the "buddy system" to ensure no injuries occur during the response.
- « Take precautions to avoid personal injury during this operation.
- « Contact operator and/or local officials to aid in operation. See list of phone numbers attached.
- « Have received training
  - in the: Detection of
  - H<sub>2</sub>S, and
  - Measures for protection against the gas,
  - Equipment used for protection and emergency response.

## Ignition of Gas Source

Should control of the well be considered lost and ignition considered, take care to protect against exposure to Sulfur Dioxide (SO<sub>2</sub>). Intentional ignition must be coordinated with the NMOCD and local officials. Additionally, the NM State Police may become involved. NM State Police shall be the Incident Command on scene of any major release. Take care to protect downwind whenever there is an ignition of the gas.

## Characteristics of H<sub>2</sub>S and SO<sub>2</sub>,

| Common Name      | Chemical Formula | Specific Gravity | Threshold Limit | Hazardous Limit | Lethal Concentration |
|------------------|------------------|------------------|-----------------|-----------------|----------------------|
| Hydrogen Sulfide | H <sub>2</sub> S | 1.189 Air=1      | 10 ppm          | 100 ppm/hr      | 600 ppm              |
| Sulfur Dioxide   | SO <sub>2</sub>  | 2.21 Air=1       | 2 ppm           | N/A             | 1000 ppm             |

## Contacting Authorities

Earthstone Operating, LLC personnel must liaise with local and state agencies to ensure a proper response to a major release. Additionally, the OCD must be notified of the release as soon as possible but no later than 4 hours. Agencies will ask for information such as type and volume of release, wind direction, location of release, etc. Be prepared with all information available including directions to site. The following call list of essential and potential responders has been prepared for use during a release. Earthstone Operating, LLC response must be in coordination with the State of New Mexico's "Hazardous Materials Emergency Response Plan" (HMERP).

## Hydrogen Sulfide Drilling Operations Plan

1. All Company and Contract personnel admitted on location must be trained by a qualified H2S safety instructor to the following:
  - A. Characteristics of H2S
  - B. Physical effects and hazards
  - C. Principal and operation of H2S detectors, warning system and briefing areas.
  - D. Evacuation procedure, routes and first aid.
  - E. Proper use of safety equipment & life support systems
  - F. Essential personnel meeting Medical Evaluation criteria will receive additional training on the proper use of 30-minute pressure demand air packs.
2. H2S Detection and Alarm Systems:
  - a. H2S sensors/detectors to be located on the drilling rig floor, in the base of the sub structure/cellar area, on the mud pits in the shale shaker area. Additional H2S detectors may be placed as deemed necessary.
  - b. An audio alarm system will be installed on the derrick floor and in the top doghouse.
3. Windsock and/or wind streamers:
  - a. Windsock at mudpit area should be high enough to be visible.
  - b. Windsock on the rig floor and/ or top doghouse should be high enough to be visible.
4. Condition Flags and Signs
  - a. Warning sign on access road to location.
  - b. Flags to be displayed on sign at entrance to location. Green flag indicates normal safe condition. Yellow flag indicates potential

pressure and danger. Red flag indicates danger (H2S present in dangerous concentration). Only H2S trained and certified personnel admitted to location.

5. Well control equipment:

- a. See exhibit BOP and Choke Diagrams

6. Communication:

- a. While working under masks chalkboards will be used for communication.
- b. Hand signals will be used where chalk board is inappropriate.
- c. Two-way radio will be used to communicate off location in case of emergency help is required. In most cases, cellular telephones will be available at most drilling foreman's trailer or living quarters.

7. Drill stem Testing:

No DSTs are planned at this time.

8. Drilling contractor supervisor will be required to be familiar with the effects H2S has on tubular goods and other mechanical equipment.
9. If H2S is encountered, mud system will be altered if necessary to maintain control of formation. A mud gas separator will be brought into service along with H2S scavengers if necessary.

## Emergency Assistance Telephone List

Earthstone Operating, LLC

The Woodlands Office (Headquarters): 281-298-4246

Midland Office: 432-686-1100

Vice President of Drilling-Nick Goree

Office: 281-771-3201

Cell: 405-488-7164

Sr. Drilling Engineer/Superintendent- Ben Taylor

Cell: 432-978-3029

Production Superintendent-Paul Martinez

Cell: 325-206-1722

| <b>Public Safety:</b>                             |           | <b>911 or</b>         |
|---|-----------|-----------------------|
| Lea County Sheriff's Department                   | Number:   | (575)396-3611         |
| Lea County Emergency Management-Lorenzo Velasquez | Number:   | (575)391-2983         |
| Lea County Fire Marshal                           |           |                       |
| Lorenzo Velasquez, Director                       | Number:   | (575)391-2983         |
| Jeff Broom, Deputy Fire Marshal                   | Number:   | (575)391-2988         |
| Fire Department:                                  |           |                       |
| Knowles Fire Department                           | Number:   | (505)392-2810         |
| City of Hobbs Fire Department                     | Number:   | (505)397-9308         |
| Jal Volunteer Fire Department                     | Number:   | (505)395-2221         |
| Lovington Fire Department                         | Number:   | (575)396-2359         |
| Maljamar Fire Department                          | Number:   | (505)676-4100         |
| Tatum Volunteer Fire Department                   | Number:   | (505)398-3473         |
| Eunice Fire Department                            | Number:   | (575)394-3258         |
| Hospital: Lea Regional Medical Center             | Number:   | (575)492-5000         |
| AirMed: Medevac                                   | Number:   | (888)303-9112         |
| Dept. of Public Safety                            | Number:   | (505)827-9000         |
| <b>New Mexico OCD-Dist. 1-Hobbs-</b>              | Office    | Number: (575)393-6161 |
|   | Emergency | Number: (575)370-3186 |
| Lea County Road Department                        | Number:   | (575)391-2940         |
| NMDOT   | Number:   | (505)827-5100         |
| <b>Bureau of Land Management</b>                  |           |                       |
| Pecos District Office                             | Number:   | (575)627-0272         |
| Carlsbad Field Office                             | Number:   | (575)234-5972         |
| Hobbs Field Station                               | Number:   | (575)393-3612         |

Earthstone Operating, LLC plans to operate a Closed Loop System.

Operator Name: EARTHSTONE OPERATING LLC

Well Name: PAKSE SOUTH FED COM

Well Number: 224H

Is the proposed well in an area containing other mineral resources? NATURAL GAS,OIL

Is the proposed well in a Helium production area? N

Use Existing Well Pad? N

New surface disturbance?

Type of Well Pad: MULTIPLE WELL

Multiple Well Pad Name:

Number: 5

PAKSE SOUTH-EGG ROLL PAD

Well Class: HORIZONTAL

Number of Legs: 1

Well Work Type: Drill

Well Type: OIL WELL

Describe Well Type:

Well sub-Type: EXPLORATORY (WILDCAT)

Describe sub-type:

Distance to town:

Distance to nearest well: 30 FT

Distance to lease line: 261 FT

Reservoir well spacing assigned acres Measurement: 240 Acres

Well plat: C\_102\_Pakse\_South\_Fed\_Com\_224H\_20201102121916.pdf

Well work start Date: 05/01/2021

Duration: 45 DAYS

## Section 3 - Well Location Table

Survey Type: RECTANGULAR

Describe Survey Type:

Datum: NAD83

Vertical Datum: NAVD88

Survey number:

Reference Datum: GROUND LEVEL

| Wellbore     | NS-Foot | NS Indicator | EW-Foot | EW Indicator | Twsp | Range | Section | Aliquot/Lot/Tract | Latitude   | Longitude    | County | State       | Meridian    | Lease Type | Lease Number | Elevation | MD    | TVD   | Will this well produce from this |
|--------------|---------|--------------|---------|--------------|------|-------|---------|-------------------|------------|--------------|--------|-------------|-------------|------------|--------------|-----------|-------|-------|----------------------------------|
| SHL Leg #1   | 261     | FNL          | 1279    | FEL          | 20S  | 32E   | 24      | Aliquot NENE      | 32.5652071 | - 103.715284 | LEA    | NEW MEXI CO | NEW MEXI CO | F          | NMNM 16640B  | 3545      | 0     | 0     | Y                                |
| KOP Leg #1   | 49      | FNL          | 519     | FEL          | 20S  | 32E   | 24      | Aliquot NENE      | 32.565789  | - 103.712821 | LEA    | NEW MEXI CO | NEW MEXI CO | F          | NMNM 16640B  | - 5954    | 9539  | 9499  | Y                                |
| PPP Leg #1-1 | 2639    | FSL          | 340     | FEL          | 20S  | 32E   | 24      | Aliquot NESE      | 32.558647  | - 103.712207 | LEA    | NEW MEXI CO | NEW MEXI CO | F          | NMNM 16640A  | - 6458    | 12400 | 10003 | Y                                |

**Operator Name:** EARTHSTONE OPERATING LLC**Well Name:** PAKSE SOUTH FED COM**Well Number:** 224H

| Wellbore     | NS-Foot | NS Indicator | EW-Foot | EW Indicator | Twsp | Range | Section | Aliquot/Lot/Tract | Latitude   | Longitude     | County | State       | Meridian    | Lease Type | Lease Number | Elevation | MD    | TVD   | Will this well produce from this |
|--------------|---------|--------------|---------|--------------|------|-------|---------|-------------------|------------|---------------|--------|-------------|-------------|------------|--------------|-----------|-------|-------|----------------------------------|
| PPP Leg #1-2 | 0       | FNL          | 332     | FEL          | 20S  | 32E   | 25      | Aliquot NENE      | 32.551382  | - 103.712207  | LEA    | NEW MEXI CO | NEW MEXI CO | F          | NMNM 15907   | - 6491    | 15100 | 10036 | Y                                |
| EXIT Leg #1  | 2631    | FNL          | 330     | FEL          | 20S  | 32E   | 25      | Aliquot SENE      | 32.5441573 | - 103.7122078 | LEA    | NEW MEXI CO | NEW MEXI CO | F          | NMNM 15907   | - 6549    | 17698 | 10094 | Y                                |
| BHL Leg #1   | 2631    | FNL          | 330     | FEL          | 20S  | 32E   | 25      | Aliquot SENE      | 32.5441573 | - 103.7122078 | LEA    | NEW MEXI CO | NEW MEXI CO | F          | NMNM 15907   | - 6549    | 17698 | 10094 | Y                                |





U.S. Department of the Interior  
BUREAU OF LAND MANAGEMENT

# Drilling Plan Data Report

05/08/2023

APD ID: 10400064762

Submission Date: 11/02/2020

Highlighted data  
reflects the most  
recent changes

Operator Name: EARTHSTONE OPERATING LLC

Well Name: PAKSE SOUTH FED COM

Well Number: 224H

Well Type: OIL WELL

Well Work Type: Drill

[Show Final Text](#)

## Section 1 - Geologic Formations

| Formation ID | Formation Name         | Elevation | True Vertical | Measured Depth | Lithologies                 | Mineral Resources | Producing Formatio |
|--------------|------------------------|-----------|---------------|----------------|-----------------------------|-------------------|--------------------|
| 1128464      | QUATERNARY             | 3546      | 0             | 0              | ALLUVIUM                    | USEABLE WATER     | N                  |
| 1128465      | RUSTLER                | 2446      | 1100          | 1100           | ANHYDRITE                   | USEABLE WATER     | N                  |
| 1128466      | TOP SALT               | 2196      | 1350          | 1350           | SALT                        | NONE              | N                  |
| 1128467      | BASE OF SALT           | 846       | 2700          | 2700           | SALT                        | NONE              | N                  |
| 1128468      | CAPITAN REEF           | -144      | 3690          | 3690           | LIMESTONE                   | NONE              | N                  |
| 1128469      | DELAWARE               | -1144     | 4690          | 4690           | SANDSTONE, SHALE, SILTSTONE | NATURAL GAS, OIL  | N                  |
| 1128470      | BONE SPRING LIME       | -4332     | 7878          | 7878           | LIMESTONE                   | NATURAL GAS, OIL  | N                  |
| 1128471      | UPPER AVALON SHALE     | -4477     | 8023          | 8023           | SHALE                       | NATURAL GAS, OIL  | N                  |
| 1128472      | FIRST BONE SPRING SAND | -5368     | 8914          | 8914           | SANDSTONE                   | NATURAL GAS, OIL  | N                  |
| 1128473      | BONE SPRING 2ND        | -5913     | 9459          | 9459           | SANDSTONE                   | NATURAL GAS, OIL  | Y                  |

## Section 2 - Blowout Prevention

Pressure Rating (PSI): 2M

Rating Depth: 3000

**Equipment:** BOP/BOPE will be tested by an independent service company to 250 psi low and the high pressure indicated above per Onshore Order 2 requirements. The System may be upgraded to a higher pressure but still tested to the working pressure listed in the table above. If the system is upgraded all the components installed will be functional and tested. Pipe rams will be operationally checked each 24 hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets. Other accessories to the BOP equipment will include a Kelly cock and floor safety valve (inside BOP) and choke lines and choke manifold. See attached schematics.

**Requesting Variance?** YES

**Variance request:** A variance is requested for the use of a flexible choke line from the BOP to Choke Manifold. See attached for specs and hydrostatic test chart.

**Testing Procedure:** Formation integrity test will be performed per Onshore Order #2. On Exploratory wells or on that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each

**Operator Name:** EARTHSTONE OPERATING LLC**Well Name:** PAKSE SOUTH FED COM**Well Number:** 224H

casing shoe shall be performed. Will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.i. The BOP will be tested per Onshore Order #2 after installation on the surface casing which will cover testing requirements for a maximum of 30 days. If any seal subject to test pressure is broken the system must be tested.

**Choke Diagram Attachment:**

2M\_\_\_H\_P\_614\_\_\_BOP\_\_\_CHOKE\_\_\_FLEX\_HOSE\_APD\_INFORMATION\_\_\_1\_\_\_20201101095945.pdf

**BOP Diagram Attachment:**

2M\_\_\_H\_P\_614\_\_\_BOP\_\_\_CHOKE\_\_\_FLEX\_HOSE\_APD\_INFORMATION\_\_\_1\_\_\_20201101100100.pdf

**Pressure Rating (PSI):** 3M**Rating Depth:** 10094

**Equipment:** BOP/BOPE will be tested by an independent service company to 250 psi low and the high pressure indicated above per Onshore Order 2 requirements. The System may be upgraded to a higher pressure but still tested to the working pressure listed in the table above. If the system is upgraded all the components installed will be functional and tested. Pipe rams will be operationally checked each 24 hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets. Other accessories to the BOP equipment will include a Kelly cock and floor safety valve (inside BOP) and choke lines and choke manifold. See attached schematics.

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**Choke Diagram Attachment:**

3M\_\_\_H\_P\_614\_\_\_BOP\_\_\_CHOKE\_\_\_FLEX\_HOSE\_APD\_INFORMATION\_\_\_1\_\_\_20201101100327.pdf

**BOP Diagram Attachment:**

3M\_\_\_H\_P\_614\_\_\_BOP\_\_\_CHOKE\_\_\_FLEX\_HOSE\_APD\_INFORMATION\_\_\_1\_\_\_20201101100339.pdf

**Pressure Rating (PSI):** 3M**Rating Depth:** 4700

**Equipment:** BOP/BOPE will be tested by an independent service company to 250 psi low and the high pressure indicated above per Onshore Order 2 requirements. The System may be upgraded to a higher pressure but still tested to the working pressure listed in the table above. If the system is upgraded all the components installed will be functional and tested. Pipe rams will be operationally checked each 24 hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets. Other accessories to the BOP equipment will include a Kelly cock and floor safety valve (inside BOP) and choke lines and choke manifold. See attached schematics.

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**District I**

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

**District II**

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 Phone:(575) 748-1283 Fax:(575) 748-9720

**District III**

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

**District IV**

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

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

CONDITIONS

Action 216585

**CONDITIONS**

|  |   |
|--|---|
| Operator:<br>Earthstone Operating, LLC<br>1400 Woodloch Forest; Ste 300<br>The Woodlands, TX 77380 | OGRID:<br>331165  |
|  | Action Number:<br>216585  |
|  | Action Type:<br>[C-101] BLM - Federal/Indian Land Lease (Form 3160-3) |

**CONDITIONS**

| Created By    | Condition  | Condition Date |
|---------------|--|----------------|
| john.harrison | Notify OCD 24 hours prior to casing & cement   | 5/16/2023      |
| john.harrison | Will require a File As Drilled C-102 and a Directional Survey with the C-104   | 5/16/2023      |
| john.harrison | Once the well is spud, to prevent ground water contamination through whole or partial conduits from the surface, the operator shall drill without interruption through the fresh water zone or zones and shall immediately set in cement the water protection string | 5/16/2023      |
| john.harrison | Cement is required to circulate on both surface and intermediate1 strings of casing  | 5/16/2023      |
| john.harrison | Oil base muds are not to be used until fresh water zones are cased and cemented providing isolation from the oil or diesel. This includes synthetic oils. Oil based mud, drilling fluids and solids must be contained in a steel closed loop system                  | 5/16/2023      |