AFMSS

U.S. Department of the Interior
Bureau of Land Management

Application for Permit to Drill

# APD Package Report

Date Printed:

| | |
|---|---|
| APD ID: | Well Status: |
| APD Received Date: | Well Name: |
| Operator: | Well Number: |

APD Package Report Contents

- Form 3160-3

- Operator Certification Report

- Application Report
- Application Attachments
  -- Well Plat: 1 file(s)

- Drilling Plan Report
- Drilling Plan Attachments
  -- Blowout Prevention Choke Diagram Attachment: 2 file(s)
  -- Blowout Prevention BOP Diagram Attachment: 2 file(s)
  -- Casing Design Assumptions and Worksheet(s): 1 file(s)
  -- Hydrogen sulfide drilling operations plan: 1 file(s)
  -- Proposed horizontal/directional/multi-lateral plan submission: 5 file(s)
  -- Other Facets: 1 file(s)
  -- Other Variances: 3 file(s)

- SUPO Report
- SUPO Attachments
  -- Existing Road Map: 1 file(s)
  -- New Road Map: 1 file(s)
  -- Attach Well map: 1 file(s)
  -- Production Facilities map: 2 file(s)
  -- Water source and transportation map: 1 file(s)
  -- Well Site Layout Diagram: 1 file(s)
  -- Recontouring attachment: 1 file(s)

- PWD Report
- PWD Attachments
  -- None

- Bond Report

- Bond Attachments
  -- None

Form 3160-3
(June 2015)

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

**APPLICATION FOR PERMIT TO DRILL OR REENTER**

5. Lease Serial No.

6. If Indian, Allotee or Tribe Name

1a. Type of work: ☐ DRILL ☐ REENTER

1b. Type of Well: ☐ Oil Well ☐ Gas Well ☐ Other

1c. Type of Completion: ☐ Hydraulic Fracturing ☐ Single Zone ☐ Multiple Zone

7. If Unit or CA Agreement, Name and No.

8. Lease Name and Well No.

2. Name of Operator

9. API Well No.
30-015-56420

3a. Address

3b. Phone No. *(include area code)*

10. Field and Pool, or Exploratory

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*

At surface

At proposed prod. zone

11. Sec., T. R. M. or Blk. and Survey or Area

14. Distance in miles and direction from nearest town or post office*

12. County or Parish

13. State

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)

16. No of acres in lease

17. Spacing Unit dedicated to this well

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.

19. Proposed Depth

20. BLM/BIA Bond No. in file

21. Elevations (Show whether DF, KDB, RT, GL, etc.)

22. Approximate date work will start*

23. Estimated duration

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.
2. A Drilling Plan.
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).
4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
5. Operator certification.
6. Such other site specific information and/or plans as may be requested by the BLM.

25. Signature

Name *(Printed/Typed)*

Date

Title

Approved by *(Signature)*

Name *(Printed/Typed)*

Date

Title

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: 01/03/2025**

(Continued on page 2)

*(Instructions on page 2)

## INSTRUCTIONS

GENERAL: This form is designed for submitting proposals to perform certain well operations, as indicated on Federal and Indian lands and leases for action by appropriate Federal agencies, pursuant to applicable Federal laws and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local, area, or regional procedures and practices, either are shown below or will be issued by, or may be obtained from local Federal offices.

ITEM I: If the proposal is to redrill to the same reservoir at a different subsurface location or to a new reservoir, use this form with appropriate notations. Consult applicable Federal regulations concerning subsequent work proposals or reports on the well.

ITEM 4: Locations on Federal or Indian land should be described in accordance with Federal requirements. Consult local Federal offices for specific instructions.

ITEM 14: Needed only when location of well cannot readily be found by road from the land or lease description. A plat, or plats, separate or on the reverse side, showing the roads to, and the surveyed location of, the wen, and any other required information, should be furnished when required by Federal agency offices.

ITEMS 15 AND 18: If well is to be, or has been directionany drilled, give distances for subsurface location of hole in any present or objective productive zone.

ITEM 22: Consult applicable Federal regulations, or appropriate officials, concerning approval of the proposal before operations are started.

ITEM 24: If the proposal will involve hydraulic fracturing operations, you must comply with 43 CFR 3162.3-3, including providing information about the protection of usable water. Operators should provide the best available information about all formations containing water and their depths. This information could include data and interpretation of resistivity logs run on nearby wells. Information may also be obtained from state or tribal regulatory agencies and from local BLM offices.

## NOTICES

The Privacy Act of 1974 and regulation in 43 CFR 2.48( d) provide that you be furnished the following information in connection with information required by this application.

AUTHORITY: 30 U.S.C. 181 et seq., 25 U.S.C. 396; 43 CFR 3160

PRINCIPAL PURPOSES: The information will be used to: (1) process and evaluate your application for a permit to drill a new oil, gas, or service wen or to reenter a plugged and abandoned well; and (2) document, for administrative use, information for the management, disposal and use of National Resource Lands and resources including (a) analyzing your proposal to discover and extract the Federal or Indian resources encountered; (b) reviewing procedures and equipment and the projected impact on the land involved; and (c) evaluating the effects of the proposed operation on the surface and subsurface water and other environmental impacts.

ROUTINE USE: Information from the record and/or the record win be transferred to appropriate Federal, State, and local or foreign agencies, when relevant to civil, criminal or regulatory investigations or prosecution, in connection with congressional inquiries and for regulatory responsibilities.

EFFECT OF NOT PROVIDING INFORMATION: Filing of this application and disclosure of the information is mandatory only if you elect to initiate a drilling or reentry operation on an oil and gas lease.

The Paperwork Reduction Act of 1995 requires us to inform you that:
The BLM conects this information to anow evaluation of the technical, safety, and environmental factors involved with drilling for oil and/or gas on Federal and Indian oil and gas leases. This information will be used to analyze and approve applications. Response to this request is mandatory only if the operator elects to initiate drilling or reentry operations on an oil and gas lease. The BLM would like you to know that you do not have to respond to this or any other Federal agency-sponsored information collection unless it displays a currently valid OMB control number.

**BURDEN HOURS STATEMENT:** Public reporting burden for this form is estimated to average 8 hours per response, including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to U.S. Department of the Interior, Bureau of Land Management (1004-0137), Bureau Information Conection Clearance Officer (WO-630), 1849 C Street, N.W., Mail Stop 401 LS, Washington, D.C. 20240.





**Approval Date: 01/03/2025**

## Additional Operator Remarks

### Location of Well

0. SHL: SESW / 792 FSL / 1655 FWL / TWSP: 25S / RANGE: 27E / SECTION: 32 / LAT: 32.081189 / LONG: -104.215586 ( TVD: 0 feet, MD: 0 feet )

PPP: SESW / 100 FSL / 544 FWL / TWSP: 25S / RANGE: 27E / SECTION: 32 / LAT: 32.079286 / LONG: -104.219211 ( TVD: 8895 feet, MD: 9060 feet )

BHL: NWNW / 100 FNL / 330 FWL / TWSP: 25S / RANGE: 27E / SECTION: 29 / LAT: 32.107894 / LONG: -104.219503 ( TVD: 9458 feet, MD: 19822 feet )

## BLM Point of Contact

Name: JANET D ESTES
Title: ADJUDICATOR
Phone: (575) 234-6233
Email: JESTES@BLM.GOV

**Review and Appeal Rights**

A person contesting a decision shall request a State Director review. This request must be filed within 20 working days of receipt of the Notice with the appropriate State Director (see 43 CFR 3165.3). The State Director review decision may be appealed to the Interior Board of Land Appeals, 801 North Quincy Street, Suite 300, Arlington, VA 22203 (see 43 CFR 3165.4). Contact the above listed Bureau of Land Management office for further information.

# SOUTHERN HILLS 33-29 FEDERAL COM 5H

## APD - Geology COAs (Not in Potash or WIPP)

- For at least one well per pad (deepest well within initial development preferred) the record of the drilling rate (ROP) along with the Gamma Ray (GR) and Neutron (CNL) well logs run from TVD to surface in the vertical section of the hole shall be submitted to the BLM office as well as all other logs run on the full borehole 30 days from completion. Any other logs run on the wellbore, excluding cement remediation, should also be sent. Only digital copies of the logs in .TIF or .LAS formats are necessary; paper logs are no longer required. Logs shall be emailed to blm-cfo-geology@doimspp.onmicrosoft.com. Well completion report should have .pdf copies of any CBLs or Temp Logs run on the wellbore.

- Exceptions: In areas where there is extensive log coverage (in particular the salt zone adjacent to a pad), Operators are encouraged to contact BLM Geologists to discuss if additional GR and N logs are necessary on a pad. Operator may request a waiver of the GR and N log requirement due to good well control or other reasons to be approved by BLM Geologist prior to well completion. A waiver approved by BLM must be attached to completion well report to satisfy COAs.

- The top of the Rustler, top and bottom of the Salt, and the top of the Capitan Reef (if present) are to be recorded on the Completion Report.

  Please be aware of the following:

- Well is in an area of HIGH karst occurrence, karst survey is required.

Questions? Contact Chris Armistead, BLM Geologist at 575-234-5715 or carmistead@blm.gov

| C-102<br>Submit Electronically<br>Via OCD Permitting | State of New Mexico<br>Energy, Minerals & Natural Resources Department<br>OIL CONSERVATION DIVISION | Revised July 9, 2024<br>Submittal Type: ☒ Initial Submittal ☐ Amended Report ☐ As Drilled |
|---|---|---|

**WELL LOCATION INFORMATION**

| API Number | Pool Code | Pool Name |
|---|---|---|
| 30-015-56420 | 98220 | Purple Sage; Wolfcamp |

| Property Code | Property Name | Well Number |
|---|---|---|
| 332837 | SOUTHERN HILLS 32-29 FEDERAL COM | 5H |

| OGRID No. | Operator Name | Ground Level Elevation |
|---|---|---|
| 215099 | CIMAREX ENERGY CO. | 3,242.8' |

Surface Owner: ☐ State ☐ Fee ☐ Tribal ☒ Federal Mineral Owner: ☐ State ☐ Fee ☐ Tribal ☒ Federal

Surface Location

| UL | Section | Township | Range | Lot | Ft. from N/S | Ft. from E/W | Latitude (NAD 83) | Longitude (NAD 83) | County |
|---|---|---|---|---|---|---|---|---|---|
| N | 32 | 25S | 27E | | 780 SOUTH | 1,552 WEST | 32.081157° | -104.215917° | EDDY |

Bottom Hole Location

| UL | Section | Township | Range | Lot | Ft. from N/S | Ft. from E/W | Latitude (NAD 83) | Longitude (NAD 83) | County |
|---|---|---|---|---|---|---|---|---|---|
| D | 29 | 25S | 27E | | 330 NORTH | 330 WEST | 32.107262° | -104.219509° | EDDY |

| Dedicated Acres | Infill or Defining Well | Defining Well API | Overlapping Spacing Unit (Y/N) | Consolidation Code |
|---|---|---|---|---|
| 320 | | | | |

Order Numbers. Well setbacks are under Common Ownership: ☐Yes ☐No

Kick Off Point (KOP)

| UL | Section | Township | Range | Lot | Ft. from N/S | Ft. from E/W | Latitude (NAD 83) | Longitude (NAD 83) | County |
|---|---|---|---|---|---|---|---|---|---|
| M | 32 | 25S | 27E | | 100 SOUTH | 544 WEST | 32.079286° | -104.219211° | EDDY |

First Take Point (FTP)

| UL | Section | Township | Range | Lot | Ft. from N/S | Ft. from E/W | Latitude (NAD 83) | Longitude (NAD 83) | County |
|---|---|---|---|---|---|---|---|---|---|
| M | 32 | 25S | 27E | | 884 SOUTH | 346 WEST | 32.081439° | -104.219807° | EDDY |

Last Take Point (LTP)

| UL | Section | Township | Range | Lot | Ft. from N/S | Ft. from E/W | Latitude (NAD 83) | Longitude (NAD 83) | County |
|---|---|---|---|---|---|---|---|---|---|
| D | 29 | 25S | 27E | | 330 NORTH | 330 WEST | 32.107262° | -104.219509° | EDDY |

| Unitized Area or Area of Uniform Interest | Spacing Unit Type ☐ Horizontal ☐ Vertical | Ground Floor Elevation: |
|---|---|---|
| | | |

**OPERATOR CERTIFICATIONS**

*I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and, if the well is a vertical or directional well, 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 a working interest or unleased mineral interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.*

*If this well is a horizontal well, I further certify that this organization has received the consent of at least one lessee or owner of a working interest or unleased mineral interest in each tract (in the target pool or formation) in which any part of the well's completed interval will be located or obtained a compulsory pooling order from the division.*

Shelly Bowen 11/6/2024

Signature Date

Shelly Bowen

Printed Name

shelly.bowen@coterra.com

Email Address

**SURVEYOR CERTIFICATIONS**

*I hereby certify that the well location shown on this plat was plotted from the 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.*


Signature and Seal of Professional Surveyor

23782 August 31, 2020

Certificate Number Date of Survey

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

| Property Name | Well Number | Drawn By | Revised By |
|---|---|---|---|
| SOUTHERN HILLS 32-29 FEDERAL COM | 5H | Z.T. 07-14-21 | REV. 7 T.I.R. 11-06-24 (UPDATE LTP/BHL) |

| NAD 83 (SURFACE HOLE LOCATION) |
|---|
| LATITUDE = 32°04'52.17" (32.081157°) |
| LONGITUDE = -104°12'57.30" (-104.215917°) |
| **NAD 27 (SURFACE HOLE LOCATION)** |
| LATITUDE = 32°04'51.73" (32.081036°) |
| LONGITUDE = -104°12'55.52" (-104.215422°) |
| **STATE PLANE NAD 83 (N.M. EAST)** |
| N: 393281.96' E: 577703.06' |
| **STATE PLANE NAD 27 (N.M. EAST)** |
| N: 393224.87' E: 536519.60' |

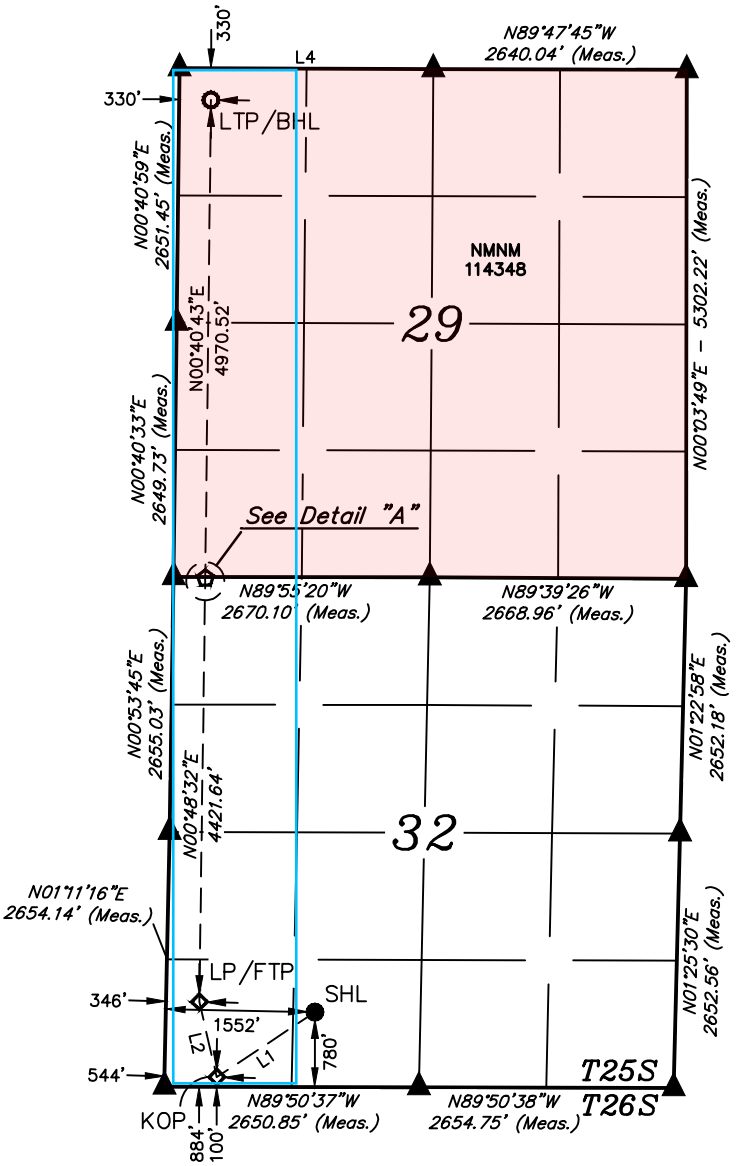
| NAD 83 (KICK OFF POINT) |
|---|
| LATITUDE = 32°04'45.43" (32.079286°) |
| LONGITUDE = -104°13'09.16" (-104.219211°) |
| **NAD 27 (KICK OFF POINT)** |
| LATITUDE = 32°04'44.99" (32.079165°) |
| LONGITUDE = -104°13'07.38" (-104.218716°) |
| **STATE PLANE NAD 83 (N.M. EAST)** |
| N: 392600.25' E: 576683.57' |
| **STATE PLANE NAD 27 (N.M. EAST)** |
| N: 392543.20' E: 535500.12' |

| NAD 83 (LP/FTP) |
|---|
| LATITUDE = 32°04'53.18" (32.081439°) |
| LONGITUDE = -104°13'11.30" (-104.219807°) |
| **NAD 27 (LP/FTP)** |
| LATITUDE = 32°04'52.75" (32.081318°) |
| LONGITUDE = -104°13'09.52" (-104.219312°) |
| **STATE PLANE NAD 83 (N.M. EAST)** |
| N: 393383.30' E: 576498.29' |
| **STATE PLANE NAD 27 (N.M. EAST)** |
| N: 393326.23' E: 535314.86' |

| NAD 83 (INFLECTION POINT) |
|---|
| LATITUDE = 32°05'36.93" (32.093591°) |
| LONGITUDE = -104°13'10.74" (-104.219650°) |
| **NAD 27 (INFLECTION POINT)** |
| LATITUDE = 32°05'36.49" (32.093470°) |
| LONGITUDE = -104°13'08.96" (-104.219154°) |
| **STATE PLANE NAD 83 (N.M. EAST)** |
| N: 397803.68' E: 576542.26' |
| **STATE PLANE NAD 27 (N.M. EAST)** |
| N: 397746.53' E: 535358.90' |

| NAD 83 (LPP) |
|---|
| LATITUDE = 32°05'36.97" (32.093602°) |
| LONGITUDE = -104°13'10.74" (-104.219650°) |
| **NAD 27 (LPP)** |
| LATITUDE = 32°05'36.53" (32.093481°) |
| LONGITUDE = -104°13'08.96" (-104.219154°) |
| **STATE PLANE NAD 83 (N.M. EAST)** |
| N: 397807.76' E: 576542.29' |
| **STATE PLANE NAD 27 (N.M. EAST)** |
| N: 397750.60' E: 535358.93' |

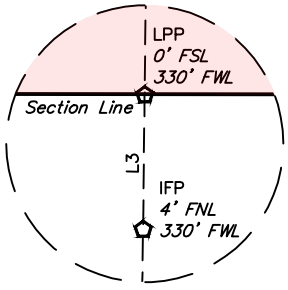
| NAD 83 (LTP/BHL) |
|---|
| LATITUDE = 32°06'26.14" (32.107262°) |
| LONGITUDE = -104°13'10.23" (-104.219509°) |
| **NAD 27 (LTP/BHL)** |
| LATITUDE = 32°06'25.71" (32.107141°) |
| LONGITUDE = -104°13'08.45" (-104.219014°) |
| **STATE PLANE NAD 83 (N.M. EAST)** |
| N: 402776.97' E: 576580.41' |
| **STATE PLANE NAD 27 (N.M. EAST)** |
| N: 402719.72' E: 535397.13' |




| LINE TABLE | | |
|---|---|---|
| LINE | DIRECTION | LENGTH |
| L1 | N56°28'10"E | 1226.69' |
| L2 | N13°04'25"W | 804.86' |
| L3 | N00°40'43"E | 4.08' |
| L4 | N89°48'34"W | 2642.05' |

● = SURFACE HOLE LOCATION
◇ = KICK OFF POINT/LANDING POINT/ FIRST TAKE POINT
⬠ = INFLECTION POINT/LEASE PENETRATION POINT
○ = LAST TAKE POINT/BOTTOM HOLE LOCATION
▲ = SECTION CORNER LOCATED

NOTE:
- Distances referenced on plat to section lines are perpendicular.
- Basis of Bearings is a Transverse Mercator Projection with a Central Meridian of W103°53'00" (NAD 83)
- Colored areas within section lines represent oil & gas leases.




Detail "A"
No Scale


Sheet 2 of 2

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:** Cimarex Energy Company **OGRID:** 215099 **Date:** 2/19/24

**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.

| Well Name | API | ULSTR | Footages | Anticipated Oil BBL/D | Anticipated Gas MCF/D | Anticipated Produced Water BBL/D |
|---|---|---|---|---|---|---|
| Southern Hills 32-29 Federal | Com 5H | N, Sec 32 T25S, R27E | 792 FSL/ 1655 FWL | 1794 | 9248 | 5127 |
| | | | | | | |

**IV. Central Delivery Point Name:** Southern Hills 32-29 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 Date | Completion Commencement Date | Initial Flow Back Date | First Production Date |
|---|---|---|---|---|---|---|
| Southern Hills 32-29 Federal Com 5H | | 1/1/26 | 2/9/26 | 9/5/26 | 10/4/26 | 10/4/26 |
| | | | | | | |

**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.

# 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.

**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: | Sarah Jordan |
| Printed Name: | Sarah Jordan |
| Title: | Regulatory Analyst |
| E-mail Address: | sarah.jordan@coterra.com |
| Date: | 2/19/24 |
| Phone: | 432/620-1909 |

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

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

***From State of New Mexico, Natural Gas Management Plan***

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

**XEC Standard Response**

Standard facility gas process flow begins at the inlet separator. These vessels are designed based off of forecasted rates and residence times in accordance with, and often greater than, API 12J. The separated gas is then routed to an additional separation vessel (ie sales scrubber) in order to extract liquids that may have carried over or developed due to the decrease in pressure. The sales scrubber is sized based on API 521. From the sales scrubber, the gas leaves the facility and enters the gas midstream gathering network.

# Cimarex
# VII. Operational Practices

Cimarex values the sustainable development of New Mexico's natural resources. Venting and flaring of natural gas is a source of waste in the industry, and Cimarex will ensure that its values are aligned with those of NMOCD. As such, Cimarex plans to take pointed steps to ensure compliance with Subsection A through F of 19.15.27.8 NMAC.

Specifically, below are the steps Cimarex will plan to follow under routine well commissioning and operations.

1. Capture or combust natural gas during drilling operations where technically feasible, using the best industry practices and control technologies.
    a. All flares during these operations will be a minimum of 100ft away from the nearest surface-hole location.
2. All gas present during post-completion drill-out and flow back will be routed through separation equipment, and, if technically feasible, flare unsellable vapors rather than vent. Lastly, formal sales separator commissioning to process well-stream fluids and send gas to a gas flow line/collection system or use the gas for on-site fuel or beneficial usage, gas as soon as is safe and technically feasible.
3. Cimarex will ensure the flare or combustion equipment is properly sized to handle expected flow rates, ensure this equipment is equipped with an automatic or continuous ignition source, and ensure this equipment is designed for proper combustion efficiency.
4. If Cimarex must flare because gas is not meeting pipeline specifications, Cimarex will limit flaring to <60 days, analyze gas composition at least twice per week, and route gas into a gathering pipeline as soon as pipeline specifications are met.
5. Under routine production operations, Cimarex will not flare/vent unless:
    a. Venting or flaring occurs due to an emergency or equipment malfunction.
    b. Venting or flaring occurs as a result of unloading practices, and an operator is onsite (or within 30 minutes of drive time and posts contact information at the wellsite) until the end of unloading practice.
    c. The venting or flaring occurs during automated plungerlift operations, in which case the Cimarex operator will work to optimize the plungerlift system to minimize venting/flaring.
    d. The venting or flaring occurs during downhole well maintenance, in which case Cimarex will work to minimize venting or flaring operations to the extent that it does not pose a risk to safe operations.
    e. The well is an exploratory well, the division has approved the well as an exploratory well, venting or flaring is limited to 12 months, as approved by the division, and venting/flaring does not cause Cimarex to breach its State-wide 98% gas capture requirement.
    f. Venting or flaring occurs because the stock tanks or other low-pressure vessels are being gauged, sampled, or liquids are being loaded out.
    g. The venting or flaring occurs because pressurized vessels are being maintained and are being blown-down or depressurized.
    h. Venting or flaring occurs as a result of normal dehydration unit operations.

i. Venting or flaring occurs as a result of bradenhead testing.
j. Venting or flaring occurs as a result of normal compressor operations, including general compressor operations, compressor engines and turbines.
k. Venting or flaring occurs as a result of a packer leakage test.
l. Venting or flaring occurs as a result of a production test lasting less than 24 hours unless otherwise approved by the division.
m. Venting or flaring occurs as a result of new equipment commissioning and is necessary to purge impurities from the pipeline or production equipment.

6. Cimarex will maintain its equipment in accordance with its Operations and Maintenance Program, to ensure venting or flaring events are minimized and that equipment is properly functioning.
7. Cimarex will install automatic tank gauging equipment on all production facilities constructed after May 25, 2021, to ensure minimal emissions from tank gauging practices.
8. By November 25, 2022, all Cimarex facilities equipped with flares or combustors will be equipped with continuous pilots or automatic igniters, and technology to ensure proper function, i.e. thermocouple, fire-eye, etc…
9. Cimarex will perform AVO (audio, visual, olfactory) facility inspections in accordance with NMOCD requirements. Specifically, Cimarex will:
    a. Perform weekly inspections during the first year of production, and so long as production is greater than 60 MCFD.
    b. If production is less than 60 MCFD, Cimarex will perform weekly AVO inspections when an operator is present on location, and inspections at least once per calendar month with at least 20 calendar days between inspections.
10. Cimarex will measure or estimate the volume of vented, flared or beneficially used natural gas, regardless of the reason or authorization for such venting or flaring.
11. On all facilities constructed after May 25, 2021, Cimarex will install metering where feasible and in accordance with available technology and best engineering practices, in an effort to measure how much gas could have been vented or flared.
    a. In areas where metering is not technically feasible, such as low-pressure/low volume venting or flaring applications, engineering estimates will be used such that the methodology could be independently verified.
12. Cimarex will fulfill the division's requirements for reporting and filing of venting or flaring that exceeds 50 MCF in volume or last eight hours or more cumulatively within any 24-hour period.

## VIII. Best Management Practices to minimize venting during active and planned maintenance

Cimarex strives to ensure minimal venting occurs during active and planned maintenance activities. Below is a description of common maintenance practices, and the steps Cimarex takes to limit venting exposure.

- **Workovers:**
  - Always strive to kill well when performing downhole maintenance.
  - If vapors or trapped pressure is present and must be relieved then:
    - Initial blowdown to production facility:
      - Route vapors to LP flare if possible/applicable
    - Blowdown to portable gas buster tank:
      - Vent to existing or portable flare if applicable.

- **Stock tank servicing:**
  - Minimize time spent with thief hatches open.
  - When cleaning or servicing via manway, suck tank bottoms to ensure minimal volatiles exposed to atmosphere.
    - Connect vacuum truck to low pressure flare while cleaning bottoms to limit venting.
  - Isolate the vent lines and overflows on the tank being serviced from other tanks.

- **Pressure vessel/compressor servicing and associated blowdowns:**
  - Route to flare where possible.
  - Blow vessel down to minimum available pressure via pipeline, prior to venting vessel.
  - Preemptively changing anodes to reduce failures and extended corrosion related servicing.
  - When cleaning or servicing via manway, suck vessel bottoms to ensure minimal volatiles exposed to atmosphere.

- **Flare/combustor maintenance:**
  - Minimize downtime by coordinating with vendor and Cimarex staff travel logistics.
  - Utilizing preventative and predictive maintenance programs to replace high wear components before failure.
  - Because the flare/combustor is the primary equipment used to limit venting practices, ensure flare/combustor is properly maintained and fully operational at all times via routine maintenance, temperature telemetry, onsite visual inspections.

*The Cimarex expectation is to limit all venting exposure. Equipment that may not be listed on this document is still expected to be maintained and associated venting during such maintenance minimized.*

## 1. Geological Formations

TVD of target 9,458
MD at TD 19,822

Pilot Hole TD N/A
Deepest expected fresh water

| Formation | Depth (TVD) from KB | Water/Mineral Bearing/Target Zone | Hazards |
|---|---|---|---|
| RUSTLER | 842 | N/A | |
| Top of Salt | 1253 | N/A | |
| Base of Salt | 1878 | N/A | |
| Anhydrite | 2068 | N/A | |
| Lamar | 2089 | N/A | |
| Bell Canyon | 2188 | N/A | |
| Cherry Canyon | 3067 | N/A | |
| Brushy Canyon | 4034 | N/A | |
| Bone Spring Lime | 5621 | N/A | |
| Leonard Shale | 5829 | N/A | |
| 1st Bone Spring Sand | 6582 | N/A | |
| 2nd Bone Spring Shale | 6754 | N/A | |
| 2nd Bone Spring Sand | 7057 | N/A | |
| 3rd Bone Spring Carb | 7535 | N/A | |
| 3rd Bone Spring Sand | 8393 | N/A | |
| Wolfcamp | 8738 | N/A | |
| Wolfcamp C | 9489 | Hydrocarbons | |

## 2. Casing Program

| Hole Size | Casing Depth From | Casing Depth To | Setting Depth TVD | Casing Size | Weight (lb/ft) | Grade | Conn. | SF Collapse | SF Burst | SF Tension |
|---|---|---|---|---|---|---|---|---|---|---|
| 17 1/2 | 0 | 600 | 600 | 13-3/8" | 48.00 | H-40 | ST&C | 2.85 | 6.66 | 11.18 |
| 12 1/4 | 0 | 2108 | 2108 | 9-5/8" | 36.00 | J-55 | LT&C | 1.84 | 3.21 | 5.97 |
| | | | | | | | | | | |
| 8 3/4 | 0 | 9810 | 9448 | 7" | 26.00 | L-80 | BT&C | 1.22 | 1.64 | 59.87 |
| 6 | 8060 | 19822 | 9458 | 4-1/2" | 11.60 | P-110 | BT&C | 1.40 | 1.98 | 22.63 |
| | | | | | BLM Minimum Safety Factor | | | 1.125 | 1 | 1.6 Dry<br>1.8 Wet |

TVD was used on all calculations.
All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.h

| | Y or N |
|---|---|
| Is casing new? If used, attach certification as required in Onshore Order #1 | Y |
| Does casing meet API specifications? If no, attach casing specification sheet. | Y |
| Is premium or uncommon casing planned? If yes attach casing specification sheet. | N |
| Does the above casing design meet or exceed BLM's minimum standards? If not provide justification (loading assumptions, casing design criteria). | Y |
| Will the intermediate pipe be kept at a minimum 1/3 fluid filled to avoid approaching the collapse pressure rating of the casing? | N |
| Is well located within Capitan Reef? | N |
| If yes, does production casing cement tie back a minimum of 50' above the Reef? | N |
| Is well within the designated 4 string boundary. | N |
| Is well located in SOPA but not in R-111-P? | N |
| If yes, are the first 2 strings cemented to surface and 3rd string cement tied back 500' into previous casing? | N |
| Is well located in R-111-P and SOPA? | N |
| If yes, are the first three strings cemented to surface? | N |
| Is 2nd string set 100' to 600' below the base of salt? | N |
| Is well located in high Cave/Karst? | N |
| If yes, are there two strings cemented to surface? | N |
| (For 2 string wells) If yes, is there a contingency casing if lost circulation occurs? | N |
| Is well located in critical Cave/Karst? | N |
| If yes, are there three strings cemented to surface? | N |
| Is AC Report included? | Y |

### 3. Cementing Program

| Casing | # Sks | Wt. lb/gal | Yld ft3/sack | H2O gal/sk | 500# Comp. Strength (hours) | Slurry Description |
|---|---|---|---|---|---|---|
| **Surface** | 182 | 13.50 | 1.72 | 9.15 | 15.5 | Lead: Class C + Bentonite |
| | 195 | 14.80 | 1.34 | 6.32 | 9.5 | Tail: Class C + LCM |
| | | | | | | |
| **Intermediate** | 393 | 12.90 | 1.88 | 9.65 | 12 | Lead: 35:65 (Poz:C) + Salt + Bentonite |
| | 124 | 14.80 | 1.34 | 6.32 | 9.5 | Tail: Class C + LCM |
| | | | | | | |
| **Production** | 440 | 10.30 | 3.64 | 22.18 | 12 | Lead: Tuned Light + LCM |
| | 125 | 14.80 | 1.36 | 6.57 | 9.5 | Tail: Class C + Retarder |
| | | | | | | |
| | | | | | | |
| **Completion System** | 773 | 14.20 | 1.30 | 5.86 | 14:30 | Tail: 50:50 (Poz:H) + Salt + Bentonite + Fluid Loss + Dispersant + SMS |
| | | | | | | |

| Casing String | TOC | % Excess |
|---|---|---|
| Surface | 0 | 38 |
| Intermediate | 0 | 52 |
| Production | 1908 | 25 |
| Production | 1908 | 25 |
| Completion System | 9248 | 10 |

## 4. Pressure Control Equipment

| | |
|---|---|
| | A variance is requested for the use of a diverter on the surface casing. See attached for schematic. |

| BOP installed and tested before drilling which hole? | Size | Min Required WP | Type | | Tested To |
|---|---|---|---|---|---|
| **12 1/4** | **13 5/8** | **5M** | Annular | 5M | 100% of working pressure |
| | | | Blind Ram | | 5M |
| | | | Pipe Ram | | |
| | | | Double Ram | X | |
| | | | Other | | |
| **8 3/4** | **13 5/8** | **5M** | Annular | 5M | 100% of working pressure |
| | | | Blind Ram | | 5M |
| | | | Pipe Ram | X | |
| | | | Double Ram | X | |
| | | | Other | | |
| **6** | **13 5/8** | **5M** | Annular | 5M | 100% of working pressure |
| | | | Blind Ram | | 5M |
| | | | Pipe Ram | X | |
| | | | Double Ram | X | |
| | | | Other | | |

| | | |
|---|---|---|
| X | Formation integrity test will be performed per Onshore Order #2.<br>On Exploratory wells or 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. Will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.i. | |
| X | 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. | |
| | N | Are anchors required by manufacturer? |

### 5. Mud Program

| Depth | Type | Weight (ppg) | Viscosity | Water Loss |
|---|---|---|---|---|
| 0' to 600' | FW Spud Mud | 7.83 - 8.33 | 30-32 | N/C |
| 600' to 2108' | Brine Water | 9.50 - 10.00 | 30-32 | N/C |
| 2108' to 9810' | Cut Brine or OBM | 8.50 - 9.00 | 27-70 | N/C |
| 10197' to 19822' | Oil Based Mud | 10.50 - 11.00 | 50-70 | N/C |

Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept on location at all times.

| | |
|---|---|
| What will be used to monitor the loss or gain of fluid? | PVT/Pason/Visual Monitoring |

### 6. Logging and Testing Procedures

| Logging, Coring and Testing | |
|---|---|
| | Will run GR/CNL fromTD to surface (horizontal well – vertical portion of hole). Stated logs run will be in the Completion Report and submitted to the BLM. |
| X | No logs are planned based on well control or offset log information. |
| | Drill stem test? |
| | Coring? |

| Additional Logs Planned | Interval |
|---|---|

### 7. Drilling Conditions

| Condition | |
|---|---|
| BH Pressure at deepest TVD | 5409 psi |
| Abnormal Temperature | No |

| | |
|---|---|
| Hydrogen Sulfide (H2S) monitors will be installed prior to drilling out the surface shoe. If H2S is detected in concentrations greater than 100 ppm, the operator will comply with the provisions of Onshore Oil and Gas Order #6. If Hydrogen Sulfide is encountered, measured values and formations will be provided to the BLM. | |
| X | H2S is present |
| X | H2S plan is attached |

### 8. Other Facets of Operation

### 9. Wellhead

1. The multi-bowl wellhead will be installed by a vendor representative. A copy of the installation instructions has been sent to the BLM field office.
2. A packoff will be installed after running and cementing the production casing. This packoff will be tested to 5K psi.

**BOPE Additional Information & Testing**

1. After running the first string of casing, a 5M BOP/BOPE system with 5M annular will be installed. BOPs will be tested according to Onshore Order #2. BOPE will be tested to full rated pressure (5K for all BOPE, including the annular). For the low test, the system will be tested to 250 psi.
2. All BOP equipment will be tested utilizing a conventional test plug.
3. A remote kill line is included in the BOPE system
4. All casing strings will be tested per Onshore Order #2, to 0.22 psi/ft or 1,500 psi, whichever is greater, not to exceed 70% of casing burst.
5. If well conditions dictate, conventional slips will be set and BOPE will be tested to appropriate pressures based on permitted pressure requirements. Additional Well Control Notes

**Additional Well Control Notes**

1. In the event wellbore pressure encroaches to the maximum rated pressure of the annular, primary pressure control will be switched to the higher rated components (i.e., switch from annular to pipe rams) – upper pipe rams will be closed, and the annular opened in order to not exceed maximum rated pressures.

# Well Control Plan

## Warning Signs of a Kick

If a kick is ever suspected, perform flow check.

While Drilling:

1. Drilling break or increase in penetration rate
2. Increase of flow
3. Pit gain
4. Flow without pumping
5. Circulating pressure decrease and/or spm increase
6. Increase in gas cutting at the shakers
7. Decrease in cuttings at shakers

While Tripping:

1. Hole not taking the proper fill on trip out of hole
2. Hole returns too much mud on trip in hole
3. Flow without pumping

While Out of the Hole:

1. Flow
2. Pit gain

## Well Control Procedures with Diverter

A TIW valve in the open position must be on the rig floor at all times.

If rotating head is installed:

1. Perform flow check.
2. If well is flowing, divert flow down flow line and through separator, before returning across shakers.
3. Swap to 10 ppg brine and circulate around. Notify superintendent.

4. If well becomes uncontrollable, close annular, which will open HCR to divert flow away from rig.

If rotating head is not installed:

1. Perform flow check.
2. If well is flowing uncontrollably, close annular, which will open HCR to divert flow away from rig.
3. Swap to 10 ppg brine and circulate around. Notify superintendent.
4. After 10 ppg is circulated around shut pumps off and perform flow check.

## Well Control Procedures

Coterra follows a hard shut-in procedure. Choke will be in the closed position.

### *General Well Control*

1. If in doubt, secure the well first, then inform your supervisor.
2. Never wait for approval to shut in the well.
3. Verify that the mud pump is off before you close the BOP.
4. Always check and verify the well is properly secured after shut in.
5. Always install TIW valve in the open position.
6. If TIW valve is installed and then closed, apply estimated DP shut-in pressure above valve before opening.
7. The weak link in the mud system and mud lines is the pressure relief valve or pop off valve on the mud pump.
8. Keep the TIW valve wrench in a designated location on the rig floor and in the open position.
9. Use a drill string float above the bit. Don't perforate or disable the float.
10. In the event wellbore pressure encroaches to the maximum rated pressure of the annular, primary pressure control will be switched to the higher rated components (i.e., switch from annular to pipe rams) – upper pipe rams will be closed, and the annular opened in order to not exceed maximum rated pressures.

### *Hard Shut-In*

1. Remote choke is closed.
2. Stop pumping and space out.
3. Check for flow.
4. To shut in, close annular or pipe ram if no annular is present.
5. Open the HCR valve.
6. Check systems, bump float. Record Initial Shut in Drill pipe pressure and Initial shut in casing pressure.

### *Flow Check when on Bottom*

1. Alert crew & stop rotating
2. Pick up and space out
3. Shut down pumps
4. Observe well for flow
5. Shut-in if flowing

### *Shutting in while Drilling*

1. After flow has been detected via flow check, kill pumps, shut in well and open HCR
2. Verify well is shut-in and flow has stopped
3. Notify supervisory personnel
4. Record data
5. Begin go forward planning

### *Flow Check while Tripping*

1. Alert crew & pick up / space out
2. Stop pipe movement. Set slips with tool joint accessible at rotary table
3. Install open TIW safety valve and close valve
4. Observe well for flow
5. Shut-in if flowing

### *Shutting in while Tripping*

1. Install open TIW safety valve and close valve
2. Shut-in the well
3. Verify well is shut-in and flow has stopped
4. Install IBOP
5. Notify supervisory personnel
6. Record data; SICP, shut-in time, kick depth, and pit gain
7. Begin go forward planning

### *Shutting in while Out of Hole*

1. Sound alarm
2. Shut-in well: close blind rams.
3. Verify well is shut-in and monitor pressures.
4. Notify supervisory personnel
5. Record data; SICP, shut-in time, kick depth, and pit gain
6. Begin go forward planning

### *Information to Record while Shut-In*

1. Shut in drill pipe pressure every 5 minutes

2. Shut in casing pressure every 5 minutes
3. Pit gain
4. Total volume in pit system
5. Mud weight in suction pit
6. Current depth
7. Total depth
8. Time the well is shut in

### *H2S with Annular Diverter:*

1. Kill Pumps, close annular, which will open HCR, to divert flow away from rig.
2. Muster and take head count.
3. Call ASSI to check location for H2S. Call Coterra superintendent.
4. After ASSI has checked for H2S the path forward will be decided from Coterra superintendent.

### *H2S with BOP's:*

1. Kill pumps
2. Shut in annular with HCR open and chokes closed.
3. Muster and take head count.
4. Call ASSI to check location for H2S. Call Coterra superintendent.
5. After ASSI has checked for H2S. discuss path forward with Coterra superintendent

### *Procedure for Closing Blind Rams*

- Open HCR valve (visually check that the HCR valve is open – stem in the valve is open, stem out the valve is closed).
- Verify all circulating pumps are off (mud pumps, trip tank pump, etc.)
- Ensure that the hydraulic choke is in the closed position.
- Close the blind rams and place the "blind rams closed, bleed pressure and remove hole cover before opening" sign on the console.
- Monitor the shut in casing pressure gauge periodically while the blinds are closed to ensure that wellbore pressure isn't building. If pressure build up is observed, monitor the shut in casing pressure more frequently & document. Notify rig management and Coterra representative of the pressure build up.
- Ensure that the inner bushings are locked into the master bushings if applicable.
- Install hole cover.

### *Procedure for Opening Blind Rams*

- Make sure choke manifold is aligned correctly.
- Open the hydraulic choke to bleed any trapped pressure that may be under the blind rams. (Even if the casing pressure gauge is reading zero).

- Confirm that no flow is discharging into the trip tank or possum bellies of the shale shaker (wherever the separator is discharging into).
- Remove hole cover.
- Confirm that the inner bushing are locked into the master bushings if applicable.
- Clear all personnel from the rig floor.
- Remove sign and open blind rams.
- Return the BOPE to its original operating alignment.

### *BOP Drills*

- Drilling crews should conduct BOP drills weekly from BOP nipple up to TD for reaction time to properly simulate securing the well. Record BOP drills on that day's report.
- Standard precautions such as checking the accumulator for proper working pressure, function testing rams, and recording slow pump rates are performed on a daily basis or on trips..
- All supervisory personnel onsite need to be properly trained and currently hold certification from an approved blowout prevention school. Any deviation from this needs to be discussed prior to spud.
- Drillers should always notify the tool pusher and the drilling foreman before performing a blowout drill.

### *Choke Manifold Freeze Prevention*

- When possible, blow out the choke & kill lines as well as the choke manifold with rig air to remove water based fluids.
- When clear water is being placed into the choke & kill line as well as the choke manifold, make sure that the water has a mixture of 30% methanol added.
- When applicable, choke & kill lines as well as choke manifold needs to be pumped through with the rig pump by the driller to ensure that the lines aren't plugged with settling barite or solids.

# Standard New Mexico Variances

## Variance Request #1: Skid Rig after Cementing Surface Casing

Coterra requests permission to skid the rig to the next well on the pad in order to begin operations immediately after the cement job for the surface casing has been completed. After the cement job is completed, no operations on the subject well will be conducted until at least 8 hours have elapsed, and both lead and tail slurries have achieved 500 psi compressive strength. While cement cures, the surface casing of the subject well will be suspended in the well by a mandrel and landing ring system, which is independent from the rig and ensures that casing remains centered while the rig is active on other wells. Before skidding the rig, a TA cap is installed on the subject well.

## Variance Request #4: Utilize Co-Flex Choke Line

Coterra requests approval to utilize a co-flex choke line between the BOP and choke manifold. Certification for the proposed co-flex choke line is attached. The choke line is not required by the manufacturer to be anchored. In the event the specific co-flex choke line is not available, one of equal or higher rating will be used. Variance to include Hammer Union connections on lines downstream of the buffer tank only.

## Variance Request #5: 10M BOPE & 5M Annular

Coterra requests permission to utilize a 5M annular BOP with a 10M BOP primary system. The 10M BOP system will include upper pipe rams, blind rams, and lower pipe rams, all tested to 10K, 100% of the rated working pressure. The annular element will be tested to 5K, 100% of the rated working pressure. As noted in the well control plan, if pressure approaches the rated working pressure of the 5K annular element while in use, the upper pipe rams will be closed, and the annular opened so as to not exceed the rated working pressures.

Schlumberger

# Coterra Southern Hills 32-29 State Fed Com 5H Rev2 kFc 05Feb24 Proposal
## Geodetic Report
**Def Plan**

| | | | |
|---|---|---|---|
| **Report Date:** | February 06, 2024 - 05:50 PM ( UTC 0 ) | **Survey / DLS Computation:** | Minimum Curvature / Lubinski |
| **Client:** | COTERRA | **Vertical Section Azimuth:** | 0.620 °(GRID North) |
| **Field:** | NM Eddy County (NAD 83) | **Vertical Section Origin:** | 0.000 ft, 0.000 ft |
| **Structure / Slot:** | Coterra Southern Hills 32-29 State Fed Com Pad 5678 / Southern Hills 32- | **TVD Reference Datum:** | RKB |
| **Well:** | Southern Hills 32-29 State Fed Com 5H | **TVD Reference Elevation:** | 3266.600 ft above MSL |
| **Borehole:** | Southern Hills 32-29 State Fed Com 5H | **Seabed / Ground Elevation:** | 3243.600 ft above MSL |
| **UBHI / API#:** | Unknown / Unknown | **Magnetic Declination:** | 6.785° |
| **Survey Name:** | Coterra Southern Hills 32-29 State Fed Com 5H Rev2 kFc 05Feb24 | **Total Gravity Field Strength:** | 998.4346mgn (9.80665 Based) |
| **Survey Date:** | February 06, 2024 | **Gravity Model:** | GARM |
| **Tort / AHD / DDI / ERD Ratio:** | 129.685 ° / 11750.952 ft / 6.502 / 1.237 | **Total Magnetic Field Strength:** | 47288.578 nT |
| **Coordinate Reference System:** | NAD83 New Mexico State Plane, Eastern Zone, US Feet | **Magnetic Dip Angle:** | 59.579° |
| **Location Lat / Long:** | 32°4'52.27942"N , 104°12'56.11087"W | **Declination Date:** | February 05, 2024 |
| **Location Grid N/E Y/X:** | N 393293.490 ftUS , E 577805.470 ftUS | **Magnetic Declination Model:** | HDGM 2024 |
| **CRS Grid Convergence Angle:** | 0.063° | **North Reference:** | Grid North |
| **Grid Scale Factor:** | 0.99991061 | **Grid Convergence Used:** | 0.063° |
| **Version / Patch:** | 2023.1.0.1 | **Total Corr Mag North->Grid North:** | 6.723° |
| | | **Local Coord Referenced To:** | Well Head |

| Comments | MD (ft) | Incl (°) | Azim (°) | TVD (ft) | TVDSS (ft) | VSEC (ft) | NS (ft) | EW (ft) | Northing (ftUS) | Easting (ftUS) | Latitude (°) | Longitude (°) | DLS (°/100ft) | BR (°/100ft) | TR (°/100ft) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SHL [792' FSL, 1655' FWL] | 0.00 | 0.00 | 0.00 | 0.00 | -3,266.60 | 0.00 | 0.00 | 0.00 | 393,293.49 | 577,805.47 | 32.08118873 | -104.21558635 | | | |
| | 100.00 | 0.00 | 238.29 | 100.00 | -3,166.60 | 0.00 | 0.00 | 0.00 | 393,293.49 | 577,805.47 | 32.08118873 | -104.21558635 | 0.00 | 0.00 | 0.00 |
| | 200.00 | 0.00 | 238.29 | 200.00 | -3,066.60 | 0.00 | 0.00 | 0.00 | 393,293.49 | 577,805.47 | 32.08118873 | -104.21558635 | 0.00 | 0.00 | 0.00 |
| | 300.00 | 0.00 | 238.29 | 300.00 | -2,966.60 | 0.00 | 0.00 | 0.00 | 393,293.49 | 577,805.47 | 32.08118873 | -104.21558635 | 0.00 | 0.00 | 0.00 |
| | 400.00 | 0.00 | 238.29 | 400.00 | -2,866.60 | 0.00 | 0.00 | 0.00 | 393,293.49 | 577,805.47 | 32.08118873 | -104.21558635 | 0.00 | 0.00 | 0.00 |
| | 500.00 | 0.00 | 238.29 | 500.00 | -2,766.60 | 0.00 | 0.00 | 0.00 | 393,293.49 | 577,805.47 | 32.08118873 | -104.21558635 | 0.00 | 0.00 | 0.00 |
| | 600.00 | 0.00 | 238.29 | 600.00 | -2,666.60 | 0.00 | 0.00 | 0.00 | 393,293.49 | 577,805.47 | 32.08118873 | -104.21558635 | 0.00 | 0.00 | 0.00 |
| | 700.00 | 0.00 | 238.29 | 700.00 | -2,566.60 | 0.00 | 0.00 | 0.00 | 393,293.49 | 577,805.47 | 32.08118873 | -104.21558635 | 0.00 | 0.00 | 0.00 |
| | 800.00 | 0.00 | 238.29 | 800.00 | -2,466.60 | 0.00 | 0.00 | 0.00 | 393,293.49 | 577,805.47 | 32.08118873 | -104.21558635 | 0.00 | 0.00 | 0.00 |
| Rustler□ | 841.60 | 0.00 | 238.29 | 841.60 | -2,425.00 | 0.00 | 0.00 | 0.00 | 393,293.49 | 577,805.47 | 32.08118873 | -104.21558635 | 0.00 | 0.00 | 0.00 |
| | 900.00 | 0.00 | 238.29 | 900.00 | -2,366.60 | 0.00 | 0.00 | 0.00 | 393,293.49 | 577,805.47 | 32.08118873 | -104.21558635 | 0.00 | 0.00 | 0.00 |
| | 1,000.00 | 0.00 | 238.29 | 1,000.00 | -2,266.60 | 0.00 | 0.00 | 0.00 | 393,293.49 | 577,805.47 | 32.08118873 | -104.21558635 | 0.00 | 0.00 | 0.00 |
| | 1,100.00 | 0.00 | 238.29 | 1,100.00 | -2,166.60 | 0.00 | 0.00 | 0.00 | 393,293.49 | 577,805.47 | 32.08118873 | -104.21558635 | 0.00 | 0.00 | 0.00 |
| | 1,200.00 | 0.00 | 238.29 | 1,200.00 | -2,066.60 | 0.00 | 0.00 | 0.00 | 393,293.49 | 577,805.47 | 32.08118873 | -104.21558635 | 0.00 | 0.00 | 0.00 |
| Top of Salt□ | 1,252.60 | 0.00 | 238.29 | 1,252.60 | -2,014.00 | 0.00 | 0.00 | 0.00 | 393,293.49 | 577,805.47 | 32.08118873 | -104.21558635 | 0.00 | 0.00 | 0.00 |
| | 1,300.00 | 0.00 | 238.29 | 1,300.00 | -1,966.60 | 0.00 | 0.00 | 0.00 | 393,293.49 | 577,805.47 | 32.08118873 | -104.21558635 | 0.00 | 0.00 | 0.00 |
| | 1,400.00 | 0.00 | 238.29 | 1,400.00 | -1,866.60 | 0.00 | 0.00 | 0.00 | 393,293.49 | 577,805.47 | 32.08118873 | -104.21558635 | 0.00 | 0.00 | 0.00 |
| | 1,500.00 | 0.00 | 238.29 | 1,500.00 | -1,766.60 | 0.00 | 0.00 | 0.00 | 393,293.49 | 577,805.47 | 32.08118873 | -104.21558635 | 0.00 | 0.00 | 0.00 |
| Nudge, Build 2°/100ft | 1,600.00 | 0.00 | 238.29 | 1,600.00 | -1,666.60 | 0.00 | 0.00 | 0.00 | 393,293.49 | 577,805.47 | 32.08118873 | -104.21558635 | 0.00 | 0.00 | 0.00 |
| | 1,700.00 | 2.00 | 238.29 | 1,699.98 | -1,566.62 | -0.93 | -0.92 | -1.48 | 393,292.57 | 577,803.99 | 32.08118621 | -104.21559115 | 2.00 | 2.00 | 0.00 |
| | 1,800.00 | 4.00 | 238.29 | 1,799.84 | -1,466.76 | -3.73 | -3.67 | -5.94 | 393,289.82 | 577,799.53 | 32.08117866 | -104.21560553 | 2.00 | 2.00 | 0.00 |
| Base of Salt□ | 1,878.04 | 5.56 | 238.29 | 1,877.60 | -1,389.00 | -7.21 | -7.09 | -11.47 | 393,286.40 | 577,794.00 | 32.08116928 | -104.21562341 | 2.00 | 2.00 | 0.00 |
| | 1,900.00 | 6.00 | 238.29 | 1,899.45 | -1,367.15 | -8.39 | -8.25 | -13.35 | 393,285.24 | 577,792.12 | 32.08116609 | -104.21562948 | 2.00 | 2.00 | 0.00 |
| | 2,000.00 | 8.00 | 238.29 | 1,998.70 | -1,267.90 | -14.91 | -14.66 | -23.72 | 393,278.84 | 577,781.75 | 32.08114852 | -104.21566298 | 2.00 | 2.00 | 0.00 |
| Anhydrite□ | 2,069.70 | 9.39 | 238.29 | 2,067.60 | -1,199.00 | -20.55 | -20.20 | -32.68 | 393,273.30 | 577,772.79 | 32.08113332 | -104.21569194 | 2.00 | 2.00 | 0.00 |
| Lamar□ | 2,091.00 | 9.82 | 238.29 | 2,088.60 | -1,178.00 | -22.45 | -22.06 | -35.71 | 393,271.43 | 577,769.77 | 32.08112819 | -104.21570171 | 2.00 | 2.00 | 0.00 |
| | 2,100.00 | 10.00 | 238.29 | 2,097.47 | -1,169.13 | -23.28 | -22.88 | -37.02 | 393,270.61 | 577,768.45 | 32.08112595 | -104.21570597 | 2.00 | 2.00 | 0.00 |
| Bell Canyon□ | 2,191.80 | 11.84 | 238.29 | 2,187.60 | -1,079.00 | -32.58 | -32.02 | -51.82 | 393,261.48 | 577,753.66 | 32.08110088 | -104.21575375 | 2.00 | 2.00 | 0.00 |
| | 2,200.00 | 12.00 | 238.29 | 2,195.62 | -1,070.98 | -33.48 | -32.91 | -53.26 | 393,260.59 | 577,752.22 | 32.08109844 | -104.21575840 | 2.00 | 2.00 | 0.00 |
| | 2,300.00 | 14.00 | 238.29 | 2,293.06 | -973.54 | -45.51 | -44.73 | -72.39 | 393,248.76 | 577,733.09 | 32.08106599 | -104.21582022 | 2.00 | 2.00 | 0.00 |
| Hold | 2,350.18 | 15.00 | 238.29 | 2,341.64 | -924.96 | -52.23 | -51.34 | -83.08 | 393,242.16 | 577,722.40 | 32.08104787 | -104.21585476 | 2.00 | 2.00 | 0.00 |
| | 2,400.00 | 15.00 | 238.29 | 2,389.76 | -876.84 | -59.13 | -58.12 | -94.05 | 393,235.38 | 577,711.43 | 32.08102927 | -104.21589020 | 0.00 | 0.00 | 0.00 |
| | 2,500.00 | 15.00 | 238.29 | 2,486.35 | -780.25 | -72.98 | -71.72 | -116.08 | 393,221.77 | 577,689.41 | 32.08099193 | -104.21596135 | 0.00 | 0.00 | 0.00 |
| | 2,600.00 | 15.00 | 238.29 | 2,582.94 | -683.66 | -86.82 | -85.33 | -138.10 | 393,208.16 | 577,667.38 | 32.08095459 | -104.21603250 | 0.00 | 0.00 | 0.00 |
| | 2,700.00 | 15.00 | 238.29 | 2,679.53 | -587.07 | -100.67 | -98.94 | -160.12 | 393,194.56 | 577,645.36 | 32.08091725 | -104.21610365 | 0.00 | 0.00 | 0.00 |
| | 2,800.00 | 15.00 | 238.29 | 2,776.12 | -490.48 | -114.51 | -112.55 | -182.14 | 393,180.95 | 577,623.34 | 32.08087991 | -104.21617480 | 0.00 | 0.00 | 0.00 |
| | 2,900.00 | 15.00 | 238.29 | 2,872.71 | -393.89 | -128.36 | -126.16 | -204.17 | 393,167.34 | 577,601.32 | 32.08084257 | -104.21624594 | 0.00 | 0.00 | 0.00 |
| | 3,000.00 | 15.00 | 238.29 | 2,969.30 | -297.30 | -142.21 | -139.77 | -226.19 | 393,153.74 | 577,579.30 | 32.08080523 | -104.21631709 | 0.00 | 0.00 | 0.00 |
| | 3,100.00 | 15.00 | 238.29 | 3,065.89 | -200.71 | -156.05 | -153.37 | -248.21 | 393,140.13 | 577,557.28 | 32.08076789 | -104.21638824 | 0.00 | 0.00 | 0.00 |
| Cherry Canyon□ | 3,100.73 | 15.00 | 238.29 | 3,066.60 | -200.00 | -156.15 | -153.47 | -248.37 | 393,140.03 | 577,557.12 | 32.08076762 | -104.21638876 | 0.00 | 0.00 | 0.00 |
| | 3,200.00 | 15.00 | 238.29 | 3,162.48 | -104.12 | -169.90 | -166.98 | -270.24 | 393,126.52 | 577,535.26 | 32.08073055 | -104.21645939 | 0.00 | 0.00 | 0.00 |
| | 3,300.00 | 15.00 | 238.29 | 3,259.08 | -7.52 | -183.74 | -180.59 | -292.26 | 393,112.92 | 577,513.24 | 32.08069321 | -104.21653053 | 0.00 | 0.00 | 0.00 |
| | 3,400.00 | 15.00 | 238.29 | 3,355.67 | 89.07 | -197.59 | -194.20 | -314.28 | 393,099.31 | 577,491.22 | 32.08065587 | -104.21660168 | 0.00 | 0.00 | 0.00 |
| | 3,500.00 | 15.00 | 238.29 | 3,452.26 | 185.66 | -211.43 | -207.81 | -336.30 | 393,085.70 | 577,469.20 | 32.08061853 | -104.21667283 | 0.00 | 0.00 | 0.00 |
| | 3,600.00 | 15.00 | 238.29 | 3,548.85 | 282.25 | -225.28 | -221.42 | -358.33 | 393,072.09 | 577,447.18 | 32.08058119 | -104.21674398 | 0.00 | 0.00 | 0.00 |
| | 3,700.00 | 15.00 | 238.29 | 3,645.44 | 378.84 | -239.13 | -235.02 | -380.35 | 393,058.49 | 577,425.15 | 32.08054385 | -104.21681512 | 0.00 | 0.00 | 0.00 |
| | 3,800.00 | 15.00 | 238.29 | 3,742.03 | 475.43 | -252.97 | -248.63 | -402.37 | 393,044.88 | 577,403.13 | 32.08050651 | -104.21688627 | 0.00 | 0.00 | 0.00 |
| | 3,900.00 | 15.00 | 238.29 | 3,838.62 | 572.02 | -266.82 | -262.24 | -424.40 | 393,031.27 | 577,381.11 | 32.08046917 | -104.21695742 | 0.00 | 0.00 | 0.00 |
| | 4,000.00 | 15.00 | 238.29 | 3,935.21 | 668.61 | -280.66 | -275.85 | -446.42 | 393,017.67 | 577,359.09 | 32.08043183 | -104.21702857 | 0.00 | 0.00 | 0.00 |
| | 4,100.00 | 15.00 | 238.29 | 4,031.80 | 765.20 | -294.51 | -289.46 | -468.44 | 393,004.06 | 577,337.07 | 32.08039449 | -104.21709971 | 0.00 | 0.00 | 0.00 |
| Brushy Canyon□ | 4,101.86 | 15.00 | 238.29 | 4,033.60 | 767.00 | -294.77 | -289.71 | -468.85 | 393,003.81 | 577,336.66 | 32.08039380 | -104.21710104 | 0.00 | 0.00 | 0.00 |
| | 4,200.00 | 15.00 | 238.29 | 4,128.39 | 861.79 | -308.35 | -303.06 | -490.46 | 392,990.45 | 577,315.05 | 32.08035715 | -104.21717086 | 0.00 | 0.00 | 0.00 |
| | 4,300.00 | 15.00 | 238.29 | 4,224.99 | 958.39 | -322.20 | -316.67 | -512.49 | 392,976.85 | 577,293.03 | 32.08031981 | -104.21724201 | 0.00 | 0.00 | 0.00 |
| | 4,400.00 | 15.00 | 238.29 | 4,321.58 | 1,054.98 | -336.05 | -330.28 | -534.51 | 392,963.24 | 577,271.01 | 32.08028247 | -104.21731315 | 0.00 | 0.00 | 0.00 |
| | 4,500.00 | 15.00 | 238.29 | 4,418.17 | 1,151.57 | -349.89 | -343.89 | -556.53 | 392,949.63 | 577,248.99 | 32.08024513 | -104.21738430 | 0.00 | 0.00 | 0.00 |
| | 4,600.00 | 15.00 | 238.29 | 4,514.76 | 1,248.16 | -363.74 | -357.50 | -578.56 | 392,936.02 | 577,226.97 | 32.08020779 | -104.21745545 | 0.00 | 0.00 | 0.00 |
| | 4,700.00 | 15.00 | 238.29 | 4,611.35 | 1,344.75 | -377.58 | -371.11 | -600.58 | 392,922.42 | 577,204.95 | 32.08017045 | -104.21752659 | 0.00 | 0.00 | 0.00 |
| | 4,800.00 | 15.00 | 238.29 | 4,707.94 | 1,441.34 | -391.43 | -384.71 | -622.60 | 392,908.81 | 577,182.93 | 32.08013311 | -104.21759774 | 0.00 | 0.00 | 0.00 |
| | 4,900.00 | 15.00 | 238.29 | 4,804.53 | 1,537.93 | -405.27 | -398.32 | -644.62 | 392,895.20 | 577,160.90 | 32.08009577 | -104.21766889 | 0.00 | 0.00 | 0.00 |
| | 5,000.00 | 15.00 | 238.29 | 4,901.12 | 1,634.52 | -419.12 | -411.93 | -666.65 | 392,881.60 | 577,138.88 | 32.08005843 | -104.21774003 | 0.00 | 0.00 | 0.00 |
| | 5,100.00 | 15.00 | 238.29 | 4,997.71 | 1,731.11 | -432.97 | -425.54 | -688.67 | 392,867.99 | 577,116.86 | 32.08002109 | -104.21781118 | 0.00 | 0.00 | 0.00 |
| | 5,200.00 | 15.00 | 238.29 | 5,094.30 | 1,827.70 | -446.81 | -439.15 | -710.69 | 392,854.38 | 577,094.84 | 32.07998375 | -104.21788233 | 0.00 | 0.00 | 0.00 |
| | 5,300.00 | 15.00 | 238.29 | 5,190.89 | 1,924.29 | -460.66 | -452.76 | -732.72 | 392,840.78 | 577,072.82 | 32.07994641 | -104.21795347 | 0.00 | 0.00 | 0.00 |
| | 5,400.00 | 15.00 | 238.29 | 5,287.49 | 2,020.89 | -474.50 | -466.36 | -754.74 | 392,827.17 | 577,050.80 | 32.07990907 | -104.21802462 | 0.00 | 0.00 | 0.00 |
| | 5,500.00 | 15.00 | 238.29 | 5,384.08 | 2,117.48 | -488.35 | -479.97 | -776.76 | 392,813.56 | 577,028.78 | 32.07987173 | -104.21809577 | 0.00 | 0.00 | 0.00 |
| | 5,600.00 | 15.00 | 238.29 | 5,480.67 | 2,214.07 | -502.20 | -493.58 | -798.78 | 392,799.95 | 577,006.76 | 32.07983439 | -104.21816691 | 0.00 | 0.00 | 0.00 |
| | 5,700.00 | 15.00 | 238.29 | 5,577.26 | 2,310.66 | -516.04 | -507.19 | -820.81 | 392,786.35 | 576,984.74 | 32.07979705 | -104.21823806 | 0.00 | 0.00 | 0.00 |
| Bone Spring Lime□ | 5,744.87 | 15.00 | 238.29 | 5,620.60 | 2,354.00 | -522.25 | -513.29 | -830.69 | 392,780.24 | 576,974.86 | 32.07978029 | -104.21826998 | 0.00 | 0.00 | 0.00 |
| | 5,800.00 | 15.00 | 238.29 | 5,673.85 | 2,407.25 | -529.89 | -520.80 | -842.83 | 392,772.74 | 576,962.72 | 32.07975971 | -104.21830920 | 0.00 | 0.00 | 0.00 |
| | 5,900.00 | 15.00 | 238.29 | 5,770.44 | 2,503.84 | -543.73 | -534.41 | -864.85 | 392,759.13 | 576,940.70 | 32.07972237 | -104.21838035 | 0.00 | 0.00 | 0.00 |
| Leonard Shale□ | 5,960.21 | 15.00 | 238.29 | 5,828.60 | 2,562.00 | -552.07 | -542.60 | -878.11 | 392,750.94 | 576,927.44 | 32.07969988 | -104.21842319 | 0.00 | 0.00 | 0.00 |
| | 6,000.00 | 15.00 | 238.29 | 5,867.03 | 2,600.43 | -557.58 | -548.01 | -886.88 | 392,745.53 | 576,918.68 | 32.07968503 | -104.21845150 | 0.00 | 0.00 | 0.00 |
| | 6,100.00 | 15.00 | 238.29 | 5,963.62 | 2,697.02 | -571.42 | -561.62 | -908.90 | 392,731.92 | 576,896.65 | 32.07964769 | -104.21852264 | 0.00 | 0.00 | 0.00 |
| | 6,200.00 | 15.00 | 238.29 | 6,060.21 | 2,793.61 | -585.27 | -575.23 | -930.92 | 392,718.31 | 576,874.63 | 32.07961034 | -104.21859379 | 0.00 | 0.00 | 0.00 |
| | 6,300.00 | 15.00 | 238.29 | 6,156.80 | 2,890.20 | -599.12 | -588.84 | -952.94 | 392,704.71 | 576,852.61 | 32.07957300 | -104.21866493 | 0.00 | 0.00 | 0.00 |
| | 6,400.00 | 15.00 | 238.29 | 6,253.39 | 2,986.79 | -612.96 | -602.45 | -974.97 | 392,691.10 | 576,830.59 | 32.07953566 | -104.21873608 | 0.00 | 0.00 | 0.00 |
| | 6,500.00 | 15.00 | 238.29 | 6,349.99 | 3,083.39 | -626.81 | -616.05 | -996.99 | 392,677.49 | 576,808.57 | 32.07949832 | -104.21880723 | 0.00 | 0.00 | 0.00 |
| | 6,600.00 | 15.00 | 238.29 | 6,446.58 | 3,179.98 | -640.65 | -629.66 | -1,019.01 | 392,663.88 | 576,786.55 | 32.07946098 | -104.21887837 | 0.00 | 0.00 | 0.00 |
| Drop 2°/100ft | 6,690.39 | 15.00 | 238.29 | 6,533.88 | 3,267.28 | -653.17 | -641.96 | -1,038.92 | 392,651.59 | 576,766.65 | 32.07942723 | -104.21894268 | 0.00 | 0.00 | 0.00 |
| | 6,700.00 | 14.81 | 238.29 | 6,543.17 | 3,276.57 | -654.49 | -643.26 | -1,041.02 | 392,650.29 | 576,764.54 | 32.07942366 | -104.21894947 | 2.00 | -2.00 | 0.00 |
| 1st BS SS □ | 6,739.68 | 14.02 | 238.29 | 6,581.60 | 3,315.00 | -659.77 | -648.45 | -1,049.43 | 392,645.09 | 576,756.14 | 32.07940942 | -104.21897662 | 2.00 | -2.00 | 0.00 |
| | 6,800.00 | 12.81 | 238.29 | 6,640.28 | 3,373.68 | -667.26 | -655.81 | -1,061.33 | 392,637.74 | 576,744.24 | 32.07938923 | -104.21901508 | 2.00 | -2.00 | 0.00 |
| | 6,900.00 | 10.81 | 238.29 | 6,738.15 | 3,471.55 | -678.20 | -666.57 | -1,078.74 | 392,626.98 | 576,726.83 | 32.07935971 | -104.21907133 | 2.00 | -2.00 | 0.00 |
| 2nd BS Carb□ | 6,915.72 | 10.50 | 238.29 | 6,753.60 | 3,487.00 | -679.76 | -668.10 | -1,081.21 | 392,625.45 | 576,724.35 | 32.07935552 | -104.21907931 | 2.00 | -2.00 | 0.00 |
| | 7,000.00 | 8.81 | 238.29 | 6,836.69 | 3,570.09 | -687.32 | -675.53 | -1,093.24 | 392,618.02 | 576,712.33 | 32.07933513 | -104.21911816 | 2.00 | -2.00 | 0.00 |
| | 7,100.00 | 6.81 | 238.29 | 6,935.75 | 3,669.15 | -694.59 | -682.67 | -1,104.80 | 392,610.88 | 576,700.77 | 32.07931553 | -104.21915551 | 2.00 | -2.00 | 0.00 |
| | 7,200.00 | 4.81 | 238.29 | 7,035.23 | 3,768.63 | -700.00 | -687.99 | -1,113.41 | 392,605.56 | 576,692.16 | 32.07930092 | -104.21918333 | 2.00 | -2.00 | 0.00 |
| 2nd BS SS□ | 7,221.44 | 4.38 | 238.29 | 7,056.60 | 3,790.00 | -700.92 | -688.90 | -1,114.87 | 392,604.66 | 576,690.70 | 32.07929844 | -104.21918805 | 2.00 | -2.00 | 0.00 |
| | 7,300.00 | 2.81 | 238.29 | 7,135.01 | 3,868.41 | -703.56 | -691.49 | -1,119.07 | 392,602.07 | 576,686.51 | 32.07929133 | -104.21920160 | 2.00 | -2.00 | 0.00 |
| | 7,400.00 | 0.81 | 238.29 | 7,234.95 | 3,968.35 | -705.25 | -693.15 | -1,121.76 | 392,600.40 | 576,683.82 | 32.07928678 | -104.21921028 | 2.00 | -2.00 | 0.00 |
| Hold | 7,440.57 | 0.00 | 238.29 | 7,275.52 | 4,008.92 | -705.40 | -693.30 | -1,122.00 | 392,600.25 | 576,683.57 | 32.07928636 | -104.21921107 | 2.00 | -2.00 | 0.00 |
| | 7,500.00 | 0.00 | 238.29 | 7,334.95 | 4,068.35 | -705.40 | -693.30 | -1,122.00 | 392,600.25 | 576,683.57 | 32.07928636 | -104.21921107 | 0.00 | 0.00 | 0.00 |
| | 7,600.00 | 0.00 | 238.29 | 7,434.95 | 4,168.35 | -705.40 | -693.30 | -1,122.00 | 392,600.25 | 576,683.57 | 32.07928636 | -104.21921107 | 0.00 | 0.00 | 0.00 |
| 3rd BS Carb□ | 7,699.65 | 0.00 | 238.29 | 7,534.60 | 4,268.00 | -705.40 | -693.30 | -1,122.00 | 392,600.25 | 576,683.57 | 32.07928636 | -104.21921107 | 0.00 | 0.00 | 0.00 |
| | 7,700.00 | 0.00 | 238.29 | 7,534.95 | 4,268.35 | -705.40 | -693.30 | -1,122.00 | 392,600.25 | 576,683.57 | 32.07928636 | -104.21921107 | 0.00 | 0.00 | 0.00 |
| | 7,800.00 | 0.00 | 238.29 | 7,634.95 | 4,368.35 | -705.40 | -693.30 | -1,122.00 | 392,600.25 | 576,683.57 | 32.07928636 | -104.21921107 | 0.00 | 0.00 | 0.00 |
| | 7,900.00 | 0.00 | 238.29 | 7,734.95 | 4,468.35 | -705.40 | -693.30 | -1,122.00 | 392,600.25 | 576,683.57 | 32.07928636 | -104.21921107 | 0.00 | 0.00 | 0.00 |
| | 8,000.00 | 0.00 | 238.29 | 7,834.95 | 4,568.35 | -705.40 | -693.30 | -1,122.00 | 392,600.25 | 576,683.57 | 32.07928636 | -104.21921107 | 0.00 | 0.00 | 0.00 |
| | 8,100.00 | 0.00 | 238.29 | 7,934.95 | 4,668.35 | -705.40 | -693.30 | -1,122.00 | 392,600.25 | 576,683.57 | 32.07928636 | -104.21921107 | 0.00 | 0.00 | 0.00 |
| | 8,200.00 | 0.00 | 238.29 | 8,034.95 | 4,768.35 | -705.40 | -693.30 | -1,122.00 | 392,600.25 | 576,683.57 | 32.07928636 | -104.21921107 | 0.00 | 0.00 | 0.00 |
| | 8,300.00 | 0.00 | 238.29 | 8,134.95 | 4,868.35 | -705.40 | -693.30 | -1,122.00 | 392,600.25 | 576,683.57 | 32.07928636 | -104.21921107 | 0.00 | 0.00 | 0.00 |
| | 8,400.00 | 0.00 | 238.29 | 8,234.95 | 4,968.35 | -705.40 | -693.30 | -1,122.00 | 392,600.25 | 576,683.57 | 32.07928636 | -104.21921107 | 0.00 | 0.00 | 0.00 |
| | 8,500.00 | 0.00 | 238.29 | 8,334.95 | 5,068.35 | -705.40 | -693.30 | -1,122.00 | 392,600.25 | 576,683.57 | 32.07928636 | -104.21921107 | 0.00 | 0.00 | 0.00 |

| Comments | MD (ft) | Incl (°) | Azim (°) | TVD (ft) | TVDSS (ft) | VSEC (ft) | NS (ft) | EW (ft) | Northing (ftUS) | Easting (ftUS) | Latitude (°) | Longitude (°) | DLS (°/100ft) | BR (°/100ft) | TR (°/100ft) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3rd BS SS□ | 8,557.65 | 0.00 | 238.29 | 8,392.60 | 5,126.00 | -705.40 | -693.30 | -1,122.00 | 392,600.25 | 576,683.57 | 32.07928636 | -104.21921107 | 0.00 | 0.00 | 0.00 |
| | 8,600.00 | 0.00 | 238.29 | 8,434.95 | 5,168.35 | -705.40 | -693.30 | -1,122.00 | 392,600.25 | 576,683.57 | 32.07928636 | -104.21921107 | 0.00 | 0.00 | 0.00 |
| | 8,700.00 | 0.00 | 238.29 | 8,534.95 | 5,268.35 | -705.40 | -693.30 | -1,122.00 | 392,600.25 | 576,683.57 | 32.07928636 | -104.21921107 | 0.00 | 0.00 | 0.00 |
| | 8,800.00 | 0.00 | 238.29 | 8,634.95 | 5,368.35 | -705.40 | -693.30 | -1,122.00 | 392,600.25 | 576,683.57 | 32.07928636 | -104.21921107 | 0.00 | 0.00 | 0.00 |
| | 8,900.00 | 0.00 | 238.29 | 8,734.95 | 5,468.35 | -705.40 | -693.30 | -1,122.00 | 392,600.25 | 576,683.57 | 32.07928636 | -104.21921107 | 0.00 | 0.00 | 0.00 |
| Wolfcamp□ | 8,902.65 | 0.00 | 238.29 | 8,737.60 | 5,471.00 | -705.40 | -693.30 | -1,122.00 | 392,600.25 | 576,683.57 | 32.07928636 | -104.21921107 | 0.00 | 0.00 | 0.00 |
| | 9,000.00 | 0.00 | 238.29 | 8,834.95 | 5,568.35 | -705.40 | -693.30 | -1,122.00 | 392,600.25 | 576,683.57 | 32.07928636 | -104.21921107 | 0.00 | 0.00 | 0.00 |
| KOP, Build 10°/100ft | 9,060.57 | 0.00 | 238.29 | 8,895.52 | 5,628.92 | -705.40 | -693.30 | -1,122.00 | 392,600.25 | 576,683.57 | 32.07928636 | -104.21921107 | 0.00 | 0.00 | 0.00 |
| | 9,100.00 | 3.94 | 343.80 | 8,934.92 | 5,668.32 | -704.10 | -692.00 | -1,122.38 | 392,601.56 | 576,683.19 | 32.07928994 | -104.21921229 | 10.00 | 10.00 | 0.00 |
| | 9,200.00 | 13.94 | 343.80 | 9,033.58 | 5,766.98 | -689.24 | -677.09 | -1,126.71 | 392,616.46 | 576,678.86 | 32.07933094 | -104.21922622 | 10.00 | 10.00 | 0.00 |
| | 9,300.00 | 23.94 | 343.80 | 9,128.04 | 5,861.44 | -658.21 | -645.95 | -1,135.76 | 392,647.60 | 576,669.82 | 32.07941654 | -104.21925532 | 10.00 | 10.00 | 0.00 |
| | 9,400.00 | 33.94 | 343.80 | 9,215.44 | 5,948.84 | -611.94 | -599.54 | -1,149.24 | 392,694.00 | 576,656.34 | 32.07954416 | -104.21929869 | 10.00 | 10.00 | 0.00 |
| | 9,500.00 | 43.94 | 343.80 | 9,293.12 | 6,026.52 | -551.85 | -539.26 | -1,166.75 | 392,754.28 | 576,638.82 | 32.07970991 | -104.21935503 | 10.00 | 10.00 | 0.00 |
| | 9,600.00 | 53.94 | 343.80 | 9,358.72 | 6,092.12 | -479.76 | -466.94 | -1,187.76 | 392,826.59 | 576,617.81 | 32.07990876 | -104.21942262 | 10.00 | 10.00 | 0.00 |
| | 9,700.00 | 63.94 | 343.80 | 9,410.24 | 6,143.64 | -397.87 | -384.78 | -1,211.63 | 392,908.75 | 576,593.95 | 32.08013466 | -104.21949940 | 10.00 | 10.00 | 0.00 |
| | 9,800.00 | 73.94 | 343.80 | 9,446.13 | 6,179.53 | -308.65 | -295.28 | -1,237.64 | 392,998.24 | 576,567.95 | 32.08038075 | -104.21958304 | 10.00 | 10.00 | 0.00 |
| Build & Turn 5°/100ft | 9,810.57 | 75.00 | 343.80 | 9,448.95 | 6,182.35 | -298.90 | -285.50 | -1,240.48 | 393,008.02 | 576,565.11 | 32.08040764 | -104.21959218 | 10.00 | 10.00 | 0.00 |
| | 9,900.00 | 78.49 | 346.67 | 9,469.46 | 6,202.86 | -214.99 | -201.34 | -1,262.64 | 393,092.17 | 576,542.94 | 32.08063902 | -104.21966346 | 5.00 | 3.91 | 3.21 |
| | 10,000.00 | 82.43 | 349.79 | 9,486.03 | 6,219.43 | -118.70 | -104.83 | -1,282.74 | 393,188.67 | 576,522.85 | 32.08090438 | -104.21972801 | 5.00 | 3.94 | 3.12 |
| Wolfcamp C□ | 10,020.67 | 83.25 | 350.43 | 9,488.60 | 6,222.00 | -98.54 | -84.63 | -1,286.26 | 393,208.87 | 576,519.32 | 32.08095991 | -104.21973931 | 5.00 | 3.95 | 3.08 |
| | 10,100.00 | 86.39 | 352.86 | 9,495.76 | 6,229.16 | -20.51 | -6.47 | -1,297.74 | 393,287.02 | 576,507.85 | 32.08117477 | -104.21977611 | 5.00 | 3.96 | 3.06 |
| Landing Point | 10,196.83 | 90.24 | 355.80 | 9,498.60 | 6,232.00 | 75.67 | 89.82 | -1,307.30 | 393,383.30 | 576,498.29 | 32.08143946 | -104.21980664 | 5.00 | 3.97 | 3.04 |
| | 10,200.00 | 90.24 | 355.80 | 9,498.59 | 6,231.99 | 78.82 | 92.98 | -1,307.53 | 393,386.46 | 576,498.06 | 32.08144815 | -104.21980738 | 0.00 | 0.00 | 0.00 |
| Turn 2°/100ft | 10,276.83 | 90.24 | 355.80 | 9,498.27 | 6,231.67 | 155.38 | 169.60 | -1,313.16 | 393,463.08 | 576,492.43 | 32.08165878 | -104.21982529 | 0.00 | 0.00 | 0.00 |
| | 10,300.00 | 90.24 | 356.26 | 9,498.17 | 6,231.57 | 178.48 | 192.72 | -1,314.76 | 393,486.19 | 576,490.83 | 32.08172232 | -104.21983039 | 2.00 | 0.00 | 2.00 |
| | 10,400.00 | 90.24 | 358.26 | 9,497.75 | 6,231.15 | 278.30 | 292.60 | -1,319.54 | 393,586.06 | 576,486.05 | 32.08199688 | -104.21984546 | 2.00 | 0.00 | 2.00 |
| | 10,500.00 | 90.24 | 0.26 | 9,497.33 | 6,230.73 | 378.27 | 392.58 | -1,320.82 | 393,686.04 | 576,484.77 | 32.08227171 | -104.21984927 | 2.00 | 0.00 | 2.00 |
| Hold | 10,526.92 | 90.24 | 0.80 | 9,497.22 | 6,230.62 | 405.18 | 419.49 | -1,320.57 | 393,712.95 | 576,485.02 | 32.08234569 | -104.21984837 | 2.00 | 0.00 | 2.00 |
| | 10,600.00 | 90.24 | 0.80 | 9,496.91 | 6,230.31 | 478.26 | 492.57 | -1,319.55 | 393,786.02 | 576,486.04 | 32.08254655 | -104.21984482 | 0.00 | 0.00 | 0.00 |
| | 10,700.00 | 90.24 | 0.80 | 9,496.49 | 6,229.89 | 578.26 | 592.56 | -1,318.15 | 393,886.00 | 576,487.44 | 32.08282139 | -104.21983996 | 0.00 | 0.00 | 0.00 |
| | 10,800.00 | 90.24 | 0.80 | 9,496.07 | 6,229.47 | 678.26 | 692.55 | -1,316.75 | 393,985.98 | 576,488.84 | 32.08309623 | -104.21983511 | 0.00 | 0.00 | 0.00 |
| | 10,900.00 | 90.24 | 0.80 | 9,495.65 | 6,229.05 | 778.26 | 792.54 | -1,315.35 | 394,085.96 | 576,490.24 | 32.08337107 | -104.21983025 | 0.00 | 0.00 | 0.00 |
| | 11,000.00 | 90.24 | 0.80 | 9,495.23 | 6,228.63 | 878.26 | 892.53 | -1,313.95 | 394,185.94 | 576,491.64 | 32.08364591 | -104.21982539 | 0.00 | 0.00 | 0.00 |
| | 11,100.00 | 90.24 | 0.80 | 9,494.81 | 6,228.21 | 978.26 | 992.52 | -1,312.55 | 394,285.92 | 576,493.04 | 32.08392074 | -104.21982054 | 0.00 | 0.00 | 0.00 |
| | 11,200.00 | 90.24 | 0.80 | 9,494.38 | 6,227.78 | 1,078.26 | 1,092.51 | -1,311.16 | 394,385.90 | 576,494.43 | 32.08419558 | -104.21981568 | 0.00 | 0.00 | 0.00 |
| | 11,300.00 | 90.24 | 0.80 | 9,493.96 | 6,227.36 | 1,178.25 | 1,192.50 | -1,309.76 | 394,485.88 | 576,495.83 | 32.08447042 | -104.21981082 | 0.00 | 0.00 | 0.00 |
| | 11,400.00 | 90.24 | 0.80 | 9,493.54 | 6,226.94 | 1,278.25 | 1,292.49 | -1,308.36 | 394,585.86 | 576,497.23 | 32.08474526 | -104.21980596 | 0.00 | 0.00 | 0.00 |
| | 11,500.00 | 90.24 | 0.80 | 9,493.12 | 6,226.52 | 1,378.25 | 1,392.48 | -1,306.96 | 394,685.84 | 576,498.63 | 32.08502009 | -104.21980111 | 0.00 | 0.00 | 0.00 |
| | 11,600.00 | 90.24 | 0.80 | 9,492.70 | 6,226.10 | 1,478.25 | 1,492.46 | -1,305.56 | 394,785.82 | 576,500.03 | 32.08529493 | -104.21979625 | 0.00 | 0.00 | 0.00 |
| | 11,700.00 | 90.24 | 0.80 | 9,492.28 | 6,225.68 | 1,578.25 | 1,592.45 | -1,304.16 | 394,885.80 | 576,501.43 | 32.08556977 | -104.21979139 | 0.00 | 0.00 | 0.00 |
| | 11,800.00 | 90.24 | 0.80 | 9,491.86 | 6,225.26 | 1,678.25 | 1,692.44 | -1,302.76 | 394,985.78 | 576,502.83 | 32.08584461 | -104.21978653 | 0.00 | 0.00 | 0.00 |
| | 11,900.00 | 90.24 | 0.80 | 9,491.44 | 6,224.84 | 1,778.25 | 1,792.43 | -1,301.36 | 395,085.76 | 576,504.23 | 32.08611944 | -104.21978168 | 0.00 | 0.00 | 0.00 |
| | 12,000.00 | 90.24 | 0.80 | 9,491.02 | 6,224.42 | 1,878.24 | 1,892.42 | -1,299.96 | 395,185.74 | 576,505.63 | 32.08639428 | -104.21977682 | 0.00 | 0.00 | 0.00 |
| | 12,100.00 | 90.24 | 0.80 | 9,490.60 | 6,224.00 | 1,978.24 | 1,992.41 | -1,298.56 | 395,285.72 | 576,507.03 | 32.08666912 | -104.21977196 | 0.00 | 0.00 | 0.00 |
| | 12,200.00 | 90.24 | 0.80 | 9,490.18 | 6,223.58 | 2,078.24 | 2,092.40 | -1,297.16 | 395,385.70 | 576,508.43 | 32.08694396 | -104.21976710 | 0.00 | 0.00 | 0.00 |
| | 12,300.00 | 90.24 | 0.80 | 9,489.76 | 6,223.16 | 2,178.24 | 2,192.39 | -1,295.76 | 395,485.68 | 576,509.82 | 32.08721879 | -104.21976225 | 0.00 | 0.00 | 0.00 |
| | 12,400.00 | 90.24 | 0.80 | 9,489.34 | 6,222.74 | 2,278.24 | 2,292.38 | -1,294.36 | 395,585.66 | 576,511.22 | 32.08749363 | -104.21975739 | 0.00 | 0.00 | 0.00 |
| | 12,500.00 | 90.24 | 0.80 | 9,488.91 | 6,222.31 | 2,378.24 | 2,392.37 | -1,292.97 | 395,685.64 | 576,512.62 | 32.08776847 | -104.21975253 | 0.00 | 0.00 | 0.00 |
| Wolfcamp C□ | 12,574.69 | 90.24 | 0.80 | 9,488.60 | 6,222.00 | 2,452.93 | 2,467.06 | -1,291.92 | 395,760.32 | 576,513.67 | 32.08797376 | -104.21974890 | 0.00 | 0.00 | 0.00 |
| | 12,600.00 | 90.24 | 0.80 | 9,488.49 | 6,221.89 | 2,478.24 | 2,492.36 | -1,291.57 | 395,785.62 | 576,514.02 | 32.08804331 | -104.21974767 | 0.00 | 0.00 | 0.00 |
| | 12,700.00 | 90.24 | 0.80 | 9,488.07 | 6,221.47 | 2,578.24 | 2,592.35 | -1,290.17 | 395,885.60 | 576,515.42 | 32.08831815 | -104.21974282 | 0.00 | 0.00 | 0.00 |
| | 12,800.00 | 90.24 | 0.80 | 9,487.65 | 6,221.05 | 2,678.23 | 2,692.34 | -1,288.77 | 395,985.58 | 576,516.82 | 32.08859298 | -104.21973796 | 0.00 | 0.00 | 0.00 |
| | 12,900.00 | 90.24 | 0.80 | 9,487.23 | 6,220.63 | 2,778.23 | 2,792.33 | -1,287.37 | 396,085.56 | 576,518.22 | 32.08886782 | -104.21973310 | 0.00 | 0.00 | 0.00 |
| | 13,000.00 | 90.24 | 0.80 | 9,486.81 | 6,220.21 | 2,878.23 | 2,892.32 | -1,285.97 | 396,185.54 | 576,519.62 | 32.08914266 | -104.21972824 | 0.00 | 0.00 | 0.00 |
| | 13,100.00 | 90.24 | 0.80 | 9,486.39 | 6,219.79 | 2,978.23 | 2,992.30 | -1,284.57 | 396,285.52 | 576,521.02 | 32.08941750 | -104.21972338 | 0.00 | 0.00 | 0.00 |
| | 13,200.00 | 90.24 | 0.80 | 9,485.97 | 6,219.37 | 3,078.23 | 3,092.29 | -1,283.17 | 396,385.50 | 576,522.42 | 32.08969233 | -104.21971853 | 0.00 | 0.00 | 0.00 |
| | 13,300.00 | 90.24 | 0.80 | 9,485.55 | 6,218.95 | 3,178.23 | 3,192.28 | -1,281.77 | 396,485.48 | 576,523.82 | 32.08996717 | -104.21971367 | 0.00 | 0.00 | 0.00 |
| | 13,400.00 | 90.24 | 0.80 | 9,485.13 | 6,218.53 | 3,278.23 | 3,292.27 | -1,280.37 | 396,585.46 | 576,525.21 | 32.09024201 | -104.21970881 | 0.00 | 0.00 | 0.00 |
| | 13,500.00 | 90.24 | 0.80 | 9,484.71 | 6,218.11 | 3,378.22 | 3,392.26 | -1,278.97 | 396,685.44 | 576,526.61 | 32.09051685 | -104.21970395 | 0.00 | 0.00 | 0.00 |
| | 13,600.00 | 90.24 | 0.80 | 9,484.29 | 6,217.69 | 3,478.22 | 3,492.25 | -1,277.57 | 396,785.42 | 576,528.01 | 32.09079168 | -104.21969909 | 0.00 | 0.00 | 0.00 |
| | 13,700.00 | 90.24 | 0.80 | 9,483.86 | 6,217.26 | 3,578.22 | 3,592.24 | -1,276.17 | 396,885.40 | 576,529.41 | 32.09106652 | -104.21969424 | 0.00 | 0.00 | 0.00 |
| | 13,800.00 | 90.24 | 0.80 | 9,483.44 | 6,216.84 | 3,678.22 | 3,692.23 | -1,274.78 | 396,985.38 | 576,530.81 | 32.09134136 | -104.21968938 | 0.00 | 0.00 | 0.00 |
| | 13,900.00 | 90.24 | 0.80 | 9,483.02 | 6,216.42 | 3,778.22 | 3,792.22 | -1,273.38 | 397,085.36 | 576,532.21 | 32.09161619 | -104.21968452 | 0.00 | 0.00 | 0.00 |
| | 14,000.00 | 90.24 | 0.80 | 9,482.60 | 6,216.00 | 3,878.22 | 3,892.21 | -1,271.98 | 397,185.34 | 576,533.61 | 32.09189103 | -104.21967966 | 0.00 | 0.00 | 0.00 |
| | 14,100.00 | 90.24 | 0.80 | 9,482.18 | 6,215.58 | 3,978.22 | 3,992.20 | -1,270.58 | 397,285.32 | 576,535.01 | 32.09216587 | -104.21967480 | 0.00 | 0.00 | 0.00 |
| | 14,200.00 | 90.24 | 0.80 | 9,481.76 | 6,215.16 | 4,078.21 | 4,092.19 | -1,269.18 | 397,385.30 | 576,536.41 | 32.09244071 | -104.21966994 | 0.00 | 0.00 | 0.00 |
| | 14,300.00 | 90.24 | 0.80 | 9,481.34 | 6,214.74 | 4,178.21 | 4,192.18 | -1,267.78 | 397,485.28 | 576,537.81 | 32.09271554 | -104.21966509 | 0.00 | 0.00 | 0.00 |
| | 14,400.00 | 90.24 | 0.80 | 9,480.92 | 6,214.32 | 4,278.21 | 4,292.17 | -1,266.38 | 397,585.26 | 576,539.21 | 32.09299038 | -104.21966023 | 0.00 | 0.00 | 0.00 |
| | 14,500.00 | 90.24 | 0.80 | 9,480.50 | 6,213.90 | 4,378.21 | 4,392.16 | -1,264.98 | 397,685.24 | 576,540.61 | 32.09326522 | -104.21965537 | 0.00 | 0.00 | 0.00 |
| | 14,600.00 | 90.24 | 0.80 | 9,480.08 | 6,213.48 | 4,478.21 | 4,492.14 | -1,263.58 | 397,785.22 | 576,542.00 | 32.09354006 | -104.21965051 | 0.00 | 0.00 | 0.00 |
| IFP1, Turn 2°/100ft | 14,618.46 | 90.24 | 0.80 | 9,480.00 | 6,213.40 | 4,496.67 | 4,510.60 | -1,263.32 | 397,803.68 | 576,542.26 | 32.09359079 | -104.21964961 | 0.00 | 0.00 | 0.00 |
| Hold | 14,636.60 | 90.24 | 0.44 | 9,479.92 | 6,213.32 | 4,514.80 | 4,528.74 | -1,263.13 | 397,821.81 | 576,542.46 | 32.09364064 | -104.21964892 | 2.00 | 0.01 | -2.00 |
| | 14,700.00 | 90.24 | 0.44 | 9,479.66 | 6,213.06 | 4,578.21 | 4,592.14 | -1,262.64 | 397,885.21 | 576,542.94 | 32.09381491 | -104.21964713 | 0.00 | 0.00 | 0.00 |
| | 14,800.00 | 90.24 | 0.44 | 9,479.23 | 6,212.63 | 4,678.21 | 4,692.14 | -1,261.87 | 397,985.20 | 576,543.71 | 32.09408977 | -104.21964432 | 0.00 | 0.00 | 0.00 |
| | 14,900.00 | 90.24 | 0.44 | 9,478.81 | 6,212.21 | 4,778.20 | 4,792.13 | -1,261.11 | 398,085.18 | 576,544.48 | 32.09436462 | -104.21964150 | 0.00 | 0.00 | 0.00 |
| | 15,000.00 | 90.24 | 0.44 | 9,478.39 | 6,211.79 | 4,878.20 | 4,892.13 | -1,260.34 | 398,185.17 | 576,545.24 | 32.09463948 | -104.21963869 | 0.00 | 0.00 | 0.00 |
| | 15,100.00 | 90.24 | 0.44 | 9,477.96 | 6,211.36 | 4,978.20 | 4,992.12 | -1,259.58 | 398,285.16 | 576,546.01 | 32.09491434 | -104.21963588 | 0.00 | 0.00 | 0.00 |
| | 15,200.00 | 90.24 | 0.44 | 9,477.54 | 6,210.94 | 5,078.20 | 5,092.12 | -1,258.81 | 398,385.14 | 576,546.78 | 32.09518920 | -104.21963306 | 0.00 | 0.00 | 0.00 |
| | 15,300.00 | 90.24 | 0.44 | 9,477.12 | 6,210.52 | 5,178.20 | 5,192.12 | -1,258.04 | 398,485.13 | 576,547.54 | 32.09546406 | -104.21963025 | 0.00 | 0.00 | 0.00 |
| | 15,400.00 | 90.24 | 0.44 | 9,476.70 | 6,210.10 | 5,278.20 | 5,292.11 | -1,257.28 | 398,585.12 | 576,548.31 | 32.09573891 | -104.21962743 | 0.00 | 0.00 | 0.00 |
| | 15,500.00 | 90.24 | 0.44 | 9,476.27 | 6,209.67 | 5,378.20 | 5,392.11 | -1,256.51 | 398,685.11 | 576,549.07 | 32.09601377 | -104.21962462 | 0.00 | 0.00 | 0.00 |
| | 15,600.00 | 90.24 | 0.44 | 9,475.85 | 6,209.25 | 5,478.19 | 5,492.10 | -1,255.74 | 398,785.09 | 576,549.84 | 32.09628863 | -104.21962180 | 0.00 | 0.00 | 0.00 |
| | 15,700.00 | 90.24 | 0.44 | 9,475.43 | 6,208.83 | 5,578.19 | 5,592.10 | -1,254.98 | 398,885.08 | 576,550.61 | 32.09656349 | -104.21961899 | 0.00 | 0.00 | 0.00 |
| | 15,800.00 | 90.24 | 0.44 | 9,475.01 | 6,208.41 | 5,678.19 | 5,692.10 | -1,254.21 | 398,985.07 | 576,551.37 | 32.09683835 | -104.21961617 | 0.00 | 0.00 | 0.00 |
| | 15,900.00 | 90.24 | 0.44 | 9,474.58 | 6,207.98 | 5,778.19 | 5,792.09 | -1,253.45 | 399,085.05 | 576,552.14 | 32.09711320 | -104.21961336 | 0.00 | 0.00 | 0.00 |
| | 16,000.00 | 90.24 | 0.44 | 9,474.16 | 6,207.56 | 5,878.19 | 5,892.09 | -1,252.68 | 399,185.04 | 576,552.90 | 32.09738806 | -104.21961054 | 0.00 | 0.00 | 0.00 |
| | 16,100.00 | 90.24 | 0.44 | 9,473.74 | 6,207.14 | 5,978.19 | 5,992.09 | -1,251.91 | 399,285.03 | 576,553.67 | 32.09766292 | -104.21960773 | 0.00 | 0.00 | 0.00 |
| | 16,200.00 | 90.24 | 0.44 | 9,473.31 | 6,206.71 | 6,078.19 | 6,092.08 | -1,251.15 | 399,385.01 | 576,554.44 | 32.09793778 | -104.21960491 | 0.00 | 0.00 | 0.00 |
| | 16,300.00 | 90.24 | 0.44 | 9,472.89 | 6,206.29 | 6,178.19 | 6,192.08 | -1,250.38 | 399,485.00 | 576,555.20 | 32.09821263 | -104.21960210 | 0.00 | 0.00 | 0.00 |
| | 16,400.00 | 90.24 | 0.44 | 9,472.47 | 6,205.87 | 6,278.18 | 6,292.07 | -1,249.61 | 399,584.99 | 576,555.97 | 32.09848749 | -104.21959929 | 0.00 | 0.00 | 0.00 |
| | 16,500.00 | 90.24 | 0.44 | 9,472.05 | 6,205.45 | 6,378.18 | 6,392.07 | -1,248.85 | 399,684.98 | 576,556.74 | 32.09876235 | -104.21959647 | 0.00 | 0.00 | 0.00 |
| | 16,600.00 | 90.24 | 0.44 | 9,471.62 | 6,205.02 | 6,478.18 | 6,492.07 | -1,248.08 | 399,784.96 | 576,557.50 | 32.09903721 | -104.21959366 | 0.00 | 0.00 | 0.00 |
| | 16,700.00 | 90.24 | 0.44 | 9,471.20 | 6,204.60 | 6,578.18 | 6,592.06 | -1,247.32 | 399,884.95 | 576,558.27 | 32.09931207 | -104.21959084 | 0.00 | 0.00 | 0.00 |
| | 16,800.00 | 90.24 | 0.44 | 9,470.78 | 6,204.18 | 6,678.18 | 6,692.06 | -1,246.55 | 399,984.94 | 576,559.03 | 32.09958692 | -104.21958803 | 0.00 | 0.00 | 0.00 |
| | 16,900.00 | 90.24 | 0.44 | 9,470.35 | 6,203.75 | 6,778.18 | 6,792.05 | -1,245.78 | 400,084.92 | 576,559.80 | 32.09986178 | -104.21958521 | 0.00 | 0.00 | 0.00 |
| | 17,000.00 | 90.24 | 0.44 | 9,469.93 | 6,203.33 | 6,878.18 | 6,892.05 | -1,245.02 | 400,184.91 | 576,560.57 | 32.10013664 | -104.21958240 | 0.00 | 0.00 | 0.00 |
| | 17,100.00 | 90.24 | 0.44 | 9,469.51 | 6,202.91 | 6,978.17 | 6,992.05 | -1,244.25 | 400,284.90 | 576,561.33 | 32.10041150 | -104.21957958 | 0.00 | 0.00 | 0.00 |
| | 17,200.00 | 90.24 | 0.44 | 9,469.09 | 6,202.49 | 7,078.17 | 7,092.04 | -1,243.49 | 400,384.89 | 576,562.10 | 32.10068635 | -104.21957677 | 0.00 | 0.00 | 0.00 |
| | 17,300.00 | 90.24 | 0.44 | 9,468.66 | 6,202.06 | 7,178.17 | 7,192.04 | -1,242.72 | 400,484.87 | 576,562.86 | 32.10096121 | -104.21957395 | 0.00 | 0.00 | 0.00 |
| | 17,400.00 | 90.24 | 0.44 | 9,468.24 | 6,201.64 | 7,278.17 | 7,292.04 | -1,241.95 | 400,584.86 | 576,563.63 | 32.10123607 | -104.21957114 | 0.00 | 0.00 | 0.00 |
| | 17,500.00 | 90.24 | 0.44 | 9,467.82 | 6,201.22 | 7,378.17 | 7,392.03 | -1,241.19 | 400,684.85 | 576,564.40 | 32.10151093 | -104.21956832 | 0.00 | 0.00 | 0.00 |
| | 17,600.00 | 90.24 | 0.44 | 9,467.40 | 6,200.80 | 7,478.17 | 7,492.03 | -1,240.42 | 400,784.83 | 576,565.16 | 32.10178578 | -104.21956551 | 0.00 | 0.00 | 0.00 |
| | 17,700.00 | 90.24 | 0.44 | 9,466.97 | 6,200.37 | 7,578.17 | 7,592.02 | -1,239.65 | 400,884.82 | 576,565.93 | 32.10206064 | -104.21956269 | 0.00 | 0.00 | 0.00 |
| | 17,800.00 | 90.24 | 0.44 | 9,466.55 | 6,199.95 | 7,678.16 | 7,692.02 | -1,238.89 | 400,984.81 | 576,566.70 | 32.10233550 | -104.21955988 | 0.00 | 0.00 | 0.00 |
| | 17,900.00 | 90.24 | 0.44 | 9,466.13 | 6,199.53 | 7,778.16 | 7,792.02 | -1,238.12 | 401,084.79 | 576,567.46 | 32.10261036 | -104.21955706 | 0.00 | 0.00 | 0.00 |
| | 18,000.00 | 90.24 | 0.44 | 9,465.70 | 6,199.10 | 7,878.16 | 7,892.01 | -1,237.36 | 401,184.78 | 576,568.23 | 32.10288521 | -104.21955425 | 0.00 | 0.00 | 0.00 |
| | 18,100.00 | 90.24 | 0.44 | 9,465.28 | 6,198.68 | 7,978.16 | 7,992.01 | -1,236.59 | 401,284.77 | 576,568.99 | 32.10316007 | -104.21955143 | 0.00 | 0.00 | 0.00 |
| | 18,200.00 | 90.24 | 0.44 | 9,464.86 | 6,198.26 | 8,078.16 | 8,092.01 | -1,235.82 | 401,384.76 | 576,569.76 | 32.10343493 | -104.21954862 | 0.00 | 0.00 | 0.00 |
| | 18,300.00 | 90.24 | 0.44 | 9,464.44 | 6,197.84 | 8,178.16 | 8,192.00 | -1,235.06 | 401,484.74 | 576,570.53 | 32.10370979 | -104.21954580 | 0.00 | 0.00 | 0.00 |
| | 18,400.00 | 90.24 | 0.44 | 9,464.01 | 6,197.41 | 8,278.16 | 8,292.00 | -1,234.29 | 401,584.73 | 576,571.29 | 32.10398464 | -104.21954299 | 0.00 | 0.00 | 0.00 |
| | 18,500.00 | 90.24 | 0.44 | 9,463.59 | 6,196.99 | 8,378.15 | 8,391.99 | -1,233.52 | 401,684.72 | 576,572.06 | 32.10425950 | -104.21954017 | 0.00 | 0.00 | 0.00 |
| | 18,600.00 | 90.24 | 0.44 | 9,463.17 | 6,196.57 | 8,478.15 | 8,491.99 | -1,232.76 | 401,784.70 | 576,572.82 | 32.10453436 | -104.21953736 | 0.00 | 0.00 | 0.00 |
| | 18,700.00 | 90.24 | 0.44 | 9,462.74 | 6,196.14 | 8,578.15 | 8,591.99 | -1,231.99 | 401,884.69 | 576,573.59 | 32.10480922 | -104.21953454 | 0.00 | 0.00 | 0.00 |
| | 18,800.00 | 90.24 | 0.44 | 9,462.32 | 6,195.72 | 8,678.15 | 8,691.98 | -1,231.23 | 401,984.68 | 576,574.36 | 32.10508407 | -104.21953172 | 0.00 | 0.00 | 0.00 |
| | 18,900.00 | 90.24 | 0.44 | 9,461.90 | 6,195.30 | 8,778.15 | 8,791.98 | -1,230.46 | 402,084.66 | 576,575.12 | 32.10535893 | -104.21952891 | 0.00 | 0.00 | 0.00 |
| | 19,000.00 | 90.24 | 0.44 | 9,461.48 | 6,194.88 | 8,878.15 | 8,891.97 | -1,229.69 | 402,184.65 | 576,575.89 | 32.10563379 | -104.21952609 | 0.00 | 0.00 | 0.00 |
| | 19,100.00 | 90.24 | 0.44 | 9,461.05 | 6,194.45 | 8,978.15 | 8,991.97 | -1,228.93 | 402,284.64 | 576,576.66 | 32.10590865 | -104.21952328 | 0.00 | 0.00 | 0.00 |
| | 19,200.00 | 90.24 | 0.44 | 9,460.63 | 6,194.03 | 9,078.14 | 9,091.97 | -1,228.16 | 402,384.63 | 576,577.42 | 32.10618350 | -104.21952046 | 0.00 | 0.00 | 0.00 |
| | 19,300.00 | 90.24 | 0.44 | 9,460.21 | 6,193.61 | 9,178.14 | 9,191.96 | -1,227.39 | 402,484.61 | 576,578.19 | 32.10645836 | -104.21951765 | 0.00 | 0.00 | 0.00 |
| | 19,400.00 | 90.24 | 0.44 | 9,459.79 | 6,193.19 | 9,278.14 | 9,291.96 | -1,226.63 | 402,584.60 | 576,578.95 | 32.10673322 | -104.21951483 | 0.00 | 0.00 | 0.00 |
| | 19,500.00 | 90.24 | 0.44 | 9,459.36 | 6,192.76 | 9,378.14 | 9,391.96 | -1,225.86 | 402,684.59 | 576,579.72 | 32.10700808 | -104.21951202 | 0.00 | 0.00 | 0.00 |
| | 19,600.00 | 90.24 | 0.44 | 9,458.94 | 6,192.34 | 9,478.14 | 9,491.95 | -1,225.10 | 402,784.57 | 576,580.49 | 32.10728293 | -104.21950920 | 0.00 | 0.00 | 0.00 |
| | 19,700.00 | 90.24 | 0.44 | 9,458.52 | 6,191.92 | 9,578.14 | 9,591.95 | -1,224.33 | 402,884.56 | 576,581.25 | 32.10755779 | -104.21950639 | 0.00 | 0.00 | 0.00 |
| | 19,800.00 | 90.24 | 0.44 | 9,458.09 | 6,191.49 | 9,678.14 | 9,691.94 | -1,223.56 | 402,984.55 | 576,582.02 | 32.10783265 | -104.21950357 | 0.00 | 0.00 | 0.00 |
| Southern Hills 32-29 State Fed C | 19,822.37 | 90.24 | 0.44 | 9,458.00 | 6,191.40 | 9,700.51 | 9,714.32 | -1,223.39 | 403,006.92 | 576,582.19 | 32.10789415 | -104.21950294 | 0.00 | 0.00 | 0.00 |

**Survey Type:** Def Plan

| Comments | MD (ft) | Incl (°) | Azim (°) | TVD (ft) | TVDSS (ft) | VSEC (ft) | NS (ft) | EW (ft) | Northing (ftUS) | Easting (ftUS) | Latitude (°) | Longitude (°) | DLS (°/100ft) | BR (°/100ft) | TR (°/100ft) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

**Survey Error Model:** ISCWSA0 3 - D 95 % Confidence 2.7955 sigma
**Survey Program:**

| Description | Part | MD From (ft) | MD To (ft) | EOU Freq (ft) | Hole Size (in) | Casing Diameter (in) | Expected Max Inclination (deg) | Survey Tool Code | Vendor / Tool | Borehole / Survey |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 0.000 | 9,850.000 | 1/100.000 | 25 – 8.75 – 6.125 | – 9.625 – 7 – 4.5 | | A001Mb_MWD | | Southern Hills 32-29 State Fed Com 5H / Coterra S |
| | 1 | 9,850.000 | 19,720.481 | 1/100.000 | 6.125 | 4.5 | | A008Mb_MWD+IFR1+MS | | Southern Hills 32-29 State Fed Com 5H / Coterra S |

**EOU Geometry:**

| End MD (ft) | Hole Size (in) | Casing Size (in) | Name |
|---|---|---|---|
| 312.130 | 17.500 | 13.375 | |
| 2,762.130 | 12.250 | 9.625 | |
| 9,263.130 | 8.750 | 7.000 | |
| 19,867.200 | 6.125 | 4.500 | |

**PECOS DISTRICT**

**SURFACE USE**

**CONDITIONS OF APPROVAL**

| | |
|---|---|
| OPERATOR'S NAME: | Cimarex Energy Company |
| LEASE NO.: | NMNM114348 |
| COUNTY: | Eddy County, New Mexico |

Wells:

SOUTHERN HILLS 32-29 FEDERAL COM 5H

SOUTHERN HILLS 32-29 FEDERAL COM 6H

SOUTHERN HILLS 32-29 FEDERAL COM 7H





**Approval Date: 01/03/2025**

# TABLE OF CONTENTS

# 1. GENERAL PROVISIONS

The failure of the operator to comply with these requirements may result in the assessment of liquidated damages or penalties pursuant to 43 CFR 3163.1 or 3163.2. A copy of these conditions of approval shall be present on the location during construction, drilling and reclamation activity. Any request for a variance shall be submitted to the Authorized Officer on Form 3160-5, Sundry Notices and Report on Wells.

## 1.1. ARCHAEOLOGICAL, PALEONTOLOGY & HISTORICAL SITES

Any cultural resource (historic or prehistoric site or object) discovered by the operator, or any person working on the operator's behalf, on the public or federal land shall be immediately reported to the Authorized Officer. The operator shall suspend all operations in the immediate area (within 100ft) 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, in conjunction with a BLM Cultural Resource Specialist, to determine appropriate actions to prevent the loss of significant scientific values. The operator shall 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 operator.

Traditional Cultural Properties (TCPs) are protected by NHPA as codified in 36 CFR 800 for possessing traditional, religious, and cultural significance tied to a certain group of individuals. Though there are currently no designated TCPs within the project area or within a mile of the project area, but it is possible for a TCP to be designated after the approval of this project. **If a TCP is designated in the project area after the project's approval, the BLM Authorized Officer will notify the operator of the following conditions and the duration for which these conditions are required.**

1. Temporary halting of all construction, drilling, and production activities to lower noise.
2. Temporary shut-off of all artificial lights at night.

The operator is hereby obligated to comply with procedures established in the Native American Graves Protection and Repatriation Act (NAGPRA), specifically NAGPRA Subpart B regarding discoveries, to protect human remains, associated funerary objects, sacred objects, and objects of cultural patrimony discovered during project work. If any human skeletal remains, funerary objects, sacred objects, or objects of cultural patrimony are discovered at any time during construction, all construction activities shall halt and a BLM-CFO Authorized Officer will be notified immediately. The BLM will then be required to be notified, in writing, within 24 hours of the discovery. The written notification should include the geographic location by county and state, the contents of the discovery, and the steps taken to protect said discovery. You must also include any potential threats to the discovery and a conformation that all activity within 100ft of the discovery has ceased and work will not resume until written certification is issued. All work on the entire project must halt for a minimum of 3 days and work cannot resume until an Authorized Officer grants permission to do so.

Any paleontological resource discovered by the operator, or any person working on the operator's behalf, on public or Federal land shall be immediately reported to the Authorized Officer. The operator shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. The operator 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 operator.

## 1.2. RANGELAND RESOURCES

### 1.2.1. **Cattleguards**

Where a permanent cattleguard 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.

1.2.2. **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).

1.2.3. **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.

## 1.3. 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, New Mexico Department of Agriculture, and BLM requirements and policies.

**1.3.1 African Rue (Peganum harmala)**

**Spraying:** The spraying of African Rue must be completed by a licensed or certified applicator. In order to attempt to kill or remove African Rue the proper mix of chemical is needed. The mix consists of 2% Arsenal (Imazapyr) and 2% Roundup (Glyphosate) along with a nonionic surfactant. Any other chemicals or combinations shall be approved by the BLM Noxious Weeds Coordinator prior to treatment. African Rue shall be sprayed in connection to any dirt working activities or disturbances to the site being sprayed. Spraying of African Rue shall be done on immature plants at initial growth through flowering and mature plants between budding and flowering stages. Spraying shall not be conducted after flowering when plant is fruiting. This will ensure optimal intake of chemical and decrease chances of developing herbicide resistance. After spraying, the operator or necessary parties must contact the Carlsbad Field Office to inspect the effectiveness of the application treatment to the plant species. No ground disturbing activities can take place until the inspection by the authorized officer is complete. The operator may contact the Environmental Protection Department or the BLM Noxious Weed Coordinator at (575) 234-5972 or BLM_NM_CFO_NoxiousWeeds@blm.gov.

**Management Practices:** In addition to spraying for African Rue, good management practices should be followed. All equipment should be washed off using a power washer in a designated containment area. The containment area shall be bermed to allow for containment of the seed to prevent it from entering any open areas of the nearby landscape. The containment area shall be excavated near or adjacent to the well pad at a depth of three feet and just large enough to get equipment inside it to be washed off. This will allow all seeds to be in a centrally located area that can be treated at a later date if the need arises.

## 1.4. LIGHT POLLUTION

1.4.1. **Downfacing**

All permanent lighting will be pointed straight down at the ground in order to prevent light spill beyond the edge of approved surface disturbance.

1.4.2. **Shielding**

All permanent lighting will use full cutoff luminaires, which are fully shielded (i.e., not emitting direct or indirect light above an imaginary horizontal plane passing through the lowest part of the light source).

1.4.3. **Lighting Color**

Lighting shall be 3,500 Kelvin or less (Warm White) except during drilling, completion, and workover operations. No bluish-white lighting shall be used in permanent outdoor lighting.

# 2. SPECIAL REQUIREMENTS

## 2.1. CAVE/KARST

2.1.1. **General Construction**

- No blasting
- The BLM, Carlsbad Field Office, will be informed immediately if any subsurface drainage channels, cave passages, or voids are penetrated during construction, and no additional construction shall occur until clearance has been issued by the Authorized Officer.
- All linear surface disturbance activities will avoid sinkholes and other karst features to lessen the possibility of encountering near surface voids during construction, minimize changes to runoff, and prevent untimely leaks and spills from entering the karst drainage system.
- This is a sensitive area and all spills or leaks will be reported to the BLM immediately for their immediate and proper treatment, as defined in NTL 3A for Major Undesirable Events.

2.1.2. **Pad Construction**

- The pad will be constructed and leveled by adding the necessary fill and caliche. No blasting will be used for any construction or leveling activities.
- The entire perimeter of the well pad 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 high with impermeable mineral material (e.g., caliche).
- No water flow from the uphill side(s) of the pad shall be allowed to enter the well pad.
- The topsoil stockpile shall be located outside the bermed well pad.
- Topsoil, either from the well pad or surrounding area, shall not be used to construct the berm.
- No storm drains, tubing or openings shall be placed in the berm.
- 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.
- 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 access road entering the well pad shall be constructed so that the integrity of the berm height surrounding the well pad is not compromised (i.e. an access road crossing the berm cannot be lower than the berm height).
- Following a rain event, all fluids will be vacuumed off of the pad and hauled off-site and disposed at a proper disposal facility.

2.1.3. **Road Construction**

- Turnout ditches and drainage leadoffs will not be constructed in such a manner as to alter the natural flow of water into or out of cave or karst features.
- Special restoration stipulations or realignment may be required if subsurface features are discovered during construction.

2.1.4. **Buried Pipeline/Cable Construction**

- Rerouting of the buried line(s) may be required if a subsurface void is encountered during construction to minimize the potential subsidence/collapse of the feature(s) as well as the possibility of leaks/spills entering the karst drainage system.

2.1.5. **Powerline Construction**

- Smaller powerlines will be routed around sinkholes and other karst features to avoid or lessen the possibility of encountering near surface voids and to minimize changes to runoff or possible leaks and spills from entering karst systems.
- Larger powerlines will adjust their pole spacing to avoid cave and karst features.
- Special restoration stipulations or realignment may be required if subsurface voids are encountered.

2.1.6. **Surface Flowlines Installation**

- Flowlines will be routed around sinkholes and other karst features to minimize the possibility of leaks/spills from entering the karst drainage system.

2.1.7. **Production Mitigation**

- Tank battery locations and facilities will be bermed and lined with a 20-mil thick permanent liner that has a 4 oz. felt backing, or equivalent, to prevent tears or punctures. Secondary containment holding capacity must be large enough to contain 1 ½ times the content of the largest tank or 24-hour production, whichever is greater (displaced volume from all tanks within the berms MUST be subtracted from total volume of containment in calculating holding capacity).
- Implementation of a leak detection system to provide an early alert to operators when a leak has occurred.
- Automatic shut off, check values, or similar systems will be installed for pipelines and tanks to minimize the effects of catastrophic line failures used in production or drilling.

2.1.8. **Residual and Cumulative Mitigation**

The operator will perform annual pressure monitoring on all casing annuli. If the test results indicate a casing failure has occurred, contact a BLM Engineer immediately, and take remedial action to correct the problem.

2.1.9. **Plugging and Abandonment Mitigation**

Upon well abandonment in high cave karst areas, additional plugging conditions of approval may be required. The BLM will assess the situation and work with the operator to ensure proper plugging of the wellbore.

## 2.3 WILDLIFE

2.3.2. **Texas Hornshell Mussel**

Oil and Gas and Associated Infrastructure Mitigation Measures for Zone D – CCA Boundary Requirements:

- Provide CEHMM with the permit, lease, or other authorization form BLM, if applicable.
- Provide CEHMM with plats or other electronic media describing the new surface disturbance for the project.

Oil and Gas Zone D - CCA Boundary requirements.

- Implement erosion control measures in accordance with the Reasonable and Prudent Practices for Stabilization (“RAPPS”)
- Comply with SPCC requirements in accordance with 40 CFR Part 112;
- Comply with the United States Army Corp of Engineers (USACE) Nationwide 12 General Permit, where applicable;

- Utilize technologies (like underground borings for pipelines), where feasible;
- Educate personnel, agents, contractors, and subcontractors about the requirements of conservation measures, COAs, Stips and provide direction in accordance with the Permit.

## 2.4 VISUAL RESOURCE MANAGEMENT

2.5.1 **VRM IV**

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

# 3. CONSTRUCTION REQUIRENMENTS

## 3.1 CONSTRUCTION NOTIFICATION

The BLM shall administer compliance and monitor construction of the access road and well pad. Notify the Carlsbad Field Office at BLM_NM_CFO_Construction_Reclamation@blm.gov 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 COAs on the well site and they shall be made available upon request by the Authorized Officer.

## 3.2 TOPSOIL

The operator shall strip the topsoil (the A horizon) from the entire well pad area and stockpile the topsoil along the edge of the well pad as depicted in the APD. No more than the top 6 inches of topsoil shall be removed. 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 (the B horizon and below) 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.

## 3.3 CLOSED LOOP SYSTEM

Tanks are required for drilling operations: No reserve pits will be used for drill cuttings. The operator shall properly dispose of drilling contents at an authorized disposal site.

## 3.4 FEDERAL MINERAL 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.

## 3.5 WELL PAD & SURFACING

Any surfacing material used to surface the well pad will be removed at the time of interim and final reclamation.

## 3.6 EXCLOSURE FENCING (CELLARS & PITS)

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

The operator will also install and maintain mesh netting for all open well cellars to prevent access to smaller wildlife before and after drilling operations until the well cellar is free of fluids and the operator. Use a maximum netting mesh size of 1 ½ inches. The netting must not have holes or gaps.

## 3.7 ON LEASE ACESS ROAD

### 3.7.1 **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 twenty-five (25) feet.

### 3.7.2 **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 will 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.

### 3.7.3 **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.

### 3.7.4 **Ditching**

Ditching shall be required on both sides of the road.

### 3.7.5 **Turnouts**

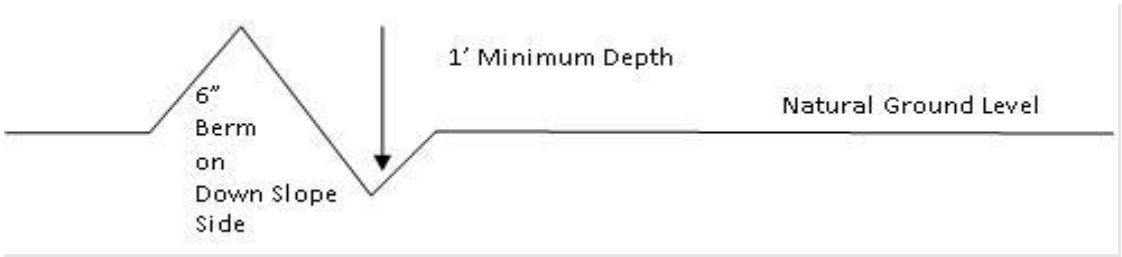
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall conform to Figure 1; cross section and plans for typical road construction.

### 3.7.6 **Drainage**

Drainage control systems shall be constructed on the entire length of road (e.g. ditches, sidehill outsloping and insloping, leadoff 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:

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

3.7.7 **Public Access**

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





**Approval Date: 01/03/2025**

**Construction Steps**

1. Salvage topsoil
2. Construct road
3. Redistribute topsoil
4. Revegetate slopes

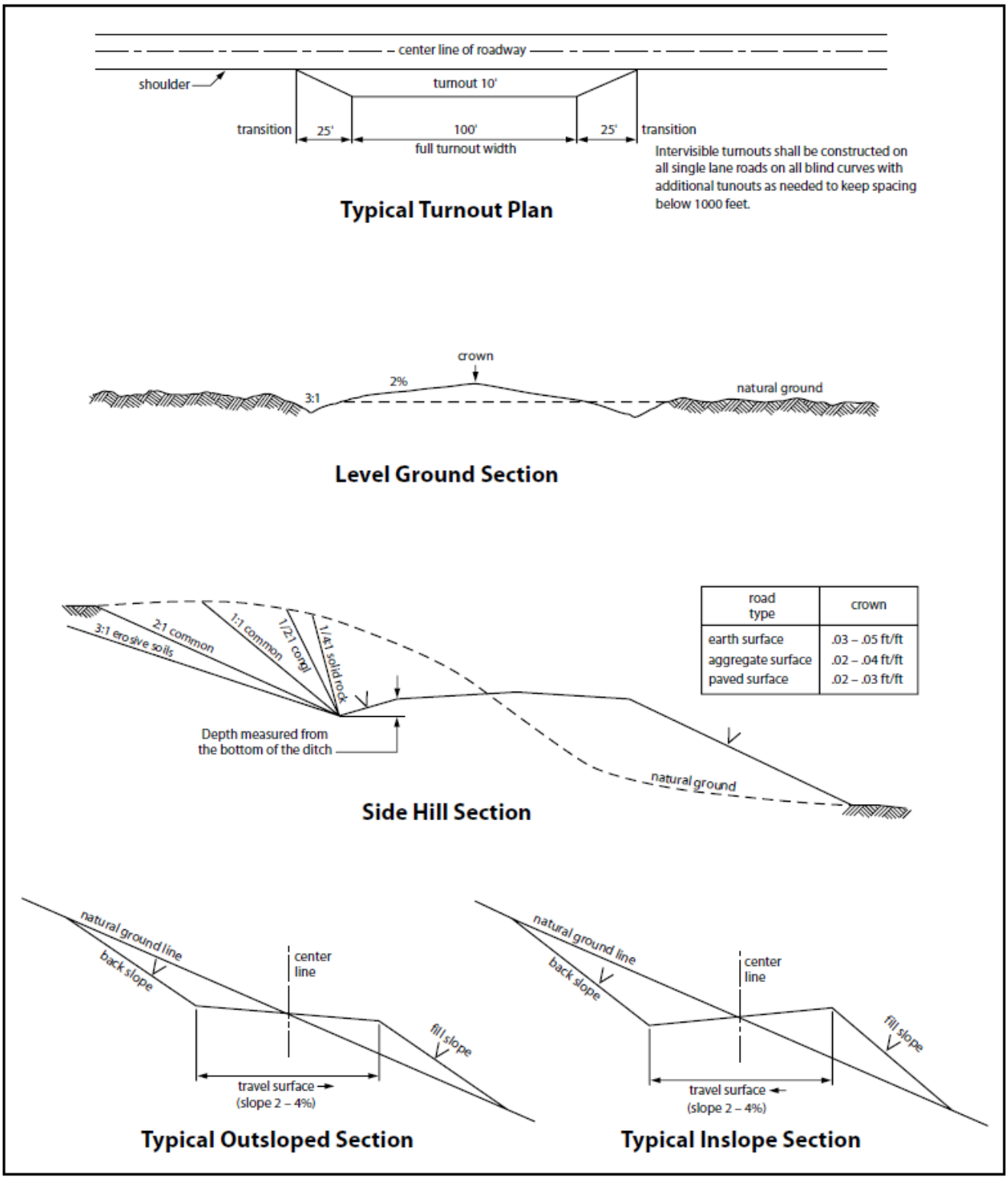



Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.





**Approval Date: 01/03/2025**

# 5. PRODUCTION (POST DRILLING)

## 5.1 WELL STRUCTURES & FACILITIES

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

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

### 5.1.2 **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.

### 5.1.3. 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.

### 5.1.4. 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.

### 5.1.5. 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.

# 6. RECLAMATION

Stipulations required by the Authorized Officer on specific actions may differ from the following general guidelines

## 6.1 ROAD AND SITE RECLAMATION

Any roads constructed during the life of the well will have the caliche removed or linear burial. If contaminants are indicated then testing will be required for chlorides and applicable contaminate anomalies for final disposal determination (disposed of in a manner approved by the Authorized Officer within Federal, State and Local statutes, regulations, and ordinances) and seeded to the specifications in sections 6.5 and 6.6.

## 6.2 EROSION CONTROL

Install erosion control berms, windrows, and hummocks. Windrows must be level and constructed perpendicular to down-slope drainage; steeper slopes will require greater windrow density. Topsoil between windrows must be ripped to a depth of at least 12”, unless bedrock is encountered. Any large boulders pulled up during ripping must be deep-buried on location. Ripping must be perpendicular to down-slope. The surface must be left rough in order to catch and contain rainfall on-site. Any trenches resulting from erosion cause by run-off shall be addressed immediately.

## 6.3 INTERIM RECLAMATION

During the life of the development, all disturbed areas not needed for active support of production operations must 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 must work with BLM surface protection specialists (BLM_NM_CFO_Construction_Reclamation@blm.gov) to devise the best strategies to reduce the size of the location. Interim reclamation must allow for remedial well operations, as well as safe and efficient removal of oil and gas.

During reclamation, the removal of caliche and any other surface material is required. 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 in section 6.6.

Upon completion of interim reclamation, the operator shall submit a Sundry Notice, Subsequent Report of Reclamation (Form 3160-5).

## 6.4 FINAL ABANDONMENT & RECLAMATION

Prior to surface abandonment, the operator shall submit a Notice of Intent Sundry Notice and reclamation plan.

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 will 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. After earthwork and seeding is completed, the operator is required to submit a Sundry Notice, Subsequent Report of Reclamation.

Operators shall contact a BLM surface protection specialist prior to surface abandonment operations for site specific objectives (BLM_NM_CFO_Construction_Reclamation@blm.gov).

## 6.5 SEEDING TECHNIQUES

Seeds shall be hydro-seeded, mechanically drilled, or broadcast, with the broadcast-seeded area raked, ripped or dragged to aid in covering the seed. The seed mixture shall be evenly and uniformly planted over the disturbed area.

## 6.6 SOIL SPECIFIC SEED MIXTURE

The lessee/permitee 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 land application will be accomplished by mechanical planting 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 tend to drop the bottom of the drill and are planted first; the operator 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 BLM or Soil Conservation

District 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 or until several months of precipitation have occurred, enabling a full four months of growth, with one or more seed generations being established.





**Approval Date: 01/03/2025**

**Seed Mixture 1 for Loamy Sites**

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

| Species | lb/acre |
|---|---|
| Plains lovegrass (Eragrostis intermedia) | 0.5 |
| Sand dropseed (Sporobolus cryptandrus) | 1.0 |
| Sideoats grama (Bouteloua curtipendula) | 5.0 |
| Plains bristlegrass (Setaria macrostachya) | 2.0 |

*Pounds of pure live seed:

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

# PECOS DISTRICT
# DRILLING CONDITIONS OF APPROVAL

| | |
|---|---|
| **OPERATOR'S NAME:** | **Cimarex Energy Company** |
| **LOCATION:** | Section 32, T.25 S., R.27 E., NMPM |
| **COUNTY:** | Eddy County, New Mexico |

| | |
|---|---|
| **WELL NAME & NO.:** | **Southern Hills 32-29 Federal Com 5H** |
| **ATS/API ID:** | **ATS-24-1438** |
| **APD ID:** | **10400097781** |
| **Sundry ID:** | **N/a** |

COA





**Approval Date: 01/03/2025**

| | | | |
|---|---|---|---|
| H2S | No | | |
| Potash | None | None | |
| Cave/Karst Potential | High | | |
| Cave/Karst Potential | ☐ Critical | | |
| Variance | ☐ None | ☒ Flex Hose | ☐ Other |
| Wellhead | Conventional and Multibowl | | |
| Other | ☐ 4 String ☐ 5 String | Capitan Reef None | ☐ WIPP |
| Other | Pilot Hole None | ☐ Open Annulus | |
| Cementing | Contingency Squeeze None | Echo-Meter None | Primary Cement Squeeze None |
| Special Requirements | ☐ Water Disposal/Injection | ☑ COM | ☐ Unit |
| Special Requirements | ☐ Batch Sundry | Waste Prevention None | |
| Special Requirements Variance | ☐ Break Testing | ☐ Offline Cementing | ☐ Casing Clearance |





**Approval Date: 01/03/2025**

## A. HYDROGEN SULFIDE

Hydrogen Sulfide (H2S) monitors shall be installed prior to drilling out the surface shoe. If H2S is detected in concentrations greater than 100 ppm, the Hydrogen Sulfide area shall meet **43 CFR part 3170 Subpart 3176**, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, provide measured values and formations to the BLM.

## B. CASING

1. The **13-3/8** inch surface casing shall be set at approximately **600 feet** (a minimum of **70 feet (Eddy County)** into the Rustler Anhydrite and above the salt when present, and below usable fresh water) and cemented to the surface. The surface hole shall be **17 1/2** inch in diameter.

    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 **8 hours** 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 **9-5/8** 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 High Cave/Karst 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.

3. The minimum required fill of cement behind the **7** inch production casing is:

    - Cement should tie-back at least **200 feet** into previous casing string. Operator shall provide method of verification. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst or potash.**

4. The minimum required fill of cement behind the **4-1/2** inch production liner is:

   - Cement should tie-back **100 feet** into the previous casing. Operator shall provide method of verification.
     **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst or potash.**
     **Cement excess is less than 25%, more cement is required if washout occurs. Adjust cement volume and excess based on a fluid caliper or similar method that reflects the as-drilled size of the wellbore.**

## 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.

**Option 1:**

a. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **3000 (3M)** psi.

b. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **9-5/8** inch intermediate casing shoe shall be **5000 (5M)** psi.

**Option 2:**

Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the **13-3/8** inch surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **5000 (5M)** 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 43 CFR 3172.6(b)(9) 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.
- The operator will submit an as-drilled survey well plat of the well completion, but are not limited to, those specified in **43 CFR part 3170 Subpart 3171**
- 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
**EMAIL** or call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220,
**BLM_NM_CFO_DrillingNotifications@BLM.GOV**
(575) 361-2822

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 2nd 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 **43 CFR part 3170 Subpart 3172** 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.

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 of both lead and tail cement, 2) until cement has been in place at least 8 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 **43 CFR part 3170 Subpart 3172** and **API STD 53 Sec. 5.3**.

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 43 CFR 3172.6(b)(9) 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 cement), 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



 **Approval Date: 01/03/2025**

done. For all casing strings, casing cut-off and BOP installation can be initiated at twelve hours after bumping the cement plug. The BOPE test can be initiated after bumping the cement plug with the casing valve open. (only applies to single stage cement jobs, prior to the cement setting up.)

c. The tests shall be done by an independent service company utilizing a test plug not a cup or J-packer and can be initiated immediately with the casing valve open. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to **43 CFR part 3170 Subpart 3172** 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 8 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 **43 CFR part 3170 Subpart 3172**.

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.

Long Vo (LVO) 10/30/2024





**Approval Date: 01/03/2025**

# H2S Drilling Operations Plan

## Training

*All company and contract personnel admitted on location must be trained by a qualified H2S safety instructor to do the following:*

1. Characteristics of H2S
2. Physical effects and hazards
3. Principle and operation of H2S detectors, warning system, and briefing areas
4. Evacuation procedure, routes and first aid
5. Proper use of safety equipment & life support systems
6. Essential personnel meeting Medical Evaluation criteria will receive additional training on the proper use of 30 minute pressure demand air packs.

## H2S Detection and Alarm Systems

1. 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
2. An audio alarm system will be installed on the derrick floor and in the top doghouse

## Windsock and/or wind streamers

1. Windsock at mudpit area should be high enough to be visible
2. Windsock on the rig floor and / or top of doghouse should be high enough to be visible

## Condition Flags & Signs

1. Warning signs on access road to location
2. Flags are to be displayed on sign at the 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.

## Well Control Equipment

1. See the pressure control section of this submission.

## Communication

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

## Drillstem Testing

1. No DSTs or cores are planned at this tmie
2. Drilling contractor supervisor will be required to be familiar with the effects that H2S has on tubular goods and other mechanical equipment.
3. If H2S is encountered, mud system will be altered if necessary to maintain control of the well. A mud gas separator will be brought into service along with H2S scavenger if necessary.

# H2S Contingency Plan

## Emergency Procedures

In the event of an H2S release, the first responder(s) must:

1. Isolate the area and prevent entry by other persons into the 100 PPM ROE.
2. Evacuate any public places encompassed by the 100 PPM ROE.
3. Be equipped with H2S monitors and air packs in order to control the release.
4. Use the buddy system
5. Take precautions to avoid personal injury during this operation
6. Contact operator and/or local officials to aid in operation. See list of emergency contacts attached.
7. Have received training the detection of H2S, measures for protection against the gas, and equipment used for protection and emergency response

## Ignition of the Gas Source

1. Should control of the well be considered lost and ignition considered, take care to protect against exposure to Sulfur Dioxide ($SO_2$). 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

## Contacting Authorities

1. Coterra 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.
2. 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. Coterra’s response must be in coordination with the State of New Mexico's" Hazardous Materials Emergency Response Plan" (HMER).

Coterra: H2S Plan

# Emergency Contacts

**Coterra Energy**

Charlie Pritchard: Drilling Operations Manager: 432 – 238 – 7084

Darrell Kelly: Vice President EHS: 281 – 589 – 5795

**Third Party**

**PERMIAN REGION CONTACT NUMBERS**

**CALL 911**

**Air Ambulance Services**

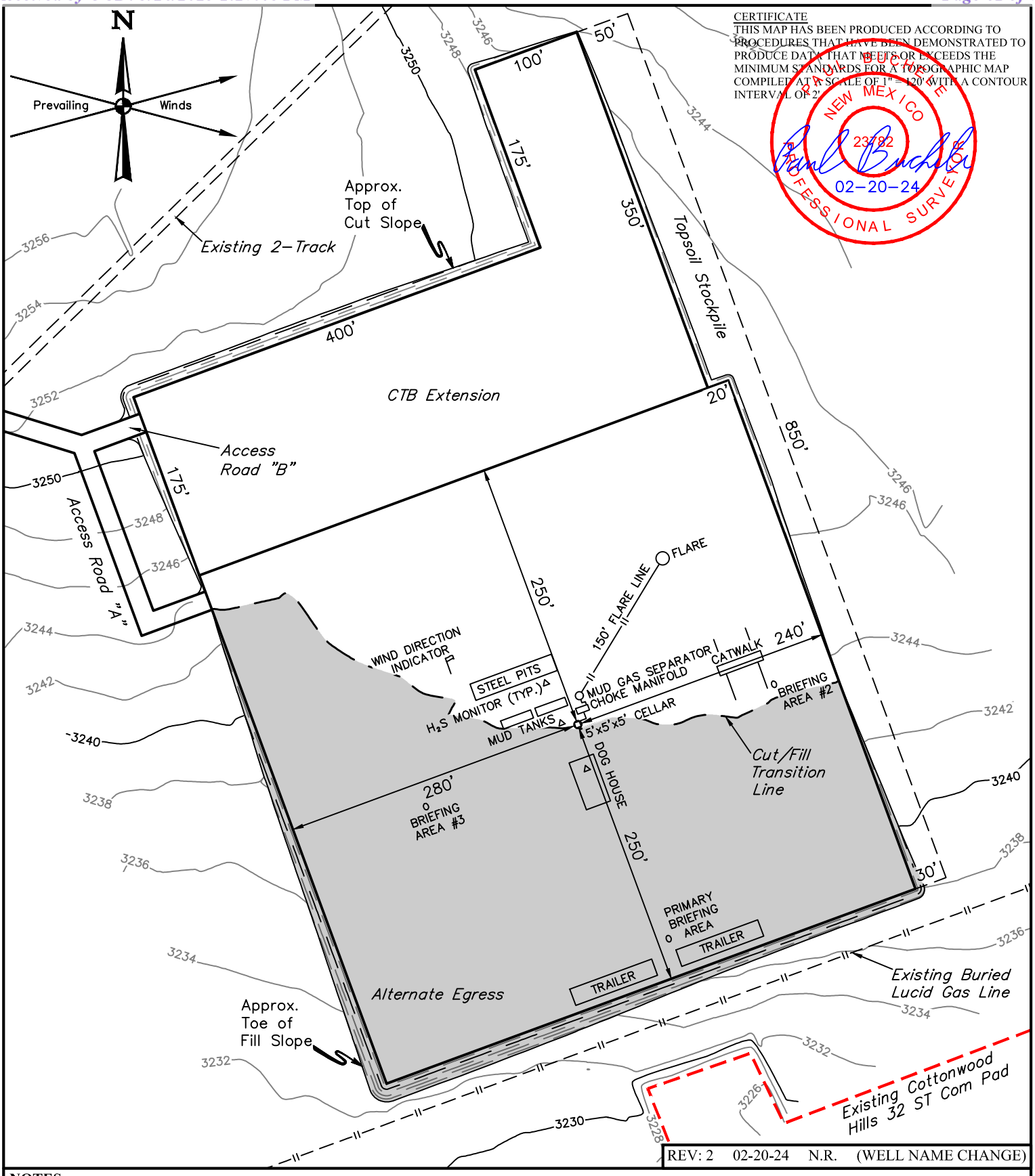
| | |
|---|---|
| Reeves County Medical - Pecos, TX | 432-447-3551 |
| Aero Care - Midland, TX | 800-627-2376 |
| Tri State Care Flight - Artesia, NM | 800-800-0900 |
| Air Methods - Hobbs, NM | 800-242-6199 |

**Fire / Police / Medical Care**

| Sheriff's Office | | Fire Departments | | Hospital / Medical Care Facilities | |
|---|---|---|---|---|---|
| Andrews County | 432-523-5545 | Andrews | 432-523-3111 | Permian Regional Med. | 432-523-2200 |
| Reagan County | 325-884-2929 | Big Lake | 325-884-3650 | Reagan Memorial Hosp. | 325-884-2561 |
| Howard County | 432-264-2244 | Big Springs | 432-264-2303 | Scenic Mountain Med Ctr | 432-263-1211 |
| Terry County | 806-637-2212 | Brownfield | 806-637-6633 | | |
| Crane County | 432-558-3571 | Crane | 432-558-2361 | Crane Memorial Hosp. | 432-558-3555 |
| Val Verde County | 830-774-7513 | Del Rio | 830-774-8648 | Val Verde Regional Med. | 830-775-8566 |
| | | Denver City | 806-592-3516 | Yoakum County Hospital | 806-592-2121 |
| Pecos County | 432-336-3521 | Ft. Stockton | 432-336-8525 | | |
| Glasscock County | 432-354-2361 | Garden City | | | |
| Winkler County | 432-586-3461 | Kermit | 432-586-2577 | Winkler County Memorial | 432-586-5864 |
| | | McCamey | 432-652-8232 | McCamey Hospital | 432-652-8626 |
| Loving County | 432-377-2411 | Mentone | | | |
| Irion County | 325-835-2551 | Mertzon | | | |
| Ward County | 432-943-6703 | Monahans | 432-943-2211 | Ward Memorial Hospital | 432-943-2511 |
| Ector County | 432-335-3050 | Odessa | 432-335-4650 | Odessa Regional Hosp. | 432-582-8340 |
| Crocket County | 325-392-2661 | Ozona | 325-392-2626 | | |
| Reeves County | 432-445-4901 | Pecos | 505-757-6511 | Reeves County Hospital | 432-447-3551 |
| Yoakum County | 806-456-2377 | Plains | 806-456-2288 | | |
| Garza County | 806-495-3595 | Post | | | |
| Upton County | 432-693-2422 | Rankin | | | |
| Coke County | 915-453-2717 | Robert Lee | | | |
| | | Roscoe | 325-766-3931 | | |
| Hockley County | 806-894-3126 | Levelland | 806-894-3155 | Covenant Health | 806-894-4963 |
| Tom Green County | 325-655-8111 | San Angelo | 325-657-4355 | San Angelo Comm. Med. | 325-949-9511 |
| Gaines County | 432-758-9871 | Seminole | 432-758-3621 | Memorial Hospital | 432-758-5811 |
| Terrell County | 432-345-2525 | Sanderson | | | |
| Scurry County | 325-573-3551 | Snyder | 325-573-3546 | DM Cogdell Memorial | 325-573-6374 |
| Sterling County | 325-378-4771 | Sterling City | | | |
| Nolan County | 325-235-5471 | Sweetwater | 325-235-8130 | Rolling Plains Memorial | 325-235-1701 |
| Culberson County | 432-283-2060 | Van Horn | | Culberson Hospital | 432-283-2760 |
| New Mexico | | | | | |
| Lea County | 505-396-3611 | Knowles | 505-392-7469 | Lea Reg Med Ctr | 575-492-5000 |
| Eddy County | 575-887-7551 | Carlsbad | 575-885-3125 | Carlsbad Medical | 575-887-4100 |
| | | Artesia | 575-746-5050 | Artesia Hospital | 575-748-3333 |
| Roosevelt County | 575-356-4408 | | | | |
| Chaves County | 575-624-7590 | | | | |

**Ground Ambulance Services**

| | | | |
|---|---|---|---|
| Reeves County Medical | | Pecos, TX | 432-447-3551 |




CERTIFICATE
THIS MAP HAS BEEN PRODUCED ACCORDING TO PROCEDURES THAT HAVE BEEN DEMONSTRATED TO PRODUCE DATA THAT MEETS OR EXCEEDS THE MINIMUM STANDARDS FOR A TOPOGRAPHIC MAP COMPILED AT A SCALE OF 1" = 120' WITH A CONTOUR INTERVAL OF 2'.

STATE OF NEW MEXICO
23782
Earl Buchele
02-20-24
PROFESSIONAL SURVEYOR

| REV: 2 | 02-20-24 | N.R. | (WELL NAME CHANGE) |
|---|---|---|---|

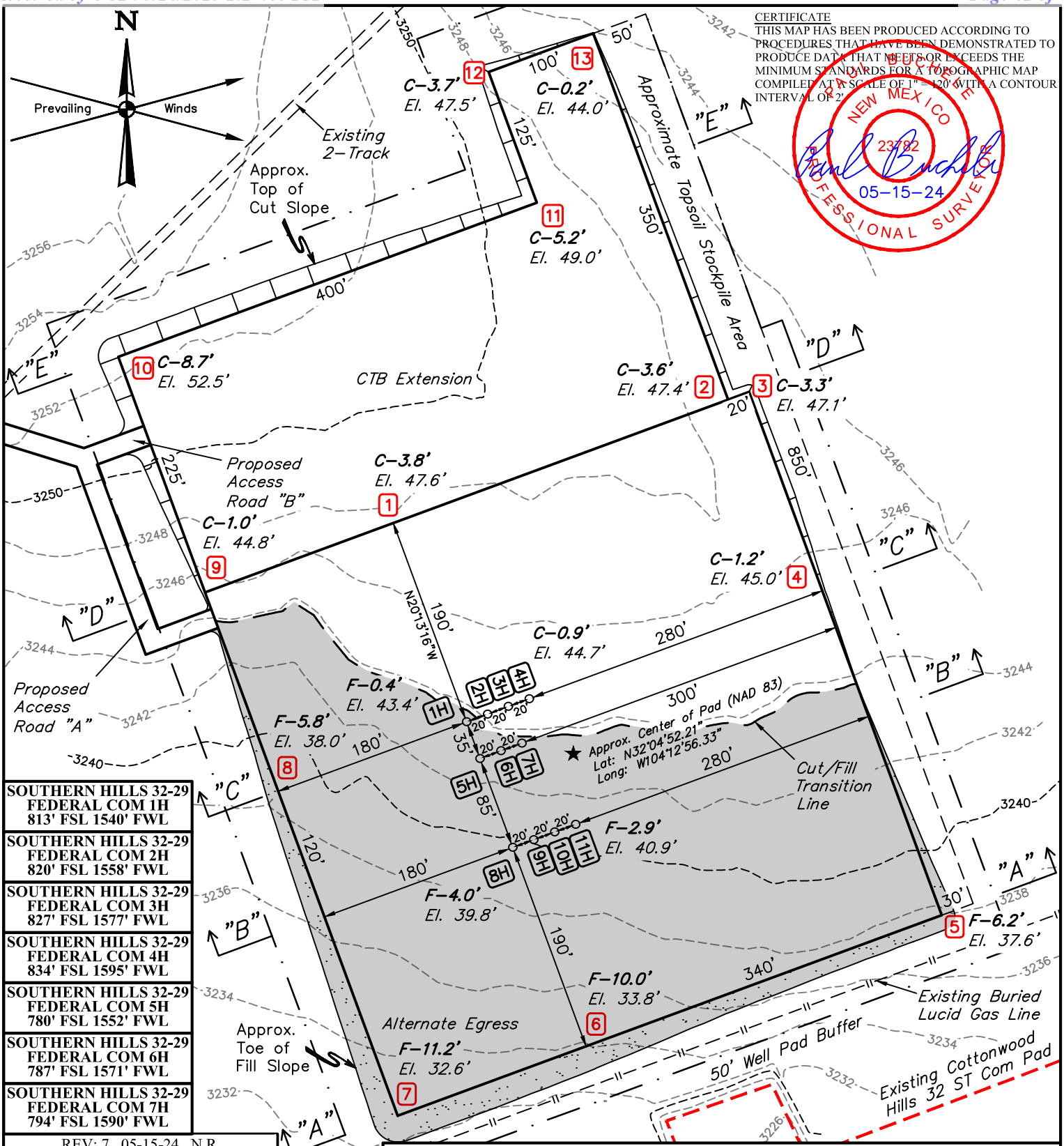
**NOTES:**
- Contours shown at 2' intervals.

# CIMAREX ENERGY CO.

**SOUTHERN HILLS 32-29 FEDERAL COM 5H**
**792' FSL 1655' FWL**
**SE 1/4 SW 1/4, SECTION 32, T25S, R27E, N.M.P.M.**
**EDDY COUNTY, NEW MEXICO**

| SURVEYED BY | A.H., S.R. | 08-31-20 | SCALE |
|---|---|---|---|
| DRAWN BY | Z.T. | 07-12-21 | 1" = 120' |
| TYPICAL RIG LAYOUT | | | EXHIBIT K |

UINTAH ENGINEERING & LAND SURVEYING
UELS, LLC
Corporate Office * 85 South 200 East
Vernal, UT 84078 * (435) 789-1017




CERTIFICATE
THIS MAP HAS BEEN PRODUCED ACCORDING TO PROCEDURES THAT HAVE BEEN DEMONSTRATED TO PRODUCE DATA THAT MEETS OR EXCEEDS THE MINIMUM STANDARDS FOR A TOPOGRAPHIC MAP COMPILED AT A SCALE OF 1" = 120' WITH A CONTOUR INTERVAL OF 2'.

STATE OF NEW MEXICO 23782 FILIMON F. JARAMILLO PROFESSIONAL SURVEYOR 05-15-24

| |
|---|
| SOUTHERN HILLS 32-29 FEDERAL COM 1H 813' FSL 1540' FWL |
| SOUTHERN HILLS 32-29 FEDERAL COM 2H 820' FSL 1558' FWL |
| SOUTHERN HILLS 32-29 FEDERAL COM 3H 827' FSL 1577' FWL |
| SOUTHERN HILLS 32-29 FEDERAL COM 4H 834' FSL 1595' FWL |
| SOUTHERN HILLS 32-29 FEDERAL COM 5H 780' FSL 1552' FWL |
| SOUTHERN HILLS 32-29 FEDERAL COM 6H 787' FSL 1571' FWL |
| SOUTHERN HILLS 32-29 FEDERAL COM 7H 794' FSL 1590' FWL |

REV: 7 05-15-24 N.R.
(PAD EXPANSION & SHL CHANGES)

FINISHED GRADE ELEVATION = **3243.8'**

NOTE: Earthwork Calculations Require a Fill @ some of the Location Stakes For Balance. All Fill is to be Compacted to a Minimum of 95% of the Maximum Dry Density Obtained by AASHTO Method t-99.

**NOTES:**

- Flare pit is to be located a min. of 100' from the wellhead.
- Contours shown at 2' intervals.
- Cut/Fill slopes 2:1 (Typ.)
- Underground utilities shown on this sheet are for visualization purposes only, actual locations to be determined prior to construction.
- Basis of Bearings is a Transverse Mercator Projection with a Central Meridian of W103°53'00" (NAD 83)

# CIMAREX ENERGY CO.

## SOUTHERN HILLS 32-29 FEDERAL COM E2W2 PAD
785' FSL 1636' FWL (APPROX. CENTER OF PAD)
SE 1/4 SW 1/4, SECTION 32, T25S, R27E, N.M.P.M.
EDDY COUNTY, NEW MEXICO

| | | | |
|---|---|---|---|
| SURVEYED BY | A.H., S.R. | 08-31-20 | SCALE |
| DRAWN BY | J.J. | 09-02-20 | 1" = 120' |
| LOCATION LAYOUT | | | EXHIBIT J |

UINTAH ENGINEERING & LAND SURVEYING
UELS, LLC
Corporate Office * 85 South 200 East
Vernal, UT 84078 * (435) 789-1017

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

# SUPO Data Report
01/21/2025

**APD ID:** 10400097781
**Submission Date:** 04/16/2024
**Operator Name:** CIMAREX ENERGY COMPANY
**Well Name:** SOUTHERN HILLS 32-29 FEDERAL COM
**Well Number:** 5H
**Well Type:** CONVENTIONAL GAS WELL
**Well Work Type:** Drill

Highlighted data reflects the most recent changes
Show Final Text

## Section 1 - Existing Roads

**Will existing roads be used?** YES

**Existing Road Map:**

Southern_Hills_32_29_Fed_Com_E2W2_Existing_Access_20210120094400.pdf

**Existing Road Purpose:** ACCESS,FLUID TRANSPORT
**Row(s) Exist?** NO

### ROW ID(s)

**ID:**

**Do the existing roads need to be improved?** NO

**Existing Road Improvement Description:**

**Existing Road Improvement Attachment:**

## Section 2 - New or Reconstructed Access Roads

**Will new roads be needed?** YES

**New Road Map:**

SOUTHERN_HILLS_32_29_FEDERAL_COM_E2W2_PAD_New_Road_Plat_20241009100315.pdf

**New road type:** COLLECTOR,RESOURCE

**Length:** 1864 Feet
**Width (ft.):** 30

**Max slope (%):** 0
**Max grade (%):** 0

**Army Corp of Engineers (ACOE) permit required?** N

**ACOE Permit Number(s):**

**New road travel width:** 20

**New road access erosion control:** Erosion of drainage ditches by runoff water shall be prevented by diverting water off at frequent intervals by means of cutouts. Should mud holes develop, the holes shall be filled in and detours around the holes avoided.
**New road access plan or profile prepared?** N

**New road access plan**

**Operator Name:** CIMAREX ENERGY COMPANY

**Well Name:** SOUTHERN HILLS 32-29 FEDERAL COM **Well Number:** 5H

**Access road engineering design?** N

**Access road engineering design**

**Turnout?** N

**Access surfacing type:** GRAVEL

**Access topsoil source:** ONSITE

**Access surfacing type description:**

**Access onsite topsoil source depth:** 4

**Offsite topsoil source description:**

**Onsite topsoil removal process:** The topsoil shall be stripped and salvaged to provide for sufficient quantities to be respreads to a depth that will be determined at the on-site over the disturbed areas needing reclamation. Topsoil shall be stockpiled separately from subsoil materials.

**Access other construction information:**

**Access miscellaneous information:**

**Number of access turnouts:** **Access turnout map:**

## Drainage Control

**New road drainage crossing:** CULVERT,LOW WATER

**Drainage Control comments:** All drainage ditches will be kept clear and free-flowing and will be maintained to good standards. All culverts will be kept free of trash, free-flowing, and serviceable. The access road disturbed area will be kept free of trash during operations. All traffic will be confined to the approved road running surface. Road drainage crossings shall be of the typical dry creek drainage crossing type. Crossings shall be designed so they will not cause excess siltation or accumulation of debris in the drainage, nor shall the drainage be blocked by the roadbed.

**Road Drainage Control Structures (DCS) description:** Drainage structures or drainage dips will be placed in all natural drainage ways

**Road Drainage Control Structures (DCS) attachment:**

## Access Additional Attachments

## Section 3 - Location of Existing Wells

**Existing Wells Map?** YES

**Attach Well map:**

Southern_Hills_32_29_Fed_Com_E2W2_One_Mile_Radius_04162024_20240416124248.pdf

## Section 4 - Location of Existing and/or Proposed Production Facilities

**Submit or defer a Proposed Production Facilities plan?** SUBMIT

**Production Facilities description:** An on-pad production facility has be constructed and production equipment installed at the wellsite.

**Operator Name:** CIMAREX ENERGY COMPANY

**Well Name:** SOUTHERN HILLS 32-29 FEDERAL COM **Well Number:** 5H

**Production Facilities map:**

SOUTHERN_HILLS_32_29_FED_COM_E2W2_POWER_NETWORK___05_21_24_20241009100338.pdf
SOUTHERN_HILLS_32_29_FEDERAL_COM_E2W2_PAD_location_layout_updated_11062024_20241106082720.pdf

## Section 5 - Location and Types of Water Supply

### Water Source Table

**Water source type:** MUNICIPAL

**Water source use type:** SURFACE CASING
INTERMEDIATE/PRODUCTION CASING

**Source latitude:** **Source longitude:**

**Source datum:**

**Water source permit type:** WATER RIGHT

**Permit Number:**

**Water source transport method:** TRUCKING

**Source land ownership:** FEDERAL

**Source transportation land ownership:** FEDERAL

**Water source volume (barrels):** 5000 **Source volume (acre-feet):** 0.64446548

**Source volume (gal):** 210000

---

**Water source and transportation**

Southern_Hills_32_29_Fed_Com_E2W2_Drilling_Water_Route_20210317091646.pdf

**Water source comments:**

**New water well?** N

### New Water Well Info

**Well latitude:** **Well Longitude:** **Well datum:**

**Well target aquifer:**

**Est. depth to top of aquifer(ft):** **Est thickness of aquifer:**

**Aquifer comments:**

**Aquifer documentation:**

**Well depth (ft):** **Well casing type:**

**Operator Name:** CIMAREX ENERGY COMPANY

**Well Name:** SOUTHERN HILLS 32-29 FEDERAL COM **Well Number:** 5H

**Well casing outside diameter (in.):**

**Well casing inside diameter (in.):**

**New water well casing?**

**Used casing source:**

**Drilling method:**

**Drill material:**

**Grout material:**

**Grout depth:**

**Casing length (ft.):**

**Casing top depth (ft.):**

**Well Production type:**

**Completion Method:**

**Water well additional information:**

**State appropriation permit:**

**Additional information attachment:**

## Section 6 - Construction Materials

**Using any construction materials:** YES

**Construction Materials description:** In the event that no caliche is found onsite, caliche will be hauled in from BLM-approved caliche pit in SENW Sec 2 26S 26E
**Construction Materials source location**

## Section 7 - Methods for Handling

**Waste type:** DRILLING

**Waste content description:** Drilling Fluids, drill cuttings, water and other waste produced from the well during drilling operations.
**Amount of waste:** 15000 barrels

**Waste disposal frequency :** Weekly

**Safe containment description:** N/A

**Safe containmant attachment:**

**Waste disposal type:** HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** COMMERCIAL
**Disposal type description:**

**Disposal location description:** Haul to R360 Environmental Solutions, 4507 Carlsbad Hwy, Hobbs, NM 88240

**Waste type:** SEWAGE

**Waste content description:** Human Waste

**Amount of waste:** 300 gallons

**Waste disposal frequency :** Weekly

**Safe containment description:** Waste will be properly contained and disposed of properly at a state approved disposal facility.
**Safe containmant attachment:**

**Waste disposal type:** HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** PRIVATE
**Disposal type description:**

**Operator Name:** CIMAREX ENERGY COMPANY

**Well Name:** SOUTHERN HILLS 32-29 FEDERAL COM **Well Number:** 5H

**Disposal location description:** A licensed 3rd party contractor will be used to haul and dispose human waste to City of Toyah TX waste water facility.

**Waste type:** SEWAGE

**Waste content description:** Human waste.

**Amount of waste:** 300 gallons

**Waste disposal frequency :** Weekly

**Safe containment description:** Waste will be properly contained and disposed of properly at a state approved disposal facility.

**Safe containmant attachment:**

**Waste disposal type:** HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** PRIVATE

**Disposal type description:**

**Disposal location description:** A licensed 3rd party contractor will be used to haul and dispose human waste to City of Toyah TX waste water facility.

**Waste type:** GARBAGE

**Waste content description:** Garbage and trash produced during drilling and completion operations

**Amount of waste:** 32500 pounds

**Waste disposal frequency :** Weekly

**Safe containment description:** N/A

**Safe containmant attachment:**

**Waste disposal type:** HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** COMMERCIAL

**Disposal type description:**

**Disposal location description:** A licensed 3rd party hauls trash to Lea County Landfill

## Reserve Pit

**Reserve Pit being used?** NO

**Temporary disposal of produced water into reserve pit?** NO

**Reserve pit length (ft.)** **Reserve pit width (ft.)**

**Reserve pit depth (ft.)** **Reserve pit volume (cu. yd.)**

**Is at least 50% of the reserve pit in cut?**

**Reserve pit liner**

**Reserve pit liner specifications and installation description**

## Cuttings Area

**Operator Name:** CIMAREX ENERGY COMPANY

**Well Name:** SOUTHERN HILLS 32-29 FEDERAL COM **Well Number:** 5H

**Cuttings Area being used?** NO

**Are you storing cuttings on location?** N

**Description of cuttings location**

**Cuttings area length (ft.)** **Cuttings area width (ft.)**

**Cuttings area depth (ft.)** **Cuttings area volume (cu. yd.)**

**Is at least 50% of the cuttings area in cut?**

**WCuttings area liner**

**Cuttings area liner specifications and installation description**

## Section 8 - Ancillary

**Are you requesting any Ancillary Facilities?:** N

**Ancillary Facilities**

**Comments:**

## Section 9 - Well Site

**Well Site Layout Diagram:**

SOUTHERN_HILLS_32_29_FEDERAL_COM_E2W2_PAD_location_layout_updated_11062024_20241106082754.pdf

**Comments:** This Well pad has wells Southern Hills 32-29 Federal Com 1H 2H 3H 4H 5H 6H 7H 8H 9H 10H 11H 12H

## Section 10 - Plans for Surface Reclamation

**Type of disturbance:** New Surface Disturbance **Multiple Well Pad Name:** Southern Hills 32-29 Fed Com

**Multiple Well Pad Number:** E2W2 Pad

**Recontouring**

SOUTHERN_HILLS_32_29_FEDERAL_COM_E2W2_PAD_reclamation_plat_updated_11062024_20241106082847.pdf

**Drainage/Erosion control construction:** To control and prevent potentially contaminated precipitation from leaving the pad site, a perimeter berm and settlement pond will be installed. Contaminated water will be removed from pond, stored in waste tanks, and disposed of at a state approved facility. Standing water or puddles will not be allowed. Drainage ditches would be established and maintained on the pad and along access roads to divert water away from operations. Natural drainage areas disturbed during construction would be re-contoured to near original condition prior to construction. Erosion Control Best Management Practices would be used where necessary and consist of seeding, fiber rolls, water bars, silt fences, and temporary diversion dikes. Areas disturbed during construction that are no longer needed for operations would be obliterated, re-contoured to near original condition prior to construction. Erosion Control Best Management Practices would be used where necessary and consist of seeding, fiber rolls, water bars, silt fences, and temporary diversion dikes. Areas disturbed during construction that are no longer needed for operations would be obliterated, re-contoured, and reclaimed to near original condition to re-establish natural drainage.

**Operator Name:** CIMAREX ENERGY COMPANY

**Well Name:** SOUTHERN HILLS 32-29 FEDERAL COM **Well Number:** 5H

**Drainage/Erosion control reclamation:** All disturbed and re-contoured areas would be reseeded according to specifications. Approved seed mixtures would be certified weed free and consist of grasses, forbs, or shrubs similar to the surrounding area. Compacted soil areas may need to be obliterated and reclaimed to near natural conditions by re-contouring all slopes to facilitate and re-establish natural drainage.

**Well pad proposed disturbance (acres):** 7.011
**Well pad interim reclamation (acres):** 3.372
**Well pad long term disturbance (acres):** 3.639
**Road proposed disturbance (acres):** 1.306
**Road interim reclamation (acres):** 0
**Road long term disturbance (acres):** 1.306
**Powerline proposed disturbance (acres):** 1.259
**Powerline interim reclamation (acres):** 0
**Powerline long term disturbance (acres):** 1.259
**Pipeline proposed disturbance (acres):** 0
**Pipeline interim reclamation (acres):** 0
**Pipeline long term disturbance (acres):** 0
**Other proposed disturbance (acres):** 0
**Other interim reclamation (acres):** 0
**Other long term disturbance (acres):** 0

**Total proposed disturbance:** 9.576
**Total interim reclamation:** 3.372
**Total long term disturbance:** 6.204000000000001

**Disturbance Comments:**

**Reconstruction method:** After well plugging, all disturbed areas would be returned to the original contour or a contour that blends with the surrounding landform including roads unless the surface owner requests that they be left intact. In consultation with the surface owners it will be determined if any gravel or similar materials used to reinforce an area are to be removed, buried, or left in place during final reclamation. Salvaged topsoil, if any, would be re-spread evenly over the surfaces to be re-vegetated. As necessary, the soil surface would be prepared to provide a seedbed for re-establishment of desirable vegetation. Site preparation may include gouging, scarifying, dozer track-walking, mulching, or fertilizing. Reclamation, Re-vegetation, and Drainage: All disturbed and re-contoured areas would be reseeded using techniques outlined under Phase I and II of this plan or as specified by the land owner. Approved seed mixtures would be certified weed free and consist of grasses, forbs, or shrubs similar to the surrounding area. Compacted soil areas may need to be obliterated and reclaimed to near natural conditions by re-contouring all slopes to facilitate and re-establish natural drainage.

**Topsoil redistribution:** The original stock piled topsoil, if any, will be spread evenly over the areas being reclaimed and the original landform will be restored for all disturbed areas including well pad, production facilities, roads, pipelines, and power line corridors as close as possible to the original topography. The location will then be seeded.

**Soil treatment:** The soil surface would be prepared to provide a seedbed for reestablishment of desirable vegetation. Establish control of erosion and invasion of non-native plants to reestablish plant community.
**Existing Vegetation at the well pad:** N/A

**Existing Vegetation at the well pad**

**Existing Vegetation Community at the road:** N/A

**Existing Vegetation Community at the road**

**Existing Vegetation Community at the pipeline:** N/A

**Existing Vegetation Community at the pipeline**

**Existing Vegetation Community at other disturbances:** N/A

**Existing Vegetation Community at other disturbances**

**Operator Name:** CIMAREX ENERGY COMPANY

**Well Name:** SOUTHERN HILLS 32-29 FEDERAL COM **Well Number:** 5H

**Non native seed used?** N

**Non native seed description:**

**Seedling transplant description:**

**Will seedlings be transplanted for this project?** N

**Seedling transplant description**

**Will seed be harvested for use in site reclamation?** N

**Seed harvest description:**

**Seed harvest description attachment:**

## Seed

## Seed Table

## Seed Summary

**Total pounds/Acre:**

| Seed Type | Pounds/Acre |
|---|---|

**Seed reclamation**

## Operator Contact/Responsible Official

**First Name:** Laci **Last Name:** Luig

**Phone:** (432)571-7810 **Email:** laci.luig@coterra.com

**Seedbed prep:**

**Seed BMP:**

**Seed method:**

**Existing invasive species?** N

**Existing invasive species treatment description:**

**Existing invasive species treatment**

**Weed treatment plan description:** N/A

**Weed treatment plan**

**Monitoring plan description:** N/A

**Monitoring plan**

**Success standards:** N/A

**Pit closure description:** N/A

**Operator Name:** CIMAREX ENERGY COMPANY

**Well Name:** SOUTHERN HILLS 32-29 FEDERAL COM **Well Number:** 5H

**Pit closure attachment:**

## Section 11 - Surface Ownership

**Disturbance type:** WELL PAD

**Describe:**

**Surface Owner:** BUREAU OF LAND MANAGEMENT

**Other surface owner description:**

**BIA Local Office:**

**BOR Local Office:**

**COE Local Office:**

**DOD Local Office:**

**NPS Local Office:**

**State Local Office:**

**Military Local Office:**

**USFWS Local Office:**

**Other Local Office:**

**USFS Region:**

**USFS Forest/Grassland:** **USFS Ranger District:**

## Section 12 - Other

**Right of Way needed?** N **Use APD as ROW?**

**ROW Type(s):**

## ROW

**SUPO Additional Information:**

**Use a previously conducted onsite?** Y

**Operator Name:** CIMAREX ENERGY COMPANY

**Well Name:** SOUTHERN HILLS 32-29 FEDERAL COM **Well Number:** 5H

**Previous Onsite information:** Onsite with McKenna Ryder and Barry Hunt on 8/27/20 Onsite with Brendan Harris on 8/13/2024

## Other SUPO

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

# Drilling Plan Data Report
01/21/2025

**APD ID:** 10400097781
**Submission Date:** 04/16/2024

**Operator Name:** CIMAREX ENERGY COMPANY

**Well Name:** SOUTHERN HILLS 32-29 FEDERAL COM
**Well Number:** 5H

**Well Type:** CONVENTIONAL GAS WELL
**Well Work Type:** Drill

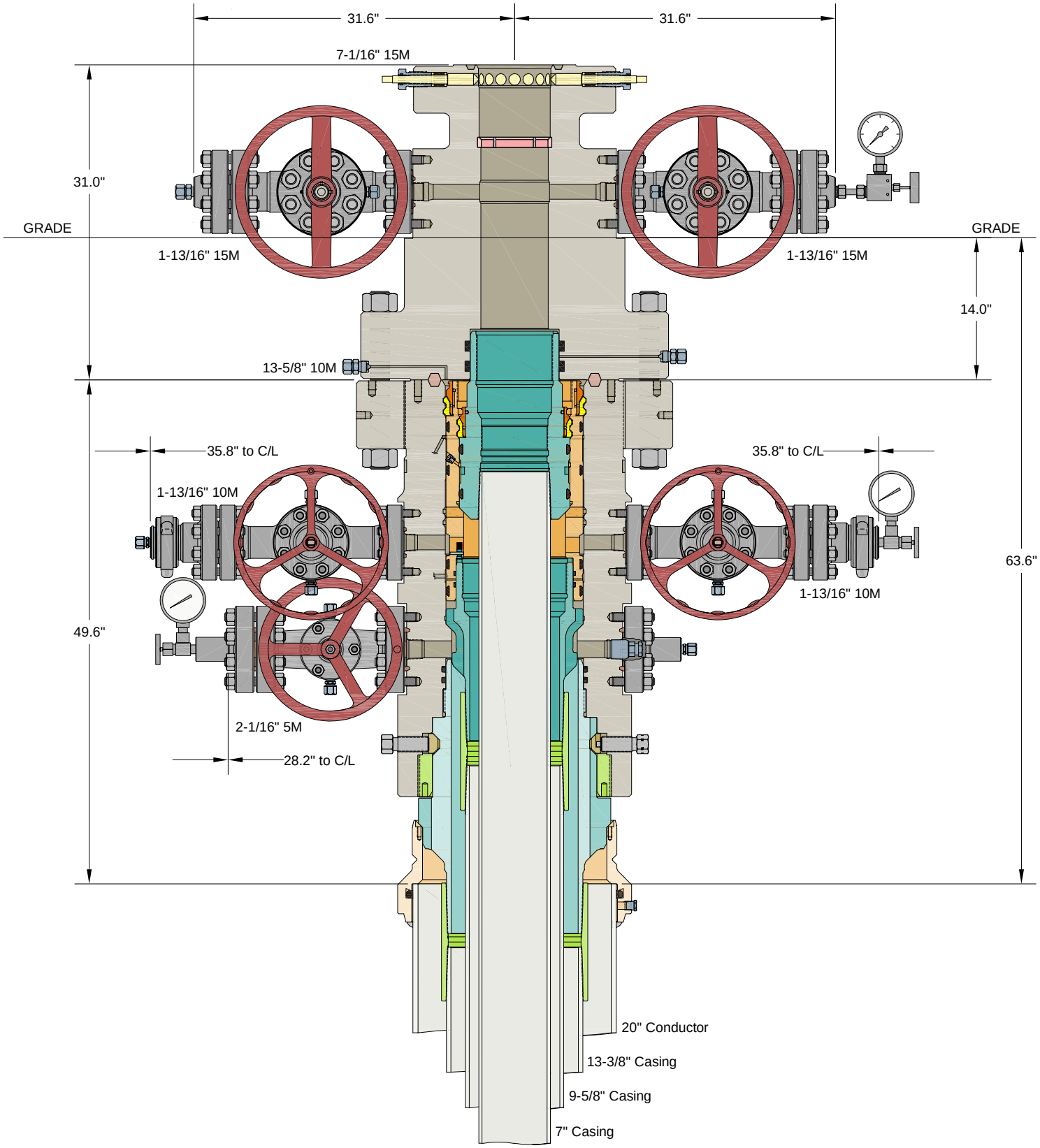
Highlighted data reflects the most recent changes

Show Final Text

## Section 1 - Geologic Formations

| Formation ID | Formation Name | Elevation | True Vertical | Measured Depth | Lithologies | Mineral Resources | Producing Formatio |
|---|---|---|---|---|---|---|---|
| 14776510 | RUSTLER | 0 | 841 | 841 | ANHYDRITE | USEABLE WATER | N |
| 14776511 | TOP SALT | -1252 | 1252 | 1252 | SALT | NONE | N |
| 14776521 | BASE OF SALT | -1878 | 1878 | 1878 | HALITE | NONE | N |
| 14776512 | CASTILE | -2067 | 2067 | 2069 | SALT | NONE | N |
| 14776522 | LAMAR | -2088 | 2088 | 2091 | SANDSTONE | NONE | N |
| 14776513 | BELL CANYON | -2187 | 2187 | 2191 | SANDSTONE | NONE | N |
| 14776514 | CHERRY CANYON | -3066 | 3066 | 3100 | SANDSTONE | NONE | N |
| 14776515 | BRUSHY CANYON | -4033 | 4033 | 4101 | SANDSTONE | NATURAL GAS, OIL | N |
| 14776516 | BONE SPRING | -5620 | 5620 | 5744 | LIMESTONE | NATURAL GAS, OIL | N |
| 14776517 | BONE SPRING 1ST | -6581 | 6581 | 6739 | SANDSTONE | NATURAL GAS, OIL | N |
| 14776518 | BONE SPRING 2ND | -6753 | 6753 | 6915 | SANDSTONE | NATURAL GAS, OIL | N |
| 14776519 | BONE SPRING 3RD | -8405 | 8405 | 8405 | SANDSTONE | NATURAL GAS, OIL | N |
| 14776520 | WOLFCAMP | -8737 | 8737 | 8902 | SHALE | NATURAL GAS, OIL | Y |

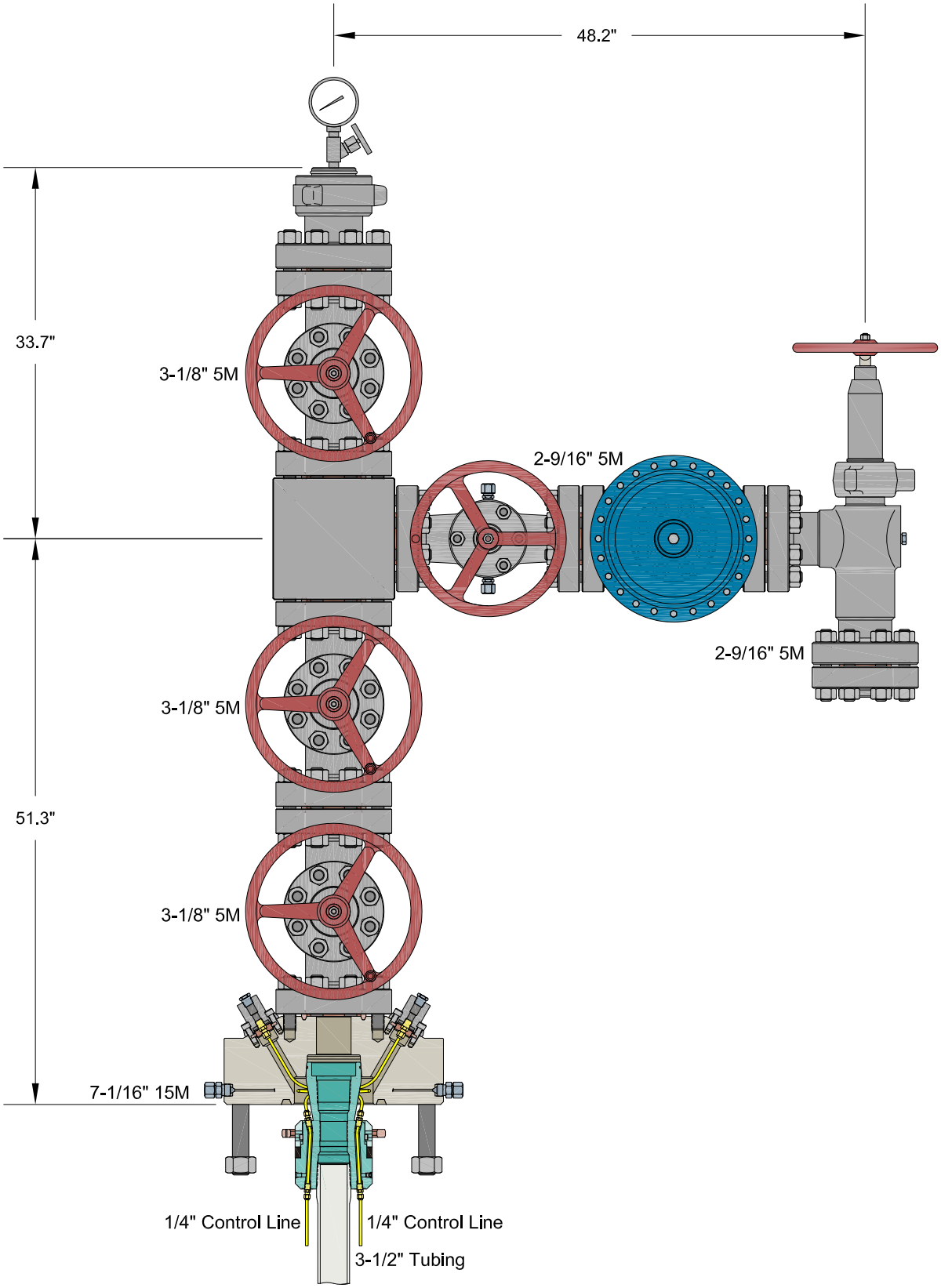
## Section 2 - Blowout Prevention






ALL DIMENSIONS APPROXIMAT

| | | |
|---|---|---|
| CACTUS WELLHEAD LLC | CIMAREX<br>HOBBS, NM | |
| 20" x 13-3/8" x 9-5/8" x 7" MBU-3T-CFL-R-DBLO-SF Wellhead Sys.<br>With 13-5/8" 10M x 7-1/16" 15M CTH-DBLHPS Tubing Head<br>And 9-5/8" Fluted & 7" One Piece Mandrel Casing Hangers | DRAWN | VJK 01FEB24 |
| | APPRV | |
| | DRAWING NO. | HBE0001053 |






ALL DIMENSIONS APPROXIMATE

# CACTUS WELLHEAD LLC

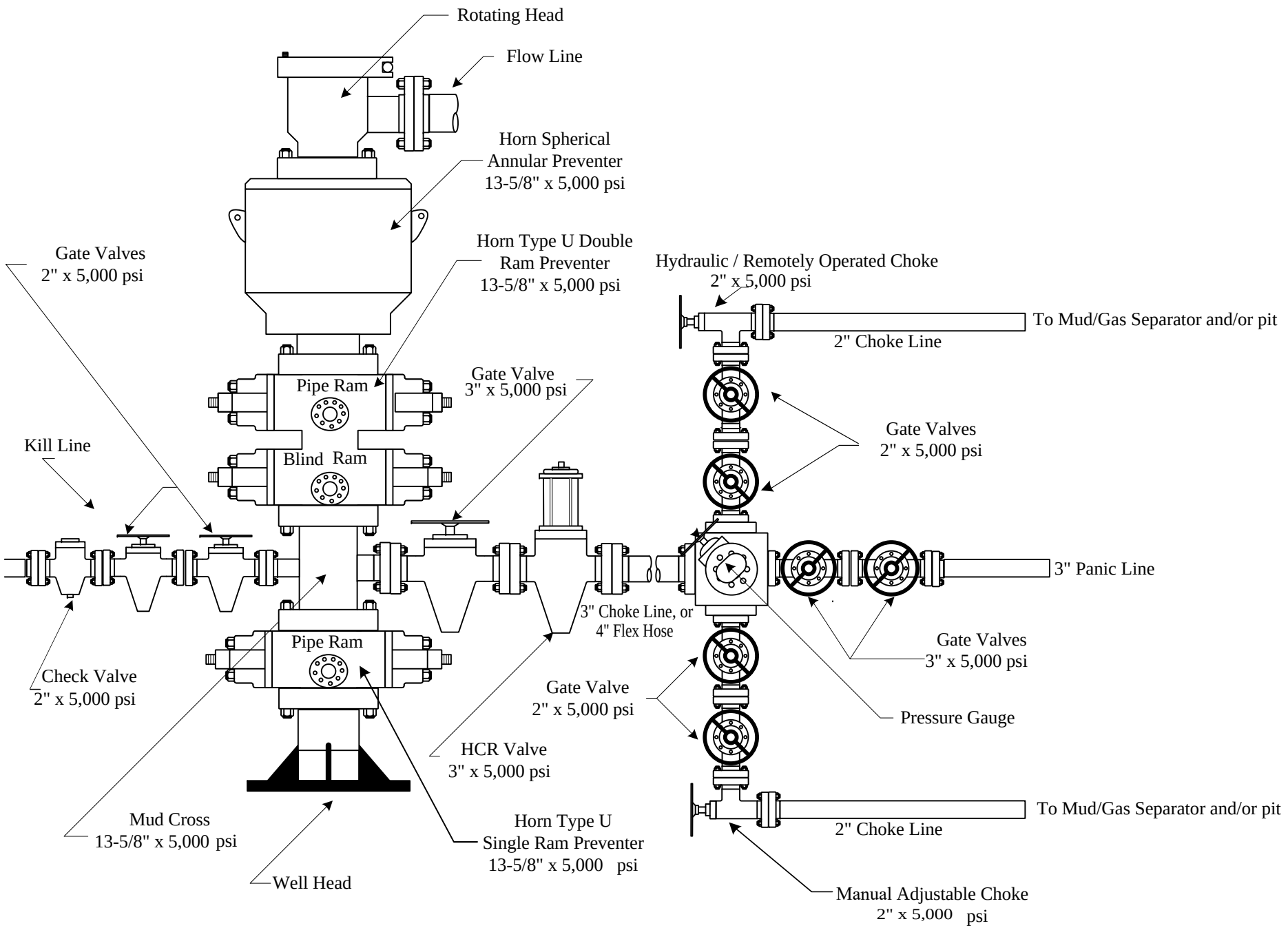
CIMAREX
HOBBS, NM

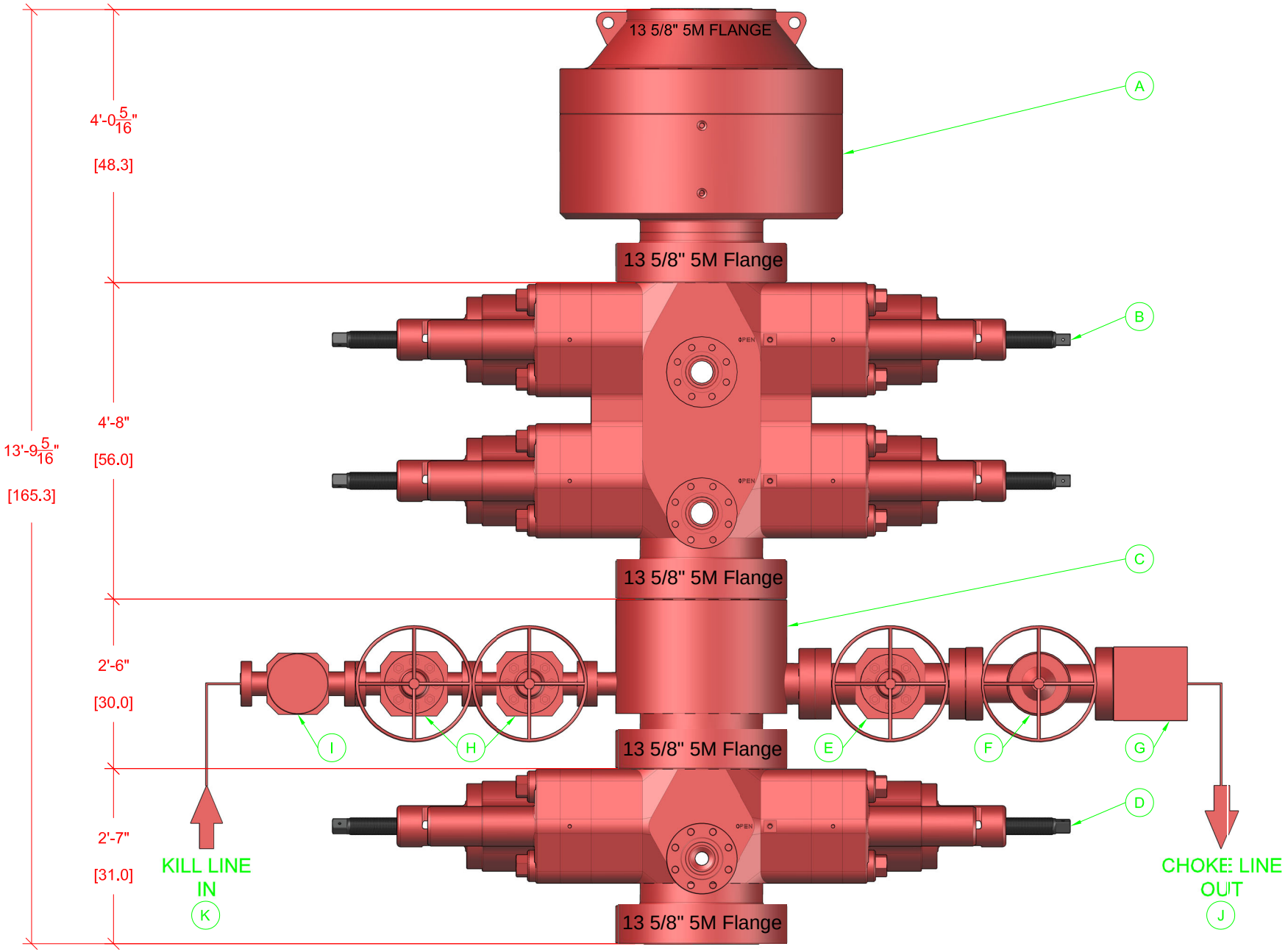
7-1/16" 15M x 3-1/8" x 2-9/16" 5M Production Tree Assembly
With 7-1/16" 15M x 3-1/8" 5M T40-CCL Tubing Head Adapter
And 7-1/16" x 3-1/2" T40-CCL Tubing Hanger

| | | |
|---|---|---|
| DRAWN | VJK | 01SEP23 |
| APPRV | | |

DRAWING NO. HBE0001017

COTERRA






BOP EQUIPMENT INFORMATION

| DESCRIPTION | MODEL | QTY |
|---|---|---|
| ANNULAR BOP | 13 5/8" 5M | 1 |
| DOUBLE RAM BOP | 13 5/8" 5M TYPE-U | 1 |
| MUD CROSS | 13 5/8" 5M | 1 |
| SINGLE RAM BOP | 13 5/8" 5M TYPE-U | 1 |
| GATE VALVE | 4 1/16" 5M FC MANUAL | 1 |

Sante Fe Main Office
Phone: (505) 476-3441

General Information
Phone: (505) 629-6116

Online Phone Directory
https://www.emnrd.nm.gov/ocd/contact-us

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



## CONDITIONS

| | |
|---|---|
| Operator:<br>CIMAREX ENERGY CO. OF COLORADO<br>6001 Deauville Blvd<br>Midland, TX 79706 | OGRID:<br>162683 |
| | Action Number:<br>445040 |
| | Action Type:<br>[C-101] BLM - Federal/Indian Land Lease (Form 3160-3) |

**CONDITIONS**

| Created By | Condition | Condition Date |
|---|---|---|
| klinarte | Cement is required to circulate on both surface and intermediate1 strings of casing. | 3/24/2025 |
| klinarte | If cement does not circulate on any string, a Cement Bond Log (CBL) is required for that string of casing. | 3/24/2025 |
| ward.rikala | Notify the OCD 24 hours prior to casing & cement. | 4/10/2025 |
| ward.rikala | File As Drilled C-102 and a directional Survey with C-104 completion packet. | 4/10/2025 |
| ward.rikala | 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. | 4/10/2025 |
| ward.rikala | 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. | 4/10/2025 |