

|                                                       |                                                                                |                                             |
|-------------------------------------------------------|--------------------------------------------------------------------------------|---------------------------------------------|
| <b>Well Name:</b> SOUTHERN HILLS 32-29<br>FEDERAL COM | <b>Well Location:</b> T25S / R27E / SEC 32 /<br>SESW / 32.081247 / -104.215956 | <b>County or Parish/State:</b> EDDY /<br>NM |
| <b>Well Number:</b> 1H                                | <b>Type of Well:</b> CONVENTIONAL GAS<br>WELL                                  | <b>Allottee or Tribe Name:</b>              |
| <b>Lease Number:</b> NMNM114348                       | <b>Unit or CA Name:</b>                                                        | <b>Unit or CA Number:</b>                   |
| <b>US Well Number:</b> 3001549513                     | <b>Operator:</b> CIMAREX ENERGY<br>COMPANY                                     |                                             |

Notice of Intent

**Sundry ID:** 2776758

**Type of Submission:** Notice of Intent

**Type of Action:** APD Change

**Date Sundry Submitted:** 03/13/2024

**Time Sundry Submitted:** 12:20

**Date proposed operation will begin:** 05/01/2024

**Procedure Description:** Cimarex Energy Company respectfully requests the following drilling and directional changes be made to the existing and approved APD for the following well: Southern Hills Federal Com 1H (API 30-015-49513) 1. Casing Design Change from previously approved APD, from Liner to Long String 2. New TVD from previously approved APD, from 9,123' to 7,869' 3. New MD from previously approved APD, from 18,694 to 19,005' 4. New producing zone/pool code from Purple Sage Wolfcamp (Gas)/ 98220 to WC-015 G-03 S252636M; BONE SPRING/97818 5. New Formation from previously approved APD, from Wolfcamp to 3Rd Bone Spring Carb See attached.

NOI Attachments

**Procedure Description**

SOUTHERN\_HILLS\_32\_29\_FEDERAL\_COM\_1H\_Sundry\_Submittal\_03132024\_20241112103003.pdf

Received by OCD: 4/3/2025 9:25:03 AM

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|                                                |                                                                         |                                      |
|------------------------------------------------|-------------------------------------------------------------------------|--------------------------------------|
| Well Name: SOUTHERN HILLS 32-29<br>FEDERAL COM | Well Location: T25S / R27E / SEC 32 /<br>SESW / 32.081247 / -104.215956 | County or Parish/State: EDDY /<br>NM |
| Well Number: 1H                                | Type of Well: CONVENTIONAL GAS<br>WELL                                  | Allottee or Tribe Name:              |
| Lease Number: NMNM114348                       | Unit or CA Name:                                                        | Unit or CA Number:                   |
| US Well Number: 3001549513                     | Operator: CIMAREX ENERGY<br>COMPANY                                     |                                      |

Conditions of Approval

Additional

32\_25\_27\_N\_Sundry\_ID\_2776758\_Southern\_Hills\_32\_29\_Federal\_Com\_1H\_Eddy\_NM114348\_Cimarex\_Energy\_Company\_13\_22h\_11\_14\_2024\_LV\_20241115072309.pdf  
Southern\_Hills\_32\_29\_Federal\_Com\_1H\_Dr\_COA\_20241115072309.pdf

Operator

I certify that the foregoing is true and correct. 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. Electronic submission of Sundry Notices through this system satisfies regulations requiring a

Operator Electronic Signature: SHELLY BOWEN

Signed on: NOV 12, 2024 10:30 AM

Name: CIMAREX ENERGY COMPANY

Title: Regulatory Analyst

Street Address: 6001 DEAUVILLE BLVD STE 300N

City: MIDLANDState: TX

Phone: (432) 620-1644

Email address: DL\_PBUREGULATORY@COTERRA.COM

Field

Representative Name:

Street Address:

City:State:Zip:

Phone:

Email address:

BLM Point of Contact

BLM POC Name: CHRISTOPHER WALLS

BLM POC Title: Petroleum Engineer

BLM POC Phone: 5752342234

BLM POC Email Address: cwalls@blm.gov

Disposition: Approved

Disposition Date: 11/26/2024

Signature: Chris Walls

Form 3160-5  
(June 2019)

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

FORM APPROVED  
OMB No. 1004-0137  
Expires: October 31, 2021

**SUNDRY NOTICES AND REPORTS ON WELLS**  
**Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160-3 (APD) for such proposals.**

|                                             |  |
|---------------------------------------------|--|
| 5. Lease Serial No.                         |  |
| 6. If Indian, Allottee or Tribe Name        |  |
| 7. If Unit of CA/Agreement, Name and/or No. |  |
| 8. Well Name and No.                        |  |
| 9. API Well No.                             |  |
| 10. Field and Pool or Exploratory Area      |  |
| 11. Country or Parish, State                |  |

**SUBMIT IN TRIPLICATE - Other instructions on page 2**

|                                                                      |                                   |                                |
|----------------------------------------------------------------------|-----------------------------------|--------------------------------|
| 1. Type of Well                                                      |                                   |                                |
| <input type="checkbox"/> Oil Well                                    | <input type="checkbox"/> Gas Well | <input type="checkbox"/> Other |
| 2. Name of Operator                                                  |                                   |                                |
| 3a. Address                                                          | 3b. Phone No. (include area code) |                                |
| 4. Location of Well (Footage, Sec., T.,R.,M., or Survey Description) |                                   |                                |

12. CHECK THE APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT OR OTHER DATA

| TYPE OF SUBMISSION                                | TYPE OF ACTION                                |                                               |                                                    |                                         |  |
|---------------------------------------------------|-----------------------------------------------|-----------------------------------------------|----------------------------------------------------|-----------------------------------------|--|
| <input type="checkbox"/> Notice of Intent         | <input type="checkbox"/> Acidize              | <input type="checkbox"/> Deepen               | <input type="checkbox"/> Production (Start/Resume) | <input type="checkbox"/> Water Shut-Off |  |
| <input type="checkbox"/> Subsequent Report        | <input type="checkbox"/> Alter Casing         | <input type="checkbox"/> Hydraulic Fracturing | <input type="checkbox"/> Reclamation               | <input type="checkbox"/> Well Integrity |  |
| <input type="checkbox"/> Final Abandonment Notice | <input type="checkbox"/> Casing Repair        | <input type="checkbox"/> New Construction     | <input type="checkbox"/> Recomplete                | <input type="checkbox"/> Other          |  |
|                                                   | <input type="checkbox"/> Change Plans         | <input type="checkbox"/> Plug and Abandon     | <input type="checkbox"/> Temporarily Abandon       |                                         |  |
|                                                   | <input type="checkbox"/> Convert to Injection | <input type="checkbox"/> Plug Back            | <input type="checkbox"/> Water Disposal            |                                         |  |

13. Describe Proposed or Completed Operation: Clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recompleate horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be perfonned or provide the Bond No. on file with BLM/BIA. Required subsequent reports must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompleation in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has detennined that the site is ready for final inspection.)

|                                                                                   |       |
|-----------------------------------------------------------------------------------|-------|
| 14. I hereby certify that the foregoing is true and correct. Name (Printed/Typed) | Title |
| Signature                                                                         | Date  |

**THE SPACE FOR FEDERAL OR STATE OFFICE USE**

|                                                                                                                                                                                                                                                           |        |      |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|------|
| Approved by                                                                                                                                                                                                                                               | Title  | Date |
| Conditions of approval, if any, are attached. Approval of this notice 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. | Office |      |

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.

(Instructions on page 2)

## GENERAL INSTRUCTIONS

This form is designed for submitting proposals to perform certain well operations and reports of such operations when completed as indicated on Federal and Indian lands pursuant to applicable Federal law 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, are either shown below, will be issued by or may be obtained from the local Federal office.

## SPECIFIC INSTRUCTIONS

*Item 4* - Locations on Federal or Indian land should be described in accordance with Federal requirements. Consult the local Federal office for specific instructions.

*Item 13*: Proposals to abandon a well and subsequent reports of abandonment should include such special information as is required by the local Federal office. In addition, such proposals and reports should include reasons for the abandonment; data on any former or present productive zones or other zones with present significant fluid contents not sealed off by cement or otherwise; depths (top and bottom) and method of placement of cement plugs; mud or other material placed below, between and above plugs; amount, size, method of parting of any casing, liner or tubing pulled and the depth to the top of any tubing left in the hole; method of closing top of well and date well site conditioned for final inspection looking for approval of the abandonment. 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 the 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., 351 et seq., 25 U.S.C. 396; 43 CFR 3160.

PRINCIPAL PURPOSE: The information is used to: (1) Evaluate, when appropriate, approve applications, and report completion of subsequent well operations, on a Federal or Indian lease; and (2) document for administrative use, information for the management, disposal and use of National Resource lands and resources, such as: (a) evaluating the equipment and procedures to be used during a proposed subsequent well operation and reviewing the completed well operations for compliance with the approved plan; (b) requesting and granting approval to perform those actions covered by 43 CFR 3162.3-2, 3162.3-3, and 3162.3-4; (c) reporting the beginning or resumption of production, as required by 43 CFR 3162.4-1(c) and (d) analyzing future applications to drill or modify operations in light of data obtained and methods used.

ROUTINE USES: Information from the record and/or the record will be transferred to appropriate Federal, State, local or foreign agencies, when relevant to civil, criminal or regulatory investigations or prosecutions in connection with congressional inquiries or to consumer reporting agencies to facilitate collection of debts owed the Government.

EFFECT OF NOT PROVIDING THE INFORMATION: Filing of this notice and report and disclosure of the information is mandatory for those subsequent well operations specified in 43 CFR 3162.3-2, 3162.3-3, 3162.3-4.

The Paperwork Reduction Act of 1995 requires us to inform you that:

The BLM collects this information to evaluate proposed and/or completed subsequent well operations on Federal or Indian oil and gas leases.

Response to this request is mandatory.

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 Collection Clearance Officer (WO-630), 1849 C St., N.W., Mail Stop 401 LS, Washington, D.C. 20240

## Additional Information

### Location of Well

0. SHL: SESW / 813 FSL / 1540 FWL / TWSP: 25S / RANGE: 27E / SECTION: 32 / LAT: 32.081247 / LONG: -104.215956 ( TVD: 0 feet, MD: 0 feet )

PPP: SWSW / 813 FSL / 330 FWL / TWSP: 25S / RANGE: 27E / SECTION: 32 / LAT: 32.081246 / LONG: -104.219861 ( TVD: 9083 feet, MD: 9717 feet )

BHL: NWNW / 100 FNL / 330 FWL / TWSP: 25S / RANGE: 27E / SECTION: 29 / LAT: 32.107894 / LONG: -104.219503 ( TVD: 9123 feet, MD: 18694 feet )

CONFIDENTIAL

32-25-27-N Sundry ID 2776758 Southern Hills 32-29 Federal Com 1H Eddy NM114348 Cimarex Energy Company 13-22h 11-14-2024 LV

## Southern Hills 32-29 Federal Com 1H

|                                                              |                  |         |          |            |          |                |       |         |           |         |      |        |
|--------------------------------------------------------------|------------------|---------|----------|------------|----------|----------------|-------|---------|-----------|---------|------|--------|
| 13 3/8                                                       | surface csg in a |         | 17 1/2   | inch hole. |          | Design Factors |       |         |           | Surface |      |        |
| Segment                                                      | #/ft             | Grade   |          | Coupling   | Joint    | Collapse       | Burst | Length  | B@s       | a-B     | a-C  | Weight |
| "A"                                                          | 48.00            |         | j 55     | stc        | 15.03    | 2.85           | 2.11  | 600     | 10        | 3.65    | 5.80 | 28,800 |
| "B"                                                          |                  |         |          | stc        |          |                |       | 0       |           |         |      | 0      |
| w/8.4#/g mud, 30min Sfc Csg Test psig: 1,397                 |                  |         |          | Tail Cmt   | does not | circ to sfc.   |       | Totals: | 600       |         |      | 28,800 |
| Comparison of Proposed to Minimum Required Cement Volumes    |                  |         |          |            |          |                |       |         |           |         |      |        |
| Hole                                                         | Annular          | 1 Stage | 1 Stage  | Min        | 1 Stage  | Drilling       | Calc  | Req'd   |           |         |      |        |
| Size                                                         | Volume           | Cmt Sx  | CuFt Cmt | Cu Ft      | % Excess | Mud Wt         | MASP  | BOPE    | Min Dist  |         |      |        |
| 17 1/2                                                       | 0.6946           | 377     | 574      | #N/A       | #N/A     | 8.33           | 649   | 2M      | Hole-Cplg |         |      |        |
| 1.56                                                         |                  |         |          |            |          |                |       |         |           |         |      |        |
| Site plot (pipe racks 3 or 4) as per D.O.D. (D-4) not found. |                  |         |          |            |          |                |       |         |           |         |      |        |

| 9 5/8                                                                             |         | casing inside the |          | 13 3/8   |          | Design Factors |       |           |        | Int 1 |      |           |
|-----------------------------------------------------------------------------------|---------|-------------------|----------|----------|----------|----------------|-------|-----------|--------|-------|------|-----------|
| Segment                                                                           | #/ft    | Grade             |          | Coupling | Joint    | Collapse       | Burst | Length    | B@s    | a-B   | a-C  | Weight    |
| "A"                                                                               | 36.00   |                   | j 55     | ltc      | 5.81     | 1.79           | 0.88  | 2,167     | 3      | 1.55  | 3.11 | 78,012    |
| "B"                                                                               |         |                   |          |          |          |                |       | 0         |        |       |      | 0         |
| w/8.4#/g mud, 30min Sfc Csg Test psig: 1,500                                      |         |                   |          |          |          |                |       | Totals:   | 2,167  |       |      | 78,012    |
| The cement volume(s) are intended to achieve a top of                             |         |                   |          |          |          |                |       | 600       |        |       |      | overlap.  |
| Hole                                                                              | Annular | 1 Stage           | 1 Stage  | Min      | 1 Stage  | Drilling       | Calc  | Req'd     |        |       |      | Min Dist  |
| Size                                                                              | Volume  | Cmt Sx            | CuFt Cmt | Cu Ft    | % Excess | Mud Wt         | MASP  | BOPE      |        |       |      | Hole-Cplg |
| 12 1/4                                                                            | 0.3132  | 531               | 930      | 717      | 30       | 10.00          | 2275  | 3M        |        |       |      | 0.81      |
| r D V Tool(s):                                                                    |         |                   |          |          |          |                |       | sum of sx | Σ CuFt |       |      | Σ%excess  |
| t by stage % :                                                                    |         |                   |          |          |          |                |       | 531       | 930    |       |      | 30        |
| Class 'H' tail cmt yld > 1.20                                                     |         |                   |          |          |          |                |       |           |        |       |      |           |
| Burst Frac Gradient(s) for Segment(s): A, B, C, D = 1.62, b, c, d All > 0.70, OK. |         |                   |          |          |          |                |       |           |        |       |      |           |

| 5 1/2                                                 |                | casing inside the |                  | 9 5/8     |                  | Design Factors  |           |            |                      | Prod 1 |      |                    |
|-------------------------------------------------------|----------------|-------------------|------------------|-----------|------------------|-----------------|-----------|------------|----------------------|--------|------|--------------------|
| Segment                                               | #/ft           | Grade             |                  | Coupling  | Body             | Collapse        | Burst     | Length     | B@s                  | a-B    | a-C  | Weight             |
| "A"                                                   | 17.00          |                   | l 80             | btc       | 2.97             | 1.57            | 1.93      | 17,660     | 2                    | 3.40   | 2.77 | 300,220            |
| "B"                                                   |                |                   |                  |           |                  |                 |           | 0          |                      |        |      | 0                  |
| "C"                                                   |                |                   |                  |           |                  |                 |           | 0          |                      |        |      | 0                  |
| "D"                                                   |                |                   |                  |           |                  |                 |           | 0          |                      |        |      | 0                  |
| w/8.4#/g mud, 30min Sfc Csg Test psig: 1,731          |                |                   |                  |           |                  |                 |           | Totals:    | 17,660               |        |      | 300,220            |
| The cement volume(s) are intended to achieve a top of |                |                   |                  |           |                  |                 |           | 1967       | ft from surface or a |        | 200  | overlap.           |
| Hole Size                                             | Annular Volume | 1 Stage Cmt Sx    | 1 Stage CuFt Cmt | Min Cu Ft | 1 Stage % Excess | Drilling Mud Wt | Calc MASP | Req'd BOPE |                      |        |      | Min Dist Hole-Cplg |
| 8 1/2                                                 | 0.2291         | 4019              | 5910             | 3603      | 64               | 9.80            |           |            |                      |        |      | 1.23               |
| Class 'C' tail cmt yld > 1.35                         |                |                   |                  |           |                  |                 |           |            |                      |        |      |                    |

|                                                    |                |                |                  |                |                  |                      |           |                 |     |     |                    |
|----------------------------------------------------|----------------|----------------|------------------|----------------|------------------|----------------------|-----------|-----------------|-----|-----|--------------------|
| #N/A                                               |                |                |                  |                |                  |                      |           |                 |     |     |                    |
| 0                                                  | 5 1/2          |                |                  | Design Factors |                  |                      |           | <Choose Casing> |     |     |                    |
| Segment                                            | #/ft           | Grade          | Coupling         | #N/A           | Collapse         | Burst                | Length    | B@s             | a-B | a-C | Weight             |
| "A"                                                |                |                | 0.00             |                |                  |                      | 0         |                 |     |     | 0                  |
| "B"                                                |                |                | 0.00             |                |                  |                      | 0         |                 |     |     | 0                  |
| w/8.4#/g mud, 30min Sfc Csg Test psig:             |                |                |                  |                |                  |                      | Totals:   | 0               |     |     | 0                  |
| Cmt vol calc below includes this csg, TOC intended |                |                |                  |                | #N/A             | ft from surface or a |           | #N/A            |     |     | overlap.           |
| Hole Size                                          | Annular Volume | 1 Stage Cmt Sx | 1 Stage CuFt Cmt | Min Cu Ft      | 1 Stage % Excess | Drilling Mud Wt      | Calc MASP | Req'd BOPE      |     |     | Min Dist Hole-Cplg |
| 0                                                  |                | #N/A           | #N/A             | 0              | #N/A             |                      |           |                 |     |     |                    |
| #N/A Capitan Reef est top XXXX.                    |                |                |                  |                |                  |                      |           |                 |     |     |                    |

**PECOS DISTRICT  
DRILLING CONDITIONS OF APPROVAL**

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

|                             |                                     |
|-----------------------------|-------------------------------------|
| <b>WELL NAME &amp; NO.:</b> | Southern Hills 32-29 Federal Com 1H |
| <b>ATS/API ID:</b>          | 3001549513                          |
| <b>APD ID:</b>              | 10400068050                         |
| <b>Sundry ID:</b>           | 2776758                             |

COA

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

## A. HYDROGEN SULFIDE

Hydrogen Sulfide (H<sub>2</sub>S) monitors shall be installed prior to drilling out the surface shoe. If H<sub>2</sub>S 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 **5-1/2** 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.**

### 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](mailto: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 2<sup>nd</sup> Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
    - BOP/BOPE test to be conducted per **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

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) 11/15/2024

| Sundry ID | Pad  | Well Name                     | API          | Lot | S/T/R      | SHL Old          | SHL New   | Lot | S/T/R      | BHL Old          | BHL New          | TVD Old | TVD New | MD Old | MD New | Old Formation | New Formation | Producing Zone                    | Pool Code | Old Casing Design | New Casing Design         |
|-----------|------|-------------------------------|--------------|-----|------------|------------------|-----------|-----|------------|------------------|------------------|---------|---------|--------|--------|---------------|---------------|-----------------------------------|-----------|-------------------|---------------------------|
| 2776758   | E2W2 | Southern Hills Federal Com 1H | 30-015-49513 | N   | 32/25S/27E | 813 FSL 1540 FWL | No Change | D   | 29/25S/27E | 100 FNL 330 FWL  | No Change        | 9,123'  | 7,869'  | 18,694 | 17,660 | Wolfcamp      | 3rd BS CARB   | WC-015 G-03 S252636M; BONE SPRING | 97818     | 7" x 4 ½" (liner) | 5 1/2" x 5" (long string) |
| 2776761   | E2W2 | Southern Hills Federal Com 2H | 30-015-49515 | N   | 32/25S/27E | 820 FSL 1558 FWL | No Change | D   | 29/25S/27E | 100 FNL 990 FWL  | 100 FNL 330 FWL  | 9,123   | 8,857   | 18,591 | 19,005 | Wolfcamp      | WOLFCAMP      | PURPLE SAGE; WOLFCAMP             | 98220     | 7" x 4 ½" (liner) | 7" x 4 ½" (liner)         |
| 2776762   | E2W2 | Southern Hills Federal Com 3H | 30-015-49514 | N   | 32/25S/27E | 827 FSL 1577 FWL | No Change | C   | 29/25S/27E | 100 FNL 1650 FWL | 100 FNL 2112 FWL | 9,123   | 7,903   | 18,529 | 17,752 | Wolfcamp      | 3rd BS CARB   | WC-015 G-03 S252636M; BONE SPRING | 97818     | 7" x 4 ½" (liner) | 5 1/2" x 5" (long string) |
| 2776765   | E2W2 | Southern Hills Federal Com 4H | 30-015-51930 | N   | 32/25S/27E | 834 FSL 1595 FWL | No Change | C   | 29/25S/27E | 100 FNL 2315 FWL | 100 FNL 2310 FWL | 9,123   | 8,884   | 18,604 | 18,955 | Wolfcamp      | WOLFCAMP      | PURPLE SAGE; WOLFCAMP             | 98220     | 7" x 4 ½" (liner) | 7" x 4 ½" (liner)         |

**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 #2: 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.

**1. Geological Formations**

TVD of target 7,869

Pilot Hole TD N/A

MD at TD 17,660

Deepest expected fresh water

| Formation             | Depth (TVD) from KB | Water/Mineral Bearing/Target Zone | Hazards |
|-----------------------|---------------------|-----------------------------------|---------|
| Russter               | 841                 | N/A                               |         |
| Top of Salt           | 1252                | N/A                               |         |
| Base of Salt          | 1877                | N/A                               |         |
| Anhydrite             | 2067                | N/A                               |         |
| Lamar                 | 2088                | N/A                               |         |
| Bell Canyon           | 2187                | N/A                               |         |
| Cherry Canyon         | 3066                | N/A                               |         |
| Brushy Canyon         | 4033                | N/A                               |         |
| Bone Spring Lime      | 5620                | N/A                               |         |
| Leonard Shale         | 5828                | N/A                               |         |
| 1st Bone Spring Sand  | 6585                | N/A                               |         |
| 2nd Bone Spring Shale | 6753                | N/A                               |         |
| 2nd Bone Spring Sand  | 7240                | N/A                               |         |
| 3rd Bone Spring Carb  | 7534                | 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/J-55 Hybrid | ST&C  | 2.85        | 6.66     | 11.18              |
| 12 1/4                    | 0                 | 2167            | 2167              | 9-5/8"      | 36.00          | J-55             | LT&C  | 1.79        | 3.12     | 5.81               |
| 8 1/2                     | 0                 | 7373            | 7373              | 5-1/2"      | 17.00          | L-80             | BT&C  | 1.67        | 2.06     | 2.97               |
| 8 1/2                     | 7373              | 17660           | 7869              | 5-1/2"      | 17.00          | L-80             | BT&C  | 1.57        | 1.93     | 47.08              |
| 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

## Cimarex Energy Co., Southern Hills 32-29 Federal Com 1H

|                                                                                                                                                  | 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?                | Y      |
| 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       | # Sk | Wt.<br>lb/gal | Yld<br>ft <sup>3</sup> /sack | H <sub>2</sub> O<br>gal/sk | 500# Comp.<br>Strength<br>(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 | 404  | 12.90         | 1.88                         | 9.65                       | 12                                | Lead: 35:65 (Poz:C) + Salt + Bentonite |
|              | 127  | 14.80         | 1.34                         | 6.32                       | 9.5                               | Tail: Class C + LCM                    |
|              |      |               |                              |                            |                                   |                                        |
| Production   | 1380 | 13.50         | 1.72                         | 9.15                       | 15.5                              | Lead: Class C + Bentonite              |
|              | 2639 | 14.80         | 1.34                         | 6.32                       | 9.5                               | Tail: Class C + LCM                    |
|              |      |               |                              |                            |                                   |                                        |

| Casing String | TOC | % Excess |
|---------------|-----|----------|
| Surface       | 0   | 38       |
| Intermediate  | 0   | 51       |
| Production    | 0   | 25       |

Cimarex request the ability to perform casing integrity tests after plug bump of cement job.

**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    | X | 50% of working pressure |
|                                                                                                      |        |                 | Blind Ram  |   | 5M                      |
|                                                                                                      |        |                 | Pipe Ram   |   |                         |
|                                                                                                      |        |                 | Double Ram | X |                         |
|                                                                                                      |        |                 | Other      |   |                         |
| 8 1/2                                                                                                | 13 5/8 | 5M              | Annular    | X | 50% of working pressure |
|                                                                                                      |        |                 | Blind Ram  |   | 5M                      |
|                                                                                                      |        |                 | Pipe Ram   | X |                         |
|                                                                                                      |        |                 | Double Ram | X |                         |
|                                                                                                      |        |                 | Other      |   |                         |

BOP/BOPE will be tested by an independent service company to 250 psi low and the high pressure indicated above per Onshore Order 2 requirements. The System may be upgraded to a higher pressure but still tested to the working pressure listed in the table above. If the system is upgraded all the components installed will be functional and tested.

Pipe rams will be operationally checked each 24 hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets. Other accessories to the BOP equipment will include a Kelly cock and floor safety valve (inside BOP) and choke lines and choke manifold. See attached schematics.

|   |                                                                                                                                                                                                                                                                                                               |
|---|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 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'      | Fresh Water | 7.83 - 8.33  | 28        | N/C        |
| 600' to 2167'   | Brine Water | 9.50 - 10.00 | 30-32     | N/C        |
| 2167' to 17660' | OBM         | 9.30 - 9.80  | 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 from TD 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 | 4010 psi |
| Abnormal Temperature       | No       |

Hydrogen Sulfide (H<sub>2</sub>S) monitors will be installed prior to drilling out the surface shoe. If H<sub>2</sub>S 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 | H <sub>2</sub> S is present       |
| X | H <sub>2</sub> S plan is attached |

**8. Other Facets of Operation****9. Wellhead**

A multi-bowl wellhead system will be utilized.

After running the 13-3/8" surface casing, a 13 5/8" BOP/BOPE system with a minimum working pressure of 5000 psi will be installed on the wellhead system and will be pressure tested to 250 psi low followed by a 5000 psi test. Annular will be tested to 50% of working pressure. The pressure test will be repeated at least every 30 days, as per Onshore Order No. 2.

The multi-bowl wellhead will be installed by vendor's representative. A copy of the installation instructions has been sent to the BLM field office.

The wellhead will be installed by a third-party welder while being monitored by the wellhead vendor representative.

All BOP equipment will be tested utilizing a conventional test plug. Not a cup or J-packer type.

A solid steel body pack-off will be utilized after running and cementing the intermediate casing. After installation the pack-off and lower flange will be pressure tested to 5000 psi.

All casing strings will be tested as per Onshore Order No.2 to atleast 0.22 psi/ft or 1,500 whichever is greater and not to exceed 70% of casing burst.

If well conditions dictate conventional slips will be set and BOPE will be tested to appropriate pressures based on permitted pressure requirements.

|                                                                 |                                                                                                            |                                     |                                                    |
|-----------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------------------------------------|
| <b>C-102</b><br><br>Submit Electronically<br>Via OCD Permitting | State of New Mexico<br>Energy, Minerals & Natural Resources Department<br><b>OIL CONSERVATION DIVISION</b> | Revised July 9, 2024                |                                                    |
|                                                                 |                                                                                                            | Submittal<br>Type:                  | <input type="checkbox"/> Initial Submittal         |
|                                                                 |                                                                                                            |                                     | <input checked="" type="checkbox"/> Amended Report |
|                                                                 |                                                                                                            | <input type="checkbox"/> As Drilled |                                                    |

**WELL LOCATION INFORMATION**

|                                                                                                                                                                                                                                                                                                               |                                                   |                                                |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|------------------------------------------------|
| API Number<br>30-015-49513                                                                                                                                                                                                                                                                                    | Pool Code<br>97818                                | Pool Name<br>WC-015 G-03 S252636M; BONE SPRING |
| Property Code                                                                                                                                                                                                                                                                                                 | Property Name<br>SOUTHERN HILLS 32-29 FEDERAL COM | Well Number<br>1H                              |
| OGRID No.<br>215099                                                                                                                                                                                                                                                                                           | Operator Name<br>CIMAREX ENERGY CO.               | Ground Level Elevation<br>3,243.4'             |
| Surface Owner: <input type="checkbox"/> State <input type="checkbox"/> Fee <input type="checkbox"/> Tribal <input checked="" type="checkbox"/> Federal Mineral Owner: <input type="checkbox"/> State <input type="checkbox"/> Fee <input type="checkbox"/> Tribal <input checked="" type="checkbox"/> Federal |                                                   |                                                |

## Surface Location

|         |               |                 |              |     |                           |                            |                                 |                                    |                |
|---------|---------------|-----------------|--------------|-----|---------------------------|----------------------------|---------------------------------|------------------------------------|----------------|
| UL<br>N | Section<br>32 | Township<br>25S | Range<br>27E | Lot | Ft. from N/S<br>813 SOUTH | Ft. from E/W<br>1,540 WEST | Latitude (NAD 83)<br>32.081247° | Longitude (NAD 83)<br>-104.215956° | County<br>EDDY |
|---------|---------------|-----------------|--------------|-----|---------------------------|----------------------------|---------------------------------|------------------------------------|----------------|

## Bottom Hole Location

|         |               |                 |              |     |                           |                          |                                 |                                    |                |
|---------|---------------|-----------------|--------------|-----|---------------------------|--------------------------|---------------------------------|------------------------------------|----------------|
| UL<br>D | Section<br>29 | Township<br>25S | Range<br>27E | Lot | Ft. from N/S<br>100 NORTH | Ft. from E/W<br>330 WEST | Latitude (NAD 83)<br>32.107894° | Longitude (NAD 83)<br>-104.219503° | County<br>EDDY |
|---------|---------------|-----------------|--------------|-----|---------------------------|--------------------------|---------------------------------|------------------------------------|----------------|

|                        |                         |                                                                                                    |                                |                    |
|------------------------|-------------------------|----------------------------------------------------------------------------------------------------|--------------------------------|--------------------|
| Dedicated Acres<br>320 | Infill or Defining Well | Defining Well API                                                                                  | Overlapping Spacing Unit (Y/N) | Consolidation Code |
| Order Numbers.         |                         | Well setbacks are under Common Ownership: <input type="checkbox"/> Yes <input type="checkbox"/> No |                                |                    |

## Kick Off Point (KOP)

|         |               |                 |              |     |                           |                          |                                 |                                    |                |
|---------|---------------|-----------------|--------------|-----|---------------------------|--------------------------|---------------------------------|------------------------------------|----------------|
| UL<br>M | Section<br>32 | Township<br>25S | Range<br>27E | Lot | Ft. from N/S<br>572 SOUTH | Ft. from E/W<br>532 WEST | Latitude (NAD 83)<br>32.080583° | Longitude (NAD 83)<br>-104.219224° | County<br>EDDY |
|---------|---------------|-----------------|--------------|-----|---------------------------|--------------------------|---------------------------------|------------------------------------|----------------|

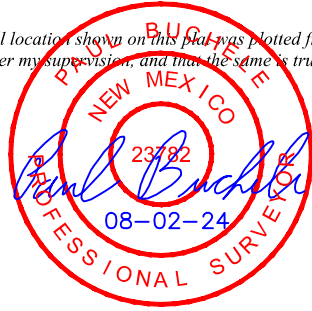
## First Take Point (FTP)

|         |               |                 |              |     |                            |                          |                                 |                                    |                |
|---------|---------------|-----------------|--------------|-----|----------------------------|--------------------------|---------------------------------|------------------------------------|----------------|
| UL<br>M | Section<br>32 | Township<br>25S | Range<br>27E | Lot | Ft. from N/S<br>1340 SOUTH | Ft. from E/W<br>347 WEST | Latitude (NAD 83)<br>32.082694° | Longitude (NAD 83)<br>-104.219777° | County<br>EDDY |
|---------|---------------|-----------------|--------------|-----|----------------------------|--------------------------|---------------------------------|------------------------------------|----------------|

## Last Take Point (LTP)

|         |               |                 |              |     |                           |                          |                                 |                                    |                |
|---------|---------------|-----------------|--------------|-----|---------------------------|--------------------------|---------------------------------|------------------------------------|----------------|
| UL<br>D | Section<br>29 | Township<br>25S | Range<br>27E | Lot | Ft. from N/S<br>100 NORTH | Ft. from E/W<br>330 WEST | Latitude (NAD 83)<br>32.107894° | Longitude (NAD 83)<br>-104.219503° | County<br>EDDY |
|---------|---------------|-----------------|--------------|-----|---------------------------|--------------------------|---------------------------------|------------------------------------|----------------|

|                                           |                                                                                         |                         |
|-------------------------------------------|-----------------------------------------------------------------------------------------|-------------------------|
| Unitized Area or Area of Uniform Interest | Spacing Unit Type <input type="checkbox"/> Horizontal <input type="checkbox"/> Vertical | Ground Floor Elevation: |
|-------------------------------------------|-----------------------------------------------------------------------------------------|-------------------------|

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>OPERATOR CERTIFICATIONS</b><br><br><i>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.</i><br><br><i>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.</i><br><br><i>Shelly Bowen</i><br>Signature Date<br>Shelly Bowen 10/1/2024<br>Printed Name<br>shelly.bowen@coterra.com<br>Email Address | <b>SURVEYOR CERTIFICATIONS</b><br><br><i>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.</i><br><br><br>Signature and Seal of Professional Surveyor<br>23782 August 31, 2020<br>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<br>SOUTHERN HILLS 32-29 FEDERAL COM | Well Number<br>1H | Drawn By<br>D.J.S. 10-07-20 | Revised By<br>REV. 7 Z.L. 08-02-24 (UPDATED DEDICATED ACRES) |
|---------------------------------------------------|-------------------|-----------------------------|--------------------------------------------------------------|

|                                           |
|-------------------------------------------|
| <b>NAD 83 (SURFACE HOLE LOCATION)</b>     |
| LATITUDE = 32°04'52.49" (32.081247°)      |
| LONGITUDE = -104°12'57.44" (-104.215956°) |
| <b>NAD 27 (SURFACE HOLE LOCATION)</b>     |
| LATITUDE = 32°04'52.05" (32.081126°)      |
| LONGITUDE = -104°12'55.66" (-104.215462°) |
| <b>STATE PLANE NAD 83 (N.M. EAST)</b>     |
| N: 393314.74' E: 577690.83'               |
| <b>STATE PLANE NAD 27 (N.M. EAST)</b>     |
| N: 393257.66' E: 536507.37'               |

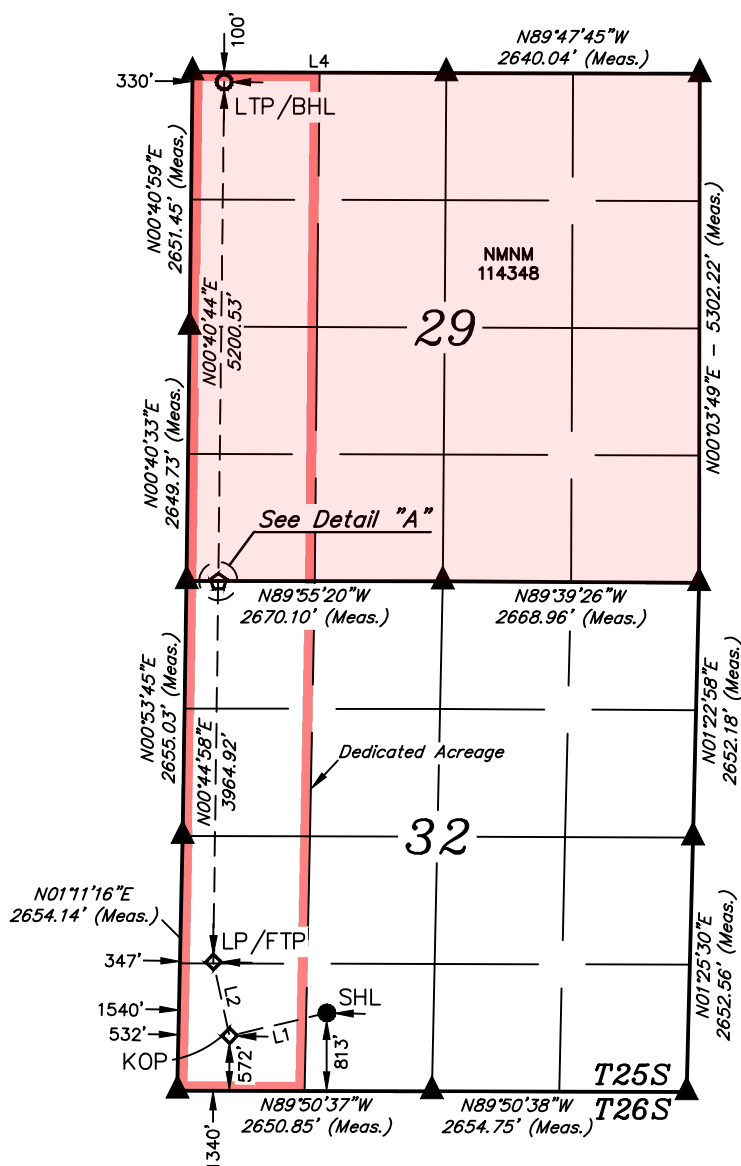
|                                           |
|-------------------------------------------|
| <b>NAD 83 (KICK OFF POINT)</b>            |
| LATITUDE = 32°04'50.10" (32.080583°)      |
| LONGITUDE = -104°13'09.21" (-104.219224°) |
| <b>NAD 27 (KICK OFF POINT)</b>            |
| LATITUDE = 32°04'49.66" (32.080461°)      |
| LONGITUDE = -104°13'07.43" (-104.218730°) |
| <b>STATE PLANE NAD 83 (N.M. EAST)</b>     |
| N: 393071.76' E: 576678.92'               |
| <b>STATE PLANE NAD 27 (N.M. EAST)</b>     |
| N: 393014.70' E: 535495.48'               |

|                                           |
|-------------------------------------------|
| <b>NAD 83 (LP/FTP)</b>                    |
| LATITUDE = 32°04'57.70" (32.082694°)      |
| LONGITUDE = -104°13'11.20" (-104.219777°) |
| <b>NAD 27 (LP/FTP)</b>                    |
| LATITUDE = 32°04'57.26" (32.082573°)      |
| LONGITUDE = -104°13'09.42" (-104.219282°) |
| <b>STATE PLANE NAD 83 (N.M. EAST)</b>     |
| N: 393839.84' E: 576506.96'               |
| <b>STATE PLANE NAD 27 (N.M. EAST)</b>     |
| N: 393782.76' E: 535323.53'               |

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

|                                           |
|-------------------------------------------|
| <b>NAD 83 (LPP)</b>                       |
| LATITUDE = 32°05'36.97" (32.093602°)      |
| LONGITUDE = -104°13'10.74" (-104.219649°) |
| <b>NAD 27 (LPP)</b>                       |
| LATITUDE = 32°05'36.53" (32.093481°)      |
| LONGITUDE = -104°13'08.96" (-104.219154°) |
| <b>STATE PLANE NAD 83 (N.M. EAST)</b>     |
| N: 397807.76' E: 576542.29'               |
| <b>STATE PLANE NAD 27 (N.M. EAST)</b>     |
| N: 397750.60' E: 535358.93'               |

|                                           |
|-------------------------------------------|
| <b>NAD 83 (LTP/BHL)</b>                   |
| LATITUDE = 32°06'28.42" (32.107894°)      |
| LONGITUDE = -104°13'10.21" (-104.219503°) |
| <b>NAD 27 (LTP/BHL)</b>                   |
| LATITUDE = 32°06'27.98" (32.107773°)      |
| LONGITUDE = -104°13'08.43" (-104.219007°) |
| <b>STATE PLANE NAD 83 (N.M. EAST)</b>     |
| N: 403006.92' E: 576582.19'               |
| <b>STATE PLANE NAD 27 (N.M. EAST)</b>     |
| N: 402949.67' E: 535398.91'               |



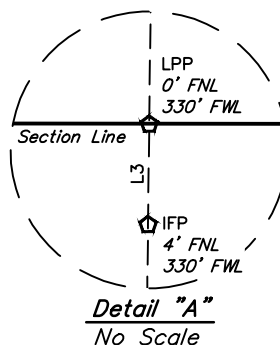
LINE TABLE

| LINE | DIRECTION   | LENGTH   |
|------|-------------|----------|
| L1   | S76°44'12"W | 1040.91' |
| L2   | N12°22'51"W | 787.28'  |
| L3   | N00°40'44"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  
 ■ = DEDICATED ACREAGE

## 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.



# Geologic Prognosis

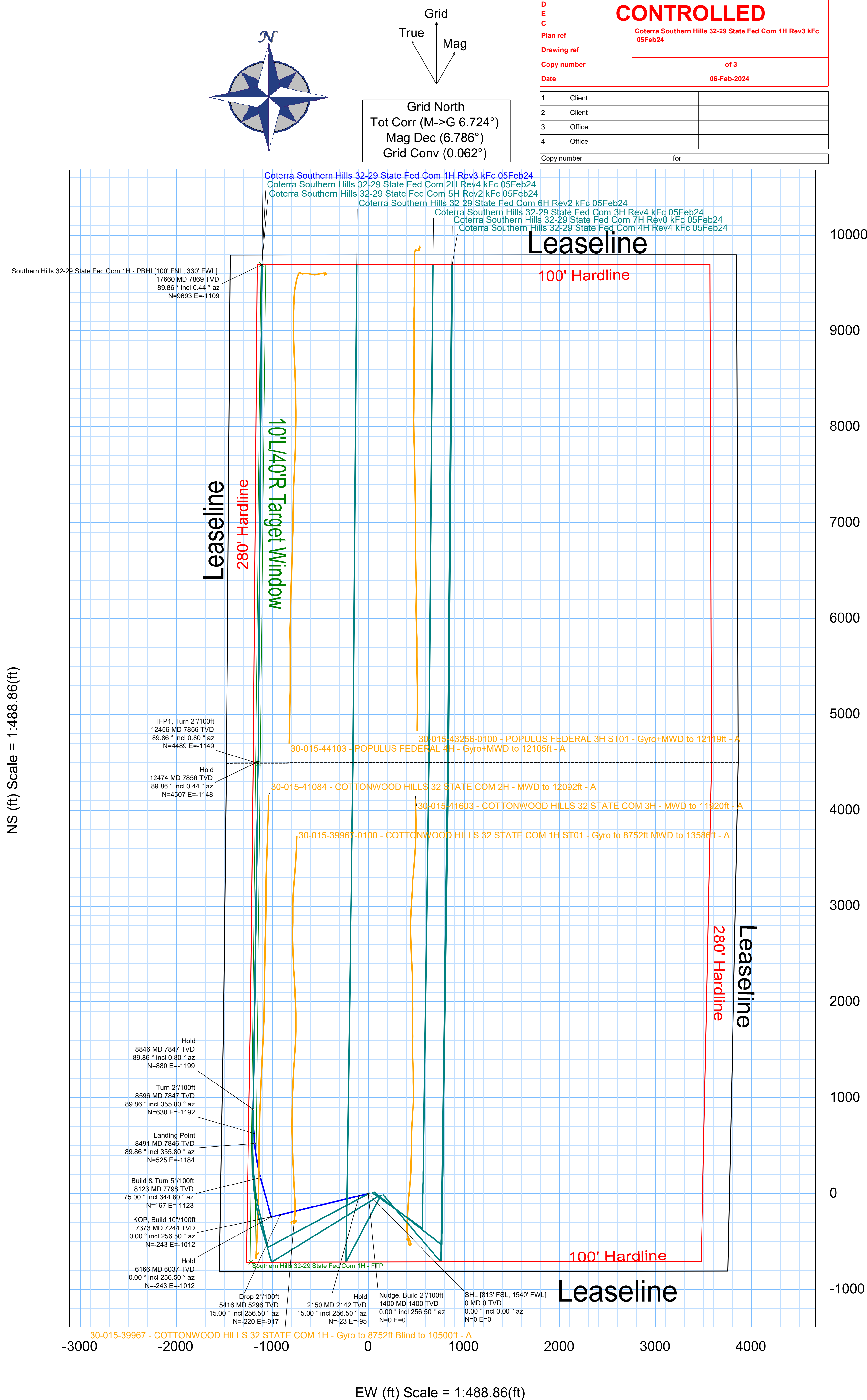
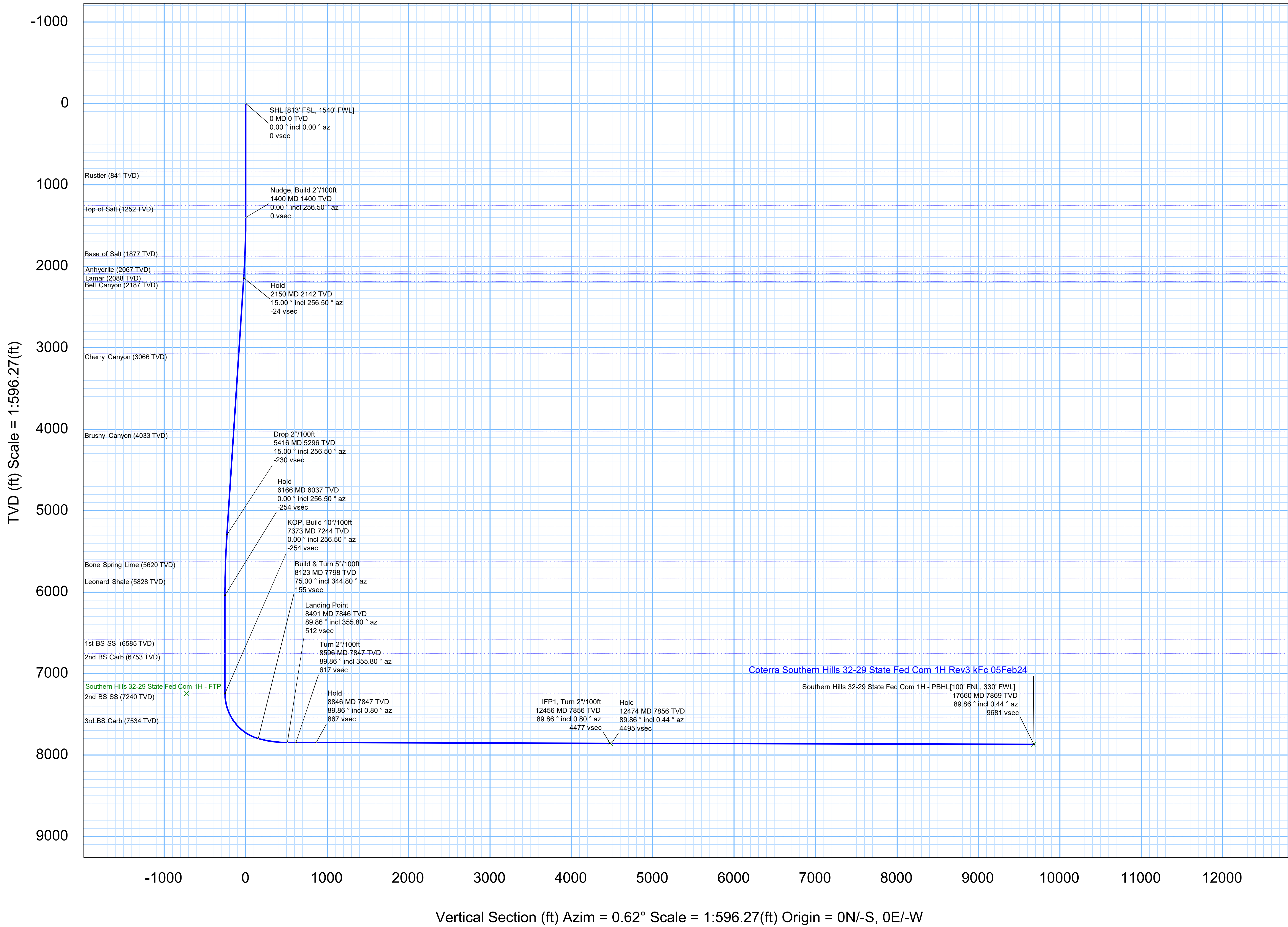


| Well Information                                          |          |                |                          |                      | Contact Information                                                                                      |
|-----------------------------------------------------------|----------|----------------|--------------------------|----------------------|----------------------------------------------------------------------------------------------------------|
| <b>Well Name:</b> Southern Hills 32-29 State Fed Com 001  |          |                | <b>County:</b> Eddy      |                      | <b>Holden Allen</b><br>Office: (432) 620-1924<br>Cell: (432) 664-7542<br>Email: Holden.Allen@coterra.com |
| <b>API #:</b>                                             |          |                | <b>State:</b> New Mexico |                      |                                                                                                          |
| <b>Dev/Exp:</b> Development                               |          |                | <b>Field:</b>            |                      |                                                                                                          |
| Surface Hole Information                                  |          |                |                          |                      | <b>Samir Jreij</b><br>Office: (432) 571-7847<br>Cell: (713) 382-0095<br>Email: Samir.Jreij@coterra.com   |
| Footages:                                                 | Section: | Township/Block | Range:                   | Direction            |                                                                                                          |
| 813' FSL / 1540' FWL                                      | 32       | 25S            | 27E                      | N-S                  |                                                                                                          |
| Bottom Hole Information                                   |          |                |                          |                      |                                                                                                          |
| Footages:                                                 | Section: | Township:      | Range:                   |                      |                                                                                                          |
| 100' FNL /330FWL                                          | 29       | 25S            | 27E                      |                      |                                                                                                          |
| Target Information                                        |          |                |                          |                      |                                                                                                          |
| Formation: 3rd Bone Spring CARB                           |          | Landing TVD:   |                          | 7846.4 ' TVD @ 0' VS | TD TVD:7869.4'                                                                                           |
|                                                           |          |                |                          |                      |                                                                                                          |
| Generated By: Crystal Pate      Date Generated: 3/13/2024 |          |                |                          |                      |                                                                                                          |
| Est. GL Elevation: 3243.4                                 |          |                |                          |                      |                                                                                                          |
| Est. KB above GL 23                                       |          | Rig: 156       |                          |                      |                                                                                                          |
| Est. KB Elevation: 3266.4                                 |          |                |                          |                      |                                                                                                          |
| Horizon                                                   | TVD top  | TVD base       | SSTVD top                | Thickness            | Comments                                                                                                 |
| Rustler                                                   | 841.4    | 2067.4         | 2425                     | 1226                 |                                                                                                          |
| Top of Salt                                               | 1252.4   | 1877.4         | 2014                     | 625                  |                                                                                                          |
| Base of Salt                                              | 1877.4   | 2067.4         | 1389                     | 190                  |                                                                                                          |
| Anhydrite                                                 | 2067.4   | 2088.4         | 1199                     | 21                   |                                                                                                          |
| Lamar                                                     | 2088.4   | 2187.4         | 1178                     | 99                   |                                                                                                          |
| Bell Canyon                                               | 2187.4   | 3066.4         | 1079                     | 879                  |                                                                                                          |
| Cherry Canyon                                             | 3066.4   | 4033.4         | 200                      | 967                  |                                                                                                          |
| Brushy Canyon                                             | 4033.4   | 5620.4         | -767                     | 1587                 |                                                                                                          |
| Bone Spring Lime                                          | 5620.4   | 5828.4         | -2354                    | 208                  |                                                                                                          |
| Leonard Shale                                             | 5828.4   | 6585.4         | -2562                    | 757                  |                                                                                                          |
| 1st Bone Spring Sand                                      | 6585.4   | 6753.4         | -3319                    | 168                  |                                                                                                          |
| 2nd Bone Spring Shale                                     | 6753.4   | 7240.4         | -3487                    | 487                  |                                                                                                          |
| 2nd Bone Spring Sand                                      | 7240.4   | 7534.4         | -3974                    | 294                  |                                                                                                          |
| 3rd Bone Spring Carb                                      | 7534.4   | 7846.4         | -4268                    | 312                  |                                                                                                          |
| Target                                                    | 7846.4   | 7896.4         | -4580                    | 50                   |                                                                                                          |
| Target Base                                               | 7896.4   |                | -4630                    |                      |                                                                                                          |
|                                                           |          |                |                          |                      |                                                                                                          |

|                                                    |                                                |                                   |                                                                      |
|----------------------------------------------------|------------------------------------------------|-----------------------------------|----------------------------------------------------------------------|
| Borehole:<br>Southern Hills 32-29 State Fed Com 1H | Well:<br>Southern Hills 32-29 State Fed Com 1H | Field:<br>NM Eddy County (NAD 83) | Structure:<br>Coterra Southern Hills 32-29 State Fed Com Pad<br>1234 |
|----------------------------------------------------|------------------------------------------------|-----------------------------------|----------------------------------------------------------------------|

|                               |           |      |             |                  |                            |      |                |                                                     |               |             |           |               |                                                                |          |                             |
|-------------------------------|-----------|------|-------------|------------------|----------------------------|------|----------------|-----------------------------------------------------|---------------|-------------|-----------|---------------|----------------------------------------------------------------|----------|-----------------------------|
| Gravity & Magnetic Parameters |           |      |             | Surface Location |                            |      |                | NAD83 New Mexico State Plane, Eastern Zone, US Feet |               |             |           | Miscellaneous |                                                                |          |                             |
| Model:                        | HDGM 2024 | Dip: | 59.579°     | Date:            | 05-Feb-2024                | Lat: | N 32 4 52.49   | Northing:                                           | 393314.74ftUS | Grid Conv:  | 0.0623°   | Slot:         | Southern Hills 32-29<br>State Fed Com 1H                       | TVD Ref: | RKB (3266.400 ft above MSL) |
| MagDec:                       | 6.786°    | FS:  | 47288.478nT | Gravity FS:      | 998.435mgn (9.80665 Based) | Lon: | W 104 12 57.44 | Easting:                                            | 577690.83ftUS | Scale Fact: | 0.9999106 | Plan:         | Coterra Southern Hills 32-29 State Fed Com 1H Rev3 kFc 05Feb24 |          |                             |

| Critical Points                                                  |          |       |        |         |         |           |           |       |
|------------------------------------------------------------------|----------|-------|--------|---------|---------|-----------|-----------|-------|
| Critical Point                                                   | MD       | INCL  | AZIM   | TVD     | VSEC    | N(+)/S(-) | E(+)/W(-) | DLS   |
| SHL [831' FSL, 1540' FWL]                                        | 0.00     | 0.00  | 0.00   | 0.00    | 0.00    | 0.00      | 0.00      |       |
| Rustler                                                          | 841.40   | 0.00  | 256.50 | 841.40  | 0.00    | 0.00      | 0.00      | 0.00  |
| Top of Salt                                                      | 1252.40  | 0.00  | 256.50 | 1252.40 | 0.00    | 0.00      | 0.00      | 0.00  |
| Nudge, Build 2°/100ft                                            | 1400.00  | 0.00  | 256.50 | 1400.00 | 0.00    | 0.00      | 0.00      | 0.00  |
| Base of Salt                                                     | 1879.64  | 9.59  | 256.50 | 1877.40 | -9.77   | -9.35     | -38.95    | 2.00  |
| Anhydrite                                                        | 2073.59  | 13.47 | 256.50 | 2067.40 | -19.23  | -18.40    | -76.65    | 2.00  |
| Lamar                                                            | 2095.20  | 13.90 | 256.50 | 2088.40 | -20.48  | -19.60    | -81.62    | 2.00  |
| Hold                                                             | 2150.24  | 15.00 | 256.50 | 2141.70 | -23.83  | -22.81    | -94.98    | 2.00  |
| Bell Canyon                                                      | 2197.56  | 15.00 | 256.50 | 2187.40 | -26.82  | -25.67    | -106.89   | 0.00  |
| Cherry Canyon                                                    | 3107.59  | 15.00 | 256.50 | 3066.40 | -84.31  | -80.68    | -335.99   | 0.00  |
| Brushy Canyon                                                    | 4108.72  | 15.00 | 256.50 | 4033.40 | -147.55 | -141.19   | -588.02   | 0.00  |
| Drop 2°/100ft                                                    | 5415.63  | 15.00 | 256.50 | 5295.74 | -230.10 | -220.19   | -917.02   | 0.00  |
| Bone Spring Lime                                                 | 5747.34  | 8.37  | 256.50 | 5620.40 | -246.49 | -235.87   | -982.33   | 2.00  |
| Leonard Shale                                                    | 5956.64  | 4.18  | 256.50 | 5828.40 | -252.07 | -241.22   | -1004.57  | 2.00  |
| Hold                                                             | 6165.87  | 0.00  | 256.50 | 6037.44 | -253.94 | -243.00   | -1012.00  | 2.00  |
| 1st BS SS                                                        | 6713.83  | 0.00  | 256.50 | 6585.40 | -253.94 | -243.00   | -1012.00  | 0.00  |
| 2nd BS Carb                                                      | 6881.83  | 0.00  | 256.50 | 6753.40 | -253.94 | -243.00   | -1012.00  | 0.00  |
| 2nd BS SS                                                        | 7368.83  | 0.00  | 256.50 | 7240.40 | -253.94 | -243.00   | -1012.00  | 0.00  |
| KOP, Build 10°/100ft                                             | 7372.87  | 0.00  | 256.50 | 7244.44 | -253.94 | -243.00   | -1012.00  | 0.00  |
| 3rd BS Carb                                                      | 7676.90  | 30.40 | 344.80 | 7534.40 | -178.13 | -166.97   | -1032.66  | 10.00 |
| Build & Turn 5°/100ft                                            | 8122.87  | 75.00 | 344.80 | 7797.87 | 154.64  | 166.81    | -1123.34  | 10.00 |
| Landing Point                                                    | 8491.11  | 89.86 | 355.80 | 7846.40 | 512.31  | 525.15    | -1183.98  | 5.00  |
| Turn 2°/100ft                                                    | 8596.11  | 89.86 | 355.80 | 7846.65 | 616.94  | 629.87    | -1191.67  | 0.00  |
| Hold                                                             | 8846.12  | 89.86 | 0.80   | 7847.28 | 866.66  | 879.69    | -1199.08  | 2.00  |
| IFP1, Turn 2°/100ft                                              | 12456.15 | 89.86 | 0.80   | 7856.40 | 4476.66 | 4489.35   | -1148.67  | 0.00  |
| Hold                                                             | 12474.20 | 89.86 | 0.44   | 7856.45 | 4494.71 | 4507.41   | -1148.48  | 2.00  |
| Southern Hills 32-29 State Fed Com 1H - PBHL[100' FNL, 330' FWL] | 17660.03 | 89.86 | 0.44   | 7869.40 | 9680.50 | 9693.07   | -1108.74  | 0.00  |





## Coterra Southern Hills 32-29 State Fed Com 1H Rev3 kFc 05Feb24 Anti-Collision Summary Report

**Analysis Date-24hr Time:** February 06, 2024 - 02:15 PM (UTC 0)  
**Client:** COTERRA  
**Field:** NM Eddy County (NAD 83)  
**Structure:** Coterra Southern Hills 32-29 State Fed Com Pad 1234  
**Slot:** Southern Hills 32-29 State Fed Com 1H  
**Well:** Southern Hills 32-29 State Fed Com 1H  
**Borehole:** Southern Hills 32-29 State Fed Com 1H  
**Scan MD Range:** 0.00ft ~ 17660.03ft

**Analysis Method:** 3D Least Distance  
**Reference Trajectory:** Coterra Southern Hills 32-29 State Fed Com 1H Rev3 kFc 05Feb24 (Def Plan)  
**Depth Interval:** Every 10.00 Measured Depth (ft)  
**Rule Set:** NAL Procedure: D&M AntiCollision Standard S002  
**Min Pts:** Absolute minima indicated.  
**Engine Version:** 2023.1.0.1  
**Database \ Project:** Southern Hills 32-29 State Fed Com 1H-COTERRA

**Trajectory Error Model:** ISCSWA0 3 - D 95 % Confidence 2.7955 sigma

## Offset Trajectories Summary

## Offset Selection Criteria

Bounding box scan: minimum Ct-Ct separation <= 2000ft  
Selection filters: Definitive Surveys - Definitive Plans - Definitive surveys exclude definitive plans  
- All Non-Def Surveys when no Def-Survey is set in a borehole - All Non-Def Plans when no Def-Plan is set in a borehole  
**12 out of 29 are selected**

| Offset Trajectory | Separation |          |          | Allow<br>Dev. (ft) | Sep.<br>Fact. | Controlling<br>Rule | Reference Trajectory |          | Risk Level |       |       | Alert | Status |
|-------------------|------------|----------|----------|--------------------|---------------|---------------------|----------------------|----------|------------|-------|-------|-------|--------|
|                   | Ct-Ct (ft) | MAS (ft) | EOU (ft) |                    |               |                     | MD (ft)              | TVD (ft) | Alert      | Minor | Major |       |        |

Results highlighted in red: Sep-Factor <= 1.5

Result highlighted in boxed, red and bold: all local minima indicated.

|                                                                                                                  |               |                |                |                 |                 |                |                |                 |          |  |  |             |               |
|------------------------------------------------------------------------------------------------------------------|---------------|----------------|----------------|-----------------|-----------------|----------------|----------------|-----------------|----------|--|--|-------------|---------------|
| Coterra Southern Hills 32-29 State Fed Com 2H Rev4 kFc 05Feb24 (DefinitivePlan)                                  |               |                |                |                 |                 |                |                |                 |          |  |  |             | Fail Minor    |
| 19.99                                                                                                            | 16.25         | 18.71          | 3.74           | N/A             | MAS = 4.95 (m)  | 0.00           | 0.00           | CtCt<=15m<15.00 |          |  |  | Enter Alert |               |
| 19.99                                                                                                            | 16.25         | 18.70          | 3.74           | 6599.59         | MAS = 4.95 (m)  | 23.00          | 23.00          |                 |          |  |  | WRP         |               |
| 19.99                                                                                                            | 16.25         | <b>16.41</b>   | 3.74           | 8.15            | MAS = 4.95 (m)  | 290.00         | 290.00         |                 |          |  |  | MinPt-EOU   |               |
| <b>19.99</b>                                                                                                     | <b>20.06</b>  | <b>6.29</b>    | <b>-0.07</b>   | <b>1.49</b>     | OSF1.50         | <b>1330.00</b> | <b>1330.00</b> |                 | OSF<1.50 |  |  | Enter Minor |               |
| <b>19.99</b>                                                                                                     | <b>21.11</b>  | <b>5.59</b>    | <b>-1.12</b>   | <b>1.42</b>     | OSF1.50         | <b>1400.00</b> | <b>1400.00</b> |                 |          |  |  | MinPt-CtCt  |               |
| <b>20.15</b>                                                                                                     | <b>21.56</b>  | <b>5.46</b>    | <b>-1.41</b>   | <b>1.40</b>     | OSF1.50         | <b>1430.00</b> | <b>1430.00</b> |                 |          |  |  | MinPt-EOU   |               |
| <b>20.27</b>                                                                                                     | <b>21.70</b>  | <b>5.47</b>    | <b>-1.43</b>   | <b>1.40</b>     | OSF1.50         | <b>1440.00</b> | <b>1440.00</b> |                 |          |  |  | MinPts      |               |
| <b>22.92</b>                                                                                                     | <b>23.03</b>  | <b>7.24</b>    | <b>-0.11</b>   | <b>1.49</b>     | OSF1.50         | <b>1530.00</b> | <b>1529.96</b> |                 | OSF>1.50 |  |  | Exit Minor  |               |
| 94.63                                                                                                            | 43.35         | 65.39          | 51.27          | <b>3.32</b>     | OSF1.50         | 2830.00        | 2798.28        |                 |          |  |  | MinPt-SF    |               |
| 265.26                                                                                                           | 115.39        | 188.01         | 149.87         | <b>3.46</b>     | OSF1.50         | 6070.00        | 5941.59        |                 |          |  |  | MinPt-SF    |               |
| 318.97                                                                                                           | 128.86        | <b>232.73</b>  | <b>190.11</b>  | <b>3.73</b>     | OSF1.50         | 7372.87        | 7244.44        |                 |          |  |  | MinPts      |               |
| 432.54                                                                                                           | 130.73        | 345.06         | 301.81         | 4.99            | OSF1.50         | 7750.00        | 7594.92        |                 | OSF>5.00 |  |  | Exit Alert  |               |
| 989.69                                                                                                           | 297.64        | 790.94         | 692.05         | 5.00            | OSF1.50         | 16480.00       | 7866.45        |                 | OSF<5.00 |  |  | Enter Alert |               |
| <b>986.80</b>                                                                                                    | <b>335.69</b> | <b>762.68</b>  | <b>651.11</b>  | <b>4.42</b>     | OSF1.50         | 17660.03       | 7869.40        |                 |          |  |  | MinPts      |               |
| Coterra Southern Hills 32-29 State Fed Com 3H Rev4 kFc 05Feb24 (DefinitivePlan)                                  |               |                |                |                 |                 |                |                |                 |          |  |  |             | Warning Alert |
| 40.00                                                                                                            | 32.25         | 38.71          | 7.74           | N/A             | MAS = 9.83 (m)  | 0.00           | 0.00           | CtCt<=15m<15.00 |          |  |  | Enter Alert |               |
| 40.00                                                                                                            | 32.25         | 38.71          | 7.74           | 9931.87         | MAS = 9.83 (m)  | 23.00          | 23.00          |                 |          |  |  | WRP         |               |
| 40.00                                                                                                            | 32.25         | <b>36.41</b>   | 7.74           | 16.86           | MAS = 9.83 (m)  | 290.00         | 290.00         |                 |          |  |  | MinPt-EOU   |               |
| <b>40.00</b>                                                                                                     | 32.25         | <b>25.59</b>   | <b>7.74</b>    | 2.91            | MAS = 9.83 (m)  | 1400.00        | 1400.00        |                 |          |  |  | MinPts      |               |
| 40.15                                                                                                            | 32.25         | <b>26.45</b>   | 7.90           | 2.86            | MAS = 9.83 (m)  | 1430.00        | 1430.00        |                 |          |  |  | MinPt-EOU   |               |
| 41.11                                                                                                            | 32.25         | 25.91          | 8.85           | <b>2.82</b>     | MAS = 9.83 (m)  | 1480.00        | 1479.99        |                 |          |  |  | MinPt-SF    |               |
| 92.61                                                                                                            | 32.25         | 72.98          | 60.36          | 4.91            | MAS = 9.83 (m)  | 1940.00        | 1936.81        |                 | OSF>5.00 |  |  | Exit Alert  |               |
| 1581.99                                                                                                          | 111.70        | <b>1907.20</b> | <b>1470.29</b> | 21.42           | OSF1.50         | 7380.00        | 7251.57        |                 |          |  |  | MinPts      |               |
| 1591.89                                                                                                          | 113.18        | 1516.10        | 1478.70        | <b>21.27</b>    | OSF1.50         | 7570.00        | 7437.70        |                 |          |  |  | MinPt-SF    |               |
| <b>1782.34</b>                                                                                                   | 331.31        | <b>1961.14</b> | <b>1451.03</b> | <b>8.09</b>     | OSF1.50         | 17660.03       | 7869.40        |                 |          |  |  | MinPts      |               |
| Coterra Southern Hills 32-29 State Fed Com 4H Rev4 kFc 05Feb24 (DefinitivePlan)                                  |               |                |                |                 |                 |                |                |                 |          |  |  |             | Warning Alert |
| 59.99                                                                                                            | 32.81         | 58.70          | 27.18          | N/A             | MAS = 10.00 (m) | 0.00           | 0.00           |                 |          |  |  | Surface     |               |
| 59.99                                                                                                            | 32.81         | 58.70          | 27.18          | 12744.46        | MAS = 10.00 (m) | 23.00          | 23.00          |                 |          |  |  | WRP         |               |
| 59.99                                                                                                            | 32.81         | <b>56.41</b>   | 27.18          | 25.56           | MAS = 10.00 (m) | 290.00         | 290.00         |                 |          |  |  | MinPt-EOU   |               |
| 59.99                                                                                                            | 32.81         | 47.19          | 27.18          | 4.99            | MAS = 10.00 (m) | 1240.00        | 1240.00        |                 | OSF<5.00 |  |  | Enter Alert |               |
| <b>59.99</b>                                                                                                     | 32.81         | <b>45.59</b>   | <b>27.18</b>   | 4.40            | MAS = 10.00 (m) | 1400.00        | 1400.00        |                 |          |  |  | MinPts      |               |
| 60.15                                                                                                            | 32.81         | <b>45.45</b>   | 27.34          | 4.31            | MAS = 10.00 (m) | 1430.00        | 1430.00        |                 |          |  |  | MinPt-EOU   |               |
| 62.49                                                                                                            | 32.81         | 46.90          | 29.68          | <b>4.21</b>     | MAS = 10.00 (m) | 1520.00        | 1519.96        |                 |          |  |  | MinPt-SF    |               |
| 84.97                                                                                                            | 32.81         | 67.10          | 52.16          | 4.97            | MAS = 10.00 (m) | 1760.00        | 1759.05        |                 | OSF>5.00 |  |  | Exit Alert  |               |
| 1801.88                                                                                                          | 113.75        | <b>1725.73</b> | <b>1688.15</b> | 23.96           | OSF1.50         | 7380.00        | 7251.57        |                 |          |  |  | MinPts      |               |
| 1810.85                                                                                                          | 114.77        | 1734.00        | 1696.08        | <b>23.86</b>    | OSF1.50         | 7530.00        | 7399.61        |                 |          |  |  | MinPt-SF    |               |
| <b>2233.68</b>                                                                                                   | 193.00        | 2104.69        | 2040.68        | 17.44           | OSF1.50         | 12460.00       | 7856.41        |                 |          |  |  | MinPt-CtCt  |               |
| <b>2229.04</b>                                                                                                   | 343.61        | <b>1999.63</b> | <b>1885.43</b> | <b>9.75</b>     | OSF1.50         | 17660.03       | 7869.40        |                 |          |  |  | MinPts      |               |
| 30-015-39967 - COTTONWOOD HILLS 32 STATE COM 1H - Gyro to 8752ft Blind to 10500ft - A (DefinitiveSurvey)         |               |                |                |                 |                 |                |                |                 |          |  |  |             | Warning Alert |
| 861.35                                                                                                           | 32.81         | 859.37         | 828.54         | N/A             | MAS = 10.00 (m) | 0.00           | 0.00           |                 |          |  |  | Surface     |               |
| 861.10                                                                                                           | 32.81         | 859.09         | 828.29         | <b>22852.92</b> | MAS = 10.00 (m) | 10.00          | 10.00          |                 |          |  |  | MinPt-SF    |               |
| 860.95                                                                                                           | 32.81         | 858.96         | 828.14         | 47910.19        | MAS = 10.00 (m) | 23.00          | 23.00          |                 |          |  |  | WRP         |               |
| 858.12                                                                                                           | 32.81         | <b>853.98</b>  | 825.31         | 395.33          | MAS = 10.00 (m) | 290.00         | 290.00         |                 |          |  |  | MinPt-EOU   |               |
| <b>856.38</b>                                                                                                    | 32.81         | 848.72         | <b>823.57</b>  | 144.91          | MAS = 10.00 (m) | 670.00         | 670.00         |                 |          |  |  | MinPts      |               |
| 206.40                                                                                                           | 63.39         | 163.60         | 143.01         | 4.97            | OSF1.50         | 4160.00        | 4082.93        |                 | OSF<5.00 |  |  | Enter Alert |               |
| <b>101.75</b>                                                                                                    | 81.21         | 47.08          | 20.55          | 1.89            | OSF1.50         | 4837.15        | 4736.99        |                 |          |  |  | MinPt-CtCt  |               |
| 101.93                                                                                                           | 81.65         | <b>46.96</b>   | <b>20.28</b>   | 1.88            | OSF1.50         | 4860.00        | 4759.06        |                 |          |  |  | MinPts      |               |
| 102.11                                                                                                           | 81.82         | 47.03          | 20.29          | <b>1.88</b>     | OSF1.50         | 4870.00        | 4768.72        |                 |          |  |  | MinPt-SF    |               |
| <b>248.10</b>                                                                                                    | 110.32        | 174.02         | 137.78         | 3.40            | OSF1.50         | 7290.00        | 7161.57        |                 |          |  |  | MinPt-CtCt  |               |
| 248.35                                                                                                           | 111.12        | <b>173.73</b>  | 137.23         | 3.38            | OSF1.50         | 7350.00        | 7221.57        |                 |          |  |  | MinPt-EOU   |               |
| 248.54                                                                                                           | 111.32        | 173.78         | <b>137.21</b>  | 3.38            | OSF1.50         | 7370.00        | 7241.57        |                 |          |  |  | MinPt-ADP   |               |
| 248.66                                                                                                           | 111.40        | 173.86         | 137.26         | <b>3.38</b>     | OSF1.50         | 7380.00        | 7251.57        |                 |          |  |  | MinPt-SF    |               |
| 393.67                                                                                                           | 119.50        | 313.47         | 274.17         | 4.99            | OSF1.50         | 7870.00        | 7681.50        |                 | OSF>5.00 |  |  | Exit Alert  |               |
| 10005.92                                                                                                         | 132.83        | 9916.86        | 9873.09        | 114.27          | OSF1.50         | 17660.03       | 7869.40        |                 |          |  |  | TD          |               |
| 30-015-39967-0100 - COTTONWOOD HILLS 32 STATE COM 1H ST01 - Gyro to 8752ft MWD to 13586ft - A (DefinitiveSurvey) |               |                |                |                 |                 |                |                |                 |          |  |  |             | Warning Alert |
| 861.35                                                                                                           | 32.81         | 859.37         | 828.54         | N/A             | MAS = 10.00 (m) | 0.00           | 0.00           |                 |          |  |  | Surface     |               |
| 861.10                                                                                                           | 32.81         | 859.09         | 828.29         | <b>22852.92</b> | MAS = 10.00 (m) | 10.00          | 10.00          |                 |          |  |  | MinPt-SF    |               |
| 860.95                                                                                                           | 32.81         | 858.96         | 828.14         | 47910.19        | MAS = 10.00 (m) | 23.00          | 23.00          |                 |          |  |  | WRP         |               |
| 858.12                                                                                                           | 32.81         | <b>853.98</b>  | 825.31         | 395.33          | MAS = 10.00 (m) | 290.00         | 290.00         |                 |          |  |  | MinPt-EOU   |               |
| <b>856.38</b>                                                                                                    | 32.81         | 848.72         | <b>823.57</b>  | 144.91          | MAS = 10.00 (m) | 670.00         | 670.00         |                 |          |  |  | MinPts      |               |
| 206.40                                                                                                           | 63.39         | 163.60         | 143.01         | 4.97            | OSF1.50         | 4160.00        | 4082.93        |                 | OSF<5.00 |  |  | Enter Alert |               |
| <b>101.75</b>                                                                                                    | 81.21         | 47.08          | 20.55          | 1.89            | OSF1.50         | 4837.15        | 4736.99        |                 |          |  |  | MinPt-CtCt  |               |
| 101.93                                                                                                           | 81.65         | <b>46.96</b>   | <b>20.28</b>   | 1.88            | OSF1.50         | 4860.00        | 4759.06        |                 |          |  |  | MinPts      |               |
| 102.11                                                                                                           | 81.82         | 47.03          | 20.29          | <b>1.88</b>     | OSF1.50         | 4870.00        | 4768.72        |                 |          |  |  | MinPt-SF    |               |
| <b>248.10</b>                                                                                                    | 110.32        | 174.02         | 137.78         | 3.40            | OSF1.50         | 7290.00        | 7161.57        |                 |          |  |  | MinPt-CtCt  |               |
| 248.35                                                                                                           | 111.12        | <b>173.73</b>  | 137.23         | 3.38            | OSF1.50         | 7350.00        | 7221.57        |                 |          |  |  | MinPt-EOU   |               |
| 248.54                                                                                                           | 111.32        | 173.78         | <b>137.21</b>  | 3.38            | OSF1.50         | 7370.00        | 7241.57        |                 |          |  |  | MinPt-ADP   |               |
| 248.66                                                                                                           | 111.40        | 173.86         | 137.26         | <b>3.38</b>     | OSF1.50         | 7380.00        | 7251.57        |                 |          |  |  | MinPt-SF    |               |
| 393.67                                                                                                           | 119.50        | 313.47         | 274.17         | 4.99            | OSF1.50         | 7870.00        | 7681.50        |                 | OSF>5.00 |  |  | Exit Alert  |               |
| <b>1974.81</b>                                                                                                   | 111.91        | 1899.70        | 1862.90        | 26.81           | OSF1.50         | 10230.00       | 7850.77        |                 |          |  |  | MinPt-CtCt  |               |
| <b>1972.05</b>                                                                                                   | 119.63        | 1891.83        | 1852.46        | 25.02           | OSF1.50         | 10540.00       | 7851.56        |                 |          |  |  | MinPt-CtCt  |               |
| <b>1965.41</b>                                                                                                   | 129.71        | 1878.44        | 1835.70        | 22.98           | OSF1.50         | 10910.00       | 7852.49        |                 |          |  |  | MinPt-CtCt  |               |

| Offset Trajectory                                                                       | Separation    |          |          | Allow<br>Dev. (ft) | Sep.<br>Fact.   | Controlling<br>Rule | Reference Trajectory |          | Risk Level |       |             | Alert      | Status |
|-----------------------------------------------------------------------------------------|---------------|----------|----------|--------------------|-----------------|---------------------|----------------------|----------|------------|-------|-------------|------------|--------|
|                                                                                         | Ct-Ct (ft)    | MAS (ft) | EOU (ft) |                    |                 |                     | MD (ft)              | TVD (ft) | Alert      | Minor | Major       |            |        |
| 30-015-41084 - COTTONWOOD HILLS 32 STATE COM 2H - MWD to 12092ft - A (DefinitiveSurvey) | 1965.74       | 130.93   | 1877.95  | 1834.81            | 22.77           | OSF1.50             | 10970.00             | 7852.64  |            |       |             | MinPt-EOU  |        |
|                                                                                         | 1966.05       | 131.29   | 1878.02  | 1834.76            | 22.71           | OSF1.50             | 10990.00             | 7852.69  |            |       |             | MinPt-ADP  |        |
|                                                                                         | 1961.97       | 144.40   | 1865.21  | 1817.58            | 20.58           | OSF1.50             | 11400.00             | 7853.73  |            |       |             | MinPt-CtCt |        |
|                                                                                         | 1962.93       | 149.75   | 1862.60  | 1813.18            | 19.85           | OSF1.50             | 11590.00             | 7854.21  |            |       |             | MinPt-EOU  |        |
|                                                                                         | 1963.24       | 150.12   | 1862.66  | 1813.12            | 19.80           | OSF1.50             | 11610.00             | 7854.26  |            |       |             | MinPt-ADP  |        |
|                                                                                         | 1983.99       | 156.18   | 1879.37  | 1827.81            | 19.23           | OSF1.50             | 11940.00             | 7855.10  |            |       |             | MinPt-SF   |        |
|                                                                                         | 6267.79       | 155.58   | 6163.57  | 6112.22            | 61.01           | OSF1.50             | 17660.03             | 7869.40  |            |       |             | TD         |        |
|                                                                                         | Warning Alert |          |          |                    |                 |                     |                      |          |            |       |             |            |        |
|                                                                                         | 1303.72       | 32.81    | 1301.74  | 1270.91            | #####           | MAS = 10.00 (m)     | 0.00                 | 0.00     |            |       |             | Surface    |        |
|                                                                                         | 1303.71       | 32.81    | 1301.71  | 1270.90            | 60191.82        | MAS = 10.00 (m)     | 23.00                | 23.00    |            |       |             | WRP        |        |
| 1302.96                                                                                 | 32.81         | 1298.89  | 1270.14  | 625.55             | MAS = 10.00 (m) | 270.00              | 270.00               |          |            |       | MinPts      |            |        |
| 1302.97                                                                                 | 32.81         | 1298.72  | 1270.16  | 572.75             | MAS = 10.00 (m) | 290.00              | 290.00               |          |            |       | MinPt-EOU   |            |        |
| 434.20                                                                                  | 90.02         | 373.65   | 344.18   | 7.34               | OSF1.50         | 6040.00             | 5911.61              |          |            |       | MinPt-CtCt  |            |        |
| 434.46                                                                                  | 90.83         | 373.36   | 343.62   | 7.28               | OSF1.50         | 6100.00             | 5971.58              |          |            |       | MinPt-EOU   |            |        |
| 434.69                                                                                  | 91.09         | 373.42   | 343.60   | 7.26               | OSF1.50         | 6120.00             | 5991.57              |          |            |       | MinPt-ADP   |            |        |
| 465.27                                                                                  | 103.28        | 395.88   | 361.99   | 6.84               | OSF1.50         | 7090.00             | 6961.57              |          |            |       | MinPt-SF    |            |        |
| 450.58                                                                                  | 80.39         | 396.45   | 370.19   | 8.55               | OSF1.50         | 7120.00             | 6991.57              |          |            |       | MinPt-SF    |            |        |
| 231.29                                                                                  | 71.07         | 183.37   | 160.22   | 4.96               | OSF1.50         | 7400.00             | 7271.56              | OSF<5.00 |            |       | Enter Alert |            |        |
| 121.16                                                                                  | 101.22        | 53.15    | 19.95    | 1.80               | OSF1.50         | 7638.56             | 7500.71              |          |            |       | MinPts      |            |        |
| 217.63                                                                                  | 67.23         | 172.27   | 150.40   | 4.94               | OSF1.50         | 7900.00             | 7700.29              | OSF>5.00 |            |       | Exit Alert  |            |        |
| 353.62                                                                                  | 101.43        | 285.50   | 252.19   | 5.29               | OSF1.50         | 10010.00            | 7850.22              |          |            |       | MinPt-CtCt  |            |        |
| 355.61                                                                                  | 107.90        | 283.17   | 247.71   | 4.99               | OSF1.50         | 10240.00            | 7850.80              | OSF<5.00 |            |       | Enter Alert |            |        |
| 345.31                                                                                  | 150.47        | 244.50   | 194.84   | 3.46               | OSF1.50         | 11570.00            | 7854.16              |          |            |       | MinPt-CtCt  |            |        |
| 349.43                                                                                  | 166.17        | 238.15   | 183.27   | 3.17               | OSF1.50         | 12020.00            | 7855.30              |          |            |       | MinPt-EOU   |            |        |
| 352.56                                                                                  | 170.18        | 238.61   | 182.38   | 3.12               | OSF1.50         | 12140.00            | 7855.60              |          |            |       | MinPts      |            |        |
| 494.34                                                                                  | 150.17        | 393.73   | 344.17   | 4.97               | OSF1.50         | 12474.20            | 7856.45              | OSF>5.00 |            |       | Exit Alert  |            |        |
| 5544.43                                                                                 | 123.42        | 5461.65  | 5421.01  | 68.20              | OSF1.50         | 17660.03            | 7869.40              |          |            |       | TD          |            |        |
| Warning Alert                                                                           |               |          |          |                    |                 |                     |                      |          |            |       |             |            |        |
| 30-015-44103 - POPULUS FEDERAL 4H - GyroMWD to 12105ft - A (DefinitiveSurvey)           | 8901.84       | 110.77   | 8827.34  | 8791.07            | 122.71          | OSF1.50             | 0.00                 | 0.00     |            |       |             | Surface    |        |
| 8882.43                                                                                 | 110.88        | 8807.85  | 8771.54  | 122.32             | OSF1.50         | 23.00               | 23.00                |          |            |       | WRP         |            |        |
| 613.59                                                                                  | 187.07        | 488.37   | 426.52   | 4.95               | OSF1.50         | 12270.00            | 7855.93              | OSF<5.00 |            |       | Enter Alert |            |        |
| 468.63                                                                                  | 229.71        | 314.95   | 238.92   | 3.07               | OSF1.50         | 12670.00            | 7856.93              |          |            |       | MinPts      |            |        |
| 466.37                                                                                  | 213.75        | 323.37   | 252.62   | 3.29               | OSF1.50         | 13800.00            | 7859.76              |          |            |       | MinPt-ADP   |            |        |
| 466.30                                                                                  | 213.67        | 323.36   | 252.64   | 3.29               | OSF1.50         | 13810.00            | 7859.78              |          |            |       | MinPt-EOU   |            |        |
| 466.24                                                                                  | 213.48        | 323.42   | 252.76   | 3.29               | OSF1.50         | 13834.23            | 7859.84              |          |            |       | MinPt-CtCt  |            |        |
| 495.24                                                                                  | 208.82        | 355.53   | 286.42   | 3.57               | OSF1.50         | 15290.00            | 7863.48              |          |            |       | MinPt-CtCt  |            |        |
| 495.27                                                                                  | 208.96        | 355.46   | 286.31   | 3.57               | OSF1.50         | 15310.00            | 7863.53              |          |            |       | MinPt-EOU   |            |        |
| 495.32                                                                                  | 209.03        | 355.46   | 286.29   | 3.57               | OSF1.50         | 15320.00            | 7863.55              |          |            |       | MinPt-ADP   |            |        |
| 495.91                                                                                  | 209.39        | 355.81   | 286.52   | 3.57               | OSF1.50         | 15370.00            | 7863.68              |          |            |       | MinPt-SF    |            |        |
| 506.43                                                                                  | 214.12        | 363.18   | 292.31   | 3.56               | OSF1.50         | 15990.00            | 7865.23              |          |            |       | MinPt-CtCt  |            |        |
| 497.04                                                                                  | 226.91        | 345.27   | 270.14   | 3.30               | OSF1.50         | 17010.00            | 7867.78              |          |            |       | MinPt-CtCt  |            |        |
| 497.29                                                                                  | 227.64        | 345.03   | 269.65   | 3.29               | OSF1.50         | 17050.00            | 7867.88              |          |            |       | MinPt-EOU   |            |        |
| 497.59                                                                                  | 228.01        | 345.08   | 269.58   | 3.29               | OSF1.50         | 17070.00            | 7867.93              |          |            |       | MinPt-ADP   |            |        |
| 499.17                                                                                  | 229.07        | 345.96   | 270.10   | 3.28               | OSF1.50         | 17130.00            | 7868.08              |          |            |       | MinPt-SF    |            |        |
| 640.39                                                                                  | 218.40        | 494.29   | 421.99   | 4.42               | OSF1.50         | 17660.03            | 7869.40              |          |            |       | TD          |            |        |
| Pass                                                                                    |               |          |          |                    |                 |                     |                      |          |            |       |             |            |        |
| Coterra Southern Hills 32-29 State Fed Com 5H Rev2 kFc 05Feb24 (DefinitivePlan)         | 116.60        | 32.81    | 115.32   | 83.80              | N/A             | MAS = 10.00 (m)     | 0.00                 | 0.00     |            |       |             | Surface    |        |
| 116.60                                                                                  | 32.81         | 115.32   | 83.80    | 162727.76          | MAS = 10.00 (m) | 23.00               | 23.00                |          |            |       | WRP         |            |        |
| 116.60                                                                                  | 32.81         | 113.03   | 83.80    | 50.34              | MAS = 10.00 (m) | 290.00              | 290.00               |          |            |       | MinPt-EOU   |            |        |
| 116.60                                                                                  | 32.81         | 102.20   | 83.80    | 8.62               | MAS = 10.00 (m) | 1400.00             | 1400.00              |          |            |       | MinPts      |            |        |
| 116.75                                                                                  | 32.81         | 102.05   | 83.94    | 8.44               | MAS = 10.00 (m) | 1430.00             | 1430.00              |          |            |       | MinPt-EOU   |            |        |
| 137.66                                                                                  | 32.81         | 119.28   | 104.85   | 7.86               | MAS = 10.00 (m) | 1810.00             | 1808.60              |          |            |       | MinPt-SF    |            |        |
| 404.04                                                                                  | 117.21        | 325.67   | 286.83   | 5.20               | OSF1.50         | 6190.00             | 6061.57              |          |            |       | MinPt-EOU   |            |        |
| 404.66                                                                                  | 117.95        | 325.70   | 286.72   | 5.18               | OSF1.50         | 6230.00             | 6101.57              |          |            |       | MinPt-ADP   |            |        |
| 411.68                                                                                  | 121.23        | 330.53   | 290.44   | 5.12               | OSF1.50         | 6430.00             | 6301.57              |          |            |       | MinPt-SF    |            |        |
| 471.29                                                                                  | 132.31        | 382.76   | 338.98   | 5.37               | OSF1.50         | 7350.00             | 7221.57              |          |            |       | MinPt-ADP   |            |        |
| 471.48                                                                                  | 132.51        | 382.81   | 338.97   | 5.37               | OSF1.50         | 7372.87             | 7244.44              |          |            |       | MinPt-ADP   |            |        |
| 471.56                                                                                  | 132.55        | 382.87   | 339.02   | 5.37               | OSF1.50         | 7380.00             | 7251.57              |          |            |       | MinPt-SF    |            |        |
| 1588.40                                                                                 | 332.92        | 1366.12  | 1255.46  | 7.17               | OSF1.50         | 17660.03            | 7869.40              |          |            |       | MinPts      |            |        |
| Pass                                                                                    |               |          |          |                    |                 |                     |                      |          |            |       |             |            |        |
| Coterra Southern Hills 32-29 State Fed Com 6H Rev2 kFc 05Feb24 (DefinitivePlan)         | 134.14        | 32.81    | 132.86   | 101.33             | N/A             | MAS = 10.00 (m)     | 0.00                 | 0.00     |            |       |             | Surface    |        |
| 134.14                                                                                  | 32.81         | 132.86   | 101.33   | 187477.53          | MAS = 10.00 (m) | 23.00               | 23.00                |          |            |       | WRP         |            |        |
| 134.14                                                                                  | 32.81         | 130.56   | 101.33   | 57.99              | MAS = 10.00 (m) | 290.00              | 290.00               |          |            |       | MinPt-EOU   |            |        |
| 134.14                                                                                  | 32.81         | 119.74   | 101.33   | 9.93               | MAS = 10.00 (m) | 1400.00             | 1400.00              |          |            |       | MinPts      |            |        |
| 134.29                                                                                  | 32.81         | 119.59   | 101.48   | 9.72               | MAS = 10.00 (m) | 1430.00             | 1430.00              |          |            |       | MinPt-EOU   |            |        |
| 146.18                                                                                  | 32.81         | 129.14   | 113.37   | 9.04               | MAS = 10.00 (m) | 1670.00             | 1669.60              |          |            |       | MinPt-SF    |            |        |
| 911.46                                                                                  | 120.54        | 830.77   | 790.92   | 11.42              | OSF1.50         | 7372.87             | 7244.44              |          |            |       | MinPt-EOU   |            |        |
| 911.49                                                                                  | 120.58        | 830.77   | 790.91   | 11.42              | OSF1.50         | 7380.00             | 7251.57              |          |            |       | MinPt-ADP   |            |        |
| 912.33                                                                                  | 120.78        | 831.48   | 791.55   | 11.41              | OSF1.50         | 7410.00             | 7281.54              |          |            |       | MinPt-SF    |            |        |
| 1896.28                                                                                 | 343.50        | 1666.95  | 1552.77  | 8.30               | OSF1.50         | 17660.03            | 7869.40              |          |            |       | MinPts      |            |        |
| Pass                                                                                    |               |          |          |                    |                 |                     |                      |          |            |       |             |            |        |
| Coterra Southern Hills 32-29 State Fed Com 7H Rev0 kFc 05Feb24 (DefinitivePlan)         | 152.29        | 32.81    | 151.00   | 119.48             | N/A             | MAS = 10.00 (m)     | 0.00                 | 0.00     |            |       |             | Surface    |        |
| 152.29                                                                                  | 32.81         | 151.00   | 119.48   | 142055.60          | MAS = 10.00 (m) | 23.00               | 23.00                |          |            |       | WRP         |            |        |
| 152.29                                                                                  | 32.81         | 148.71   | 119.48   | 65.90              | MAS = 10.00 (m) | 290.00              | 290.00               |          |            |       | MinPt-EOU   |            |        |
| 152.29                                                                                  | 32.81         | 137.89   | 119.48   | 11.28              | MAS = 10.00 (m) | 1400.00             | 1400.00              |          |            |       | MinPts      |            |        |
| 152.44                                                                                  | 32.81         | 137.74   | 119.63   | 11.05              | MAS = 10.00 (m) | 1430.00             | 1430.00              |          |            |       | MinPt-EOU   |            |        |
| 163.07                                                                                  | 32.81         | 146.24   | 130.26   | 10.23              | MAS = 10.00 (m) | 1650.00             | 1649.68              |          |            |       | MinPt-SF    |            |        |
| 1831.23                                                                                 | 115.40        | 1753.97  | 1715.83  | 24.00              | OSF1.50         | 7380.00             | 7251.57              |          |            |       | MinPts      |            |        |
| 1838.28                                                                                 | 116.21        | 1760.48  | 1722.07  | 23.92              | OSF1.50         | 7500.00             | 7370.53              |          |            |       | MinPt-SF    |            |        |
| 2681.14                                                                                 | 192.96        | 2552.17  | 2488.17  | 20.94              | OSF1.50         | 12474.20            | 7856.45              |          |            |       | MinPt-CtCt  |            |        |
| 2657.83                                                                                 | 346.10        | 2426.77  | 2311.73  | 11.55              | OSF1.50         | 17660.03            | 7869.40              |          |            |       | MinPts      |            |        |
| Pass                                                                                    |               |          |          |                    |                 |                     |                      |          |            |       |             |            |        |
| 30-015-41603 - COTTONWOOD HILLS 32 STATE COM 3H - MWD to 11920ft - A (DefinitiveSurvey) | 647.11        | 32.81    | 645.13   | 614.30             | N/A             | MAS = 10.00 (m)     | 0.00                 | 0.00     |            |       |             | Surface    |        |
| 646.89                                                                                  | 32.81         | 644.88   | 614.06   | 22483.91           | MAS = 10.00 (m) | 10.00               | 10.00                |          |            |       | MinPt-SF    |            |        |
| 646.82                                                                                  | 32.81         | 644.83   | 614.01   | 239369.91          | MAS = 10.00 (m) | 23.00               | 23.00                |          |            |       | WRP         |            |        |
| 621.16                                                                                  | 32.81         | 606.75   | 588.35   | 48.97              | MAS = 10.00 (m) | 1333.87             | 1333.87              |          |            |       | MinPts      |            |        |
| 621.48                                                                                  | 32.81         | 606.45   | 588.67   | 46.71              | MAS = 10.00 (m) | 1400.00             | 1400.00              |          |            |       | MinPt-EOU   |            |        |
| 1174.51                                                                                 | 70.86         | 1126.73  | 1103.64  | 25.41              | OSF1.50         | 4620.00             | 4527.24              |          |            |       | MinPt-SF    |            |        |
| 1479.89                                                                                 | 101.42        | 1411.74  | 1378.47  | 22.22              | OSF1.50         | 6680.00             | 6551.57              |          |            |       | MinPt-EOU   |            |        |
| 1480.61                                                                                 | 102.30        | 1411.87  | 1378.31  | 22.03              | OSF1.50         | 6750.00             | 6621.57              |          |            |       | MinPt-ADP   |            |        |
| 1484.02                                                                                 | 105.35        | 1413.25  | 1378.67  | 21.44              | OSF1.50         | 6970.00             | 6841.57              |          |            |       | MinPts      |            |        |
| 1422.03                                                                                 | 108.33        | 1349.28  | 1313.70  | 19.97              | OSF1.50         | 7420.00             | 7291.52              |          |            |       | MinPt-SF    |            |        |

| Offset Trajectory | Separation |          |          | Allow<br>Dev. (ft) | Sep.<br>Fact. | Controlling<br>Rule | Reference Trajectory |          | Risk Level |       |       | Alert      | Status |
|-------------------|------------|----------|----------|--------------------|---------------|---------------------|----------------------|----------|------------|-------|-------|------------|--------|
|                   | Ct-Ct (ft) | MAS (ft) | EOU (ft) |                    |               |                     | MD (ft)              | TVD (ft) | Alert      | Minor | Major |            |        |
|                   | 1680.95    | 150.45   | 1580.18  | 1530.53            | 16.91         | OSF1.50             | 9780.00              | 7849.64  |            |       |       | MinPt-CtCt |        |
|                   | 1681.13    | 150.96   | 1579.99  | 1530.17            | 16.86         | OSF1.50             | 9810.00              | 7849.71  |            |       |       | MinPt-EOU  |        |
|                   | 1681.25    | 151.13   | 1580.00  | 1530.13            | 16.84         | OSF1.50             | 9820.00              | 7849.74  |            |       |       | MinPt-ADP  |        |
|                   | 1646.57    | 188.15   | 1520.63  | 1458.41            | 13.22         | OSF1.50             | 10790.00             | 7852.19  |            |       |       | MinPt-CtCt |        |
|                   | 1646.96    | 189.31   | 1520.25  | 1457.65            | 13.14         | OSF1.50             | 10840.00             | 7852.32  |            |       |       | MinPt-EOU  |        |
|                   | 1647.34    | 189.77   | 1520.32  | 1457.57            | 13.11         | OSF1.50             | 10860.00             | 7852.37  |            |       |       | MinPt-ADP  |        |
|                   | 1652.44    | 194.80   | 1522.07  | 1457.64            | 12.81         | OSF1.50             | 11000.00             | 7852.72  |            |       |       | MinPt-EOU  |        |
|                   | 1652.75    | 195.22   | 1522.10  | 1457.53            | 12.79         | OSF1.50             | 11010.00             | 7852.74  |            |       |       | MinPt-ADP  |        |
|                   | 1666.58    | 206.28   | 1528.55  | 1460.30            | 12.20         | OSF1.50             | 11290.00             | 7853.45  |            |       |       | MinPt-EOU  |        |
|                   | 1666.91    | 206.63   | 1528.65  | 1460.28            | 12.18         | OSF1.50             | 11300.00             | 7853.48  |            |       |       | MinPt-ADP  |        |
|                   | 1684.21    | 214.01   | 1541.03  | 1470.19            | 11.88         | OSF1.50             | 11540.00             | 7854.08  |            |       |       | MinPt-CtCt |        |
|                   | 1684.28    | 243.83   | 1521.20  | 1440.42            | 10.42         | OSF1.50             | 12140.00             | 7855.60  |            |       |       | MinPt-EOU  |        |
|                   | 1684.28    | 243.93   | 1521.16  | 1440.35            | 10.41         | OSF1.50             | 12150.00             | 7855.63  |            |       |       | MinPt-ADP  |        |
|                   | 1684.37    | 244.02   | 1521.19  | 1440.35            | 10.41         | OSF1.50             | 12160.00             | 7855.65  |            |       |       | MinPt-SF   |        |
|                   | 1685.70    | 244.36   | 1522.29  | 1441.34            | 10.40         | OSF1.50             | 12210.00             | 7855.78  |            |       |       | MinPt-SF   |        |
|                   | 5780.43    | 154.77   | 5676.76  | 5625.67            | 56.56         | OSF1.50             | 17660.03             | 7869.40  |            |       |       | TD         |        |

30-015-43256-0100 - POPULUS FEDERAL 3H ST01 - Gyro+MWD to 12119ft - A (DefinitiveSurvey)

Pass

|         |        |         |         |        |  |         |          |         |  |  |  |            |  |
|---------|--------|---------|---------|--------|--|---------|----------|---------|--|--|--|------------|--|
| 8961.31 | 111.23 | 8886.50 | 8850.08 | 123.01 |  | OSF1.50 | 0.00     | 0.00    |  |  |  | Surface    |  |
| 8941.99 | 111.34 | 8867.11 | 8830.66 | 122.63 |  | OSF1.50 | 23.00    | 23.00   |  |  |  | WRP        |  |
| 1686.66 | 288.62 | 1495.74 | 1400.04 | 8.81   |  | OSF1.50 | 12810.00 | 7857.28 |  |  |  | MinPts     |  |
| 1681.96 | 266.55 | 1503.76 | 1415.41 | 9.51   |  | OSF1.50 | 13530.00 | 7859.08 |  |  |  | MinPt-EOU  |  |
| 1679.45 | 262.24 | 1504.12 | 1417.21 | 9.65   |  | OSF1.50 | 13700.00 | 7859.51 |  |  |  | MinPt-EOU  |  |
| 1670.08 | 253.91 | 1500.31 | 1416.18 | 9.92   |  | OSF1.50 | 14050.00 | 7860.38 |  |  |  | MinPt-ADP  |  |
| 1669.58 | 253.47 | 1500.10 | 1416.11 | 9.93   |  | OSF1.50 | 14090.00 | 7860.48 |  |  |  | MinPt-ADP  |  |
| 1669.51 | 253.38 | 1500.09 | 1416.13 | 9.93   |  | OSF1.50 | 14100.00 | 7860.51 |  |  |  | MinPt-EOU  |  |
| 1669.40 | 253.09 | 1500.17 | 1416.31 | 9.94   |  | OSF1.50 | 14130.00 | 7860.58 |  |  |  | MinPt-CtCt |  |
| 1659.23 | 242.27 | 1497.21 | 1416.95 | 10.33  |  | OSF1.50 | 14700.00 | 7862.01 |  |  |  | MinPt-ADP  |  |
| 1659.10 | 242.11 | 1497.19 | 1416.99 | 10.33  |  | OSF1.50 | 14720.00 | 7862.06 |  |  |  | MinPt-EOU  |  |
| 1656.49 | 238.00 | 1497.32 | 1418.49 | 10.50  |  | OSF1.50 | 15010.00 | 7862.78 |  |  |  | MinPt-ADP  |  |
| 1656.41 | 237.90 | 1497.30 | 1418.50 | 10.50  |  | OSF1.50 | 15020.00 | 7862.80 |  |  |  | MinPt-EOU  |  |
| 1633.13 | 232.40 | 1477.70 | 1400.74 | 10.60  |  | OSF1.50 | 16110.00 | 7865.53 |  |  |  | MinPt-CtCt |  |
| 1633.22 | 232.61 | 1477.68 | 1400.61 | 10.59  |  | OSF1.50 | 16190.00 | 7865.73 |  |  |  | MinPt-EOU  |  |
| 1633.32 | 232.73 | 1477.67 | 1400.59 | 10.59  |  | OSF1.50 | 16220.00 | 7865.80 |  |  |  | MinPt-ADP  |  |
| 1634.04 | 233.58 | 1477.82 | 1400.46 | 10.55  |  | OSF1.50 | 16460.00 | 7866.40 |  |  |  | MinPt-SF   |  |
| 1631.99 | 234.74 | 1475.00 | 1397.26 | 10.49  |  | OSF1.50 | 16630.00 | 7866.83 |  |  |  | MinPt-CtCt |  |
| 1632.28 | 235.43 | 1474.82 | 1396.85 | 10.46  |  | OSF1.50 | 16700.00 | 7867.00 |  |  |  | MinPt-EOU  |  |
| 1633.36 | 236.68 | 1475.09 | 1396.69 | 10.41  |  | OSF1.50 | 16830.00 | 7867.33 |  |  |  | MinPt-ADP  |  |
| 1633.57 | 236.88 | 1475.15 | 1396.69 | 10.40  |  | OSF1.50 | 16850.00 | 7867.38 |  |  |  | MinPt-SF   |  |
| 1631.05 | 238.62 | 1471.51 | 1392.47 | 10.31  |  | OSF1.50 | 17019.22 | 7867.80 |  |  |  | MinPt-CtCt |  |
| 1631.38 | 239.34 | 1471.32 | 1392.04 | 10.28  |  | OSF1.50 | 17070.00 | 7867.93 |  |  |  | MinPt-EOU  |  |
| 1631.76 | 239.78 | 1471.40 | 1391.98 | 10.26  |  | OSF1.50 | 17100.00 | 7868.00 |  |  |  | MinPt-ADP  |  |
| 1654.06 | 245.82 | 1489.68 | 1408.24 | 10.15  |  | OSF1.50 | 17540.00 | 7869.10 |  |  |  | MinPt-SF   |  |
| 1666.56 | 247.24 | 1501.23 | 1419.31 | 10.16  |  | OSF1.50 | 17660.03 | 7869.40 |  |  |  | TD         |  |

Schlumberger

Coterra Southern Hills 32-29 State Fed Com 1H Rev3 kFc 05Feb24 Proposal

Geodetic Report

Def Plan

Report Date:

Client:

Field:

Structure / Slot:

Well:

Borehole:

UBHI / API#:

Survey Name:

Tort / AHD / DDI / ERD Ratio:

Coordinate Reference System:

Location Lat / Long:

Location Grid N/E Y/X:

CRS Grid Convergence Angle:

Grid Scale Factor:

Version / Patch:

February 06, 2024 - 02:14 PM ( UTC 0 )

COTERRA

NM Eddy County (NAD 83)

Coterra Southern Hills 32-29 State Fed Com Pad 1234 / Southern Hills

Southern Hills 32-29 State Fed Com 1H

Southern Hills 32-29 State Fed Com 1H

Unknown / Unknown

Coterra Southern Hills 32-29 State Fed Com 1H Rev3 kFc 05Feb24

February 06, 2024

128.783 ° / 10998.313 ft / 6.502 / 1.398

NAD83 New Mexico State Plane, Eastern Zone, US Feet

32°43'52.49098°N, -104°12'57.44313°W

N 393314.740 ftUS, E 577690.830 ftUS

0.062°

0.9999106

2023.1.0.1

Survey / DLS Computation:

Vertical Section Azimuth:

Vertical Section Origin:

TVD Reference Datum:

TVD Reference Elevation:

Seabed / Ground Elevation:

Magnetic Declination:

Total Gravity Field Strength:

Gravity Model:

Total Magnetic Field Strength:

Magnetic Dip Angle:

Declination Date:

Magnetic Declination Model:

North Reference:

Grid Convergence Used:

Total Corr Mag North->Grid North:

Local Coord Referenced To:

Minimum Curvature / Lubinski

0.620 "(GRID North)

0.000 ft, 0.000 ft

RKB

3266.400 ft above MSL

3243.400 ft above MSL

6.786°

998.4346mgn (8.80665 Based)

GARM

47288.478 nT

59.579°

February 05, 2024

HDGM 2024

Grid North

0.062°

6.724°

Well Head

| Comments                                                         | MD<br>(ft) | Incl<br>(°) | Azim<br>(°) | TVD<br>(ft) | TVDSS<br>(ft) | VSEC<br>(ft) | NS<br>(ft) | EW<br>(ft) | Northing<br>(ftUS) | Easting<br>(ftUS) | Latitude<br>(°) | Longitude<br>(°) | DLS<br>(ft/100ft) | BR<br>(ft/100ft) | TR<br>(ft/100ft) |
|------------------------------------------------------------------|------------|-------------|-------------|-------------|---------------|--------------|------------|------------|--------------------|-------------------|-----------------|------------------|-------------------|------------------|------------------|
| SHL [831' FSL, 1540' FWL]                                        | 0.00       | 0.00        | 0.00        | 0.00        | -3,266.40     | 0.00         | 0.00       | 0.00       | 393,314.74         | 577,690.83        | 32.08124749     | -104.21595643    |                   |                  |                  |
| Nudge, Build 2"/100ft                                            | 1,400.00   | 0.00        | 256.50      | 1,400.00    | -1,866.40     | 0.00         | 0.00       | 0.00       | 393,314.74         | 577,690.83        | 32.08124749     | -104.21595643    | 0.00              | 0.00             | 0.00             |
| Hold                                                             | 2,150.24   | 15.00       | 256.50      | 2,141.70    | -1,124.70     | -23.83       | -22.81     | -94.98     | 393,291.94         | 577,595.86        | 32.08118508     | -104.21626314    | 2.00              | 2.00             | 0.00             |
| Drop 2"/100ft                                                    | 5,415.63   | 15.00       | 256.50      | 5,295.74    | 2,029.34      | -230.10      | -220.19    | -917.02    | 393,094.57         | 576,773.89        | 32.08064495     | -104.21891777    | 0.00              | 0.00             | 0.00             |
| Hold                                                             | 6,165.87   | 0.00        | 256.50      | 6,037.44    | 2,771.04      | -253.94      | -243.00    | -1,012.00  | 393,071.76         | 576,678.92        | 32.08058254     | -104.21922448    | 2.00              | -2.00            | 0.00             |
| KOP, Build 10"/100ft                                             | 7,372.87   | 0.00        | 256.50      | 7,244.44    | 3,978.04      | -253.94      | -243.00    | -1,012.00  | 393,071.76         | 576,678.92        | 32.08058254     | -104.21922448    | 0.00              | 0.00             | 0.00             |
| Build & Turn 5"/100ft                                            | 8,122.87   | 75.00       | 344.80      | 7,797.87    | 4,531.47      | 154.64       | 166.81     | -1,123.34  | 393,481.53         | 576,567.59        | 32.08170931     | -104.21958255    | 10.00             | 10.00            | 0.00             |
| Landing Point                                                    | 8,491.11   | 89.86       | 355.80      | 7,846.40    | 4,580.00      | 512.31       | 525.15     | -1,183.98  | 393,839.84         | 576,506.96        | 32.08269446     | -104.21977710    | 5.00              | 4.04             | 2.99             |
| Turn 2"/100ft                                                    | 8,596.11   | 89.86       | 355.80      | 7,846.65    | 4,580.25      | 616.94       | 629.87     | -1,191.67  | 393,944.55         | 576,499.27        | 32.08298232     | -104.21980157    | 0.00              | 0.00             | 0.00             |
| Hold                                                             | 8,846.12   | 89.86       | 0.80        | 7,847.28    | 4,580.88      | 866.66       | 879.69     | -1,199.08  | 394,194.35         | 576,491.86        | 32.08366902     | -104.21982466    | 2.00              | 0.00             | 2.00             |
| FP1, Turn 2"/100ft                                               | 12,456.15  | 89.86       | 0.80        | 7,856.40    | 4,590.00      | 4,476.66     | 4,489.35   | -1,148.67  | 397,803.68         | 576,542.26        | 32.09359079     | -104.21964961    | 0.00              | 0.00             | 0.00             |
| Hold                                                             | 12,474.20  | 89.86       | 0.44        | 7,856.45    | 4,590.05      | 4,494.71     | 4,507.41   | -1,148.48  | 397,821.73         | 576,542.46        | 32.09364042     | -104.21964892    | 2.00              | 0.01             | -2.00            |
| Southern Hills 32-29 State Fed Com 1H - PBHL[100' FNL, 330' FWL] | 17,660.03  | 89.86       | 0.44        | 7,869.40    | 4,603.00      | 9,680.50     | 9,693.07   | -1,108.74  | 403,006.92         | 576,582.19        | 32.10789415     | -104.21950294    | 0.00              | 0.00             | 0.00             |

Survey Type:

Def Plan

Survey Error Model:

Survey Program:

ISCWSA0 3 - D 95 % Confidence 2.7955 sigma

| Description | Part | MD From<br>(ft) | MD To<br>(ft) | EOU Freq<br>(ft) | Hole Size<br>(in)  | Casing Diameter<br>(in) | Expected Max<br>Inclination<br>(deg) | Survey Tool Code   | Vendor / Tool | Borehole / Survey                                 |
|-------------|------|-----------------|---------------|------------------|--------------------|-------------------------|--------------------------------------|--------------------|---------------|---------------------------------------------------|
|             | 1    | 0.000           | 7,350.000     | 1/100.000        | 7.5 – 12.25 – 8.75 | 3.375 – 9.625 – 7       |                                      | A001Mb_MWD         |               | Southern Hills 32-29 State Fed Com 1H / Coterra S |
|             | 1    | 7,350.000       | 17,449.025    | 1/100.000        | 8.75 – 6.125       | 7 – 4.5                 |                                      | A008Mb_MWD+IFR1+MS |               | Southern Hills 32-29 State Fed Com 1H / Coterra S |

EOU Geometry:

| End MD (ft) | Hole Size (in) | Casing Size (in) | Name |
|-------------|----------------|------------------|------|
| 311.930     | 17.500         | 13.375           |      |
| 2,761.930   | 12.250         | 9.625            |      |
| 9,262.930   | 8.750          | 7.000            |      |
| 19,867.000  | 6.125          | 4.500            |      |

Schlumberger

## Coterra Southern Hills 32-29 State Fed Com 1H Rev3 kFc 05Feb24 Proposal

## Geodetic Report

## Def Plan

Report Date: February 06, 2024 - 02:15 PM (UTC 0)  
 Client: COTERRA  
 Field: NM Eddy County (NAD 83)  
 Structure / Slot: Coterra Southern Hills 32-29 State Fed Com Pad 1234 / Southern Hills 32-29 State Fed Com Pad 1H  
 Well: Southern Hills 32-29 State Fed Com 1H  
 Borehole: Southern Hills 32-29 State Fed Com 1H  
 UBH / API#: Unknown / Unknown  
 Survey Name: Coterra Southern Hills 32-29 State Fed Com 1H Rev3 kFc 05Feb24  
 Survey Date: February 06, 2024  
 Tort / AHD / DDI / ERD Ratio: 128.783' / 10998.313 ft / 6.502' / 1.398  
 Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet  
 Location Lat / Long: 32°43'24.490987N, 104°12'57.443137W  
 Location Grid N/E Y/X: N 393314.740 RIJS, E 577690.830 RIJS  
 CRS Grid Convergence Angle: 0.062°  
 Grid Scale Factor: 0.9999106  
 Version / Patch: 2023.1.0.1

Survey / DLS Computation: Minimum Curvature / Lubinski  
 Vertical Section Azimuth: 0.620 °(GRID North)  
 Vertical Section Origin: 0.000 ft, 0.000 ft  
 TVD Reference Datum: RKB  
 TVD Reference Elevation: 3266.400 ft above MSL  
 Sealed / Ground Elevation: 3243.400 ft above MSL  
 Magnetic Declination: 6.786°  
 Total Gravity Field Strength: 998.4346mgn (9.80665 Based)  
 Gravity Model: GARM  
 Total Magnetic Field Strength: 47288.478 nT  
 Magnetic Dip Angle: 59.579°  
 Declination Date: February 05, 2024  
 Magnetic Declination Model: HDGM 2024  
 North Reference: Grid North  
 Grid Convergence Used: 0.062°  
 Total Corr Mag North->Grid North: 6.724°  
 Local Coord Referenced To: Well Head

| Comments                  | MD<br>(ft) | Incl<br>(°) | Azim<br>(°) | TVD<br>(ft) | TVDSS<br>(ft) | VSEC<br>(ft) | NS<br>(ft) | EW<br>(ft) | Northing<br>(RUS) | Easting<br>(RUS) | Latitude<br>(°) | Longitude<br>(°) | DLS<br>(°/100ft) | BR<br>(°/100ft) | TR<br>(°/100ft) |
|---------------------------|------------|-------------|-------------|-------------|---------------|--------------|------------|------------|-------------------|------------------|-----------------|------------------|------------------|-----------------|-----------------|
| SHL [B31° FSL, 1540° FWL] | 0.00       | 0.00        | 0.00        | 0.00        | -3.266.40     | 0.00         | 0.00       | 0.00       | 393,314.74        | 577,690.83       | 32.08124749     | -104.21595643    |                  |                 |                 |
|                           | 100.00     | 0.00        | 256.50      | 100.00      | -3.166.40     | 0.00         | 0.00       | 0.00       | 393,314.74        | 577,690.83       | 32.08124749     | -104.21595643    | 0.00             | 0.00            | 0.00            |
|                           | 200.00     | 0.00        | 256.50      | 200.00      | -3.066.40     | 0.00         | 0.00       | 0.00       | 393,314.74        | 577,690.83       | 32.08124749     | -104.21595643    | 0.00             | 0.00            | 0.00            |
|                           | 300.00     | 0.00        | 256.50      | 300.00      | -2.966.40     | 0.00         | 0.00       | 0.00       | 393,314.74        | 577,690.83       | 32.08124749     | -104.21595643    | 0.00             | 0.00            | 0.00            |
|                           | 400.00     | 0.00        | 256.50      | 400.00      | -2.866.40     | 0.00         | 0.00       | 0.00       | 393,314.74        | 577,690.83       | 32.08124749     | -104.21595643    | 0.00             | 0.00            | 0.00            |
|                           | 500.00     | 0.00        | 256.50      | 500.00      | -2.766.40     | 0.00         | 0.00       | 0.00       | 393,314.74        | 577,690.83       | 32.08124749     | -104.21595643    | 0.00             | 0.00            | 0.00            |
|                           | 600.00     | 0.00        | 256.50      | 600.00      | -2.666.40     | 0.00         | 0.00       | 0.00       | 393,314.74        | 577,690.83       | 32.08124749     | -104.21595643    | 0.00             | 0.00            | 0.00            |
|                           | 700.00     | 0.00        | 256.50      | 700.00      | -2.566.40     | 0.00         | 0.00       | 0.00       | 393,314.74        | 577,690.83       | 32.08124749     | -104.21595643    | 0.00             | 0.00            | 0.00            |
|                           | 800.00     | 0.00        | 256.50      | 800.00      | -2.466.40     | 0.00         | 0.00       | 0.00       | 393,314.74        | 577,690.83       | 32.08124749     | -104.21595643    | 0.00             | 0.00            | 0.00            |
| Rustler                   | 841.40     | 0.00        | 256.50      | 841.40      | -2.425.00     | 0.00         | 0.00       | 0.00       | 393,314.74        | 577,690.83       | 32.08124749     | -104.21595643    | 0.00             | 0.00            | 0.00            |
|                           | 900.00     | 0.00        | 256.50      | 900.00      | -2.366.40     | 0.00         | 0.00       | 0.00       | 393,314.74        | 577,690.83       | 32.08124749     | -104.21595643    | 0.00             | 0.00            | 0.00            |
|                           | 1,000.00   | 0.00        | 256.50      | 1,000.00    | -2.266.40     | 0.00         | 0.00       | 0.00       | 393,314.74        | 577,690.83       | 32.08124749     | -104.21595643    | 0.00             | 0.00            | 0.00            |
|                           | 1,100.00   | 0.00        | 256.50      | 1,100.00    | -2.166.40     | 0.00         | 0.00       | 0.00       | 393,314.74        | 577,690.83       | 32.08124749     | -104.21595643    | 0.00             | 0.00            | 0.00            |
|                           | 1,200.00   | 0.00        | 256.50      | 1,200.00    | -2.066.40     | 0.00         | 0.00       | 0.00       | 393,314.74        | 577,690.83       | 32.08124749     | -104.21595643    | 0.00             | 0.00            | 0.00            |
| Top of Salt               | 1,252.40   | 0.00        | 256.50      | 1,252.40    | -2.014.00     | 0.00         | 0.00       | 0.00       | 393,314.74        | 577,690.83       | 32.08124749     | -104.21595643    | 0.00             | 0.00            | 0.00            |
|                           | 1,300.00   | 0.00        | 256.50      | 1,300.00    | -1.966.40     | 0.00         | 0.00       | 0.00       | 393,314.74        | 577,690.83       | 32.08124749     | -104.21595643    | 0.00             | 0.00            | 0.00            |
| Nudge, Build 2"/100ft     | 1,400.00   | 0.00        | 256.50      | 1,400.00    | -1.866.40     | 0.00         | 0.00       | 0.00       | 393,314.74        | 577,690.83       | 32.08124749     | -104.21595643    | 0.00             | 0.00            | 0.00            |
|                           | 1,500.00   | 2.00        | 256.50      | 1,499.98    | -1.766.42     | -0.43        | -0.41      | -1.70      | 393,314.33        | 577,689.13       | 32.08124637     | -104.21596191    | 2.00             | 2.00            | 0.00            |
|                           | 1,600.00   | 4.00        | 256.50      | 1,599.84    | -1.666.56     | -1.70        | -1.63      | -6.79      | 393,313.11        | 577,684.05       | 32.08124303     | -104.21597834    | 2.00             | 2.00            | 0.00            |
|                           | 1,700.00   | 6.00        | 256.50      | 1,699.45    | -1.566.95     | -3.83        | -3.66      | -15.26     | 393,311.08        | 577,675.57       | 32.08123746     | -104.21600570    | 2.00             | 2.00            | 0.00            |
|                           | 1,800.00   | 8.00        | 256.50      | 1,798.70    | -1.467.70     | -6.80        | -6.51      | -27.11     | 393,308.23        | 577,663.72       | 32.08122968     | -104.21604397    | 2.00             | 2.00            | 0.00            |
| Base of Salt              | 1,879.64   | 9.59        | 256.50      | 1,877.40    | -1.389.00     | -9.77        | -9.35      | -38.95     | 393,305.39        | 577,651.88       | 32.08122190     | -104.21608221    | 2.00             | 2.00            | 0.00            |
|                           | 1,900.00   | 10.00       | 256.50      | 1,897.47    | -1.368.93     | -10.62       | -10.16     | -42.32     | 393,304.58        | 577,648.51       | 32.08121968     | -104.21609309    | 2.00             | 2.00            | 0.00            |
|                           | 2,000.00   | 12.00       | 256.50      | 1,995.62    | -1.270.78     | -15.27       | -14.62     | -60.87     | 393,300.12        | 577,629.96       | 32.08120749     | -104.21615300    | 2.00             | 2.00            | 0.00            |
| Amhydrille                | 2,073.59   | 13.47       | 256.50      | 2,067.40    | -1.192.23     | -19.23       | -18.40     | -76.65     | 393,296.34        | 577,614.15       | 32.08119713     | -104.21620394    | 2.00             | 2.00            | 0.00            |
| Lamar                     | 2,095.20   | 13.87       | 256.50      | 2,088.40    | -1.178.00     | -20.48       | -19.60     | -81.62     | 393,295.14        | 577,609.22       | 32.08119386     | -104.21620394    | 2.00             | 2.00            | 0.00            |
|                           | 2,100.00   | 14.00       | 256.50      | 2,093.06    | -1.173.34     | -20.76       | -19.87     | -82.74     | 393,294.87        | 577,608.09       | 32.08119312     | -104.21622363    | 2.00             | 2.00            | 0.00            |
| Hold                      | 2,150.24   | 15.00       | 256.50      | 2,141.70    | -1.124.70     | -23.83       | -22.81     | -94.98     | 393,291.94        | 577,595.86       | 32.08118508     | -104.21626314    | 2.00             | 2.00            | 0.00            |
| Bell Canyon               | 2,197.56   | 15.00       | 256.50      | 2,187.40    | -1.079.00     | -26.82       | -25.67     | -106.89    | 393,289.08        | 577,583.95       | 32.08117726     | -104.21630161    | 0.00             | 0.00            | 0.00            |
|                           | 2,200.00   | 15.00       | 256.50      | 2,189.76    | -1.076.64     | -26.98       | -25.81     | -107.50    | 393,288.93        | 577,583.34       | 32.08117685     | -104.21630359    | 0.00             | 0.00            | 0.00            |
|                           | 2,300.00   | 15.00       | 256.50      | 2,286.35    | -980.05       | -33.29       | -31.86     | -132.68    | 393,282.88        | 577,558.16       | 32.08116031     | -104.21638489    | 0.00             | 0.00            | 0.00            |
|                           | 2,400.00   | 15.00       | 256.50      | 2,392.94    | -883.46       | -39.61       | -37.90     | -157.85    | 393,276.39        | 577,532.96       | 32.08114377     | -104.21646191    | 0.00             | 0.00            | 0.00            |
|                           | 2,500.00   | 15.00       | 256.50      | 2,479.53    | -786.87       | -45.93       | -43.95     | -183.03    | 393,270.80        | 577,507.82       | 32.08112723     | -104.21654748    | 0.00             | 0.00            | 0.00            |
|                           | 2,600.00   | 15.00       | 256.50      | 2,576.12    | -690.28       | -52.24       | -49.99     | -208.20    | 393,264.75        | 577,482.65       | 32.08111069     | -104.21662878    | 0.00             | 0.00            | 0.00            |
|                           | 2,700.00   | 15.00       | 256.50      | 2,672.71    | -593.69       | -58.56       | -56.04     | -233.38    | 393,258.71        | 577,457.47       | 32.08109415     | -104.21671007    | 0.00             | 0.00            | 0.00            |
|                           | 2,800.00   | 15.00       | 256.50      | 2,769.30    | -497.10       | -64.88       | -62.08     | -258.55    | 393,252.66        | 577,432.30       | 32.08107761     | -104.21679137    | 0.00             | 0.00            | 0.00            |
|                           | 2,900.00   | 15.00       | 256.50      | 2,865.89    | -400.51       | -71.19       | -68.13     | -283.73    | 393,246.62        | 577,407.13       | 32.08106107     | -104.21687267    | 0.00             | 0.00            | 0.00            |
|                           | 3,000.00   | 15.00       | 256.50      | 2,962.48    | -303.92       | -77.51       | -74.17     | -308.90    | 393,240.57        | 577,381.96       | 32.08104453     | -104.21695396    | 0.00             | 0.00            | 0.00            |
| Cherry Canyon             | 3,100.00   | 15.00       | 256.50      | 3,059.07    | -207.33       | -83.83       | -80.22     | -334.07    | 393,236.55        | 577,354.79       | 32.08102789     | -104.21703526    | 0.00             | 0.00            | 0.00            |
|                           | 3,107.59   | 15.00       | 256.50      | 3,065.40    | -200.00       | -84.31       | -80.66     | -335.99    | 393,234.07        | 577,354.88       | 32.08102677     | -104.21704043    | 0.00             | 0.00            | 0.00            |
|                           | 3,200.00   | 15.00       | 256.50      | 3,155.66    | -110.74       | -90.14       | -86.26     | -359.25    | 393,228.49        | 577,331.61       | 32.08101145     | -104.21711655    | 0.00             | 0.00            | 0.00            |
|                           | 3,300.00   | 15.00       | 256.50      | 3,252.25    | -14.15        | -96.46       | -92.31     | -384.42    | 393,222.44        | 577,306.44       | 32.08099491     | -104.21719785    | 0.00             | 0.00            | 0.00            |
|                           | 3,400.00   | 15.00       | 256.50      | 3,348.84    | 82.44         | -102.78      | -98.35     | -409.60    | 393,216.40        | 577,281.27       | 32.08097836     | -104.21727913    | 0.00             | 0.00            | 0.00            |
|                           | 3,500.00   | 15.00       | 256.50      | 3,445.43    | 179.03        | -109.10      | -104.40    | -434.77    | 393,210.35        | 577,256.10       | 32.08096182     | -104.21736044    | 0.00             | 0.00            | 0.00            |
|                           | 3,600.00   | 15.00       | 256.50      | 3,542.02    | 275.62        | -115.41      | -110.44    | -459.95    | 393,204.31        | 577,230.92       | 32.08094528     | -104.21744174    | 0.00             | 0.00            | 0.00            |
|                           | 3,700.00   | 15.00       | 256.50      | 3,638.61    | 372.23        | -116.43      | -116.49    | -486.12    | 393,198.26        | 577,205.75       | 32.08092874     | -104.21752303    | 0.00             | 0.00            | 0.00            |
|                           | 3,800.00   | 15.00       | 256.50      | 3,735.20    | 468.80        | -128.05      | -122.53    | -510.30    | 393,192.22        | 577,180.32       | 32.08091220     | -104.21760433    | 0.00             | 0.00            | 0.00            |
|                           | 3,900.00   | 15.00       | 256.50      | 3,831.79    | 565.39        | -134.36      | -128.58    | -535.47    | 393,186.18        | 577,155.41       | 32.08089566     | -104.21768563    | 0.00             | 0.00            | 0.00            |
|                           | 4,000.00   | 15.00       | 256.50      | 3,928.38    | 661.98        | -140.68      | -134.62    | -560.65    | 393,180.13        | 577,130.24       | 32.08087912     | -104.21776692    | 0.00             | 0.00            | 0.00            |
| Brushy Canyon             | 4,100.00   | 15.00       | 256.50      | 4,024.97    | 758.57        | -147.00      | -140.67    | -585.82    | 393,174.09        | 577,105.06       | 32.08086257     | -104.21784822    | 0.00             | 0.00            | 0.00            |
|                           | 4,108.72   | 15.00       | 256.50      | 4,033.40    | 767.00        | -147.55      | -141.19    | -588.02    | 393,173.56        | 577,102.87       | 32.08086113     | -104.21785531    | 0.00             | 0.00            | 0.00            |
|                           | 4,200.00   | 15.00       | 256.50      | 4,121.57    | 855.17        | -153.31      | -146.71    | -610.99    | 393,168.04        | 577,079.89       | 32.08084603     | -104.21792951    | 0.00             | 0.00            | 0.00            |
|                           | 4,300.00   | 15.00       | 256.50      | 4,218.16    | 951.76        | -159.63      | -152.76    | -636.17    | 393,162.00        | 577,054.72       | 32.08082949     | -104.21801081    | 0.00             | 0.00            | 0.00            |
|                           | 4,400.00   | 15.00       | 256.50      | 4,314.75    | 1,048.35      | -165.95      | -160.80    | -661.34    | 393,155.95        | 577,029.55       | 32.08081295     | -104.21809211    | 0.00             | 0.00            | 0.00            |
|                           | 4,500.00   | 15.00       | 256.50      | 4,411.34    | 1,144.94      | -172.26      | -164.85    | -686.52    | 393,149.91        | 577,004.38       | 32.08079641     | -104.21817340    | 0.00             | 0.00            | 0.00            |
|                           | 4,600.00   | 15.00       | 256.50      | 4,507.93    | 1,241.53      | -178.58      | -170.89    | -711.69    | 393,143.87        | 576,979.20       | 32.08077987     | -104.21825470    | 0.00             | 0.00            | 0.00            |
|                           | 4,700.00   | 15.00       | 256.50      | 4,604.52    | 1,338.12      | -184.90      | -176.94    | -736.87    | 393,137.82        | 576,954.03       | 32.08076332     | -104.21833599    | 0.00             | 0.00            | 0.00            |
|                           | 4,800.00   | 15.00       | 256.50      | 4,701.11    | 1,434.71      | -191.22      | -182.98    | -762.04    | 393,131.78        | 576,928.86       | 32.08074678     | -104.21841729    | 0.00             | 0.00            | 0.00            |
|                           | 4,900.00   | 15.00       | 256.50      | 4,797.70    | 1,531.30      | -197.53      | -189.03    | -787.22    | 393,125.73        | 576,903.69       | 32.08073024     | -104.21849858    | 0.00             | 0.00            | 0.00            |

| Comments            | MD<br>(ft) | Incl<br>(°) | Azim<br>(°) | TVD<br>(ft) | TVSS<br>(ft) | VSEC<br>(ft) | NS<br>(ft) | EW<br>(ft) | Northing<br>(ftUS) | Easting<br>(ftUS) | Latitude<br>(°) | Longitude<br>(°) | DLS<br>(°/100ft) | BR<br>(°/100ft) | TR<br>(°/100ft) |
|---------------------|------------|-------------|-------------|-------------|--------------|--------------|------------|------------|--------------------|-------------------|-----------------|------------------|------------------|-----------------|-----------------|
| Landing Point       | 8,400.00   | 86.16       | 353.14      | 7,843.23    | 4,576.83     | 421.80       | 434.54     | -1,175.21  | 393,749.24         | 576,515.73        | 32.08244537     | -104.21974908    | 5.00             | 4.05            | 2.95            |
|                     | 8,491.11   | 89.86       | 355.80      | 7,846.40    | 4,580.00     | 512.31       | 525.15     | -1,183.98  | 393,839.84         | 576,506.96        | 32.08269446     | -104.21977100    | 5.00             | 4.06            | 2.92            |
|                     | 8,500.00   | 89.86       | 355.80      | 7,846.42    | 4,580.02     | 521.16       | 534.01     | -1,184.63  | 393,848.71         | 576,506.31        | 32.08271883     | -104.21977917    | 0.00             | 0.00            | 0.00            |
| Turn 2°/100ft       | 8,596.11   | 89.86       | 355.80      | 7,846.65    | 4,580.25     | 616.94       | 629.87     | -1,191.67  | 393,944.55         | 576,499.27        | 32.08296232     | -104.21980157    | 0.00             | 0.00            | 0.00            |
|                     | 8,600.00   | 89.86       | 355.88      | 7,846.66    | 4,580.26     | 620.81       | 633.75     | -1,191.95  | 393,948.43         | 576,498.99        | 32.08299298     | -104.21980247    | 2.00             | 0.00            | 2.00            |
|                     | 8,700.00   | 89.86       | 357.88      | 7,846.91    | 4,580.51     | 720.59       | 733.59     | -1,197.40  | 394,048.27         | 576,493.54        | 32.08328744     | -104.21981971    | 2.00             | 0.00            | 2.00            |
|                     | 8,800.00   | 89.86       | 359.88      | 7,847.16    | 4,580.76     | 800.54       | 813.57     | -1,199.36  | 394,148.23         | 576,510.76        | 32.08354221     | -104.21982959    | 2.00             | 0.00            | 2.00            |
| Hold                | 8,846.12   | 89.86       | 0.80        | 7,847.28    | 4,580.88     | 866.66       | 879.69     | -1,199.08  | 394,194.35         | 576,491.86        | 32.08366902     | -104.21982466    | 2.00             | 0.00            | 2.00            |
|                     | 8,900.00   | 89.86       | 0.80        | 7,847.41    | 4,581.01     | 920.54       | 933.56     | -1,198.33  | 394,248.22         | 576,492.61        | 32.08381710     | -104.21982204    | 0.00             | 0.00            | 0.00            |
|                     | 9,000.00   | 89.86       | 0.80        | 7,847.66    | 4,581.26     | 1,020.54     | 1,033.55   | -1,196.94  | 394,348.20         | 576,494.00        | 32.08409194     | -104.21981720    | 0.00             | 0.00            | 0.00            |
|                     | 9,100.00   | 89.86       | 0.80        | 7,847.92    | 4,581.52     | 1,120.54     | 1,133.54   | -1,195.54  | 394,448.18         | 576,495.40        | 32.08436678     | -104.21981235    | 0.00             | 0.00            | 0.00            |
|                     | 9,200.00   | 89.86       | 0.80        | 7,848.17    | 4,581.77     | 1,220.54     | 1,233.53   | -1,194.14  | 394,548.16         | 576,496.80        | 32.08464162     | -104.21980750    | 0.00             | 0.00            | 0.00            |
|                     | 9,300.00   | 89.86       | 0.80        | 7,848.42    | 4,582.02     | 1,320.54     | 1,333.52   | -1,192.75  | 394,648.14         | 576,498.19        | 32.08491646     | -104.21980285    | 0.00             | 0.00            | 0.00            |
|                     | 9,400.00   | 89.86       | 0.80        | 7,848.68    | 4,582.28     | 1,420.54     | 1,433.51   | -1,191.35  | 394,748.12         | 576,499.58        | 32.08519130     | -104.21979780    | 0.00             | 0.00            | 0.00            |
|                     | 9,500.00   | 89.86       | 0.80        | 7,848.93    | 4,582.53     | 1,520.53     | 1,533.50   | -1,189.95  | 394,848.10         | 576,500.99        | 32.08546614     | -104.21979295    | 0.00             | 0.00            | 0.00            |
|                     | 9,600.00   | 89.86       | 0.80        | 7,849.18    | 4,582.78     | 1,620.53     | 1,633.49   | -1,188.56  | 394,948.08         | 576,502.38        | 32.08574098     | -104.21978811    | 0.00             | 0.00            | 0.00            |
|                     | 9,700.00   | 89.86       | 0.80        | 7,849.43    | 4,583.03     | 1,720.53     | 1,733.48   | -1,187.16  | 395,048.06         | 576,503.78        | 32.08601582     | -104.21978326    | 0.00             | 0.00            | 0.00            |
|                     | 9,800.00   | 89.86       | 0.80        | 7,849.69    | 4,583.29     | 1,820.53     | 1,833.47   | -1,185.76  | 395,148.04         | 576,505.17        | 32.08629066     | -104.21977841    | 0.00             | 0.00            | 0.00            |
|                     | 9,900.00   | 89.86       | 0.80        | 7,849.94    | 4,583.54     | 1,920.53     | 1,933.46   | -1,184.37  | 395,248.02         | 576,506.57        | 32.08656550     | -104.21977356    | 0.00             | 0.00            | 0.00            |
|                     | 10,000.00  | 89.86       | 0.80        | 7,850.19    | 4,583.79     | 2,020.53     | 2,033.45   | -1,182.97  | 395,348.00         | 576,507.97        | 32.08684033     | -104.21976871    | 0.00             | 0.00            | 0.00            |
|                     | 10,100.00  | 89.86       | 0.80        | 7,850.44    | 4,584.04     | 2,120.53     | 2,133.44   | -1,181.57  | 395,447.98         | 576,509.36        | 32.08711517     | -104.21976386    | 0.00             | 0.00            | 0.00            |
|                     | 10,200.00  | 89.86       | 0.80        | 7,850.70    | 4,584.30     | 2,220.53     | 2,233.43   | -1,180.18  | 395,547.97         | 576,510.76        | 32.08739001     | -104.21975901    | 0.00             | 0.00            | 0.00            |
|                     | 10,300.00  | 89.86       | 0.80        | 7,850.95    | 4,584.55     | 2,320.53     | 2,333.42   | -1,178.78  | 395,647.95         | 576,512.16        | 32.08766485     | -104.21975417    | 0.00             | 0.00            | 0.00            |
|                     | 10,400.00  | 89.86       | 0.80        | 7,851.20    | 4,584.80     | 2,420.53     | 2,433.41   | -1,177.39  | 395,747.93         | 576,513.55        | 32.08793969     | -104.21974932    | 0.00             | 0.00            | 0.00            |
|                     | 10,500.00  | 89.86       | 0.80        | 7,851.46    | 4,585.06     | 2,520.53     | 2,533.40   | -1,175.99  | 395,847.91         | 576,514.95        | 32.08821453     | -104.21974447    | 0.00             | 0.00            | 0.00            |
|                     | 10,600.00  | 89.86       | 0.80        | 7,851.71    | 4,585.31     | 2,620.53     | 2,633.39   | -1,174.59  | 395,947.89         | 576,516.35        | 32.08848937     | -104.21973962    | 0.00             | 0.00            | 0.00            |
|                     | 10,700.00  | 89.86       | 0.80        | 7,851.96    | 4,585.56     | 2,720.52     | 2,733.38   | -1,173.20  | 396,047.87         | 576,517.74        | 32.08876421     | -104.21973477    | 0.00             | 0.00            | 0.00            |
|                     | 10,800.00  | 89.86       | 0.80        | 7,852.21    | 4,585.81     | 2,820.52     | 2,833.37   | -1,171.81  | 396,147.85         | 576,519.14        | 32.08903905     | -104.21972992    | 0.00             | 0.00            | 0.00            |
|                     | 10,900.00  | 89.86       | 0.80        | 7,852.47    | 4,586.07     | 2,920.52     | 2,933.36   | -1,170.40  | 396,247.83         | 576,520.53        | 32.08931389     | -104.21972507    | 0.00             | 0.00            | 0.00            |
|                     | 11,000.00  | 89.86       | 0.80        | 7,852.72    | 4,586.32     | 3,020.52     | 3,033.35   | -1,169.01  | 396,347.81         | 576,521.93        | 32.08958873     | -104.21972022    | 0.00             | 0.00            | 0.00            |
|                     | 11,100.00  | 89.86       | 0.80        | 7,852.97    | 4,586.57     | 3,120.52     | 3,133.34   | -1,167.61  | 396,447.79         | 576,523.33        | 32.08986357     | -104.21971538    | 0.00             | 0.00            | 0.00            |
|                     | 11,200.00  | 89.86       | 0.80        | 7,853.23    | 4,586.83     | 3,220.52     | 3,233.33   | -1,166.21  | 396,547.77         | 576,524.72        | 32.09013841     | -104.21971053    | 0.00             | 0.00            | 0.00            |
|                     | 11,300.00  | 89.86       | 0.80        | 7,853.48    | 4,587.08     | 3,320.52     | 3,333.32   | -1,164.82  | 396,647.75         | 576,526.12        | 32.09041324     | -104.21970568    | 0.00             | 0.00            | 0.00            |
|                     | 11,400.00  | 89.86       | 0.80        | 7,853.73    | 4,587.33     | 3,420.52     | 3,433.31   | -1,163.42  | 396,747.74         | 576,527.52        | 32.09068808     | -104.21970083    | 0.00             | 0.00            | 0.00            |
|                     | 11,500.00  | 89.86       | 0.80        | 7,853.98    | 4,587.58     | 3,520.52     | 3,533.30   | -1,162.02  | 396,847.73         | 576,528.91        | 32.09096292     | -104.21969598    | 0.00             | 0.00            | 0.00            |
|                     | 11,600.00  | 89.86       | 0.80        | 7,854.24    | 4,587.84     | 3,620.52     | 3,633.29   | -1,160.63  | 396,947.70         | 576,530.31        | 32.09123776     | -104.21969113    | 0.00             | 0.00            | 0.00            |
|                     | 11,700.00  | 89.86       | 0.80        | 7,854.49    | 4,588.09     | 3,720.52     | 3,733.28   | -1,159.23  | 397,047.68         | 576,531.70        | 32.09151260     | -104.21968628    | 0.00             | 0.00            | 0.00            |
|                     | 11,800.00  | 89.86       | 0.80        | 7,854.74    | 4,588.34     | 3,820.52     | 3,833.27   | -1,157.84  | 397,147.66         | 576,533.10        | 32.09178744     | -104.21968143    | 0.00             | 0.00            | 0.00            |
|                     | 11,900.00  | 89.86       | 0.80        | 7,854.99    | 4,588.59     | 3,920.51     | 3,933.26   | -1,156.44  | 397,247.64         | 576,534.50        | 32.09206228     | -104.21967658    | 0.00             | 0.00            | 0.00            |
|                     | 12,000.00  | 89.86       | 0.80        | 7,855.25    | 4,588.85     | 4,020.51     | 4,033.25   | -1,155.04  | 397,347.62         | 576,535.89        | 32.09233712     | -104.21967173    | 0.00             | 0.00            | 0.00            |
|                     | 12,100.00  | 89.86       | 0.80        | 7,855.50    | 4,589.10     | 4,120.51     | 4,133.24   | -1,153.65  | 397,447.60         | 576,537.29        | 32.09261196     | -104.21966688    | 0.00             | 0.00            | 0.00            |
|                     | 12,200.00  | 89.86       | 0.80        | 7,855.75    | 4,589.35     | 4,220.51     | 4,233.23   | -1,152.25  | 397,547.58         | 576,538.69        | 32.09288680     | -104.21966204    | 0.00             | 0.00            | 0.00            |
|                     | 12,300.00  | 89.86       | 0.80        | 7,856.01    | 4,589.61     | 4,320.51     | 4,333.22   | -1,150.85  | 397,647.56         | 576,540.08        | 32.09316163     | -104.21965719    | 0.00             | 0.00            | 0.00            |
|                     | 12,400.00  | 89.86       | 0.80        | 7,856.26    | 4,589.86     | 4,420.51     | 4,433.21   | -1,149.46  | 397,747.54         | 576,541.48        | 32.09343647     | -104.21965234    | 0.00             | 0.00            | 0.00            |
| IFP1, Turn 2°/100ft | 12,456.15  | 89.86       | 0.80        | 7,856.40    | 4,590.00     | 4,476.66     | 4,489.35   | -1,148.67  | 397,803.68         | 576,542.26        | 32.09359079     | -104.21964961    | 0.00             | 0.00            | 0.00            |
| Hold                | 12,474.20  | 89.86       | 0.44        | 7,856.45    | 4,590.05     | 4,494.71     | 4,507.41   | -1,148.48  | 397,821.73         | 576,542.46        | 32.09364042     | -104.21964982    | 2.00             | 0.01            | -2.00           |
|                     | 12,500.00  | 89.86       | 0.44        | 7,856.51    | 4,590.11     | 4,520.51     | 4,533.20   | -1,148.28  | 397,847.53         | 576,542.66        | 32.09371132     | -104.21964820    | 0.00             | 0.00            | 0.00            |
|                     | 12,600.00  | 89.86       | 0.44        | 7,856.76    | 4,590.36     | 4,620.51     | 4,633.20   | -1,147.51  | 397,947.51         | 576,543.42        | 32.09398618     | -104.21964538    | 0.00             | 0.00            | 0.00            |
|                     | 12,700.00  | 89.86       | 0.44        | 7,857.01    | 4,590.61     | 4,720.51     | 4,733.19   | -1,146.75  | 398,047.50         | 576,544.19        | 32.09426104     | -104.21964257    | 0.00             | 0.00            | 0.00            |
|                     | 12,800.00  | 89.86       | 0.44        | 7,857.26    | 4,590.86     | 4,820.51     | 4,833.18   | -1,145.98  | 398,147.48         | 576,545.08        | 32.09453592     | -104.21963975    | 0.00             | 0.00            | 0.00            |
|                     | 12,900.00  | 89.86       | 0.44        | 7,857.51    | 4,591.11     | 4,920.51     | 4,933.19   | -1,145.21  | 398,247.48         | 576,545.72        | 32.09481076     | -104.21963694    | 0.00             | 0.00            | 0.00            |
|                     | 13,000.00  | 89.86       | 0.44        | 7,857.76    | 4,591.36     | 5,020.51     | 5,033.18   | -1,144.45  | 398,347.46         | 576,546.49        | 32.09508562     | -104.21963412    | 0.00             | 0.00            | 0.00            |
|                     | 13,100.00  | 89.86       | 0.44        | 7,858.01    | 4,591.61     | 5,120.51     | 5,133.18   | -1,143.68  | 398,447.45         | 576,547.25        | 32.09536048     | -104.21963131    | 0.00             | 0.00            | 0.00            |
|                     | 13,200.00  | 89.86       | 0.44        | 7,858.26    | 4,591.86     | 5,220.50     | 5,233.18   | -1,142.92  | 398,547.44         | 576,548.02        | 32.09563534     | -104.21962849    | 0.00             | 0.00            | 0.00            |
|                     | 13,300.00  | 89.86       | 0.44        | 7,858.51    | 4,592.11     | 5,320.50     | 5,333.17   | -1,142.15  | 398,647.43         | 576,548.78        | 32.09591020     | -104.21962568    | 0.00             | 0.00            | 0.00            |
|                     | 13,400.00  | 89.86       | 0.44        | 7,858.76    | 4,592.36     | 5,420.50     | 5,433.17   | -1,141.38  | 398,747.41         | 576,549.55        | 32.09618506     | -104.21962286    | 0.00             | 0.00            | 0.00            |
|                     | 13,500.00  | 89.86       | 0.44        | 7,859.01    | 4,592.61     | 5,520.50     | 5,533.17   | -1,140.62  | 398,847.40         | 576,550.32        | 32.09645992     | -104.21962005    | 0.00             | 0.00            | 0.00            |
|                     | 13,600.00  | 89.86       | 0.44        | 7,859.26    | 4,592.86     | 5,620.50     | 5,633.16   | -1,139.85  | 398,947.39         | 576,551.08        | 32.09673477     | -104.21961724    | 0.00             | 0.00            | 0.00            |
|                     | 13,700.00  | 89.86       | 0.44        | 7,859.51    | 4,593.11     | 5,720.50     | 5,733.16   | -1,139.08  | 399,047.38         | 576,551.85        | 32.09700963     | -104.21961442    | 0.00             | 0.00            | 0.00            |
|                     | 13,800.00  | 89.86       | 0.44        | 7,859.76    | 4,593.36     | 5,820.50     | 5,833.16   | -1,138.32  | 399,147.37         | 576,552.62        | 32.09728449     | -104.21961161    | 0.00             | 0.00            | 0.00            |
|                     | 13,900.00  | 89.86       | 0.44        | 7,860.01    | 4,593.61     | 5,920.50     | 5,933.16   | -1,137.55  | 399,247.35         | 576,553.38        | 32.09755935     | -104.21960879    | 0.00             | 0.00            | 0.00            |
|                     | 14,000.00  | 89.86       | 0.44        | 7,860.26    | 4,593.86     | 6,020.50     | 6,033.15   | -1,136.79  | 399,347.34         | 576,554.15        | 32.0978342      |                  |                  |                 |                 |

Sante Fe Main Office  
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General Information  
Phone: (505) 629-6116

Online Phone Directory  
<https://www.emnrd.nm.gov/oed/contact-us>

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

CONDITIONS

Action 448353

CONDITIONS

|                                                                                       |                                                      |
|---------------------------------------------------------------------------------------|------------------------------------------------------|
| Operator:<br>Coterra Energy Operating Co.<br>6001 Deauville Blvd<br>Midland, TX 79706 | OGRID:<br>215099                                     |
|                                                                                       | Action Number:<br>448353                             |
|                                                                                       | Action Type:<br>[C-103] NOI Change of Plans (C-103A) |

CONDITIONS

| Created By  | Condition                                | Condition Date |
|-------------|------------------------------------------|----------------|
| ward.rikala | Work was performed without OCD approval. | 12/12/2025     |