Form 3160-3
(June 2015)

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

**APPLICATION FOR PERMIT TO DRILL OR REENTER**

5. Lease Serial No.: NMNM100858

6. If Indian, Allotee or Tribe Name:

1a. Type of work: ☑ DRILL ☐ REENTER

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

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

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

8. Lease Name and Well No.: RAINMAKER FED 004

2. Name of Operator: MANZANITA OPERATING LLC

9. API Well No.: 30-015-57263

3a. Address: PO BOX 3489, MIDLAND, TX 79702

3b. Phone No. *(include area code)*: (432) 557-2196

10. Field and Pool, or Exploratory: BENSON/DELAWARE

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

At surface: SESE / 660 FSL / 990 FEL / LAT 32.6840049 / LONG -103.88619

At proposed prod. zone: SESE / 660 FSL / 990 FEL / LAT 32.6840049 / LONG -103.88619

11. Sec., T. R. M. or Blk. and Survey or Area: SEC 5/T19S/R31E/NMP

14. Distance in miles and direction from nearest town or post office*: 10 miles

12. County or Parish: EDDY

13. State: NM

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any): 330 feet

16. No of acres in lease:

17. Spacing Unit dedicated to this well: 40.0

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.: 522 feet

19. Proposed Depth: 5600 feet / 5600 feet

20. BLM/BIA Bond No. in file: FED: NMB001872

21. Elevations (Show whether DF, KDB, RT, GL, etc.): 3550 feet

22. Approximate date work will start*: 08/01/2025

23. Estimated duration: 30 days

24. Attachments

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

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

25. Signature: (Electronic Submission)

Name *(Printed/Typed)*: BRIAN WOOD / Ph: (432) 557-2196

Date: 06/19/2025

Title: Permitting Agent

Approved by *(Signature)*: (Electronic Submission)

Name *(Printed/Typed)*: CODY LAYTON / Ph: (575) 234-5959

Date: 08/29/2025

Title: Assistant Field Manager Lands & Minerals

Office: Carlsbad Field Office

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

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

APPROVED WITH CONDITIONS

(Continued on page 2)

*(Instructions on page 2)

**Approval Date: 08/29/2025**

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

## WELL LOCATION INFORMATION

| API Number | Pool Code | Pool Name |
|---|---|---|
| 30-015-57263 | 97083 | BENSON; DELAWARE (O) |

| Property Code | Property Name | Well Number |
|---|---|---|
| 332797 | RAINMAKER FED | 4 |

| OGRID No. | Operator Name | Ground Level Elevation |
|---|---|---|
| 330289 | MANZANITA OPERATING, LLC | 3550.4 |

Surface Owner: ☐State ☐Fee ☐Tribal ☑Federal | Mineral Owner: ☐State ☐Fee ☐Tribal ☑Federal

### Surface Location

| UL | Section | Township | Range | Lot | Ft. from N/S | Ft. from E/W | Latitude | Longitude | County |
|---|---|---|---|---|---|---|---|---|---|
| P | 5 | 19 S | 31 E | | 660 SOUTH | 990 EAST | 32.6840049°N | 103.8861900°W | EDDY |

### Bottom Hole Location

| UL | Section | Township | Range | Lot | Ft. from N/S | Ft. from E/W | Latitude | Longitude | County |
|---|---|---|---|---|---|---|---|---|---|
| P | 5 | 19 S | 31 E | | 660 SOUTH | 990 EAST | 32.6840049°N | 103.8861900°W | EDDY |

| Dedicated Acres | Infill or Defining Well | Defining Well API | Overlapping Spacing Unit (Y/N) | Consolidation Code |
|---|---|---|---|---|
| 40.00 | | | | |

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

### Kick Off Point (KOP)

| UL | Section | Township | Range | Lot | Ft. from N/S | Ft. from E/W | Latitude | Longitude | County |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |

### First Take Point (FTP)

| UL | Section | Township | Range | Lot | Ft. from N/S | Ft. from E/W | Latitude | Longitude | County |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |

### Last Take Point (LTP)

| UL | Section | Township | Range | Lot | Ft. from N/S | Ft. from E/W | Latitude | Longitude | County |
|---|---|---|---|---|---|---|---|---|---|
| | | - | | | | | | | |

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

### OPERATOR CERTIFICATIONS

*I hereby certify that the information contained herein is true and complete to the best ofmy 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 run leased mineral interest, or to a voluntary pooling agreement or a compulsory pooling order here to fore entered by the division.*

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

Signature: [signature] Date: 6-1-25

BRIAN WOOD
Printed Name

brian@permitswest.com
Email Address

### SURVEYOR CERTIFICATIONS

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

FILIMON F. JARAMILLO NEW MEXICO 12797 REGISTERED PROFESSIONAL SURVEYOR

Signature and Seal of Professional Surveyor

FILIMON F. JARAMILLO

| CertificateNumber | Dateof Survey |
|---|---|
| PLS 12797 | APRIL 16, 2025 |

SURVEY NO. 10412

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

ACREAGE DEDICATION PLATS

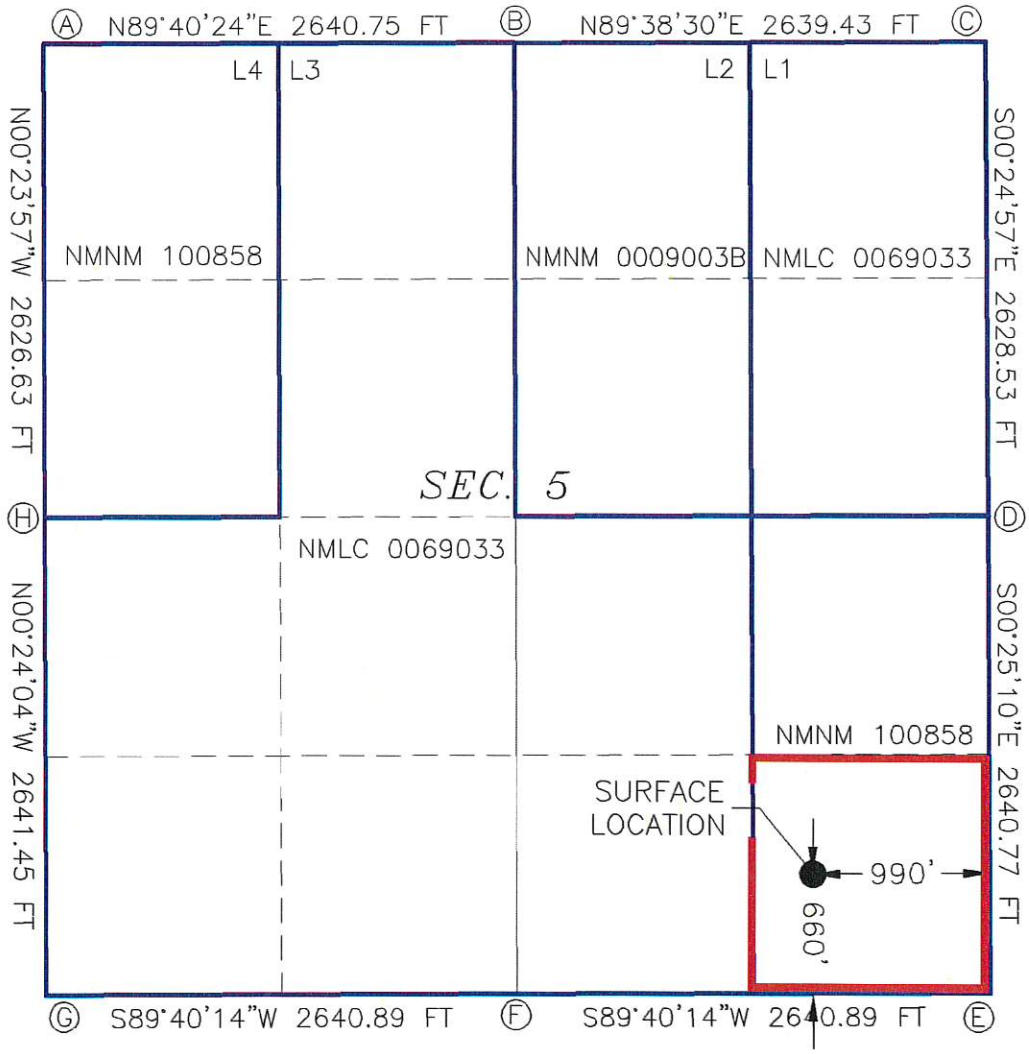
This grid represents a standard section. You may superimpose a non-standard section, or larger area, over this grid. Operators must outline the dedicated acreage in a red box, clearly show the well surface location and bottom hole location, if it is directionally drilled, with the dimensions from the section lines in the cardinal directions. If this is a horizontal wellbore show on this plat the location of the First Take Point and Last Take Point, and the point within the Completed interval (other than the First Take Point or Last Take Point) that is closest to any outer boundary of the tract.

Surveyors shall use the latest United States government survey or dependent resurvey. Well locations will be in reference to the New Mexico Principal Meridian. If the land is not surveyed, contact the OCD Engineering Bureau. Independent subdivision surveys will not be acceptable.

*RAINMAKER FED 4*
EL. = 3550.4

GEODETIC COORDINATES
NAD 83 NMSP EAST
SURFACE LOCATION
660' FSL, 990' FEL
N.=612862.04
E.=678908.33
LAT.=32.6840049°N
LONG.=103.8861900°W

BOTTOM OF HOLE
660' FSL, 990' FEL
N.=612862.04
E.=678908.33
LAT.=32.6840049°N
LONG.=103.8861900°W




CORNER COORDINATES TABLE
NAD 83 NMSP EAST

| | | |
|---|---|---|
| A | N.=617444.27 | E.=674585.69 |
| B | N.=617459.33 | E.=677225.77 |
| C | N.=617475.83 | E.=679864.52 |
| D | N.=614847.99 | E.=679883.59 |
| E | N.=612207.92 | E.=679902.92 |
| F | N.=612192.74 | E.=677262.70 |
| G | N.=612177.56 | E.=674622.48 |
| H | N.=614818.32 | E.=674603.99 |

LEGEND
SECTION LINE
QUARTER LINE
LEASE LINE
WELL PATH

State of New Mexico
Energy, Minerals and Natural Resources Department

Submit Electronically
Via E-permitting

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

# NATURAL GAS MANAGEMENT PLAN

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

## Section 1 – Plan Description
**Effective May 25, 2021**

**I. Operator:** Manzanita Operating, LLC **OGRID:** 330289 **Date:** 06 / 05 / 25

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

If Other, please describe: _____

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

| Well Name | API | ULSTR | Footages | Anticipated Oil BBL/D | Anticipated Gas MCF/D | Anticipated Produced Water BBL/D |
|---|---|---|---|---|---|---|
| Rainmaker Fed 4 | 30-015- | P-5-19s-31e | 660 FSL & 990 FEL | 50 | 10 | 50 |
| | | | | | | |

**IV. Central Delivery Point Name:** DCP via Rainmaker Fed 1 in O-5-19s-31e [See 19.15.27.9(D)(1) NMAC]

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

| Well Name | API | Spud Date | TD Reached Date | Completion Commencement Date | Initial Flow Back Date | First Production Date |
|---|---|---|---|---|---|---|
| Rainmaker Fed 4 | 30-015- | 8-1-25 | 8-10-25 | 9-1-25 | 9-5-25 | 9-5-25 |
| | | | | | | |

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

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

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

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

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

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

**IX. Anticipated Natural Gas Production:**

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

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

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

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

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

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

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

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

## Section 3 - Certifications

**Effective May 25, 2021**

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

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

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

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

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

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

## Section 4 - Notices

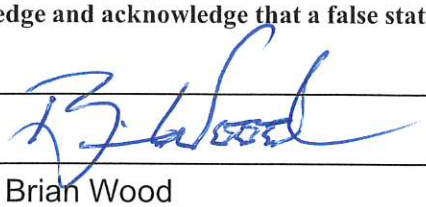
1. If, at any time after Operator submits this Natural Gas Management Plan and before the well is spud:

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

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

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

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

| | |
|---|---|
| Signature: |  |
| Printed Name: | Brian Wood |
| Title: | Consultant |
| E-mail Address: | brian@permitswest.com |
| Date: | 6-5-25 |
| Phone: | 505 466-8120 |

| **OIL CONSERVATION DIVISION**<br>**(Only applicable when submitted as a standalone form)** |
|---|
| Approved By: |
| Title: |
| Approval Date: |
| Conditions of Approval: |

**Manzanita Operating, LLC**

P.O. Box 3489
Midland, Texas 79702

Panthaky Cell: (432) 349-3096
Fedro Cell: (432) 557-2196

Manzanita Operating, LLC has 5 existing offset Benson; Delaware oil wells that should be similar in production to this well. A flowline will be laid west 990.7' to connect with Manzanita's existing central tank battery at the Haymaker Fed 1. Gas will then flow east 1352.4' via Manzanita's approved gas sales line NMNM-145140 to DCP's existing Blue Thunder tie-in point.

**Separation Equipment**

Separation equipment includes a 3-phase separator with individual separators set for each well completed. Volumes are expected to be 4-500 BPD total fluid max, and up to 50 MCFPD max during initial production.

**Venting and Flaring**

Manzanita Operating, LLC will take all steps necessary to prevent any venting and/or flaring, including shutting-in the well in until the necessary steps can be completed to prevent any flaring or venting of natural gas.

**Best Management Practices**

Manzanita Operating, LLC does not intend to flare or vent any natural gas, however in the case of emergencies, there will be an emergency flare with the system designed such that any gas unable to be transferred into the sales-pipeline will be routed to the emergency flare for combustion.

**Manzanita Operating, LLC**

P.O. Box 3489
Midland, Texas 79702

Panthaky Cell: (432) 349-3096
Fedro Cell: (432) 557-2196

## Natural Gas Management Plan

VI. Separation equipment will be sized by construction engineering staff based on stated manufacturer daily throughput capacities and anticipated daily production rates to ensure adequate capacity. Closed vent system piping, compression needs, and VRUs will be sized utilizing software to ensure adequate capacity for anticipated production volumes and conditions.

VII. Manzanita Operating, LLC will take the following actions to comply with the regulations listed in 19.15.27.8:

A. MANZANITA OPERATING, LLC will maximize the recovery of natural gas by minimizing the waste, as defined by 19.15.2 NMAC, of natural gas through venting and flaring. MANZANITA OPERATING, LLC will ensure that well(s) will be connected to a natural gas gathering system with sufficient capacity to transport natural gas. If there is no adequate takeaway for the gas, well(s) will be shut in until the natural gas gathering system is available.

B. All drilling operations will be equipped with a rig flare located at least 100' from the nearest surface hole. Rig flare will be utilized to combust any natural gas that is brought to surface during normal drilling operations. In the case of emergency venting or flaring the volumes will be estimated and repo1ted appropriately.

C. During completion operations any natural gas brought to surface will be flared. Immediately following the finish of completion operations, all well flowback will be directed to permanent separation equipment. Produced natural gas from separation equipment will be sent to sales. It is not anticipated that gas will not meet pipeline standards. However, if natural gas does not meet gathering pipeline quality specifications, MANZANITA OPERATING, LLC will flare the natural gas for 60 days or until the natural gas meets the pipeline quality specifications, whichever is sooner. MANZANITA OPERATING, LLC will ensure that the flare is sized properly and is equipped with automatic igniter or continuous pilot. The gas sample will be analyzed twice per week and the gas will be routed into a gathering system as soon as pipeline specifications are met.

D. Natural gas will not be flared with the exceptions and provisions listed in the 19.15.27.8.

D.(I) through (4). If there is no adequate takeaway for the separator gas, well(s) will be shut in until the natural gas gathering system is available with exception of emergency or malfunction situations. Venting and/or flaring volumes will be estimated and repo1ted appropriately.

E. MANZANITA OPERATING, LLC will comply with the performance standards requirements and provisions listed in 19.15.27.8 E.(l)through (8). All equipment will be designed and sized to handle maximum anticipated pressures and throughputs to minimize the waste. Production storage tanks constructed after May 25, 2021, will be equipped with automatic gauging system. Flares constructed after May 25, 2021, will be equipped with automatic igniter or continuous pilot. Flares will be located at least 100' from the well and storage tanks unless otherwise approved by the division. MANZANITA OPERATING, LLC will conduct AVO inspections as described in 19.15.27.8 E (5) (a) with frequencies specified in 19.15.27.8 E (5) (b) and (c). All emergencies will be resolved as quickly and safely as feasible to minimize waste.

F. The volume of natural gas that is vented or flared as the result of malfunction or emergency during drilling and completions operations will be estimated. The volume of natural gas that is vented, flared, or beneficially used during production operations, will be measured, or estimated. MANZANITA OPERATING, LLC will install equipment to measure the volume of natural gas flared from existing process piping, or a flowline piped from equipment such as high-pressure separators, heater treaters, or vapor recovery units associated with a well or facility associated with a well authorized by an APD issued after May 25, 2021, that has an average daily production greater than 60 Mcf/day. If metering is not practicable due to circumstances such as low flow rate or low-pressure venting and flaring, MANZANITA OPERATING, LLC will estimate the volume of vented or flared natural gas. Measuring equipment will conform to industry standards and will not be designed or equipped with a manifold that allows the diversion of natural gas around the metering element except for the sole purpose of inspecting and servicing the measurement equipment.

VIII. For maintenance activities involving production equipment and compression, venting will be limited to the depressurization of the subject equipment to ensure safe working conditions. For maintenance of production and compression equipment the associated producing wells will be shut in to eliminate venting. For maintenance of VRUs all gas normally routed to the VRU will be routed to flare to eliminate venting.

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

# Drilling Plan Data Report
08/29/2025

**APD ID:** 10400105383
**Submission Date:** 06/19/2025
**Operator Name:** MANZANITA OPERATING LLC
**Well Name:** RAINMAKER FED
**Well Number:** 004
**Well Type:** OIL WELL
**Well Work Type:** Drill

Highlighted data reflects the most recent changes

Show Final Text

## Section 1 - Geologic Formations

| Formation ID | Formation Name | Elevation | True Vertical | Measured Depth | Lithologies | Mineral Resources | Producing Formatio |
|---|---|---|---|---|---|---|---|
| 16300743 | QUATERNARY | 3550 | 0 | 0 | OTHER : Caliche | USEABLE WATER | N |
| 16300744 | RUSTLER ANHYDRITE | 2945 | 605 | 605 | ANHYDRITE | NONE | N |
| 16300745 | TOP SALT | 2860 | 690 | 690 | SALT | NONE | N |
| 16300746 | BASE OF SALT | 1375 | 2175 | 2175 | SALT | NONE | N |
| 16300747 | YATES | 1170 | 2380 | 2380 | SANDSTONE | NATURAL GAS, OIL | N |
| 16300748 | QUEEN | 300 | 3250 | 3250 | SANDSTONE | NONE | N |
| 16300749 | GRAYBURG | -195 | 3745 | 3745 | DOLOMITE | NATURAL GAS, OIL | N |
| 16300750 | SAN ANDRES | -440 | 3990 | 3990 | OTHER : Carbonate | NONE | N |
| 16300751 | BRUSHY CANYON | -1255 | 4805 | 4805 | SANDSTONE | NATURAL GAS, OIL | Y |

## Section 2 - Blowout Prevention

**Pressure Rating (PSI):** 3M
**Rating Depth:** 5000

**Equipment:** A 3000 psi BOP stack and manifold system will be used. A typical 3000 psi system is attached. If the equipment changes, then a Sundry Notice will be filed. System will meet 43 CFR 3172 (BOP) and 43 CFR 3176 (H2S) requirements. BOP equipment will consist of the following: Annular preventer; Double ram with blind rams and pipe rams; Drilling spool, or blowout preventer with 2 side outlets (choke side will be >3" diameter and kill side will be >2" diameter); Kill line (>2" diameter) & kill line valve (>2" diameter); At least 2 choke line valves (3" minimum); >3" diameter choke line with >3 diameter valves; Two kill line valves, one of which will be a check valve (2" minimum); 2 chokes, at least one will be capable of remote operation; Pressure gauge on choke manifold; Upper Kelly cock valve with handle available; Safety valve and subs to fit all drill string connections in use All BOPE connections subject to well pressure will be flanged, welded, or clamped; Fill-up line will be above the uppermost preventer

**Requesting Variance?** NO

**Variance request:**

**Testing Procedure:** BOP and choke manifold will be installed and pressure tested before drilling out of the surface casing. Subsequent pressure tests will be performed whenever pressure seals are broken. BOP and

**Operator Name:** MANZANITA OPERATING LLC

**Well Name:** RAINMAKER FED **Well Number:** 004

choke mechanical operating conditions will be checked daily. BOP will be tested at least once every 30 days. Ram type preventers and related pressure control equipment will be pressure tested to the working pressure of the stack if a test plug is used. If a plug is not used, then the stack will be tested to the rated working pressure of the stack or 70% of the minimum internal yield of the casing, whichever is less. Annular type preventers will be pressure tested to 50% of their working pressure. All casing strings will be pressure tested to 0.22 psi/foot or 1500 psi, whichever is greater, not to exceed 70% of the internal yield. The casing shoe will be tested by drilling 5' to 20' out from under the shoe and pressure tested to a maximum expected mud weight equivalent as shown in the mud program. A manual locking device (e. g., hand wheels) or automatic locking devices will be installed on the BOP stack. Remote controls capable of both opening and closing all preventers will be readily accessible to the driller. Choke manifold and accumulator will meet or exceed BLM standards. BOP equipment will be tested after any repair. Pipe and blind rams and annular preventer will be activated on each trip. Weekly BOP drills will be conducted with each crew. All tests, maintenance, and BOP drills will be recorded on the daily drilling report.

**Choke Diagram Attachment:**

BOP_Choke_20250609113459.pdf

**BOP Diagram Attachment:**

BOP_Choke_20250609113506.pdf

## Section 3 - Casing

| Casing ID | String Type | Hole Size | Csg Size | Condition | Standard | Tapered String | Top Set MD | Bottom Set MD | Top Set TVD | Bottom Set TVD | Top Set MSL | Bottom Set MSL | Calculated casing length MD | Grade | Weight | Joint Type | Collapse SF | Burst SF | Joint SF Type | Joint SF | Body SF Type | Body SF |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | SURFACE | 11 | 8.625 | NEW | API | N | 0 | 680 | 0 | 680 | 3550 | 2870 | 680 | J-55 | 32 | ST&C | 1.19 | 1.9 | DRY | 4.6 | DRY | 4.6 |
| 2 | PRODUCTION | 7.875 | 5.5 | NEW | API | N | 0 | 5600 | 0 | 5600 | 3550 | -2050 | 5600 | J-55 | 15.5 | LT&C | 1.68 | 1.4 | DRY | 25.59 | DRY | 2.59 |

**Casing Attachments**

**Operator Name:** MANZANITA OPERATING LLC

**Well Name:** RAINMAKER FED **Well Number:** 004

**Casing Attachments**

**Casing ID:** 1 **String** SURFACE

**Inspection Document:**

**Spec Document:**

**Tapered String Spec:**

**Casing Design Assumptions and Worksheet(s):**

Rain_004_Casing_Design_Assumptions_20250609113612.pdf

**Casing ID:** 2 **String** PRODUCTION

**Inspection Document:**

**Spec Document:**

**Tapered String Spec:**

**Casing Design Assumptions and Worksheet(s):**

Rain_004_Casing_Design_Assumptions_20250609113715.pdf

## Section 4 - Cement

| String Type | Lead/Tail | Stage Tool Depth | Top MD | Bottom MD | Quantity(sx) | Yield | Density | Cu Ft | Excess% | Cement type | Additives |
|---|---|---|---|---|---|---|---|---|---|---|---|
| SURFACE | Lead | | 0 | 680 | 415 | 1.75 | 13.5 | 726 | 100 | Premium | 4% gel + 0.25 lb/sk cello flake + 1 lb/sk Kol-seal + 2% CaCl2 |
| SURFACE | Tail | | 0 | 680 | 215 | 1.35 | 14.8 | 290 | 100 | Premium | 0.25 lb/sk cello flake + 2% CaCl2 |
| PRODUCTION | Lead | 3700 | 0 | 3300 | 325 | 1.96 | 12.4 | 637 | 25 | Premium Plus 65/35/6 | 5% salt U+ 3#/sk Kol-seal |
| PRODUCTION | Tail | | 3300 | 3700 | 55 | 1.34 | 14.8 | 73 | 25 | Premium Plus | 1% CaCl2 |
| PRODUCTION | Lead | 3700 | 3700 | 5600 | 280 | 1.49 | 14.1 | 417 | 25 | Premium Plus | 0.3% CAS-1 + 0.3% CD-1 + 0.5% CFL-3 |

**Operator Name:** MANZANITA OPERATING LLC

**Well Name:** RAINMAKER FED **Well Number:** 004

## Section 5 - Circulating Medium

**Mud System Type:** Closed

**Will an air or gas system be Used?** NO

**Description of the equipment for the circulating system in accordance with 43 CFR 3172:**

**Diagram of the equipment for the circulating system in accordance with 43 CFR 3172:**

**Describe what will be on location to control well or mitigate other conditions:** Appropriate additives (bentonite, cedar bark) will be on site to manage any abnormal hole condition (lost circulation, pressure) that could be encountered while drilling this well. Circulation could be lost in the Grayburg.
**Describe the mud monitoring system utilized:** A PVT/Pason/visual mud monitoring system will be used.

## Circulating Medium Table

| Top Depth | Bottom Depth | Mud Type | Min Weight (lbs/gal) | Max Weight (lbs/gal) | Density (lbs/cu ft) | Gel Strength (lbs/100 sqft) | PH | Viscosity (CP) | Salinity (ppm) | Filtration (cc) | Additional Characteristics |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 600 | OTHER : Fresh water spud mud | 8.4 | 8.7 | | | | | | | |
| 600 | 2300 | OTHER : Brine | 10 | 10 | | | | | | | |
| 2300 | 5500 | OTHER : Brine | 9.2 | 9.2 | | | | | | | |
| 5500 | 5600 | OTHER : Brine | 9.2 | 9.2 | | | | | | | |

**Operator Name:** MANZANITA OPERATING LLC

**Well Name:** RAINMAKER FED **Well Number:** 004

## Section 6 - Test, Logging, Coring

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

Drill stem test may be run as appropriate. Mud log samples will be collected every 10' from 3500' to TD. GR-CAL logs will be run from TD to surface. CMR + TCOM logs will be run from TD through the pay zone.

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

MUD LOG/GEOLOGICAL LITHOLOGY LOG,GAMMA RAY LOG,

**Coring operation description for the well:**

None

## Section 7 - Pressure

**Anticipated Bottom Hole Pressure:** 2424 **Anticipated Surface Pressure:** 1192

**Anticipated Bottom Hole Temperature(F):** 100

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

**Describe:**

**Contingency Plans geoharzards description:**

**Contingency Plans geohazards**

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

**Hydrogen sulfide drilling operations**

Rain_004_H2S_Plan_20250609114445.pdf

## Section 8 - Other Information

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

**Other proposed operations facets description:**

Centralizers will be installed as required by 43 CFR 3172. Centralizers will be set on each of the first 3 joints of surface casing and then every 3rd joint to surface. Centralizers will be set on every 4th joint of the long string through the pay zone, and elsewhere as needed.

**Other proposed operations facets attachment:**

Rain_004_Drill_Plan_20250609114503.pdf

Rain_004_WMP_20250612135007.pdf

**Other Variance request(s)?:** N

**Other Variance attachment:**

# PECOS DISTRICT
# DRILLING CONDITIONS OF APPROVAL

| | |
|---|---|
| **OPERATOR'S NAME:** | Manzanita Operating |
| **WELL NAME & NO.:** | Rainmaker Fed 4 |
| **LOCATION:** | 5-19S-31E-NMP |
| **COUNTY:** | Eddy County, New Mexico |

**Create COAs**

| $H_2S$ | Cave / Karst | Waste Prevention Rule |
|---|---|---|
| Present | Low | Waste Minimization Plan |
| **Potash** | **R-111-Q Design** | |
| None | | |
| **Wellhead** | **Casing** | |
| Conventional | 2-String Well | |
| | ☐ Liner ☐ Fluid Filled ☐ Casing Clearance | |
| ☐ Flex Hose | **Cementing** | |
| ☐ Break Testing | ☐ DV Tool ☐ Bradenhead ☐ Echometer | |
| | ☐ Offline Cement ☐ Open Annulus ☐ Pilot Hole | |
| **Special Requirements** | | |
| ☑ Capitan Reef ☐ Water Disposal ☐ COM ☐ Unit | | |

## A. HYDROGEN SULFIDE

A Hydrogen Sulfide ($H_2S$) Drilling Plan shall be activated 500 feet prior to drilling into the **Delaware** formation(s). As a result, the Hydrogen Sulfide area must meet all requirements from 43 CFR 3176, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, please provide measured values and formations to the BLM.

## B. CASING

1. The **8 5/8**-inch surface casing shall be set at approximately **860** feet (a minimum of **70 feet (Eddy County)** into the Rustler Anhydrite, above the salt, and below usable fresh water) and cemented to the surface.
    a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic-type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement



 **Approval Date: 08/29/2025**

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 (including 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 **5-1/2** inch production 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 the presence of cave/karst, or Capitan Reef features.

**C. PRESSURE CONTROL**

1. 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.

# 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)

**Contact Eddy County Petroleum Engineering Inspection Staff:**

Email or call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220; **BLM_NM_CFO_DrillingNotifications@BLM.GOV**; (575) 361-2822

1. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.
   a. In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).
   b. When the operator proposes to set surface casing with Spudder Rig
      i. Notify the BLM when moving in and removing the Spudder Rig.
      ii. Notify the BLM when moving in the 2nd Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.

iii. BOP/BOPE test to be conducted per **43 CFR 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.
3. For intervals in which cement to surface is required, cement to surface should be verified with a visual check and density or pH check to differentiate cement from spacer and drilling mud. The results should be documented in the driller's log and daily reports.

## 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-Q 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 3172**.
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:
    i. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
    ii. 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.
    iii. Manufacturer representative shall install the test plug for the initial BOP test.
    iv. Whenever any seal subject to test pressure is broken, all the tests in 43 CFR 3172.6(b)(9) must be followed.
    v. 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.

i. 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).
ii. 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.)
iii. 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 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).
iv. 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.
v. The results of the test shall be reported to the appropriate BLM office.
vi. 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.
vii. 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.
viii. 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 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.

**Approved by Zota Stevens on 7/14/2025**
575-234-5998 / zstevens@blm.gov

# Manzanita Operating, LLC
# Rainmaker Fed 4
# $H_2S$ Drilling Operations Plan

a. All personnel will be trained in $H_2S$ working conditions as required by 43 CFR 3176 before drilling out of the surface casing.

b. Two briefing areas will be established. Each will be ≥150' from the wellhead, perpendicular from one another, and easily entered and exited.

c. $H_2S$ Safety Equipment/Systems:

i. Well Control Equipment
- Flare line will be ≥150' from the wellhead and ignited by a flare gun.
- Beware of $SO_2$ created by flaring.
- Choke manifold will include a remotely operated choke.
- Mud gas separator

ii. Protective Equipment for Essential Personnel
- Every person on site will be required to wear a personal $H_2S$ and $SO_2$ monitor at all time while on site. Monitors will not be worn on hard hats. Monitors will be worn on the front of the waist or chest.
- One self-contained breathing apparatus (SCBA) 30-minute rescue pack will be at each briefing area. Two 30-minute SCBA packs will be stored in the safety trailer.
- Four work/escape packs will be on the rig floor. Each pack will have a long enough hose to allow unimpaired work activity.
- Four emergency escape packs will be in the doghouse for emergency evacuation.
- Hand signals will be used when wearing protective breathing apparatus.
- Stokes litter or stretcher
- Two full OSHA compliant body harnesses
- A 100' long x 5/8" OSHA compliant rope
- One 20-pound ABC fire extinguisher

iii. $H_2S$ Detection & Monitoring Equipment
- Every person on site will be required to wear a personal $H_2S$ and $SO_2$ monitor at all time while on site. Monitors will not be worn on hard hats. Monitors will be worn on the front of the waist or chest.
- A stationary detector with 3 sensors will be in the doghouse.

- Sensors will be installed on the rig floor, bell nipple, and at the end of the flow line or where drilling fluids are discharged.
- Visual alarm will be triggered at 10 ppm.
- Audible alarm will be triggered at 10 ppm.
- Calibration will occur at least every 30 days. Gas sample tubes will be kept in the safety trailer.

iv. Visual Warning System

- Color-coded $H_2S$ condition sign will be set at the entrance to the pad.
- Color-coded condition flag will be installed to indicate current $H_2S$ conditions.
- Two windsocks will be installed. Both will be visible from all sides.

v. Mud Program

- A water-based mud with a pH of $\geq$10 will be maintained to control corrosion, $H_2S$ gas returns to the surface, and minimize sulfide stress cracking and embrittlement.
- Drilling mud containing $H_2S$ gas will be degassed at an optimum location for the rig configuration.
- This gas will be piped into the flare system.
- Enough mud additives will be on location to scavenge and/or neutralize $H_2S$ where formation pressures are unknown.

vi. Metallurgy

- All equipment that has the potential to be exposed to $H_2S$ will be suitable for $H_2S$ service.
- Equipment that will meet these metallurgical standards include the drill string, casing, wellhead, BOP assembly, casing head and spool, rotating head, kill lines, choke, choke manifold and lines, valves, mud-gas separators, DST tools, test units, tubing, flanges, and other related equipment (elastomer packings and seals).

vii. Communication from well site

- Cell phones and/or 2-way radios will be used to communicate from the well site.

d. A remote-controlled choke, mud-gas separator, and a rotating head will be installed before drilling or testing any zone expected to hold $H_2S$.

Manzanita Operating, LLC Personnel to be Notified

| | |
|---|---|
| Scott Panthaky, Manager - Operations | Office: (432) 557-2196 |
| or | |
| Bob Fedro, Manager - Geology | Office: (432) 557-2196 |

Local & County Agencies

| | |
|---|---|
| Loco Hills Fire Department | 911 or (575) 677-2349 |
| Maljamar Fire Department | 911 or (575) 676-4100 |
| Eddy County Sheriff (Artesia) | 911 or (575) 748-2323 |
| Eddy County Emergency Management (Carlsbad) | (575) 887-9511 |
| Eddy County Emergency Management (Artesia) | (575) 746-9540 |
| Eddy County Health Services (Carlsbad) | (575) 887-9511 |
| Artesia Hospital<br>702 North 13th Street, Artesia | (575) 748-3333 |

State Agencies

| | |
|---|---|
| NM State Police (Artesia) | (575) 748-9718 |
| NM Oil Conservation (Artesia) | (575) 748-1283 |
| NM Oil Conservation (Santa Fe) | (505) 476-3440 |
| NM Dept. of Transportation (Roswell) | (575) 637-7201 |

Federal Agencies

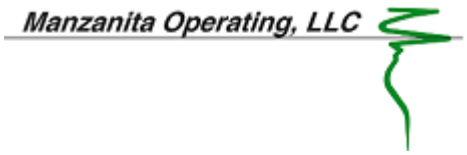
| | |
|---|---|
| BLM Carlsbad Field Office | (575) 234-5972 |
| National Response Center | (800) 424-8802 |
| US EPA Region 6 (Dallas) | (800) 887-6063 |
| | or (214) 665-6444 |

Other Contacts

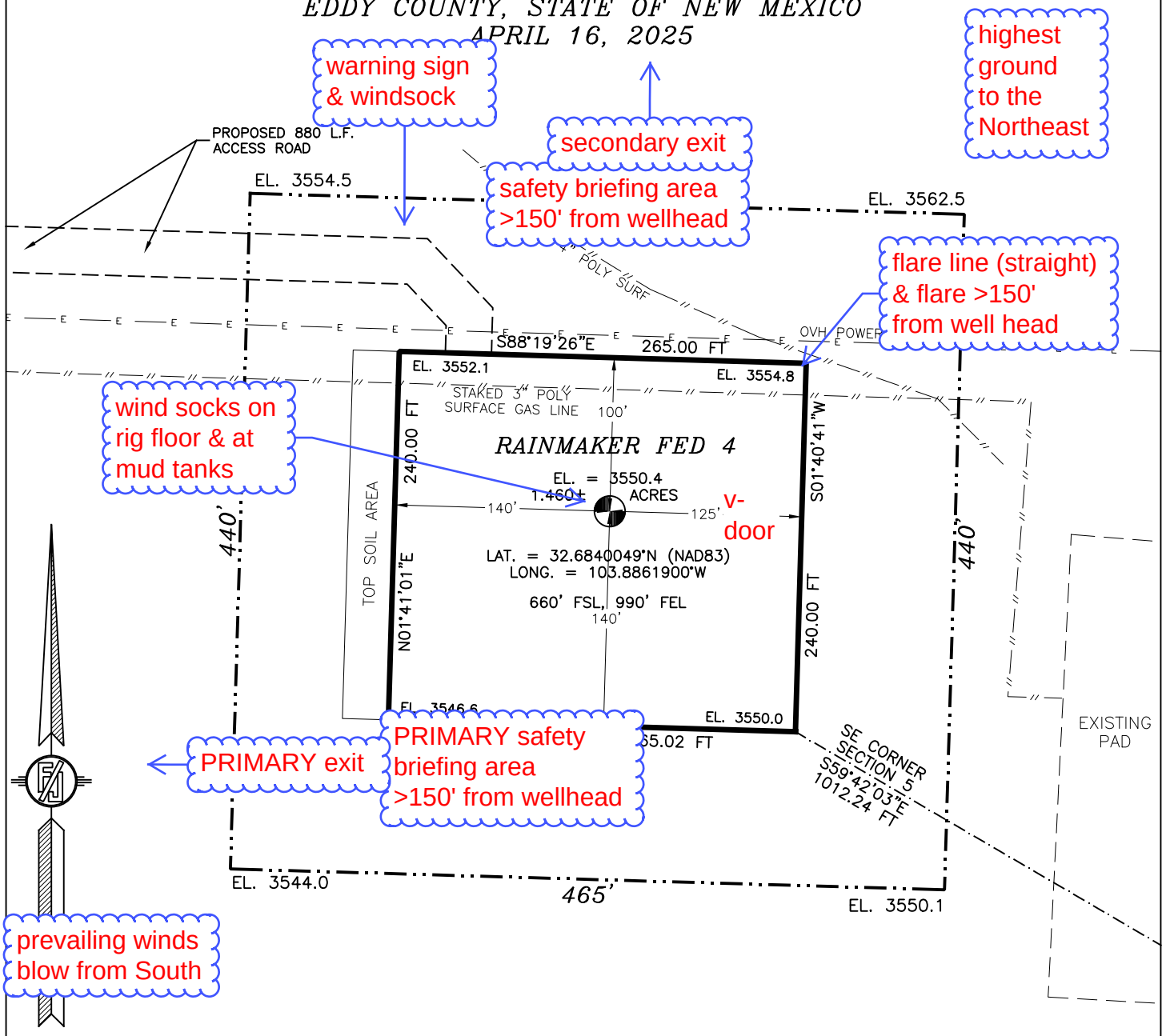
| | | |
|---|---|---|
| Veterinarian | Artesia Animal Clinic | (575) 748-2042 |

Residents within 2 miles

No homes are within 2 miles.



# RAINMAKER FED 4
# MANZANITA OPERATING, LLC
## IN THE W/2 SE/4 SE/4 OF
## SECTION 5, TOWNSHIP 19 SOUTH, RANGE 31 EAST, N.M.P.M.
## EDDY COUNTY, STATE OF NEW MEXICO
## APRIL 16, 2025




010 50 100 200
SCALE 1" = 100'

SEE NEXT SHEET (2-7) FOR DESCRIPTION

***GENERAL NOTES***

1.) THE INTENT OF THIS SURVEY IS TO ACQUIRE A BUSINESS LEASE FOR THE PURPOSE OF BUILDING A WELL PAD

2.) BASIS OF BEARING IS NEW MEXICO STATE PLANE EAST ZONE MODIFIED TO THE SURFACE (NAD83), COORDINATES ARE NAD 83, ELEVATIONS ARE NAVD 88

***DRIVING DIRECTIONS***: FROM THE INTERSECTION OF SHUGART RD. (CR. 222) AND WESTALL RD. (CR. 249), GO NORTH ON SHUGART RD. ABOUT 200' OVER A CATTLE GUARD, TURN LEFT AT CALICHE LEASE ROAD GO WEST (OVER CATTLE GUARD) ABOUT 0.63 MILES, TURN LEFT ON CALICHE ROAD GO SOUTH ABOUT 0.47 MILES TO BEGIN ROAD SURVEY (P.I. IN ROAD), FOLLOW ROAD SURVEY APPROX. SOUTHWEST 215', THEN SOUTH APPROX. 600', THEN SOUTHEAST AND EAST APPROX. 880' TO THE NORTHWEST PAD CORNER FOR THIS LOCATION.

***SURVEYOR CERTIFICATE***

I, FILIMON F. JARAMILLO, A NEW MEXICO PROFESSIONAL SURVEYOR NO. 12797, HEREBY CERTIFY THAT I HAVE CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR LAND SURVEYING IN THE STATE OF NEW MEXICO.

IN WITNESS WHEREOF, THIS CERTIFICATE IS EXECUTED AT CARLSBAD, NEW MEXICO, THIS 23 DAY OF APRIL 2025

FILIMON F. JARAMILLO PLS 12797

MADRON SURVEYING, INC.
301 SOUTH CANAL
CARLSBAD, NEW MEXICO 88220
Phone (575) 234-3327

SURVEY NO. 10412

MADRON SURVEYING, INC. CARLSBAD, NEW MEXICO

# Manzanita Operating, LLC

**Rainmaker Fed 4**
**H2S 2 mile radius map**

Section 5, T. 19S, R. 31E
Eddy County, New Mexico

Well Pad

1:27,000

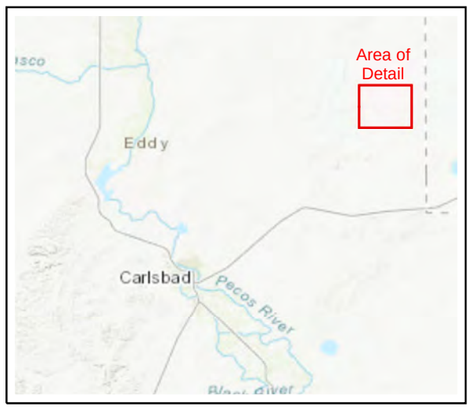
0 2,000 4,000
Feet

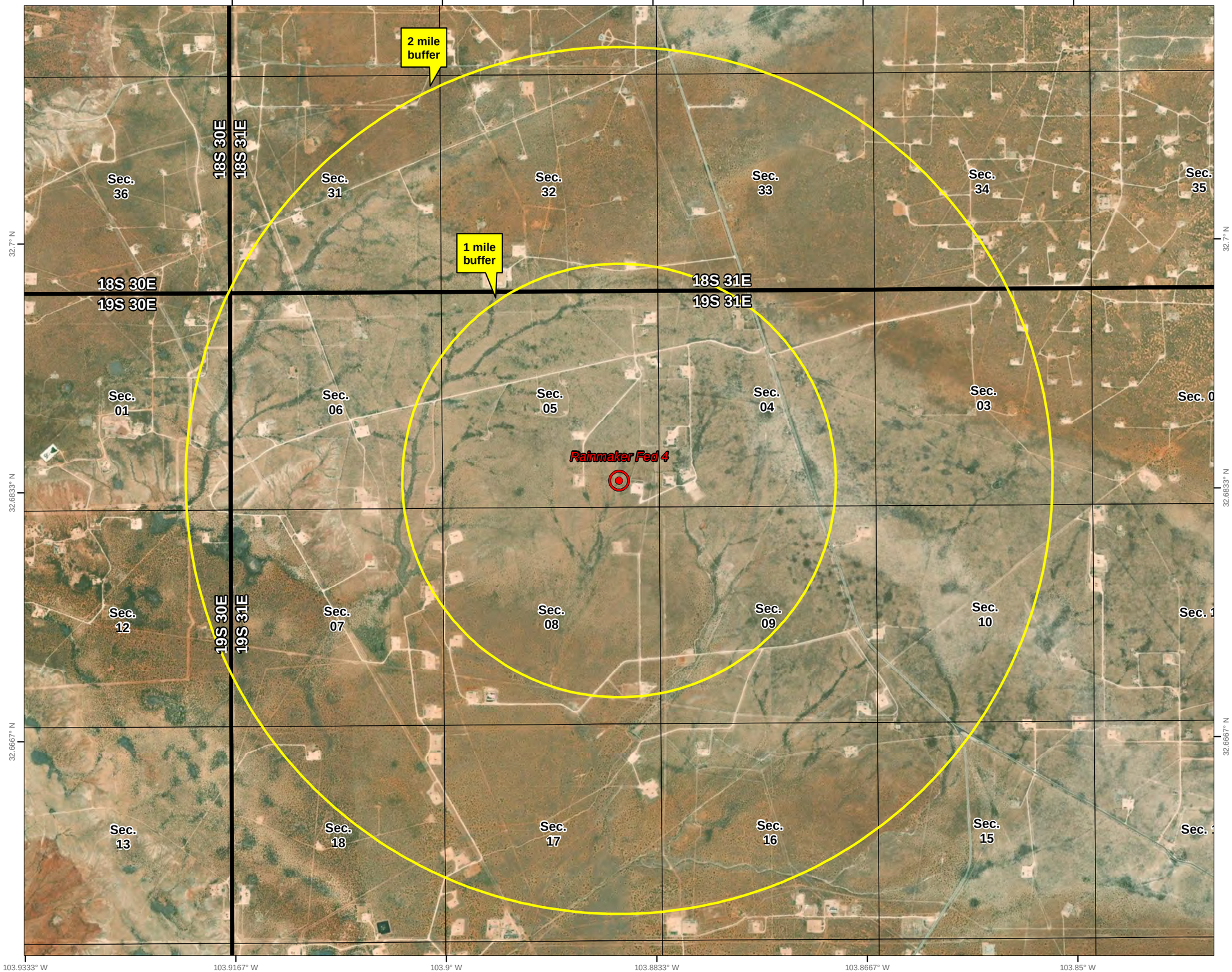
N

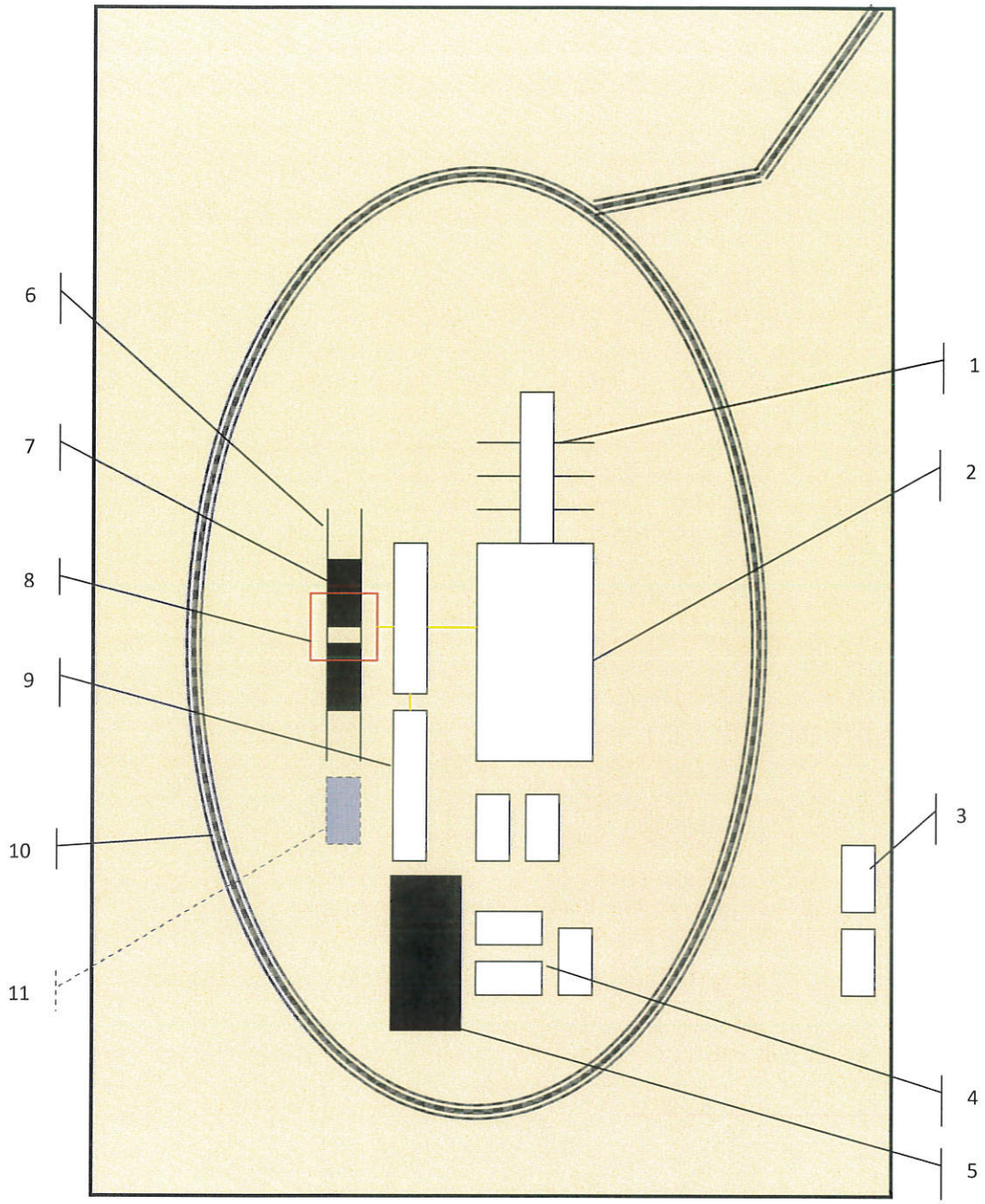
NAD 1983 New Mexico State Plane East
FIPS 3001 Feet

PERMITS WEST

Prepared by Permits West, Inc., June 5, 2025
for Manzanita Operating, LLC






**Schematic Closed Loop Drilling Rig***

1. Pipe Rack
2. Drill Rig
3. House Trailers/ Offices
4. Generator/Fuel/Storage
5. Overflow-Frac Tank
6. Skids
7. Roll Offs
8. Hopper or Centrifuge
9. Mud Tanks
10. Loop Drive
11. Generator (only for use with centrifuge)

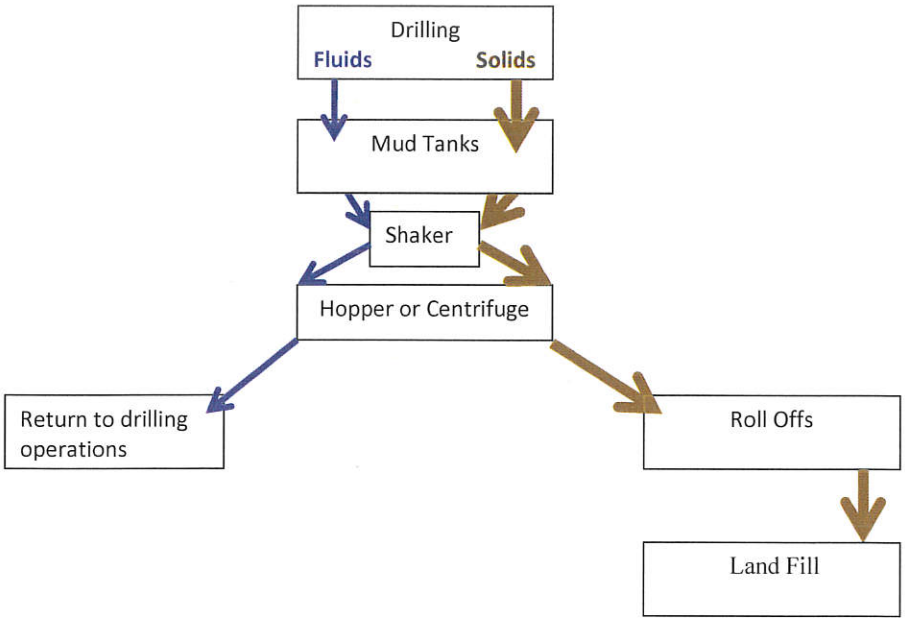
*Not drawn to scale: Closed loop system requires at least 30 feet beyond mud tanks. Ideally 60 feet would be available

Above: Centrifugal Closed Loop System

PERMITS WEST, INC.
PROVIDING PERMITS for LAND USERS
37Verano Loop, Santa Fe, New Mexico 87508 (505) 466-8120


**Closed Loop Drilling System:** **Mud tanks to right (1)**
**Hopper in air to settle out solids (2)**
**Water return pipe (3)**
**Shaker between hopper and mud tanks (4)**
**Roll offs on skids (5)**

## Flow Chart for Drilling Fluids and Solids




**Photos Courtesy of Gandy Corporation Oil Field Service**

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

General Information
Phone: (505) 629-6116

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

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



## ACKNOWLEDGMENTS

| | |
|---|---|
| Operator:<br>Manzanita Operating, LLC<br>PO Box 3489<br>Midland, TX 79705 | OGRID:<br>330289 |
| | Action Number:<br>500800 |
| | Action Type:<br>[C-101] BLM - Federal/Indian Land Lease (Form 3160-3) |

**ACKNOWLEDGMENTS**

| | |
|---|---|
| ☑ | I hereby certify that no additives containing PFAS chemicals will be added to the completion or recompletion of this well. |

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

General Information
Phone: (505) 629-6116

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

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



## CONDITIONS

| | |
|---|---|
| Operator:<br>Manzanita Operating, LLC<br>PO Box 3489<br>Midland, TX 79705 | OGRID:<br>330289 |
| | Action Number:<br>500800 |
| | Action Type:<br>[C-101] BLM - Federal/Indian Land Lease (Form 3160-3) |

**CONDITIONS**

| Created By | Condition | Condition Date |
|---|---|---|
| bwood | Cement is required to circulate on both surface and intermediate1 strings of casing. | 8/30/2025 |
| bwood | If cement does not circulate on any string, a Cement Bond Log (CBL) is required for that string of casing. | 8/30/2025 |
| ward.rikala | Notify the OCD 24 hours prior to casing & cement. | 9/17/2025 |
| ward.rikala | File As Drilled C-102 and a directional Survey with C-104 completion packet. | 9/17/2025 |
| ward.rikala | Once the well is spud, to prevent ground water contamination through whole or partial conduits from the surface, the operator shall drill without interruption through the fresh water zone or zones and shall immediately set in cement the water protection string. | 9/17/2025 |
| ward.rikala | Oil base muds are not to be used until fresh water zones are cased and cemented providing isolation from the oil or diesel. This includes synthetic oils. Oil based mud, drilling fluids and solids must be contained in a steel closed loop system. | 9/17/2025 |
| ward.rikala | If the Capitan Reef is encounter while drilling, drilling shall immediately cease and a casing string shall be sat immediately on top of the Capitan Reef and cemented back to surface. Operator shall then drill through the Capitan Reef with fresh water and then casing be sat and cemented back to surface at the base of the Capitan Reef. | 9/17/2025 |