AFMSS

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

Application for Permit to Drill

APD Package Report

Date Printed: 06/19/2024 03:29 PM

APD ID:	10400097086	Well Status:	AAPD
APD Received Date:	02/14/2024 02:09 PM	Well Name:	SANTA MARIA 31/36 FED C(
Operator:	MEWBOURNE OIL COMPANY	Well Number:	628H

APD Package Report Contents

- Form 3160-3

- Operator Certification Report

- Application Report
- Application Attachments
  -- Well Plat: 2 file(s)

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

- SUPO Report
- SUPO Attachments
  -- Existing Road Map: 1 file(s)
  -- Attach Well map: 1 file(s)
  -- Production Facilities map: 1 file(s)
  -- Water source and transportation map: 1 file(s)
  -- Construction Materials source location attachment: 1 file(s)
  -- Well Site Layout Diagram: 1 file(s)
  -- Other SUPO Attachment: 2 file(s)

- PWD Report
- PWD Attachments
  -- None

- Bond Report

- Bond Attachments
  -- None

Form 3160-3
(June 2015)

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.: NMNM19431

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.: SANTA MARIA 31/36 FED COM 628H

2. Name of Operator: MEWBOURNE OIL COMPANY

9. API Well No.: 30-015-55214

3a. Address: P O BOX 5270, HOBBS, NM 88241

3b. Phone No. *(include area code)*: (575) 393-5905

10. Field and Pool, or Exploratory: AVALON EAST/LOWER BONE SPRING

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

At surface: SWNW / 2495 FNL / 800 FWL / LAT 32.5304973 / LONG -104.3095761

At proposed prod. zone: SWSW / 660 FSL / 100 FWL / LAT 32.5244144 / LONG -104.3460111

11. Sec., T. R. M. or Blk. and Survey or Area: SEC 32/T20S/R27E/NMP

14. Distance in miles and direction from nearest town or post office*: 9 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): 100 feet

16. No of acres in lease:

17. Spacing Unit dedicated to this well: 320.0

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.: 20 feet

19. Proposed Depth: 7597 feet / 19145 feet

20. BLM/BIA Bond No. in file: FED: NM1693

21. Elevations (Show whether DF, KDB, RT, GL, etc.): 3226 feet

22. Approximate date work will start*: 04/13/2024

23. Estimated duration: 60 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	Name *(Printed/Typed)*	Date
(Electronic Submission)	BRADLEY BISHOP / Ph: (575) 393-5905	02/14/2024

Title: Regulatory

Approved by *(Signature)*	Name *(Printed/Typed)*	Date
(Electronic Submission)	CODY LAYTON / Ph: (575) 234-5959	06/14/2024

Title	Office
Assistant Field Manager Lands & Minerals	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: 06/14/2024

INSTRUCTIONS

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

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

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

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

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

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

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

NOTICES

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

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

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

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

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

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

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

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

(Continued on page 3)

Additional Operator Remarks

Location of Well

0. SHL: SWNW / 2495 FNL / 800 FWL / TWSP: 20S / RANGE: 27E / SECTION: 32 / LAT: 32.5304973 / LONG: -104.3095761 (TVD: 0 feet, MD: 0 feet)

PPP: SWSE / 660 FSL / 1320 FEL / TWSP: 20S / RANGE: 27E / SECTION: 31 / LAT: 32.5244124 / LONG: -104.316318 (TVD: 7948 feet, MD: 9987 feet)

PPP: SESE / 660 FSL / 100 FEL / TWSP: 20S / RANGE: 27E / SECTION: 31 / LAT: 32.5244115 / LONG: -104.3123587 (TVD: 7994 feet, MD: 8765 feet)

BHL: SWSW / 660 FSL / 100 FWL / TWSP: 20S / RANGE: 26E / SECTION: 36 / LAT: 32.5244144 / LONG: -104.3460111 (TVD: 7597 feet, MD: 19145 feet)

BLM Point of Contact

Name: PAMELLA HERNANDEZ
Title: LIE
Phone: (575) 234-5954
Email: PHERNANDEZ@BLM.GOV

Review and Appeal Rights

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

PECOS DISTRICT
SURFACE USE
CONDITIONS OF APPROVAL

Mewbourne Oil Co.

Lease Number NMNM0400512
Eddy County, N.M.

SANTA MARIA 31/36/ FED COM 626H
Surface Hole Location: 2475' FNL & 800' FWL, Section 32, T. 20 S., R. 27 E.
Bottom Hole Location: 1980' FSL & 100' FWL, Section 36, T. 20 S, R 26 E.

SANTA MARIA 31/36/ FED COM 628H
Surface Hole Location: 2495' FNL & 800' FWL, Section 32, T. 20 S., R. 27 E.
Bottom Hole Location: 660' FSL & 100' FWL, Section 36, T. 20 S, R 26 E.

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

 Approval Date: 06/14/2024

I. GENERAL PROVISIONS

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

II. PERMIT EXPIRATION

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

III. ARCHAEOLOGICAL, PALEONTOLOGY & HISTORICAL SITES

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

IV. NOXIOUS WEEDS

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

V. SPECIAL REQUIREMENT(S)

Watershed:

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

TANK BATTERY:

Tank battery locations will be lined and bermed. A 20 mil permanent liner will be installed with a 4 oz. felt backing to prevent tears or punctures. Tank battery berms must be large enough to contain 1 ½ times the content of the largest tank or 24 hour production, whichever is greater. Automatic shut off, check valves, or similar systems will be installed for tanks to minimize the effects of catastrophic line failures used in production or drilling.

Cave/Karst:

Construction Mitigation

In order to mitigate the impacts from construction activities on cave and karst resources, the following Conditions of Approval will apply to this APD or project:

General Construction:

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

Pad Construction:

- The pad will be constructed and leveled by adding the necessary fill and caliche – no blasting.
- The entire perimeter of the well pad will be bermed to prevent oil, salt, and other chemical contaminants from leaving the well pad.
- The compacted berm shall be constructed at a minimum of 12 inches high with impermeable mineral material (e.g., caliche).
- No water flow from the uphill side(s) of the pad shall be allowed to enter the well pad.
- The topsoil stockpile shall be located outside the bermed well pad.
- Topsoil, either from the well pad or surrounding area, shall not be used to construct the berm.
- No storm drains, tubing or openings shall be placed in the berm.
- If fluid collects within the bermed area, the fluid must be vacuumed into a safe container and disposed of properly at a state approved facility.
- The integrity of the berm shall be maintained around the surfaced pad throughout the life of the well and around the downsized pad after interim reclamation has been completed.
- Any access road entering the well pad shall be constructed so that the integrity of the berm height surrounding the well pad is not compromised (i.e. an access road crossing the berm cannot be lower than the berm height).
- Following a rain event, all fluids will vacuumed off of the pad and hauled off-site and disposed at a proper disposal facility.

Road Construction:

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

Buried Pipeline/Cable Construction:

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

Powerline Construction:

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

Surface Flowlines Installation:

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

Drilling Mitigation

Federal regulations and standard Conditions of Approval applied to all APDs require that adequate measures are taken to prevent contamination to the environment. Due to the extreme sensitivity of the cave and karst resources in this project area, the following additional Conditions of Approval will be added to this APD.

To prevent cave and karst resource contamination the following will be required:

- Closed loop system using steel tanks - all fluids and cuttings will be hauled off-site and disposed of properly at an authorized site
- Rotary drilling with fresh water where cave or karst features are expected to prevent contamination of freshwater aquifers.
- Directional drilling is only allowed at depths greater than 100 feet below the cave occurrence zone to prevent additional impacts resulting from directional drilling.
- Lost circulation zones will be logged and reported in the drilling report so BLM can assess the situation and work with the operator on corrective actions.
- Additional drilling, casing, and cementing procedures to protect cave zones and fresh water aquifers. See drilling COAs.

Production Mitigation

In order to mitigate the impacts from production activities and due to the nature of karst terrane, the following Conditions of Approval will apply to this APD:

- Tank battery locations and facilities will be bermed and lined with a 20 mil thick permanent liner that has a 4 oz. felt backing, or equivalent, to prevent tears or punctures. Tank battery berms must be large enough to contain 1 ½ times the content of the largest tank.
- Development and implementation of a leak detection system to provide an early alert to operators when a leak has occurred.
- Automatic shut off, check values, or similar systems will be installed for pipelines and tanks to minimize the effects of catastrophic line failures used in production or drilling.

Residual and Cumulative Mitigation

The operator will perform annual pressure monitoring on all casing annuli and reported in a sundry notice. If the test results indicated a casing failure has occurred, remedial action will be taken to correct the problem to the BLM's approval.

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

VI. CONSTRUCTION

A. NOTIFICATION

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

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

B. TOPSOIL

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

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

C. CLOSED LOOP SYSTEM

Tanks are required for drilling operations: No Pits.

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

D. FEDERAL MINERAL MATERIALS PIT

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

E. WELL PAD SURFACING

Surfacing of the well pad is not required.

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

F. EXCLOSURE FENCING (CELLARS & PITS)

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

G. ON LEASE ACCESS ROADS

Road Width
The access road shall have a driving surface that creates the smallest possible surface disturbance and does not exceed fourteen (14) feet in width. The maximum width of surface disturbance, when constructing the access road, shall not exceed twenty-five (25) feet.

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

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

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

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

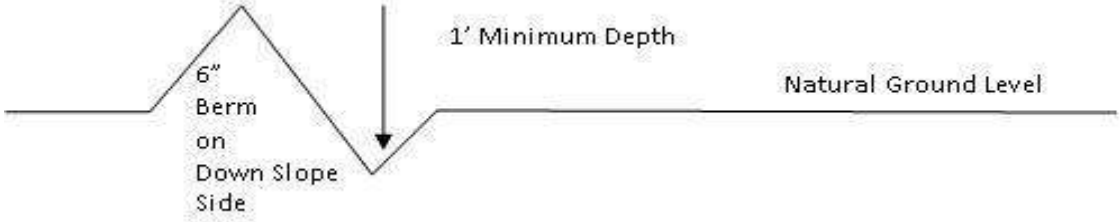
Ditching
Ditching shall be required on both sides of the road.

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

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

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

Cross Section of a Typical Lead-off Ditch



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

Formula for Spacing Interval of Lead-off Ditches

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

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

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

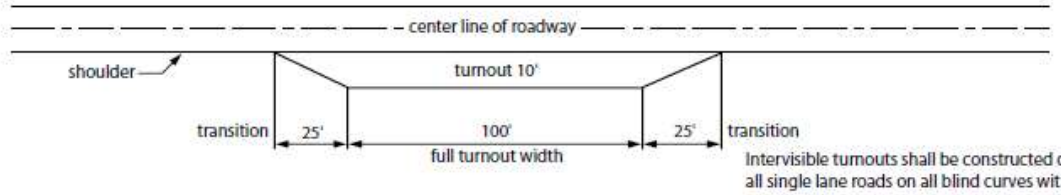
Fence Requirement
Where entry is granted across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting. The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fences.

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

 Approval Date: 06/14/2024

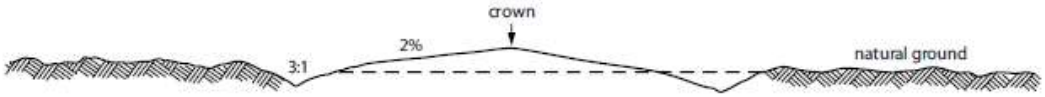
Construction Steps

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

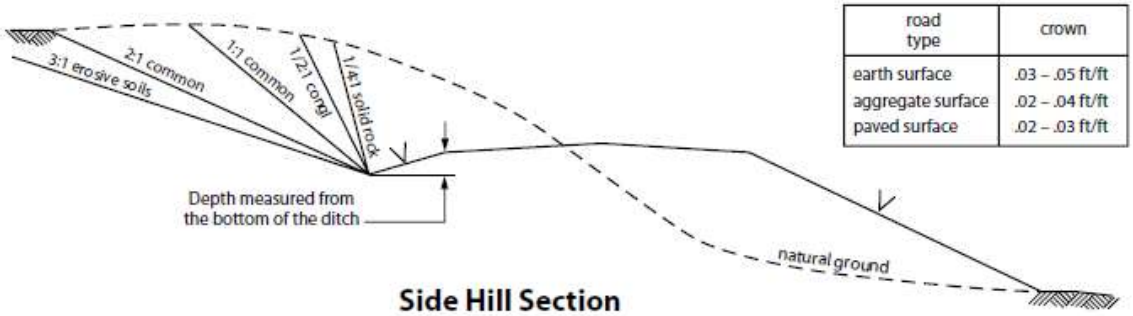


Intervisible turnouts shall be constructed on all single lane roads on all blind curves with additional turnouts as needed to keep spacing below 1000 feet.

Typical Turnout Plan

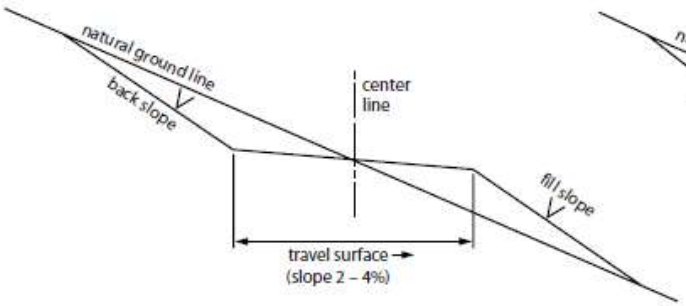


Level Ground Section

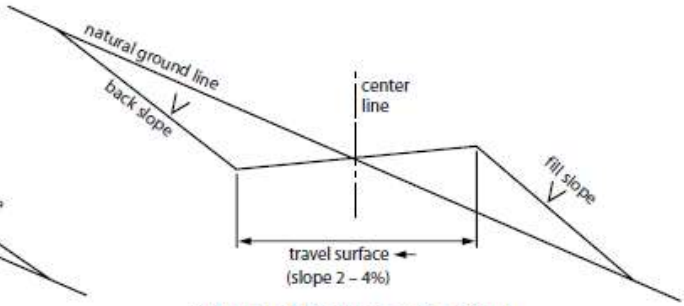


road type	crown
earth surface	.03 – .05 ft/ft
aggregate surface	.02 – .04 ft/ft
paved surface	.02 – .03 ft/ft

Side Hill Section



Typical Outsloped Section



Typical Inslope Section

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

Approval Date: 06/14/2024

VII. PRODUCTION (POST DRILLING)

A. WELL STRUCTURES & FACILITIES

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

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

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

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

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

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

VIII. INTERIM RECLAMATION

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

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

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

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

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

IX. FINAL ABANDONMENT & RECLAMATION

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

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

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

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

Ground-level Abandoned Well Marker to avoid raptor perching: Upon the plugging and subsequent abandonment of the well, the well marker will be installed at ground level on a plate containing the pertinent information for the plugged well.

Seed Mixture 1 for Loamy Sites

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

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

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

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

*Pounds of pure live seed:

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

Mewbourne Oil Company, Santa Maria 31/36 Fed Com 628H
Sec 32, T20S, R27E
SHL: 2495' FNL 800' FWL (Sec 32)
BHL: 660' FSL 100' FWL (Sec 36)

Casing Program Design A						BLM Minimum Safety Factors	1.125	1.0	1.6 Dry 1.8 Wet	1.6 Dry 1.8 Wet
String	Hole Size	Top MD	Top TVD	Bot MD	Bot TVD	Csg. Size	SF Collapse	SF Burst	SF Jt Tension	SF Body Tension
surface	26'	0'	0'	350'	350'	20" 94# J55 BTC	3.40	13.80	42.61	44.98
Int 1	17.5'	0'	0'	1200'	1200'	13.375" 48# H40 STC	1.37	3.08	5.59	9.39
Int 2	12.25'	0'	0'	2300'	2300'	9.625" 36# J55 LTC	1.88	3.27	5.47	6.81
Production	8.75'	0'	0'	7865'	7421'	7" 26# N-80 LTC	1.32	1.77	2.54	2.95
Liner	6.125'	7665'	7599'	19145'	7597'	4.5" 13.5# P110 LTC	1.55	1.81	2.18	2.72

Cement Program

Casing		# Sacks	Wt. lb/gal	Yield ft^3/sack	TOC/BOC	Volume ft^3	% Excess	Slurry Description
20.000 in	LEAD	380	12.5	2.12	0' - 261'	810	100%	Class C: Salt, Gel, Extender, LCM
	TAIL	200	14.8	1.34	261' - 350'	268		Class C: Retarder
13.375 in	LEAD	460	12.5	2.12	0' - 942'	980	50%	Class C: Salt, Gel, Extender, LCM
	TAIL	200	14.8	1.34	942' - 1200'	268		Class C: Retarder
1st Stg 9.625 in	LEAD	70	12.5	2.12	1255' - 1630'	150	25%	Class C: Salt, Gel, Extender, LCM
	TAIL	200	14.8	1.34	1630' - 2300'	268		Class C: Retarder
9 5/8" DV Tool @ 1255'								
2nd Stg 9.625 in	LEAD	170	12.5	2.12	0' - 921'	370	25%	Class C: Salt, Gel, Extender, LCM
	TAIL	100	14.8	1.34	921' - 1255'	980		Class C: Retarder
1st Stg 7 in	LEAD	50	12.5	2.12	6200' - 6515'	110	25%	Class C: Salt, Gel, Extender, LCM, Defoamer
	TAIL	400	15.6	1.18	6515' - 7864.9'	472		Class H: Retarder, Fluid Loss, Defoamer
7" DV Tool @ 6200'								
2nd Stg 7 in	LEAD	370	12.5	2.12	1230' - 5479'	790	25%	Class C: Salt, Gel, Extender, LCM, Defoamer
	TAIL	100	14.8	1.34	5479' - 6200'	134		Class C: Retarder, Fluid Loss, Defoamer
4.5 in	LEAD	730	13.5	1.85	7664.9' - 19144.8'	1360	25%	Class H: Salt, Gel, Fluid Loss, Retarder, Dispersant, Defoamer, Anti-

Design A - Mud Program

Depth	Mud Wt	Mud Type
0' - 350'	8.4	Fresh Water
350' - 1200'	9	Brine
1200' - 2300'	9	Fresh Water
2300' - 7864.9'	10	Cut-Brine
7864.9' - 19144.8'	11.5	OBM

Geology

Formation	Est. Top (TVD)	Mineral Resources	Formation	Est. Top (TVD)	Mineral Resources
Rustler			Yeso		
Castile			Delaware (Lamar)	2270'	Oil/Natural Gas
Salt Top			Bell Canyon		
Salt Base			Cherry Canyon		
Yates	380'	Oil/Natural Gas	Manzanita Marker		
Seven Rivers			Basal Brushy Canyon		
Queen			Bone Spring	3698'	Oil/Natural Gas
Capitan	1280'	Usable Water	1st Bone Spring	5609'	Oil/Natural Gas
Grayburg			2nd Bone Spring	6296'	Oil/Natural Gas
San Andres			3rd Bone Spring	7618'	Oil/Natural Gas
Glorieta			Wolfcamp	7973'	Oil/Natural Gas

All casing strings will be tested in accordance with 43 CFR Part 3170 Subpart 3172. Must have table for contingency casing.

	Y or N
Is casing new? If used, attach certification as required in Onshore Order #1	Y
Is casing API approved? 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 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?	Y
If yes, does production casing cement tie back a minimum of 50' above the Reef?	Y
Is well within the designated 4 string boundary.	Y
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?	
Is well located in R-111-P and SOPA?	N
If yes, are the first three strings cemented to surface?	
Is 2nd string set 100' to 600' below the base of salt?	
Is an open annulus used to satisfy R-111-Q? If yes, see cement design.	
Is an engineered weak point used to satisfy R-111-Q?	
If yes, at what depth is the weak point planned?	
Is well located in high Cave/Karst?	Y
If yes, are there two strings cemented to surface?	Y
(For 2 string wells) If yes, is there a contingency casing if lost circulation occurs?	
Is well located in critical Cave/Karst?	N
If yes, are there three strings cemented to surface?	

Approval Date: 06/14/2024

Mewbourne Oil Company, Santa Maria 31/36 Fed Com 628H
Sec 32, T20S, R27E
SHL: 2495' FNL 800' FWL (Sec 32)
BHL: 660' FSL 100' FWL (Sec 36)

Casing Program Design B						BLM Minimum Safety Factors	1.125	1.0	1.6 Drv 1.8 Wet	1.6 Drv 1.8 Wet
String	Hole Size	Top MD	Top TVD	Bot MD	Bot TVD	Csg. Size	SF Collapse	SF Burst	SF Jt Tension	SF Body Tension
surface	26'	0'	0'	350'	350'	20" 94# J55 BTC	3.40	13.80	42.61	44.98
Int 1	17.5'	0'	0'	1200'	1200'	13.375" 48# H40 STC	1.37	3.08	5.59	9.39
Int 2	12.25'	0'	0'	2300'	2300'	9.625" 36# J55 LTC	1.88	3.27	5.47	6.81
Production	8.75'	0'	0'	8765'	7994'	7" 26# HCP110 LTC	1.71	2.18	3.04	3.64
Liner	6.125'	7865'	7421'	19145'	7994'	4.5" 13.5# P110 LTC	1.58	1.84	2.22	2.77

Design B - Cement Program

Casing		# Sacks	Wt. lb/gal	Yield cu.ft/sack	TOC	Slurry Description		
20.000 in	LEAD	380	12.5	2.12	0' - 261'	810	100%	Class C: Salt, Gel, Extender, LCM
	TAIL	200	14.8	1.34	261' - 350'	268		Class C: Retarder
13.375 in	LEAD	460	12.5	2.12	0' - 942'	980	50%	Class C: Salt, Gel, Extender, LCM
	TAIL	200	14.8	1.34	942' - 1200'	268		Class C: Retarder
1st Stg 9.625 in	LEAD	70	12.5	2.12	1255' - 1630'	150	25%	Class C: Salt, Gel, Extender, LCM
	TAIL	200	14.8	1.34	1630' - 2300'	268		Class C: Retarder
9 5/8" DV Tool @ 1255'								
2nd Stg 9.625 in	LEAD	170	12.5	2.12	0' - 921'	370	25%	Class C: Salt, Gel, Extender, LCM
	TAIL	100	14.8	1.34	921' - 1255'	0		Class C: Retarder
1st Stg 7 in	LEAD	50	12.5	2.12	6200' - 6685'	110	25%	Class C: Salt, Gel, Extender, LCM, Defoamer
	TAIL	400	15.6	1.18	6685' - 8765.3'	472		Class H: Retarder, Fluid Loss, Defoamer
7" DV Tool @ 6200'								
2nd Stg 7 in	LEAD	370	12.5	2.12	1230' - 5479'	790	25%	Class C: Salt, Gel, Extender, LCM, Defoamer
	TAIL	100	14.8	1.34	5479' - 6200'	134		Class C: Retarder, Fluid Loss, Defoamer

Design B - Mud Program

Depth	Mud Wt	Mud Type
0' - 350'	8.4	Fresh Water
350' - 1200'	9	Brine
1200' - 2300'	9	Fresh Water
2300' - 8765.3'	10	Cut-Brine
8765.3' - 19144.8'	11.5	OBM

Geology

Formation	Est. Top (TVD)	Mineral Resources	Formation	Est. Top (TVD)	Mineral Resources
Rustler			Yeso		
Castile			Delaware (Lamar)	2270'	Oil/Natural Gas
Salt Top			Bell Canyon		
Salt Base			Cherry Canyon		
Yates	380'	Oil/Natural Gas	Manzanita Marker		
Seven Rivers			Basal Brushy Canyon		
Queen			Bone Spring	3698'	Oil/Natural Gas
Capitan	1280'	Usable Water	1st Bone Spring	5609'	Oil/Natural Gas
Grayburg			2nd Bone Spring	6296'	Oil/Natural Gas
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Glorieta			Wolfcamp	7973'	Oil/Natural Gas

All casing strings will be tested in accordance with 43 CFR Part 3170 Subpart 3172. Must have table for contingency casing.

	Y or N
Is casing new? If used, attach certification as required in Onshore Order #1	Y
Is casing API approved? 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 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?	Y
If yes, does production casing cement tie back a minimum of 50' above the Reef?	Y
Is well within the designated 4 string boundary.	Y
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?	
Is well located in R-111-P and SOPA?	N
If yes, are the first three strings cemented to surface?	
Is 2nd string set 100' to 600' below the base of salt?	
Is an open annulus used to satisfy R-111-Q? If yes, see cement design.	
Is an engineered weak point used to satisfy R-111-Q?	
If yes, at what depth is the weak point planned?	
Is well located in high Cave/Karst?	Y
If yes, are there two strings cemented to surface?	Y
(For 2 string wells) If yes, is there a contingency casing if lost circulation occurs?	
Is well located in critical Cave/Karst?	N
If yes, are there three strings cemented to surface?	

Approval Date: 06/14/2024

PECOS DISTRICT
DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	MEWBOURNE OIL COMPANY
WELL NAME & NO.:	SANTA MARIA 31/36 FED COM 628H
APD ID:	10400097086
SURFACE HOLE FOOTAGE:	2495'/N & 800'/W
BOTTOM HOLE FOOTAGE	660'/S & 100'/W
SURFACE LOCATION:	Section 32, T.20 S., R.27 E. NMP.
COUNTY:	Eddy County, New Mexico

COA

H_2S	◉ Yes	○ No	
Potash	◉ None	○ Secretary	○ R-111-Q
Cave/Karst Potential	○ Low	○ Medium	◉ High
Cave/Karst Potential	○ Critical		
Variance	○ None	◉ Flex Hose	○ Other
Wellhead	○ Conventional	◉ Multibowl	○ Both
Other	☑ 4 String	☑ Capitan Reef	☐ WIPP
Other	☐ Fluid Filled	☐ Pilot Hole	☐ Open Annulus
Other Variances	☑ Offline cementing	☐ Squeeze cement	☑ Break testing
Special Requirements	☐ Water Disposal	☑ COM	☐ Unit

A. HYDROGEN SULFIDE

A Hydrogen Sulfide (H_2S) Drilling Plan shall be activated **AT SPUD**. As a result, the Hydrogen Sulfide area must meet **43 CFR 3176** requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, please provide measured values and formations to the BLM.

B. CASING DESIGN

Primary Casing Program

1. The **20** inch surface casing shall be set at approximately **350 ft.** (a minimum of 70 feet (Eddy County) into the Rustler Anhydrite and above the salt) and cemented to the surface. **If salt is encountered set casing at least 25 ft. above the salt.**
    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

 Approval Date: 06/14/2024

completing the cement job.

b. Wait on cement (WOC) time for a primary cement job will be a minimum of **8 hours** or **500 psi 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 psi compressive strength, whichever is greater.
d. If cement falls back, remedial cementing will be done prior to drilling out that string.

2. The **13-3/8** inch 1st intermediate casing shall be set at approximately **1,200 ft.** in Queen formation and above Capitan reef. The minimum required fill of cement behind the **13-3/8** inch intermediate casing is:

Option 1 (Single Stage): 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 and Capitan reef**.

Option 2 (Two-stage): Operator has proposed a DV tool, the depth may be adjusted as long as the cement is changed proportionally. The DV tool may be cancelled if cement circulates to surface on the first stage.

a. First stage to DV tool: Cement to circulate. If cement does not circulate off the DV tool, contact the appropriate BLM office before proceeding with second stage cement job.
b. Second stage above DV tool: **Cement to surface.** If cement does not circulate, contact the appropriate BLM office. Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to **Cave/Karst and Capitan reef**.

❖ In Capitan Reef Areas if cement does not circulate to surface on the first two casing strings, the cement on the 3rd casing string must come to surface.

❖ 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.

❖ **Special Capitan Reef requirements.** If lost circulation (50% or greater) occurs below the Base of the Salt, the operator shall do the following:
(Use this for 3 string wells in the Capitan Reef, if 4 string well ensure FW based mud used across the capitan interval)

- Switch to freshwater mud to protect the Capitan Reef and use freshwater mud until setting the intermediate casing. The appropriate BLM office is to be notified for a PET to witness the switch to fresh water.

- Daily drilling reports from the Base of the Salt to the setting of the intermediate casing are to be submitted to the BLM CFO engineering staff via e-mail by

0800 hours each morning. Any lost circulation encountered is to be recorded on these drilling reports. The daily drilling report should show mud volume per shift/tour. Failure to submit these reports will result in an Incidence of Non-Compliance being issued for failure to comply with the Conditions of Approval. If not already planned, the operator shall run a caliper survey for the intermediate well bore and submit to the appropriate BLM office.

3. The **9-5/8** inch 2nd intermediate casing shall be set at approximately **2,300 ft.** in the base of Capitan reef or Lamar. The minimum required fill of cement behind the **9-5/8** inch intermediate casing is:

   Option 1 (Single Stage): Cement should tie-back **at least 200 feet** into previous casing string or 50 ft. above Capitan reef top, whichever is greater. 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 and Capitan reef**.

   Option 2 (Two-stage): Operator has proposed a DV tool, the depth may be adjusted as long as the cement is changed proportionally. The DV tool may be cancelled if cement circulates to surface on the first stage.
   a. **First stage to DV tool:** Cement to circulate. If cement does not circulate off the DV tool, contact the appropriate BLM office before proceeding with second stage cement job.
   b. **Second stage above DV tool:** Cement should tie-back **at least 200 feet** into previous casing string or 50 ft. above Capitan reef top, whichever is greater. Operator shall provide method of verification. If cement does not circulate, contact the appropriate BLM office. Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to **Cave/Karst and Capitan reef**.

4. Operator has proposed to set **7 in. (N-80, 26#/ft.)** production casing at approximately **7,865 ft.** (7,421 ft. TVD). The minimum required fill of cement behind the **7 in.** production casing is:

   Option 1 (Single Stage): 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 and Capitan reef**.

   Option 2 (Two-stage): Operator has proposed a DV tool, the depth may be adjusted as long as the cement is changed proportionally. The DV tool may be cancelled if cement circulates to surface on the first stage.
   a. **First stage to DV tool:** Cement to circulate. If cement does not circulate off the DV tool, contact the appropriate BLM office before proceeding with second stage cement job.
   b. **Second stage above DV tool:** Cement should tie-back **at least 200 feet** into previous casing string. Operator shall provide method of verification. If cement does not circulate, contact the appropriate BLM office. Wait on

cement (WOC) time for a primary cement job is to include the lead cement slurry due to **Cave/Karst and Capitan reef**.

Note: Cement volume for the 1st stage is insufficient. More cement might be needed.

5. The minimum required fill of cement behind the **4-1/2 in.** production liner is:
   - Cement should tie-back **at least 100 feet** into previous casing string. Operator shall provide method of verification.

Alternate Casing Program

1. The **20** inch surface casing shall be set at approximately **350 ft.** (a minimum of 70 feet (Eddy County) into the Rustler Anhydrite and above the salt) and cemented to the surface. **If salt is encountered set casing at least 25 ft. above the salt.**
   e. 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.
   f. Wait on cement (WOC) time for a primary cement job will be a minimum of **8 hours** or **500 psi compressive strength**, whichever is greater. (This is to include the lead cement)
   g. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 psi compressive strength, whichever is greater.
   h. If cement falls back, remedial cementing will be done prior to drilling out that string.

2. The **13-3/8** inch 1st intermediate casing shall be set at approximately **1,200 ft.** in Queen formation and above Capitan reef. The minimum required fill of cement behind the **13-3/8** inch intermediate casing is:

   Option 1 (Single Stage): 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 and Capitan reef**.

   Option 2 (Two-stage): Operator has proposed a DV tool, the depth may be adjusted as long as the cement is changed proportionally. The DV tool may be cancelled if cement circulates to surface on the first stage.
   c. First stage to DV tool: Cement to circulate. If cement does not circulate off the DV tool, contact the appropriate BLM office before proceeding with second stage cement job.
   d. Second stage above DV tool: **Cement to surface.** If cement does not circulate, contact the appropriate BLM office. Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to **Cave/Karst and Capitan reef**.

- ❖ In Capitan Reef Areas if cement does not circulate to surface on the first two casing strings, the cement on the 3rd casing string must come to surface.

- ❖ 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.

- ❖ **Special Capitan Reef requirements.** If lost circulation (50% or greater) occurs below the Base of the Salt, the operator shall do the following:
  (Use this for 3 string wells in the Capitan Reef, if 4 string well ensure FW based mud used across the capitan interval)

  - Switch to freshwater mud to protect the Capitan Reef and use freshwater mud until setting the intermediate casing. The appropriate BLM office is to be notified for a PET to witness the switch to fresh water.

  - Daily drilling reports from the Base of the Salt to the setting of the intermediate casing are to be submitted to the BLM CFO engineering staff via e-mail by 0800 hours each morning. Any lost circulation encountered is to be recorded on these drilling reports. The daily drilling report should show mud volume per shift/tour. Failure to submit these reports will result in an Incidence of Non-Compliance being issued for failure to comply with the Conditions of Approval. If not already planned, the operator shall run a caliper survey for the intermediate well bore and submit to the appropriate BLM office.

3. The **9-5/8** inch 2nd intermediate casing shall be set at approximately **2,300 ft.** in the base of Capitan reef or Lamar. The minimum required fill of cement behind the **9-5/8** inch intermediate casing is:

   Option 1 (Single Stage): Cement should tie-back **at least 200 feet** into previous casing string or 50 ft. above Capitan reef top, whichever is greater. 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 and Capitan reef**.

   Option 2 (Two-stage): Operator has proposed a DV tool, the depth may be adjusted as long as the cement is changed proportionally. The DV tool may be cancelled if cement circulates to surface on the first stage.

   c. **First stage to DV tool:** Cement to circulate. If cement does not circulate off the DV tool, contact the appropriate BLM office before proceeding with second stage cement job.
   d. **Second stage above DV tool:** Cement should tie-back **at least 200 feet** into previous casing string or 50 ft. above Capitan reef top, whichever is greater. Operator shall provide method of verification. If cement does not circulate, contact the appropriate BLM office. Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to **Cave/Karst and Capitan reef**.

4. Operator has proposed to set **7 in. (HCP-110, 26#/ft.)** production casing at approximately **8,765 ft.** (7,994 ft. TVD). The minimum required fill of cement behind the **7 in.** production casing is:

   Option 1 (Single Stage): Cement should tie-back **at least 200 feet** into previous casing string. Operator shall provide method of verification.

   Option 2 (Two-stage): Operator has proposed a DV tool, the depth may be adjusted as long as the cement is changed proportionally. The DV tool may be cancelled if cement circulates to surface on the first stage.

   c. **First stage to DV tool:** Cement to circulate. If cement does not circulate off the DV tool, contact the appropriate BLM office before proceeding with second stage cement job.
   d. **Second stage above DV tool:** Cement should tie-back **at least 200 feet** into previous casing string. Operator shall provide method of verification. If cement does not circulate, contact the appropriate BLM office.

   Note: Cement volume for the 1st stage is insufficient. More cement might be needed.

5. The minimum required fill of cement behind the **4-1/2 in.** production liner is:
   - Cement should tie-back **at least 100 feet** into previous casing string. Operator shall provide method of verification.

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. Operator has proposed a **multi-bowl wellhead** assembly. This assembly will only be tested when installed on the 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. The BOP/BOPE and annular preventer shall be pressure-tested in accordance with **title 43 CFR 3172 and API Standard 53.**

   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 the **title 43 CFR 3172.6(b)(9)** must be followed.

BOPE Break Testing Variance (Approved)
(Note: For a minimum 5M BOPE or less (Utilizing a 10M BOPE system)

- BOPE Break Testing is ONLY permitted for 5M BOPE or less. **(Annular preventer must be tested to a minimum of 70% of BOPE working pressure and shall be higher than the MASP)**
- BOPE Break Testing is NOT permitted to drilling the production hole section.
- Variance only pertains to the intermediate hole-sections and no deeper than the Bone Springs formation.
- While in transfer between wells, the BOPE shall be secured by the hydraulic carrier or cradle.
- Any well control event while drilling require notification to the BLM Petroleum Engineer **(575-706-2779)** prior to the commencement of any BOPE Break Testing operations.
- A full BOPE test is required prior to drilling the first deep intermediate hole section. If any subsequent hole interval is deeper than the first, a full BOPE test will be required. (200' TVD tolerance between intermediate shoes is allowable).
- The BLM is to be contacted **(575-361-2822 Eddy County)** 4 hours prior to BOPE tests.
- As a minimum, a full BOPE test shall be performed at **21**-day intervals.
- In the event any repairs or replacement of the BOPE is required, the BOPE shall test as per **43 CFR part 3170 Subpart 3172**.
- If in the event break testing is not utilized, then a full BOPE test would be conducted.

Offline Cementing

Operator has been **(Approved)** to pump the proposed cement program offline in the **Surface and intermediate(s) intervals**. Offline cementing should commence within 24 hours of landing the casing for the interval. Notify the BLM 4hrs prior to cementing offline at **Eddy County: 575-361-2822**.

D. SPECIAL REQUIREMENT (S)

Communitization Agreement

- The operator will submit a Communitization Agreement to the Santa Fe Office, 301 Dinosaur Trail Santa Fe, New Mexico 87508, at least 90 days before the anticipated date of first production from a well subject to a spacing order issued by the New Mexico Oil Conservation Division. The Communitization Agreement will include the signatures of all working interest owners in all Federal and Indian leases subject to the Communitization Agreement (i.e., operating rights owners and lessees of record), or certification that the operator has obtained the written signatures of all such owners and will make those signatures available to the BLM immediately upon request.

- If the operator does not comply with this condition of approval, the BLM may take enforcement actions that include, but are not limited to, those specified in 43 CFR 3163.1.

- In addition, the well sign shall include the surface and bottom hole lease numbers. When the Communitization Agreement number is known, it shall also be on the sign.

GENERAL REQUIREMENTS

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

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

☒ Eddy County
EMAIL or call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220,
BLM_NM_CFO_DrillingNotifications@BLM.GOV
(575) 361-2822

1. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.

   a. In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).
   b. When the operator proposes to set surface casing with Spudder Rig
      - Notify the BLM when moving in and removing the Spudder Rig.
      - Notify the BLM when moving in the 2nd Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
      - BOP/BOPE test to be conducted per **43 CFR part 3170 Subpart 3172** as soon as 2nd Rig is rigged up on well.

2. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.

3. For at least one well per pad (deepest well preferred) the record of drilling rate (ROP) along with the Gamma Ray (GR) and Neutron (CNL) well logs run from TVD to surface in the vertical section of the hole shall be submitted to the BLM office as well as all other logs run on the full borehole within 30 days from completion. Only digital copies of the logs in .TIF or .LAS formats are necessary; Logs shall be emailed to blm-cfo-geology@doimspp.onmicrosoft.com. The email should have a subject line with the US Well Number / API Number, well name, and the body should include the starting depth and the TVD of the log.

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

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 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.

SA 06/12/2024

Mewbourne Oil Company, Santa Maria 31/36 Fed Com 628H
Sec 32, T20S, R27E
SHL: 2495' FNL 800' FWL (Sec 32)
BHL: 660' FSL 100' FWL (Sec 36)

Well Location **GL: 3226'**

Point	Calls	Leases	Aliquot	Section	Township	Range	County	Lat	Long	TVD	MD
SHL	SHL: 2495' FNL & 800' FWL (Sec 32)	NMNM 084711	SWNW	32	20S	27E	Eddy	32.5304973	104.3095761	0'	0'
KOP	KOP: 660' FSL & 473' FWL (Sec 32)	FEE	SWSW	32	20S	27E	Eddy	32.5244111	104.3104993	7,421'	7,865'
FTP	FTP: 660' FSL & 100' FEL (Sec 31)	NMNM 019431	SESE	31	20S	27E	Eddy	32.5244115	104.3123587	7,994'	8,765'
PPP2	PPP2: 660' FSL & 1320' FEL (Sec 31)	NMNM 0400512A	SWSE	31	20S	27E	Eddy	32.5244124	104.3163180	7,948'	9,987'
BHL	BHL: 660' FSL & 100' FWL (Sec 36)	V053170001	SWSW	36	20S	26E	Eddy	32.5244144	104.3460111	7,597'	19,145'

GEOLOGY

Formation	Est. Top (TVD)	Lithology	Mineral Resources	Formation	Est. Top (TVD)	Lithology	Mineral Resources
Rustler				Yeso			
Castile				Delaware (Lamar)	2270'	Limestone/Dolomite	Oil/Natural Gas
Salt Top				Bell Canyon			
Salt Base				Cherry Canyon			
Yates	380'	Sandstone	Oil/Natural Gas	Manzanita Marker			
Seven Rivers				Basal Brushy Canyon			
Queen				Bone Spring	3698'	Limestone	Oil/Natural Gas
Capitan	1280'	Limestone/Dolomite	Usable Water	1st Bone Spring	5609'	Sandstone	Oil/Natural Gas
Grayburg				2nd Bone Spring	6296'	Sandstone	Oil/Natural Gas
San Andres				**3rd Bone Spring**	**7618'**	**Sandstone**	**Oil/Natural Gas**
Glorietta				Wolfcamp	7973'	Shale/Sandstone/Limestone	Oil/Natural Gas

Casing Program Design A						BLM Minimum Safety Factors	1.125	1.0	1.6 Dry 1.8 Wet	1.6 Dry 1.8 Wet
String	Hole Size	Top MD	Top TVD	Bot MD	Bot TVD	Csg. Size	SF Collapse	SF Burst	SF Jt Tension	SF Body Tension
surface	26'	0'	0'	350'	350'	20" 94# J55 BTC	3.40	13.80	42.61	44.98
Int 1	17.5'	0'	0'	1200'	1200'	13.375" 48# H40 STC	1.37	3.08	5.59	9.39
Int 2	12.25'	0'	0'	2300'	2300'	9.625" 36# J55 LTC	1.88	3.27	5.47	6.81
Production	8.75'	0'	0'	7865'	7421'	7" 26# N-80 LTC	1.32	1.77	2.54	2.95
Liner	6.125'	7665'	7599'	19145'	7597'	4.5" 13.5# P110 LTC	1.55	1.81	2.18	2.72

All casing strings will be tested in accordance with 43 CFR Part 3172. Must have table for contingency casing.

	Y or N
Is casing new? If used, attach certification as required in Onshore Order #1	Y
Is casing API approved? 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 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?	Y
If yes, does production casing cement tie back a minimum of 50' above the Reef?	Y
Is well within the designated 4 string boundary.	Y
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?	
Is well located in R-111-P and SOPA?	N
If yes, are the first three strings cemented to surface?	
Is 2nd string set 100' to 600' below the base of salt?	
Is an open annulus used to satisfy R-111-Q? If yes, see cement design.	
Is an engineered weak point used to satisfy R-111-Q?	
If yes, at what depth is the weak point planned?	
Is well located in high Cave/Karst?	Y
If yes, are there two strings cemented to surface?	Y
(For 2 string wells) If yes, is there a contingency casing if lost circulation occurs?	
Is well located in critical Cave/Karst?	N
If yes, are there three strings cemented to surface?	

Approval Date: 06/14/2024

Mewbourne Oil Company, Santa Maria 31/36 Fed Com 628H
Sec 32, T20S, R27E
SHL: 2495' FNL 800' FWL (Sec 32)
BHL: 660' FSL 100' FWL (Sec 36)

Design A - Cement Program

Csg. Size		# Sacks	Wt., lb/gal	Yield, ft^3/sack	TOC/BOC	Volume, ft^3	% Excess	Slurry Description
20.000 in	LEAD	380	12.5	2.12	0' - 261'	810	100%	Class C: Salt, Gel, Extender, LCM
	TAIL	200	14.8	1.34	261' - 350'	268		Class C: Retarder
13.375 in	LEAD	460	12.5	2.12	0' - 942'	980	50%	Class C: Salt, Gel, Extender, LCM
	TAIL	200	14.8	1.34	942' - 1200'	268		Class C: Retarder
1st Stg 9.625 in	LEAD	70	12.5	2.12	1255' - 1630'	150	25%	Class C: Salt, Gel, Extender, LCM
	TAIL	200	14.8	1.34	1630' - 2300'	268		Class C: Retarder
9 5/8" DV Tool @ 1255'								
2nd Stg 9.625 in	LEAD	170	12.5	2.12	0' - 921'	370	25%	Class C: Salt, Gel, Extender, LCM
	TAIL	100	14.8	1.34	921' - 1255'	0		Class C: Retarder
1st Stg 7 in	LEAD	50	12.5	2.12	6200' - 6515'	110	25%	Class C: Salt, Gel, Extender, LCM, Defoamer
	TAIL	400	15.6	1.18	6515' - 7864.9'	472		Class H: Retarder, Fluid Loss, Defoamer
7" DV Tool @ 6200'								
2nd Stg 7 in	LEAD	370	12.5	2.12	1230' - 5479'	790	25%	Class C: Salt, Gel, Extender, LCM, Defoamer
	TAIL	100	14.8	1.34	5479' - 6200'	134		Class C: Retarder, Fluid Loss, Defoamer
4.5 in	LEAD	730	13.5	1.85	7664.9' - 19144.8'	1360	25%	Class H: Salt, Gel, Fluid Loss, Retarder, Dispersant, Defoamer, Anti-settling Agent

Pressure Control Equipment

BOP installed and tested before drilling hole, in:	Size, in	System Rated WP	Type		Tested to:	Rating Depth
17.5	20	5M	Annular	X	2500#	19,145'
		5M	Blind Ram	X	5000#	
			Pipe Ram	X		
			Double Ram			
			Other*			

*Specify if additional ram is utilized.

Equipment: Annular, Pipe Rams, Blind Rams, 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.

Variance Request: A variance is requested for the use of a variable choke line from the BOP to the choke manifold. See attached for hydrostatic test chart. Anchors are not required by manufacturer. Variance is requested to use a multi bowl wellhead. Variance is requested to perform break testing according to attached procedure.

Testing Procedure: BOP/BOPE will be tested by an independent service company to 250 psi low and the high pressure indicated above per 43 CFR Part 3172 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.

Y	Formation integrity test will be performed per 43 CFR Part 3172. 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 43 CFR Part 3172.
N	Mewbourne Oil Company request a variance to use a 5000 psi annular BOP with a 10,000 psi BOP stack.

Mud Program

Depth (MD)	Mud Wt., lb/gal	Mud Type
0' - 350'	8.4	Fresh Water
350' - 1200'	9	Brine
1200' - 2300'	9	Brine
2300' - 7864.9'	10	Cut-Brine
7864.9' - 19144.8'	11.5	OBM

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?	Pason/PVT/Visual Monitoring

Approval Date: 06/14/2024

Mewbourne Oil Company, Santa Maria 31/36 Fed Com 628H
Sec 32, T20S, R27E
SHL: 2495' FNL 800' FWL (Sec 32)
BHL: 660' FSL 100' FWL (Sec 36)

Logging and Testing Procedures

Logging, Coring and Testing.	
N	Will run GR/CNL from KOP (7864.9') to surface (horizontal well – vertical portion of hole). Stated logs run will be in the Completion Report and submitted to the BLM.
Y	No logs are planned based on well control or offset log information. Offset Well: Santa Maria 31/36 Fed Com #628H
N	Coring? If yes, explain:

Open & Cased Hole Logs Run In the Well

☐	Caliper	☐	Cement Bond Log	☐	CNL/FDC
☐	Compensated Densilog	☐	Compensated Neutron Log	☐	Computer Generated Log
☐	Dip Meter Log	☐	Directional Survey	☐	Dual Induction/Microresistivity
☐	Dual Lateral Log/Microspherically Focused	☐	Electric Log	☐	Formation Density Compensated Log
☐	Gamma Ray Log	☑	**Measurement While Drilling**	☐	Mud Log/Geological Lithology Log
☐	Other	☐	Porosity-Resistivity Log	☐	Sidewall Neutron Log
☐	Sonic Log	☐	Spontaneous Potential Log	☐	Temperature Log

Drilling Conditions

Condition	Specify what type and where?
BH Pressure at deepest TVD	4780 psi
BH Temperature	140
Abnormal Temp, Pressure, or Geologic Hazards	No

Mitigation measure for abnormal conditions. Describe. Lost circulation material/sweeps/mud scavengers in surface hole. Weighted mud for possible over-pressure in Wolfcamp formation.

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

	H2S is present
X	H2S Plan attached

Mewbourne Oil Company, Santa Maria 31/36 Fed Com 628H
Sec 32, T20S, R27E
SHL: 2495' FNL 800' FWL (Sec 32)
BHL: 660' FSL 100' FWL (Sec 36)

Other facets of operation

Mewbourne Oil Company also requests approval to implement Design B as described below. BLM will be notified of elected design.

Offline Cementing Variance: Variance is request to perform offline cementing according to the attached procedure.

Casing Program Design B						BLM Minimum Safety Factors	1.125	1.0	1.6 Dry 1.8 Wet	1.6 Dry 1.8 Wet
String	Hole Size	Top MD	Top TVD	Bot MD	Bot TVD	Csg. Size	SF Collapse	SF Burst	SF Jt	SF Body
surface	26'	0'	0'	350'	350'	20" 94# J55 BTC	3.40	13.80	42.61	44.98
Int 1	17.5'	0'	0'	1200'	1200'	13.375" 48# H40 STC	1.37	3.08	5.59	9.39
Int 2	12.25'	0'	0'	2300'	2300'	9.625" 36# J55 LTC	1.88	3.27	5.47	6.81
Production	8.75'	0'	0'	8765'	7994'	7" 26# HCP110 LTC	1.71	2.18	3.04	3.64
Liner	6.125'	7865'	7421'	19145'	7994'	4.5" 13.5# P110 LTC	1.58	1.84	2.22	2.77

All casing strings will be tested in accordance with 43 CFR Part 3172. Must have table for contingency casing.

	Y or N
Is casing new? If used, attach certification as required in Onshore Order #1	Y
Is casing API approved? 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 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?	Y
If yes, does production casing cement tie back a minimum of 50' above the Reef?	Y
Is well within the designated 4 string boundary.	Y
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?	
Is well located in R-111-P and SOPA?	N
If yes, are the first three strings cemented to surface?	
Is 2nd string set 100' to 600' below the base of salt?	
Is an open annulus used to satisfy R-111-Q? If yes, see cement design.	
Is an engineered weak point used to satisfy R-111-Q?	
If yes, at what depth is the weak point planned?	
Is well located in high Cave/Karst?	Y
If yes, are there two strings cemented to surface?	Y
(For 2 string wells) If yes, is there a contingency casing if lost circulation occurs?	
Is well located in critical Cave/Karst?	N
If yes, are there three strings cemented to surface?	

Design B - Cement Program

Csg. Size		# Sacks	Wt., lb/gal	Yield, ft³/sack	TOC/BOC	Volume, ft³	% Excess	Slurry Description
20.000 in	LEAD	380	12.5	2.12	0' - 261'	810	100%	Class C: Salt, Gel, Extender, LCM
	TAIL	200	14.8	1.34	261' - 350'	268		Class C: Retarder
13.375 in	LEAD	460	12.5	2.12	0' - 942'	980	50%	Class C: Salt, Gel, Extender, LCM
	TAIL	200	14.8	1.34	942' - 1200'	268		Class C: Retarder
1st Stg 9.625 in	LEAD	70	12.5	2.12	1255' - 1630'	150	25%	Class C: Salt, Gel, Extender, LCM
	TAIL	200	14.8	1.34	1630' - 2300'	268		Class C: Retarder
9 5/8" DV Tool @ 1255'								
2nd Stg 9.625 in	LEAD	170	12.5	2.12	0' - 921'	370	25%	Class C: Salt, Gel, Extender, LCM
	TAIL	100	14.8	1.34	921' - 1255'	0		Class C: Retarder
1st Stg 7 in	LEAD	50	12.5	2.12	6200' - 6685'	110	25%	Class C: Salt, Gel, Extender, LCM, Defoamer
	TAIL	400	15.6	1.18	6685' - 8765.3'	472		Class H: Retarder, Fluid Loss, Defoamer
7" DV Tool @ 6200'								
2nd Stg 7 in	LEAD	370	12.5	2.12	1230' - 5479'	790	25%	Class C: Salt, Gel, Extender, LCM, Defoamer
	TAIL	100	14.8	1.34	5479' - 6200'	134		Class C: Retarder, Fluid Loss, Defoamer
4.5 in	LEAD	720	13.5	1.85	7864.9' - 19144.8'	1340	25%	Class H: Salt, Gel, Fluid Loss, Retarder, Dispersant, Defoamer, Anti-settling Agent

Approval Date: 06/14/2024

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	96381	AVALON; BONE SPRING

4 Property Code	5 Property Name	6 Well Number
	SANTA MARIA 31/36 FED COM	628H

7 OGRID NO.	8 Operator Name	9 Elevation
14744	MEWBOURNE OIL COMPANY	3226'

10 Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet From the	East/West line	County
E	32	20S	27E		2495	NORTH	800	WEST	EDDY

11 Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	36	20S	26E		660	SOUTH	100	WEST	EDDY

12 Dedicated Acres	13 Joint or Infill	14 Consolidation Code	15 Order No.
320			

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16

GEODETIC DATA
NAD 83 GRID – NM EAST

SURFACE LOCATION (SL)
N: 556726.4 – E: 548659.2

LAT: 32.5304973° N
LONG: 104.3095761° W

KICK OFF POINT (KOP)
660' FSL – 473' FWL SEC.32
N: 554511.8 – E: 548375.0

LAT: 32.5244100° N
LONG: 104.3104999° W

FIRST TAKE POINT (FTP)
660' FSL – 100' FEL SEC.31
N: 554511.7 – E: 547802.2

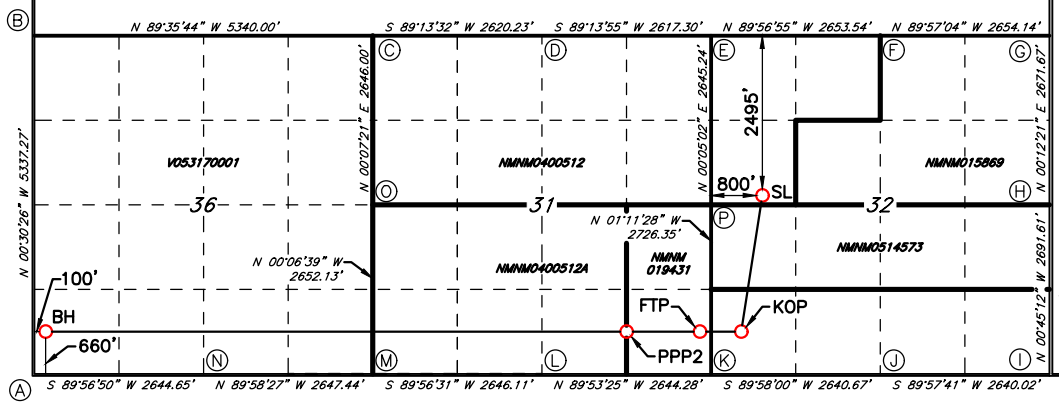
LAT: 32.5244101° N
LONG: 104.3123585° W

PROPOSED PENETRATION POINT 2
658' FSL – 1317' FEL SEC.31
N: 554511.9 – E: 546585.6

LAT: 32.5244111° N
LONG: 104.3163058° W

BOTTOM HOLE
N: 554512.9 – E: 537430.1

LAT: 32.5244144° N
LONG: 104.3460111° W



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Carter Crook 5/22/2024
Signature Date

Carter Crook
Printed Name

ccrook@mewbourne.com
E-mail Address

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01/17/2024
Date of Survey

Signature and Seal of Professional Surveyor:

ROBERT M. HOWETT
NEW MEXICO
19680
PROFESSIONAL SURVEYOR

19680
Certificate Number

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JOB No: LS24010042D

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M	36	20S	26E		660	SOUTH	100	WEST	EDDY

12 Dedicated Acres	13 Joint or Infill	14 Consolidation Code	15 Order No.

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CORNER DATA
NAD 83 GRID – NM EAST

A: FOUND BRASS CAP "1948"
N: 553853.0 – E: 537336.0

B: FOUND BRASS CAP "1984"
N: 559188.8 – E: 537288.7

C: FOUND BRASS CAP "1942"
N: 559151.1 – E: 542627.3

D: FOUND BRASS CAP "1942"
N: 559186.5 – E: 545246.6

E: FOUND BRASS CAP "1942"
N: 559221.5 – E: 547863.1

F: FOUND BRASS CAP "1942"
N: 559219.2 – E: 550516.0

G: FOUND BRASS CAP "1934"
N: 559216.9 – E: 553169.5

H: FOUND BRASS CAP "1942"
N: 556545.9 – E: 553159.9

I: CALCULATED CORNER
N: 553855.2 – E: 553195.2

J: FOUND BRASS CAP "1942"
N: 553853.4 – E: 550555.9

K: FOUND BRASS CAP "1942"
N: 553851.9 – E: 547915.8

L: FOUND BRASS CAP "1942"
N: 553856.9 – E: 545272.2

M: FOUND BRASS CAP "1942"
N: 553854.2 – E: 542626.7

N: FOUND BRASS CAP "1948"
N: 553855.4 – E: 539980.0

O: FOUND BRASS CAP "1942"
N: 556505.7 – E: 542621.6

P: FOUND BRASS CAP "1934"
N: 556577.0 – E: 547859.2

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Carter Crook
Printed Name

ccrook@mewbourne.com
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Approval Date: 06/14/2024

AFMSS

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

Operator Certification Data Report

06/19/2024

Operator

I hereby certify that I, or someone under my direct supervision, have inspected the drill site and access route proposed herein; that I am familiar with the conditions which currently exist; that I have full knowledge of state and Federal laws applicable to this operation; that the statements made in this APD package are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or the company I represent, am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of false statements.

NAME: MELONY LEAL **Signed on:** 02/14/2024

Title: Analyst

Street Address: 4801 BUSINESS PARK BLVD

City: HOBBS **State:** NM **Zip:** 88240

Phone: (575)393-5905

Email address: MLEAL@MEWBOURNE.COM

Field

Representative Name:

Street Address:

City: **State:** **Zip:**

Phone:

Email address:

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

Application Data
06/19/2024

APD ID: 10400097086
Submission Date: 02/14/2024
Operator Name: MEWBOURNE OIL COMPANY
Well Name: SANTA MARIA 31/36 FED COM
Well Number: 628H
Well Type: CONVENTIONAL GAS WELL
Well Work Type: Drill

Highlighted data reflects the most recent changes
Show Final Text

Section 1 - General

APD ID: 10400097086
Tie to previous NOS? N
Submission Date: 02/14/2024
BLM Office: Carlsbad
User: MELONY LEAL
Title: Analyst
Federal/Indian APD: FED
Is the first lease penetrated for production Federal or Indian? FED
Lease number: NMNM19431
Lease Acres:
Surface access agreement in place?
Allotted?
Reservation:
Agreement in place? NO
Federal or Indian agreement:
Agreement number:
Agreement name:
Keep application confidential? Y
Permitting Agent? NO
APD Operator: MEWBOURNE OIL COMPANY
Operator letter of

Operator Info

Operator Organization Name: MEWBOURNE OIL COMPANY
Operator Address: P O BOX 5270
Zip: 88241
Operator PO Box:
Operator City: HOBBS
State: NM
Operator Phone: (575)393-5905
Operator Internet Address:

Section 2 - Well Information

Well in Master Development Plan? NO
Master Development Plan name:
Well in Master SUPO? NO
Master SUPO name:
Well in Master Drilling Plan? NO
Master Drilling Plan name:
Well Name: SANTA MARIA 31/36 FED COM
Well Number: 628H
Well API Number:
Field/Pool or Exploratory? Field and Pool
Field Name: AVALON EAST
Pool Name: LOWER BONE SPRING

Operator Name: MEWBOURNE OIL COMPANY

Well Name: SANTA MARIA 31/36 FED COM **Well Number:** 628H

Is the proposed well in an area containing other mineral resources? NONE

Is the proposed well in a Helium production area? N **Use Existing Well Pad?** N **New surface disturbance?**

Type of Well Pad: MULTIPLE WELL **Multiple Well Pad Name:** Omaha 36/31 MP & LI **Number:** 4

Well Class: HORIZONTAL **Number of Legs:** 1

Well Work Type: Drill

Well Type: CONVENTIONAL GAS WELL

Describe Well Type:

Well sub-Type: INFILL

Describe sub-type:

Distance to town: 9 Miles **Distance to nearest well:** 20 FT **Distance to lease line:** 100 FT

Reservoir well spacing assigned acres Measurement: 320 Acres

Well plat: Santa_Maria_31_36_Fed_Com__628H_AddInfo_20240213125626.pdf

SANTA_MARIA_31_36_FED_COM__628H_C102_20240522154306.pdf

Well work start Date: 04/13/2024 **Duration:** 60 DAYS

Section 3 - Well Location Table

Survey Type: RECTANGULAR

Describe Survey Type:

Datum: NAD83 **Vertical Datum:** NAVD88

Survey number: **Reference Datum:** KELLY BUSHING

Wellbore	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD	Will this well produce from this
SHL Leg #1	2495	FNL	800	FWL	20S	27E	32	Aliquot SWNW	32.5304973	-104.3095761	EDDY	NEW MEXICO	NEW MEXICO	F	NMNM 0400512	3226	0	0	N
KOP Leg #1	660	FSL	473	FWL	20S	27E	32	Aliquot SWSW	32.5244111	-104.3104993	EDDY	NEW MEXICO	NEW MEXICO	F	FEE	2753	660	473	Y

Operator Name: MEWBOURNE OIL COMPANY

Well Name: SANTA MARIA 31/36 FED COM **Well Number:** 628H

Wellbore	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD	Will this well produce from this
PPP Leg #1-1	660	FSL	100	FEL	20S	27E	31	Aliquot SESE	32.5244115	-104.3123587	EDDY	NEW MEXICO	NEW MEXICO	F	NMNM 19431	-4768	8765	7994	Y
PPP Leg #1-2	660	FSL	1320	FEL	20S	27E	31	Aliquot SWSE	32.5244124	-104.316318	EDDY	NEW MEXICO	NEW MEXICO	F	NMNM 040051 2A	-4722	9987	7948	Y
EXIT Leg #1	660	FSL	100	FWL	20S	26E	36	Aliquot SWSW	32.5244144	-104.3460111	EDDY	NEW MEXICO	NEW MEXICO	S	STATE	-4371	19145	7597	Y
BHL Leg #1	660	FSL	100	FWL	20S	26E	36	Aliquot SWSW	32.5244144	-104.3460111	EDDY	NEW MEXICO	NEW MEXICO	S	STATE	-4371	19145	7597	Y

Mewbourne Oil Company, Santa Maria 31/36 Fed Com 628H
Sec 32, T20S, R27E
SHL: 2495' FNL 800' FWL (Sec 32)
BHL: 660' FSL 100' FWL (Sec 36)

Operator Name:	Property Name:	Well Number
Mewbourne Oil Company	Santa Maria 31/36 Fed Com	628H

Kick Off Point (KOP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
M	32	20	27	-	660'	FSL	473'	FWL	Eddy
Latitude					Longitude				NAD
32.5244111					-104.3104993				83

First Take Point (FTP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
P	31	20	27	-	660'	FSL	100'	FEL	Eddy
Latitude					Longitude				NAD
32.5244115					-104.3123587				83

Last Take Point (LTP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
M	36	20	26	-	660'	FSL	100'	FWL	Eddy
Latitude					Longitude				NAD
32.5244144					-104.3460111				83

Is this well the defining well for the Horizontal Spacing Unit? Y
Is this well an infill well? N

If infill is yes please provide API if available, Operator Name and well number for Defining well for Horizontal Spacing Unit.

API #

Operator Name:	Property Name:	Well Number

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14744	MEWBOURNE OIL COMPANY	3226'

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12 Dedicated Acres	13 Joint or Infill	14 Consolidation Code	15 Order No.
320			

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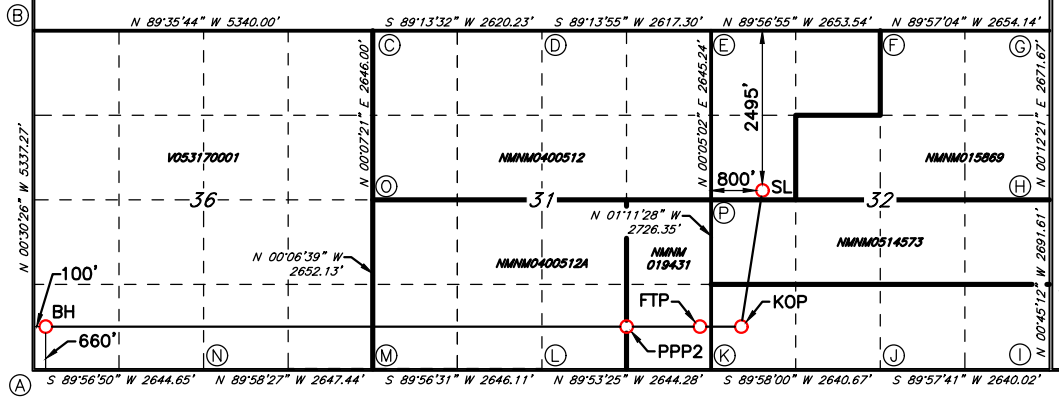

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F: FOUND BRASS CAP "1942"
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H: FOUND BRASS CAP "1942"
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K: FOUND BRASS CAP "1942"
N: 553851.9 – E: 547915.8

L: FOUND BRASS CAP "1942"
N: 553856.9 – E: 545272.2

M: FOUND BRASS CAP "1942"
N: 553854.2 – E: 542626.7

N: FOUND BRASS CAP "1948"
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O: FOUND BRASS CAP "1942"
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Certificate Number

REV: ADD WELL CALLS – 02/07/24

JOB No: LS24010042D

AFMSS

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

Drilling Plan Data Report
06/19/2024

APD ID: 10400097086
Submission Date: 02/14/2024
Operator Name: MEWBOURNE OIL COMPANY
Well Name: SANTA MARIA 31/36 FED COM
Well Number: 628H
Well Type: CONVENTIONAL GAS WELL
Well Work Type: Drill

Highlighted data reflects the most recent changes

Show Final Text

Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical	Measured Depth	Lithologies	Mineral Resources	Producing Formatio
13602933	UNKNOWN	3226	28	28	OTHER : Topsoil	NONE	N
13602940	YATES	2846	380	380	SANDSTONE	NATURAL GAS, OIL	N
13602934	CAPITAN REEF	1946	1280	1280	DOLOMITE, LIMESTONE	USEABLE WATER	N
13602926	LAMAR	956	2270	2270	DOLOMITE, LIMESTONE	NATURAL GAS, OIL	N
13602928	BONE SPRING	-472	3698	3698	LIMESTONE	NATURAL GAS, OIL	N
13602929	BONE SPRING 1ST	-2383	5609	5609	SANDSTONE	NATURAL GAS, OIL	N
13602930	BONE SPRING 2ND	-3070	6296	6296	SANDSTONE	NATURAL GAS, OIL	N
13602938	BONE SPRING 3RD	-4392	7618	7618	SANDSTONE	NATURAL GAS, OIL	Y
13602939	WOLFCAMP	-4747	7973	7973	LIMESTONE, SANDSTONE, SHALE	NATURAL GAS, OIL	N

Section 2 - Blowout Prevention

Pressure Rating (PSI): 5M
Rating Depth: 19145

Equipment: Annular, Pipe Rams, Blind Rams, Other accessories to the BOP equipment will include a Kelly cock and floor safety valve (inside BOP) and choke lines and choke manifold. See attached schematics
Requesting Variance? YES

Variance request: A variance is requested for the use of a variable choke line from the BOP to the choke manifold. See attached for hydrostatic test chart. Anchors are not required by manufacturer. Variance is requested to use a multi bowl wellhead. Variance is requested to perform break testing according to attached procedure.

Testing Procedure: BOP/BOPE will be tested by an independent service company to 250 psi low and the high pressure indicated above per 43 CFR Part 3172 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.

Choke Diagram Attachment:

Operator Name: MEWBOURNE OIL COMPANY

Well Name: SANTA MARIA 31/36 FED COM **Well Number:** 628H

Santa_Maria_31_36_Fed_Com__628H_5M_BOPE_Choke_Diagram_20240213110208.pdf

Santa_Maria_31_36_Fed_Com__628H_Flex_Line_Specs_API_16C_20240213110215.pdf

Santa_Maria_31_36_Fed_Com__628H_Flex_Line_Specs_20240213110221.pdf

BOP Diagram Attachment:

Santa_Maria_31_36_Fed_Com__628H_5M_BOPE_Schematic_20240213110234.pdf

Santa_Maria_31_36_Fed_Com__628H_MOC_Break_Testing_Variance_20240213110245.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	26	20.0	NEW	API	N	0	350	0	350	3226	2876	350	J-55	94	OTHER - BTC	3.4	13.8	DRY	42.61	DRY	44.98
2	INTERMEDIATE	17.5	13.375	NEW	API	N	0	1200	0	1200	3192	2026	1200	H-40	48	ST&C	1.37	3.08	DRY	5.59	DRY	9.39
3	INTERMEDIATE	12.25	9.625	NEW	API	N	0	2300	0	2300	2982	926	2300	J-55	36	LT&C	1.88	3.27	DRY	5.47	DRY	6.81
4	PRODUCTION	8.75	7.0	NEW	API	N	0	7865	0	7421	2982	-4195	7865	N-80	26	LT&C	1.32	1.77	DRY	2.54	DRY	2.95
5	LINER	6.125	4.5	NEW	API	N	7665	19145	7599	7597	-4373	-4371	11480	P-110	13.5	LT&C	1.55	1.81	DRY	2.18	DRY	2.72

Casing Attachments

Operator Name: MEWBOURNE OIL COMPANY

Well Name: SANTA MARIA 31/36 FED COM **Well Number:** 628H

Casing Attachments

Casing ID: 1 **String** SURFACE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Santa_Maria_31_36_Fed_Com__628H_CsgAssumptions_20240213111107.pdf

Casing ID: 2 **String** INTERMEDIATE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Santa_Maria_31_36_Fed_Com__628H_CsgAssumptions_20240213110903.pdf

Casing ID: 3 **String** INTERMEDIATE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Santa_Maria_31_36_Fed_Com__628H_CsgAssumptions_20240213110748.pdf

Operator Name: MEWBOURNE OIL COMPANY

Well Name: SANTA MARIA 31/36 FED COM **Well Number:** 628H

Casing Attachments

Casing ID: 4 **String** PRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Santa_Maria_31_36_Fed_Com__628H_CsgAssumptions_20240213110652.pdf

Casing ID: 5 **String** LINER

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Santa_Maria_31_36_Fed_Com__628H_CsgAssumptions_20240213110949.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	261	380	2.12	12.5	810	100	Class C	Salt, Gel, Extedner, LCM
SURFACE	Tail		261	350	200	1.34	14.8	268	100	Class C	Retarder
INTERMEDIATE	Lead	1255	0	921	170	2.12	12.5	370	25	Class C	Salt, Gel, Extender, LCM
INTERMEDIATE	Tail		921	1255	100	1.34	14.8	0	25	Class C	Retarder
INTERMEDIATE	Lead		1255	1630	70	2.12	12.5	150	25	Class C	Salt, Gel, Extender, LCM

Operator Name: MEWBOURNE OIL COMPANY

Well Name: SANTA MARIA 31/36 FED COM **Well Number:** 628H

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
INTERMEDIATE	Tail		1630	2300	200	1.34	14.8	268	25	Class C	Retarder
PRODUCTION	Lead	6200	1230	5479	370	2.12	12.5	790	25	Class C	Gel, Retarder, Defoamer, Extender
PRODUCTION	Tail		5479	6200	100	1.34	14.8	134	25	Class C	Retarder, Fluid Loss, Defoamer
PRODUCTION	Lead	6200	6200	6515	50	2.12	12.5	110	25	CLASS C	SALT, GEL, EXTENDER, LCM, DEFOAMER
PRODUCTION	Tail		6515	7864	400	1.18	15.6	472	25	CLASS H	RETARDER, FLUID LOSS, DEAFOAMER
LINER	Lead		7664	19144	730	1.85	13.5	1360	25	Class H	Salt, Gel, Fluid Loss, Retarder, Dispersant, Defoamer, Anti-Settling Agent

Section 5 - Circulating Medium

Mud System Type: Closed

Will an air or gas system be Used? NO

Description of the equipment for the circulating system in accordance with Onshore Order #2:

Diagram of the equipment for the circulating system in accordance with Onshore Order #2:

Describe what will be on location to control well or mitigate other conditions: Sufficient mud materials to maintain mud properties & meet minimum lost circulation and weight increase requirements will be kept on location at all times.

Describe the mud monitoring system utilized: Pason/PVT/Visual Monitoring

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	350	SPUD MUD	8.4	8.4							

Operator Name: MEWBOURNE OIL COMPANY

Well Name: SANTA MARIA 31/36 FED COM **Well Number:** 628H

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
350	1200	SALT SATURATED	9	9							
1200	2300	SALT SATURATED	9	9							
7864	19144	OIL-BASED MUD	10	11.5							
2300	7864	WATER-BASED MUD	10	10							

Section 6 - Test, Logging, Coring

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

No logs are planned based on well control or offset log information. Offset Well: Santa Maria 31/36 Fed Com #628H

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

MEASUREMENT WHILE DRILLING,MUD LOG/GEOLOGIC LITHOLOGY LOG,

Coring operation description for the well:

None

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 4780 **Anticipated Surface Pressure:** 3021

Anticipated Bottom Hole Temperature(F): 140

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

Santa_Maria_31_36_Fed_Com__628H_H2S_Plan_20240213112242.pdf

Operator Name: MEWBOURNE OIL COMPANY

Well Name: SANTA MARIA 31/36 FED COM **Well Number:** 628H

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

Santa_Maria_31_36_Fed_Com__628_MOC_Dir_plan_20240213112310.pdf

Santa_Maria_31_36_Fed_Com__628_MOC_Dir_Plot_20240213112315.pdf

Other proposed operations facets description:

Other proposed operations facets attachment:

Santa_Maria_31_36_Fed_Com__628H_AddInfo_20240213112337.pdf

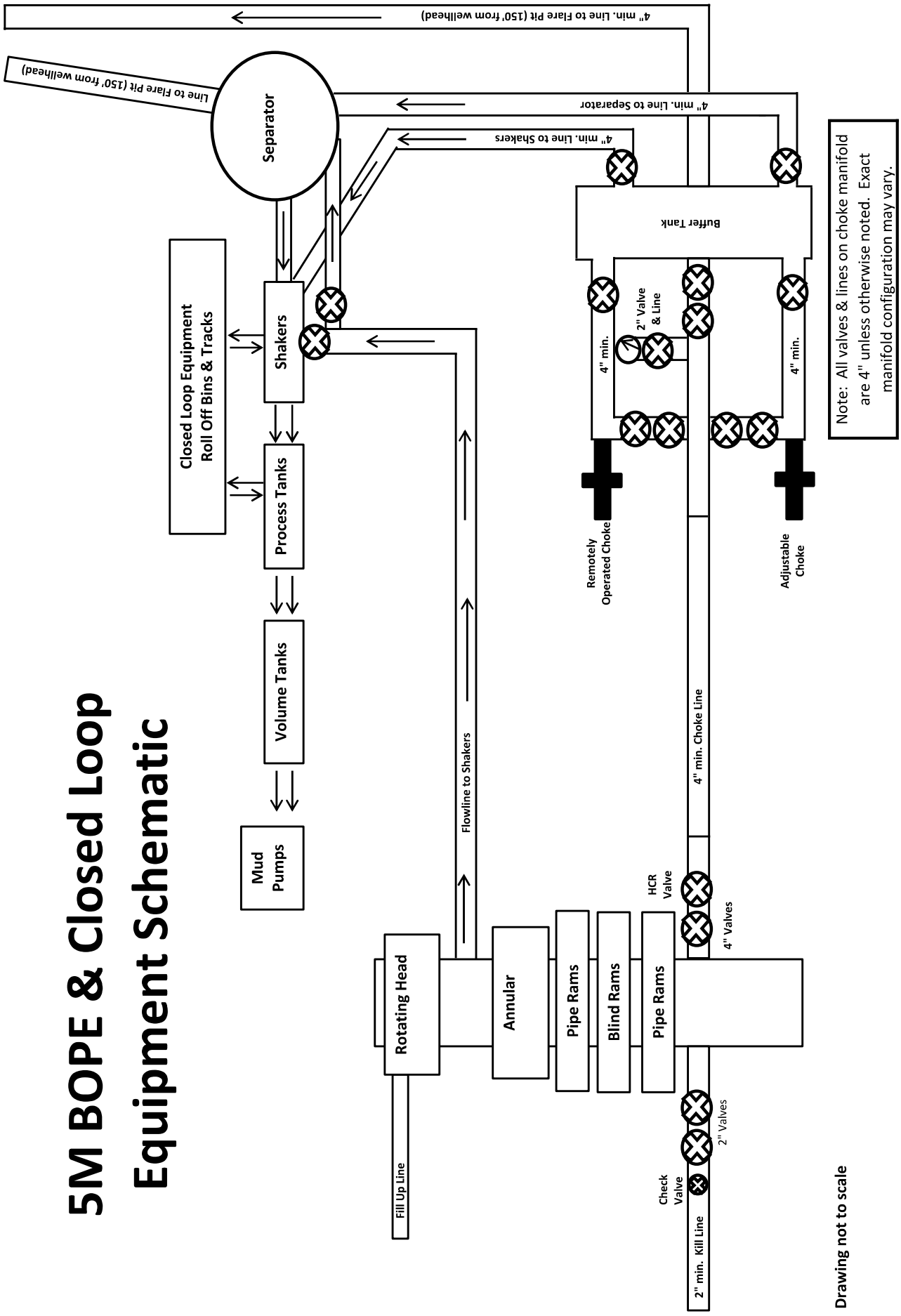
Santa_Maria_31_36_Fed_Com__628H_Drlg_Program_20240213112347.pdf

Other Variance attachment:

Santa_Maria_31_36_Fed_Com__628H_MOC_Break_Testing_Variance_20240213112359.pdf

Santa_Maria_31_36_Fed_Com__628H_MOC_Offline_Cementing_Variance_20240213112404.pdf

5M BOPE & Closed Loop Equipment Schematic



GATES ENGINEERING & SERVICES NORTH AMERICA
7603 Prairie Oak Dr.
Houston, TX 77086

PHONE: (281) 602 - 4119
FAX:
EMAIL: Troy.Schmidt@gates.com
WEB: www.gates.com

10K CHOKE & KILL ASSEMBLY PRESSURE TEST CERTIFICATE

Customer:	A-7 AUSTIN INC DBA AUSTIN HOSE	Test Date:	8/20/2018
Customer Ref.:	4101901	Hose Serial No.:	H-082018-10
Invoice No.:	511956	Created By:	Moosa Naqvi

Product Description:	10KF3.035.0CK41/1610KFLGFXDxFLT L/E

End Fitting 1:	4 1/16 in. Fixed Flange	End Fitting 2:	4 1/16 in. Float Flange
Gates Part No.:	68503010-9721632	Assembly Code:	L40695052218H-082018-10
Working Pressure:	10,000 psi.	Test Pressure:	15,000 psi.

Gates Engineering & Services North America certifies that the following hose assembly has successfully passed all pressure testing requirements set forth in Gates specifications: GTS-04-052 (for 5K assemblies) or GTS-04-053 (10K assemblies), which include reference to Specification API 16C (2nd Edition); sections 7.5.4, 7.5.9, and 10.8.7. A test graph will accompany this test certificate to illustrate conformity to test requirements.

Quality:	QUALITY	Production:	PRODUCTION
Date :	8/20/2018	Date :	8/20/2018
Signature :	Moosa Naqvi	Signature :	

Form PTC - 01 Rev.0 2

ENGINEERING & SERVICES

GATES E & S NORTH AMERICA, INC.
134 44TH STREET
CORPUS CHRISTI, TEXAS 78405

PHONE: 361-887-9807
FAX: 361-887-0812
EMAIL: Tim.Cantu@gates.com
WEB: www.gates.com

10K CEMENTING ASSEMBLY PRESSURE TEST CERTIFICATE

Customer :	AUSTIN DISTRIBUTING	Test Date:	4/30/2015
Customer Ref. :	4060578	Hose Serial No.:	D-043015-7
Invoice No. :	500506	Created By:	JUSTIN CROPPER

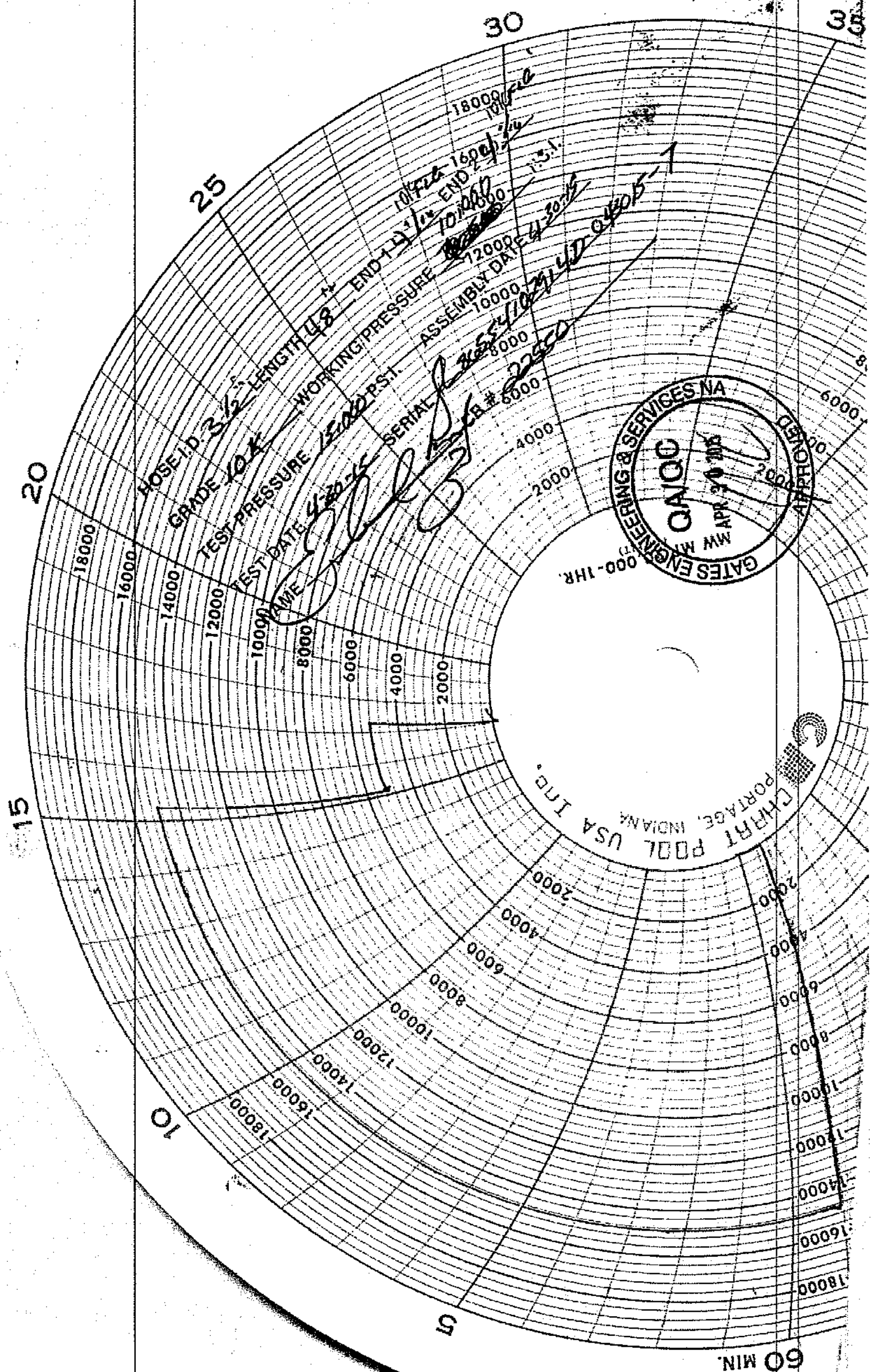
Product Description:	10K3.548.0CK4.1/1610KFLGE/E LE

End Fitting 1 :	4 1/16 10K FLG	End Fitting 2 :	4 1/16 10K FLG
Gates Part No. :	4773-6290	Assembly Code :	L36554102914D-043015-7
Working Pressure :	10,000 PSI	Test Pressure :	15,000 PSI

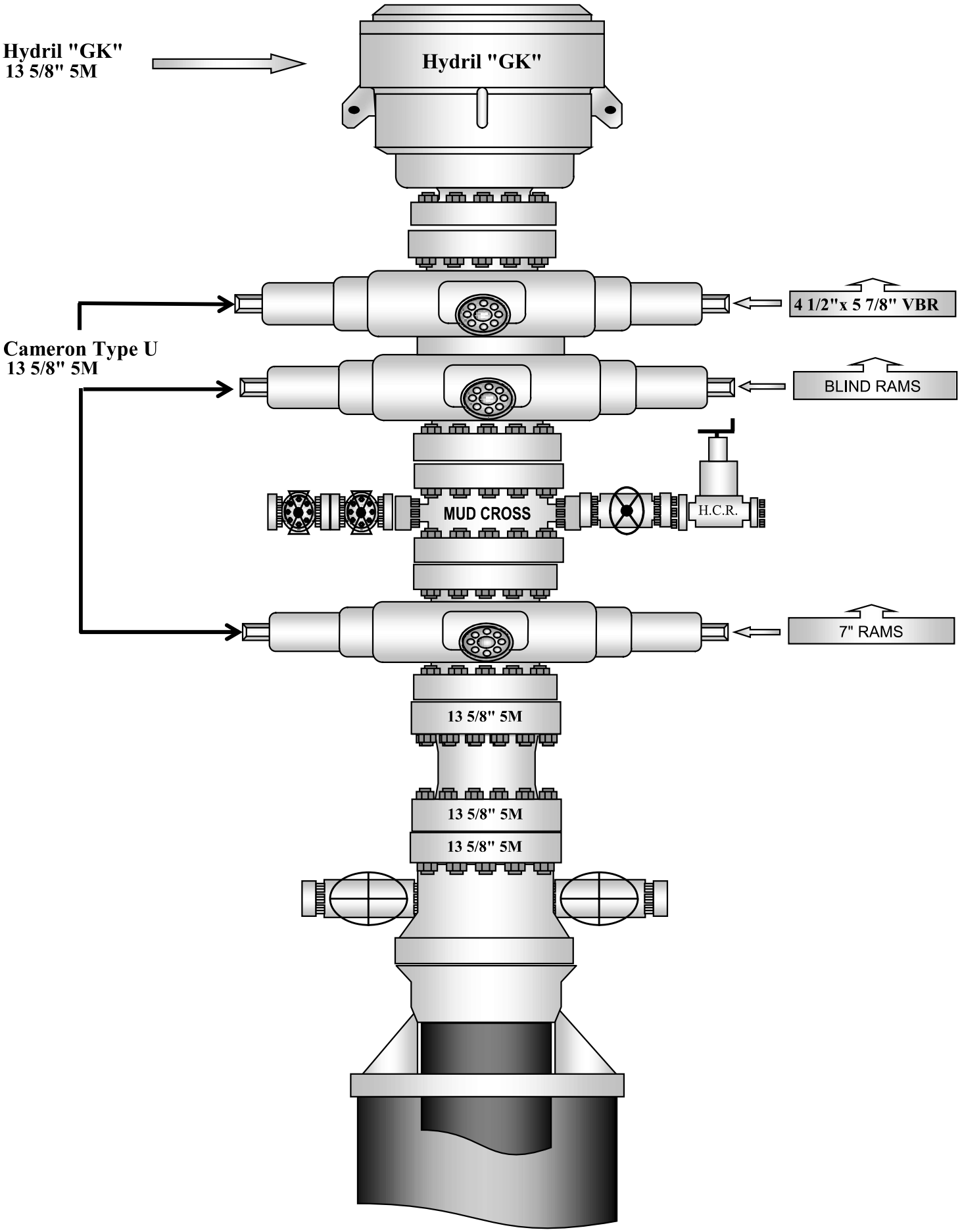
Gates E & S North America, Inc. certifies that the following hose assembly has been tested to the Gates Oilfield Roughneck Agreement/Specification requirements and passed the 15 minute hydrostatic test per API Spec 7K/Q1, Fifth Edition, June 2010, Test pressure 9.6.7 and per Table 9 to 15,000 psi in accordance with this product number. Hose burst pressure 9.6.7.2 exceeds the minimum of 2.5 times the working pressure per Table 9.

Quality Manager :	QUALITY	Produciton:	PRODUCTION
Date :	4/30/2015	Date :	4/30/2015
Signature :		Signature :	

Form-PTC - 01 Rev.0 2



5M BOPE Schematic



MEWBOURNE OIL COMPANY

Mewbourne Oil Co.

BOP Break Testing Variance

Mewbourne Oil Company requests a variance from the minimum standards for well control equipment testing of 43 CFR 3172 to allow a testing schedule of the blow out preventer (BOP) and blow out prevention equipment (BOPE) along with batch drilling & offline cementing operations. Modern rig upgrades which facilitate pad drilling allow the BOP stack to be moved between wells on a multi-well pad without breaking any BOP stack components apart. Widespread use of these technologies has led to break testing BOPE being endorsed as safe and reliable. American Petroleum Institute (API) best practices are frequently used by regulators to develop their regulations. API Standard 53, *Well Control Equipment Systems for Drilling Wells* (5th Ed., Dec. 2018) Section 5.3.7.1 states "A pressure test of the pressure containing component shall be performed following the disconnection or repair, limited to the affected component."

Procedures

1. Full BOPE test at first installation on the pad.
   - Full BOPE test at least every 21 days.
   - Function test BOP elements per 43 CFR 3172.
   - Contact the BLM if a well control event occurs.
2. After the well section is secured and the well is confirmed to be static, the BOP will be disconnected from the wellhead and walked with the rig to another well on the pad. Two breaks on the BOPE will be made (Fig. 1).
   - Connection between the flex line and the HCR valve
   - Connection between the wellhead and the BOP quick connect (Fig. 5 & 6).
3. A capping flange will be installed after cementing per wellhead vendor procedure & casing pressure will be monitored via wellhead valve.
4. The BOP will be removed and carried by a hydraulic carrier (Fig. 3 & 4).
5. The rig will then walk to the next well.
6. Confirm that the well is static and remove the capping flange.
7. The connection between the flex line and HCR valve and the connection between the wellhead and the BOP quick connect will be reconnected.
8. Install a test plug into the wellhead.
9. A test will then be conducted against the upper pipe rams and choke, testing both breaks (Fig. 1 & 2).
10. The test will be held at 250 psi low and to the high value submitted in the APD, not to exceed 5000 psi.
11. The annular, blind rams and lower pipe rams will then be function tested.
12. If a pad consists of three or more wells, steps 4 through 11 will be repeated.

MEWBOURNE OIL COMPANY

13. A break test will only be conducted if the intermediate section can be drilled and cased within 21 days of the last full BOPE test.

Barriers

Before Nipple Down:

- Floats in casing
- Kill weight fluid in casing
- Kill weight fluid in annulus
- Solid body mandrel and/or packoff

After Nipple Down:

- Floats in casing
- Kill weight fluid in casing
- Kill weight fluid in annulus
- Solid body mandrel and/or packoff
- Offline cementing tool and/or cement head
- Capping flange after cementing

Summary

A variance is requested to only test broken pressure seals on the BOPE when moving between wells on a multi-well pad if the following conditions are met:

- A full BOPE test is conducted on the first well on the pad. API Standard 53 requires testing annular BOP to 70% of RWP or 100% of MASP, whichever is greater.
- If the first well on the pad is not the well with the deepest intermediate section, a full BOPE test will also be performed when moving to a deeper well.
- The hole section being drilled has a MASP under 5000 psi.
- If a well control event occurs, Mewbourne will contact BLM for permission to continue break testing.
- If significant (>50%) losses occur, full BOPE testing will be required going forward.
- Full BOPE test will be required prior to drilling the production hole.

While walking the rig, the BOP stack will be secured via hydraulic winch or hydraulic carrier. A full BOPE test will be performed at least every 21 days.

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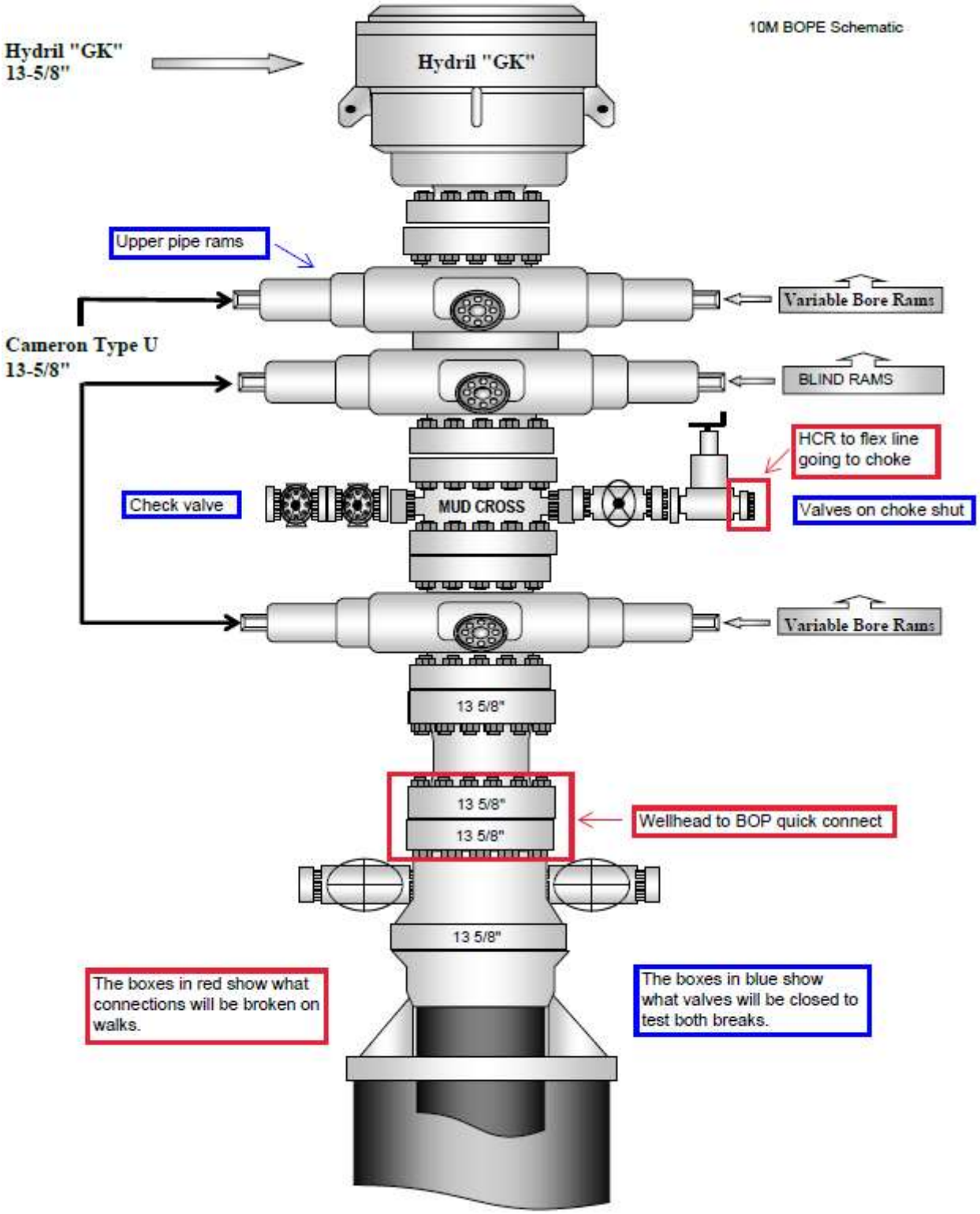

Figure 1. BOP diagram

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OIL COMPANY

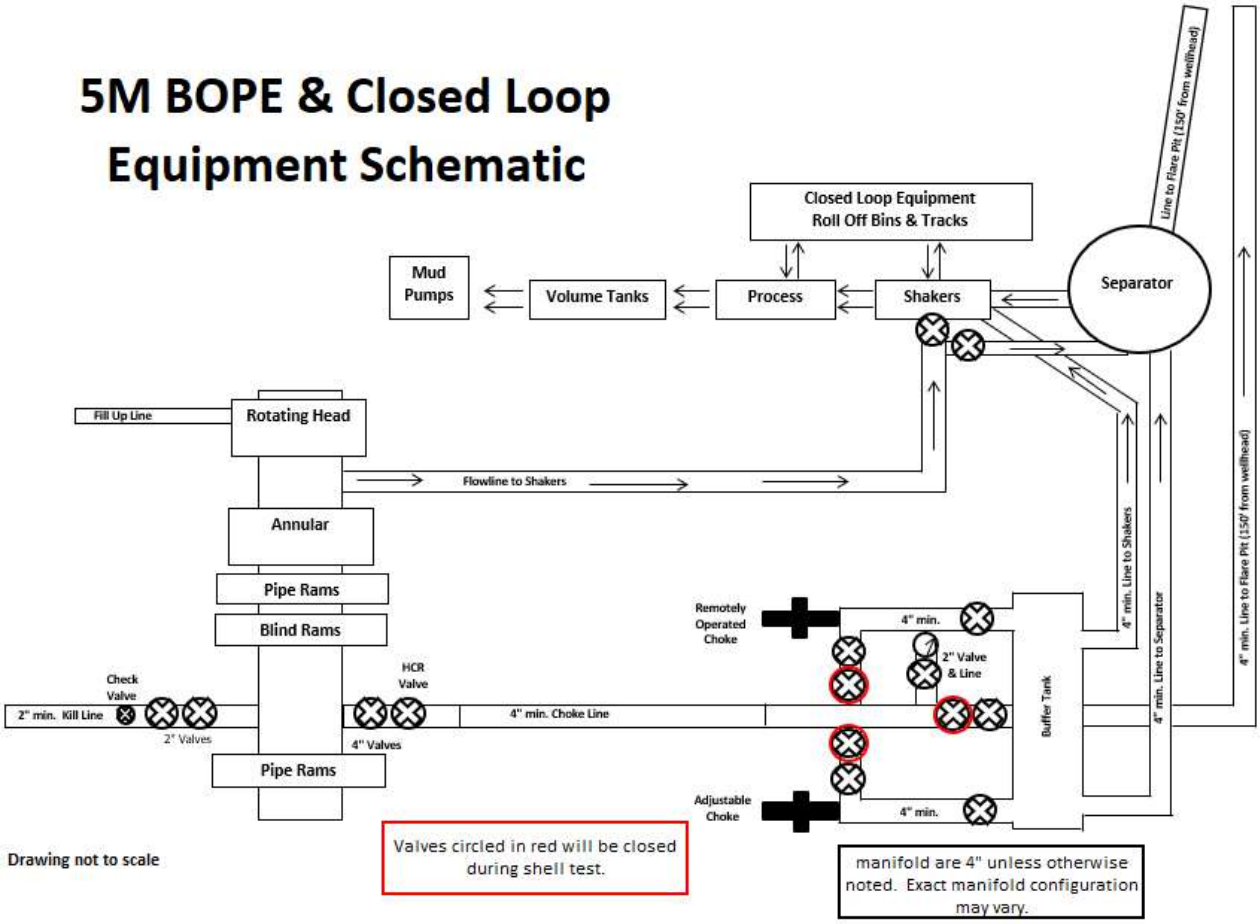

Figure 2. BOPE diagram

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Figure 3. BOP handling system

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Figure 4. BOP handling system

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OIL COMPANY

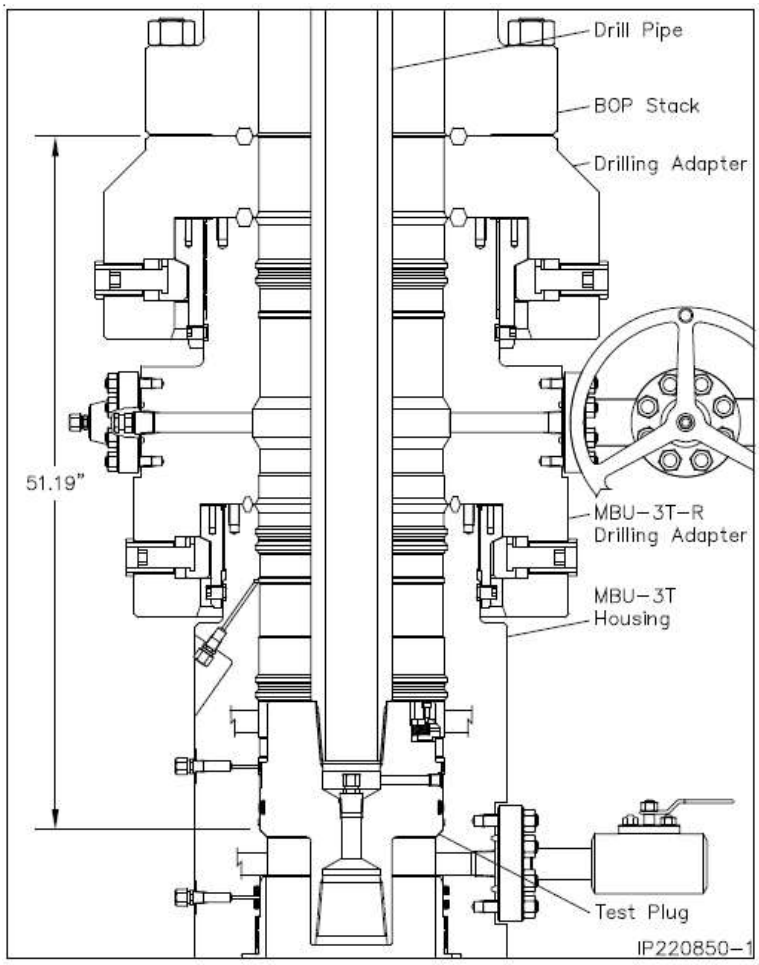

Figure 5. Cactus 5M wellhead with BOP quick connect

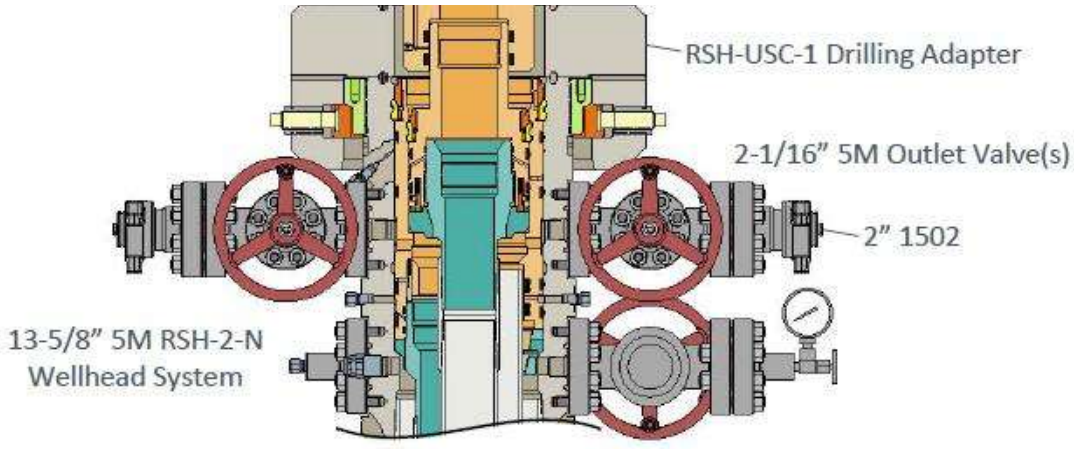

Figure 6. Vault 5M wellhead with BOP quick connect

Mewbourne Oil Company, Santa Maria 31/36 Fed Com 628H
Sec 32, T20S, R27E
SHL: 2495' FNL 800' FWL (Sec 32)
BHL: 660' FSL 100' FWL (Sec 36)

Casing Program Design A						BLM Minimum Safety Factors	1.125	1.0	1.6 Dry 1.8 Wet	1.6 Dry 1.8 Wet
String	Hole Size	Top MD	Top TVD	Bot MD	Bot TVD	Csg. Size	SF Collapse	SF Burst	SF Jt Tension	SF Body Tension
surface	26'	0'	0'	350'	350'	20" 94# J55 BTC	3.40	13.80	42.61	44.98
Int 1	17.5'	0'	0'	1200'	1200'	13.375" 48# H40 STC	1.37	3.08	5.59	9.39
Int 2	12.25'	0'	0'	2300'	2300'	9.625" 36# J55 LTC	1.88	3.27	5.47	6.81
Production	8.75'	0'	0'	7865'	7421'	7" 26# N-80 LTC	1.32	1.77	2.54	2.95
Liner	6.125'	7665'	7599'	19145'	7597'	4.5" 13.5# P110 LTC	1.55	1.81	2.18	2.72

Cement Program

Casing		# Sacks	Wt. lb/gal	Yield ft^3/sack	TOC/BOC	Volume ft^3	% Excess	Slurry Description
20.000 in	LEAD	380	12.5	2.12	0' - 261'	810	100%	Class C: Salt, Gel, Extender, LCM
	TAIL	200	14.8	1.34	261' - 350'	268		Class C: Retarder
13.375 in	LEAD	460	12.5	2.12	0' - 942'	980	50%	Class C: Salt, Gel, Extender, LCM
	TAIL	200	14.8	1.34	942' - 1200'	268		Class C: Retarder
1st Stg 9.625 in	LEAD	70	12.5	2.12	1255' - 1630'	150	25%	Class C: Salt, Gel, Extender, LCM
	TAIL	200	14.8	1.34	1630' - 2300'	268		Class C: Retarder
9 5/8" DV Tool @ 1255'								
2nd Stg 9.625 in	LEAD	170	12.5	2.12	0' - 921'	370	25%	Class C: Salt, Gel, Extender, LCM
	TAIL	100	14.8	1.34	921' - 1255'	980		Class C: Retarder
1st Stg 7 in	LEAD	50	12.5	2.12	6200' - 6515'	110	25%	Class C: Salt, Gel, Extender, LCM, Defoamer
	TAIL	400	15.6	1.18	6515' - 7864.9'	472		Class H: Retarder, Fluid Loss, Defoamer
7" DV Tool @ 6200'								
2nd Stg 7 in	LEAD	370	12.5	2.12	1230' - 5479'	790	25%	Class C: Salt, Gel, Extender, LCM, Defoamer
	TAIL	100	14.8	1.34	5479' - 6200'	134		Class C: Retarder, Fluid Loss, Defoamer
4.5 in	LEAD	730	13.5	1.85	7664.9' - 19144.8'	1360	25%	Class H: Salt, Gel, Fluid Loss, Retarder, Dispersant, Defoamer, Anti-

Design A - Mud Program

Depth	Mud Wt	Mud Type
0' - 350'	8.4	Fresh Water
350' - 1200'	9	Brine
1200' - 2300'	9	Fresh Water
2300' - 7864.9'	10	Cut-Brine
7864.9' - 19144.8'	11.5	OBM

Geology

Formation	Est. Top (TVD)	Mineral Resources	Formation	Est. Top (TVD)	Mineral Resources
Rustler			Yeso		
Castile			Delaware (Lamar)	2270'	Oil/Natural Gas
Salt Top			Bell Canyon		
Salt Base			Cherry Canyon		
Yates	380'	Oil/Natural Gas	Manzanita Marker		
Seven Rivers			Basal Brushy Canyon		
Queen			Bone Spring	3698'	Oil/Natural Gas
Capitan	1280'	Usable Water	1st Bone Spring	5609'	Oil/Natural Gas
Grayburg			2nd Bone Spring	6296'	Oil/Natural Gas
San Andres			3rd Bone Spring	7618'	Oil/Natural Gas
Glorieta			Wolfcamp	7973'	Oil/Natural Gas

All casing strings will be tested in accordance with 43 CFR Part 3170 Subpart 3172. Must have table for contingency casing.

	Y or N
Is casing new? If used, attach certification as required in Onshore Order #1	Y
Is casing API approved? 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 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?	Y
If yes, does production casing cement tie back a minimum of 50' above the Reef?	Y
Is well within the designated 4 string boundary.	Y
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?	
Is well located in R-111-P and SOPA?	N
If yes, are the first three strings cemented to surface?	
Is 2nd string set 100' to 600' below the base of salt?	
Is an open annulus used to satisfy R-111-Q? If yes, see cement design.	
Is an engineered weak point used to satisfy R-111-Q?	
If yes, at what depth is the weak point planned?	
Is well located in high Cave/Karst?	Y
If yes, are there two strings cemented to surface?	Y
(For 2 string wells) If yes, is there a contingency casing if lost circulation occurs?	
Is well located in critical Cave/Karst?	N
If yes, are there three strings cemented to surface?	

Mewbourne Oil Company, Santa Maria 31/36 Fed Com 628H
Sec 32, T20S, R27E
SHL: 2495' FNL 800' FWL (Sec 32)
BHL: 660' FSL 100' FWL (Sec 36)

Casing Program Design B						BLM Minimum Safety Factors	1.125	1.0	1.6 Drv 1.8 Wet	1.6 Drv 1.8 Wet
String	Hole Size	Top MD	Top TVD	Bot MD	Bot TVD	Csg. Size	SF Collapse	SF Burst	SF Jt Tension	SF Body Tension
surface	26'	0'	0'	350'	350'	20" 94# J55 BTC	3.40	13.80	42.61	44.98
Int 1	17.5'	0'	0'	1200'	1200'	13.375" 48# H40 STC	1.37	3.08	5.59	9.39
Int 2	12.25'	0'	0'	2300'	2300'	9.625" 36# J55 LTC	1.88	3.27	5.47	6.81
Production	8.75'	0'	0'	8765'	7994'	7" 26# HCP110 LTC	1.71	2.18	3.04	3.64
Liner	6.125'	7865'	7421'	19145'	7994'	4.5" 13.5# P110 LTC	1.58	1.84	2.22	2.77

Design B - Cement Program

Casing		# Sacks	Wt. lb/gal	Yield cu.ft/sack	TOC	Slurry Description		
20.000 in	LEAD	380	12.5	2.12	0' - 261'	810	100%	Class C: Salt, Gel, Extender, LCM
	TAIL	200	14.8	1.34	261' - 350'	268		Class C: Retarder
13.375 in	LEAD	460	12.5	2.12	0' - 942'	980	50%	Class C: Salt, Gel, Extender, LCM
	TAIL	200	14.8	1.34	942' - 1200'	268		Class C: Retarder
1st Stg 9.625 in	LEAD	70	12.5	2.12	1255' - 1630'	150	25%	Class C: Salt, Gel, Extender, LCM
	TAIL	200	14.8	1.34	1630' - 2300'	268		Class C: Retarder
9 5/8" DV Tool @ 1255'								
2nd Stg 9.625 in	LEAD	170	12.5	2.12	0' - 921'	370	25%	Class C: Salt, Gel, Extender, LCM
	TAIL	100	14.8	1.34	921' - 1255'	0		Class C: Retarder
1st Stg 7 in	LEAD	50	12.5	2.12	6200' - 6685'	110	25%	Class C: Salt, Gel, Extender, LCM, Defoamer
	TAIL	400	15.6	1.18	6685' - 8765.3'	472		Class H: Retarder, Fluid Loss, Defoamer
7" DV Tool @ 6200'								
2nd Stg 7 in	LEAD	370	12.5	2.12	1230' - 5479'	790	25%	Class C: Salt, Gel, Extender, LCM, Defoamer
	TAIL	100	14.8	1.34	5479' - 6200'	134		Class C: Retarder, Fluid Loss, Defoamer

Design B - Mud Program

Depth	Mud Wt	Mud Type
0' - 350'	8.4	Fresh Water
350' - 1200'	9	Brine
1200' - 2300'	9	Fresh Water
2300' - 8765.3'	10	Cut-Brine
8765.3' - 19144.8'	11.5	OBM

Geology

Formation	Est. Top (TVD)	Mineral Resources	Formation	Est. Top (TVD)	Mineral Resources
Rustler			Yeso		
Castile			Delaware (Lamar)	2270'	Oil/Natural Gas
Salt Top			Bell Canyon		
Salt Base			Cherry Canyon		
Yates	380'	Oil/Natural Gas	Manzanita Marker		
Seven Rivers			Basal Brushy Canyon		
Queen			Bone Spring	3698'	Oil/Natural Gas
Capitan	1280'	Usable Water	1st Bone Spring	5609'	Oil/Natural Gas
Grayburg			2nd Bone Spring	6296'	Oil/Natural Gas
San Andres			3rd Bone Spring	7618'	Oil/Natural Gas
Glorieta			Wolfcamp	7973'	Oil/Natural Gas

All casing strings will be tested in accordance with 43 CFR Part 3170 Subpart 3172. Must have table for contingency casing.

	Y or N
Is casing new? If used, attach certification as required in Onshore Order #1	Y
Is casing API approved? 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 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?	Y
If yes, does production casing cement tie back a minimum of 50' above the Reef?	Y
Is well within the designated 4 string boundary.	Y
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?	
Is well located in R-111-P and SOPA?	N
If yes, are the first three strings cemented to surface?	
Is 2nd string set 100' to 600' below the base of salt?	
Is an open annulus used to satisfy R-111-Q? If yes, see cement design.	
Is an engineered weak point used to satisfy R-111-Q?	
If yes, at what depth is the weak point planned?	
Is well located in high Cave/Karst?	Y
If yes, are there two strings cemented to surface?	Y
(For 2 string wells) If yes, is there a contingency casing if lost circulation occurs?	
Is well located in critical Cave/Karst?	N
If yes, are there three strings cemented to surface?	

Mewbourne Oil Company, Santa Maria 31/36 Fed Com 628H
Sec 32, T20S, R27E
SHL: 2495' FNL 800' FWL (Sec 32)
BHL: 660' FSL 100' FWL (Sec 36)

Casing Program Design A						BLM Minimum Safety Factors	1.125	1.0	1.6 Dry 1.8 Wet	1.6 Dry 1.8 Wet
String	Hole Size	Top MD	Top TVD	Bot MD	Bot TVD	Csg. Size	SF Collapse	SF Burst	SF Jt Tension	SF Body Tension
surface	26'	0'	0'	350'	350'	20" 94# J55 BTC	3.40	13.80	42.61	44.98
Int 1	17.5'	0'	0'	1200'	1200'	13.375" 48# H40 STC	1.37	3.08	5.59	9.39
Int 2	12.25'	0'	0'	2300'	2300'	9.625" 36# J55 LTC	1.88	3.27	5.47	6.81
Production	8.75'	0'	0'	7865'	7421'	7" 26# N-80 LTC	1.32	1.77	2.54	2.95
Liner	6.125'	7665'	7599'	19145'	7597'	4.5" 13.5# P110 LTC	1.55	1.81	2.18	2.72

Cement Program

Casing		# Sacks	Wt. lb/gal	Yield ft^3/sack	TOC/BOC	Volume ft^3	% Excess	Slurry Description
20.000 in	LEAD	380	12.5	2.12	0' - 261'	810	100%	Class C: Salt, Gel, Extender, LCM
	TAIL	200	14.8	1.34	261' - 350'	268		Class C: Retarder
13.375 in	LEAD	460	12.5	2.12	0' - 942'	980	50%	Class C: Salt, Gel, Extender, LCM
	TAIL	200	14.8	1.34	942' - 1200'	268		Class C: Retarder
1st Stg 9.625 in	LEAD	70	12.5	2.12	1255' - 1630'	150	25%	Class C: Salt, Gel, Extender, LCM
	TAIL	200	14.8	1.34	1630' - 2300'	268		Class C: Retarder
9 5/8" DV Tool @ 1255'								
2nd Stg 9.625 in	LEAD	170	12.5	2.12	0' - 921'	370	25%	Class C: Salt, Gel, Extender, LCM
	TAIL	100	14.8	1.34	921' - 1255'	980		Class C: Retarder
1st Stg 7 in	LEAD	50	12.5	2.12	6200' - 6515'	110	25%	Class C: Salt, Gel, Extender, LCM, Defoamer
	TAIL	400	15.6	1.18	6515' - 7864.9'	472		Class H: Retarder, Fluid Loss, Defoamer
7" DV Tool @ 6200'								
2nd Stg 7 in	LEAD	370	12.5	2.12	1230' - 5479'	790	25%	Class C: Salt, Gel, Extender, LCM, Defoamer
	TAIL	100	14.8	1.34	5479' - 6200'	134		Class C: Retarder, Fluid Loss, Defoamer
4.5 in	LEAD	730	13.5	1.85	7664.9' - 19144.8'	1360	25%	Class H: Salt, Gel, Fluid Loss, Retarder, Dispersant, Defoamer, Anti-

Design A - Mud Program

Depth	Mud Wt	Mud Type
0' - 350'	8.4	Fresh Water
350' - 1200'	9	Brine
1200' - 2300'	9	Fresh Water
2300' - 7864.9'	10	Cut-Brine
7864.9' - 19144.8'	11.5	OBM

Geology

Formation	Est. Top (TVD)	Mineral Resources	Formation	Est. Top (TVD)	Mineral Resources
Rustler			Yeso		
Castile			Delaware (Lamar)	2270'	Oil/Natural Gas
Salt Top			Bell Canyon		
Salt Base			Cherry Canyon		
Yates	380'	Oil/Natural Gas	Manzanita Marker		
Seven Rivers			Basal Brushy Canyon		
Queen			Bone Spring	3698'	Oil/Natural Gas
Capitan	1280'	Usable Water	1st Bone Spring	5609'	Oil/Natural Gas
Grayburg			2nd Bone Spring	6296'	Oil/Natural Gas
San Andres			3rd Bone Spring	7618'	Oil/Natural Gas
Glorieta			Wolfcamp	7973'	Oil/Natural Gas

All casing strings will be tested in accordance with 43 CFR Part 3170 Subpart 3172. Must have table for contingency casing.

	Y or N
Is casing new? If used, attach certification as required in Onshore Order #1	Y
Is casing API approved? 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 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?	Y
If yes, does production casing cement tie back a minimum of 50' above the Reef?	Y
Is well within the designated 4 string boundary.	Y
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?	
Is well located in R-111-P and SOPA?	N
If yes, are the first three strings cemented to surface?	
Is 2nd string set 100' to 600' below the base of salt?	
Is an open annulus used to satisfy R-111-Q? If yes, see cement design.	
Is an engineered weak point used to satisfy R-111-Q?	
If yes, at what depth is the weak point planned?	
Is well located in high Cave/Karst?	Y
If yes, are there two strings cemented to surface?	Y
(For 2 string wells) If yes, is there a contingency casing if lost circulation occurs?	
Is well located in critical Cave/Karst?	N
If yes, are there three strings cemented to surface?	

Mewbourne Oil Company, Santa Maria 31/36 Fed Com 628H
Sec 32, T20S, R27E
SHL: 2495' FNL 800' FWL (Sec 32)
BHL: 660' FSL 100' FWL (Sec 36)

Casing Program Design B						BLM Minimum Safety Factors	1.125	1.0	1.6 Drv 1.8 Wet	1.6 Drv 1.8 Wet
String	Hole Size	Top MD	Top TVD	Bot MD	Bot TVD	Csg. Size	SF Collapse	SF Burst	SF Jt Tension	SF Body Tension
surface	26'	0'	0'	350'	350'	20" 94# J55 BTC	3.40	13.80	42.61	44.98
Int 1	17.5'	0'	0'	1200'	1200'	13.375" 48# H40 STC	1.37	3.08	5.59	9.39
Int 2	12.25'	0'	0'	2300'	2300'	9.625" 36# J55 LTC	1.88	3.27	5.47	6.81
Production	8.75'	0'	0'	8765'	7994'	7" 26# HCP110 LTC	1.71	2.18	3.04	3.64
Liner	6.125'	7865'	7421'	19145'	7994'	4.5" 13.5# P110 LTC	1.58	1.84	2.22	2.77

Design B - Cement Program

Casing		# Sacks	Wt. lb/gal	Yield cu.ft/sack	TOC	Slurry Description		
20.000 in	LEAD	380	12.5	2.12	0' - 261'	810	100%	Class C: Salt, Gel, Extender, LCM
	TAIL	200	14.8	1.34	261' - 350'	268		Class C: Retarder
13.375 in	LEAD	460	12.5	2.12	0' - 942'	980	50%	Class C: Salt, Gel, Extender, LCM
	TAIL	200	14.8	1.34	942' - 1200'	268		Class C: Retarder
1st Stg 9.625 in	LEAD	70	12.5	2.12	1255' - 1630'	150	25%	Class C: Salt, Gel, Extender, LCM
	TAIL	200	14.8	1.34	1630' - 2300'	268		Class C: Retarder
9 5/8" DV Tool @ 1255'								
2nd Stg 9.625 in	LEAD	170	12.5	2.12	0' - 921'	370	25%	Class C: Salt, Gel, Extender, LCM
	TAIL	100	14.8	1.34	921' - 1255'	0		Class C: Retarder
1st Stg 7 in	LEAD	50	12.5	2.12	6200' - 6685'	110	25%	Class C: Salt, Gel, Extender, LCM, Defoamer
	TAIL	400	15.6	1.18	6685' - 8765.3'	472		Class H: Retarder, Fluid Loss, Defoamer
7" DV Tool @ 6200'								
2nd Stg 7 in	LEAD	370	12.5	2.12	1230' - 5479'	790	25%	Class C: Salt, Gel, Extender, LCM, Defoamer
	TAIL	100	14.8	1.34	5479' - 6200'	134		Class C: Retarder, Fluid Loss, Defoamer

Design B - Mud Program

Depth	Mud Wt	Mud Type
0' - 350'	8.4	Fresh Water
350' - 1200'	9	Brine
1200' - 2300'	9	Fresh Water
2300' - 8765.3'	10	Cut-Brine
8765.3' - 19144.8'	11.5	OBM

Geology

Formation	Est. Top (TVD)	Mineral Resources	Formation	Est. Top (TVD)	Mineral Resources
Rustler			Yeso		
Castile			Delaware (Lamar)	2270'	Oil/Natural Gas
Salt Top			Bell Canyon		
Salt Base			Cherry Canyon		
Yates	380'	Oil/Natural Gas	Manzanita Marker		
Seven Rivers			Basal Brushy Canyon		
Queen			Bone Spring	3698'	Oil/Natural Gas
Capitan	1280'	Usable Water	1st Bone Spring	5609'	Oil/Natural Gas
Grayburg			2nd Bone Spring	6296'	Oil/Natural Gas
San Andres			3rd Bone Spring	7618'	Oil/Natural Gas
Glorieta			Wolfcamp	7973'	Oil/Natural Gas

All casing strings will be tested in accordance with 43 CFR Part 3170 Subpart 3172. Must have table for contingency casing.

	Y or N
Is casing new? If used, attach certification as required in Onshore Order #1	Y
Is casing API approved? 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 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?	Y
If yes, does production casing cement tie back a minimum of 50' above the Reef?	Y
Is well within the designated 4 string boundary.	Y
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?	
Is well located in R-111-P and SOPA?	N
If yes, are the first three strings cemented to surface?	
Is 2nd string set 100' to 600' below the base of salt?	
Is an open annulus used to satisfy R-111-Q? If yes, see cement design.	
Is an engineered weak point used to satisfy R-111-Q?	
If yes, at what depth is the weak point planned?	
Is well located in high Cave/Karst?	Y
If yes, are there two strings cemented to surface?	Y
(For 2 string wells) If yes, is there a contingency casing if lost circulation occurs?	
Is well located in critical Cave/Karst?	N
If yes, are there three strings cemented to surface?	

Mewbourne Oil Company, Santa Maria 31/36 Fed Com 628H
Sec 32, T20S, R27E
SHL: 2495' FNL 800' FWL (Sec 32)
BHL: 660' FSL 100' FWL (Sec 36)

Casing Program Design A						BLM Minimum Safety Factors	1.125	1.0	1.6 Dry 1.8 Wet	1.6 Dry 1.8 Wet
String	Hole Size	Top MD	Top TVD	Bot MD	Bot TVD	Csg. Size	SF Collapse	SF Burst	SF Jt Tension	SF Body Tension
surface	26'	0'	0'	350'	350'	20" 94# J55 BTC	3.40	13.80	42.61	44.98
Int 1	17.5'	0'	0'	1200'	1200'	13.375" 48# H40 STC	1.37	3.08	5.59	9.39
Int 2	12.25'	0'	0'	2300'	2300'	9.625" 36# J55 LTC	1.88	3.27	5.47	6.81
Production	8.75'	0'	0'	7865'	7421'	7" 26# N-80 LTC	1.32	1.77	2.54	2.95
Liner	6.125'	7665'	7599'	19145'	7597'	4.5" 13.5# P110 LTC	1.55	1.81	2.18	2.72

Cement Program

Casing		# Sacks	Wt. lb/gal	Yield ft^3/sack	TOC/BOC	Volume ft^3	% Excess	Slurry Description
20.000 in	LEAD	380	12.5	2.12	0' - 261'	810	100%	Class C: Salt, Gel, Extender, LCM
	TAIL	200	14.8	1.34	261' - 350'	268		Class C: Retarder
13.375 in	LEAD	460	12.5	2.12	0' - 942'	980	50%	Class C: Salt, Gel, Extender, LCM
	TAIL	200	14.8	1.34	942' - 1200'	268		Class C: Retarder
1st Stg 9.625 in	LEAD	70	12.5	2.12	1255' - 1630'	150	25%	Class C: Salt, Gel, Extender, LCM
	TAIL	200	14.8	1.34	1630' - 2300'	268		Class C: Retarder
9 5/8" DV Tool @ 1255'								
2nd Stg 9.625 in	LEAD	170	12.5	2.12	0' - 921'	370	25%	Class C: Salt, Gel, Extender, LCM
	TAIL	100	14.8	1.34	921' - 1255'	980		Class C: Retarder
1st Stg 7 in	LEAD	50	12.5	2.12	6200' - 6515'	110	25%	Class C: Salt, Gel, Extender, LCM, Defoamer
	TAIL	400	15.6	1.18	6515' - 7864.9'	472		Class H: Retarder, Fluid Loss, Defoamer
7" DV Tool @ 6200'								
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	TAIL	100	14.8	1.34	5479' - 6200'	134		Class C: Retarder, Fluid Loss, Defoamer
4.5 in	LEAD	730	13.5	1.85	7664.9' - 19144.8'	1360	25%	Class H: Salt, Gel, Fluid Loss, Retarder, Dispersant, Defoamer, Anti-

Design A - Mud Program

Depth	Mud Wt	Mud Type
0' - 350'	8.4	Fresh Water
350' - 1200'	9	Brine
1200' - 2300'	9	Fresh Water
2300' - 7864.9'	10	Cut-Brine
7864.9' - 19144.8'	11.5	OBM

Geology

Formation	Est. Top (TVD)	Mineral Resources	Formation	Est. Top (TVD)	Mineral Resources
Rustler			Yeso		
Castile			Delaware (Lamar)	2270'	Oil/Natural Gas
Salt Top			Bell Canyon		
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	Y or N
Is casing new? If used, attach certification as required in Onshore Order #1	Y
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Does the above casing design meet or exceed BLM's minimum standards? If not provide justification (loading assumptions, casing design criteria).	Y
Will the 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?	Y
If yes, does production casing cement tie back a minimum of 50' above the Reef?	Y
Is well within the designated 4 string boundary.	Y
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?	
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Is 2nd string set 100' to 600' below the base of salt?	
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Is an engineered weak point used to satisfy R-111-Q?	
If yes, at what depth is the weak point planned?	
Is well located in high Cave/Karst?	Y
If yes, are there two strings cemented to surface?	Y
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Sec 32, T20S, R27E
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1st Stg 7 in	LEAD	50	12.5	2.12	6200' - 6685'	110	25%	Class C: Salt, Gel, Extender, LCM, Defoamer
	TAIL	400	15.6	1.18	6685' - 8765.3'	472		Class H: Retarder, Fluid Loss, Defoamer
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2nd Stg 7 in	LEAD	370	12.5	2.12	1230' - 5479'	790	25%	Class C: Salt, Gel, Extender, LCM, Defoamer
	TAIL	100	14.8	1.34	5479' - 6200'	134		Class C: Retarder, Fluid Loss, Defoamer

Design B - Mud Program

Depth	Mud Wt	Mud Type
0' - 350'	8.4	Fresh Water
350' - 1200'	9	Brine
1200' - 2300'	9	Fresh Water
2300' - 8765.3'	10	Cut-Brine
8765.3' - 19144.8'	11.5	OBM

Geology

Formation	Est. Top (TVD)	Mineral Resources	Formation	Est. Top (TVD)	Mineral Resources
Rustler			Yeso		
Castile			Delaware (Lamar)	2270'	Oil/Natural Gas
Salt Top			Bell Canyon		
Salt Base			Cherry Canyon		
Yates	380'	Oil/Natural Gas	Manzanita Marker		
Seven Rivers			Basal Brushy Canyon		
Queen			Bone Spring	3698'	Oil/Natural Gas
Capitan	1280'	Usable Water	1st Bone Spring	5609'	Oil/Natural Gas
Grayburg			2nd Bone Spring	6296'	Oil/Natural Gas
San Andres			3rd Bone Spring	7618'	Oil/Natural Gas
Glorieta			Wolfcamp	7973'	Oil/Natural Gas

All casing strings will be tested in accordance with 43 CFR Part 3170 Subpart 3172. Must have table for contingency casing.

	Y or N
Is casing new? If used, attach certification as required in Onshore Order #1	Y
Is casing API approved? 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 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?	Y
If yes, does production casing cement tie back a minimum of 50' above the Reef?	Y
Is well within the designated 4 string boundary.	Y
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?	
Is well located in R-111-P and SOPA?	N
If yes, are the first three strings cemented to surface?	
Is 2nd string set 100' to 600' below the base of salt?	
Is an open annulus used to satisfy R-111-Q? If yes, see cement design.	
Is an engineered weak point used to satisfy R-111-Q?	
If yes, at what depth is the weak point planned?	
Is well located in high Cave/Karst?	Y
If yes, are there two strings cemented to surface?	Y
(For 2 string wells) If yes, is there a contingency casing if lost circulation occurs?	
Is well located in critical Cave/Karst?	N
If yes, are there three strings cemented to surface?	

Mewbourne Oil Company, Santa Maria 31/36 Fed Com 628H
Sec 32, T20S, R27E
SHL: 2495' FNL 800' FWL (Sec 32)
BHL: 660' FSL 100' FWL (Sec 36)

Casing Program Design A						BLM Minimum Safety Factors	1.125	1.0	1.6 Dry 1.8 Wet	1.6 Dry 1.8 Wet
String	Hole Size	Top MD	Top TVD	Bot MD	Bot TVD	Csg. Size	SF Collapse	SF Burst	SF Jt Tension	SF Body Tension
surface	26'	0'	0'	350'	350'	20" 94# J55 BTC	3.40	13.80	42.61	44.98
Int 1	17.5'	0'	0'	1200'	1200'	13.375" 48# H40 STC	1.37	3.08	5.59	9.39
Int 2	12.25'	0'	0'	2300'	2300'	9.625" 36# J55 LTC	1.88	3.27	5.47	6.81
Production	8.75'	0'	0'	7865'	7421'	7" 26# N-80 LTC	1.32	1.77	2.54	2.95
Liner	6.125'	7665'	7599'	19145'	7597'	4.5" 13.5# P110 LTC	1.55	1.81	2.18	2.72

Cement Program

Casing		# Sacks	Wt. lb/gal	Yield ft^3/sack	TOC/BOC	Volume ft^3	% Excess	Slurry Description
20.000 in	LEAD	380	12.5	2.12	0' - 261'	810	100%	Class C: Salt, Gel, Extender, LCM
	TAIL	200	14.8	1.34	261' - 350'	268		Class C: Retarder
13.375 in	LEAD	460	12.5	2.12	0' - 942'	980	50%	Class C: Salt, Gel, Extender, LCM
	TAIL	200	14.8	1.34	942' - 1200'	268		Class C: Retarder
1st Stg 9.625 in	LEAD	70	12.5	2.12	1255' - 1630'	150	25%	Class C: Salt, Gel, Extender, LCM
	TAIL	200	14.8	1.34	1630' - 2300'	268		Class C: Retarder
9 5/8" DV Tool @ 1255'								
2nd Stg 9.625 in	LEAD	170	12.5	2.12	0' - 921'	370	25%	Class C: Salt, Gel, Extender, LCM
	TAIL	100	14.8	1.34	921' - 1255'	980		Class C: Retarder
1st Stg 7 in	LEAD	50	12.5	2.12	6200' - 6515'	110	25%	Class C: Salt, Gel, Extender, LCM, Defoamer
	TAIL	400	15.6	1.18	6515' - 7864.9'	472		Class H: Retarder, Fluid Loss, Defoamer
7" DV Tool @ 6200'								
2nd Stg 7 in	LEAD	370	12.5	2.12	1230' - 5479'	790	25%	Class C: Salt, Gel, Extender, LCM, Defoamer
	TAIL	100	14.8	1.34	5479' - 6200'	134		Class C: Retarder, Fluid Loss, Defoamer
4.5 in	LEAD	730	13.5	1.85	7664.9' - 19144.8'	1360	25%	Class H: Salt, Gel, Fluid Loss, Retarder, Dispersant, Defoamer, Anti-

Design A - Mud Program

Depth	Mud Wt	Mud Type
0' - 350'	8.4	Fresh Water
350' - 1200'	9	Brine
1200' - 2300'	9	Fresh Water
2300' - 7864.9'	10	Cut-Brine
7864.9' - 19144.8'	11.5	OBM

Geology

Formation	Est. Top (TVD)	Mineral Resources	Formation	Est. Top (TVD)	Mineral Resources
Rustler			Yeso		
Castile			Delaware (Lamar)	2270'	Oil/Natural Gas
Salt Top			Bell Canyon		
Salt Base			Cherry Canyon		
Yates	380'	Oil/Natural Gas	Manzanita Marker		
Seven Rivers			Basal Brushy Canyon		
Queen			Bone Spring	3698'	Oil/Natural Gas
Capitan	1280'	Usable Water	1st Bone Spring	5609'	Oil/Natural Gas
Grayburg			2nd Bone Spring	6296'	Oil/Natural Gas
San Andres			3rd Bone Spring	7618'	Oil/Natural Gas
Glorieta			Wolfcamp	7973'	Oil/Natural Gas

All casing strings will be tested in accordance with 43 CFR Part 3170 Subpart 3172. Must have table for contingency casing.

	Y or N
Is casing new? If used, attach certification as required in Onshore Order #1	Y
Is casing API approved? 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 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?	Y
If yes, does production casing cement tie back a minimum of 50' above the Reef?	Y
Is well within the designated 4 string boundary.	Y
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?	
Is well located in R-111-P and SOPA?	N
If yes, are the first three strings cemented to surface?	
Is 2nd string set 100' to 600' below the base of salt?	
Is an open annulus used to satisfy R-111-Q? If yes, see cement design.	
Is an engineered weak point used to satisfy R-111-Q?	
If yes, at what depth is the weak point planned?	
Is well located in high Cave/Karst?	Y
If yes, are there two strings cemented to surface?	Y
(For 2 string wells) If yes, is there a contingency casing if lost circulation occurs?	
Is well located in critical Cave/Karst?	N
If yes, are there three strings cemented to surface?	

Mewbourne Oil Company, Santa Maria 31/36 Fed Com 628H
Sec 32, T20S, R27E
SHL: 2495' FNL 800' FWL (Sec 32)
BHL: 660' FSL 100' FWL (Sec 36)

Casing Program Design B						BLM Minimum Safety Factors	1.125	1.0	1.6 Drv 1.8 Wet	1.6 Drv 1.8 Wet
String	Hole Size	Top MD	Top TVD	Bot MD	Bot TVD	Csg. Size	SF Collapse	SF Burst	SF Jt Tension	SF Body Tension
surface	26'	0'	0'	350'	350'	20" 94# J55 BTC	3.40	13.80	42.61	44.98
Int 1	17.5'	0'	0'	1200'	1200'	13.375" 48# H40 STC	1.37	3.08	5.59	9.39
Int 2	12.25'	0'	0'	2300'	2300'	9.625" 36# J55 LTC	1.88	3.27	5.47	6.81
Production	8.75'	0'	0'	8765'	7994'	7" 26# HCP110 LTC	1.71	2.18	3.04	3.64
Liner	6.125'	7865'	7421'	19145'	7994'	4.5" 13.5# P110 LTC	1.58	1.84	2.22	2.77

Design B - Cement Program

Casing		# Sacks	Wt. lb/gal	Yield cu.ft/sack	TOC	Slurry Description		
20.000 in	LEAD	380	12.5	2.12	0' - 261'	810	100%	Class C: Salt, Gel, Extender, LCM
	TAIL	200	14.8	1.34	261' - 350'	268		Class C: Retarder
13.375 in	LEAD	460	12.5	2.12	0' - 942'	980	50%	Class C: Salt, Gel, Extender, LCM
	TAIL	200	14.8	1.34	942' - 1200'	268		Class C: Retarder
1st Stg 9.625 in	LEAD	70	12.5	2.12	1255' - 1630'	150	25%	Class C: Salt, Gel, Extender, LCM
	TAIL	200	14.8	1.34	1630' - 2300'	268		Class C: Retarder
9 5/8" DV Tool @ 1255'								
2nd Stg 9.625 in	LEAD	170	12.5	2.12	0' - 921'	370	25%	Class C: Salt, Gel, Extender, LCM
	TAIL	100	14.8	1.34	921' - 1255'	0		Class C: Retarder
1st Stg 7 in	LEAD	50	12.5	2.12	6200' - 6685'	110	25%	Class C: Salt, Gel, Extender, LCM, Defoamer
	TAIL	400	15.6	1.18	6685' - 8765.3'	472		Class H: Retarder, Fluid Loss, Defoamer
7" DV Tool @ 6200'								
2nd Stg 7 in	LEAD	370	12.5	2.12	1230' - 5479'	790	25%	Class C: Salt, Gel, Extender, LCM, Defoamer
	TAIL	100	14.8	1.34	5479' - 6200'	134		Class C: Retarder, Fluid Loss, Defoamer

Design B - Mud Program

Depth	Mud Wt	Mud Type
0' - 350'	8.4	Fresh Water
350' - 1200'	9	Brine
1200' - 2300'	9	Fresh Water
2300' - 8765.3'	10	Cut-Brine
8765.3' - 19144.8'	11.5	OBM

Geology

Formation	Est. Top (TVD)	Mineral Resources	Formation	Est. Top (TVD)	Mineral Resources
Rustler			Yeso		
Castile			Delaware (Lamar)	2270'	Oil/Natural Gas
Salt Top			Bell Canyon		
Salt Base			Cherry Canyon		
Yates	380'	Oil/Natural Gas	Manzanita Marker		
Seven Rivers			Basal Brushy Canyon		
Queen			Bone Spring	3698'	Oil/Natural Gas
Capitan	1280'	Usable Water	1st Bone Spring	5609'	Oil/Natural Gas
Grayburg			2nd Bone Spring	6296'	Oil/Natural Gas
San Andres			3rd Bone Spring	7618'	Oil/Natural Gas
Glorieta			Wolfcamp	7973'	Oil/Natural Gas

All casing strings will be tested in accordance with 43 CFR Part 3170 Subpart 3172. Must have table for contingency casing.

	Y or N
Is casing new? If used, attach certification as required in Onshore Order #1	Y
Is casing API approved? 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 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?	Y
If yes, does production casing cement tie back a minimum of 50' above the Reef?	Y
Is well within the designated 4 string boundary.	Y
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?	
Is well located in R-111-P and SOPA?	N
If yes, are the first three strings cemented to surface?	
Is 2nd string set 100' to 600' below the base of salt?	
Is an open annulus used to satisfy R-111-Q? If yes, see cement design.	
Is an engineered weak point used to satisfy R-111-Q?	
If yes, at what depth is the weak point planned?	
Is well located in high Cave/Karst?	Y
If yes, are there two strings cemented to surface?	Y
(For 2 string wells) If yes, is there a contingency casing if lost circulation occurs?	
Is well located in critical Cave/Karst?	N
If yes, are there three strings cemented to surface?	

Mewbourne Oil Company, Santa Maria 31/36 Fed Com 628H
Sec 32, T20S, R27E
SHL: 2495' FNL 800' FWL (Sec 32)
BHL: 660' FSL 100' FWL (Sec 36)

Casing Program Design A						BLM Minimum Safety Factors	1.125	1.0	1.6 Dry 1.8 Wet	1.6 Dry 1.8 Wet
String	Hole Size	Top MD	Top TVD	Bot MD	Bot TVD	Csg. Size	SF Collapse	SF Burst	SF Jt Tension	SF Body Tension
surface	26'	0'	0'	350'	350'	20" 94# J55 BTC	3.40	13.80	42.61	44.98
Int 1	17.5'	0'	0'	1200'	1200'	13.375" 48# H40 STC	1.37	3.08	5.59	9.39
Int 2	12.25'	0'	0'	2300'	2300'	9.625" 36# J55 LTC	1.88	3.27	5.47	6.81
Production	8.75'	0'	0'	7865'	7421'	7" 26# N-80 LTC	1.32	1.77	2.54	2.95
Liner	6.125'	7665'	7599'	19145'	7597'	4.5" 13.5# P110 LTC	1.55	1.81	2.18	2.72

Cement Program

Casing		# Sacks	Wt. lb/gal	Yield ft^3/sack	TOC/BOC	Volume ft^3	% Excess	Slurry Description
20.000 in	LEAD	380	12.5	2.12	0' - 261'	810	100%	Class C: Salt, Gel, Extender, LCM
	TAIL	200	14.8	1.34	261' - 350'	268		Class C: Retarder
13.375 in	LEAD	460	12.5	2.12	0' - 942'	980	50%	Class C: Salt, Gel, Extender, LCM
	TAIL	200	14.8	1.34	942' - 1200'	268		Class C: Retarder
1st Stg 9.625 in	LEAD	70	12.5	2.12	1255' - 1630'	150	25%	Class C: Salt, Gel, Extender, LCM
	TAIL	200	14.8	1.34	1630' - 2300'	268		Class C: Retarder
9 5/8" DV Tool @ 1255'								
2nd Stg 9.625 in	LEAD	170	12.5	2.12	0' - 921'	370	25%	Class C: Salt, Gel, Extender, LCM
	TAIL	100	14.8	1.34	921' - 1255'	980		Class C: Retarder
1st Stg 7 in	LEAD	50	12.5	2.12	6200' - 6515'	110	25%	Class C: Salt, Gel, Extender, LCM, Defoamer
	TAIL	400	15.6	1.18	6515' - 7864.9'	472		Class H: Retarder, Fluid Loss, Defoamer
7" DV Tool @ 6200'								
2nd Stg 7 in	LEAD	370	12.5	2.12	1230' - 5479'	790	25%	Class C: Salt, Gel, Extender, LCM, Defoamer
	TAIL	100	14.8	1.34	5479' - 6200'	134		Class C: Retarder, Fluid Loss, Defoamer
4.5 in	LEAD	730	13.5	1.85	7664.9' - 19144.8'	1360	25%	Class H: Salt, Gel, Fluid Loss, Retarder, Dispersant, Defoamer, Anti-

Design A - Mud Program

Depth	Mud Wt	Mud Type
0' - 350'	8.4	Fresh Water
350' - 1200'	9	Brine
1200' - 2300'	9	Fresh Water
2300' - 7864.9'	10	Cut-Brine
7864.9' - 19144.8'	11.5	OBM

Geology

Formation	Est. Top (TVD)	Mineral Resources	Formation	Est. Top (TVD)	Mineral Resources
Rustler			Yeso		
Castile			Delaware (Lamar)	2270'	Oil/Natural Gas
Salt Top			Bell Canyon		
Salt Base			Cherry Canyon		
Yates	380'	Oil/Natural Gas	Manzanita Marker		
Seven Rivers			Basal Brushy Canyon		
Queen			Bone Spring	3698'	Oil/Natural Gas
Capitan	1280'	Usable Water	1st Bone Spring	5609'	Oil/Natural Gas
Grayburg			2nd Bone Spring	6296'	Oil/Natural Gas
San Andres			3rd Bone Spring	7618'	Oil/Natural Gas
Glorieta			Wolfcamp	7973'	Oil/Natural Gas

All casing strings will be tested in accordance with 43 CFR Part 3170 Subpart 3172. Must have table for contingency casing.

	Y or N
Is casing new? If used, attach certification as required in Onshore Order #1	Y
Is casing API approved? 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 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?	Y
If yes, does production casing cement tie back a minimum of 50' above the Reef?	Y
Is well within the designated 4 string boundary.	Y
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?	
Is well located in R-111-P and SOPA?	N
If yes, are the first three strings cemented to surface?	
Is 2nd string set 100' to 600' below the base of salt?	
Is an open annulus used to satisfy R-111-Q? If yes, see cement design.	
Is an engineered weak point used to satisfy R-111-Q?	
If yes, at what depth is the weak point planned?	
Is well located in high Cave/Karst?	Y
If yes, are there two strings cemented to surface?	Y
(For 2 string wells) If yes, is there a contingency casing if lost circulation occurs?	
Is well located in critical Cave/Karst?	N
If yes, are there three strings cemented to surface?	

Mewbourne Oil Company, Santa Maria 31/36 Fed Com 628H
Sec 32, T20S, R27E
SHL: 2495' FNL 800' FWL (Sec 32)
BHL: 660' FSL 100' FWL (Sec 36)

Casing Program Design B						BLM Minimum Safety Factors	1.125	1.0	1.6 Drv 1.8 Wet	1.6 Drv 1.8 Wet
String	Hole Size	Top MD	Top TVD	Bot MD	Bot TVD	Csg. Size	SF Collapse	SF Burst	SF Jt Tension	SF Body Tension
surface	26'	0'	0'	350'	350'	20" 94# J55 BTC	3.40	13.80	42.61	44.98
Int 1	17.5'	0'	0'	1200'	1200'	13.375" 48# H40 STC	1.37	3.08	5.59	9.39
Int 2	12.25'	0'	0'	2300'	2300'	9.625" 36# J55 LTC	1.88	3.27	5.47	6.81
Production	8.75'	0'	0'	8765'	7994'	7" 26# HCP110 LTC	1.71	2.18	3.04	3.64
Liner	6.125'	7865'	7421'	19145'	7994'	4.5" 13.5# P110 LTC	1.58	1.84	2.22	2.77

Design B - Cement Program

Casing		# Sacks	Wt. lb/gal	Yield cu.ft/sack	TOC	Slurry Description		
20.000 in	LEAD	380	12.5	2.12	0' - 261'	810	100%	Class C: Salt, Gel, Extender, LCM
	TAIL	200	14.8	1.34	261' - 350'	268		Class C: Retarder
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	TAIL	200	14.8	1.34	942' - 1200'	268		Class C: Retarder
1st Stg 9.625 in	LEAD	70	12.5	2.12	1255' - 1630'	150	25%	Class C: Salt, Gel, Extender, LCM
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2nd Stg 9.625 in	LEAD	170	12.5	2.12	0' - 921'	370	25%	Class C: Salt, Gel, Extender, LCM
	TAIL	100	14.8	1.34	921' - 1255'	0		Class C: Retarder
1st Stg 7 in	LEAD	50	12.5	2.12	6200' - 6685'	110	25%	Class C: Salt, Gel, Extender, LCM, Defoamer
	TAIL	400	15.6	1.18	6685' - 8765.3'	472		Class H: Retarder, Fluid Loss, Defoamer
7" DV Tool @ 6200'								
2nd Stg 7 in	LEAD	370	12.5	2.12	1230' - 5479'	790	25%	Class C: Salt, Gel, Extender, LCM, Defoamer
	TAIL	100	14.8	1.34	5479' - 6200'	134		Class C: Retarder, Fluid Loss, Defoamer

Design B - Mud Program

Depth	Mud Wt	Mud Type
0' - 350'	8.4	Fresh Water
350' - 1200'	9	Brine
1200' - 2300'	9	Fresh Water
2300' - 8765.3'	10	Cut-Brine
8765.3' - 19144.8'	11.5	OBM

Geology

Formation	Est. Top (TVD)	Mineral Resources	Formation	Est. Top (TVD)	Mineral Resources
Rustler			Yeso		
Castile			Delaware (Lamar)	2270'	Oil/Natural Gas
Salt Top			Bell Canyon		
Salt Base			Cherry Canyon		
Yates	380'	Oil/Natural Gas	Manzanita Marker		
Seven Rivers			Basal Brushy Canyon		
Queen			Bone Spring	3698'	Oil/Natural Gas
Capitan	1280'	Usable Water	1st Bone Spring	5609'	Oil/Natural Gas
Grayburg			2nd Bone Spring	6296'	Oil/Natural Gas
San Andres			3rd Bone Spring	7618'	Oil/Natural Gas
Glorieta			Wolfcamp	7973'	Oil/Natural Gas

All casing strings will be tested in accordance with 43 CFR Part 3170 Subpart 3172. Must have table for contingency casing.

	Y or N
Is casing new? If used, attach certification as required in Onshore Order #1	Y
Is casing API approved? 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 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?	Y
If yes, does production casing cement tie back a minimum of 50' above the Reef?	Y
Is well within the designated 4 string boundary.	Y
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?	
Is well located in R-111-P and SOPA?	N
If yes, are the first three strings cemented to surface?	
Is 2nd string set 100' to 600' below the base of salt?	
Is an open annulus used to satisfy R-111-Q? If yes, see cement design.	
Is an engineered weak point used to satisfy R-111-Q?	
If yes, at what depth is the weak point planned?	
Is well located in high Cave/Karst?	Y
If yes, are there two strings cemented to surface?	Y
(For 2 string wells) If yes, is there a contingency casing if lost circulation occurs?	
Is well located in critical Cave/Karst?	N
If yes, are there three strings cemented to surface?	

Hydrogen Sulfide Drilling Operations Plan
Mewbourne Oil Company

1. General Requirements

Rule 118 does not apply to this well because MOC has researched this area and no high concentrations of H2S were found. MOC will have on location and working all H2S safety equipment before the Delaware formation for purposes of safety and insurance requirements.

2. Hydrogen Sulfide Training

All personnel, whether regularly assigned, contracted, or employed on an unscheduled basis, will have received training from a qualified instructor in the following areas prior to entering the drilling pad area of the well:

1. The hazards and characteristics of hydrogen sulfide gas.
2. The proper use of personal protective equipment and life support systems.
3. The proper use of hydrogen sulfide detectors, alarms, warning systems, briefing areas, evacuation procedures.
4. The proper techniques for first aid and rescue operations.

Additionally, supervisory personnel will be trained in the following areas:

1 The effects of hydrogen sulfide on metal components. If high tensile tubular systems are utilized, supervisory personnel will be trained in their special maintenance requirements.
2 Corrective action and shut in procedures, blowout prevention, and well control procedures while drilling a well.
3 The contents of the Hydrogen Sulfide Drilling Operations Plan.

There will be an initial training session prior to encountering a know hydrogen sulfide source. The initial training session shall include a review of the site specific Hydrogen Sulfide Drilling Operations Plan.

3. Hydrogen Sulfide Safety Equipment and Systems

All hydrogen sulfide safety equipment and systems will be installed, tested, and operational prior to drilling below the 9 5/8" intermediate casing.

1. Well Control Equipment
   - A. Choke manifold with minimum of one adjustable choke/remote choke.
   - B. Blowout preventers equipped with blind rams and pipe rams to accommodate all pipe sizes with properly sized closing unit
   - C. Auxiliary equipment including annular type blowout preventer.
2. Protective Equipment for Essential Personnel
   Thirty minute self contained work unit located in the dog house and at briefing areas.

Additionally: If H2S is encountered in concentrations less than 10 ppm, fans will be placed in work areas to prevent the accumulation of hazardous amounts of poisonous gas. If higher concentrations of H2S are detected the well will be shut in and a rotating head, mud/gas separator, remote choke and flare line with igniter will be installed.

3. Hydrogen Sulfide Protection and Monitoring Equipment
Two portable hydrogen sulfide monitors positioned on location for optimum coverage and detection. The units shall have audible sirens to notify personnel when hydrogen sulfide levels exceed 20 PPM.

4. Visual Warning Systems
A. Wind direction indicators as indicated on the wellsite diagram.
B. Caution signs shall be posted on roads providing access to location. Signs shall be painted a high visibility color with lettering of sufficient size to be readable at reasonable distances from potentially contaminated areas.

4. Mud Program

The mud program has been designed to minimize the amount of hydrogen sulfide entrained in the mud system. Proper mud weight, safe drilling practices, and the use of hydrogen sulfide scavengers will minimize hazards while drilling the well.

5. Metallurgy

All tubular systems, wellheads, blowout preventers, drilling spools, kill lines, choke manifolds, and valves shall be suitable for service in a hydrogen sulfide environment when chemically treated.

6. Communications

State & County Officials phone numbers are posted on rig floor and supervisors trailer. Communications in company vehicles and toolpushers are either two way radios or cellular phones.

7. Well Testing

Drill stem testing is not an anticipated requirement for evaluation of this well. If a drill stem test is required, it will be conducted with a minimum number of personnel in the immediate vicinity. The test will be conducted during daylight hours only.

8. Emergency Phone Numbers

Eddy County Sheriff's Office	**911 or 575-887-7551**
Ambulance Service	**911 or 575-885-2111**
Carlsbad Fire Dept	**911 or 575-885-2111**
Loco Hills Volunteer Fire Dept.	**911 or 575-677-3266**
Closest Medical Facility - Columbia Medical Center of Carlsbad	**575-492-5000**

Mewbourne Oil Company	**Hobbs District Office**	**575-393-5905**
	Fax	**575-397-6252**
	2nd Fax	**575-393-7259**
District Manager	**Robin Terrell**	**575-390-4816**
Drilling Superintendent	**Frosty Lathan**	**575-390-4103**
	Bradley Bishop	**575-390-6838**
Drilling Foreman	**Wesley Noseff**	**575-441-0729**

Mewbourne Oil Company

Eddy County, New Mexico NAD 83
Santa Maria 31/36 Fed Com #628H
Sec 32, T20S, R27E
SHL: 2495' FNL & 800' FWL (Sec 32)
BHL: 660' FSL & 100' FWL (Sec 36)

Plan: Design #1

Standard Planning Report

02 February, 2024

Planning Report

Database:	Hobbs	**Local Co-ordinate Reference:**	Site Santa Maria 31/36 Fed Com #628H
Company:	Mewbourne Oil Company	**TVD Reference:**	Well @ 3254.0usft (Original Well)
Project:	Eddy County, New Mexico NAD 83	**MD Reference:**	Well @ 3254.0usft (Original Well)
Site:	Santa Maria 31/36 Fed Com #628H	**North Reference:**	Grid
Well:	Sec 32, T20S, R27E	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	BHL: 660' FSL & 100' FWL (Sec 36)		
Design:	Design #1		

Project Eddy County, New Mexico NAD 83

Map System:	US State Plane 1983	**System Datum:**	Ground Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site Santa Maria 31/36 Fed Com #628H

Site Position:		**Northing:**	556,725.80 usft	**Latitude:**	32.5304956
From:	Map	**Easting:**	548,659.40 usft	**Longitude:**	-104.3095756
Position Uncertainty:	0.0 usft	**Slot Radius:**	13-3/16 "		

Well Sec 32, T20S, R27E

Well Position	**+N/-S**	0.0 usft	**Northing:**	556,725.80 usft	**Latitude:**	32.5304956
	+E/-W	0.0 usft	**Easting:**	548,659.40 usft	**Longitude:**	-104.3095756
Position Uncertainty		0.0 usft	**Wellhead Elevation:**	3,254.0 usft	**Ground Level:**	3,226.0 usft
Grid Convergence:		0.01 °				

Wellbore BHL: 660' FSL & 100' FWL (Sec 36)

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	12/31/2014	7.51	60.26	48,342.07314265

Design Design #1

Audit Notes:

Version:	**Phase:**	PROTOTYPE	**Tie On Depth:**	0.0

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	258.85

Plan Survey Tool Program **Date** 2/2/2024

	Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.0	19,144.8	Design #1 (BHL: 660' FSL & 100'		

Plan Sections

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,250.0	0.00	0.00	1,250.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,466.5	24.33	187.32	2,430.3	-252.4	-32.4	2.00	2.00	0.00	187.32	
6,648.4	24.33	187.32	6,240.7	-1,961.2	-251.8	0.00	0.00	0.00	0.00	
7,864.9	0.00	0.00	7,421.0	-2,213.6	-284.2	2.00	-2.00	0.00	180.00	KOP: 660' FSL & 4
8,787.6	92.20	270.00	7,994.0	-2,213.6	-879.6	9.99	9.99	0.00	-90.00	
19,144.8	92.20	270.00	7,597.0	-2,212.7	-11,229.2	0.00	0.00	0.00	0.00	BHL: 660' FSL & 1

Planning Report

Database:	Hobbs	**Local Co-ordinate Reference:**	Site Santa Maria 31/36 Fed Com #628H
Company:	Mewbourne Oil Company	**TVD Reference:**	Well @ 3254.0usft (Original Well)
Project:	Eddy County, New Mexico NAD 83	**MD Reference:**	Well @ 3254.0usft (Original Well)
Site:	Santa Maria 31/36 Fed Com #628H	**North Reference:**	Grid
Well:	Sec 32, T20S, R27E	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	BHL: 660' FSL & 100' FWL (Sec 36)		
Design:	Design #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
SHL: 2495' FNL & 800' FWL (Sec 32)									
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,250.0	0.00	0.00	1,250.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	1.00	187.32	1,300.0	-0.4	-0.1	0.1	2.00	2.00	0.00
1,400.0	3.00	187.32	1,399.9	-3.9	-0.5	1.2	2.00	2.00	0.00
1,500.0	5.00	187.32	1,499.7	-10.8	-1.4	3.5	2.00	2.00	0.00
1,600.0	7.00	187.32	1,599.1	-21.2	-2.7	6.8	2.00	2.00	0.00
1,700.0	9.00	187.32	1,698.2	-35.0	-4.5	11.2	2.00	2.00	0.00
1,800.0	11.00	187.32	1,796.6	-52.2	-6.7	16.7	2.00	2.00	0.00
1,900.0	13.00	187.32	1,894.4	-72.8	-9.4	23.3	2.00	2.00	0.00
2,000.0	15.00	187.32	1,991.5	-96.8	-12.4	30.9	2.00	2.00	0.00
2,100.0	17.00	187.32	2,087.6	-124.2	-15.9	39.6	2.00	2.00	0.00
2,200.0	19.00	187.32	2,182.7	-154.8	-19.9	49.4	2.00	2.00	0.00
2,300.0	21.00	187.32	2,276.6	-188.7	-24.2	60.3	2.00	2.00	0.00
2,400.0	23.00	187.32	2,369.4	-225.9	-29.0	72.1	2.00	2.00	0.00
2,466.5	24.33	187.32	2,430.3	-252.4	-32.4	80.6	2.00	2.00	0.00
2,500.0	24.33	187.32	2,460.8	-266.0	-34.2	84.9	0.00	0.00	0.00
2,600.0	24.33	187.32	2,551.9	-306.9	-39.4	98.0	0.00	0.00	0.00
2,700.0	24.33	187.32	2,643.0	-347.8	-44.7	111.0	0.00	0.00	0.00
2,800.0	24.33	187.32	2,734.1	-388.6	-49.9	124.1	0.00	0.00	0.00
2,900.0	24.33	187.32	2,825.3	-429.5	-55.1	137.1	0.00	0.00	0.00
3,000.0	24.33	187.32	2,916.4	-470.4	-60.4	150.2	0.00	0.00	0.00
3,100.0	24.33	187.32	3,007.5	-511.2	-65.6	163.2	0.00	0.00	0.00
3,200.0	24.33	187.32	3,098.6	-552.1	-70.9	176.3	0.00	0.00	0.00
3,300.0	24.33	187.32	3,189.7	-593.0	-76.1	189.3	0.00	0.00	0.00
3,400.0	24.33	187.32	3,280.9	-633.8	-81.4	202.4	0.00	0.00	0.00
3,500.0	24.33	187.32	3,372.0	-674.7	-86.6	215.4	0.00	0.00	0.00
3,600.0	24.33	187.32	3,463.1	-715.6	-91.9	228.5	0.00	0.00	0.00
3,700.0	24.33	187.32	3,554.2	-756.4	-97.1	241.5	0.00	0.00	0.00
3,800.0	24.33	187.32	3,645.3	-797.3	-102.4	254.6	0.00	0.00	0.00
3,900.0	24.33	187.32	3,736.5	-838.1	-107.6	267.6	0.00	0.00	0.00
4,000.0	24.33	187.32	3,827.6	-879.0	-112.9	280.7	0.00	0.00	0.00
4,100.0	24.33	187.32	3,918.7	-919.9	-118.1	293.7	0.00	0.00	0.00
4,200.0	24.33	187.32	4,009.8	-960.7	-123.3	306.8	0.00	0.00	0.00
4,300.0	24.33	187.32	4,100.9	-1,001.6	-128.6	319.8	0.00	0.00	0.00
4,400.0	24.33	187.32	4,192.0	-1,042.5	-133.8	332.9	0.00	0.00	0.00
4,500.0	24.33	187.32	4,283.2	-1,083.3	-139.1	345.9	0.00	0.00	0.00
4,600.0	24.33	187.32	4,374.3	-1,124.2	-144.3	359.0	0.00	0.00	0.00
4,700.0	24.33	187.32	4,465.4	-1,165.1	-149.6	372.0	0.00	0.00	0.00
4,800.0	24.33	187.32	4,556.5	-1,205.9	-154.8	385.0	0.00	0.00	0.00
4,900.0	24.33	187.32	4,647.6	-1,246.8	-160.1	398.1	0.00	0.00	0.00
5,000.0	24.33	187.32	4,738.8	-1,287.6	-165.3	411.1	0.00	0.00	0.00

Planning Report

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Project:	Eddy County, New Mexico NAD 83	**MD Reference:**	Well @ 3254.0usft (Original Well)
Site:	Santa Maria 31/36 Fed Com #628H	**North Reference:**	Grid
Well:	Sec 32, T20S, R27E	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	BHL: 660' FSL & 100' FWL (Sec 36)		
Design:	Design #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,100.0	24.33	187.32	4,829.9	-1,328.5	-170.6	424.2	0.00	0.00	0.00
5,200.0	24.33	187.32	4,921.0	-1,369.4	-175.8	437.2	0.00	0.00	0.00
5,300.0	24.33	187.32	5,012.1	-1,410.2	-181.1	450.3	0.00	0.00	0.00
5,400.0	24.33	187.32	5,103.2	-1,451.1	-186.3	463.3	0.00	0.00	0.00
5,500.0	24.33	187.32	5,194.4	-1,492.0	-191.6	476.4	0.00	0.00	0.00
5,600.0	24.33	187.32	5,285.5	-1,532.8	-196.8	489.4	0.00	0.00	0.00
5,700.0	24.33	187.32	5,376.6	-1,573.7	-202.0	502.5	0.00	0.00	0.00
5,800.0	24.33	187.32	5,467.7	-1,614.6	-207.3	515.5	0.00	0.00	0.00
5,900.0	24.33	187.32	5,558.8	-1,655.4	-212.5	528.6	0.00	0.00	0.00
6,000.0	24.33	187.32	5,649.9	-1,696.3	-217.8	541.6	0.00	0.00	0.00
6,100.0	24.33	187.32	5,741.1	-1,737.2	-223.0	554.7	0.00	0.00	0.00
6,200.0	24.33	187.32	5,832.2	-1,778.0	-228.3	567.7	0.00	0.00	0.00
6,300.0	24.33	187.32	5,923.3	-1,818.9	-233.5	580.8	0.00	0.00	0.00
6,400.0	24.33	187.32	6,014.4	-1,859.7	-238.8	593.8	0.00	0.00	0.00
6,500.0	24.33	187.32	6,105.5	-1,900.6	-244.0	606.9	0.00	0.00	0.00
6,600.0	24.33	187.32	6,196.7	-1,941.5	-249.3	619.9	0.00	0.00	0.00
6,648.4	24.33	187.32	6,240.7	-1,961.2	-251.8	626.2	0.00	0.00	0.00
6,700.0	23.30	187.32	6,288.0	-1,981.9	-254.5	632.8	2.00	-2.00	0.00
6,800.0	21.30	187.32	6,380.5	-2,019.5	-259.3	644.8	2.00	-2.00	0.00
6,900.0	19.30	187.32	6,474.3	-2,054.0	-263.7	655.8	2.00	-2.00	0.00
7,000.0	17.30	187.32	6,569.2	-2,085.1	-267.7	665.8	2.00	-2.00	0.00
7,100.0	15.30	187.32	6,665.2	-2,112.9	-271.3	674.7	2.00	-2.00	0.00
7,200.0	13.30	187.32	6,762.1	-2,137.4	-274.4	682.5	2.00	-2.00	0.00
7,300.0	11.30	187.32	6,859.8	-2,158.5	-277.1	689.2	2.00	-2.00	0.00
7,400.0	9.30	187.32	6,958.2	-2,176.3	-279.4	694.9	2.00	-2.00	0.00
7,500.0	7.30	187.32	7,057.1	-2,190.6	-281.2	699.4	2.00	-2.00	0.00
7,600.0	5.30	187.32	7,156.5	-2,201.5	-282.6	702.9	2.00	-2.00	0.00
7,700.0	3.30	187.32	7,256.2	-2,208.9	-283.6	705.3	2.00	-2.00	0.00
7,800.0	1.30	187.32	7,356.1	-2,212.9	-284.1	706.6	2.00	-2.00	0.00
7,864.9	0.00	0.00	7,421.0	-2,213.6	-284.2	706.8	2.00	-2.00	0.00
KOP: 660' FSL & 473' FWL (Sec 32)									
7,900.0	3.51	270.00	7,456.1	-2,213.6	-285.3	707.9	9.99	9.99	0.00
7,950.0	8.51	270.00	7,505.8	-2,213.6	-290.5	713.0	9.99	9.99	0.00
8,000.0	13.50	270.00	7,554.9	-2,213.6	-300.0	722.3	9.99	9.99	0.00
8,050.0	18.50	270.00	7,602.9	-2,213.6	-313.8	735.9	9.99	9.99	0.00
8,100.0	23.49	270.00	7,649.6	-2,213.6	-331.7	753.4	9.99	9.99	0.00
8,150.0	28.49	270.00	7,694.5	-2,213.6	-353.6	774.9	9.99	9.99	0.00
8,200.0	33.49	270.00	7,737.4	-2,213.6	-379.4	800.2	9.99	9.99	0.00
8,250.0	38.48	270.00	7,777.8	-2,213.6	-408.7	829.0	9.99	9.99	0.00
8,300.0	43.48	270.00	7,815.6	-2,213.6	-441.5	861.1	9.99	9.99	0.00
8,350.0	48.47	270.00	7,850.3	-2,213.6	-477.5	896.4	9.99	9.99	0.00
8,400.0	53.47	270.00	7,881.8	-2,213.6	-516.3	934.5	9.99	9.99	0.00
8,450.0	58.47	270.00	7,909.7	-2,213.6	-557.7	975.1	9.99	9.99	0.00
8,500.0	63.46	270.00	7,934.0	-2,213.6	-601.4	1,018.0	9.99	9.99	0.00
8,550.0	68.46	270.00	7,954.4	-2,213.6	-647.1	1,062.8	9.99	9.99	0.00
8,600.0	73.45	270.00	7,970.7	-2,213.6	-694.3	1,109.2	9.99	9.99	0.00
8,650.0	78.45	270.00	7,982.8	-2,213.6	-742.8	1,156.7	9.99	9.99	0.00
8,700.0	83.45	270.00	7,990.7	-2,213.6	-792.2	1,205.2	9.99	9.99	0.00
8,750.0	88.44	270.00	7,994.2	-2,213.6	-842.0	1,254.1	9.99	9.99	0.00
8,765.3	89.97	270.00	7,994.4	-2,213.6	-857.3	1,269.1	9.99	9.99	0.00
FTP/LP: 660' FSL & 100' FEL (Sec 31)									
8,787.6	92.20	270.00	7,994.0	-2,213.6	-879.6	1,291.0	9.99	9.99	0.00
8,800.0	92.20	270.00	7,993.5	-2,213.5	-892.0	1,303.1	0.00	0.00	0.00
8,900.0	92.20	270.00	7,989.7	-2,213.5	-991.9	1,401.2	0.00	0.00	0.00

Planning Report

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Project:	Eddy County, New Mexico NAD 83	**MD Reference:**	Well @ 3254.0usft (Original Well)
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Well:	Sec 32, T20S, R27E	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	BHL: 660' FSL & 100' FWL (Sec 36)		
Design:	Design #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
9,000.0	92.20	270.00	7,985.9	-2,213.5	-1,091.9	1,499.2	0.00	0.00	0.00
9,100.0	92.20	270.00	7,982.0	-2,213.5	-1,191.8	1,597.2	0.00	0.00	0.00
9,200.0	92.20	270.00	7,978.2	-2,213.5	-1,291.7	1,695.3	0.00	0.00	0.00
9,300.0	92.20	270.00	7,974.4	-2,213.5	-1,391.6	1,793.3	0.00	0.00	0.00
9,400.0	92.20	270.00	7,970.5	-2,213.5	-1,491.6	1,891.4	0.00	0.00	0.00
9,500.0	92.20	270.00	7,966.7	-2,213.5	-1,591.5	1,989.4	0.00	0.00	0.00
9,600.0	92.20	270.00	7,962.9	-2,213.5	-1,691.4	2,087.4	0.00	0.00	0.00
9,700.0	92.20	270.00	7,959.0	-2,213.5	-1,791.3	2,185.5	0.00	0.00	0.00
9,800.0	92.20	270.00	7,955.2	-2,213.5	-1,891.3	2,283.5	0.00	0.00	0.00
9,900.0	92.20	270.00	7,951.4	-2,213.5	-1,991.2	2,381.6	0.00	0.00	0.00
9,986.5	92.20	270.00	7,948.0	-2,213.5	-2,077.6	2,466.3	0.00	0.00	0.00
PPP2: 660' FSL & 1320' FWL (Sec 32)									
10,000.0	92.20	270.00	7,947.5	-2,213.5	-2,091.1	2,479.6	0.00	0.00	0.00
10,100.0	92.20	270.00	7,943.7	-2,213.4	-2,191.1	2,577.6	0.00	0.00	0.00
10,200.0	92.20	270.00	7,939.9	-2,213.4	-2,291.0	2,675.7	0.00	0.00	0.00
10,300.0	92.20	270.00	7,936.0	-2,213.4	-2,390.9	2,773.7	0.00	0.00	0.00
10,400.0	92.20	270.00	7,932.2	-2,213.4	-2,490.8	2,871.8	0.00	0.00	0.00
10,500.0	92.20	270.00	7,928.4	-2,213.4	-2,590.8	2,969.8	0.00	0.00	0.00
10,600.0	92.20	270.00	7,924.5	-2,213.4	-2,690.7	3,067.8	0.00	0.00	0.00
10,700.0	92.20	270.00	7,920.7	-2,213.4	-2,790.6	3,165.9	0.00	0.00	0.00
10,800.0	92.20	270.00	7,916.9	-2,213.4	-2,890.5	3,263.9	0.00	0.00	0.00
10,900.0	92.20	270.00	7,913.0	-2,213.4	-2,990.5	3,362.0	0.00	0.00	0.00
11,000.0	92.20	270.00	7,909.2	-2,213.4	-3,090.4	3,460.0	0.00	0.00	0.00
11,100.0	92.20	270.00	7,905.4	-2,213.4	-3,190.3	3,558.0	0.00	0.00	0.00
11,200.0	92.20	270.00	7,901.5	-2,213.4	-3,290.2	3,656.1	0.00	0.00	0.00
11,300.0	92.20	270.00	7,897.7	-2,213.3	-3,390.2	3,754.1	0.00	0.00	0.00
11,400.0	92.20	270.00	7,893.9	-2,213.3	-3,490.1	3,852.2	0.00	0.00	0.00
11,500.0	92.20	270.00	7,890.0	-2,213.3	-3,590.0	3,950.2	0.00	0.00	0.00
11,600.0	92.20	270.00	7,886.2	-2,213.3	-3,689.9	4,048.2	0.00	0.00	0.00
11,700.0	92.20	270.00	7,882.4	-2,213.3	-3,789.9	4,146.3	0.00	0.00	0.00
11,800.0	92.20	270.00	7,878.5	-2,213.3	-3,889.8	4,244.3	0.00	0.00	0.00
11,900.0	92.20	270.00	7,874.7	-2,213.3	-3,989.7	4,342.4	0.00	0.00	0.00
12,000.0	92.20	270.00	7,870.9	-2,213.3	-4,089.7	4,440.4	0.00	0.00	0.00
12,100.0	92.20	270.00	7,867.0	-2,213.3	-4,189.6	4,538.4	0.00	0.00	0.00
12,200.0	92.20	270.00	7,863.2	-2,213.3	-4,289.5	4,636.5	0.00	0.00	0.00
12,300.0	92.20	270.00	7,859.4	-2,213.3	-4,389.4	4,734.5	0.00	0.00	0.00
12,400.0	92.20	270.00	7,855.5	-2,213.3	-4,489.4	4,832.6	0.00	0.00	0.00
12,500.0	92.20	270.00	7,851.7	-2,213.2	-4,589.3	4,930.6	0.00	0.00	0.00
12,600.0	92.20	270.00	7,847.9	-2,213.2	-4,689.2	5,028.6	0.00	0.00	0.00
12,700.0	92.20	270.00	7,844.0	-2,213.2	-4,789.1	5,126.7	0.00	0.00	0.00
12,800.0	92.20	270.00	7,840.2	-2,213.2	-4,889.1	5,224.7	0.00	0.00	0.00
12,900.0	92.20	270.00	7,836.4	-2,213.2	-4,989.0	5,322.8	0.00	0.00	0.00
13,000.0	92.20	270.00	7,832.5	-2,213.2	-5,088.9	5,420.8	0.00	0.00	0.00
13,100.0	92.20	270.00	7,828.7	-2,213.2	-5,188.8	5,518.8	0.00	0.00	0.00
13,200.0	92.20	270.00	7,824.9	-2,213.2	-5,288.8	5,616.9	0.00	0.00	0.00
13,300.0	92.20	270.00	7,821.0	-2,213.2	-5,388.7	5,714.9	0.00	0.00	0.00
13,400.0	92.20	270.00	7,817.2	-2,213.2	-5,488.6	5,813.0	0.00	0.00	0.00
13,500.0	92.20	270.00	7,813.4	-2,213.2	-5,588.6	5,911.0	0.00	0.00	0.00
13,600.0	92.20	270.00	7,809.5	-2,213.2	-5,688.5	6,009.0	0.00	0.00	0.00
13,700.0	92.20	270.00	7,805.7	-2,213.1	-5,788.4	6,107.1	0.00	0.00	0.00
13,800.0	92.20	270.00	7,801.9	-2,213.1	-5,888.3	6,205.1	0.00	0.00	0.00
13,900.0	92.20	270.00	7,798.0	-2,213.1	-5,988.3	6,303.1	0.00	0.00	0.00
14,000.0	92.20	270.00	7,794.2	-2,213.1	-6,088.2	6,401.2	0.00	0.00	0.00

Planning Report

Database:	Hobbs	**Local Co-ordinate Reference:**	Site Santa Maria 31/36 Fed Com #628H
Company:	Mewbourne Oil Company	**TVD Reference:**	Well @ 3254.0usft (Original Well)
Project:	Eddy County, New Mexico NAD 83	**MD Reference:**	Well @ 3254.0usft (Original Well)
Site:	Santa Maria 31/36 Fed Com #628H	**North Reference:**	Grid
Well:	Sec 32, T20S, R27E	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	BHL: 660' FSL & 100' FWL (Sec 36)		
Design:	Design #1		

Planned Survey

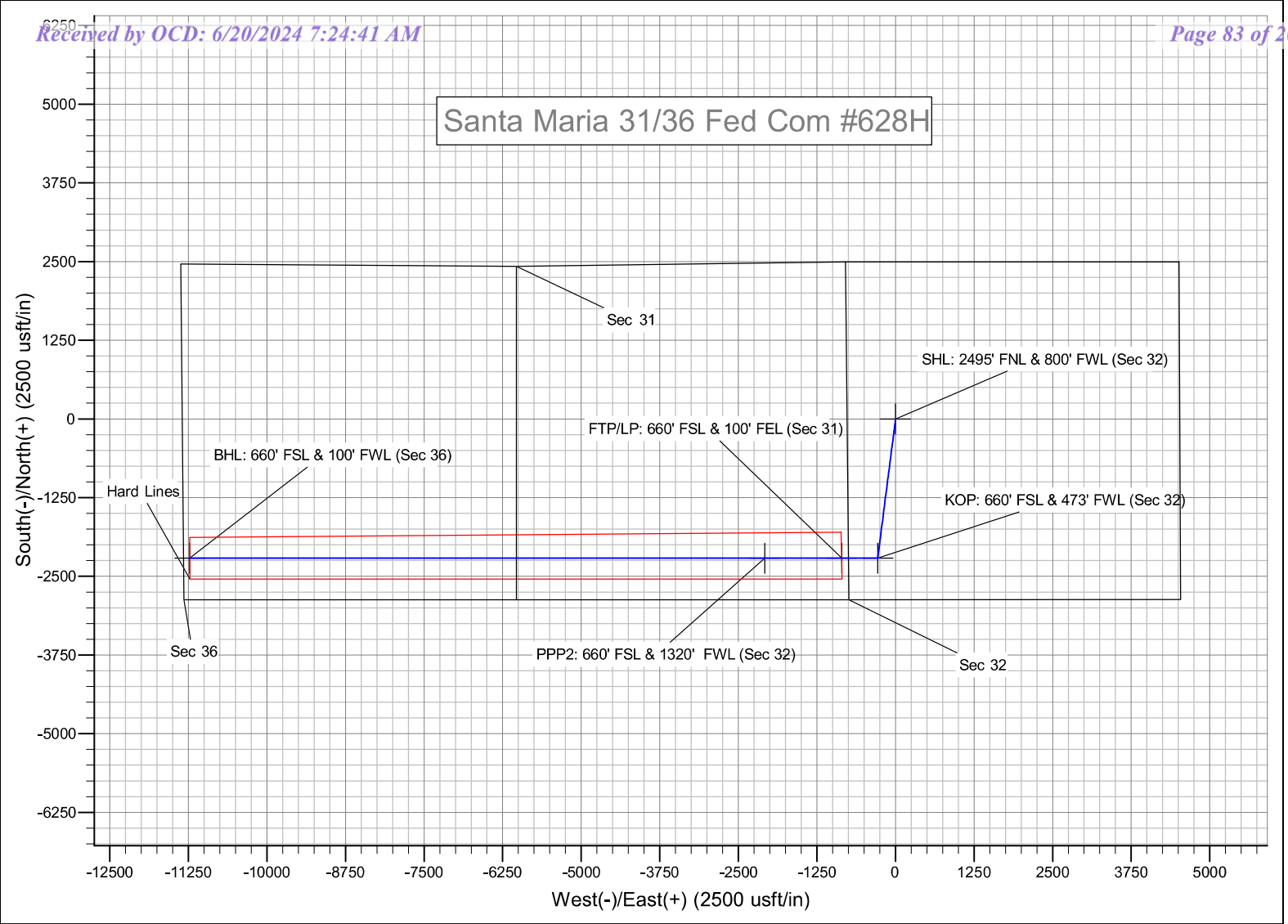
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
14,100.0	92.20	270.00	7,790.4	-2,213.1	-6,188.1	6,499.2	0.00	0.00	0.00
14,200.0	92.20	270.00	7,786.5	-2,213.1	-6,288.0	6,597.3	0.00	0.00	0.00
14,300.0	92.20	270.00	7,782.7	-2,213.1	-6,388.0	6,695.3	0.00	0.00	0.00
14,400.0	92.20	270.00	7,778.9	-2,213.1	-6,487.9	6,793.3	0.00	0.00	0.00
14,500.0	92.20	270.00	7,775.0	-2,213.1	-6,587.8	6,891.4	0.00	0.00	0.00
14,600.0	92.20	270.00	7,771.2	-2,213.1	-6,687.7	6,989.4	0.00	0.00	0.00
14,700.0	92.20	270.00	7,767.4	-2,213.1	-6,787.7	7,087.5	0.00	0.00	0.00
14,800.0	92.20	270.00	7,763.5	-2,213.1	-6,887.6	7,185.5	0.00	0.00	0.00
14,900.0	92.20	270.00	7,759.7	-2,213.0	-6,987.5	7,283.5	0.00	0.00	0.00
15,000.0	92.20	270.00	7,755.9	-2,213.0	-7,087.5	7,381.6	0.00	0.00	0.00
15,100.0	92.20	270.00	7,752.0	-2,213.0	-7,187.4	7,479.6	0.00	0.00	0.00
15,200.0	92.20	270.00	7,748.2	-2,213.0	-7,287.3	7,577.7	0.00	0.00	0.00
15,300.0	92.20	270.00	7,744.4	-2,213.0	-7,387.2	7,675.7	0.00	0.00	0.00
15,400.0	92.20	270.00	7,740.5	-2,213.0	-7,487.2	7,773.7	0.00	0.00	0.00
15,500.0	92.20	270.00	7,736.7	-2,213.0	-7,587.1	7,871.8	0.00	0.00	0.00
15,600.0	92.20	270.00	7,732.9	-2,213.0	-7,687.0	7,969.8	0.00	0.00	0.00
15,700.0	92.20	270.00	7,729.0	-2,213.0	-7,786.9	8,067.9	0.00	0.00	0.00
15,800.0	92.20	270.00	7,725.2	-2,213.0	-7,886.9	8,165.9	0.00	0.00	0.00
15,900.0	92.20	270.00	7,721.4	-2,213.0	-7,986.8	8,263.9	0.00	0.00	0.00
16,000.0	92.20	270.00	7,717.5	-2,213.0	-8,086.7	8,362.0	0.00	0.00	0.00
16,100.0	92.20	270.00	7,713.7	-2,213.0	-8,186.6	8,460.0	0.00	0.00	0.00
16,200.0	92.20	270.00	7,709.9	-2,212.9	-8,286.6	8,558.1	0.00	0.00	0.00
16,300.0	92.20	270.00	7,706.0	-2,212.9	-8,386.5	8,656.1	0.00	0.00	0.00
16,400.0	92.20	270.00	7,702.2	-2,212.9	-8,486.4	8,754.1	0.00	0.00	0.00
16,500.0	92.20	270.00	7,698.4	-2,212.9	-8,586.3	8,852.2	0.00	0.00	0.00
16,600.0	92.20	270.00	7,694.5	-2,212.9	-8,686.3	8,950.2	0.00	0.00	0.00
16,700.0	92.20	270.00	7,690.7	-2,212.9	-8,786.2	9,048.3	0.00	0.00	0.00
16,800.0	92.20	270.00	7,686.9	-2,212.9	-8,886.1	9,146.3	0.00	0.00	0.00
16,900.0	92.20	270.00	7,683.0	-2,212.9	-8,986.1	9,244.3	0.00	0.00	0.00
17,000.0	92.20	270.00	7,679.2	-2,212.9	-9,086.0	9,342.4	0.00	0.00	0.00
17,100.0	92.20	270.00	7,675.4	-2,212.9	-9,185.9	9,440.4	0.00	0.00	0.00
17,200.0	92.20	270.00	7,671.5	-2,212.9	-9,285.8	9,538.5	0.00	0.00	0.00
17,300.0	92.20	270.00	7,667.7	-2,212.9	-9,385.8	9,636.5	0.00	0.00	0.00
17,400.0	92.20	270.00	7,663.9	-2,212.8	-9,485.7	9,734.5	0.00	0.00	0.00
17,500.0	92.20	270.00	7,660.0	-2,212.8	-9,585.6	9,832.6	0.00	0.00	0.00
17,600.0	92.20	270.00	7,656.2	-2,212.8	-9,685.5	9,930.6	0.00	0.00	0.00
17,700.0	92.20	270.00	7,652.4	-2,212.8	-9,785.5	10,028.7	0.00	0.00	0.00
17,800.0	92.20	270.00	7,648.5	-2,212.8	-9,885.4	10,126.7	0.00	0.00	0.00
17,900.0	92.20	270.00	7,644.7	-2,212.8	-9,985.3	10,224.7	0.00	0.00	0.00
18,000.0	92.20	270.00	7,640.9	-2,212.8	-10,085.2	10,322.8	0.00	0.00	0.00
18,100.0	92.20	270.00	7,637.0	-2,212.8	-10,185.2	10,420.8	0.00	0.00	0.00
18,200.0	92.20	270.00	7,633.2	-2,212.8	-10,285.1	10,518.9	0.00	0.00	0.00
18,300.0	92.20	270.00	7,629.4	-2,212.8	-10,385.0	10,616.9	0.00	0.00	0.00
18,400.0	92.20	270.00	7,625.5	-2,212.8	-10,485.0	10,714.9	0.00	0.00	0.00
18,500.0	92.20	270.00	7,621.7	-2,212.8	-10,584.9	10,813.0	0.00	0.00	0.00
18,600.0	92.20	270.00	7,617.9	-2,212.7	-10,684.8	10,911.0	0.00	0.00	0.00
18,700.0	92.20	270.00	7,614.0	-2,212.7	-10,784.7	11,009.1	0.00	0.00	0.00
18,800.0	92.20	270.00	7,610.2	-2,212.7	-10,884.7	11,107.1	0.00	0.00	0.00
18,900.0	92.20	270.00	7,606.4	-2,212.7	-10,984.6	11,205.1	0.00	0.00	0.00
19,000.0	92.20	270.00	7,602.6	-2,212.7	-11,084.5	11,303.2	0.00	0.00	0.00
19,100.0	92.20	270.00	7,598.7	-2,212.7	-11,184.4	11,401.2	0.00	0.00	0.00
19,144.8	92.20	270.00	7,597.0	-2,212.7	-11,229.2	11,445.1	0.00	0.00	0.00
BHL: 660' FSL & 100' FWL (Sec 36)									

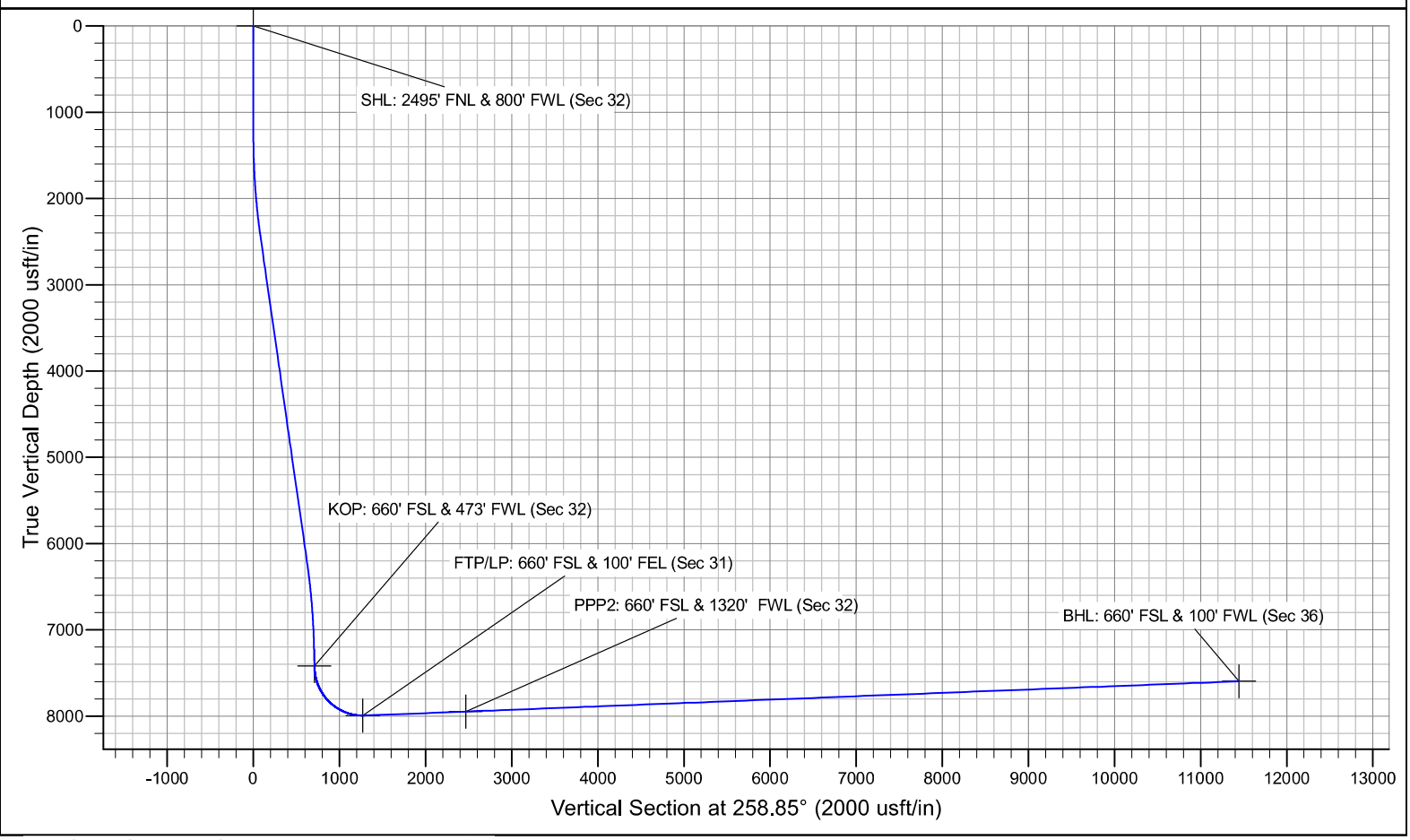
Planning Report

Database:	Hobbs	**Local Co-ordinate Reference:**	Site Santa Maria 31/36 Fed Com #628H
Company:	Mewbourne Oil Company	**TVD Reference:**	Well @ 3254.0usft (Original Well)
Project:	Eddy County, New Mexico NAD 83	**MD Reference:**	Well @ 3254.0usft (Original Well)
Site:	Santa Maria 31/36 Fed Com #628H	**North Reference:**	Grid
Well:	Sec 32, T20S, R27E	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	BHL: 660' FSL & 100' FWL (Sec 36)		
Design:	Design #1		

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
SHL: 2495' FNL & 80(- plan hits target center - Point	0.00	0.00	0.0	0.0	0.0	556,725.80	548,659.40	32.5304956	-104.3095756
KOP: 660' FSL & 473' - plan hits target center - Point	0.00	0.00	7,421.0	-2,213.6	-284.2	554,512.20	548,375.20	32.5244111	-104.3104993
BHL: 660' FSL & 100' - plan hits target center - Point	0.00	360.00	7,597.0	-2,212.7	-11,229.2	554,513.10	537,430.20	32.5244150	-104.3460107
PPP2: 660' FSL & 13 - plan hits target center - Point	0.00	0.00	7,948.0	-2,213.5	-2,077.6	554,512.35	546,581.80	32.5244124	-104.3163180
FTP/LP: 660' FSL & 1 - plan hits target center - Point	0.00	0.00	7,994.4	-2,213.6	-857.3	554,512.25	547,802.10	32.5244115	-104.3123587


Santa Maria 31/36 Fed Com #628H
Sec 31
SHL: 2495' FNL & 800' FWL (Sec 32)
FTP/LP: 660' FSL & 100' FEL (Sec 31)
BHL: 660' FSL & 100' FWL (Sec 36)
Hard Lines
KOP: 660' FSL & 473' FWL (Sec 32)
Sec 36
PPP2: 660' FSL & 1320' FWL (Sec 32)
Sec 32
South(-)/North(+) (2500 usft/in)
West(-)/East(+) (2500 usft/in)


SHL: 2495' FNL & 800' FWL (Sec 32)
KOP: 660' FSL & 473' FWL (Sec 32)
FTP/LP: 660' FSL & 100' FEL (Sec 31)
PPP2: 660' FSL & 1320' FWL (Sec 32)
BHL: 660' FSL & 100' FWL (Sec 36)
True Vertical Depth (2000 usft/in)
Vertical Section at 258.85° (2000 usft/in)

Mewbourne Oil Company, Santa Maria 31/36 Fed Com 628H
Sec 32, T20S, R27E
SHL: 2495' FNL 800' FWL (Sec 32)
BHL: 660' FSL 100' FWL (Sec 36)

Operator Name:	Property Name:	Well Number
Mewbourne Oil Company	Santa Maria 31/36 Fed Com	628H

Kick Off Point (KOP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
M	32	20	27	-	660'	FSL	473'	FWL	Eddy
Latitude					Longitude				NAD
32.5244111					-104.3104993				83

First Take Point (FTP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
P	31	20	27	-	660'	FSL	100'	FEL	Eddy
Latitude					Longitude				NAD
32.5244115					-104.3123587				83

Last Take Point (LTP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
M	36	20	26	-	660'	FSL	100'	FWL	Eddy
Latitude					Longitude				NAD
32.5244144					-104.3460111				83

Is this well the defining well for the Horizontal Spacing Unit? Y
Is this well an infill well? N

If infill is yes please provide API if available, Operator Name and well number for Defining well for Horizontal Spacing Unit.

API #

Operator Name:	Property Name:	Well Number

Mewbourne Oil Company, Santa Maria 31/36 Fed Com 628H
Sec 32, T20S, R27E
SHL: 2495' FNL 800' FWL (Sec 32)
BHL: 660' FSL 100' FWL (Sec 36)

Well Location **GL: 3226'**

Point	Calls	Leases	Aliquot	Section	Township	Range	County	Lat	Long	TVD	MD
SHL	SHL: 2495' FNL & 800' FWL (Sec 32)	NMNM 084711	SWNW	32	20S	27E	Eddy	32.5304973	104.3095761	0'	0'
KOP	KOP: 660' FSL & 473' FWL (Sec 32)	FEE	SWSW	32	20S	27E	Eddy	32.5244111	104.3104993	7,421'	7,865'
FTP	FTP: 660' FSL & 100' FEL (Sec 31)	NMNM 019431	SESE	31	20S	27E	Eddy	32.5244115	104.3123587	7,994'	8,765'
PPP2	PPP2: 660' FSL & 1320' FEL (Sec 31)	NMNM 0400512A	SWSE	31	20S	27E	Eddy	32.5244124	104.3163180	7,948'	9,987'
BHL	BHL: 660' FSL & 100' FWL (Sec 36)	V053170001	SWSW	36	20S	26E	Eddy	32.5244144	104.3460111	7,597'	19,145'

GEOLOGY

Formation	Est. Top (TVD)	Lithology	Mineral Resources	Formation	Est. Top (TVD)	Lithology	Mineral Resources
Rustler				Yeso			
Castile				Delaware (Lamar)	2270'	Limestone/Dolomite	Oil/Natural Gas
Salt Top				Bell Canyon			
Salt Base				Cherry Canyon			
Yates	380'	Sandstone	Oil/Natural Gas	Manzanita Marker			
Seven Rivers				Basal Brushy Canyon			
Queen				Bone Spring	3698'	Limestone	Oil/Natural Gas
Capitan	1280'	Limestone/Dolomite	Usable Water	1st Bone Spring	5609'	Sandstone	Oil/Natural Gas
Grayburg				2nd Bone Spring	6296'	Sandstone	Oil/Natural Gas
San Andres				**3rd Bone Spring**	**7618'**	**Sandstone**	**Oil/Natural Gas**
Glorietta				Wolfcamp	7973'	Shale/Sandstone/Limestone	Oil/Natural Gas

Casing Program Design A						BLM Minimum Safety Factors	1.125	1.0	1.6 Dry 1.8 Wet	1.6 Dry 1.8 Wet
String	Hole Size	Top MD	Top TVD	Bot MD	Bot TVD	Csg. Size	SF Collapse	SF Burst	SF Jt Tension	SF Body Tension
surface	26'	0'	0'	350'	350'	20" 94# J55 BTC	3.40	13.80	42.61	44.98
Int 1	17.5'	0'	0'	1200'	1200'	13.375" 48# H40 STC	1.37	3.08	5.59	9.39
Int 2	12.25'	0'	0'	2300'	2300'	9.625" 36# J55 LTC	1.88	3.27	5.47	6.81
Production	8.75'	0'	0'	7865'	7421'	7" 26# N-80 LTC	1.32	1.77	2.54	2.95
Liner	6.125'	7665'	7599'	19145'	7597'	4.5" 13.5# P110 LTC	1.55	1.81	2.18	2.72

All casing strings will be tested in accordance with 43 CFR Part 3172. Must have table for contingency casing.

	Y or N
Is casing new? If used, attach certification as required in Onshore Order #1	Y
Is casing API approved? 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 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?	Y
If yes, does production casing cement tie back a minimum of 50' above the Reef?	Y
Is well within the designated 4 string boundary.	Y
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?	
Is well located in R-111-P and SOPA?	N
If yes, are the first three strings cemented to surface?	
Is 2nd string set 100' to 600' below the base of salt?	
Is an open annulus used to satisfy R-111-Q? If yes, see cement design.	
Is an engineered weak point used to satisfy R-111-Q?	
If yes, at what depth is the weak point planned?	
Is well located in high Cave/Karst?	Y
If yes, are there two strings cemented to surface?	Y
(For 2 string wells) If yes, is there a contingency casing if lost circulation occurs?	
Is well located in critical Cave/Karst?	N
If yes, are there three strings cemented to surface?	

Mewbourne Oil Company, Santa Maria 31/36 Fed Com 628H
Sec 32, T20S, R27E
SHL: 2495' FNL 800' FWL (Sec 32)
BHL: 660' FSL 100' FWL (Sec 36)

Design A - Cement Program

Csg. Size		# Sacks	Wt., lb/gal	Yield, ft^3/sack	TOC/BOC	Volume, ft^3	% Excess	Slurry Description
20.000 in	LEAD	380	12.5	2.12	0' - 261'	810	100%	Class C: Salt, Gel, Extender, LCM
	TAIL	200	14.8	1.34	261' - 350'	268		Class C: Retarder
13.375 in	LEAD	460	12.5	2.12	0' - 942'	980	50%	Class C: Salt, Gel, Extender, LCM
	TAIL	200	14.8	1.34	942' - 1200'	268		Class C: Retarder
1st Stg 9.625 in	LEAD	70	12.5	2.12	1255' - 1630'	150	25%	Class C: Salt, Gel, Extender, LCM
	TAIL	200	14.8	1.34	1630' - 2300'	268		Class C: Retarder
9 5/8" DV Tool @ 1255'								
2nd Stg 9.625 in	LEAD	170	12.5	2.12	0' - 921'	370	25%	Class C: Salt, Gel, Extender, LCM
	TAIL	100	14.8	1.34	921' - 1255'	0		Class C: Retarder
1st Stg 7 in	LEAD	50	12.5	2.12	6200' - 6515'	110	25%	Class C: Salt, Gel, Extender, LCM, Defoamer
	TAIL	400	15.6	1.18	6515' - 7864.9'	472		Class H: Retarder, Fluid Loss, Defoamer
7" DV Tool @ 6200'								
2nd Stg 7 in	LEAD	370	12.5	2.12	1230' - 5479'	790	25%	Class C: Salt, Gel, Extender, LCM, Defoamer
	TAIL	100	14.8	1.34	5479' - 6200'	134		Class C: Retarder, Fluid Loss, Defoamer
4.5 in	LEAD	730	13.5	1.85	7664.9' - 19144.8'	1360	25%	Class H: Salt, Gel, Fluid Loss, Retarder, Dispersant, Defoamer, Anti-settling Agent

Pressure Control Equipment

BOP installed and tested before drilling hole, in:	Size, in	System Rated WP	Type		Tested to:	Rating Depth
17.5	20	5M	Annular	X	2500#	19,145'
		5M	Blind Ram	X	5000#	
			Pipe Ram	X		
			Double Ram			
			Other*			

*Specify if additional ram is utilized.

Equipment: Annular, Pipe Rams, Blind Rams, 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.

Variance Request: A variance is requested for the use of a variable choke line from the BOP to the choke manifold. See attached for hydrostatic test chart. Anchors are not required by manufacturer. Variance is requested to use a multi bowl wellhead. Variance is requested to perform break testing according to attached procedure.

Testing Procedure: BOP/BOPE will be tested by an independent service company to 250 psi low and the high pressure indicated above per 43 CFR Part 3172 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.

Y	Formation integrity test will be performed per 43 CFR Part 3172. 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 43 CFR Part 3172.
N	Mewbourne Oil Company request a variance to use a 5000 psi annular BOP with a 10,000 psi BOP stack.

Mud Program

Depth (MD)	Mud Wt., lb/gal	Mud Type
0' - 350'	8.4	Fresh Water
350' - 1200'	9	Brine
1200' - 2300'	9	Brine
2300' - 7864.9'	10	Cut-Brine
7864.9' - 19144.8'	11.5	OBM

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?	Pason/PVT/Visual Monitoring

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SHL: 2495' FNL 800' FWL (Sec 32)
BHL: 660' FSL 100' FWL (Sec 36)

Logging and Testing Procedures

Logging, Coring and Testing.	
N	Will run GR/CNL from KOP (7864.9') to surface (horizontal well – vertical portion of hole). Stated logs run will be in the Completion Report and submitted to the BLM.
Y	No logs are planned based on well control or offset log information. Offset Well: Santa Maria 31/36 Fed Com #628H
N	Coring? If yes, explain:

Open & Cased Hole Logs Run In the Well

☐	Caliper	☐	Cement Bond Log	☐	CNL/FDC
☐	Compensated Densilog	☐	Compensated Neutron Log	☐	Computer Generated Log
☐	Dip Meter Log	☐	Directional Survey	☐	Dual Induction/Microresistivity
☐	Dual Lateral Log/Microspherically Focused	☐	Electric Log	☐	Formation Density Compensated Log
☐	Gamma Ray Log	☑	**Measurement While Drilling**	☐	Mud Log/Geological Lithology Log
☐	Other	☐	Porosity-Resistivity Log	☐	Sidewall Neutron Log
☐	Sonic Log	☐	Spontaneous Potential Log	☐	Temperature Log

Drilling Conditions

Condition	Specify what type and where?
BH Pressure at deepest TVD	4780 psi
BH Temperature	140
Abnormal Temp, Pressure, or Geologic Hazards	No

Mitigation measure for abnormal conditions. Describe. Lost circulation material/sweeps/mud scavengers in surface hole. Weighted mud for possible over-pressure in Wolfcamp formation.

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

	H2S is present
X	H2S Plan attached

Mewbourne Oil Company, Santa Maria 31/36 Fed Com 628H
Sec 32, T20S, R27E
SHL: 2495' FNL 800' FWL (Sec 32)
BHL: 660' FSL 100' FWL (Sec 36)

Other facets of operation

Mewbourne Oil Company also requests approval to implement Design B as described below. BLM will be notified of elected design.

Offline Cementing Variance: Variance is request to perform offline cementing according to the attached procedure.

Casing Program Design B						BLM Minimum Safety Factors	1.125	1.0	1.6 Dry 1.8 Wet	1.6 Dry 1.8 Wet
String	Hole Size	Top MD	Top TVD	Bot MD	Bot TVD	Csg. Size	SF Collapse	SF Burst	SF Jt	SF Body
surface	26'	0'	0'	350'	350'	20" 94# J55 BTC	3.40	13.80	42.61	44.98
Int 1	17.5'	0'	0'	1200'	1200'	13.375" 48# H40 STC	1.37	3.08	5.59	9.39
Int 2	12.25'	0'	0'	2300'	2300'	9.625" 36# J55 LTC	1.88	3.27	5.47	6.81
Production	8.75'	0'	0'	8765'	7994'	7" 26# HCP110 LTC	1.71	2.18	3.04	3.64
Liner	6.125'	7865'	7421'	19145'	7994'	4.5" 13.5# P110 LTC	1.58	1.84	2.22	2.77

All casing strings will be tested in accordance with 43 CFR Part 3172. Must have table for contingency casing.

	Y or N
Is casing new? If used, attach certification as required in Onshore Order #1	Y
Is casing API approved? 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 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?	Y
If yes, does production casing cement tie back a minimum of 50' above the Reef?	Y
Is well within the designated 4 string boundary.	Y
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?	
Is well located in R-111-P and SOPA?	N
If yes, are the first three strings cemented to surface?	
Is 2nd string set 100' to 600' below the base of salt?	
Is an open annulus used to satisfy R-111-Q? If yes, see cement design.	
Is an engineered weak point used to satisfy R-111-Q?	
If yes, at what depth is the weak point planned?	
Is well located in high Cave/Karst?	Y
If yes, are there two strings cemented to surface?	Y
(For 2 string wells) If yes, is there a contingency casing if lost circulation occurs?	
Is well located in critical Cave/Karst?	N
If yes, are there three strings cemented to surface?	

Design B - Cement Program

Csg. Size		# Sacks	Wt., lb/gal	Yield, ft³/sack	TOC/BOC	Volume, ft³	% Excess	Slurry Description
20.000 in	LEAD	380	12.5	2.12	0' - 261'	810	100%	Class C: Salt, Gel, Extender, LCM
	TAIL	200	14.8	1.34	261' - 350'	268		Class C: Retarder
13.375 in	LEAD	460	12.5	2.12	0' - 942'	980	50%	Class C: Salt, Gel, Extender, LCM
	TAIL	200	14.8	1.34	942' - 1200'	268		Class C: Retarder
1st Stg 9.625 in	LEAD	70	12.5	2.12	1255' - 1630'	150	25%	Class C: Salt, Gel, Extender, LCM
	TAIL	200	14.8	1.34	1630' - 2300'	268		Class C: Retarder
9 5/8" DV Tool @ 1255'								
2nd Stg 9.625 in	LEAD	170	12.5	2.12	0' - 921'	370	25%	Class C: Salt, Gel, Extender, LCM
	TAIL	100	14.8	1.34	921' - 1255'	0		Class C: Retarder
1st Stg 7 in	LEAD	50	12.5	2.12	6200' - 6685'	110	25%	Class C: Salt, Gel, Extender, LCM, Defoamer
	TAIL	400	15.6	1.18	6685' - 8765.3'	472		Class H: Retarder, Fluid Loss, Defoamer
7" DV Tool @ 6200'								
2nd Stg 7 in	LEAD	370	12.5	2.12	1230' - 5479'	790	25%	Class C: Salt, Gel, Extender, LCM, Defoamer
	TAIL	100	14.8	1.34	5479' - 6200'	134		Class C: Retarder, Fluid Loss, Defoamer

MEWBOURNE OIL COMPANY

Mewbourne Oil Co.

BOP Break Testing Variance

Mewbourne Oil Company requests a variance from the minimum standards for well control equipment testing of 43 CFR 3172 to allow a testing schedule of the blow out preventer (BOP) and blow out prevention equipment (BOPE) along with batch drilling & offline cementing operations. Modern rig upgrades which facilitate pad drilling allow the BOP stack to be moved between wells on a multi-well pad without breaking any BOP stack components apart. Widespread use of these technologies has led to break testing BOPE being endorsed as safe and reliable. American Petroleum Institute (API) best practices are frequently used by regulators to develop their regulations. API Standard 53, *Well Control Equipment Systems for Drilling Wells* (5th Ed., Dec. 2018) Section 5.3.7.1 states "A pressure test of the pressure containing component shall be performed following the disconnection or repair, limited to the affected component."

Procedures

1. Full BOPE test at first installation on the pad.
   - Full BOPE test at least every 21 days.
   - Function test BOP elements per 43 CFR 3172.
   - Contact the BLM if a well control event occurs.
2. After the well section is secured and the well is confirmed to be static, the BOP will be disconnected from the wellhead and walked with the rig to another well on the pad. Two breaks on the BOPE will be made (Fig. 1).
   - Connection between the flex line and the HCR valve
   - Connection between the wellhead and the BOP quick connect (Fig. 5 & 6).
3. A capping flange will be installed after cementing per wellhead vendor procedure & casing pressure will be monitored via wellhead valve.
4. The BOP will be removed and carried by a hydraulic carrier (Fig. 3 & 4).
5. The rig will then walk to the next well.
6. Confirm that the well is static and remove the capping flange.
7. The connection between the flex line and HCR valve and the connection between the wellhead and the BOP quick connect will be reconnected.
8. Install a test plug into the wellhead.
9. A test will then be conducted against the upper pipe rams and choke, testing both breaks (Fig. 1 & 2).
10. The test will be held at 250 psi low and to the high value submitted in the APD, not to exceed 5000 psi.
11. The annular, blind rams and lower pipe rams will then be function tested.
12. If a pad consists of three or more wells, steps 4 through 11 will be repeated.

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13. A break test will only be conducted if the intermediate section can be drilled and cased within 21 days of the last full BOPE test.

Barriers

Before Nipple Down:

- Floats in casing
- Kill weight fluid in casing
- Kill weight fluid in annulus
- Solid body mandrel and/or packoff

After Nipple Down:

- Floats in casing
- Kill weight fluid in casing
- Kill weight fluid in annulus
- Solid body mandrel and/or packoff
- Offline cementing tool and/or cement head
- Capping flange after cementing

Summary

A variance is requested to only test broken pressure seals on the BOPE when moving between wells on a multi-well pad if the following conditions are met:

- A full BOPE test is conducted on the first well on the pad. API Standard 53 requires testing annular BOP to 70% of RWP or 100% of MASP, whichever is greater.
- If the first well on the pad is not the well with the deepest intermediate section, a full BOPE test will also be performed when moving to a deeper well.
- The hole section being drilled has a MASP under 5000 psi.
- If a well control event occurs, Mewbourne will contact BLM for permission to continue break testing.
- If significant (>50%) losses occur, full BOPE testing will be required going forward.
- Full BOPE test will be required prior to drilling the production hole.

While walking the rig, the BOP stack will be secured via hydraulic winch or hydraulic carrier. A full BOPE test will be performed at least every 21 days.

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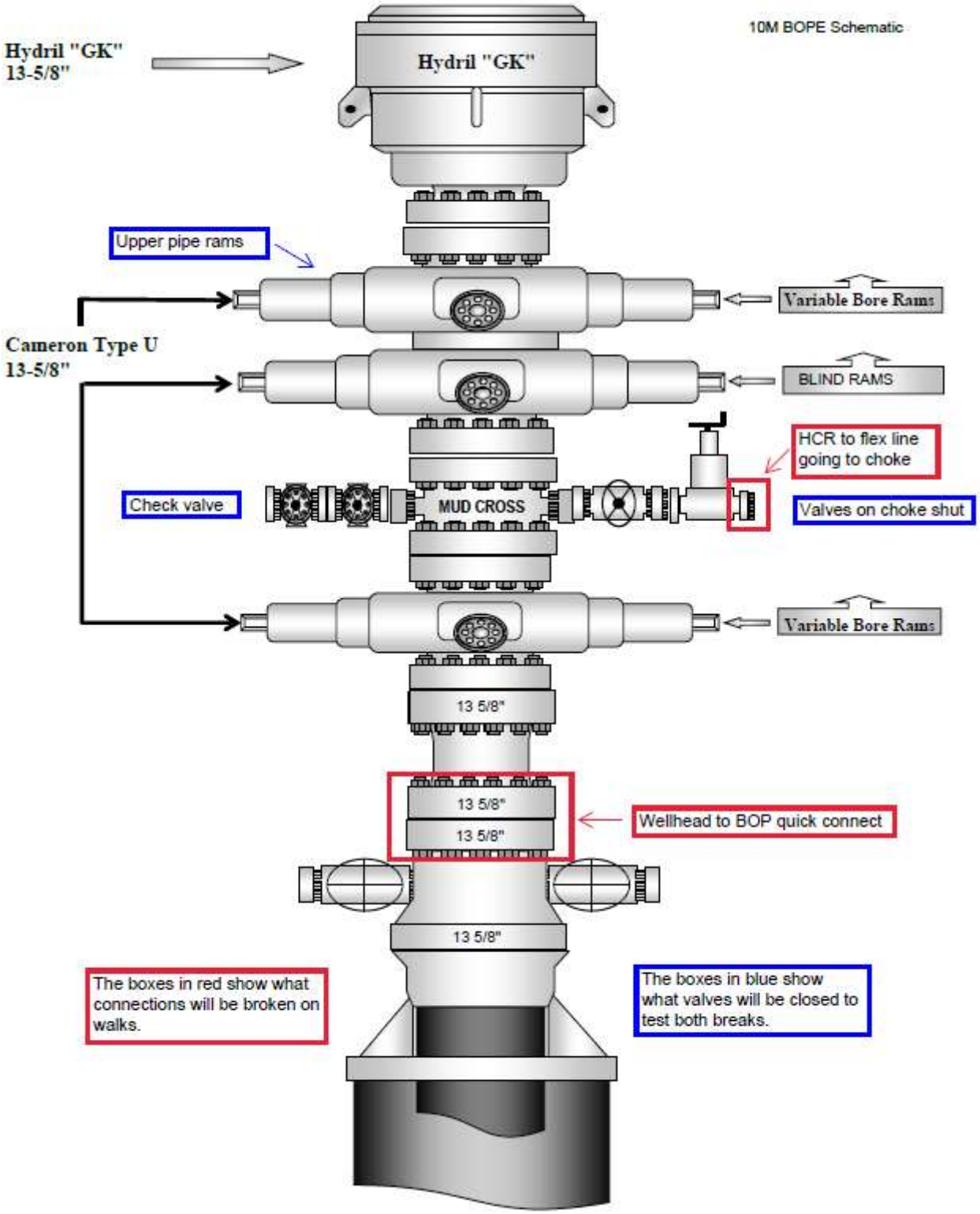

Figure 1. BOP diagram

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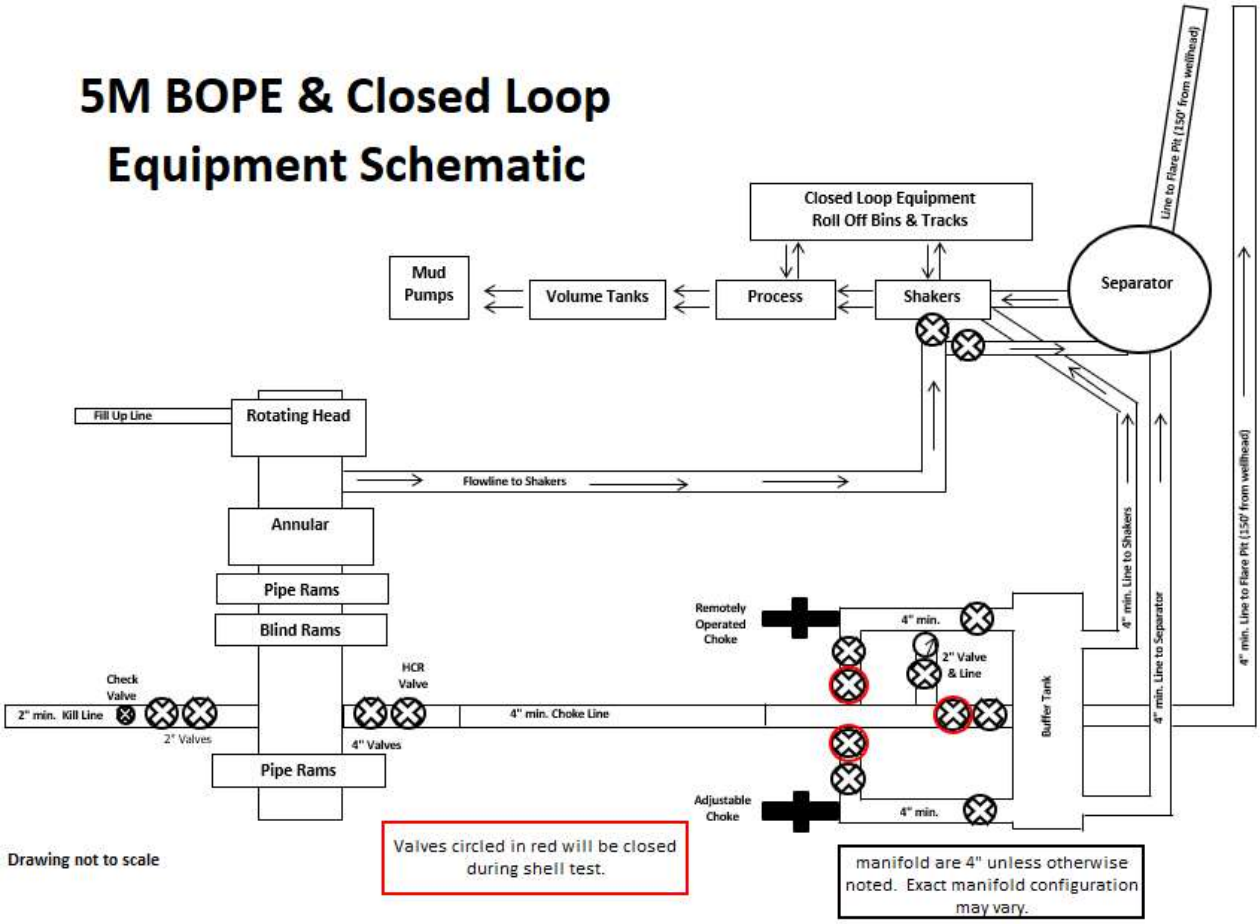

Figure 2. BOPE diagram

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Figure 3. BOP handling system

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Figure 4. BOP handling system

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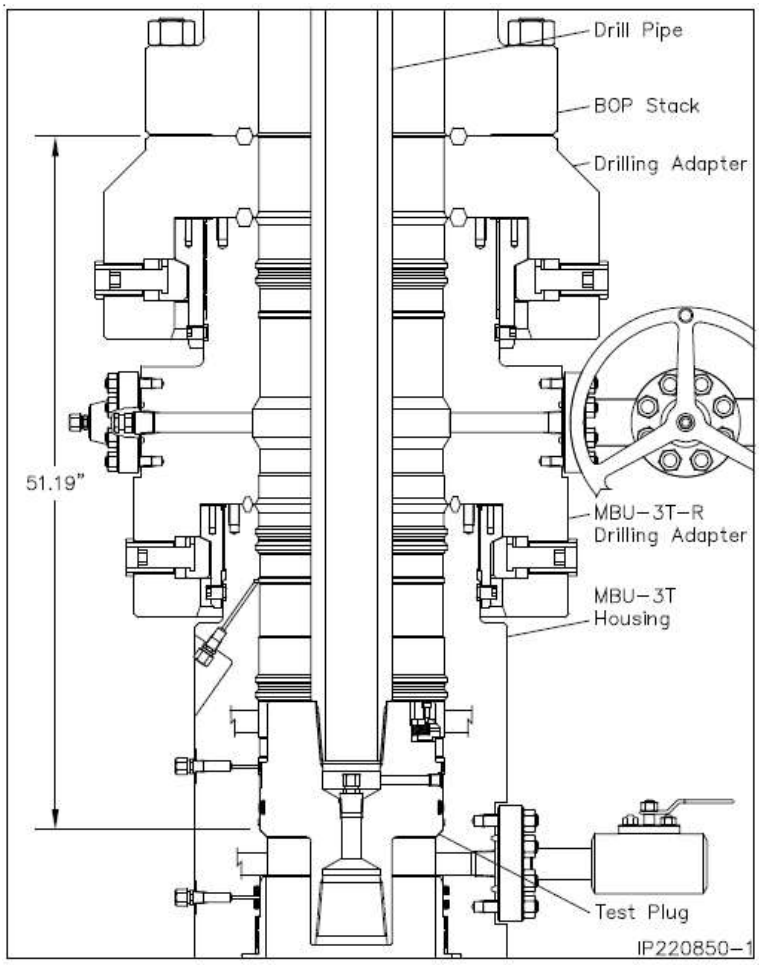

Figure 5. Cactus 5M wellhead with BOP quick connect

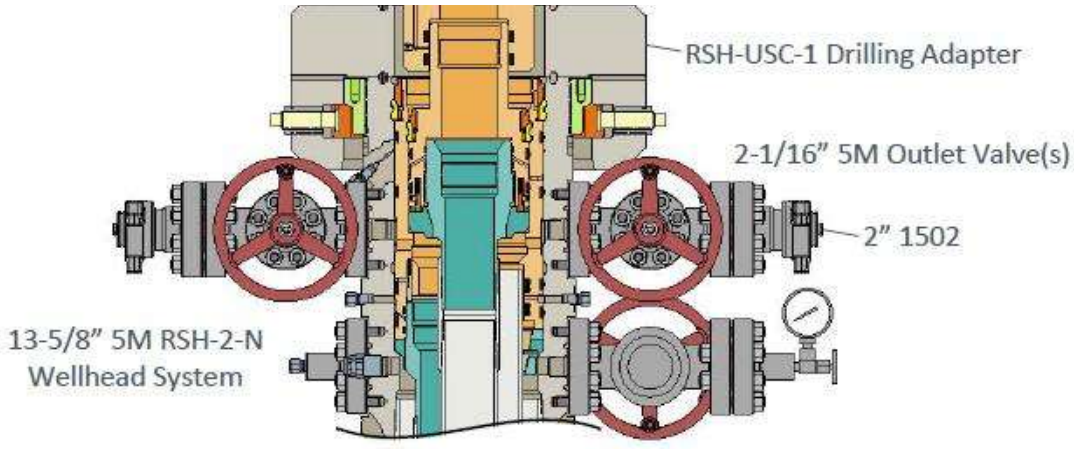

Figure 6. Vault 5M wellhead with BOP quick connect

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Mewbourne Oil Co.

Surface & Intermediate Offline Cementing Variance

Mewbourne Oil Company requests a variance to perform offline cementing for surface and intermediate casing strings with the following conditions:

- Offline cementing will not be performed on production casing.
- Offline cementing will not be performed on a hole section with MASP > 5000 psi.
- Offline cementing will not be performed concurrently with offset drilling.

Surface Casing Order of Operations:

1. Run 13 3/8" surface casing as per normal operations (TPGS and float collar).
2. Perform negative pressure test to confirm integrity of float equipment while running casing.
3. Confirm well is static.
4. Make up 13 ⅝" wellhead or wellhead landing ring assembly and land on 20" conductor.
5. Fill pipe, circulate casing capacity and confirm float(s) are still holding.
6. Confirm well is static.
7. Back out landing joint and pull to rig floor. Lay down landing joint.
8. Walk rig to next well on pad with cement crew standing by to rig up.
9. Make up offline cement tool with forklift per wellhead manufacturer (Fig. 1 & 2).
10. Make up cement head on top of offline cement tool with forklift.
11. Commence cement operations.
12. If cement circulates, confirm well is static and proceed to step 16.
13. If cement does not circulate, notify the appropriate BLM office, wait a minimum of six hours, and run a temperature survey to determine the top of cement.
14. Use 1" pipe for remedial cement job until the surface casing is cemented to surface.
15. Confirm well is static.
16. Once cement job is complete, the cement head and offline cementing tool are removed. The wellhead technician returns to cellar to install wellhead/valves.
17. Install wellhead capping flange.

Barriers

Before Walk:

- Float(s) in casing
- Kill weight fluid in casing
- Kill weight fluid in annulus

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After Walk:

- Float(s) in casing
- Kill weight fluid in casing
- Kill weight fluid in annulus
- Offline cementing tool tested to 5000 psi and cement head
- Capping flange after cementing

20” Surface Casing Order of Operations (4 string area):

1. Run 20" surface casing as per normal operations (TPGS and float collar).
2. Perform negative pressure test to confirm integrity of float equipment while running casing.
3. Fill pipe, circulate casing capacity and confirm float(s) are still holding.
4. Confirm well is static.
5. Back out landing joint and pull to rig floor. Lay down landing joint.
6. Make up cement head.
7. Walk rig to next well on pad with cement crew standing by to rig up.
8. Commence cement operations.
9. If cement circulates, confirm well is static and proceed to step 13.
10. If cement does not circulate, notify the appropriate BLM office, wait a minimum of six hours, and run a temperature survey to determine the top of cement.
11. Use 1" pipe for remedial cement job until the surface casing is cemented to surface.
12. Confirm well is static.
13. Once cement job is complete, remove cement head and install cap.

Barriers

Before Walk:

- Float(s) in casing
- Kill weight fluid in casing
- Kill weight fluid in annulus
- Cement Head

After Walk:

- Float(s) in casing
- Kill weight fluid in casing
- Kill weight fluid in annulus
- Cement head
- Capping flange after cementing

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Intermediate Casing Order of Operations:

1. Run casing as per normal operations (float shoe and float collar).
2. Perform negative pressure test to confirm integrity of float equipment while running casing.
3. Confirm well is static (if running SBM).
4. Land casing.
5. Fill pipe, circulate casing capacity and confirm floats are still holding.
6. Confirm well is static.
7. Back out landing joint and pull to rig floor. Lay down landing joint. Install packoff & test.
8. Nipple down BOP.
9. Walk rig to next well on pad with cement crew standing by to rig up.
10. Make up offline cement tool using forklift per wellhead manufacturer (Fig. 3 - 8).
11. Make up cement head on top of offline cement tool.
12. Commence cement operations.
13. If cement circulates, confirm well is static and proceed to step 16.
14. If cement does not circulate (when required), notify the appropriate BLM office, wait a minimum of six hours, and run a temperature survey to determine the top of cement.
15. Pump remedial cement job if required.
16. Confirm well is static.
17. Remove cement head and offline cementing tool.
18. Install wellhead capping flange and test.

Barriers

Before Nipple Down:

- Floats in casing
- Kill weight fluid in casing
- Kill weight fluid in annulus
- Solid body mandrel and/or packoff

After Nipple Down:

- Floats in casing
- Kill weight fluid in casing
- Kill weight fluid in annulus
- Solid body mandrel and/or packoff
- Offline cementing tool tested to 5000 psi and cement head
- Capping flange after cementing

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Risks:

- Pressure build up in annulus before cementing
  - Contact BLM if a well control event occurs.
  - Rig up 3rd party pump or rig pumps to pump down casing and kill well.
  - Returns will be taken through the wellhead valves to a choke manifold (Fig 9 & 10).
  - Well could also be killed through the wellhead valves down the annulus.

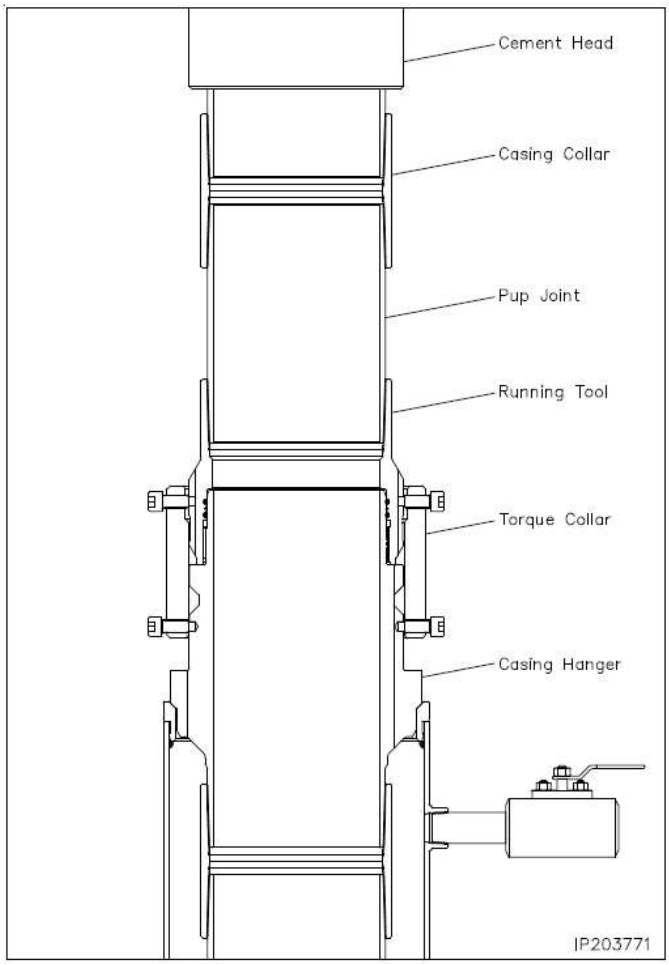

Figure 1. Cactus 13 3/8" 5M offline cementing tool. Pressure rating limited by the lesser of 5M tool rating or the 13 3/8" pup joint and casing.

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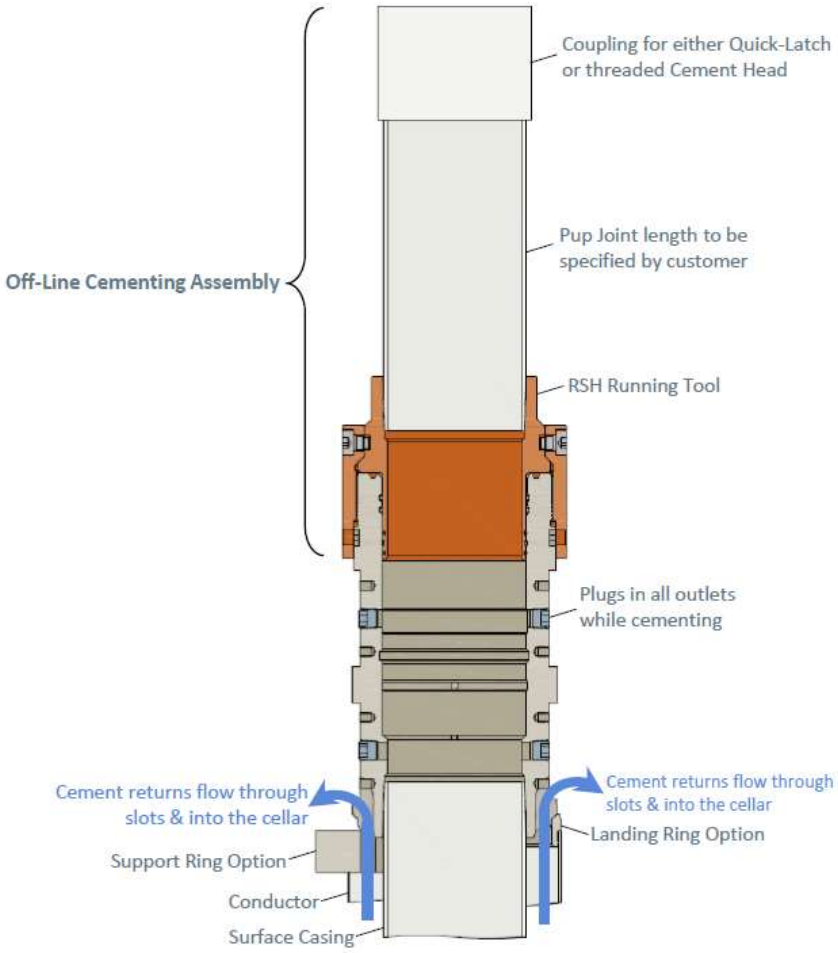

Figure 2. Vault 13 3/8” 5M offline cementing tool. Pressure rating limited by the lesser of 5M tool rating or the 13 3/8” pup joint and casing.

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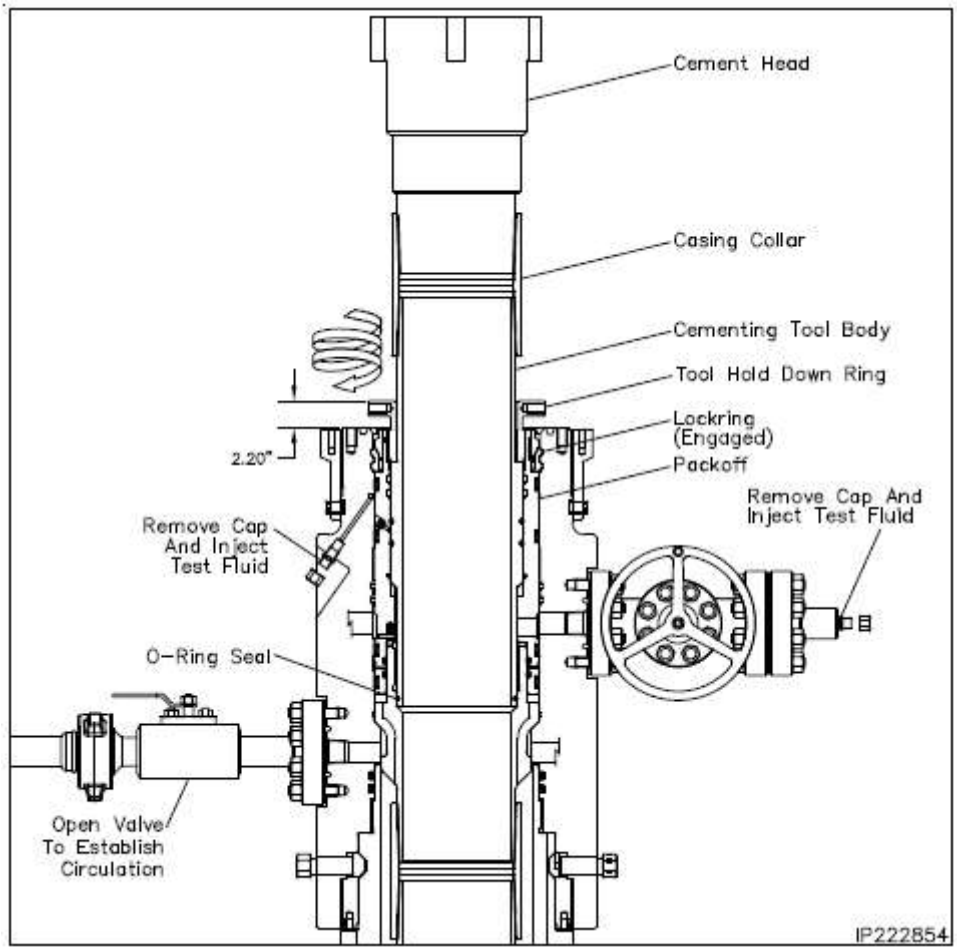

Figure 3. Cactus 9 5/8” 5M offline cementing tool. Pressure rating limited by the lesser of 5M tool rating or the 9 5/8” pup joint and casing.

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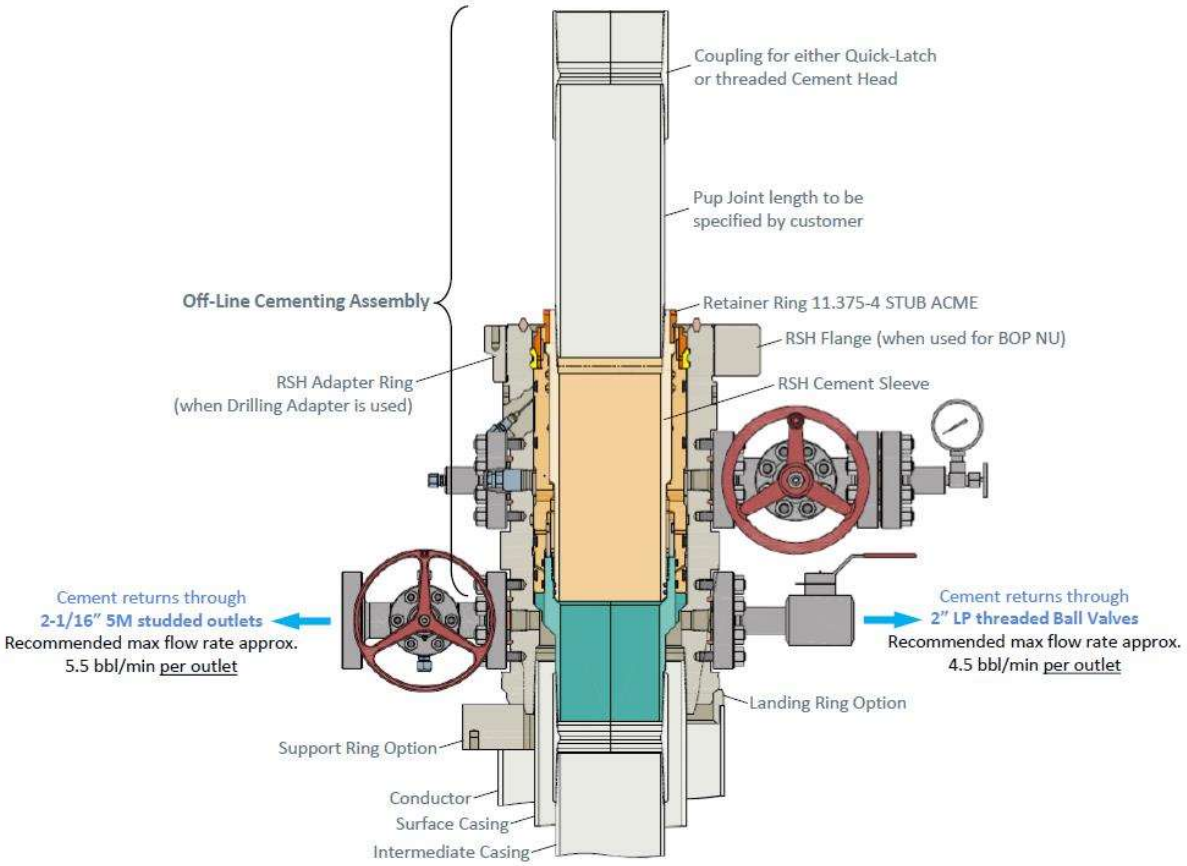

Figure 4. Vault 9 5/8" 5M offline cementing tool. Pressure rating limited by the lesser of 5M tool rating or the 9 5/8" pup joint and casing.

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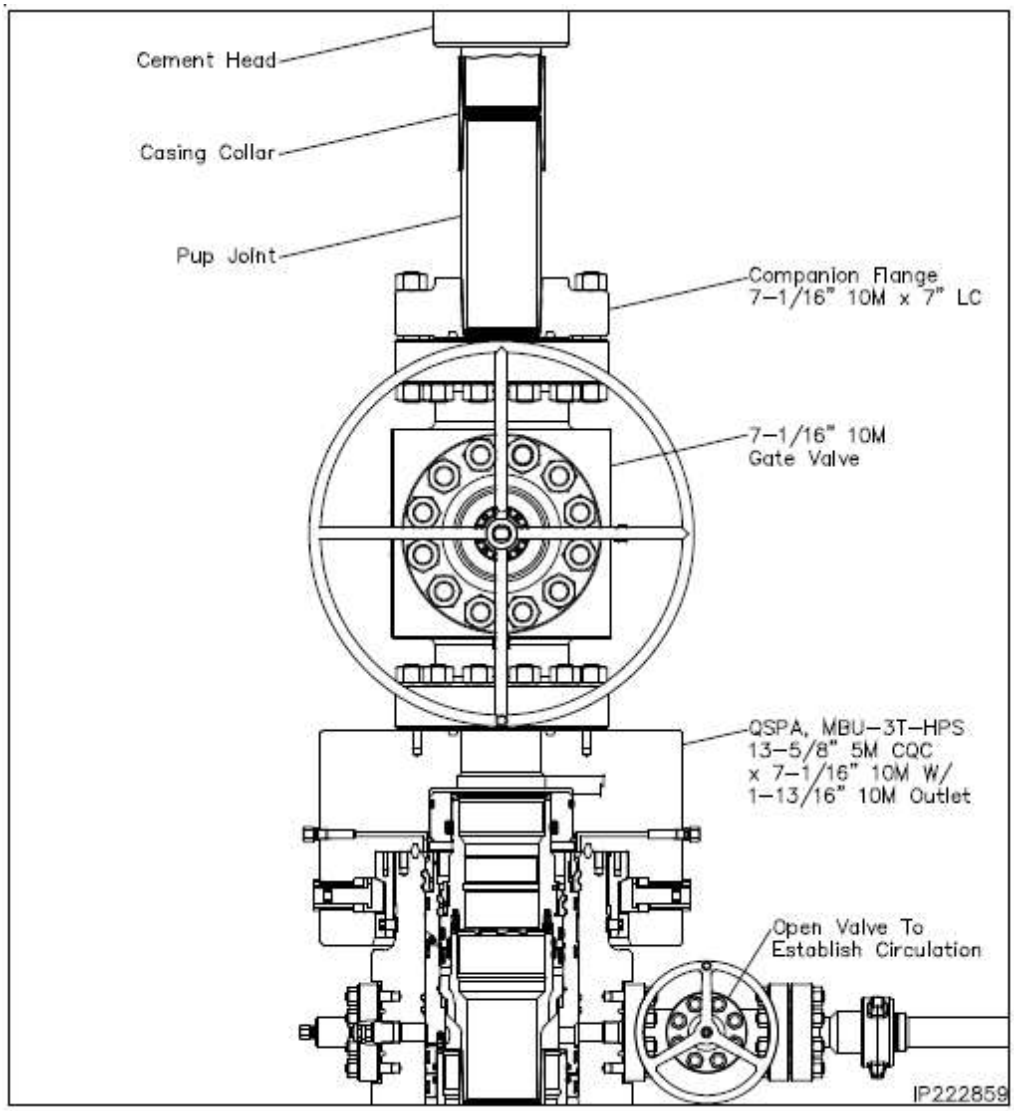

Figure 5. Cactus 7" 5M offline cementing tool. Pressure rating limited by the lesser of 5M tool rating or the 7" pup joint and casing.

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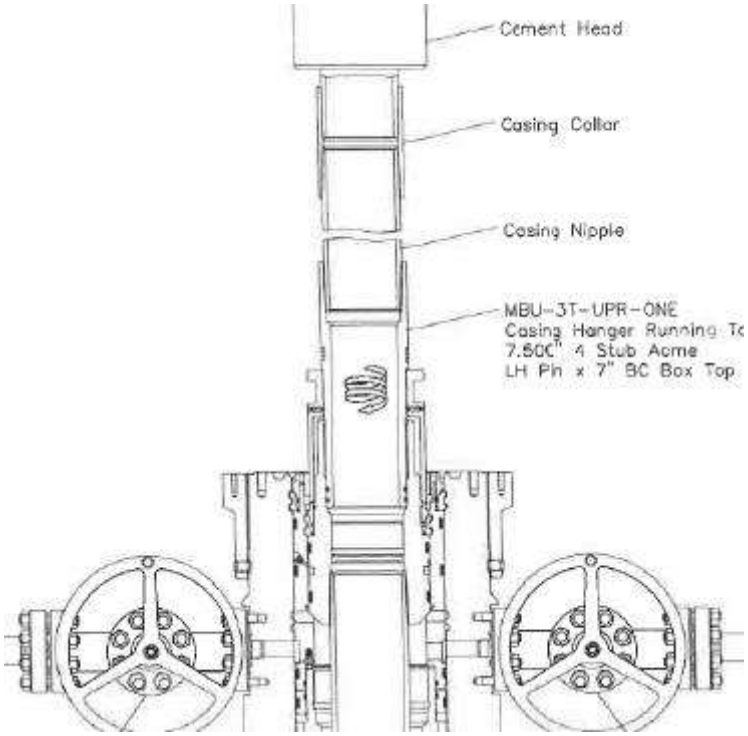

Figure 6. Cactus 7” 5M offline cementing tool. Pressure rating limited by the lesser of 5M tool rating or the 7” pup joint and casing.

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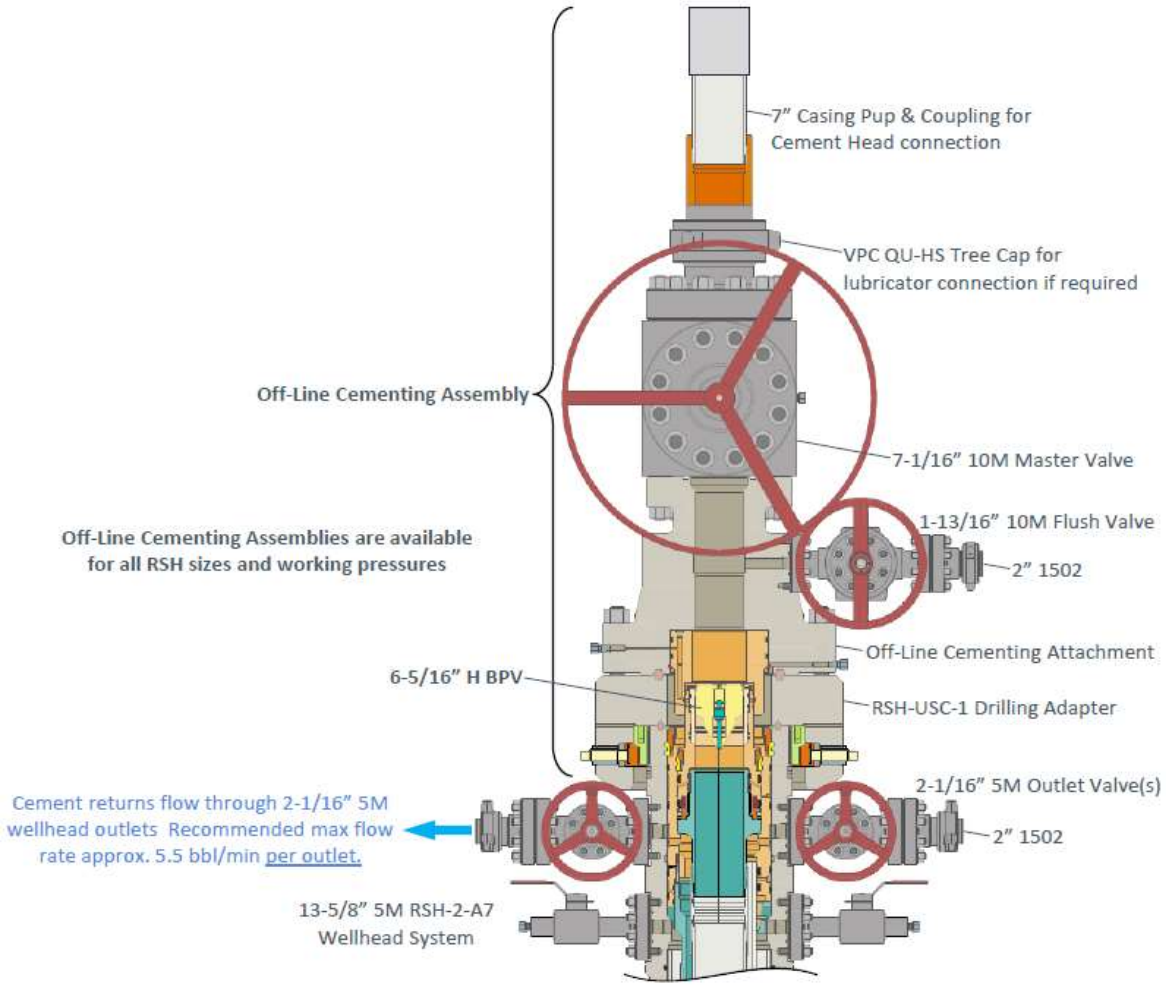

Figure 7. Vault 7" 5M offline cementing tool. Pressure rating limited by the lesser of 5M tool rating or the 7" pup joint and casing.

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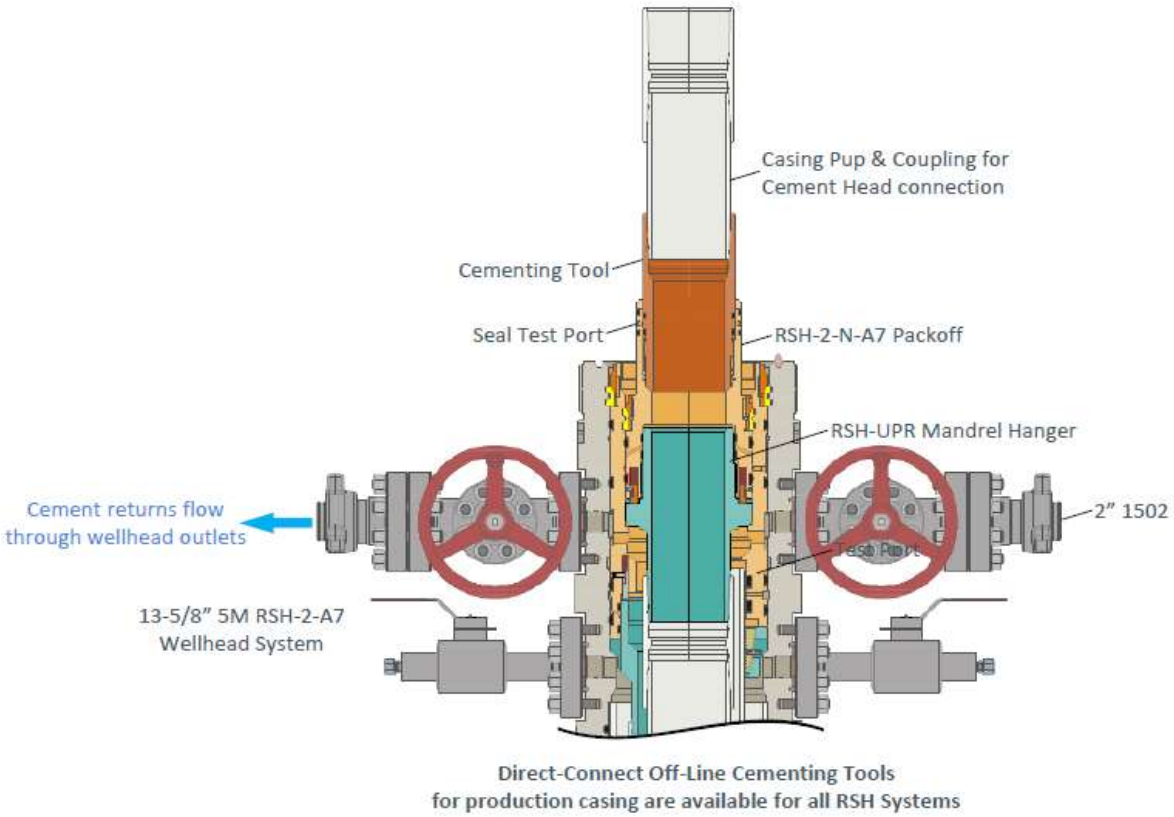


Figure 8. Vault 7" 5M offline cementing tool. Pressure rating limited by the lesser of 5M tool rating or the 7" pup joint and casing.

MEWBOURNE
OIL COMPANY

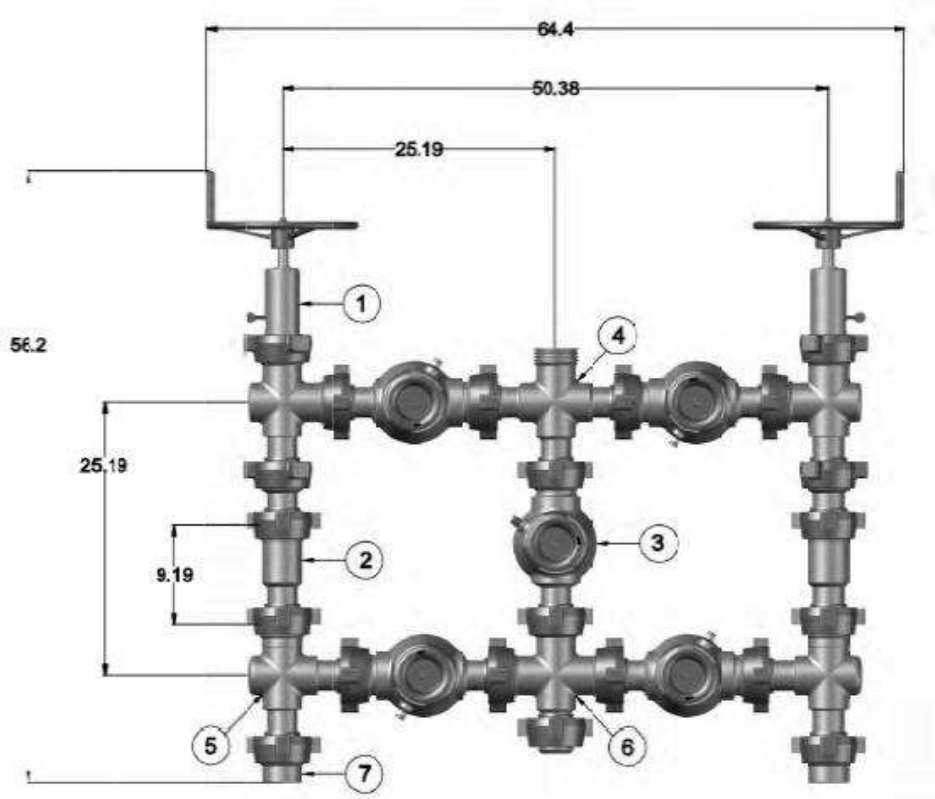


Figure 9. Five valve 15k choke manifold.

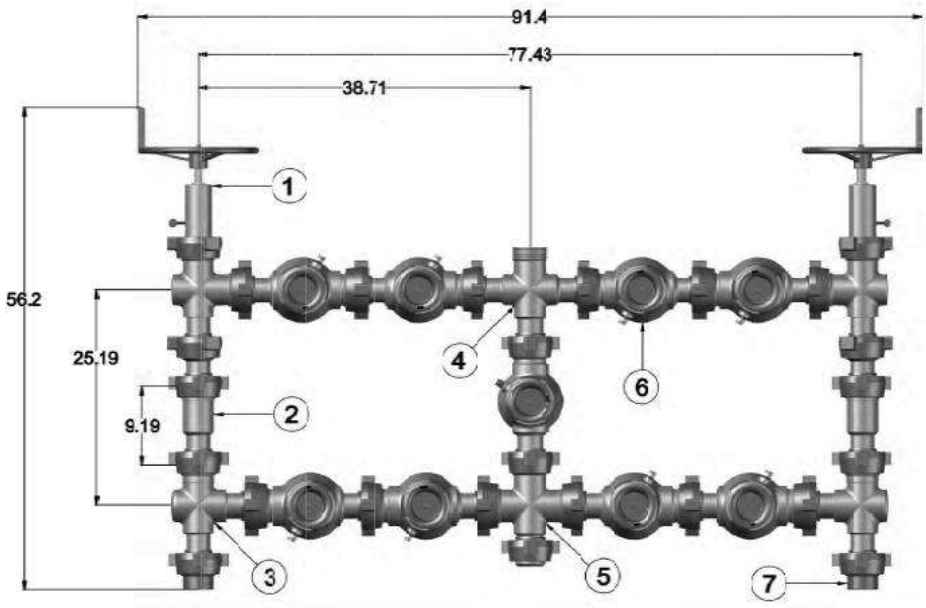


Figure 10. Nine valve 15k choke manifold.

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

SUPO Data Report
06/19/2024

APD ID: 10400097086
Submission Date: 02/14/2024
Operator Name: MEWBOURNE OIL COMPANY
Well Name: SANTA MARIA 31/36 FED COM
Well Number: 628H
Well Type: CONVENTIONAL GAS WELL
Well Work Type: Drill

Highlighted data reflects the most recent changes
Show Final Text

Section 1 - Existing Roads

Will existing roads be used? YES

Existing Road Map:

Santa_Maria_31_36_Fed_Com_628H_ExistingRoadMap_20240213112440.pdf

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

ROW ID(s)

ID:

Do the existing roads need to be improved? NO

Existing Road Improvement Description:

Existing Road Improvement Attachment:

Section 2 - New or Reconstructed Access Roads

Will new roads be needed? NO

Section 3 - Location of Existing Wells

Existing Wells Map? YES

Attach Well map:

Operator Name: MEWBOURNE OIL COMPANY

Well Name: SANTA MARIA 31/36 FED COM **Well Number:** 628H

SANTA_MARIA_31_36_FED_COM__628H_ExistingWellMap_20240213112623.pdf

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

Submit or defer a Proposed Production Facilities plan? SUBMIT

Production Facilities description: Pad is 565' x 420' .

Production Facilities map:

SANTA_MARIA_OFFSITE_BATTERY_AND_FLOWLINE_20240213133906.pdf

Section 5 - Location and Types of Water Supply

Water Source Table

Water source type: IRRIGATION

Water source use type: DUST CONTROL

SURFACE CASING

INTERMEDIATE/PRODUCTION CASING

Source latitude: 32.115456 **Source longitude:** -104.082855

Source datum: NAD83

Water source permit type: WATER WELL

Water source transport method: TRUCKING

Source land ownership: PRIVATE

Source transportation land ownership: PRIVATE

Water source volume (barrels): 2135 **Source volume (acre-feet):** 0.27518675

Source volume (gal): 89670

Water source and transportation

Santa_Maria_31_36_Fed_Com__628H_WaterSourceTransMap_20240213112743.pdf

Water source comments: NONE

New water well? N

New Water Well Info

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

Operator Name: MEWBOURNE OIL COMPANY

Well Name: SANTA MARIA 31/36 FED COM **Well Number:** 628H

Well target aquifer:

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

Aquifer comments:

Aquifer documentation:

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

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

New water well casing? **Used casing source:**

Drilling method: **Drill material:**

Grout material: **Grout depth:**

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

Well Production type: **Completion Method:**

Water well additional information:

State appropriation permit:

Additional information attachment:

Section 6 - Construction Materials

Using any construction materials: YES

Construction Materials description: Caliche

Construction Materials source location

Santa_Maria_31_36_Fed_Com__628H_CalicheSourceTransMap_20240213112815.pdf

Section 7 - Methods for Handling

Waste type: DRILLING

Waste content description: Drill cuttings

Amount of waste: 1335 barrels

Waste disposal frequency : One Time Only

Safe containment description: 20 yard roll off bins

Safe containmant attachment:

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

Disposal type description:

Disposal location description: NMOCD approved waste disposal locations are CRI or Lea Land, both facilities are located on HWY 62/180, Sec. 27 T20S R32E.

Operator Name: MEWBOURNE OIL COMPANY

Well Name: SANTA MARIA 31/36 FED COM **Well Number:** 628H

Waste type: SEWAGE

Waste content description: Human waste & grey water

Amount of waste: 1500 gallons

Waste disposal frequency : Weekly

Safe containment description: 2,000 gallon plastic container

Safe containmant attachment:

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

Disposal type description:

Disposal location description: City of Carlsbad Water Treatment facility

Waste type: GARBAGE

Waste content description: Garbage & trash from all drilling & completion procedures

Amount of waste: 1500 pounds

Waste disposal frequency : One Time Only

Safe containment description: Enclosed trash trailers

Safe containmant attachment:

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

Disposal type description:

Disposal location description: County of Eddy waste management

Reserve Pit

Reserve Pit being used? NO

Temporary disposal of produced water into reserve pit? NO

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

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

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

Reserve pit liner

Reserve pit liner specifications and installation description

Cuttings Area

Cuttings Area being used? NO

Are you storing cuttings on location? Y

Operator Name: MEWBOURNE OIL COMPANY

Well Name: SANTA MARIA 31/36 FED COM **Well Number:** 628H

Description of cuttings location Drill cuttings will be properly contained in steel tanks (20 yard roll off bins.) and taken to an NMOCD approved disposal facility listed below. After drilling and completion operations, trash, chemicals, salts, frac sand and other waste material will be removed and disposed of properly at the said facilities. NMOCD approved waste disposal locations are CRI or Lea Land, both facilities are located on HWY 62/180, Sec. 27 T20S R32E.

Cuttings area length (ft.)

Cuttings area width (ft.)

Cuttings area depth (ft.)

Cuttings area volume (cu. yd.)

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

WCuttings area liner

Cuttings area liner specifications and installation description

Section 8 - Ancillary

Are you requesting any Ancillary Facilities?: N

Ancillary Facilities

Comments:

Section 9 - Well Site

Well Site Layout Diagram:

Santa_Maria_31_36_Fed_Com_628H_WellSiteLayout_20240213112829.pdf

Comments: NONE

Section 10 - Plans for Surface Reclamation

Type of disturbance: New Surface Disturbance

Multiple Well Pad Name: Omaha 36/31 MP & LI

Multiple Well Pad Number: 4

Recontouring

Drainage/Erosion control construction: None required

Drainage/Erosion control reclamation: None required

Operator Name: MEWBOURNE OIL COMPANY

Well Name: SANTA MARIA 31/36 FED COM **Well Number:** 628H

Well pad proposed disturbance (acres): 6.7	**Well pad interim reclamation (acres):** 0.07	**Well pad long term disturbance (acres):** 6.63
Road proposed disturbance (acres): 0.101	**Road interim reclamation (acres):** 0	**Road long term disturbance (acres):** 0
Powerline proposed disturbance (acres): 0	**Powerline interim reclamation (acres):** 0	**Powerline long term disturbance (acres):** 0
Pipeline proposed disturbance (acres): 0	**Pipeline interim reclamation (acres):** 0	**Pipeline long term disturbance (acres):** 0
Other proposed disturbance (acres): 0	**Other interim reclamation (acres):** 0	**Other long term disturbance (acres):** 0
Total proposed disturbance: 6.801	**Total interim reclamation:** 0.07	**Total long term disturbance:** 6.63

Disturbance Comments: The length of the pipeline is unknown. A sundry notice will be filed for approval of said pipeline.

Reconstruction method: Remove caliche, redistribute topsoil over reclaimed area & reseed.

Topsoil redistribution: Use backhoe/loader to spread material.

Soil treatment: None

Existing Vegetation at the well pad: Various brush & grasses.

Existing Vegetation at the well pad

Existing Vegetation Community at the road: Various brush & grasses.

Existing Vegetation Community at the road

Existing Vegetation Community at the pipeline: Various brush & grasses.

Existing Vegetation Community at the pipeline

Existing Vegetation Community at other disturbances: Various brush & grasses.

Existing Vegetation Community at other disturbances

Non native seed used? N

Non native seed description:

Seedling transplant description:

Will seedlings be transplanted for this project? N

Seedling transplant description

Will seed be harvested for use in site reclamation? N

Seed harvest description:

Seed harvest description attachment:

Operator Name: MEWBOURNE OIL COMPANY

Well Name: SANTA MARIA 31/36 FED COM **Well Number:** 628H

Seed

Seed Table

Seed Summary

Total pounds/Acre:

Seed Type	Pounds/Acre

Seed reclamation

Operator Contact/Responsible Official

First Name: **Last Name:**

Phone: **Email:**

Seedbed prep: recontouring

Seed BMP: NA

Seed method: broadcast & drill

Existing invasive species? N

Existing invasive species treatment description:

Existing invasive species treatment

Weed treatment plan description: None

Weed treatment plan

Monitoring plan description: Visual inspection within 3 months of interim reclamation.

Monitoring plan

Success standards: Complete re-growth within 1 year of interim reclamation.

Pit closure description: None

Pit closure attachment:

Section 11 - Surface Ownership

Disturbance type: WELL PAD

Describe:

Surface Owner: STATE GOVERNMENT

Other surface owner description:

BIA Local Office:

BOR Local Office:

Operator Name: MEWBOURNE OIL COMPANY

Well Name: SANTA MARIA 31/36 FED COM **Well Number:** 628H

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office: NMSLO

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

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

Disturbance type: NEW ACCESS ROAD

Describe:

Surface Owner: STATE GOVERNMENT

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office: NMSLO

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

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

Operator Name: MEWBOURNE OIL COMPANY

Well Name: SANTA MARIA 31/36 FED COM **Well Number:** 628H

Disturbance type: OTHER

Describe: Production Facility

Surface Owner: STATE GOVERNMENT

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office: NMSLO

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

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

Section 12 - Other

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

ROW Type(s):

ROW

SUPO Additional Information:

Use a previously conducted onsite? Y

Previous Onsite information: Met w/ RRC Surveying & staked location @ 2475' FNL & 800' FWL, Sec 32, T20S, R27E, Eddy Co., NM. (Elevation @ 3226'). Existing pad will be extended 200' to the E. Pit area will be to the W towards existing Santa Maria wells. Flow lines will follow existing Santa Maria flow lines to battery located to the W. Reclaim 60 N & E w/topsoil staked 30 wide to the N. Will require additional cave/karst, archeology, & botany surveys. May require a BLM onsite due to proximity of sink holes. Lat: 32.5305524 N, Long: -104.3095761 W NAD 83. (BPS)

Other SUPO

Operator Name: MEWBOURNE OIL COMPANY

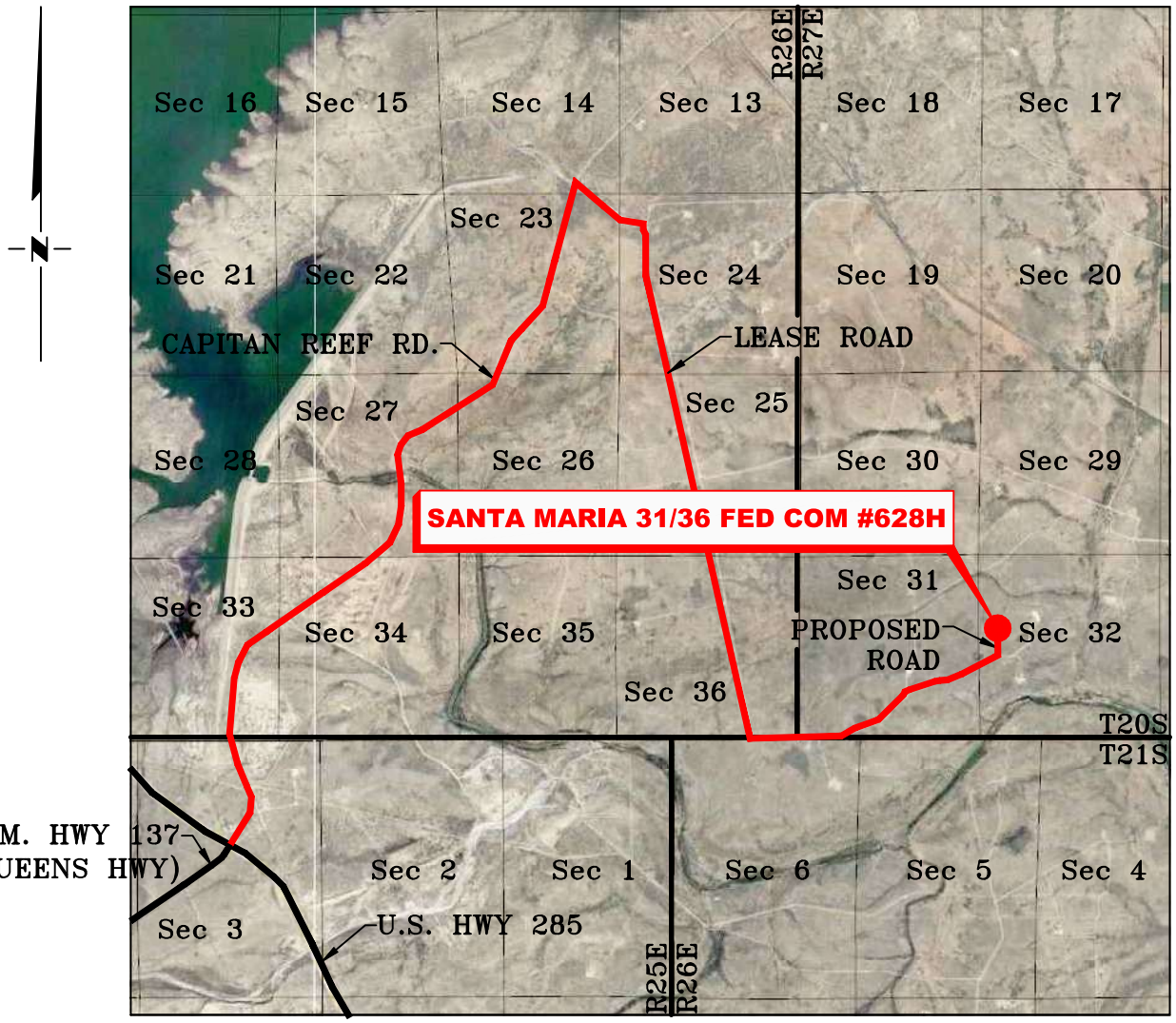
Well Name: SANTA MARIA 31/36 FED COM **Well Number:** 628H

Santa_Maria_31_36_Fed_Com_628H_InterimReclamationMap_20240213112909.pdf

Santa_Maria_31_36_Fed_Com_628H_NGMP_20240213112916.pdf

VICINITY MAP

NOT TO SCALE



SECTION 32, TWP. 20 SOUTH, RGE. 27 EAST,
N. M. P. M., EDDY COUNTY, NEW MEXICO

OPERATOR: Mewbourne Oil Company
LEASE: Santa Maria 31/36 Fed Com
WELL NO.: 628H

LOCATION: 2495' FNL & 800' FWL
ELEVATION: 3226'

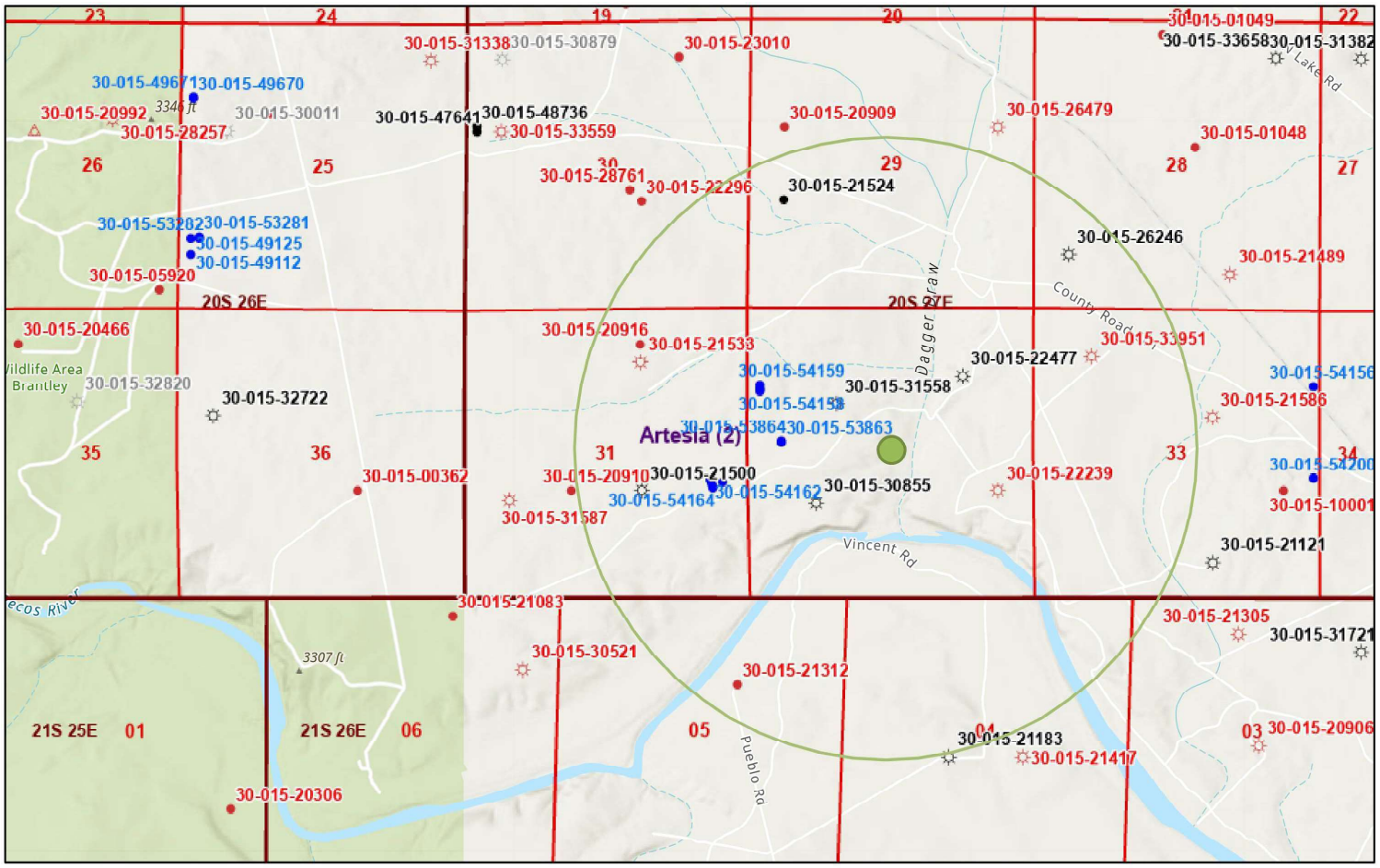
NO.	REVISION	DATE

JOB NO.: LS24010042
DWG. NO.: 24010042-3

RRC ENERGY SERVICES LLC.
701 S. CECIL ST., HOBBS, NM 88240 (575) 964-8200

SCALE: N. T. S.
DATE: 01/17/2024
SURVEYED BY: ML/IW
DRAWN BY: AR
APPROVED BY: RMH
SHEET: 1 OF 1

OCD Well Locations



1/25/2024, 1:53:55 PM

1:36,112

0 0.25 0.5 1 mi

0 0.4 0.8 1.6 km

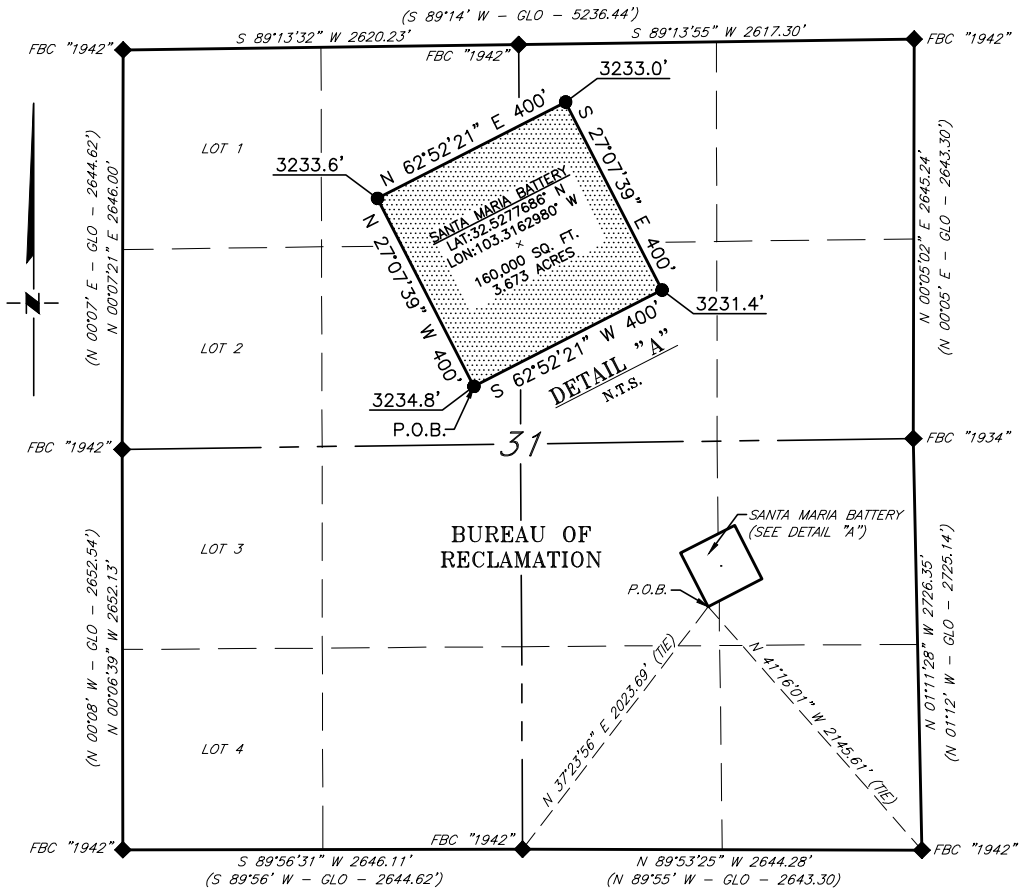
Areas
- Override 1
- Override 2

Wells - Large Scale
- Gas, Active
- Gas, Cancelled
- Gas, Plugged
- Oil, Active
- Oil, New
- Oil, Plugged
- Salt Water Injection, Plugged

- OCD Districts
- PLSS First Division
- PLSS Townships

NM OCD Oil and Gas Map. http://nm-emnrd.maps.arcgis.com/apps/webappviewer/index.html?id=4d017f2306164de29fd2fb9f8f35ca75: New Mexico Oil Conservation Division

MEWBOURNE OIL COMPANY
BATTERY FOR THE SANTA MARIA 31/36 WELL LOCATIONS
SECTION 31, T20S, R27E
N. M. P. M., EDDY COUNTY, NEW MEXICO



DIRECTIONS TO LOCATION

From the intersection of U.S. Hwy 285 & N.M. Hwy 137 (Queens Hwy);

Go Northeast on N.M. Hwy 137 approx. 4.5 miles to a lease road on the right;

Turn right and go Southeast approx. 0.5 miles, road curves right;

Continue Southeast approx. 2.9 miles, road curves left;

Continue East approx. 1.1 miles to location on the right.

SCALE: 1" = 1000'
0 500' 1000'

BEARINGS ARE GRID NAD 83 NM EAST
DISTANCES ARE HORIZ. GROUND.

LEGEND

( ) *RECORD DATA – GLO*
◆ *FOUND MONUMENT AS NOTED*
P.O.B. *POINT OF BEGINNING*

I, R. M. Howett, a N. M. Professional Surveyor, hereby certify that I prepared this plat from an actual survey made on the ground under my direct supervision, said survey and plat meet the Min. Stds. for Land Surveying in the State of N. M. and are true and correct to the best of my knowledge and belief.

Robert M. Howett
Robert M. Howett NM PS 19680

ROBERT M. HOWETT
NEW MEXICO
19680
03/24/23
PROFESSIONAL SURVEYOR

NO.	REVISION	DATE

JOB NO.: LS23030279
DWG. NO.: 23030279–1

RRC ENERGY SERVICES, LLC.
701 S. CECIL ST., HOBBS, NM 88240 (575) 964–8200

SCALE: 1" = 1000'
DATE: 03/10/2023
SURVEYED BY: ML/IW
DRAWN BY: AR
APPROVED BY: RMH
SHEET: 1 OF 2

MEWBOURNE OIL COMPANY
BATTERY FOR THE SANTA MARIA 31/36 WELL LOCATIONS
SECTION 31, T20S, R27E
N. M. P. M., EDDY COUNTY, NEW MEXICO

DESCRIPTION

A tract of land situated within the Southeast quarter of Section 31, Township 20 South, Range 27 East, N. M. P. M. Eddy County, New Mexico, across Bureau of Reclamation land and being more particularly described by metes and bounds as follows:

BEGINNING at a point in the Southeast quarter of Section 31, which bears, N 37°23'56" E, 2,023.69 feet from a brass cap, stamped "1942", found for the South quarter corner of Section 31 and being N 41°16'01" W, 2,145.61 feet from a brass cap, stamped "1942", found for the Southeast corner of Section 31;

Thence N 27°07'39" W, 400 feet, to a point;

Thence N 62°52'21" E, 400 feet, to a point;

Thence S 27°07'39" E, 400 feet, to a point;

Thence S 62°52'21" W, 400 feet, to the Point of Beginning.

Said tract of land contains 160,000 square feet or 3.673 acres, more or less and is allocated by forties as follows:

NW 1/4 SE 1/4	71,964.62 Sq. Ft.	1.652 Acres
NE 1/4 SE 1/4	88,035.38 Sq. Ft.	2.021 Acres

NO.	REVISION	DATE

JOB NO.: LS23030279
DWG. NO.: 23030279–2

RRC ENERGY SERVICES, LLC.
701 S. CECIL ST., HOBBS, NM 88240 (575) 964–8200

SCALE: 1" = 1000'
DATE: 03/10/2023
SURVEYED BY: ML/IW
DRAWN BY: AR
APPROVED BY: RMH
SHEET: 2 OF 2

NO.	REVISION	DATE

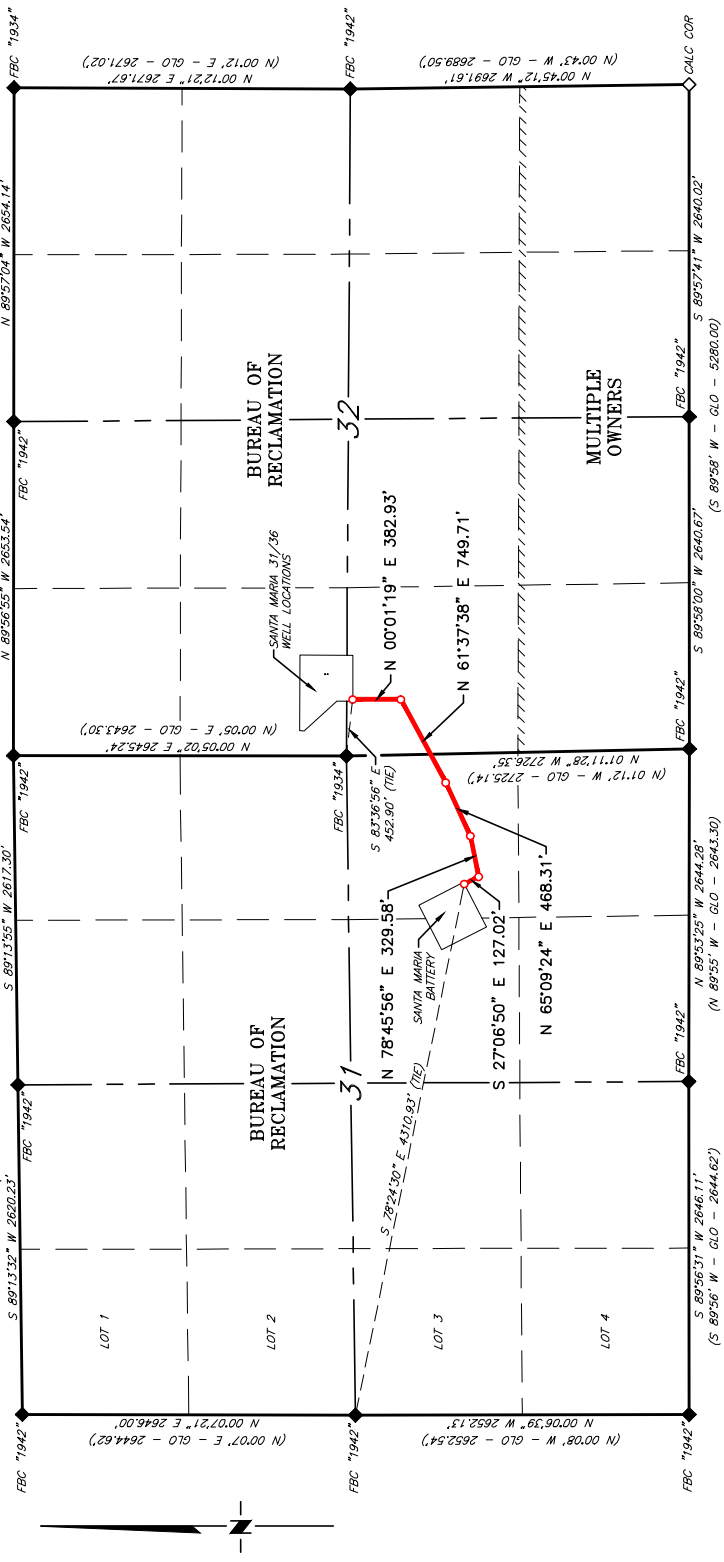
JOB NO.: LS2303027 9

DWG. NO.: 2303027 9-3

ENERGY SERVICES, LLC.
701 S. CECIL ST., HOBBS, NM 88240 (575) 964-8200

SCALE: 1" = 1200'
DATE: 03/10/2023
SURVEYED BY: ML/IW
DRAWN BY: AR
APPROVED BY: RMH
SHEET: 1 OF 3

MEWBOURNE OIL COMPANY
PIPELINE FOR THE SANTA MARIA 31/36 WELL LOCATIONS
SECTIONS 31 & 32, T20S, R27E
N. M. P. M., EDDY COUNTY, NEW MEXICO



LEGEND

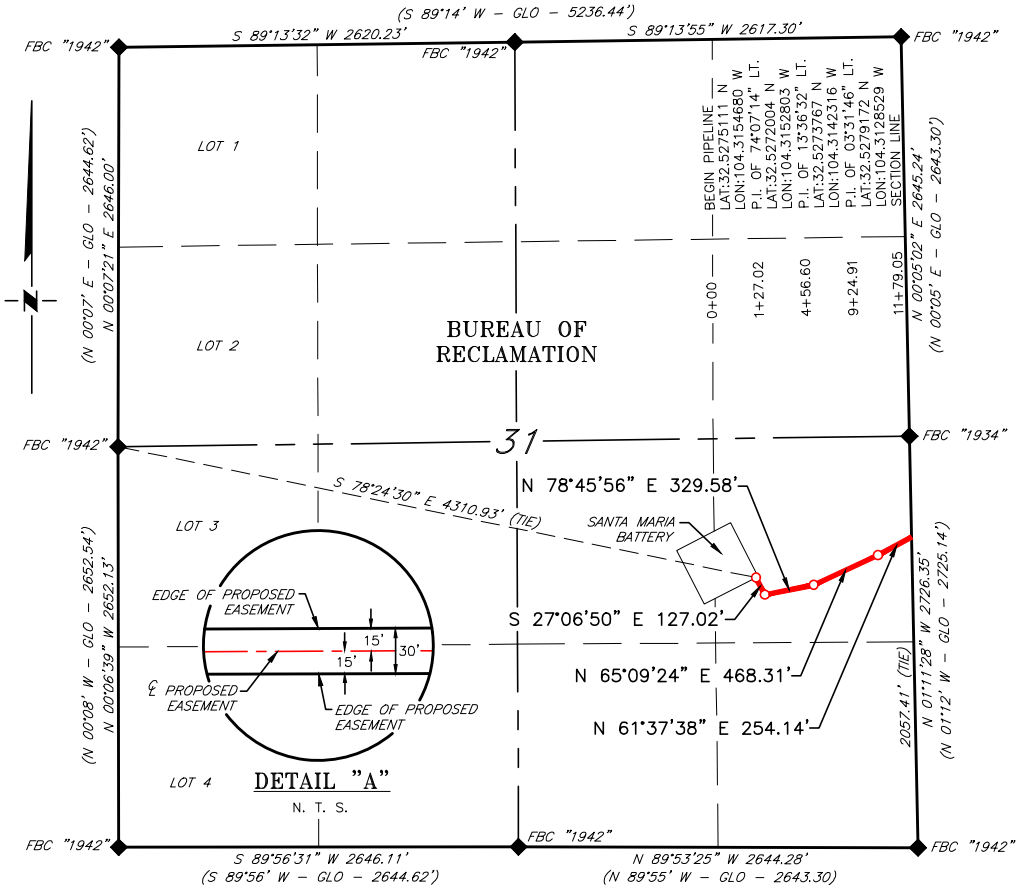
( ) RECORD DATA - GLO
◆ FOUND MONUMENT AS NOTED
◇ CALCULATED CORNER
PROPOSED PIPELINE

ENTIRE LINE TOTALS	FEET	RODS	ACRES
TOTAL	2,057.55'	124.700	1.417

SCALE: 1" = 1200'
0 600' 1200'

BEARINGS ARE GRID NAD 83 NM EAST
DISTANCES ARE HORIZ. GROUND.

MEWBOURNE OIL COMPANY
PIPELINE FOR THE SANTA MARIA 31/36 WELL LOCATIONS
SECTION 31, T20S, R27E
N. M. P. M., EDDY COUNTY, NEW MEXICO



DESCRIPTION

A strip of land 30 feet wide, being 1,179.05 feet or 71.458 rods in length, lying in Section 31, Township 20 South, Range 27 East, N. M. P. M., Eddy County, New Mexico, being 15 feet left and 15 feet right of the following described survey of a centerline across Bureau of Reclamation land:

BEGINNING at Engr. Sta. 0+00, a point in the Southeast quarter of Section 31, which bears, S 78°24'30" E, 4,310.93 feet from a brass cap, stamped "1942", found for the West quarter corner of Section 31;

Thence S 27°06'50" E, 127.02 feet, to Engr. Sta. 1+27.02, a P. I. of 74°07'14" left;

Thence N 78°45'56" E, 329.58 feet, to Engr. Sta. 4+56.60, a P. I. of 13°36'32" left;

Thence N 65°09'24" E, 468.31 feet, to Engr. Sta. 9+24.91, a P. I. of 03°31'46" left;

Thence N 61°37'38" E, 254.14 feet, to Engr. Sta. 11+79.05, a point on the East line of Section 31, which bears, N 01°11'28" W, 2,057.41 feet from a brass cap, stamped "1942", found for the Southeast corner of Section 31.

Said strip of land contains 0.812 acres, more or less, and is allocated by forties as follows:

NE 1/4 SE 1/4	1,179.05 Feet	71.458 Rods	0.812 Acres

SCALE: 1" = 1000'
0 500' 1000'

BEARINGS ARE GRID NAD 83 NM EAST
DISTANCES ARE HORIZ. GROUND.

LEGEND
( ) RECORD DATA – GLO
◆ FOUND MONUMENT AS NOTED
PROPOSED PIPELINE

I, R. M. Howett, a N. M. Professional Surveyor, hereby certify that I prepared this plat from an actual survey made on the ground under my direct supervision, said survey and plat meet the Min. Stds. for Land Surveying in the State of N. M. and are true and correct to the best of my knowledge and belief.

Robert M. Howett
Robert M. Howett NM PS 19680

ROBERT M. HOWETT NEW MEXICO 19680 03/24/23 PROFESSIONAL SURVEYOR

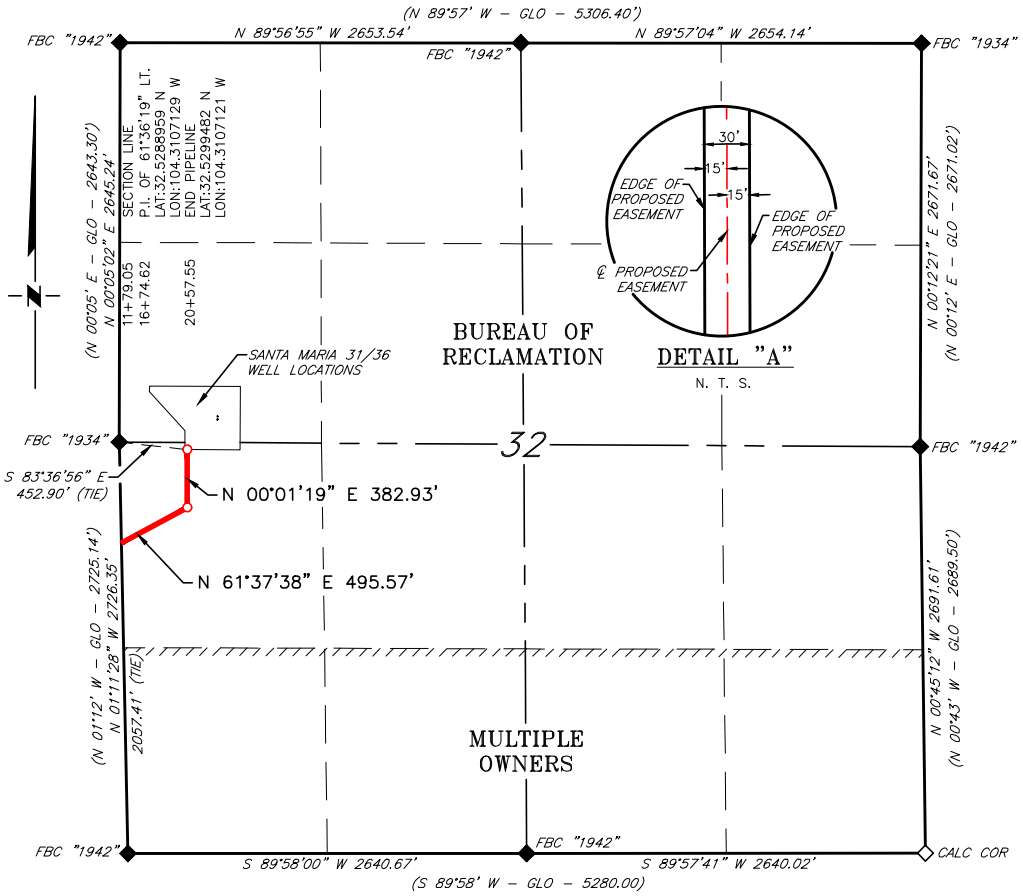
NO.	REVISION	DATE

JOB NO.: LS23030279
DWG. NO.: 23030279–4

RRC ENERGY SERVICES, LLC.
701 S. CECIL ST., HOBBS, NM 88240 (575) 964–8200

SCALE: 1" = 1000'
DATE: 03/10/2023
SURVEYED BY: ML/IW
DRAWN BY: AR
APPROVED BY: RMH
SHEET: 2 OF 3

MEWBOURNE OIL COMPANY
PIPELINE FOR THE SANTA MARIA 31/36 WELL LOCATIONS
SECTION 32, T20S, R27E
N. M. P. M., EDDY COUNTY, NEW MEXICO



DESCRIPTION

A strip of land 30 feet wide, being 878.50 feet or 53.242 rods in length, lying in Section 32, Township 20 South, Range 27 East, N. M. P. M., Eddy County, New Mexico, being 15 feet left and 15 feet right of the following described survey of a centerline across Bureau of Reclamation land:

BEGINNING at Engr. Sta. 11+79.05, a point on the West line of Section 32, which bears, N 01°11'28" W, 2,057.41 feet from a brass cap, stamped "1942", found for the Southwest corner of Section 32;

Thence N 61°37'38" E, 495.57 feet, to Engr. Sta. 16+74.62, a P. I. of 61°36'19" left;

Thence N 00°01'19" E, 382.93 feet, to Engr. Sta. 20+57.55, the End of Survey, a point in the Southwest quarter of Section 32, which bears, S 83°36'56" E, 452.90 feet from a brass cap, stamped "1934", found for the West quarter corner of Section 32.

Said strip of land contains 0.605 acres, more or less, and is allocated by forties as follows:

NW 1/4 SW 1/4	878.50 Feet	53.242 Rods	0.605 Acres

SCALE: 1" = 1000'
0 500' 1000'

BEARINGS ARE GRID NAD 83 NM EAST
DISTANCES ARE HORIZ. GROUND.

LEGEND
( ) RECORD DATA – GLO
◆ FOUND MONUMENT AS NOTED
◇ CALCULATED CORNER
PROPOSED PIPELINE

I, R. M. Howett, a N. M. Professional Surveyor, hereby certify that I prepared this plat from an actual survey made on the ground under my direct supervision, said survey and plat meet the Min. Stds. for Land Surveying in the State of N. M. and are true and correct to the best of my knowledge and belief.

Robert M. Howett
Robert M. Howett NM PS 19680

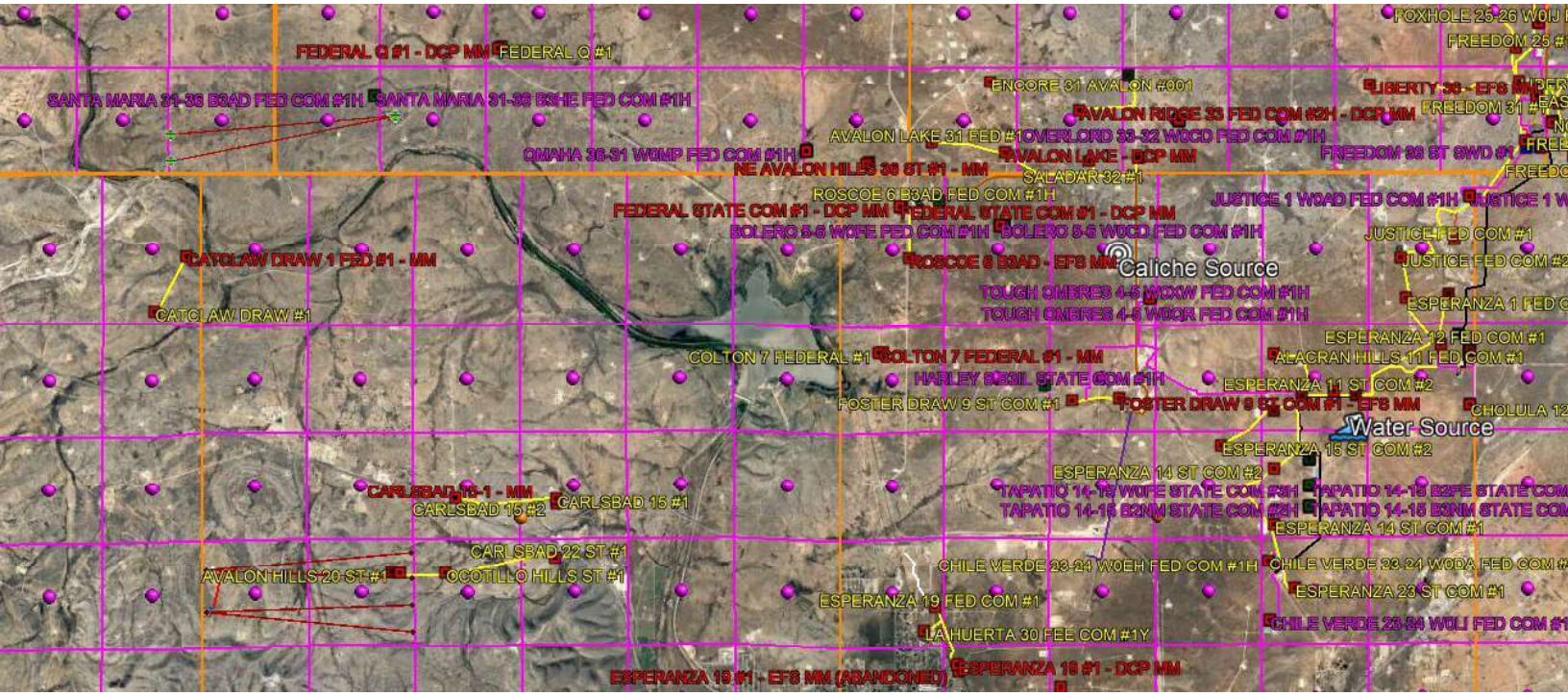
ROBERT M. HOWETT NEW MEXICO 19680 03/24/23 PROFESSIONAL SURVEYOR

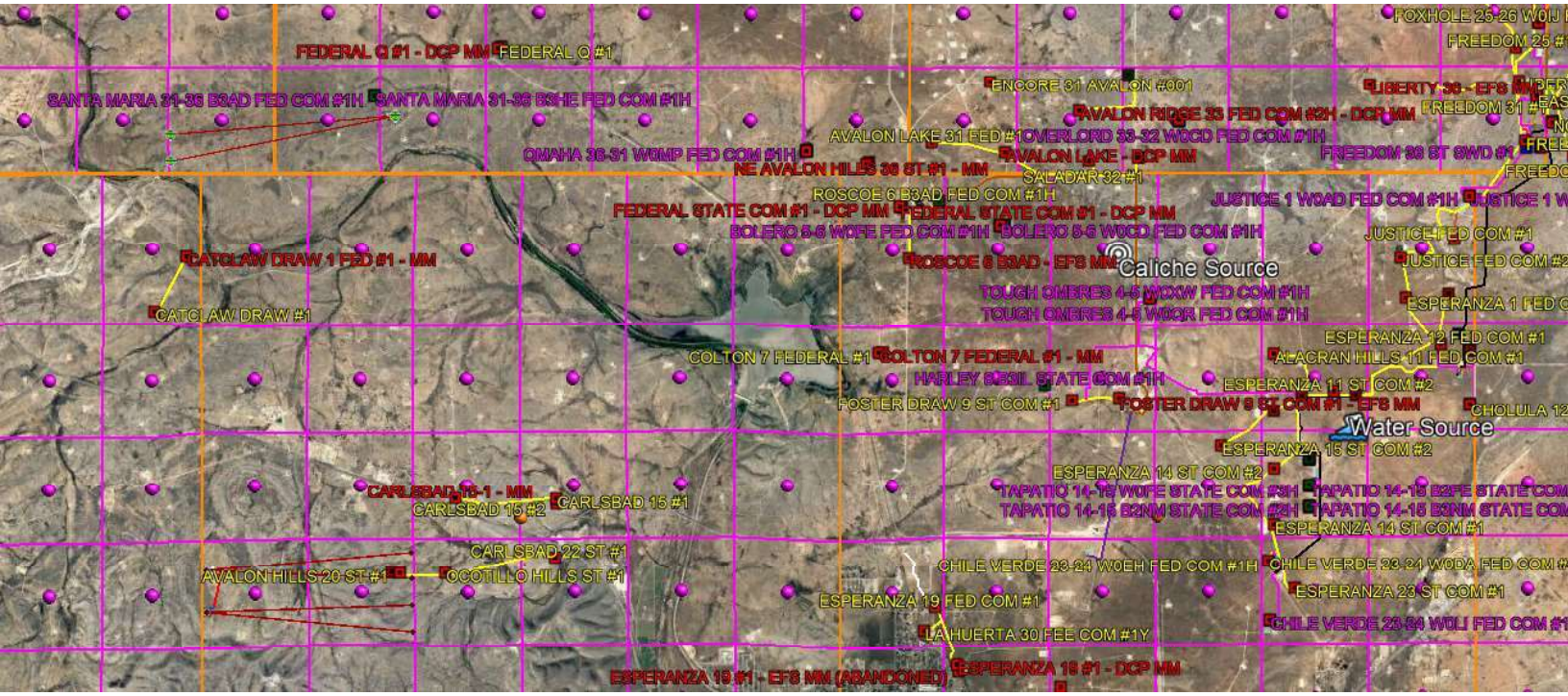
NO.	REVISION	DATE

JOB NO.: LS23030279
DWG. NO.: 23030279–5

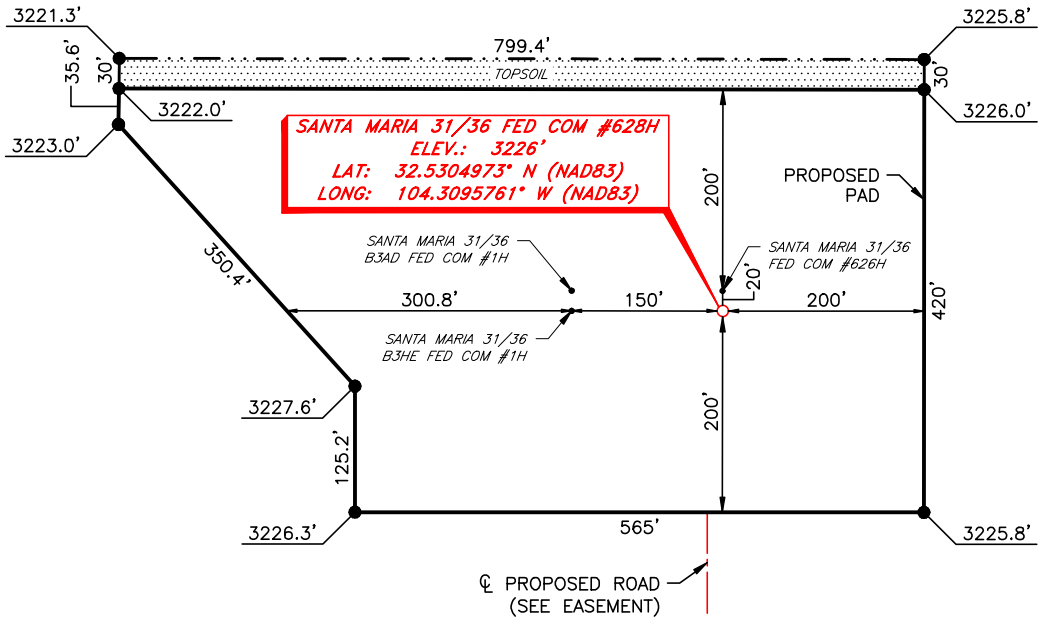
RRC ENERGY SERVICES, LLC.
701 S. CECIL ST., HOBBS, NM 88240 (575) 964–8200

SCALE: 1" = 1000'
DATE: 03/10/2023
SURVEYED BY: ML/IW
DRAWN BY: AR
APPROVED BY: RMH
SHEET: 3 OF 3


FEDERAL Q #1 - DCP MM
FEDERAL Q #1
SANTA MARIA 31-36 B3AD FED COM #1H
SANTA MARIA 31-36 B3HE FED COM #1H
ENCORE 31 AVALON #001
AVALON RIDGE 33 FED COM #2H - DCP MM
AVALON LAKE 31 FED #1
OVERLORD 33-32 W0CD FED COM #1H
OMAHA 36-31 W0MP FED COM #1H
NE AVALON HILLS 36 ST #1 - MM
AVALON LAKE - DCP MM
SALADAR 32 #1
ROSCOE 6 B3AD FED COM #1H
FEDERAL STATE COM #1 - DCP MM
FEDERAL STATE COM #1 - DCP MM
BOLERO 8-6 W0FE FED COM #1H
BOLERO 8-6 W0CD FED COM #1H
ROSCOE 6 B3AD - EF8 MM
Caliche Source
TOUGH OMERES 4-5 W0XW FED COM #1H
TOUGH OMERES 4-5 W0OR FED COM #1H
CATCLAW DRAW 1 FED #1 - MM
CATCLAW DRAW #1
COLTON 7 FEDERAL #1
COLTON 7 FEDERAL #1 - MM
HARLEY 8 B3IL STATE COM #1H
FOSTER DRAW 9 ST COM #1
FOSTER DRAW 9 ST COM #1 - EF8 MM
ESPERANZA 11 ST COM #2
ESPERANZA 12 FED COM #1
ALACRAN HILLS 11 FED COM #1
Water Source
ESPERANZA 15 ST COM #2
ESPERANZA 14 ST COM #2
CARLSBAD 16-1 - MM
CARLSBAD 16 #2
CARLSBAD 16 #1
TAPATIO 14-15 W0FE STATE COM #3H
TAPATIO 14-15 B2NM STATE COM #2H
ESPERANZA 14 ST COM #1
CARLSBAD 22 ST #1
AVALON HILLS 20 ST #1
OCOTILLO HILLS ST #1
CHILE VERDE 23-24 W0EH FED COM #1H
CHILE VERDE 23-24 W0DA FED COM #1H
ESPERANZA 23 ST COM #1
ESPERANZA 19 FED COM #1
CHILE VERDE 23-24 W0LI FED COM #1H
LA HUERTA 30 FEE COM #1Y
ESPERANZA 19 #1 - EF8 MM (ABANDONED)
ESPERANZA 19 #1 - DCP MM


FEDERAL Q #1 - DCP MM
FEDERAL Q #1
SANTA MARIA 31-36 B3AD FED COM #1H
SANTA MARIA 31-36 B3HE FED COM #1H
ENCORE 31 AVALON #001
AVALON RIDGE 33 FED COM #2H - DCP MM
AVALON LAKE 31 FED #1
OVERLORD 33-32 W0CD FED COM #1H
OMAHA 36-31 W0MP FED COM #1H
NE AVALON HILLS 36 ST #1 - MM
AVALON LAKE - DCP MM
SALADAR 32 #1
ROSCOE 6 B3AD FED COM #1H
FEDERAL STATE COM #1 - DCP MM
FEDERAL STATE COM #1 - DCP MM
BOLERO 8-6 W0FE FED COM #1H
BOLERO 8-6 W0CD FED COM #1H
ROSCOE 6 B3AD - EF8 MM
Caliche Source
TOUGH OMERES 4-5 W0XW FED COM #1H
TOUGH OMERES 4-5 W0OR FED COM #1H
CATCLAW DRAW 1 FED #1 - MM
CATCLAW DRAW #1
COLTON 7 FEDERAL #1
COLTON 7 FEDERAL #1 - MM
HARLEY 8 B3IL STATE COM #1H
FOSTER DRAW 9 ST COM #1
FOSTER DRAW 9 ST COM #1 - EF8 MM
Water Source
ESPERANZA 14 ST COM #2
TAPATIO 14-15 W0FE STATE COM #3H
TAPATIO 14-15 B2NM STATE COM #2H
CARLSBAD 15-1 - MM
CARLSBAD 15 #2
CARLSBAD 15 #1
CARLSBAD 22 ST #1
AVALON HILLS 20 ST #1
OCOTILLO HILLS ST #1
CHILE VERDE 23-24 W0EH FED COM #1H
ESPERANZA 19 FED COM #1
LA HUERTA 30 FEE COM #1Y
ESPERANZA 19 #1 - EF8 MM (ABANDONED)
ESPERANZA 19 #1 - DCP MM
ESPERANZA 14 ST COM #1
ESPERANZA 23 ST COM #1
CHILE VERDE 23-24 W0LI FED COM #1
ESPERANZA 15 ST COM #2
ESPERANZA 11 ST COM #2
ESPERANZA 12 FED COM #1
ALACRAN HILLS 11 FED COM #1
JUSTICE 1 W0AD FED COM #1H
JUSTICE FED COM #1
JUSTICE FED COM #2
FREEDOM 31 #1
FREEDOM 36 ST 6WD #1
LIBERTY 36 - EF8 MM
FOXHOLE 25-26 W0IJ
FREEDOM 25 #1
CHOLULA 12

MEWBOURNE OIL COMPANY
SANTA MARIA 31/36 FED COM #628H
(2495' FNL & 800' FWL)
SECTION 32, T20S, R27E
N. M. P. M., EDDY COUNTY, NEW MEXICO



DIRECTIONS TO LOCATION

From the intersection of U.S. 285 & N.M Hwy 137 (Queens Hwy.);

Go Northeast on Capitan Reef Rd. approx. 4.5 miles to lease road on right;

Turn right and go Southeast approx. 3.5 miles road curves left;

Continue East approx. 1.5 miles to a proposed road on the left;

Turn left and go North approx. 0.1 miles to location on the left.

PAD FOOTAGE & ACREAGE		
QUARTER/QUARTER	FEET	ACRES
SW 1/4 NW 1/4	250,226.23 Sq Ft.	5.744
NW 1/4 SW 1/4	26,244.23 Sq Ft.	0.602
TOTAL	276,470.46 Sq Ft.	6.347

SCALE: 1" = 150'
0 75 150

BEARINGS ARE NAD 83 GRID – NM EAST DISTANCES ARE GROUND.

I, R. M. Howett, a N. M. Professional Surveyor, hereby certify that I prepared this unclassified survey of a well location from an actual survey made on the ground under my direct supervision, said survey and plat meet the Min. Stds. for Land Surveying in the State of N. M. and are true and correct to the best of my knowledge and belief.

Robert M. Howett
Robert M. Howett NM PS 19680

ROBERT M. HOWETT NEW MEXICO 19680 01/24/24 PROFESSIONAL SURVEYOR

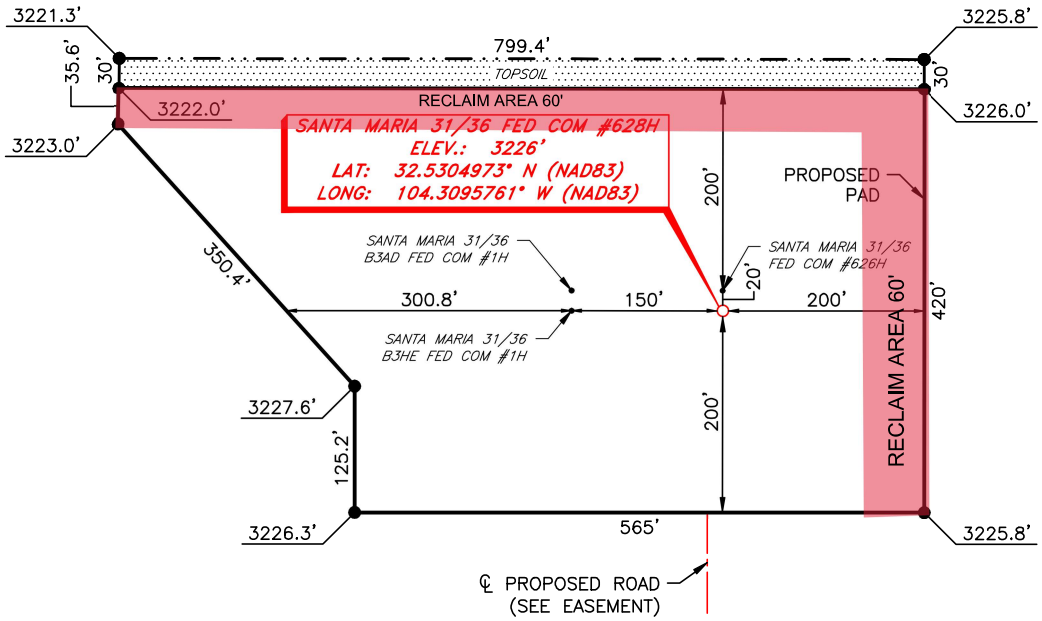
NO.	REVISION	DATE

JOB NO.: LS24010042
DWG. NO.: 24010042–4

RRC ENERGY SERVICES, LLC.
701 S. CECIL ST., HOBBS, NM 88240 (575) 964–8200

SCALE: 1" = 150'
DATE: 01/17/2024
SURVEYED BY: ML/IW
DRAWN BY: AR
APPROVED BY: RMH
SHEET: 1 OF 1

MEWBOURNE OIL COMPANY
SANTA MARIA 31/36 FED COM #628H
(2495' FNL & 800' FWL)
SECTION 32, T20S, R27E
N. M. P. M., EDDY COUNTY, NEW MEXICO



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Robert M. Howett
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701 S. CECIL ST., HOBBS, NM 88240 (575) 964–8200

SCALE: 1" = 150'
DATE: 01/17/2024
SURVEYED BY: ML/IW
DRAWN BY: AR
APPROVED BY: RMH
SHEET: 1 OF 1

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: Mewbourne Oil Co. **OGRID:** 14744 **Date:** 5/2/22

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
Santa Maria 31/36 Fed Com 628H		E 32 20S 27E	2495' FNL x 800' FWL	1500	5000	1000

IV. Central Delivery Point Name: Santa Maria 31/36 Fed Com 628H [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
Santa Maria 31/36 Fed Com 628H		7/2/22	8/2/22	9/2/22	9/17/22	9/17/22

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.

Page 8

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:	Bradley Bishop
Printed Name:	BRADLEY BISHOP
Title:	REGULATORY MANAGER
E-mail Address:	BBISHOP@MEWBOURNE.COM
Date:	5/2/22
Phone:	575-393-5905

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

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

Mewbourne Oil Company

Natural Gas Management Plan – Attachment

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 ProMax modelling software to ensure adequate capacity for anticipated production volumes and conditions.

VII. Mewbourne Oil Company (MOC) will take following actions to comply with the regulations listed in 19.15.27.8 :

A. MOC 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. MOC 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 ft 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 reported appropriately.

C. During completion operations any natural gas brought to surface will be flared. Immediately following the finish of completion operations, all well flow 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, MOC will flare the natural gas for 60 days or until the natural gas meets the pipeline quality specifications, whichever is sooner. MOC will ensure that the flare is sized properly and is equipped with automatic igniter or continuous pilot. The gas sample will 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.(1) 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 reported appropriately.

E. MOC will comply with the performance standards requirements and provisions listed in 19.15.27.8 E.(1) through (8). All equipment will be designed and sized to handle maximum anticipated pressures and throughputs in order 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. MOC 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. MOC 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 pressureventing and flaring, MOC 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 thediversion 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

PWD Data Report
06/19/2024

APD ID: 10400097086 **Submission Date:** 02/14/2024

Operator Name: MEWBOURNE OIL COMPANY

Well Name: SANTA MARIA 31/36 FED COM **Well Number:** 628H

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

Section 1 - General

Would you like to address long-term produced water disposal? NO

Section 2 - Lined

Would you like to utilize Lined Pit PWD options? N

Produced Water Disposal (PWD) Location:

PWD surface owner: **PWD disturbance (acres):**

Lined pit PWD on or off channel:

Lined pit PWD discharge volume (bbl/day):

Lined pit

Pit liner description:

Pit liner manufacturers

Precipitated solids disposal:

Decribe precipitated solids disposal:

Precipitated solids disposal

Lined pit precipitated solids disposal schedule:

Lined pit precipitated solids disposal schedule

Lined pit reclamation description:

Lined pit reclamation

Leak detection system description:

Leak detection system

Operator Name: MEWBOURNE OIL COMPANY

Well Name: SANTA MARIA 31/36 FED COM **Well Number:** 628H

Lined pit Monitor description:

Lined pit Monitor

Lined pit: do you have a reclamation bond for the pit?

Is the reclamation bond a rider under the BLM bond?

Lined pit bond number:

Lined pit bond amount:

Additional bond information

Section 3 - Unlined

Would you like to utilize Unlined Pit PWD options? N

Produced Water Disposal (PWD) Location:

PWD disturbance (acres): **PWD surface owner:**

Unlined pit PWD on or off channel:

Unlined pit PWD discharge volume (bbl/day):

Unlined pit

Precipitated solids disposal:

Decribe precipitated solids disposal:

Precipitated solids disposal

Unlined pit precipitated solids disposal schedule:

Unlined pit precipitated solids disposal schedule

Unlined pit reclamation description:

Unlined pit reclamation

Unlined pit Monitor description:

Unlined pit Monitor

Do you propose to put the produced water to beneficial use?

Beneficial use user

Estimated depth of the shallowest aquifer (feet):

Does the produced water have an annual average Total Dissolved Solids (TDS) concentration equal to or less than that of the existing water to be protected?

TDS lab results:

Geologic and hydrologic

State

Unlined Produced Water Pit Estimated

Unlined pit: do you have a reclamation bond for the pit?

Operator Name: MEWBOURNE OIL COMPANY

Well Name: SANTA MARIA 31/36 FED COM **Well Number:** 628H

Is the reclamation bond a rider under the BLM bond?

Unlined pit bond number:

Unlined pit bond amount:

Additional bond information

Section 4 -

Would you like to utilize Injection PWD options? N

Produced Water Disposal (PWD) Location:

PWD surface owner: **PWD disturbance (acres):**

Injection PWD discharge volume (bbl/day):

Injection well mineral owner:

Injection well type:

Injection well number: **Injection well name:**

Assigned injection well API number? **Injection well API number:**

Injection well new surface disturbance (acres):

Minerals protection information:

Mineral protection

Underground Injection Control (UIC) Permit?

UIC Permit

Section 5 - Surface

Would you like to utilize Surface Discharge PWD options? N

Produced Water Disposal (PWD) Location:

PWD surface owner: **PWD disturbance (acres):**

Surface discharge PWD discharge volume (bbl/day):

Surface Discharge NPDES Permit?

Surface Discharge NPDES Permit attachment:

Surface Discharge site facilities information:

Surface discharge site facilities map:

Section 6 -

Would you like to utilize Other PWD options? N

Produced Water Disposal (PWD) Location:

PWD surface owner: **PWD disturbance (acres):**

Other PWD discharge volume (bbl/day):

Operator Name: MEWBOURNE OIL COMPANY

Well Name: SANTA MARIA 31/36 FED COM **Well Number:** 628H

Other PWD type description:

Other PWD type

Have other regulatory requirements been met?

Other regulatory requirements

AFMSS

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

Bond Info Data

06/19/2024

APD ID: 10400097086

Submission Date: 02/14/2024

Operator Name: MEWBOURNE OIL COMPANY

Well Name: SANTA MARIA 31/36 FED COM

Well Number: 628H

Well Type: CONVENTIONAL GAS WELL

Well Work Type: Drill

Highlighted data reflects the most recent changes

Show Final Text

Bond

Federal/Indian APD: FED

BLM Bond number: NM1693

BIA Bond number:

Do you have a reclamation bond? NO

Is the reclamation bond a rider under the BLM bond?

Is the reclamation bond BLM or Forest Service?

BLM reclamation bond number:

Forest Service reclamation bond number:

Forest Service reclamation bond

Reclamation bond number:

Reclamation bond amount:

Reclamation bond rider amount:

Additional reclamation bond information

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

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

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

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

1 API Number	2 Pool Code	3 Pool Name
30-015-55214	96381	AVALON; BONE SPRING

4 Property Code	5 Property Name	6 Well Number
336006	SANTA MARIA 31/36 FED COM	628H

7 OGRID NO.	8 Operator Name	9 Elevation
14744	MEWBOURNE OIL COMPANY	3226'

10 Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet From the	East/West line	County
E	32	20S	27E		2495	NORTH	800	WEST	EDDY

11 Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	36	20S	26E		660	SOUTH	100	WEST	EDDY

12 Dedicated Acres	13 Joint or Infill	14 Consolidation Code	15 Order No.
320			

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.

16

GEODETIC DATA
NAD 83 GRID – NM EAST

SURFACE LOCATION (SL)
N: 556726.4 – E: 548659.2

LAT: 32.5304973° N
LONG: 104.3095761° W

KICK OFF POINT (KOP)
660' FSL – 473' FWL SEC.32
N: 554511.8 – E: 548375.0

LAT: 32.5244100° N
LONG: 104.3104999° W

FIRST TAKE POINT (FTP)
660' FSL – 100' FEL SEC.31
N: 554511.7 – E: 547802.2

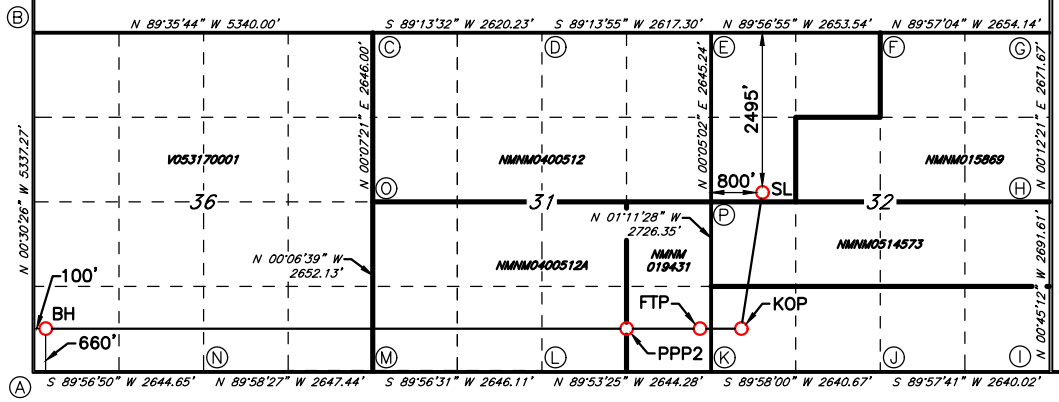
LAT: 32.5244101° N
LONG: 104.3123585° W

PROPOSED PENETRATION POINT 2
658' FSL – 1317' FEL SEC.31
N: 554511.9 – E: 546585.6

LAT: 32.5244111° N
LONG: 104.3163058° W

BOTTOM HOLE
N: 554512.9 – E: 537430.1

LAT: 32.5244144° N
LONG: 104.3460111° W



17 OPERATOR CERTIFICATION

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

Carter Crook 5/22/2024
Signature Date

Carter Crook
Printed Name

ccrook@mewbourne.com
E-mail Address

18 SURVEYOR CERTIFICATION

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

01/17/2024
Date of Survey

Signature and Seal of Professional Surveyor:

ROBERT M. HOWETT
NEW MEXICO
19680
PROFESSIONAL SURVEYOR

19680
Certificate Number

REV: ADD WELL CALLS – 02/07/24

JOB No: LS24010042D

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

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

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

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

1 API Number	2 Pool Code	3 Pool Name
	96381	AVALON; BONE SPRING

4 Property Code	5 Property Name	6 Well Number
	SANTA MARIA 31/36 FED COM	628H

7 OGRID NO.	8 Operator Name	9 Elevation
14744	MEWBOURNE OIL COMPANY	3226'

10 Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet From the	East/West line	County
E	32	20S	27E		2495	NORTH	800	WEST	EDDY

11 Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	36	20S	26E		660	SOUTH	100	WEST	EDDY

12 Dedicated Acres	13 Joint or Infill	14 Consolidation Code	15 Order No.

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.

16

CORNER DATA
NAD 83 GRID – NM EAST

A: FOUND BRASS CAP "1948"
N: 553853.0 – E: 537336.0

B: FOUND BRASS CAP "1984"
N: 559188.8 – E: 537288.7

C: FOUND BRASS CAP "1942"
N: 559151.1 – E: 542627.3

D: FOUND BRASS CAP "1942"
N: 559186.5 – E: 545246.6

E: FOUND BRASS CAP "1942"
N: 559221.5 – E: 547863.1

F: FOUND BRASS CAP "1942"
N: 559219.2 – E: 550516.0

G: FOUND BRASS CAP "1934"
N: 559216.9 – E: 553169.5

H: FOUND BRASS CAP "1942"
N: 556545.9 – E: 553159.9

I: CALCULATED CORNER
N: 553855.2 – E: 553195.2

J: FOUND BRASS CAP "1942"
N: 553853.4 – E: 550555.9

K: FOUND BRASS CAP "1942"
N: 553851.9 – E: 547915.8

L: FOUND BRASS CAP "1942"
N: 553856.9 – E: 545272.2

M: FOUND BRASS CAP "1942"
N: 553854.2 – E: 542626.7

N: FOUND BRASS CAP "1948"
N: 553855.4 – E: 539980.0

O: FOUND BRASS CAP "1942"
N: 556505.7 – E: 542621.6

P: FOUND BRASS CAP "1934"
N: 556577.0 – E: 547859.2

17 OPERATOR CERTIFICATION

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

Signature Date

Printed Name

E-mail Address

18 SURVEYOR CERTIFICATION

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

01/17/2024
Date of Survey

Signature and Seal of Professional Surveyor:

ROBERT M. HOWETT
NEW MEXICO
19680
PROFESSIONAL SURVEYOR

19680
Certificate Number

REV: ADD WELL CALLS – 02/07/24

JOB No: LS24010042D

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: Mewbourne Oil Co. **OGRID:** 14744 **Date:** 5/2/22

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
Santa Maria 31/36 Fed Com 628H		E 32 20S 27E	2495' FNL x 800' FWL	1500	5000	1000

IV. Central Delivery Point Name: Santa Maria 31/36 Fed Com 628H [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
Santa Maria 31/36 Fed Com 628H		7/2/22	8/2/22	9/2/22	9/17/22	9/17/22

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.

Page 8

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:	Bradley Bishop
Printed Name:	BRADLEY BISHOP
Title:	REGULATORY MANAGER
E-mail Address:	BBISHOP@MEWBOURNE.COM
Date:	5/2/22
Phone:	575-393-5905

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

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

Mewbourne Oil Company

Natural Gas Management Plan – Attachment

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 ProMax modelling software to ensure adequate capacity for anticipated production volumes and conditions.

VII. Mewbourne Oil Company (MOC) will take following actions to comply with the regulations listed in 19.15.27.8 :

A. MOC 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. MOC 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 ft 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 reported appropriately.

C. During completion operations any natural gas brought to surface will be flared. Immediately following the finish of completion operations, all well flow 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, MOC will flare the natural gas for 60 days or until the natural gas meets the pipeline quality specifications, whichever is sooner. MOC will ensure that the flare is sized properly and is equipped with automatic igniter or continuous pilot. The gas sample will 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.(1) 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 reported appropriately.

E. MOC will comply with the performance standards requirements and provisions listed in 19.15.27.8 E.(1) through (8). All equipment will be designed and sized to handle maximum anticipated pressures and throughputs in order 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. MOC 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. MOC 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 pressureventing and flaring, MOC 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 thediversion 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
06/19/2024

APD ID: 10400097086
Submission Date: 02/14/2024
Operator Name: MEWBOURNE OIL COMPANY
Well Name: SANTA MARIA 31/36 FED COM
Well Number: 628H
Well Type: CONVENTIONAL GAS WELL
Well Work Type: Drill

Highlighted data reflects the most recent changes

Show Final Text

Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical	Measured Depth	Lithologies	Mineral Resources	Producing Formatio
13602933	UNKNOWN	3226	28	28	OTHER : Topsoil	NONE	N
13602940	YATES	2846	380	380	SANDSTONE	NATURAL GAS, OIL	N
13602934	CAPITAN REEF	1946	1280	1280	DOLOMITE, LIMESTONE	USEABLE WATER	N
13602926	LAMAR	956	2270	2270	DOLOMITE, LIMESTONE	NATURAL GAS, OIL	N
13602928	BONE SPRING	-472	3698	3698	LIMESTONE	NATURAL GAS, OIL	N
13602929	BONE SPRING 1ST	-2383	5609	5609	SANDSTONE	NATURAL GAS, OIL	N
13602930	BONE SPRING 2ND	-3070	6296	6296	SANDSTONE	NATURAL GAS, OIL	N
13602938	BONE SPRING 3RD	-4392	7618	7618	SANDSTONE	NATURAL GAS, OIL	Y
13602939	WOLFCAMP	-4747	7973	7973	LIMESTONE, SANDSTONE, SHALE	NATURAL GAS, OIL	N

Section 2 - Blowout Prevention

Pressure Rating (PSI): 5M
Rating Depth: 19145

Equipment: Annular, Pipe Rams, Blind Rams, Other accessories to the BOP equipment will include a Kelly cock and floor safety valve (inside BOP) and choke lines and choke manifold. See attached schematics
Requesting Variance? YES

Variance request: A variance is requested for the use of a variable choke line from the BOP to the choke manifold. See attached for hydrostatic test chart. Anchors are not required by manufacturer. Variance is requested to use a multi bowl wellhead. Variance is requested to perform break testing according to attached procedure.

Testing Procedure: BOP/BOPE will be tested by an independent service company to 250 psi low and the high pressure indicated above per 43 CFR Part 3172 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.

Choke Diagram Attachment:

Operator Name: MEWBOURNE OIL COMPANY

Well Name: SANTA MARIA 31/36 FED COM **Well Number:** 628H

Santa_Maria_31_36_Fed_Com__628H_5M_BOPE_Choke_Diagram_20240213110208.pdf

Santa_Maria_31_36_Fed_Com__628H_Flex_Line_Specs_API_16C_20240213110215.pdf

Santa_Maria_31_36_Fed_Com__628H_Flex_Line_Specs_20240213110221.pdf

BOP Diagram Attachment:

Santa_Maria_31_36_Fed_Com__628H_5M_BOPE_Schematic_20240213110234.pdf

Santa_Maria_31_36_Fed_Com__628H_MOC_Break_Testing_Variance_20240213110245.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	26	20.0	NEW	API	N	0	350	0	350	3226	2876	350	J-55	94	OTHER - BTC	3.4	13.8	DRY	42.61	DRY	44.98
2	INTERMEDIATE	17.5	13.375	NEW	API	N	0	1200	0	1200	3192	2026	1200	H-40	48	ST&C	1.37	3.08	DRY	5.59	DRY	9.39
3	INTERMEDIATE	12.25	9.625	NEW	API	N	0	2300	0	2300	2982	926	2300	J-55	36	LT&C	1.88	3.27	DRY	5.47	DRY	6.81
4	PRODUCTION	8.75	7.0	NEW	API	N	0	7865	0	7421	2982	-4195	7865	N-80	26	LT&C	1.32	1.77	DRY	2.54	DRY	2.95
5	LINER	6.125	4.5	NEW	API	N	7665	19145	7599	7597	-4373	-4371	11480	P-110	13.5	LT&C	1.55	1.81	DRY	2.18	DRY	2.72

Casing Attachments

Operator Name: MEWBOURNE OIL COMPANY

Well Name: SANTA MARIA 31/36 FED COM **Well Number:** 628H

Casing Attachments

Casing ID: 1 **String** SURFACE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Santa_Maria_31_36_Fed_Com__628H_CsgAssumptions_20240213111107.pdf

Casing ID: 2 **String** INTERMEDIATE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Santa_Maria_31_36_Fed_Com__628H_CsgAssumptions_20240213110903.pdf

Casing ID: 3 **String** INTERMEDIATE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Santa_Maria_31_36_Fed_Com__628H_CsgAssumptions_20240213110748.pdf

Operator Name: MEWBOURNE OIL COMPANY

Well Name: SANTA MARIA 31/36 FED COM **Well Number:** 628H

Casing Attachments

Casing ID: 4 **String** PRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Santa_Maria_31_36_Fed_Com__628H_CsgAssumptions_20240213110652.pdf

Casing ID: 5 **String** LINER

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Santa_Maria_31_36_Fed_Com__628H_CsgAssumptions_20240213110949.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	261	380	2.12	12.5	810	100	Class C	Salt, Gel, Extedner, LCM
SURFACE	Tail		261	350	200	1.34	14.8	268	100	Class C	Retarder
INTERMEDIATE	Lead	1255	0	921	170	2.12	12.5	370	25	Class C	Salt, Gel, Extender, LCM
INTERMEDIATE	Tail		921	1255	100	1.34	14.8	0	25	Class C	Retarder
INTERMEDIATE	Lead		1255	1630	70	2.12	12.5	150	25	Class C	Salt, Gel, Extender, LCM

Operator Name: MEWBOURNE OIL COMPANY

Well Name: SANTA MARIA 31/36 FED COM **Well Number:** 628H

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
INTERMEDIATE	Tail		1630	2300	200	1.34	14.8	268	25	Class C	Retarder
PRODUCTION	Lead	6200	1230	5479	370	2.12	12.5	790	25	Class C	Gel, Retarder, Defoamer, Extender
PRODUCTION	Tail		5479	6200	100	1.34	14.8	134	25	Class C	Retarder, Fluid Loss, Defoamer
PRODUCTION	Lead	6200	6200	6515	50	2.12	12.5	110	25	CLASS C	SALT, GEL, EXTENDER, LCM, DEFOAMER
PRODUCTION	Tail		6515	7864	400	1.18	15.6	472	25	CLASS H	RETARDER, FLUID LOSS, DEAFOAMER
LINER	Lead		7664	19144	730	1.85	13.5	1360	25	Class H	Salt, Gel, Fluid Loss, Retarder, Dispersant, Defoamer, Anti-Settling Agent

Section 5 - Circulating Medium

Mud System Type: Closed

Will an air or gas system be Used? NO

Description of the equipment for the circulating system in accordance with Onshore Order #2:

Diagram of the equipment for the circulating system in accordance with Onshore Order #2:

Describe what will be on location to control well or mitigate other conditions: Sufficient mud materials to maintain mud properties & meet minimum lost circulation and weight increase requirements will be kept on location at all times.

Describe the mud monitoring system utilized: Pason/PVT/Visual Monitoring

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	350	SPUD MUD	8.4	8.4							

Operator Name: MEWBOURNE OIL COMPANY

Well Name: SANTA MARIA 31/36 FED COM **Well Number:** 628H

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
350	1200	SALT SATURATED	9	9							
1200	2300	SALT SATURATED	9	9							
7864	19144	OIL-BASED MUD	10	11.5							
2300	7864	WATER-BASED MUD	10	10							

Section 6 - Test, Logging, Coring

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

No logs are planned based on well control or offset log information. Offset Well: Santa Maria 31/36 Fed Com #628H

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

MEASUREMENT WHILE DRILLING,MUD LOG/GEOLOGIC LITHOLOGY LOG,

Coring operation description for the well:

None

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 4780 **Anticipated Surface Pressure:** 3021

Anticipated Bottom Hole Temperature(F): 140

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

Santa_Maria_31_36_Fed_Com__628H_H2S_Plan_20240213112242.pdf

Operator Name: MEWBOURNE OIL COMPANY

Well Name: SANTA MARIA 31/36 FED COM **Well Number:** 628H

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

Santa_Maria_31_36_Fed_Com__628_MOC_Dir_plan_20240213112310.pdf

Santa_Maria_31_36_Fed_Com__628_MOC_Dir_Plot_20240213112315.pdf

Other proposed operations facets description:

Other proposed operations facets attachment:

Santa_Maria_31_36_Fed_Com__628H_AddInfo_20240213112337.pdf

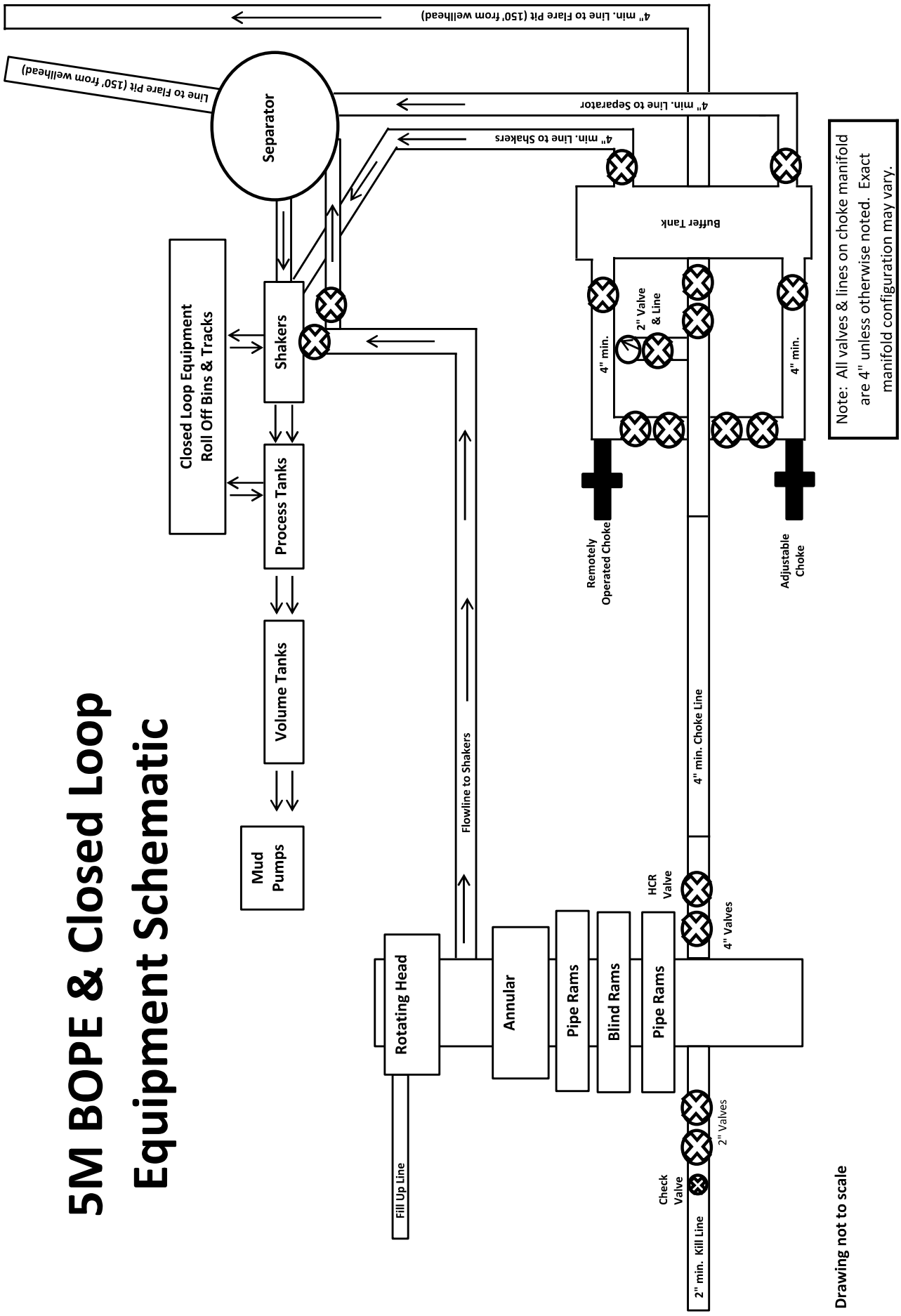
Santa_Maria_31_36_Fed_Com__628H_Drlg_Program_20240213112347.pdf

Other Variance attachment:

Santa_Maria_31_36_Fed_Com__628H_MOC_Break_Testing_Variance_20240213112359.pdf

Santa_Maria_31_36_Fed_Com__628H_MOC_Offline_Cementing_Variance_20240213112404.pdf

5M BOPE & Closed Loop Equipment Schematic



Drawing not to scale

GATES ENGINEERING & SERVICES NORTH AMERICA
7603 Prairie Oak Dr.
Houston, TX 77086

PHONE: (281) 602 - 4119
FAX:
EMAIL: Troy.Schmidt@gates.com
WEB: www.gates.com

10K CHOKE & KILL ASSEMBLY PRESSURE TEST CERTIFICATE

Customer:	A-7 AUSTIN INC DBA AUSTIN HOSE	Test Date:	8/20/2018
Customer Ref.:	4101901	Hose Serial No.:	H-082018-10
Invoice No.:	511956	Created By:	Moosa Naqvi

Product Description:	10KF3.035.0CK41/1610KFLGFXDxFLT L/E

End Fitting 1:	4 1/16 in. Fixed Flange	End Fitting 2:	4 1/16 in. Float Flange
Gates Part No.:	68503010-9721632	Assembly Code:	L40695052218H-082018-10
Working Pressure:	10,000 psi.	Test Pressure:	15,000 psi.

Gates Engineering & Services North America certifies that the following hose assembly has successfully passed all pressure testing requirements set forth in Gates specifications: GTS-04-052 (for 5K assemblies) or GTS-04-053 (10K assemblies), which include reference to Specification API 16C (2nd Edition); sections 7.5.4, 7.5.9, and 10.8.7. A test graph will accompany this test certificate to illustrate conformity to test requirements.

Quality:	QUALITY	Production:	PRODUCTION
Date :	8/20/2018	Date :	8/20/2018
Signature :	Moosa Naqvi	Signature :	

Form PTC - 01 Rev.0 2

ENGINEERING & SERVICES

GATES E & S NORTH AMERICA, INC.
134 44TH STREET
CORPUS CHRISTI, TEXAS 78405

PHONE: 361-887-9807
FAX: 361-887-0812
EMAIL: *Tim.Cantu@gates.com*
WEB: www.gates.com

10K CEMENTING ASSEMBLY PRESSURE TEST CERTIFICATE

Customer :	AUSTIN DISTRIBUTING	Test Date:	4/30/2015
Customer Ref. :	4060578	Hose Serial No.:	D-043015-7
Invoice No. :	500506	Created By:	JUSTIN CROPPER

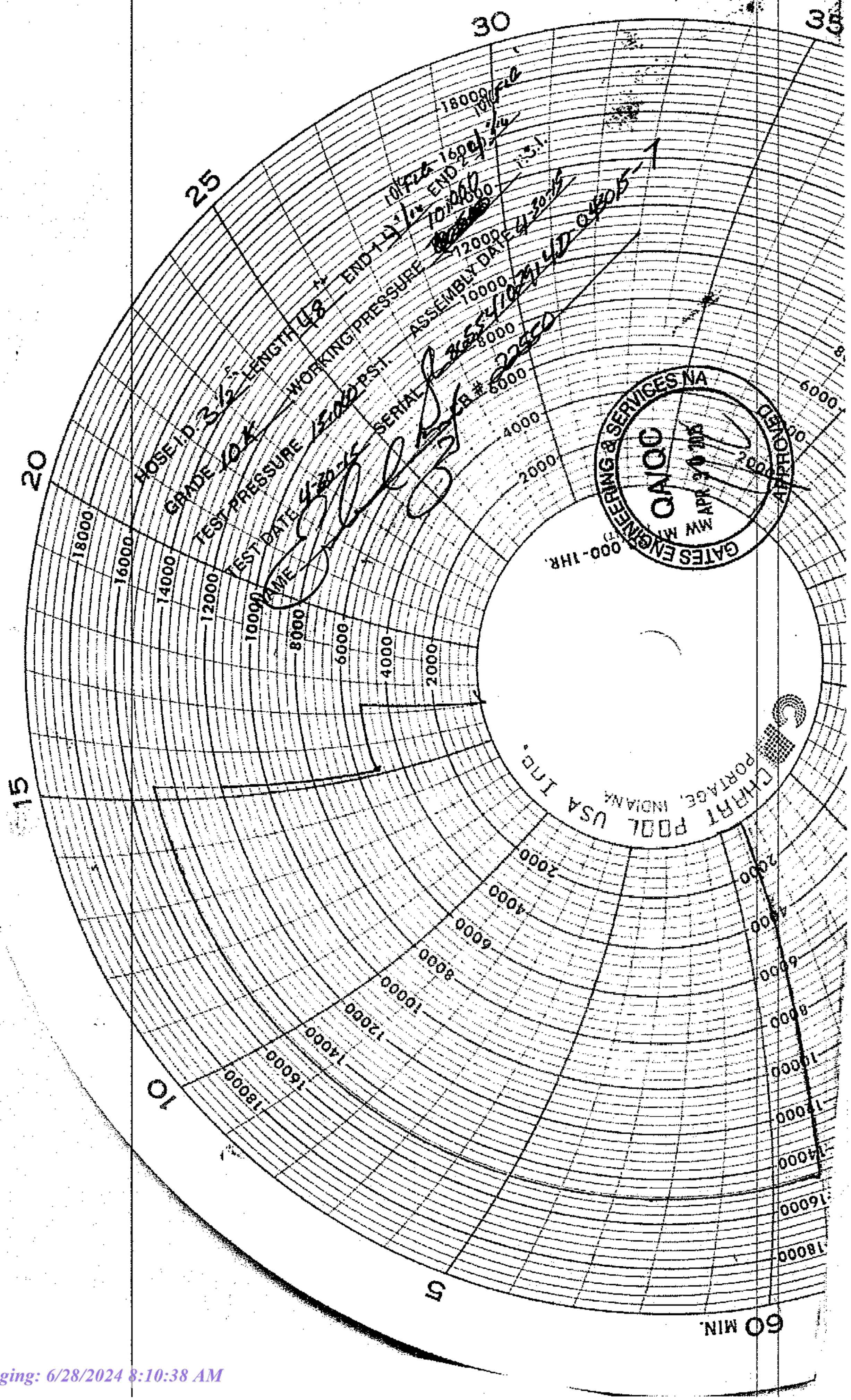
Product Description:	10K3.548.0CK4.1/1610KFLGE/E LE

End Fitting 1 :	4 1/16 10K FLG	End Fitting 2 :	4 1/16 10K FLG
Gates Part No. :	4773-6290	Assembly Code :	L36554102914D-043015-7
Working Pressure :	10,000 PSI	Test Pressure :	15,000 PSI

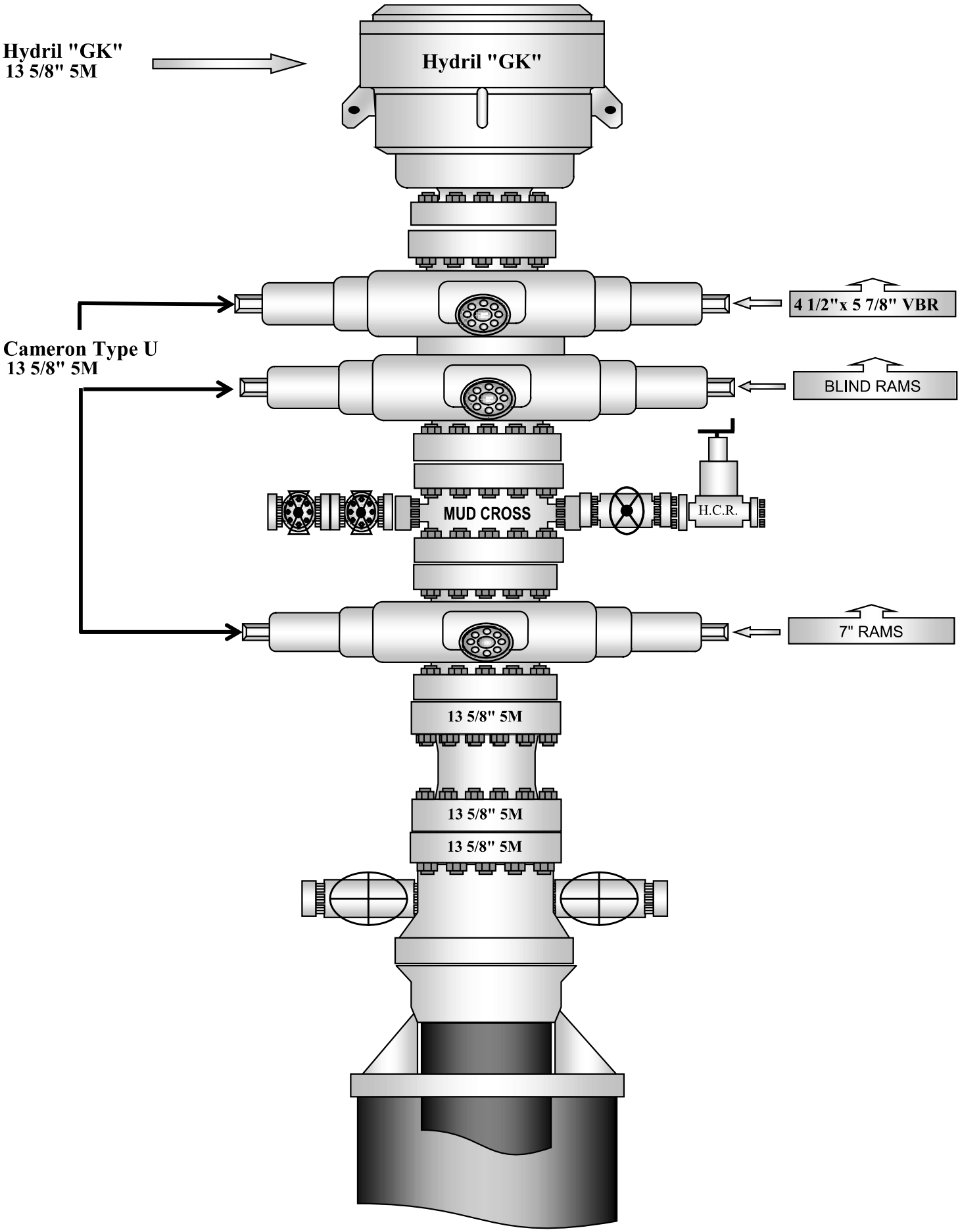
Gates E & S North America, Inc. certifies that the following hose assembly has been tested to the Gates Oilfield Roughneck Agreement/Specification requirements and passed the 15 minute hydrostatic test per API Spec 7K/Q1, Fifth Edition, June 2010, Test pressure 9.6.7 and per Table 9 to 15,000 psi in accordance with this product number. Hose burst pressure 9.6.7.2 exceeds the minimum of 2.5 times the working pressure per Table 9.

Quality Manager :	QUALITY	Produciton:	PRODUCTION
Date :	4/30/2015	Date :	4/30/2015
Signature :		Signature :	

Form-PTC - 01 Rev.0 2


HOSE I.D. 3 1/2 LENGTH 48 END
GRADE 10K WORKING PRESSURE P.S.I.
TEST PRESSURE 15000 P.S.I. SERIAL
ASSEMBLY DATE 4-30-15
TEST DATE 4-30-15
NAME
GATES ENGINEERING & SERVICES NA
QA/QC
APPROVED
CHART POOL USA INC.
PORTAGE, INDIANA
60 MIN.

5M BOPE Schematic



MEWBOURNE OIL COMPANY

Mewbourne Oil Co.

BOP Break Testing Variance

Mewbourne Oil Company requests a variance from the minimum standards for well control equipment testing of 43 CFR 3172 to allow a testing schedule of the blow out preventer (BOP) and blow out prevention equipment (BOPE) along with batch drilling & offline cementing operations. Modern rig upgrades which facilitate pad drilling allow the BOP stack to be moved between wells on a multi-well pad without breaking any BOP stack components apart. Widespread use of these technologies has led to break testing BOPE being endorsed as safe and reliable. American Petroleum Institute (API) best practices are frequently used by regulators to develop their regulations. API Standard 53, *Well Control Equipment Systems for Drilling Wells* (5th Ed., Dec. 2018) Section 5.3.7.1 states "A pressure test of the pressure containing component shall be performed following the disconnection or repair, limited to the affected component."

Procedures

1. Full BOPE test at first installation on the pad.
   - Full BOPE test at least every 21 days.
   - Function test BOP elements per 43 CFR 3172.
   - Contact the BLM if a well control event occurs.
2. After the well section is secured and the well is confirmed to be static, the BOP will be disconnected from the wellhead and walked with the rig to another well on the pad. Two breaks on the BOPE will be made (Fig. 1).
   - Connection between the flex line and the HCR valve
   - Connection between the wellhead and the BOP quick connect (Fig. 5 & 6).
3. A capping flange will be installed after cementing per wellhead vendor procedure & casing pressure will be monitored via wellhead valve.
4. The BOP will be removed and carried by a hydraulic carrier (Fig. 3 & 4).
5. The rig will then walk to the next well.
6. Confirm that the well is static and remove the capping flange.
7. The connection between the flex line and HCR valve and the connection between the wellhead and the BOP quick connect will be reconnected.
8. Install a test plug into the wellhead.
9. A test will then be conducted against the upper pipe rams and choke, testing both breaks (Fig. 1 & 2).
10. The test will be held at 250 psi low and to the high value submitted in the APD, not to exceed 5000 psi.
11. The annular, blind rams and lower pipe rams will then be function tested.
12. If a pad consists of three or more wells, steps 4 through 11 will be repeated.

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13. A break test will only be conducted if the intermediate section can be drilled and cased within 21 days of the last full BOPE test.

Barriers

Before Nipple Down:

- Floats in casing
- Kill weight fluid in casing
- Kill weight fluid in annulus
- Solid body mandrel and/or packoff

After Nipple Down:

- Floats in casing
- Kill weight fluid in casing
- Kill weight fluid in annulus
- Solid body mandrel and/or packoff
- Offline cementing tool and/or cement head
- Capping flange after cementing

Summary

A variance is requested to only test broken pressure seals on the BOPE when moving between wells on a multi-well pad if the following conditions are met:

- A full BOPE test is conducted on the first well on the pad. API Standard 53 requires testing annular BOP to 70% of RWP or 100% of MASP, whichever is greater.
- If the first well on the pad is not the well with the deepest intermediate section, a full BOPE test will also be performed when moving to a deeper well.
- The hole section being drilled has a MASP under 5000 psi.
- If a well control event occurs, Mewbourne will contact BLM for permission to continue break testing.
- If significant (>50%) losses occur, full BOPE testing will be required going forward.
- Full BOPE test will be required prior to drilling the production hole.

While walking the rig, the BOP stack will be secured via hydraulic winch or hydraulic carrier. A full BOPE test will be performed at least every 21 days.

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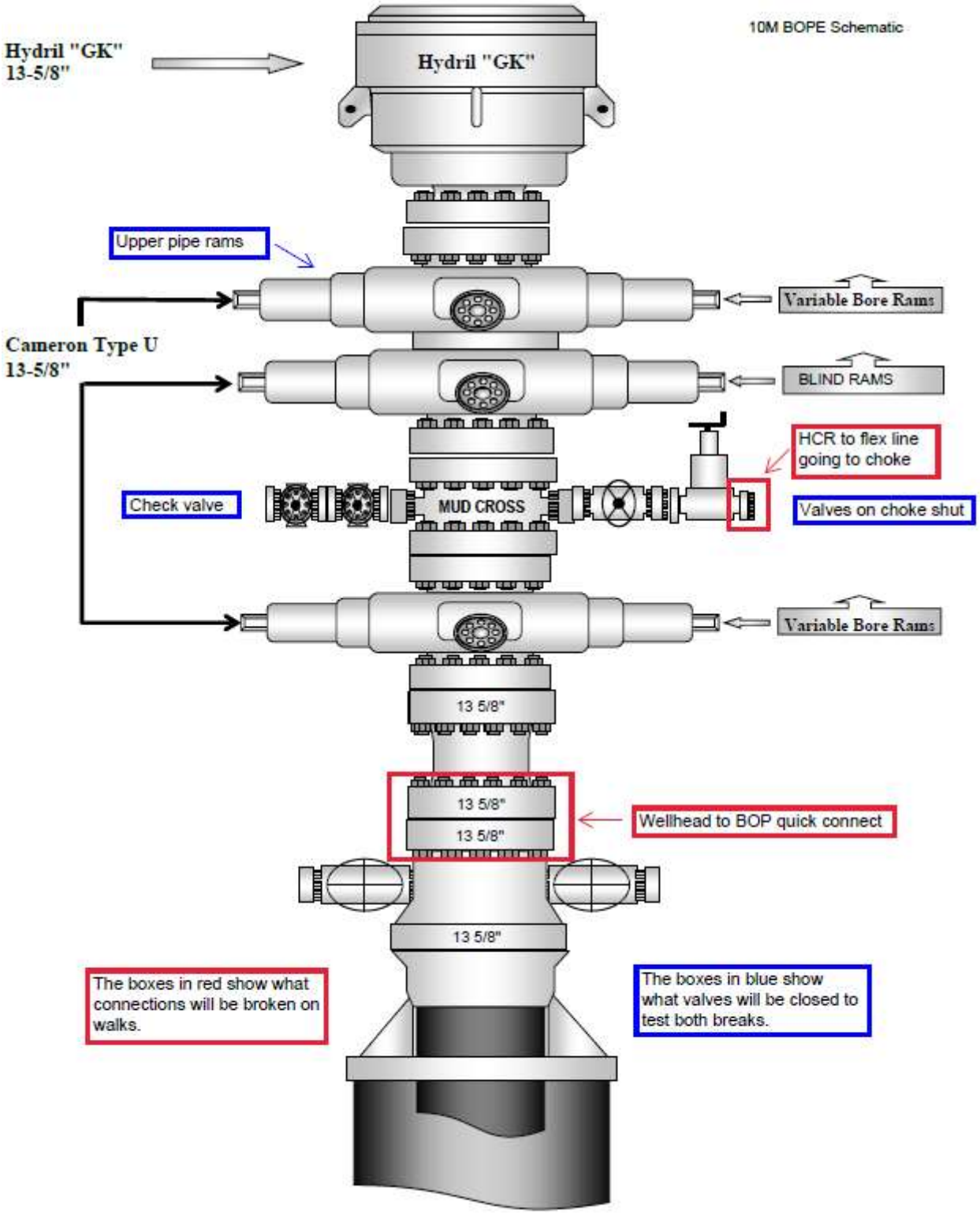

Figure 1. BOP diagram

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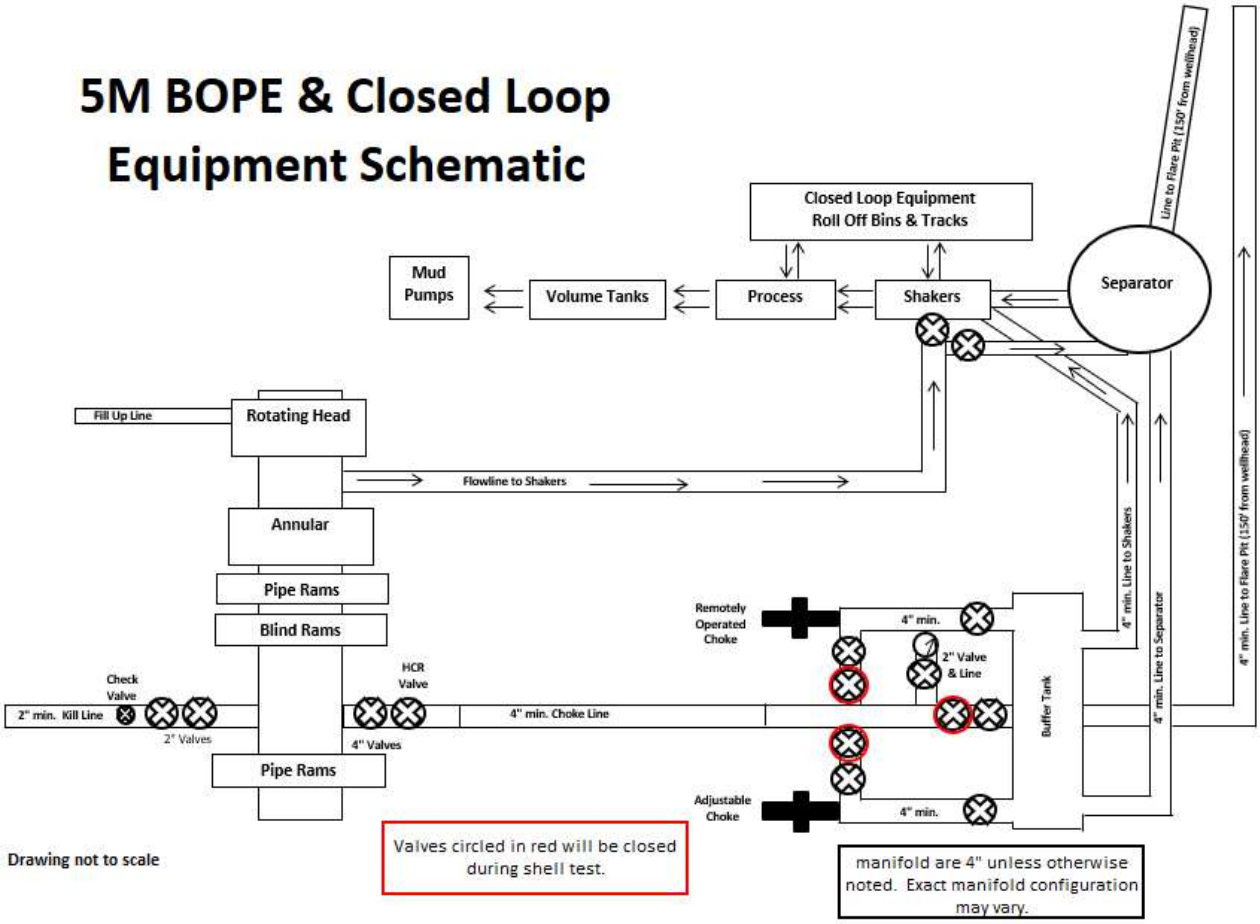

Figure 2. BOPE diagram

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Figure 3. BOP handling system

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Figure 4. BOP handling system

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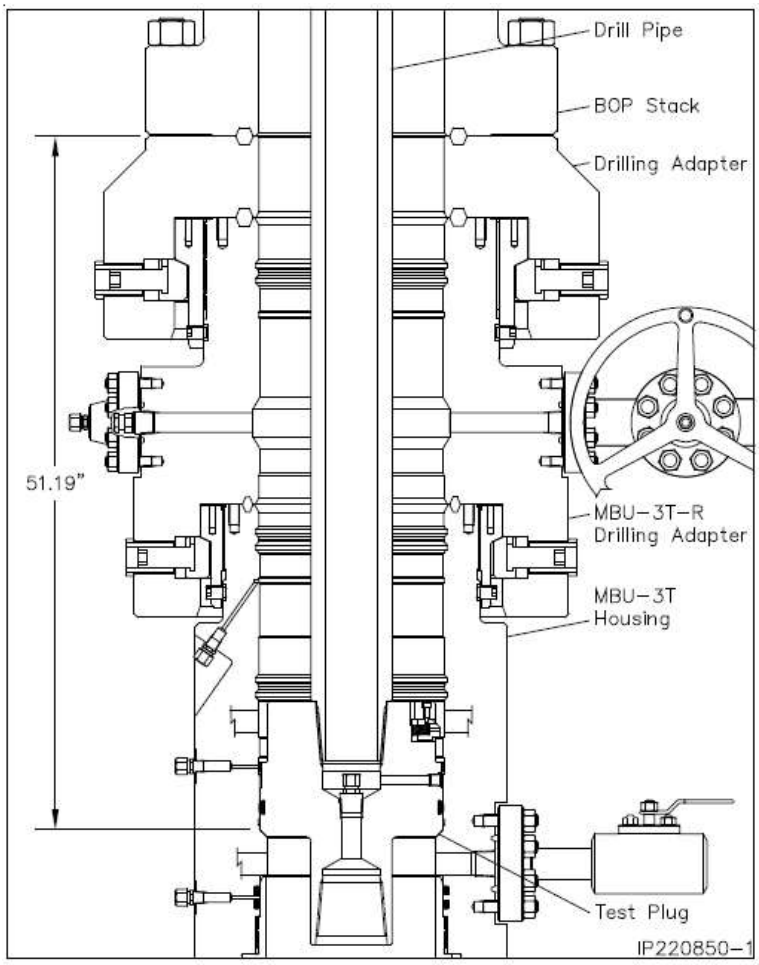

Figure 5. Cactus 5M wellhead with BOP quick connect

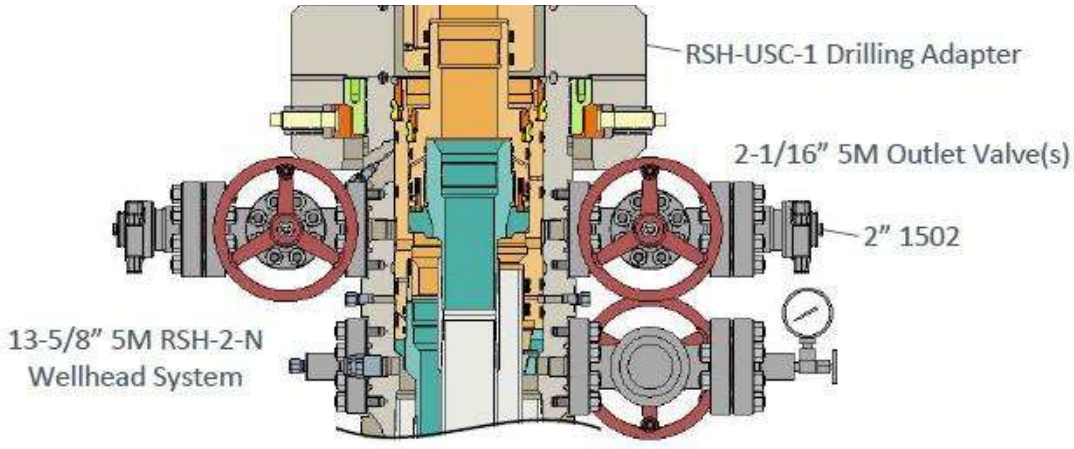

Figure 6. Vault 5M wellhead with BOP quick connect

Mewbourne Oil Company, Santa Maria 31/36 Fed Com 628H
Sec 32, T20S, R27E
SHL: 2495' FNL 800' FWL (Sec 32)
BHL: 660' FSL 100' FWL (Sec 36)

Casing Program Design A						BLM Minimum Safety Factors	1.125	1.0	1.6 Dry 1.8 Wet	1.6 Dry 1.8 Wet
String	Hole Size	Top MD	Top TVD	Bot MD	Bot TVD	Csg. Size	SF Collapse	SF Burst	SF Jt Tension	SF Body Tension
surface	26'	0'	0'	350'	350'	20" 94# J55 BTC	3.40	13.80	42.61	44.98
Int 1	17.5'	0'	0'	1200'	1200'	13.375" 48# H40 STC	1.37	3.08	5.59	9.39
Int 2	12.25'	0'	0'	2300'	2300'	9.625" 36# J55 LTC	1.88	3.27	5.47	6.81
Production	8.75'	0'	0'	7865'	7421'	7" 26# N-80 LTC	1.32	1.77	2.54	2.95
Liner	6.125'	7665'	7599'	19145'	7597'	4.5" 13.5# P110 LTC	1.55	1.81	2.18	2.72

Cement Program

Casing		# Sacks	Wt. lb/gal	Yield ft^3/sack	TOC/BOC	Volume ft^3	% Excess	Slurry Description
20.000 in	LEAD	380	12.5	2.12	0' - 261'	810	100%	Class C: Salt, Gel, Extender, LCM
	TAIL	200	14.8	1.34	261' - 350'	268		Class C: Retarder
13.375 in	LEAD	460	12.5	2.12	0' - 942'	980	50%	Class C: Salt, Gel, Extender, LCM
	TAIL	200	14.8	1.34	942' - 1200'	268		Class C: Retarder
1st Stg 9.625 in	LEAD	70	12.5	2.12	1255' - 1630'	150	25%	Class C: Salt, Gel, Extender, LCM
	TAIL	200	14.8	1.34	1630' - 2300'	268		Class C: Retarder
9 5/8" DV Tool @ 1255'								
2nd Stg 9.625 in	LEAD	170	12.5	2.12	0' - 921'	370	25%	Class C: Salt, Gel, Extender, LCM
	TAIL	100	14.8	1.34	921' - 1255'	980		Class C: Retarder
1st Stg 7 in	LEAD	50	12.5	2.12	6200' - 6515'	110	25%	Class C: Salt, Gel, Extender, LCM, Defoamer
	TAIL	400	15.6	1.18	6515' - 7864.9'	472		Class H: Retarder, Fluid Loss, Defoamer
7" DV Tool @ 6200'								
2nd Stg 7 in	LEAD	370	12.5	2.12	1230' - 5479'	790	25%	Class C: Salt, Gel, Extender, LCM, Defoamer
	TAIL	100	14.8	1.34	5479' - 6200'	134		Class C: Retarder, Fluid Loss, Defoamer
4.5 in	LEAD	730	13.5	1.85	7664.9' - 19144.8'	1360	25%	Class H: Salt, Gel, Fluid Loss, Retarder, Dispersant, Defoamer, Anti-

Design A - Mud Program

Depth	Mud Wt	Mud Type
0' - 350'	8.4	Fresh Water
350' - 1200'	9	Brine
1200' - 2300'	9	Fresh Water
2300' - 7864.9'	10	Cut-Brine
7864.9' - 19144.8'	11.5	OBM

Geology

Formation	Est. Top (TVD)	Mineral Resources	Formation	Est. Top (TVD)	Mineral Resources
Rustler			Yeso		
Castile			Delaware (Lamar)	2270'	Oil/Natural Gas
Salt Top			Bell Canyon		
Salt Base			Cherry Canyon		
Yates	380'	Oil/Natural Gas	Manzanita Marker		
Seven Rivers			Basal Brushy Canyon		
Queen			Bone Spring	3698'	Oil/Natural Gas
Capitan	1280'	Usable Water	1st Bone Spring	5609'	Oil/Natural Gas
Grayburg			2nd Bone Spring	6296'	Oil/Natural Gas
San Andres			3rd Bone Spring	7618'	Oil/Natural Gas
Glorieta			Wolfcamp	7973'	Oil/Natural Gas

All casing strings will be tested in accordance with 43 CFR Part 3170 Subpart 3172. Must have table for contingency casing.

	Y or N
Is casing new? If used, attach certification as required in Onshore Order #1	Y
Is casing API approved? 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 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?	Y
If yes, does production casing cement tie back a minimum of 50' above the Reef?	Y
Is well within the designated 4 string boundary.	Y
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?	
Is well located in R-111-P and SOPA?	N
If yes, are the first three strings cemented to surface?	
Is 2nd string set 100' to 600' below the base of salt?	
Is an open annulus used to satisfy R-111-Q? If yes, see cement design.	
Is an engineered weak point used to satisfy R-111-Q?	
If yes, at what depth is the weak point planned?	
Is well located in high Cave/Karst?	Y
If yes, are there two strings cemented to surface?	Y
(For 2 string wells) If yes, is there a contingency casing if lost circulation occurs?	
Is well located in critical Cave/Karst?	N
If yes, are there three strings cemented to surface?	

Mewbourne Oil Company, Santa Maria 31/36 Fed Com 628H
Sec 32, T20S, R27E
SHL: 2495' FNL 800' FWL (Sec 32)
BHL: 660' FSL 100' FWL (Sec 36)

Casing Program Design B						BLM Minimum Safety Factors	1.125	1.0	1.6 Drv 1.8 Wet	1.6 Drv 1.8 Wet
String	Hole Size	Top MD	Top TVD	Bot MD	Bot TVD	Csg. Size	SF Collapse	SF Burst	SF Jt Tension	SF Body Tension
surface	26'	0'	0'	350'	350'	20" 94# J55 BTC	3.40	13.80	42.61	44.98
Int 1	17.5'	0'	0'	1200'	1200'	13.375" 48# H40 STC	1.37	3.08	5.59	9.39
Int 2	12.25'	0'	0'	2300'	2300'	9.625" 36# J55 LTC	1.88	3.27	5.47	6.81
Production	8.75'	0'	0'	8765'	7994'	7" 26# HCP110 LTC	1.71	2.18	3.04	3.64
Liner	6.125'	7865'	7421'	19145'	7994'	4.5" 13.5# P110 LTC	1.58	1.84	2.22	2.77

Design B - Cement Program

Casing		# Sacks	Wt. lb/gal	Yield cu.ft/sack	TOC	Slurry Description		
20.000 in	LEAD	380	12.5	2.12	0' - 261'	810	100%	Class C: Salt, Gel, Extender, LCM
	TAIL	200	14.8	1.34	261' - 350'	268		Class C: Retarder
13.375 in	LEAD	460	12.5	2.12	0' - 942'	980	50%	Class C: Salt, Gel, Extender, LCM
	TAIL	200	14.8	1.34	942' - 1200'	268		Class C: Retarder
1st Stg 9.625 in	LEAD	70	12.5	2.12	1255' - 1630'	150	25%	Class C: Salt, Gel, Extender, LCM
	TAIL	200	14.8	1.34	1630' - 2300'	268		Class C: Retarder
9 5/8" DV Tool @ 1255'								
2nd Stg 9.625 in	LEAD	170	12.5	2.12	0' - 921'	370	25%	Class C: Salt, Gel, Extender, LCM
	TAIL	100	14.8	1.34	921' - 1255'	0		Class C: Retarder
1st Stg 7 in	LEAD	50	12.5	2.12	6200' - 6685'	110	25%	Class C: Salt, Gel, Extender, LCM, Defoamer
	TAIL	400	15.6	1.18	6685' - 8765.3'	472		Class H: Retarder, Fluid Loss, Defoamer
7" DV Tool @ 6200'								
2nd Stg 7 in	LEAD	370	12.5	2.12	1230' - 5479'	790	25%	Class C: Salt, Gel, Extender, LCM, Defoamer
	TAIL	100	14.8	1.34	5479' - 6200'	134		Class C: Retarder, Fluid Loss, Defoamer

Design B - Mud Program

Depth	Mud Wt	Mud Type
0' - 350'	8.4	Fresh Water
350' - 1200'	9	Brine
1200' - 2300'	9	Fresh Water
2300' - 8765.3'	10	Cut-Brine
8765.3' - 19144.8'	11.5	OBM

Geology

Formation	Est. Top (TVD)	Mineral Resources	Formation	Est. Top (TVD)	Mineral Resources
Rustler			Yeso		
Castile			Delaware (Lamar)	2270'	Oil/Natural Gas
Salt Top			Bell Canyon		
Salt Base			Cherry Canyon		
Yates	380'	Oil/Natural Gas	Manzanita Marker		
Seven Rivers			Basal Brushy Canyon		
Queen			Bone Spring	3698'	Oil/Natural Gas
Capitan	1280'	Usable Water	1st Bone Spring	5609'	Oil/Natural Gas
Grayburg			2nd Bone Spring	6296'	Oil/Natural Gas
San Andres			3rd Bone Spring	7618'	Oil/Natural Gas
Glorieta			Wolfcamp	7973'	Oil/Natural Gas

All casing strings will be tested in accordance with 43 CFR Part 3170 Subpart 3172. Must have table for contingency casing.

	Y or N
Is casing new? If used, attach certification as required in Onshore Order #1	Y
Is casing API approved? 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 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?	Y
If yes, does production casing cement tie back a minimum of 50' above the Reef?	Y
Is well within the designated 4 string boundary.	Y
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?	
Is well located in R-111-P and SOPA?	N
If yes, are the first three strings cemented to surface?	
Is 2nd string set 100' to 600' below the base of salt?	
Is an open annulus used to satisfy R-111-Q? If yes, see cement design.	
Is an engineered weak point used to satisfy R-111-Q?	
If yes, at what depth is the weak point planned?	
Is well located in high Cave/Karst?	Y
If yes, are there two strings cemented to surface?	Y
(For 2 string wells) If yes, is there a contingency casing if lost circulation occurs?	
Is well located in critical Cave/Karst?	N
If yes, are there three strings cemented to surface?	

Mewbourne Oil Company, Santa Maria 31/36 Fed Com 628H
Sec 32, T20S, R27E
SHL: 2495' FNL 800' FWL (Sec 32)
BHL: 660' FSL 100' FWL (Sec 36)

Casing Program Design A						BLM Minimum Safety Factors	1.125	1.0	1.6 Dry 1.8 Wet	1.6 Dry 1.8 Wet
String	Hole Size	Top MD	Top TVD	Bot MD	Bot TVD	Csg. Size	SF Collapse	SF Burst	SF Jt Tension	SF Body Tension
surface	26'	0'	0'	350'	350'	20" 94# J55 BTC	3.40	13.80	42.61	44.98
Int 1	17.5'	0'	0'	1200'	1200'	13.375" 48# H40 STC	1.37	3.08	5.59	9.39
Int 2	12.25'	0'	0'	2300'	2300'	9.625" 36# J55 LTC	1.88	3.27	5.47	6.81
Production	8.75'	0'	0'	7865'	7421'	7" 26# N-80 LTC	1.32	1.77	2.54	2.95
Liner	6.125'	7665'	7599'	19145'	7597'	4.5" 13.5# P110 LTC	1.55	1.81	2.18	2.72

Cement Program

Casing		# Sacks	Wt. lb/gal	Yield ft^3/sack	TOC/BOC	Volume ft^3	% Excess	Slurry Description
20.000 in	LEAD	380	12.5	2.12	0' - 261'	810	100%	Class C: Salt, Gel, Extender, LCM
	TAIL	200	14.8	1.34	261' - 350'	268		Class C: Retarder
13.375 in	LEAD	460	12.5	2.12	0' - 942'	980	50%	Class C: Salt, Gel, Extender, LCM
	TAIL	200	14.8	1.34	942' - 1200'	268		Class C: Retarder
1st Stg 9.625 in	LEAD	70	12.5	2.12	1255' - 1630'	150	25%	Class C: Salt, Gel, Extender, LCM
	TAIL	200	14.8	1.34	1630' - 2300'	268		Class C: Retarder
9 5/8" DV Tool @ 1255'								
2nd Stg 9.625 in	LEAD	170	12.5	2.12	0' - 921'	370	25%	Class C: Salt, Gel, Extender, LCM
	TAIL	100	14.8	1.34	921' - 1255'	980		Class C: Retarder
1st Stg 7 in	LEAD	50	12.5	2.12	6200' - 6515'	110	25%	Class C: Salt, Gel, Extender, LCM, Defoamer
	TAIL	400	15.6	1.18	6515' - 7864.9'	472		Class H: Retarder, Fluid Loss, Defoamer
7" DV Tool @ 6200'								
2nd Stg 7 in	LEAD	370	12.5	2.12	1230' - 5479'	790	25%	Class C: Salt, Gel, Extender, LCM, Defoamer
	TAIL	100	14.8	1.34	5479' - 6200'	134		Class C: Retarder, Fluid Loss, Defoamer
4.5 in	LEAD	730	13.5	1.85	7664.9' - 19144.8'	1360	25%	Class H: Salt, Gel, Fluid Loss, Retarder, Dispersant, Defoamer, Anti-

Design A - Mud Program

Depth	Mud Wt	Mud Type
0' - 350'	8.4	Fresh Water
350' - 1200'	9	Brine
1200' - 2300'	9	Fresh Water
2300' - 7864.9'	10	Cut-Brine
7864.9' - 19144.8'	11.5	OBM

Geology

Formation	Est. Top (TVD)	Mineral Resources	Formation	Est. Top (TVD)	Mineral Resources
Rustler			Yeso		
Castile			Delaware (Lamar)	2270'	Oil/Natural Gas
Salt Top			Bell Canyon		
Salt Base			Cherry Canyon		
Yates	380'	Oil/Natural Gas	Manzanita Marker		
Seven Rivers			Basal Brushy Canyon		
Queen			Bone Spring	3698'	Oil/Natural Gas
Capitan	1280'	Usable Water	1st Bone Spring	5609'	Oil/Natural Gas
Grayburg			2nd Bone Spring	6296'	Oil/Natural Gas
San Andres			3rd Bone Spring	7618'	Oil/Natural Gas
Glorieta			Wolfcamp	7973'	Oil/Natural Gas

All casing strings will be tested in accordance with 43 CFR Part 3170 Subpart 3172. Must have table for contingency casing.

	Y or N
Is casing new? If used, attach certification as required in Onshore Order #1	Y
Is casing API approved? 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 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?	Y
If yes, does production casing cement tie back a minimum of 50' above the Reef?	Y
Is well within the designated 4 string boundary.	Y
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?	
Is well located in R-111-P and SOPA?	N
If yes, are the first three strings cemented to surface?	
Is 2nd string set 100' to 600' below the base of salt?	
Is an open annulus used to satisfy R-111-Q? If yes, see cement design.	
Is an engineered weak point used to satisfy R-111-Q?	
If yes, at what depth is the weak point planned?	
Is well located in high Cave/Karst?	Y
If yes, are there two strings cemented to surface?	Y
(For 2 string wells) If yes, is there a contingency casing if lost circulation occurs?	
Is well located in critical Cave/Karst?	N
If yes, are there three strings cemented to surface?	

Mewbourne Oil Company, Santa Maria 31/36 Fed Com 628H
Sec 32, T20S, R27E
SHL: 2495' FNL 800' FWL (Sec 32)
BHL: 660' FSL 100' FWL (Sec 36)

Casing Program Design B						BLM Minimum Safety Factors	1.125	1.0	1.6 Drv 1.8 Wet	1.6 Drv 1.8 Wet
String	Hole Size	Top MD	Top TVD	Bot MD	Bot TVD	Csg. Size	SF Collapse	SF Burst	SF Jt Tension	SF Body Tension
surface	26'	0'	0'	350'	350'	20" 94# J55 BTC	3.40	13.80	42.61	44.98
Int 1	17.5'	0'	0'	1200'	1200'	13.375" 48# H40 STC	1.37	3.08	5.59	9.39
Int 2	12.25'	0'	0'	2300'	2300'	9.625" 36# J55 LTC	1.88	3.27	5.47	6.81
Production	8.75'	0'	0'	8765'	7994'	7" 26# HCP110 LTC	1.71	2.18	3.04	3.64
Liner	6.125'	7865'	7421'	19145'	7994'	4.5" 13.5# P110 LTC	1.58	1.84	2.22	2.77

Design B - Cement Program

Casing		# Sacks	Wt. lb/gal	Yield cu.ft/sack	TOC	Slurry Description		
20.000 in	LEAD	380	12.5	2.12	0' - 261'	810	100%	Class C: Salt, Gel, Extender, LCM
	TAIL	200	14.8	1.34	261' - 350'	268		Class C: Retarder
13.375 in	LEAD	460	12.5	2.12	0' - 942'	980	50%	Class C: Salt, Gel, Extender, LCM
	TAIL	200	14.8	1.34	942' - 1200'	268		Class C: Retarder
1st Stg 9.625 in	LEAD	70	12.5	2.12	1255' - 1630'	150	25%	Class C: Salt, Gel, Extender, LCM
	TAIL	200	14.8	1.34	1630' - 2300'	268		Class C: Retarder
9 5/8" DV Tool @ 1255'								
2nd Stg 9.625 in	LEAD	170	12.5	2.12	0' - 921'	370	25%	Class C: Salt, Gel, Extender, LCM
	TAIL	100	14.8	1.34	921' - 1255'	0		Class C: Retarder
1st Stg 7 in	LEAD	50	12.5	2.12	6200' - 6685'	110	25%	Class C: Salt, Gel, Extender, LCM, Defoamer
	TAIL	400	15.6	1.18	6685' - 8765.3'	472		Class H: Retarder, Fluid Loss, Defoamer
7" DV Tool @ 6200'								
2nd Stg 7 in	LEAD	370	12.5	2.12	1230' - 5479'	790	25%	Class C: Salt, Gel, Extender, LCM, Defoamer
	TAIL	100	14.8	1.34	5479' - 6200'	134		Class C: Retarder, Fluid Loss, Defoamer

Design B - Mud Program

Depth	Mud Wt	Mud Type
0' - 350'	8.4	Fresh Water
350' - 1200'	9	Brine
1200' - 2300'	9	Fresh Water
2300' - 8765.3'	10	Cut-Brine
8765.3' - 19144.8'	11.5	OBM

Geology

Formation	Est. Top (TVD)	Mineral Resources	Formation	Est. Top (TVD)	Mineral Resources
Rustler			Yeso		
Castile			Delaware (Lamar)	2270'	Oil/Natural Gas
Salt Top			Bell Canyon		
Salt Base			Cherry Canyon		
Yates	380'	Oil/Natural Gas	Manzanita Marker		
Seven Rivers			Basal Brushy Canyon		
Queen			Bone Spring	3698'	Oil/Natural Gas
Capitan	1280'	Usable Water	1st Bone Spring	5609'	Oil/Natural Gas
Grayburg			2nd Bone Spring	6296'	Oil/Natural Gas
San Andres			3rd Bone Spring	7618'	Oil/Natural Gas
Glorieta			Wolfcamp	7973'	Oil/Natural Gas

All casing strings will be tested in accordance with 43 CFR Part 3170 Subpart 3172. Must have table for contingency casing.

	Y or N
Is casing new? If used, attach certification as required in Onshore Order #1	Y
Is casing API approved? 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 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?	Y
If yes, does production casing cement tie back a minimum of 50' above the Reef?	Y
Is well within the designated 4 string boundary.	Y
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?	
Is well located in R-111-P and SOPA?	N
If yes, are the first three strings cemented to surface?	
Is 2nd string set 100' to 600' below the base of salt?	
Is an open annulus used to satisfy R-111-Q? If yes, see cement design.	
Is an engineered weak point used to satisfy R-111-Q?	
If yes, at what depth is the weak point planned?	
Is well located in high Cave/Karst?	Y
If yes, are there two strings cemented to surface?	Y
(For 2 string wells) If yes, is there a contingency casing if lost circulation occurs?	
Is well located in critical Cave/Karst?	N
If yes, are there three strings cemented to surface?	

Mewbourne Oil Company, Santa Maria 31/36 Fed Com 628H
Sec 32, T20S, R27E
SHL: 2495' FNL 800' FWL (Sec 32)
BHL: 660' FSL 100' FWL (Sec 36)

Casing Program Design A						BLM Minimum Safety Factors	1.125	1.0	1.6 Dry 1.8 Wet	1.6 Dry 1.8 Wet
String	Hole Size	Top MD	Top TVD	Bot MD	Bot TVD	Csg. Size	SF Collapse	SF Burst	SF Jt Tension	SF Body Tension
surface	26'	0'	0'	350'	350'	20" 94# J55 BTC	3.40	13.80	42.61	44.98
Int 1	17.5'	0'	0'	1200'	1200'	13.375" 48# H40 STC	1.37	3.08	5.59	9.39
Int 2	12.25'	0'	0'	2300'	2300'	9.625" 36# J55 LTC	1.88	3.27	5.47	6.81
Production	8.75'	0'	0'	7865'	7421'	7" 26# N-80 LTC	1.32	1.77	2.54	2.95
Liner	6.125'	7665'	7599'	19145'	7597'	4.5" 13.5# P110 LTC	1.55	1.81	2.18	2.72

Cement Program

Casing		# Sacks	Wt. lb/gal	Yield ft^3/sack	TOC/BOC	Volume ft^3	% Excess	Slurry Description
20.000 in	LEAD	380	12.5	2.12	0' - 261'	810	100%	Class C: Salt, Gel, Extender, LCM
	TAIL	200	14.8	1.34	261' - 350'	268		Class C: Retarder
13.375 in	LEAD	460	12.5	2.12	0' - 942'	980	50%	Class C: Salt, Gel, Extender, LCM
	TAIL	200	14.8	1.34	942' - 1200'	268		Class C: Retarder
1st Stg 9.625 in	LEAD	70	12.5	2.12	1255' - 1630'	150	25%	Class C: Salt, Gel, Extender, LCM
	TAIL	200	14.8	1.34	1630' - 2300'	268		Class C: Retarder
9 5/8" DV Tool @ 1255'								
2nd Stg 9.625 in	LEAD	170	12.5	2.12	0' - 921'	370	25%	Class C: Salt, Gel, Extender, LCM
	TAIL	100	14.8	1.34	921' - 1255'	980		Class C: Retarder
1st Stg 7 in	LEAD	50	12.5	2.12	6200' - 6515'	110	25%	Class C: Salt, Gel, Extender, LCM, Defoamer
	TAIL	400	15.6	1.18	6515' - 7864.9'	472		Class H: Retarder, Fluid Loss, Defoamer
7" DV Tool @ 6200'								
2nd Stg 7 in	LEAD	370	12.5	2.12	1230' - 5479'	790	25%	Class C: Salt, Gel, Extender, LCM, Defoamer
	TAIL	100	14.8	1.34	5479' - 6200'	134		Class C: Retarder, Fluid Loss, Defoamer
4.5 in	LEAD	730	13.5	1.85	7664.9' - 19144.8'	1360	25%	Class H: Salt, Gel, Fluid Loss, Retarder, Dispersant, Defoamer, Anti-

Design A - Mud Program

Depth	Mud Wt	Mud Type
0' - 350'	8.4	Fresh Water
350' - 1200'	9	Brine
1200' - 2300'	9	Fresh Water
2300' - 7864.9'	10	Cut-Brine
7864.9' - 19144.8'	11.5	OBM

Geology

Formation	Est. Top (TVD)	Mineral Resources	Formation	Est. Top (TVD)	Mineral Resources
Rustler			Yeso		
Castile			Delaware (Lamar)	2270'	Oil/Natural Gas
Salt Top			Bell Canyon		
Salt Base			Cherry Canyon		
Yates	380'	Oil/Natural Gas	Manzanita Marker		
Seven Rivers			Basal Brushy Canyon		
Queen			Bone Spring	3698'	Oil/Natural Gas
Capitan	1280'	Usable Water	1st Bone Spring	5609'	Oil/Natural Gas
Grayburg			2nd Bone Spring	6296'	Oil/Natural Gas
San Andres			3rd Bone Spring	7618'	Oil/Natural Gas
Glorieta			Wolfcamp	7973'	Oil/Natural Gas

All casing strings will be tested in accordance with 43 CFR Part 3170 Subpart 3172. Must have table for contingency casing.

	Y or N
Is casing new? If used, attach certification as required in Onshore Order #1	Y
Is casing API approved? 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 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?	Y
If yes, does production casing cement tie back a minimum of 50' above the Reef?	Y
Is well within the designated 4 string boundary.	Y
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?	
Is well located in R-111-P and SOPA?	N
If yes, are the first three strings cemented to surface?	
Is 2nd string set 100' to 600' below the base of salt?	
Is an open annulus used to satisfy R-111-Q? If yes, see cement design.	
Is an engineered weak point used to satisfy R-111-Q?	
If yes, at what depth is the weak point planned?	
Is well located in high Cave/Karst?	Y
If yes, are there two strings cemented to surface?	Y
(For 2 string wells) If yes, is there a contingency casing if lost circulation occurs?	
Is well located in critical Cave/Karst?	N
If yes, are there three strings cemented to surface?	

Mewbourne Oil Company, Santa Maria 31/36 Fed Com 628H
Sec 32, T20S, R27E
SHL: 2495' FNL 800' FWL (Sec 32)
BHL: 660' FSL 100' FWL (Sec 36)

Casing Program Design B						BLM Minimum Safety Factors	1.125	1.0	1.6 Drv 1.8 Wet	1.6 Drv 1.8 Wet
String	Hole Size	Top MD	Top TVD	Bot MD	Bot TVD	Csg. Size	SF Collapse	SF Burst	SF Jt Tension	SF Body Tension
surface	26'	0'	0'	350'	350'	20" 94# J55 BTC	3.40	13.80	42.61	44.98
Int 1	17.5'	0'	0'	1200'	1200'	13.375" 48# H40 STC	1.37	3.08	5.59	9.39
Int 2	12.25'	0'	0'	2300'	2300'	9.625" 36# J55 LTC	1.88	3.27	5.47	6.81
Production	8.75'	0'	0'	8765'	7994'	7" 26# HCP110 LTC	1.71	2.18	3.04	3.64
Liner	6.125'	7865'	7421'	19145'	7994'	4.5" 13.5# P110 LTC	1.58	1.84	2.22	2.77

Design B - Cement Program

Casing		# Sacks	Wt. lb/gal	Yield cu.ft/sack	TOC	Slurry Description		
20.000 in	LEAD	380	12.5	2.12	0' - 261'	810	100%	Class C: Salt, Gel, Extender, LCM
	TAIL	200	14.8	1.34	261' - 350'	268		Class C: Retarder
13.375 in	LEAD	460	12.5	2.12	0' - 942'	980	50%	Class C: Salt, Gel, Extender, LCM
	TAIL	200	14.8	1.34	942' - 1200'	268		Class C: Retarder
1st Stg 9.625 in	LEAD	70	12.5	2.12	1255' - 1630'	150	25%	Class C: Salt, Gel, Extender, LCM
	TAIL	200	14.8	1.34	1630' - 2300'	268		Class C: Retarder
9 5/8" DV Tool @ 1255'								
2nd Stg 9.625 in	LEAD	170	12.5	2.12	0' - 921'	370	25%	Class C: Salt, Gel, Extender, LCM
	TAIL	100	14.8	1.34	921' - 1255'	0		Class C: Retarder
1st Stg 7 in	LEAD	50	12.5	2.12	6200' - 6685'	110	25%	Class C: Salt, Gel, Extender, LCM, Defoamer
	TAIL	400	15.6	1.18	6685' - 8765.3'	472		Class H: Retarder, Fluid Loss, Defoamer
7" DV Tool @ 6200'								
2nd Stg 7 in	LEAD	370	12.5	2.12	1230' - 5479'	790	25%	Class C: Salt, Gel, Extender, LCM, Defoamer
	TAIL	100	14.8	1.34	5479' - 6200'	134		Class C: Retarder, Fluid Loss, Defoamer

Design B - Mud Program

Depth	Mud Wt	Mud Type
0' - 350'	8.4	Fresh Water
350' - 1200'	9	Brine
1200' - 2300'	9	Fresh Water
2300' - 8765.3'	10	Cut-Brine
8765.3' - 19144.8'	11.5	OBM

Geology

Formation	Est. Top (TVD)	Mineral Resources	Formation	Est. Top (TVD)	Mineral Resources
Rustler			Yeso		
Castile			Delaware (Lamar)	2270'	Oil/Natural Gas
Salt Top			Bell Canyon		
Salt Base			Cherry Canyon		
Yates	380'	Oil/Natural Gas	Manzanita Marker		
Seven Rivers			Basal Brushy Canyon		
Queen			Bone Spring	3698'	Oil/Natural Gas
Capitan	1280'	Usable Water	1st Bone Spring	5609'	Oil/Natural Gas
Grayburg			2nd Bone Spring	6296'	Oil/Natural Gas
San Andres			3rd Bone Spring	7618'	Oil/Natural Gas
Glorieta			Wolfcamp	7973'	Oil/Natural Gas

All casing strings will be tested in accordance with 43 CFR Part 3170 Subpart 3172. Must have table for contingency casing.

	Y or N
Is casing new? If used, attach certification as required in Onshore Order #1	Y
Is casing API approved? 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 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?	Y
If yes, does production casing cement tie back a minimum of 50' above the Reef?	Y
Is well within the designated 4 string boundary.	Y
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?	
Is well located in R-111-P and SOPA?	N
If yes, are the first three strings cemented to surface?	
Is 2nd string set 100' to 600' below the base of salt?	
Is an open annulus used to satisfy R-111-Q? If yes, see cement design.	
Is an engineered weak point used to satisfy R-111-Q?	
If yes, at what depth is the weak point planned?	
Is well located in high Cave/Karst?	Y
If yes, are there two strings cemented to surface?	Y
(For 2 string wells) If yes, is there a contingency casing if lost circulation occurs?	
Is well located in critical Cave/Karst?	N
If yes, are there three strings cemented to surface?	

Mewbourne Oil Company, Santa Maria 31/36 Fed Com 628H
Sec 32, T20S, R27E
SHL: 2495' FNL 800' FWL (Sec 32)
BHL: 660' FSL 100' FWL (Sec 36)

Casing Program Design A						BLM Minimum Safety Factors	1.125	1.0	1.6 Dry 1.8 Wet	1.6 Dry 1.8 Wet
String	Hole Size	Top MD	Top TVD	Bot MD	Bot TVD	Csg. Size	SF Collapse	SF Burst	SF Jt Tension	SF Body Tension
surface	26'	0'	0'	350'	350'	20" 94# J55 BTC	3.40	13.80	42.61	44.98
Int 1	17.5'	0'	0'	1200'	1200'	13.375" 48# H40 STC	1.37	3.08	5.59	9.39
Int 2	12.25'	0'	0'	2300'	2300'	9.625" 36# J55 LTC	1.88	3.27	5.47	6.81
Production	8.75'	0'	0'	7865'	7421'	7" 26# N-80 LTC	1.32	1.77	2.54	2.95
Liner	6.125'	7665'	7599'	19145'	7597'	4.5" 13.5# P110 LTC	1.55	1.81	2.18	2.72

Cement Program

Casing		# Sacks	Wt. lb/gal	Yield ft^3/sack	TOC/BOC	Volume ft^3	% Excess	Slurry Description
20.000 in	LEAD	380	12.5	2.12	0' - 261'	810	100%	Class C: Salt, Gel, Extender, LCM
	TAIL	200	14.8	1.34	261' - 350'	268		Class C: Retarder
13.375 in	LEAD	460	12.5	2.12	0' - 942'	980	50%	Class C: Salt, Gel, Extender, LCM
	TAIL	200	14.8	1.34	942' - 1200'	268		Class C: Retarder
1st Stg 9.625 in	LEAD	70	12.5	2.12	1255' - 1630'	150	25%	Class C: Salt, Gel, Extender, LCM
	TAIL	200	14.8	1.34	1630' - 2300'	268		Class C: Retarder
9 5/8" DV Tool @ 1255'								
2nd Stg 9.625 in	LEAD	170	12.5	2.12	0' - 921'	370	25%	Class C: Salt, Gel, Extender, LCM
	TAIL	100	14.8	1.34	921' - 1255'	980		Class C: Retarder
1st Stg 7 in	LEAD	50	12.5	2.12	6200' - 6515'	110	25%	Class C: Salt, Gel, Extender, LCM, Defoamer
	TAIL	400	15.6	1.18	6515' - 7864.9'	472		Class H: Retarder, Fluid Loss, Defoamer
7" DV Tool @ 6200'								
2nd Stg 7 in	LEAD	370	12.5	2.12	1230' - 5479'	790	25%	Class C: Salt, Gel, Extender, LCM, Defoamer
	TAIL	100	14.8	1.34	5479' - 6200'	134		Class C: Retarder, Fluid Loss, Defoamer
4.5 in	LEAD	730	13.5	1.85	7664.9' - 19144.8'	1360	25%	Class H: Salt, Gel, Fluid Loss, Retarder, Dispersant, Defoamer, Anti-

Design A - Mud Program

Depth	Mud Wt	Mud Type
0' - 350'	8.4	Fresh Water
350' - 1200'	9	Brine
1200' - 2300'	9	Fresh Water
2300' - 7864.9'	10	Cut-Brine
7864.9' - 19144.8'	11.5	OBM

Geology

Formation	Est. Top (TVD)	Mineral Resources	Formation	Est. Top (TVD)	Mineral Resources
Rustler			Yeso		
Castile			Delaware (Lamar)	2270'	Oil/Natural Gas
Salt Top			Bell Canyon		
Salt Base			Cherry Canyon		
Yates	380'	Oil/Natural Gas	Manzanita Marker		
Seven Rivers			Basal Brushy Canyon		
Queen			Bone Spring	3698'	Oil/Natural Gas
Capitan	1280'	Usable Water	1st Bone Spring	5609'	Oil/Natural Gas
Grayburg			2nd Bone Spring	6296'	Oil/Natural Gas
San Andres			3rd Bone Spring	7618'	Oil/Natural Gas
Glorieta			Wolfcamp	7973'	Oil/Natural Gas

All casing strings will be tested in accordance with 43 CFR Part 3170 Subpart 3172. Must have table for contingency casing.

	Y or N
Is casing new? If used, attach certification as required in Onshore Order #1	Y
Is casing API approved? 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 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?	Y
If yes, does production casing cement tie back a minimum of 50' above the Reef?	Y
Is well within the designated 4 string boundary.	Y
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?	
Is well located in R-111-P and SOPA?	N
If yes, are the first three strings cemented to surface?	
Is 2nd string set 100' to 600' below the base of salt?	
Is an open annulus used to satisfy R-111-Q? If yes, see cement design.	
Is an engineered weak point used to satisfy R-111-Q?	
If yes, at what depth is the weak point planned?	
Is well located in high Cave/Karst?	Y
If yes, are there two strings cemented to surface?	Y
(For 2 string wells) If yes, is there a contingency casing if lost circulation occurs?	
Is well located in critical Cave/Karst?	N
If yes, are there three strings cemented to surface?	

Mewbourne Oil Company, Santa Maria 31/36 Fed Com 628H
Sec 32, T20S, R27E
SHL: 2495' FNL 800' FWL (Sec 32)
BHL: 660' FSL 100' FWL (Sec 36)

Casing Program Design B						BLM Minimum Safety Factors	1.125	1.0	1.6 Drv 1.8 Wet	1.6 Drv 1.8 Wet
String	Hole Size	Top MD	Top TVD	Bot MD	Bot TVD	Csg. Size	SF Collapse	SF Burst	SF Jt Tension	SF Body Tension
surface	26'	0'	0'	350'	350'	20" 94# J55 BTC	3.40	13.80	42.61	44.98
Int 1	17.5'	0'	0'	1200'	1200'	13.375" 48# H40 STC	1.37	3.08	5.59	9.39
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Production	8.75'	0'	0'	8765'	7994'	7" 26# HCP110 LTC	1.71	2.18	3.04	3.64
Liner	6.125'	7865'	7421'	19145'	7994'	4.5" 13.5# P110 LTC	1.58	1.84	2.22	2.77

Design B - Cement Program

Casing		# Sacks	Wt. lb/gal	Yield cu.ft/sack	TOC	Slurry Description		
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	TAIL	200	14.8	1.34	261' - 350'	268		Class C: Retarder
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	TAIL	200	14.8	1.34	942' - 1200'	268		Class C: Retarder
1st Stg 9.625 in	LEAD	70	12.5	2.12	1255' - 1630'	150	25%	Class C: Salt, Gel, Extender, LCM
	TAIL	200	14.8	1.34	1630' - 2300'	268		Class C: Retarder
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2nd Stg 9.625 in	LEAD	170	12.5	2.12	0' - 921'	370	25%	Class C: Salt, Gel, Extender, LCM
	TAIL	100	14.8	1.34	921' - 1255'	0		Class C: Retarder
1st Stg 7 in	LEAD	50	12.5	2.12	6200' - 6685'	110	25%	Class C: Salt, Gel, Extender, LCM, Defoamer
	TAIL	400	15.6	1.18	6685' - 8765.3'	472		Class H: Retarder, Fluid Loss, Defoamer
7" DV Tool @ 6200'								
2nd Stg 7 in	LEAD	370	12.5	2.12	1230' - 5479'	790	25%	Class C: Salt, Gel, Extender, LCM, Defoamer
	TAIL	100	14.8	1.34	5479' - 6200'	134		Class C: Retarder, Fluid Loss, Defoamer

Design B - Mud Program

Depth	Mud Wt	Mud Type
0' - 350'	8.4	Fresh Water
350' - 1200'	9	Brine
1200' - 2300'	9	Fresh Water
2300' - 8765.3'	10	Cut-Brine
8765.3' - 19144.8'	11.5	OBM

Geology

Formation	Est. Top (TVD)	Mineral Resources	Formation	Est. Top (TVD)	Mineral Resources
Rustler			Yeso		
Castile			Delaware (Lamar)	2270'	Oil/Natural Gas
Salt Top			Bell Canyon		
Salt Base			Cherry Canyon		
Yates	380'	Oil/Natural Gas	Manzanita Marker		
Seven Rivers			Basal Brushy Canyon		
Queen			Bone Spring	3698'	Oil/Natural Gas
Capitan	1280'	Usable Water	1st Bone Spring	5609'	Oil/Natural Gas
Grayburg			2nd Bone Spring	6296'	Oil/Natural Gas
San Andres			3rd Bone Spring	7618'	Oil/Natural Gas
Glorieta			Wolfcamp	7973'	Oil/Natural Gas

All casing strings will be tested in accordance with 43 CFR Part 3170 Subpart 3172. Must have table for contingency casing.

	Y or N
Is casing new? If used, attach certification as required in Onshore Order #1	Y
Is casing API approved? 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 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?	Y
If yes, does production casing cement tie back a minimum of 50' above the Reef?	Y
Is well within the designated 4 string boundary.	Y
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?	
Is well located in R-111-P and SOPA?	N
If yes, are the first three strings cemented to surface?	
Is 2nd string set 100' to 600' below the base of salt?	
Is an open annulus used to satisfy R-111-Q? If yes, see cement design.	
Is an engineered weak point used to satisfy R-111-Q?	
If yes, at what depth is the weak point planned?	
Is well located in high Cave/Karst?	Y
If yes, are there two strings cemented to surface?	Y
(For 2 string wells) If yes, is there a contingency casing if lost circulation occurs?	
Is well located in critical Cave/Karst?	N
If yes, are there three strings cemented to surface?	

Mewbourne Oil Company, Santa Maria 31/36 Fed Com 628H
Sec 32, T20S, R27E
SHL: 2495' FNL 800' FWL (Sec 32)
BHL: 660' FSL 100' FWL (Sec 36)

Casing Program Design A						BLM Minimum Safety Factors	1.125	1.0	1.6 Dry 1.8 Wet	1.6 Dry 1.8 Wet
String	Hole Size	Top MD	Top TVD	Bot MD	Bot TVD	Csg. Size	SF Collapse	SF Burst	SF Jt Tension	SF Body Tension
surface	26'	0'	0'	350'	350'	20" 94# J55 BTC	3.40	13.80	42.61	44.98
Int 1	17.5'	0'	0'	1200'	1200'	13.375" 48# H40 STC	1.37	3.08	5.59	9.39
Int 2	12.25'	0'	0'	2300'	2300'	9.625" 36# J55 LTC	1.88	3.27	5.47	6.81
Production	8.75'	0'	0'	7865'	7421'	7" 26# N-80 LTC	1.32	1.77	2.54	2.95
Liner	6.125'	7665'	7599'	19145'	7597'	4.5" 13.5# P110 LTC	1.55	1.81	2.18	2.72

Cement Program

Casing		# Sacks	Wt. lb/gal	Yield ft^3/sack	TOC/BOC	Volume ft^3	% Excess	Slurry Description
20.000 in	LEAD	380	12.5	2.12	0' - 261'	810	100%	Class C: Salt, Gel, Extender, LCM
	TAIL	200	14.8	1.34	261' - 350'	268		Class C: Retarder
13.375 in	LEAD	460	12.5	2.12	0' - 942'	980	50%	Class C: Salt, Gel, Extender, LCM
	TAIL	200	14.8	1.34	942' - 1200'	268		Class C: Retarder
1st Stg 9.625 in	LEAD	70	12.5	2.12	1255' - 1630'	150	25%	Class C: Salt, Gel, Extender, LCM
	TAIL	200	14.8	1.34	1630' - 2300'	268		Class C: Retarder
9 5/8" DV Tool @ 1255'								
2nd Stg 9.625 in	LEAD	170	12.5	2.12	0' - 921'	370	25%	Class C: Salt, Gel, Extender, LCM
	TAIL	100	14.8	1.34	921' - 1255'	980		Class C: Retarder
1st Stg 7 in	LEAD	50	12.5	2.12	6200' - 6515'	110	25%	Class C: Salt, Gel, Extender, LCM, Defoamer
	TAIL	400	15.6	1.18	6515' - 7864.9'	472		Class H: Retarder, Fluid Loss, Defoamer
7" DV Tool @ 6200'								
2nd Stg 7 in	LEAD	370	12.5	2.12	1230' - 5479'	790	25%	Class C: Salt, Gel, Extender, LCM, Defoamer
	TAIL	100	14.8	1.34	5479' - 6200'	134		Class C: Retarder, Fluid Loss, Defoamer
4.5 in	LEAD	730	13.5	1.85	7664.9' - 19144.8'	1360	25%	Class H: Salt, Gel, Fluid Loss, Retarder, Dispersant, Defoamer, Anti-

Design A - Mud Program

Depth	Mud Wt	Mud Type
0' - 350'	8.4	Fresh Water
350' - 1200'	9	Brine
1200' - 2300'	9	Fresh Water
2300' - 7864.9'	10	Cut-Brine
7864.9' - 19144.8'	11.5	OBM

Geology

Formation	Est. Top (TVD)	Mineral Resources	Formation	Est. Top (TVD)	Mineral Resources
Rustler			Yeso		
Castile			Delaware (Lamar)	2270'	Oil/Natural Gas
Salt Top			Bell Canyon		
Salt Base			Cherry Canyon		
Yates	380'	Oil/Natural Gas	Manzanita Marker		
Seven Rivers			Basal Brushy Canyon		
Queen			Bone Spring	3698'	Oil/Natural Gas
Capitan	1280'	Usable Water	1st Bone Spring	5609'	Oil/Natural Gas
Grayburg			2nd Bone Spring	6296'	Oil/Natural Gas
San Andres			3rd Bone Spring	7618'	Oil/Natural Gas
Glorieta			Wolfcamp	7973'	Oil/Natural Gas

All casing strings will be tested in accordance with 43 CFR Part 3170 Subpart 3172. Must have table for contingency casing.

	Y or N
Is casing new? If used, attach certification as required in Onshore Order #1	Y
Is casing API approved? 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 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?	Y
If yes, does production casing cement tie back a minimum of 50' above the Reef?	Y
Is well within the designated 4 string boundary.	Y
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?	
Is well located in R-111-P and SOPA?	N
If yes, are the first three strings cemented to surface?	
Is 2nd string set 100' to 600' below the base of salt?	
Is an open annulus used to satisfy R-111-Q? If yes, see cement design.	
Is an engineered weak point used to satisfy R-111-Q?	
If yes, at what depth is the weak point planned?	
Is well located in high Cave/Karst?	Y
If yes, are there two strings cemented to surface?	Y
(For 2 string wells) If yes, is there a contingency casing if lost circulation occurs?	
Is well located in critical Cave/Karst?	N
If yes, are there three strings cemented to surface?	

Mewbourne Oil Company, Santa Maria 31/36 Fed Com 628H
Sec 32, T20S, R27E
SHL: 2495' FNL 800' FWL (Sec 32)
BHL: 660' FSL 100' FWL (Sec 36)

Casing Program Design B						BLM Minimum Safety Factors	1.125	1.0	1.6 Drv 1.8 Wet	1.6 Drv 1.8 Wet
String	Hole Size	Top MD	Top TVD	Bot MD	Bot TVD	Csg. Size	SF Collapse	SF Burst	SF Jt Tension	SF Body Tension
surface	26'	0'	0'	350'	350'	20" 94# J55 BTC	3.40	13.80	42.61	44.98
Int 1	17.5'	0'	0'	1200'	1200'	13.375" 48# H40 STC	1.37	3.08	5.59	9.39
Int 2	12.25'	0'	0'	2300'	2300'	9.625" 36# J55 LTC	1.88	3.27	5.47	6.81
Production	8.75'	0'	0'	8765'	7994'	7" 26# HCP110 LTC	1.71	2.18	3.04	3.64
Liner	6.125'	7865'	7421'	19145'	7994'	4.5" 13.5# P110 LTC	1.58	1.84	2.22	2.77

Design B - Cement Program

Casing		# Sacks	Wt. lb/gal	Yield cu.ft/sack	TOC	Slurry Description		
20.000 in	LEAD	380	12.5	2.12	0' - 261'	810	100%	Class C: Salt, Gel, Extender, LCM
	TAIL	200	14.8	1.34	261' - 350'	268		Class C: Retarder
13.375 in	LEAD	460	12.5	2.12	0' - 942'	980	50%	Class C: Salt, Gel, Extender, LCM
	TAIL	200	14.8	1.34	942' - 1200'	268		Class C: Retarder
1st Stg 9.625 in	LEAD	70	12.5	2.12	1255' - 1630'	150	25%	Class C: Salt, Gel, Extender, LCM
	TAIL	200	14.8	1.34	1630' - 2300'	268		Class C: Retarder
9 5/8" DV Tool @ 1255'								
2nd Stg 9.625 in	LEAD	170	12.5	2.12	0' - 921'	370	25%	Class C: Salt, Gel, Extender, LCM
	TAIL	100	14.8	1.34	921' - 1255'	0		Class C: Retarder
1st Stg 7 in	LEAD	50	12.5	2.12	6200' - 6685'	110	25%	Class C: Salt, Gel, Extender, LCM, Defoamer
	TAIL	400	15.6	1.18	6685' - 8765.3'	472		Class H: Retarder, Fluid Loss, Defoamer
7" DV Tool @ 6200'								
2nd Stg 7 in	LEAD	370	12.5	2.12	1230' - 5479'	790	25%	Class C: Salt, Gel, Extender, LCM, Defoamer
	TAIL	100	14.8	1.34	5479' - 6200'	134		Class C: Retarder, Fluid Loss, Defoamer

Design B - Mud Program

Depth	Mud Wt	Mud Type
0' - 350'	8.4	Fresh Water
350' - 1200'	9	Brine
1200' - 2300'	9	Fresh Water
2300' - 8765.3'	10	Cut-Brine
8765.3' - 19144.8'	11.5	OBM

Geology

Formation	Est. Top (TVD)	Mineral Resources	Formation	Est. Top (TVD)	Mineral Resources
Rustler			Yeso		
Castile			Delaware (Lamar)	2270'	Oil/Natural Gas
Salt Top			Bell Canyon		
Salt Base			Cherry Canyon		
Yates	380'	Oil/Natural Gas	Manzanita Marker		
Seven Rivers			Basal Brushy Canyon		
Queen			Bone Spring	3698'	Oil/Natural Gas
Capitan	1280'	Usable Water	1st Bone Spring	5609'	Oil/Natural Gas
Grayburg			2nd Bone Spring	6296'	Oil/Natural Gas
San Andres			3rd Bone Spring	7618'	Oil/Natural Gas
Glorieta			Wolfcamp	7973'	Oil/Natural Gas

All casing strings will be tested in accordance with 43 CFR Part 3170 Subpart 3172. Must have table for contingency casing.

	Y or N
Is casing new? If used, attach certification as required in Onshore Order #1	Y
Is casing API approved? 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 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?	Y
If yes, does production casing cement tie back a minimum of 50' above the Reef?	Y
Is well within the designated 4 string boundary.	Y
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?	
Is well located in R-111-P and SOPA?	N
If yes, are the first three strings cemented to surface?	
Is 2nd string set 100' to 600' below the base of salt?	
Is an open annulus used to satisfy R-111-Q? If yes, see cement design.	
Is an engineered weak point used to satisfy R-111-Q?	
If yes, at what depth is the weak point planned?	
Is well located in high Cave/Karst?	Y
If yes, are there two strings cemented to surface?	Y
(For 2 string wells) If yes, is there a contingency casing if lost circulation occurs?	
Is well located in critical Cave/Karst?	N
If yes, are there three strings cemented to surface?	

Mewbourne Oil Company

Eddy County, New Mexico NAD 83
Santa Maria 31/36 Fed Com #628H
Sec 32, T20S, R27E
SHL: 2495' FNL & 800' FWL (Sec 32)
BHL: 660' FSL & 100' FWL (Sec 36)

Plan: Design #1

Standard Planning Report

02 February, 2024

Planning Report

Database:	Hobbs	**Local Co-ordinate Reference:**	Site Santa Maria 31/36 Fed Com #628H
Company:	Mewbourne Oil Company	**TVD Reference:**	Well @ 3254.0usft (Original Well)
Project:	Eddy County, New Mexico NAD 83	**MD Reference:**	Well @ 3254.0usft (Original Well)
Site:	Santa Maria 31/36 Fed Com #628H	**North Reference:**	Grid
Well:	Sec 32, T20S, R27E	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	BHL: 660' FSL & 100' FWL (Sec 36)		
Design:	Design #1		

Project Eddy County, New Mexico NAD 83

Map System:	US State Plane 1983	**System Datum:**	Ground Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site Santa Maria 31/36 Fed Com #628H

Site Position:		**Northing:**	556,725.80 usft	**Latitude:**	32.5304956
From:	Map	**Easting:**	548,659.40 usft	**Longitude:**	-104.3095756
Position Uncertainty:	0.0 usft	**Slot Radius:**	13-3/16 "		

Well Sec 32, T20S, R27E

Well Position	**+N/-S**	0.0 usft	**Northing:**	556,725.80 usft	**Latitude:**	32.5304956
	+E/-W	0.0 usft	**Easting:**	548,659.40 usft	**Longitude:**	-104.3095756
Position Uncertainty		0.0 usft	**Wellhead Elevation:**	3,254.0 usft	**Ground Level:**	3,226.0 usft
Grid Convergence:		0.01 °				

Wellbore BHL: 660' FSL & 100' FWL (Sec 36)

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	12/31/2014	7.51	60.26	48,342.07314265

Design Design #1

Audit Notes:				
Version:	**Phase:**	PROTOTYPE	**Tie On Depth:**	0.0

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	258.85

Plan Survey Tool Program **Date** 2/2/2024

	Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.0	19,144.8	Design #1 (BHL: 660' FSL & 100'		

Plan Sections

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,250.0	0.00	0.00	1,250.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,466.5	24.33	187.32	2,430.3	-252.4	-32.4	2.00	2.00	0.00	187.32	
6,648.4	24.33	187.32	6,240.7	-1,961.2	-251.8	0.00	0.00	0.00	0.00	
7,864.9	0.00	0.00	7,421.0	-2,213.6	-284.2	2.00	-2.00	0.00	180.00	KOP: 660' FSL & 4
8,787.6	92.20	270.00	7,994.0	-2,213.6	-879.6	9.99	9.99	0.00	-90.00	
19,144.8	92.20	270.00	7,597.0	-2,212.7	-11,229.2	0.00	0.00	0.00	0.00	BHL: 660' FSL & 1

Planning Report

Database:	Hobbs	**Local Co-ordinate Reference:**	Site Santa Maria 31/36 Fed Com #628H
Company:	Mewbourne Oil Company	**TVD Reference:**	Well @ 3254.0usft (Original Well)
Project:	Eddy County, New Mexico NAD 83	**MD Reference:**	Well @ 3254.0usft (Original Well)
Site:	Santa Maria 31/36 Fed Com #628H	**North Reference:**	Grid
Well:	Sec 32, T20S, R27E	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	BHL: 660' FSL & 100' FWL (Sec 36)		
Design:	Design #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
SHL: 2495' FNL & 800' FWL (Sec 32)									
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,250.0	0.00	0.00	1,250.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	1.00	187.32	1,300.0	-0.4	-0.1	0.1	2.00	2.00	0.00
1,400.0	3.00	187.32	1,399.9	-3.9	-0.5	1.2	2.00	2.00	0.00
1,500.0	5.00	187.32	1,499.7	-10.8	-1.4	3.5	2.00	2.00	0.00
1,600.0	7.00	187.32	1,599.1	-21.2	-2.7	6.8	2.00	2.00	0.00
1,700.0	9.00	187.32	1,698.2	-35.0	-4.5	11.2	2.00	2.00	0.00
1,800.0	11.00	187.32	1,796.6	-52.2	-6.7	16.7	2.00	2.00	0.00
1,900.0	13.00	187.32	1,894.4	-72.8	-9.4	23.3	2.00	2.00	0.00
2,000.0	15.00	187.32	1,991.5	-96.8	-12.4	30.9	2.00	2.00	0.00
2,100.0	17.00	187.32	2,087.6	-124.2	-15.9	39.6	2.00	2.00	0.00
2,200.0	19.00	187.32	2,182.7	-154.8	-19.9	49.4	2.00	2.00	0.00
2,300.0	21.00	187.32	2,276.6	-188.7	-24.2	60.3	2.00	2.00	0.00
2,400.0	23.00	187.32	2,369.4	-225.9	-29.0	72.1	2.00	2.00	0.00
2,466.5	24.33	187.32	2,430.3	-252.4	-32.4	80.6	2.00	2.00	0.00
2,500.0	24.33	187.32	2,460.8	-266.0	-34.2	84.9	0.00	0.00	0.00
2,600.0	24.33	187.32	2,551.9	-306.9	-39.4	98.0	0.00	0.00	0.00
2,700.0	24.33	187.32	2,643.0	-347.8	-44.7	111.0	0.00	0.00	0.00
2,800.0	24.33	187.32	2,734.1	-388.6	-49.9	124.1	0.00	0.00	0.00
2,900.0	24.33	187.32	2,825.3	-429.5	-55.1	137.1	0.00	0.00	0.00
3,000.0	24.33	187.32	2,916.4	-470.4	-60.4	150.2	0.00	0.00	0.00
3,100.0	24.33	187.32	3,007.5	-511.2	-65.6	163.2	0.00	0.00	0.00
3,200.0	24.33	187.32	3,098.6	-552.1	-70.9	176.3	0.00	0.00	0.00
3,300.0	24.33	187.32	3,189.7	-593.0	-76.1	189.3	0.00	0.00	0.00
3,400.0	24.33	187.32	3,280.9	-633.8	-81.4	202.4	0.00	0.00	0.00
3,500.0	24.33	187.32	3,372.0	-674.7	-86.6	215.4	0.00	0.00	0.00
3,600.0	24.33	187.32	3,463.1	-715.6	-91.9	228.5	0.00	0.00	0.00
3,700.0	24.33	187.32	3,554.2	-756.4	-97.1	241.5	0.00	0.00	0.00
3,800.0	24.33	187.32	3,645.3	-797.3	-102.4	254.6	0.00	0.00	0.00
3,900.0	24.33	187.32	3,736.5	-838.1	-107.6	267.6	0.00	0.00	0.00
4,000.0	24.33	187.32	3,827.6	-879.0	-112.9	280.7	0.00	0.00	0.00
4,100.0	24.33	187.32	3,918.7	-919.9	-118.1	293.7	0.00	0.00	0.00
4,200.0	24.33	187.32	4,009.8	-960.7	-123.3	306.8	0.00	0.00	0.00
4,300.0	24.33	187.32	4,100.9	-1,001.6	-128.6	319.8	0.00	0.00	0.00
4,400.0	24.33	187.32	4,192.0	-1,042.5	-133.8	332.9	0.00	0.00	0.00
4,500.0	24.33	187.32	4,283.2	-1,083.3	-139.1	345.9	0.00	0.00	0.00
4,600.0	24.33	187.32	4,374.3	-1,124.2	-144.3	359.0	0.00	0.00	0.00
4,700.0	24.33	187.32	4,465.4	-1,165.1	-149.6	372.0	0.00	0.00	0.00
4,800.0	24.33	187.32	4,556.5	-1,205.9	-154.8	385.0	0.00	0.00	0.00
4,900.0	24.33	187.32	4,647.6	-1,246.8	-160.1	398.1	0.00	0.00	0.00
5,000.0	24.33	187.32	4,738.8	-1,287.6	-165.3	411.1	0.00	0.00	0.00

Planning Report

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Company:	Mewbourne Oil Company	**TVD Reference:**	Well @ 3254.0usft (Original Well)
Project:	Eddy County, New Mexico NAD 83	**MD Reference:**	Well @ 3254.0usft (Original Well)
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Wellbore:	BHL: 660' FSL & 100' FWL (Sec 36)		
Design:	Design #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,100.0	24.33	187.32	4,829.9	-1,328.5	-170.6	424.2	0.00	0.00	0.00
5,200.0	24.33	187.32	4,921.0	-1,369.4	-175.8	437.2	0.00	0.00	0.00
5,300.0	24.33	187.32	5,012.1	-1,410.2	-181.1	450.3	0.00	0.00	0.00
5,400.0	24.33	187.32	5,103.2	-1,451.1	-186.3	463.3	0.00	0.00	0.00
5,500.0	24.33	187.32	5,194.4	-1,492.0	-191.6	476.4	0.00	0.00	0.00
5,600.0	24.33	187.32	5,285.5	-1,532.8	-196.8	489.4	0.00	0.00	0.00
5,700.0	24.33	187.32	5,376.6	-1,573.7	-202.0	502.5	0.00	0.00	0.00
5,800.0	24.33	187.32	5,467.7	-1,614.6	-207.3	515.5	0.00	0.00	0.00
5,900.0	24.33	187.32	5,558.8	-1,655.4	-212.5	528.6	0.00	0.00	0.00
6,000.0	24.33	187.32	5,649.9	-1,696.3	-217.8	541.6	0.00	0.00	0.00
6,100.0	24.33	187.32	5,741.1	-1,737.2	-223.0	554.7	0.00	0.00	0.00
6,200.0	24.33	187.32	5,832.2	-1,778.0	-228.3	567.7	0.00	0.00	0.00
6,300.0	24.33	187.32	5,923.3	-1,818.9	-233.5	580.8	0.00	0.00	0.00
6,400.0	24.33	187.32	6,014.4	-1,859.7	-238.8	593.8	0.00	0.00	0.00
6,500.0	24.33	187.32	6,105.5	-1,900.6	-244.0	606.9	0.00	0.00	0.00
6,600.0	24.33	187.32	6,196.7	-1,941.5	-249.3	619.9	0.00	0.00	0.00
6,648.4	24.33	187.32	6,240.7	-1,961.2	-251.8	626.2	0.00	0.00	0.00
6,700.0	23.30	187.32	6,288.0	-1,981.9	-254.5	632.8	2.00	-2.00	0.00
6,800.0	21.30	187.32	6,380.5	-2,019.5	-259.3	644.8	2.00	-2.00	0.00
6,900.0	19.30	187.32	6,474.3	-2,054.0	-263.7	655.8	2.00	-2.00	0.00
7,000.0	17.30	187.32	6,569.2	-2,085.1	-267.7	665.8	2.00	-2.00	0.00
7,100.0	15.30	187.32	6,665.2	-2,112.9	-271.3	674.7	2.00	-2.00	0.00
7,200.0	13.30	187.32	6,762.1	-2,137.4	-274.4	682.5	2.00	-2.00	0.00
7,300.0	11.30	187.32	6,859.8	-2,158.5	-277.1	689.2	2.00	-2.00	0.00
7,400.0	9.30	187.32	6,958.2	-2,176.3	-279.4	694.9	2.00	-2.00	0.00
7,500.0	7.30	187.32	7,057.1	-2,190.6	-281.2	699.4	2.00	-2.00	0.00
7,600.0	5.30	187.32	7,156.5	-2,201.5	-282.6	702.9	2.00	-2.00	0.00
7,700.0	3.30	187.32	7,256.2	-2,208.9	-283.6	705.3	2.00	-2.00	0.00
7,800.0	1.30	187.32	7,356.1	-2,212.9	-284.1	706.6	2.00	-2.00	0.00
7,864.9	0.00	0.00	7,421.0	-2,213.6	-284.2	706.8	2.00	-2.00	0.00
KOP: 660' FSL & 473' FWL (Sec 32)									
7,900.0	3.51	270.00	7,456.1	-2,213.6	-285.3	707.9	9.99	9.99	0.00
7,950.0	8.51	270.00	7,505.8	-2,213.6	-290.5	713.0	9.99	9.99	0.00
8,000.0	13.50	270.00	7,554.9	-2,213.6	-300.0	722.3	9.99	9.99	0.00
8,050.0	18.50	270.00	7,602.9	-2,213.6	-313.8	735.9	9.99	9.99	0.00
8,100.0	23.49	270.00	7,649.6	-2,213.6	-331.7	753.4	9.99	9.99	0.00
8,150.0	28.49	270.00	7,694.5	-2,213.6	-353.6	774.9	9.99	9.99	0.00
8,200.0	33.49	270.00	7,737.4	-2,213.6	-379.4	800.2	9.99	9.99	0.00
8,250.0	38.48	270.00	7,777.8	-2,213.6	-408.7	829.0	9.99	9.99	0.00
8,300.0	43.48	270.00	7,815.6	-2,213.6	-441.5	861.1	9.99	9.99	0.00
8,350.0	48.47	270.00	7,850.3	-2,213.6	-477.5	896.4	9.99	9.99	0.00
8,400.0	53.47	270.00	7,881.8	-2,213.6	-516.3	934.5	9.99	9.99	0.00
8,450.0	58.47	270.00	7,909.7	-2,213.6	-557.7	975.1	9.99	9.99	0.00
8,500.0	63.46	270.00	7,934.0	-2,213.6	-601.4	1,018.0	9.99	9.99	0.00
8,550.0	68.46	270.00	7,954.4	-2,213.6	-647.1	1,062.8	9.99	9.99	0.00
8,600.0	73.45	270.00	7,970.7	-2,213.6	-694.3	1,109.2	9.99	9.99	0.00
8,650.0	78.45	270.00	7,982.8	-2,213.6	-742.8	1,156.7	9.99	9.99	0.00
8,700.0	83.45	270.00	7,990.7	-2,213.6	-792.2	1,205.2	9.99	9.99	0.00
8,750.0	88.44	270.00	7,994.2	-2,213.6	-842.0	1,254.1	9.99	9.99	0.00
8,765.3	89.97	270.00	7,994.4	-2,213.6	-857.3	1,269.1	9.99	9.99	0.00
FTP/LP: 660' FSL & 100' FEL (Sec 31)									
8,787.6	92.20	270.00	7,994.0	-2,213.6	-879.6	1,291.0	9.99	9.99	0.00
8,800.0	92.20	270.00	7,993.5	-2,213.5	-892.0	1,303.1	0.00	0.00	0.00
8,900.0	92.20	270.00	7,989.7	-2,213.5	-991.9	1,401.2	0.00	0.00	0.00

Planning Report

Database:	Hobbs	**Local Co-ordinate Reference:**	Site Santa Maria 31/36 Fed Com #628H
Company:	Mewbourne Oil Company	**TVD Reference:**	Well @ 3254.0usft (Original Well)
Project:	Eddy County, New Mexico NAD 83	**MD Reference:**	Well @ 3254.0usft (Original Well)
Site:	Santa Maria 31/36 Fed Com #628H	**North Reference:**	Grid
Well:	Sec 32, T20S, R27E	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	BHL: 660' FSL & 100' FWL (Sec 36)		
Design:	Design #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
9,000.0	92.20	270.00	7,985.9	-2,213.5	-1,091.9	1,499.2	0.00	0.00	0.00
9,100.0	92.20	270.00	7,982.0	-2,213.5	-1,191.8	1,597.2	0.00	0.00	0.00
9,200.0	92.20	270.00	7,978.2	-2,213.5	-1,291.7	1,695.3	0.00	0.00	0.00
9,300.0	92.20	270.00	7,974.4	-2,213.5	-1,391.6	1,793.3	0.00	0.00	0.00
9,400.0	92.20	270.00	7,970.5	-2,213.5	-1,491.6	1,891.4	0.00	0.00	0.00
9,500.0	92.20	270.00	7,966.7	-2,213.5	-1,591.5	1,989.4	0.00	0.00	0.00
9,600.0	92.20	270.00	7,962.9	-2,213.5	-1,691.4	2,087.4	0.00	0.00	0.00
9,700.0	92.20	270.00	7,959.0	-2,213.5	-1,791.3	2,185.5	0.00	0.00	0.00
9,800.0	92.20	270.00	7,955.2	-2,213.5	-1,891.3	2,283.5	0.00	0.00	0.00
9,900.0	92.20	270.00	7,951.4	-2,213.5	-1,991.2	2,381.6	0.00	0.00	0.00
9,986.5	92.20	270.00	7,948.0	-2,213.5	-2,077.6	2,466.3	0.00	0.00	0.00
PPP2: 660' FSL & 1320' FWL (Sec 32)									
10,000.0	92.20	270.00	7,947.5	-2,213.5	-2,091.1	2,479.6	0.00	0.00	0.00
10,100.0	92.20	270.00	7,943.7	-2,213.4	-2,191.1	2,577.6	0.00	0.00	0.00
10,200.0	92.20	270.00	7,939.9	-2,213.4	-2,291.0	2,675.7	0.00	0.00	0.00
10,300.0	92.20	270.00	7,936.0	-2,213.4	-2,390.9	2,773.7	0.00	0.00	0.00
10,400.0	92.20	270.00	7,932.2	-2,213.4	-2,490.8	2,871.8	0.00	0.00	0.00
10,500.0	92.20	270.00	7,928.4	-2,213.4	-2,590.8	2,969.8	0.00	0.00	0.00
10,600.0	92.20	270.00	7,924.5	-2,213.4	-2,690.7	3,067.8	0.00	0.00	0.00
10,700.0	92.20	270.00	7,920.7	-2,213.4	-2,790.6	3,165.9	0.00	0.00	0.00
10,800.0	92.20	270.00	7,916.9	-2,213.4	-2,890.5	3,263.9	0.00	0.00	0.00
10,900.0	92.20	270.00	7,913.0	-2,213.4	-2,990.5	3,362.0	0.00	0.00	0.00
11,000.0	92.20	270.00	7,909.2	-2,213.4	-3,090.4	3,460.0	0.00	0.00	0.00
11,100.0	92.20	270.00	7,905.4	-2,213.4	-3,190.3	3,558.0	0.00	0.00	0.00
11,200.0	92.20	270.00	7,901.5	-2,213.4	-3,290.2	3,656.1	0.00	0.00	0.00
11,300.0	92.20	270.00	7,897.7	-2,213.3	-3,390.2	3,754.1	0.00	0.00	0.00
11,400.0	92.20	270.00	7,893.9	-2,213.3	-3,490.1	3,852.2	0.00	0.00	0.00
11,500.0	92.20	270.00	7,890.0	-2,213.3	-3,590.0	3,950.2	0.00	0.00	0.00
11,600.0	92.20	270.00	7,886.2	-2,213.3	-3,689.9	4,048.2	0.00	0.00	0.00
11,700.0	92.20	270.00	7,882.4	-2,213.3	-3,789.9	4,146.3	0.00	0.00	0.00
11,800.0	92.20	270.00	7,878.5	-2,213.3	-3,889.8	4,244.3	0.00	0.00	0.00
11,900.0	92.20	270.00	7,874.7	-2,213.3	-3,989.7	4,342.4	0.00	0.00	0.00
12,000.0	92.20	270.00	7,870.9	-2,213.3	-4,089.7	4,440.4	0.00	0.00	0.00
12,100.0	92.20	270.00	7,867.0	-2,213.3	-4,189.6	4,538.4	0.00	0.00	0.00
12,200.0	92.20	270.00	7,863.2	-2,213.3	-4,289.5	4,636.5	0.00	0.00	0.00
12,300.0	92.20	270.00	7,859.4	-2,213.3	-4,389.4	4,734.5	0.00	0.00	0.00
12,400.0	92.20	270.00	7,855.5	-2,213.3	-4,489.4	4,832.6	0.00	0.00	0.00
12,500.0	92.20	270.00	7,851.7	-2,213.2	-4,589.3	4,930.6	0.00	0.00	0.00
12,600.0	92.20	270.00	7,847.9	-2,213.2	-4,689.2	5,028.6	0.00	0.00	0.00
12,700.0	92.20	270.00	7,844.0	-2,213.2	-4,789.1	5,126.7	0.00	0.00	0.00
12,800.0	92.20	270.00	7,840.2	-2,213.2	-4,889.1	5,224.7	0.00	0.00	0.00
12,900.0	92.20	270.00	7,836.4	-2,213.2	-4,989.0	5,322.8	0.00	0.00	0.00
13,000.0	92.20	270.00	7,832.5	-2,213.2	-5,088.9	5,420.8	0.00	0.00	0.00
13,100.0	92.20	270.00	7,828.7	-2,213.2	-5,188.8	5,518.8	0.00	0.00	0.00
13,200.0	92.20	270.00	7,824.9	-2,213.2	-5,288.8	5,616.9	0.00	0.00	0.00
13,300.0	92.20	270.00	7,821.0	-2,213.2	-5,388.7	5,714.9	0.00	0.00	0.00
13,400.0	92.20	270.00	7,817.2	-2,213.2	-5,488.6	5,813.0	0.00	0.00	0.00
13,500.0	92.20	270.00	7,813.4	-2,213.2	-5,588.6	5,911.0	0.00	0.00	0.00
13,600.0	92.20	270.00	7,809.5	-2,213.2	-5,688.5	6,009.0	0.00	0.00	0.00
13,700.0	92.20	270.00	7,805.7	-2,213.1	-5,788.4	6,107.1	0.00	0.00	0.00
13,800.0	92.20	270.00	7,801.9	-2,213.1	-5,888.3	6,205.1	0.00	0.00	0.00
13,900.0	92.20	270.00	7,798.0	-2,213.1	-5,988.3	6,303.1	0.00	0.00	0.00
14,000.0	92.20	270.00	7,794.2	-2,213.1	-6,088.2	6,401.2	0.00	0.00	0.00

Planning Report

Database:	Hobbs	**Local Co-ordinate Reference:**	Site Santa Maria 31/36 Fed Com #628H
Company:	Mewbourne Oil Company	**TVD Reference:**	Well @ 3254.0usft (Original Well)
Project:	Eddy County, New Mexico NAD 83	**MD Reference:**	Well @ 3254.0usft (Original Well)
Site:	Santa Maria 31/36 Fed Com #628H	**North Reference:**	Grid
Well:	Sec 32, T20S, R27E	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	BHL: 660' FSL & 100' FWL (Sec 36)		
Design:	Design #1		

Planned Survey

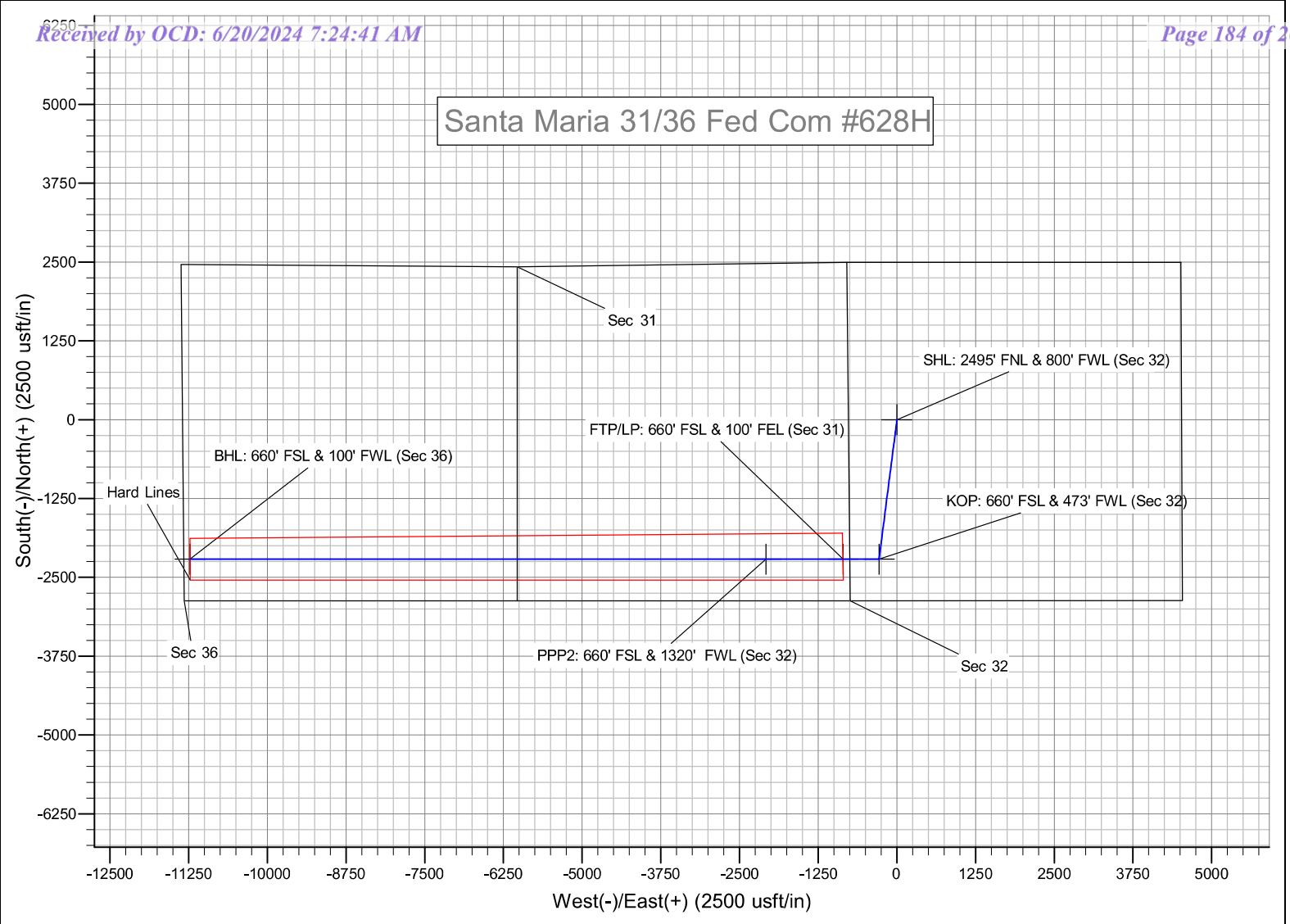
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
14,100.0	92.20	270.00	7,790.4	-2,213.1	-6,188.1	6,499.2	0.00	0.00	0.00
14,200.0	92.20	270.00	7,786.5	-2,213.1	-6,288.0	6,597.3	0.00	0.00	0.00
14,300.0	92.20	270.00	7,782.7	-2,213.1	-6,388.0	6,695.3	0.00	0.00	0.00
14,400.0	92.20	270.00	7,778.9	-2,213.1	-6,487.9	6,793.3	0.00	0.00	0.00
14,500.0	92.20	270.00	7,775.0	-2,213.1	-6,587.8	6,891.4	0.00	0.00	0.00
14,600.0	92.20	270.00	7,771.2	-2,213.1	-6,687.7	6,989.4	0.00	0.00	0.00
14,700.0	92.20	270.00	7,767.4	-2,213.1	-6,787.7	7,087.5	0.00	0.00	0.00
14,800.0	92.20	270.00	7,763.5	-2,213.1	-6,887.6	7,185.5	0.00	0.00	0.00
14,900.0	92.20	270.00	7,759.7	-2,213.0	-6,987.5	7,283.5	0.00	0.00	0.00
15,000.0	92.20	270.00	7,755.9	-2,213.0	-7,087.5	7,381.6	0.00	0.00	0.00
15,100.0	92.20	270.00	7,752.0	-2,213.0	-7,187.4	7,479.6	0.00	0.00	0.00
15,200.0	92.20	270.00	7,748.2	-2,213.0	-7,287.3	7,577.7	0.00	0.00	0.00
15,300.0	92.20	270.00	7,744.4	-2,213.0	-7,387.2	7,675.7	0.00	0.00	0.00
15,400.0	92.20	270.00	7,740.5	-2,213.0	-7,487.2	7,773.7	0.00	0.00	0.00
15,500.0	92.20	270.00	7,736.7	-2,213.0	-7,587.1	7,871.8	0.00	0.00	0.00
15,600.0	92.20	270.00	7,732.9	-2,213.0	-7,687.0	7,969.8	0.00	0.00	0.00
15,700.0	92.20	270.00	7,729.0	-2,213.0	-7,786.9	8,067.9	0.00	0.00	0.00
15,800.0	92.20	270.00	7,725.2	-2,213.0	-7,886.9	8,165.9	0.00	0.00	0.00
15,900.0	92.20	270.00	7,721.4	-2,213.0	-7,986.8	8,263.9	0.00	0.00	0.00
16,000.0	92.20	270.00	7,717.5	-2,213.0	-8,086.7	8,362.0	0.00	0.00	0.00
16,100.0	92.20	270.00	7,713.7	-2,213.0	-8,186.6	8,460.0	0.00	0.00	0.00
16,200.0	92.20	270.00	7,709.9	-2,212.9	-8,286.6	8,558.1	0.00	0.00	0.00
16,300.0	92.20	270.00	7,706.0	-2,212.9	-8,386.5	8,656.1	0.00	0.00	0.00
16,400.0	92.20	270.00	7,702.2	-2,212.9	-8,486.4	8,754.1	0.00	0.00	0.00
16,500.0	92.20	270.00	7,698.4	-2,212.9	-8,586.3	8,852.2	0.00	0.00	0.00
16,600.0	92.20	270.00	7,694.5	-2,212.9	-8,686.3	8,950.2	0.00	0.00	0.00
16,700.0	92.20	270.00	7,690.7	-2,212.9	-8,786.2	9,048.3	0.00	0.00	0.00
16,800.0	92.20	270.00	7,686.9	-2,212.9	-8,886.1	9,146.3	0.00	0.00	0.00
16,900.0	92.20	270.00	7,683.0	-2,212.9	-8,986.1	9,244.3	0.00	0.00	0.00
17,000.0	92.20	270.00	7,679.2	-2,212.9	-9,086.0	9,342.4	0.00	0.00	0.00
17,100.0	92.20	270.00	7,675.4	-2,212.9	-9,185.9	9,440.4	0.00	0.00	0.00
17,200.0	92.20	270.00	7,671.5	-2,212.9	-9,285.8	9,538.5	0.00	0.00	0.00
17,300.0	92.20	270.00	7,667.7	-2,212.9	-9,385.8	9,636.5	0.00	0.00	0.00
17,400.0	92.20	270.00	7,663.9	-2,212.8	-9,485.7	9,734.5	0.00	0.00	0.00
17,500.0	92.20	270.00	7,660.0	-2,212.8	-9,585.6	9,832.6	0.00	0.00	0.00
17,600.0	92.20	270.00	7,656.2	-2,212.8	-9,685.5	9,930.6	0.00	0.00	0.00
17,700.0	92.20	270.00	7,652.4	-2,212.8	-9,785.5	10,028.7	0.00	0.00	0.00
17,800.0	92.20	270.00	7,648.5	-2,212.8	-9,885.4	10,126.7	0.00	0.00	0.00
17,900.0	92.20	270.00	7,644.7	-2,212.8	-9,985.3	10,224.7	0.00	0.00	0.00
18,000.0	92.20	270.00	7,640.9	-2,212.8	-10,085.2	10,322.8	0.00	0.00	0.00
18,100.0	92.20	270.00	7,637.0	-2,212.8	-10,185.2	10,420.8	0.00	0.00	0.00
18,200.0	92.20	270.00	7,633.2	-2,212.8	-10,285.1	10,518.9	0.00	0.00	0.00
18,300.0	92.20	270.00	7,629.4	-2,212.8	-10,385.0	10,616.9	0.00	0.00	0.00
18,400.0	92.20	270.00	7,625.5	-2,212.8	-10,485.0	10,714.9	0.00	0.00	0.00
18,500.0	92.20	270.00	7,621.7	-2,212.8	-10,584.9	10,813.0	0.00	0.00	0.00
18,600.0	92.20	270.00	7,617.9	-2,212.7	-10,684.8	10,911.0	0.00	0.00	0.00
18,700.0	92.20	270.00	7,614.0	-2,212.7	-10,784.7	11,009.1	0.00	0.00	0.00
18,800.0	92.20	270.00	7,610.2	-2,212.7	-10,884.7	11,107.1	0.00	0.00	0.00
18,900.0	92.20	270.00	7,606.4	-2,212.7	-10,984.6	11,205.1	0.00	0.00	0.00
19,000.0	92.20	270.00	7,602.6	-2,212.7	-11,084.5	11,303.2	0.00	0.00	0.00
19,100.0	92.20	270.00	7,598.7	-2,212.7	-11,184.4	11,401.2	0.00	0.00	0.00
19,144.8	92.20	270.00	7,597.0	-2,212.7	-11,229.2	11,445.1	0.00	0.00	0.00
BHL: 660' FSL & 100' FWL (Sec 36)									

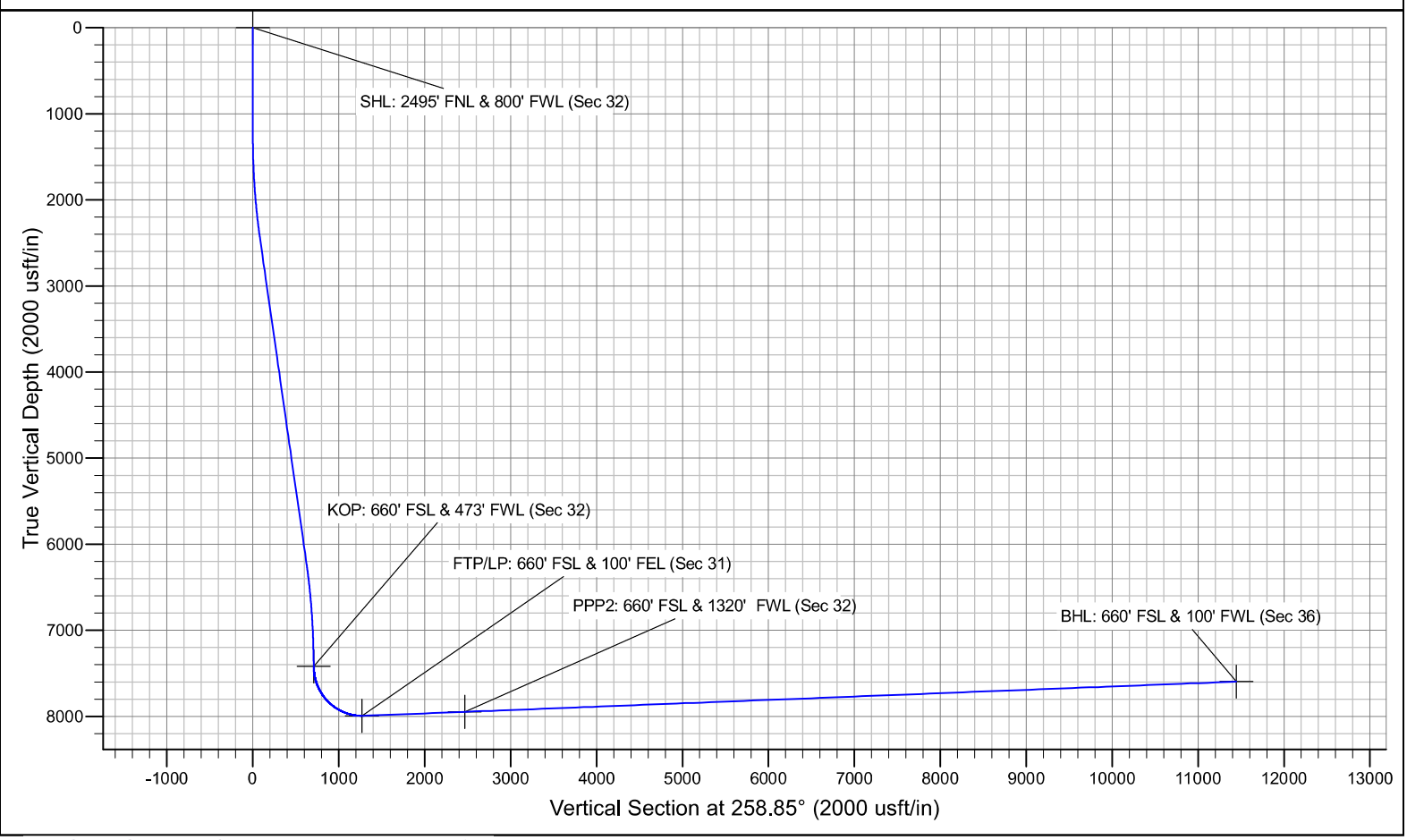
Planning Report

Database:	Hobbs	**Local Co-ordinate Reference:**	Site Santa Maria 31/36 Fed Com #628H
Company:	Mewbourne Oil Company	**TVD Reference:**	Well @ 3254.0usft (Original Well)
Project:	Eddy County, New Mexico NAD 83	**MD Reference:**	Well @ 3254.0usft (Original Well)
Site:	Santa Maria 31/36 Fed Com #628H	**North Reference:**	Grid
Well:	Sec 32, T20S, R27E	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	BHL: 660' FSL & 100' FWL (Sec 36)		
Design:	Design #1		

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
SHL: 2495' FNL & 80(- plan hits target center - Point	0.00	0.00	0.0	0.0	0.0	556,725.80	548,659.40	32.5304956	-104.3095756
KOP: 660' FSL & 473' - plan hits target center - Point	0.00	0.00	7,421.0	-2,213.6	-284.2	554,512.20	548,375.20	32.5244111	-104.3104993
BHL: 660' FSL & 100' - plan hits target center - Point	0.00	360.00	7,597.0	-2,212.7	-11,229.2	554,513.10	537,430.20	32.5244150	-104.3460107
PPP2: 660' FSL & 13 - plan hits target center - Point	0.00	0.00	7,948.0	-2,213.5	-2,077.6	554,512.35	546,581.80	32.5244124	-104.3163180
FTP/LP: 660' FSL & 1 - plan hits target center - Point	0.00	0.00	7,994.4	-2,213.6	-857.3	554,512.25	547,802.10	32.5244115	-104.3123587


Santa Maria 31/36 Fed Com #628H
Sec 31
SHL: 2495' FNL & 800' FWL (Sec 32)
FTP/LP: 660' FSL & 100' FEL (Sec 31)
BHL: 660' FSL & 100' FWL (Sec 36)
Hard Lines
KOP: 660' FSL & 473' FWL (Sec 32)
Sec 36
PPP2: 660' FSL & 1320' FWL (Sec 32)
Sec 32
South(-)/North(+) (2500 usft/in)
West(-)/East(+) (2500 usft/in)


SHL: 2495' FNL & 800' FWL (Sec 32)
KOP: 660' FSL & 473' FWL (Sec 32)
FTP/LP: 660' FSL & 100' FEL (Sec 31)
PPP2: 660' FSL & 1320' FWL (Sec 32)
BHL: 660' FSL & 100' FWL (Sec 36)
True Vertical Depth (2000 usft/in)
Vertical Section at 258.85° (2000 usft/in)

Mewbourne Oil Company, Santa Maria 31/36 Fed Com 628H
Sec 32, T20S, R27E
SHL: 2495' FNL 800' FWL (Sec 32)
BHL: 660' FSL 100' FWL (Sec 36)

Operator Name:	Property Name:	Well Number
Mewbourne Oil Company	Santa Maria 31/36 Fed Com	628H

Kick Off Point (KOP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
M	32	20	27	-	660'	FSL	473'	FWL	Eddy
Latitude					Longitude				NAD
32.5244111					-104.3104993				83

First Take Point (FTP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
P	31	20	27	-	660'	FSL	100'	FEL	Eddy
Latitude					Longitude				NAD
32.5244115					-104.3123587				83

Last Take Point (LTP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
M	36	20	26	-	660'	FSL	100'	FWL	Eddy
Latitude					Longitude				NAD
32.5244144					-104.3460111				83

Is this well the defining well for the Horizontal Spacing Unit? Y
Is this well an infill well? N

If infill is yes please provide API if available, Operator Name and well number for Defining well for Horizontal Spacing Unit.

API #

Operator Name:	Property Name:	Well Number

PECOS DISTRICT
DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	MEWBOURNE OIL COMPANY
WELL NAME & NO.:	SANTA MARIA 31/36 FED COM 628H
APD ID:	10400097086
SURFACE HOLE FOOTAGE:	2495'/N & 800'/W
BOTTOM HOLE FOOTAGE	660'/S & 100'/W
SURFACE LOCATION:	Section 32, T.20 S., R.27 E. NMP.
COUNTY:	Eddy County, New Mexico

COA

H_2S	◉ Yes	○ No	
Potash	◉ None	○ Secretary	○ R-111-Q
Cave/Karst Potential	○ Low	○ Medium	◉ High
Cave/Karst Potential	○ Critical		
Variance	○ None	◉ Flex Hose	○ Other
Wellhead	○ Conventional	◉ Multibowl	○ Both
Other	☑ 4 String	☑ Capitan Reef	☐ WIPP
Other	☐ Fluid Filled	☐ Pilot Hole	☐ Open Annulus
Other Variances	☑ Offline cementing	☐ Squeeze cement	☑ Break testing
Special Requirements	☐ Water Disposal	☑ COM	☐ Unit

A. HYDROGEN SULFIDE

A Hydrogen Sulfide (H_2S) Drilling Plan shall be activated **AT SPUD**. As a result, the Hydrogen Sulfide area must meet **43 CFR 3176** requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, please provide measured values and formations to the BLM.

B. CASING DESIGN

Primary Casing Program

1. The **20** inch surface casing shall be set at approximately **350 ft.** (a minimum of 70 feet (Eddy County) into the Rustler Anhydrite and above the salt) and cemented to the surface. **If salt is encountered set casing at least 25 ft. above the salt.**
    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

 Approval Date: 06/14/2024

completing the cement job.

b. Wait on cement (WOC) time for a primary cement job will be a minimum of **8 hours** or **500 psi 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 psi compressive strength, whichever is greater.
d. If cement falls back, remedial cementing will be done prior to drilling out that string.

2. The **13-3/8** inch 1st intermediate casing shall be set at approximately **1,200 ft.** in Queen formation and above Capitan reef. The minimum required fill of cement behind the **13-3/8** inch intermediate casing is:

Option 1 (Single Stage): 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 and Capitan reef**.

Option 2 (Two-stage): Operator has proposed a DV tool, the depth may be adjusted as long as the cement is changed proportionally. The DV tool may be cancelled if cement circulates to surface on the first stage.

a. First stage to DV tool: Cement to circulate. If cement does not circulate off the DV tool, contact the appropriate BLM office before proceeding with second stage cement job.
b. Second stage above DV tool: **Cement to surface.** If cement does not circulate, contact the appropriate BLM office. Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to **Cave/Karst and Capitan reef**.

❖ In Capitan Reef Areas if cement does not circulate to surface on the first two casing strings, the cement on the 3rd casing string must come to surface.

❖ 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.

❖ **Special Capitan Reef requirements.** If lost circulation (50% or greater) occurs below the Base of the Salt, the operator shall do the following:
(Use this for 3 string wells in the Capitan Reef, if 4 string well ensure FW based mud used across the capitan interval)

- Switch to freshwater mud to protect the Capitan Reef and use freshwater mud until setting the intermediate casing. The appropriate BLM office is to be notified for a PET to witness the switch to fresh water.

- Daily drilling reports from the Base of the Salt to the setting of the intermediate casing are to be submitted to the BLM CFO engineering staff via e-mail by

0800 hours each morning. Any lost circulation encountered is to be recorded on these drilling reports. The daily drilling report should show mud volume per shift/tour. Failure to submit these reports will result in an Incidence of Non-Compliance being issued for failure to comply with the Conditions of Approval. If not already planned, the operator shall run a caliper survey for the intermediate well bore and submit to the appropriate BLM office.

3. The **9-5/8** inch 2nd intermediate casing shall be set at approximately **2,300 ft.** in the base of Capitan reef or Lamar. The minimum required fill of cement behind the **9-5/8** inch intermediate casing is:

   Option 1 (Single Stage): Cement should tie-back **at least 200 feet** into previous casing string or 50 ft. above Capitan reef top, whichever is greater. 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 and Capitan reef**.

   Option 2 (Two-stage): Operator has proposed a DV tool, the depth may be adjusted as long as the cement is changed proportionally. The DV tool may be cancelled if cement circulates to surface on the first stage.
   a. **First stage to DV tool:** Cement to circulate. If cement does not circulate off the DV tool, contact the appropriate BLM office before proceeding with second stage cement job.
   b. **Second stage above DV tool:** Cement should tie-back **at least 200 feet** into previous casing string or 50 ft. above Capitan reef top, whichever is greater. Operator shall provide method of verification. If cement does not circulate, contact the appropriate BLM office. Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to **Cave/Karst and Capitan reef**.

4. Operator has proposed to set **7 in. (N-80, 26#/ft.)** production casing at approximately **7,865 ft.** (7,421 ft. TVD). The minimum required fill of cement behind the **7 in.** production casing is:

   Option 1 (Single Stage): 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 and Capitan reef**.

   Option 2 (Two-stage): Operator has proposed a DV tool, the depth may be adjusted as long as the cement is changed proportionally. The DV tool may be cancelled if cement circulates to surface on the first stage.
   a. **First stage to DV tool:** Cement to circulate. If cement does not circulate off the DV tool, contact the appropriate BLM office before proceeding with second stage cement job.
   b. **Second stage above DV tool:** Cement should tie-back **at least 200 feet** into previous casing string. Operator shall provide method of verification. If cement does not circulate, contact the appropriate BLM office. Wait on

cement (WOC) time for a primary cement job is to include the lead cement slurry due to **Cave/Karst and Capitan reef**.

Note: Cement volume for the 1st stage is insufficient. More cement might be needed.

5. The minimum required fill of cement behind the **4-1/2 in.** production liner is:
   - Cement should tie-back **at least 100 feet** into previous casing string. Operator shall provide method of verification.

Alternate Casing Program

1. The **20** inch surface casing shall be set at approximately **350 ft.** (a minimum of 70 feet (Eddy County) into the Rustler Anhydrite and above the salt) and cemented to the surface. **If salt is encountered set casing at least 25 ft. above the salt.**
   e. 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.
   f. Wait on cement (WOC) time for a primary cement job will be a minimum of **8 hours** or **500 psi compressive strength**, whichever is greater. (This is to include the lead cement)
   g. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 psi compressive strength, whichever is greater.
   h. If cement falls back, remedial cementing will be done prior to drilling out that string.

2. The **13-3/8** inch 1st intermediate casing shall be set at approximately **1,200 ft.** in Queen formation and above Capitan reef. The minimum required fill of cement behind the **13-3/8** inch intermediate casing is:

   Option 1 (Single Stage): 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 and Capitan reef**.

   Option 2 (Two-stage): Operator has proposed a DV tool, the depth may be adjusted as long as the cement is changed proportionally. The DV tool may be cancelled if cement circulates to surface on the first stage.
   c. First stage to DV tool: Cement to circulate. If cement does not circulate off the DV tool, contact the appropriate BLM office before proceeding with second stage cement job.
   d. Second stage above DV tool: **Cement to surface.** If cement does not circulate, contact the appropriate BLM office. Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to **Cave/Karst and Capitan reef**.

- ❖ In Capitan Reef Areas if cement does not circulate to surface on the first two casing strings, the cement on the 3rd casing string must come to surface.

- ❖ 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.

- ❖ **Special Capitan Reef requirements.** If lost circulation (50% or greater) occurs below the Base of the Salt, the operator shall do the following:
  (Use this for 3 string wells in the Capitan Reef, if 4 string well ensure FW based mud used across the capitan interval)

  - Switch to freshwater mud to protect the Capitan Reef and use freshwater mud until setting the intermediate casing. The appropriate BLM office is to be notified for a PET to witness the switch to fresh water.

  - Daily drilling reports from the Base of the Salt to the setting of the intermediate casing are to be submitted to the BLM CFO engineering staff via e-mail by 0800 hours each morning. Any lost circulation encountered is to be recorded on these drilling reports. The daily drilling report should show mud volume per shift/tour. Failure to submit these reports will result in an Incidence of Non-Compliance being issued for failure to comply with the Conditions of Approval. If not already planned, the operator shall run a caliper survey for the intermediate well bore and submit to the appropriate BLM office.

3. The **9-5/8** inch 2nd intermediate casing shall be set at approximately **2,300 ft.** in the base of Capitan reef or Lamar. The minimum required fill of cement behind the **9-5/8** inch intermediate casing is:

   Option 1 (Single Stage): Cement should tie-back **at least 200 feet** into previous casing string or 50 ft. above Capitan reef top, whichever is greater. 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 and Capitan reef**.

   Option 2 (Two-stage): Operator has proposed a DV tool, the depth may be adjusted as long as the cement is changed proportionally. The DV tool may be cancelled if cement circulates to surface on the first stage.

   c. **First stage to DV tool:** Cement to circulate. If cement does not circulate off the DV tool, contact the appropriate BLM office before proceeding with second stage cement job.
   d. **Second stage above DV tool:** Cement should tie-back **at least 200 feet** into previous casing string or 50 ft. above Capitan reef top, whichever is greater. Operator shall provide method of verification. If cement does not circulate, contact the appropriate BLM office. Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to **Cave/Karst and Capitan reef**.

4. Operator has proposed to set **7 in. (HCP-110, 26#/ft.)** production casing at approximately **8,765 ft.** (7,994 ft. TVD). The minimum required fill of cement behind the **7 in.** production casing is:

   Option 1 (Single Stage): Cement should tie-back **at least 200 feet** into previous casing string. Operator shall provide method of verification.

   Option 2 (Two-stage): Operator has proposed a DV tool, the depth may be adjusted as long as the cement is changed proportionally. The DV tool may be cancelled if cement circulates to surface on the first stage.

   c. **First stage to DV tool:** Cement to circulate. If cement does not circulate off the DV tool, contact the appropriate BLM office before proceeding with second stage cement job.
   d. **Second stage above DV tool:** Cement should tie-back **at least 200 feet** into previous casing string. Operator shall provide method of verification. If cement does not circulate, contact the appropriate BLM office.

   Note: Cement volume for the 1st stage is insufficient. More cement might be needed.

5. The minimum required fill of cement behind the **4-1/2 in.** production liner is:
   - Cement should tie-back **at least 100 feet** into previous casing string. Operator shall provide method of verification.

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. Operator has proposed a **multi-bowl wellhead** assembly. This assembly will only be tested when installed on the 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. The BOP/BOPE and annular preventer shall be pressure-tested in accordance with **title 43 CFR 3172 and API Standard 53.**

   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 the **title 43 CFR 3172.6(b)(9)** must be followed.

BOPE Break Testing Variance (Approved)
(Note: For a minimum 5M BOPE or less (Utilizing a 10M BOPE system)

- BOPE Break Testing is ONLY permitted for 5M BOPE or less. **(Annular preventer must be tested to a minimum of 70% of BOPE working pressure and shall be higher than the MASP)**
- BOPE Break Testing is NOT permitted to drilling the production hole section.
- Variance only pertains to the intermediate hole-sections and no deeper than the Bone Springs formation.
- While in transfer between wells, the BOPE shall be secured by the hydraulic carrier or cradle.
- Any well control event while drilling require notification to the BLM Petroleum Engineer **(575-706-2779)** prior to the commencement of any BOPE Break Testing operations.
- A full BOPE test is required prior to drilling the first deep intermediate hole section. If any subsequent hole interval is deeper than the first, a full BOPE test will be required. (200' TVD tolerance between intermediate shoes is allowable).
- The BLM is to be contacted **(575-361-2822 Eddy County)** 4 hours prior to BOPE tests.
- As a minimum, a full BOPE test shall be performed at **21**-day intervals.
- In the event any repairs or replacement of the BOPE is required, the BOPE shall test as per **43 CFR part 3170 Subpart 3172**.
- If in the event break testing is not utilized, then a full BOPE test would be conducted.

Offline Cementing

Operator has been **(Approved)** to pump the proposed cement program offline in the **Surface and intermediate(s) intervals**. Offline cementing should commence within 24 hours of landing the casing for the interval. Notify the BLM 4hrs prior to cementing offline at **Eddy County: 575-361-2822**.

D. SPECIAL REQUIREMENT (S)

Communitization Agreement

- The operator will submit a Communitization Agreement to the Santa Fe Office, 301 Dinosaur Trail Santa Fe, New Mexico 87508, at least 90 days before the anticipated date of first production from a well subject to a spacing order issued by the New Mexico Oil Conservation Division. The Communitization Agreement will include the signatures of all working interest owners in all Federal and Indian leases subject to the Communitization Agreement (i.e., operating rights owners and lessees of record), or certification that the operator has obtained the written signatures of all such owners and will make those signatures available to the BLM immediately upon request.

- If the operator does not comply with this condition of approval, the BLM may take enforcement actions that include, but are not limited to, those specified in 43 CFR 3163.1.

- In addition, the well sign shall include the surface and bottom hole lease numbers. When the Communitization Agreement number is known, it shall also be on the sign.

GENERAL REQUIREMENTS

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

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

☒ Eddy County
EMAIL or call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220,
BLM_NM_CFO_DrillingNotifications@BLM.GOV
(575) 361-2822

1. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.

   a. In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).
   b. When the operator proposes to set surface casing with Spudder Rig
      - Notify the BLM when moving in and removing the Spudder Rig.
      - Notify the BLM when moving in the 2nd Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
      - BOP/BOPE test to be conducted per **43 CFR part 3170 Subpart 3172** as soon as 2nd Rig is rigged up on well.

2. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.

3. For at least one well per pad (deepest well preferred) the record of drilling rate (ROP) along with the Gamma Ray (GR) and Neutron (CNL) well logs run from TVD to surface in the vertical section of the hole shall be submitted to the BLM office as well as all other logs run on the full borehole within 30 days from completion. Only digital copies of the logs in .TIF or .LAS formats are necessary; Logs shall be emailed to blm-cfo-geology@doimspp.onmicrosoft.com. The email should have a subject line with the US Well Number / API Number, well name, and the body should include the starting depth and the TVD of the log.

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

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 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.

SA 06/12/2024

Hydrogen Sulfide Drilling Operations Plan
Mewbourne Oil Company

1. General Requirements

Rule 118 does not apply to this well because MOC has researched this area and no high concentrations of H2S were found. MOC will have on location and working all H2S safety equipment before the Delaware formation for purposes of safety and insurance requirements.

2. Hydrogen Sulfide Training

All personnel, whether regularly assigned, contracted, or employed on an unscheduled basis, will have received training from a qualified instructor in the following areas prior to entering the drilling pad area of the well:

1. The hazards and characteristics of hydrogen sulfide gas.
2. The proper use of personal protective equipment and life support systems.
3. The proper use of hydrogen sulfide detectors, alarms, warning systems, briefing areas, evacuation procedures.
4. The proper techniques for first aid and rescue operations.

Additionally, supervisory personnel will be trained in the following areas:

1 The effects of hydrogen sulfide on metal components. If high tensile tubular systems are utilized, supervisory personnel will be trained in their special maintenance requirements.
2 Corrective action and shut in procedures, blowout prevention, and well control procedures while drilling a well.
3 The contents of the Hydrogen Sulfide Drilling Operations Plan.

There will be an initial training session prior to encountering a know hydrogen sulfide source. The initial training session shall include a review of the site specific Hydrogen Sulfide Drilling Operations Plan.

3. Hydrogen Sulfide Safety Equipment and Systems

All hydrogen sulfide safety equipment and systems will be installed, tested, and operational prior to drilling below the 9 5/8" intermediate casing.

1. Well Control Equipment
   - A. Choke manifold with minimum of one adjustable choke/remote choke.
   - B. Blowout preventers equipped with blind rams and pipe rams to accommodate all pipe sizes with properly sized closing unit
   - C. Auxiliary equipment including annular type blowout preventer.
2. Protective Equipment for Essential Personnel
   Thirty minute self contained work unit located in the dog house and at briefing areas.

Additionally: If H2S is encountered in concentrations less than 10 ppm, fans will be placed in work areas to prevent the accumulation of hazardous amounts of poisonous gas. If higher concentrations of H2S are detected the well will be shut in and a rotating head, mud/gas separator, remote choke and flare line with igniter will be installed.

3. Hydrogen Sulfide Protection and Monitoring Equipment
Two portable hydrogen sulfide monitors positioned on location for optimum coverage and detection. The units shall have audible sirens to notify personnel when hydrogen sulfide levels exceed 20 PPM.

4. Visual Warning Systems
A. Wind direction indicators as indicated on the wellsite diagram.
B. Caution signs shall be posted on roads providing access to location. Signs shall be painted a high visibility color with lettering of sufficient size to be readable at reasonable distances from potentially contaminated areas.

4. Mud Program

The mud program has been designed to minimize the amount of hydrogen sulfide entrained in the mud system. Proper mud weight, safe drilling practices, and the use of hydrogen sulfide scavengers will minimize hazards while drilling the well.

5. Metallurgy

All tubular systems, wellheads, blowout preventers, drilling spools, kill lines, choke manifolds, and valves shall be suitable for service in a hydrogen sulfide environment when chemically treated.

6. Communications

State & County Officials phone numbers are posted on rig floor and supervisors trailer. Communications in company vehicles and toolpushers are either two way radios or cellular phones.

7. Well Testing

Drill stem testing is not an anticipated requirement for evaluation of this well. If a drill stem test is required, it will be conducted with a minimum number of personnel in the immediate vicinity. The test will be conducted during daylight hours only.

8. Emergency Phone Numbers

Eddy County Sheriff's Office	**911 or 575-887-7551**
Ambulance Service	**911 or 575-885-2111**
Carlsbad Fire Dept	**911 or 575-885-2111**
Loco Hills Volunteer Fire Dept.	**911 or 575-677-3266**
Closest Medical Facility - Columbia Medical Center of Carlsbad	**575-492-5000**

Mewbourne Oil Company	**Hobbs District Office**	**575-393-5905**
	Fax	**575-397-6252**
	2nd Fax	**575-393-7259**
District Manager	**Robin Terrell**	**575-390-4816**
Drilling Superintendent	**Frosty Lathan**	**575-390-4103**
	Bradley Bishop	**575-390-6838**
Drilling Foreman	**Wesley Noseff**	**575-441-0729**

Operator Name: MEWBOURNE OIL COMPANY

Well Name: SANTA MARIA 31/36 FED COM **Well Number:** 628H

Waste type: SEWAGE

Waste content description: Human waste & grey water

Amount of waste: 1500 gallons

Waste disposal frequency : Weekly

Safe containment description: 2,000 gallon plastic container

Safe containmant attachment:

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

Disposal type description:

Disposal location description: City of Carlsbad Water Treatment facility

Waste type: GARBAGE

Waste content description: Garbage & trash from all drilling & completion procedures

Amount of waste: 1500 pounds

Waste disposal frequency : One Time Only

Safe containment description: Enclosed trash trailers

Safe containmant attachment:

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

Disposal type description:

Disposal location description: County of Eddy waste management

Reserve Pit

Reserve Pit being used? NO

Temporary disposal of produced water into reserve pit? NO

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

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

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

Reserve pit liner

Reserve pit liner specifications and installation description

Cuttings Area

Cuttings Area being used? NO

Are you storing cuttings on location? Y

Operator Name: MEWBOURNE OIL COMPANY

Well Name: SANTA MARIA 31/36 FED COM **Well Number:** 628H

Description of cuttings location Drill cuttings will be properly contained in steel tanks (20 yard roll off bins.) and taken to an NMOCD approved disposal facility listed below. After drilling and completion operations, trash, chemicals, salts, frac sand and other waste material will be removed and disposed of properly at the said facilities. NMOCD approved waste disposal locations are CRI or Lea Land, both facilities are located on HWY 62/180, Sec. 27 T20S R32E.

Cuttings area length (ft.)

Cuttings area width (ft.)

Cuttings area depth (ft.)

Cuttings area volume (cu. yd.)

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

WCuttings area liner

Cuttings area liner specifications and installation description

Section 8 - Ancillary

Are you requesting any Ancillary Facilities?: N

Ancillary Facilities

Comments:

Section 9 - Well Site

Well Site Layout Diagram:

Santa_Maria_31_36_Fed_Com_628H_WellSiteLayout_20240213112829.pdf

Comments: NONE

Section 10 - Plans for Surface Reclamation

Type of disturbance: New Surface Disturbance

Multiple Well Pad Name: Omaha 36/31 MP & LI

Multiple Well Pad Number: 4

Recontouring

Drainage/Erosion control construction: None required

Drainage/Erosion control reclamation: None required

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720
District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

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

CONDITIONS

Action 356195

CONDITIONS

Operator: MEWBOURNE OIL CO P.O. Box 5270 Hobbs, NM 88241	OGRID: 14744
	Action Number: 356195
	Action Type: [C-101] BLM - Federal/Indian Land Lease (Form 3160-3)

CONDITIONS

Created By	Condition	Condition Date
ward.rikala	Notify OCD 24 hours prior to casing & cement	6/28/2024
ward.rikala	Will require a File As Drilled C-102 and a Directional Survey with the C-104	6/28/2024
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	6/28/2024
ward.rikala	Cement is required to circulate on both surface and intermediate1 strings of casing	6/28/2024
ward.rikala	If cement does not circulate on any string, a CBL is required for that string of casing	6/28/2024
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	6/28/2024
ward.rikala	Only fresh water mud can be used through the Reef and aquifer.	6/28/2024