Form 3160-3
(June 2015)

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.

6. If Indian, Allotee or Tribe Name

1a. Type of work: ☐ DRILL ☐ REENTER

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

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

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

8. Lease Name and Well No.

2. Name of Operator

9. API Well No.
30-015-56934

3a. Address

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

10. Field and Pool, or Exploratory
WC-015 2330S16 J; WOLFCAMP

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

At surface

At proposed prod. zone

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

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

12. County or Parish

13. State

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)	16. No of acres in lease	17. Spacing Unit dedicated to this well
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.	19. Proposed Depth	20. BLM/BIA Bond No. in file
21. Elevations (Show whether DF, KDB, RT, GL, etc.)	22. Approximate date work will start*	23. Estimated duration

24. Attachments

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

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

25. Signature	Name *(Printed/Typed)*	Date
Title		
Approved by *(Signature)*	Name *(Printed/Typed)*	Date
Title	Office	

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

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

APPROVED WITH CONDITIONS

(Continued on page 2)

*(Instructions on page 2)

Approval Date: 04/28/2025

INSTRUCTIONS

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

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

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

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

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

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

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

NOTICES

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

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

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

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

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

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

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

Approval Date: 04/28/2025

Additional Operator Remarks

Location of Well

0. SHL: SENW / 2350 FNL / 1580 FWL / TWSP: 23S / RANGE: 30E / SECTION: 16 / LAT: 32.3059153 / LONG: -103.8897489 (TVD: 0 feet, MD: 0 feet)

PPP: SENW / 2618 FNL / 2318 FWL / TWSP: 23S / RANGE: 30E / SECTION: 4 / LAT: 32.3341602 / LONG: -103.8881501 (TVD: 11051 feet, MD: 21697 feet)

PPP: SESW / 0 FSL / 2328 FWL / TWSP: 23S / RANGE: 30E / SECTION: 4 / LAT: 32.3268928 / LONG: -103.8874282 (TVD: 11055 feet, MD: 19054 feet)

PPP: SESW / 0 FSL / 2328 FWL / TWSP: 23S / RANGE: 30E / SECTION: 9 / LAT: 32.3123605 / LONG: -103.8874008 (TVD: 11063 feet, MD: 13767 feet)

PPP: SENW / 2312 FNL / 2310 FWL / TWSP: 23S / RANGE: 30E / SECTION: 16 / LAT: 32.3060073 / LONG: -103.8873888 (TVD: 11067 feet, MD: 11456 feet)

BHL: NENW / 330 FNL / 2310 FWL / TWSP: 23S / RANGE: 30E / SECTION: 4 / LAT: 32.3405304 / LONG: -103.887454 (TVD: 11047 feet, MD: 24015 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.

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

WELL LOCATION INFORMATION

API Number	Pool Code	Pool Name	
30-015-56934	98268 ~~98220~~	WC-015 2330S16 J; WOLFCAMP ~~PURPLE SAGE WOLFCAMP~~	
Property Code: 336611	Property Name: FORTY NINER RIDGE UNIT COM		Well Number: 144H
OGRID No.: 14744	Operator Name: MEWBOURNE OIL COMPANY		Ground Level Elevation: 3129'
Surface Owner: ■ State ☐ Fee ☐ Tribal ☐ Federal		Mineral Owner: ☐ State ☐ Fee ☐ Tribal ■ Federal	

Surface Location

UL	Section	Township	Range	Lot	Ft. from N/S	Ft. from E/W	Latitude	Longitude	County
F	16	23S	30E		2350 FNL	1580 FWL	32.3059153°N	103.8897489°W	EDDY

Bottom Hole Location

UL	Section	Township	Range	Lot	Ft. from N/S	Ft. from E/W	Latitude	Longitude	County
C	4	23S	30E	2 ~~3~~	330 FNL	2310 FWL	32.3405304°N	103.8874540°W	EDDY

Dedicated Acres	Infill or Defining Well	Defining Well API	Overlapping Spacing Unit (Y/N)	Consolidation Code
1600.4	DEFINING WELL			
Order Numbers.			Well setbacks are under Common Ownership: ☐ Yes ☐ No	

Kick Off Point (KOP)

UL	Section	Township	Range	Lot	Ft. from N/S	Ft. from E/W	Latitude	Longitude	County
K	16	23S	30E		2413 FSL	2310 FWL	32.3044325°N	103.8873859°W	EDDY

First Take Point (FTP)

UL	Section	Township	Range	Lot	Ft. from N/S	Ft. from E/W	Latitude	Longitude	County
F	16	23S	30E		2312 FNL	2310 FWL	32.3060073°N	103.8873888°W	EDDY

Last Take Point (LTP)

UL	Section	Township	Range	Lot	Ft. from N/S	Ft. from E/W	Latitude	Longitude	County
C	4	23S	30E	2 ~~3~~	330 FNL	2310 FWL	32.3405304°N	103.8874540°W	EDDY

Unitized Area or Area of Uniform Interest	Spacing Unit Type ■ Horizontal ☐ Vertical	Ground Floor Elevation: 3157'

OPERATOR CERTIFICATIONS

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

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

Ryan McDaniel 2/4/25

Signature Date

Ryan McDaniel

Printed Name

RyanMcDaniel@Mewbourne.com

Email Address

SURVEYOR CERTIFICATIONS

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

ROBERT M. HOWETT NEW MEXICO 19680 PROFESSIONAL SURVEYOR

Signature and Seal of Professional Surveyor

Robert M. Howett

Certificate Number	Date of Survey
19680	05/06/2021

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

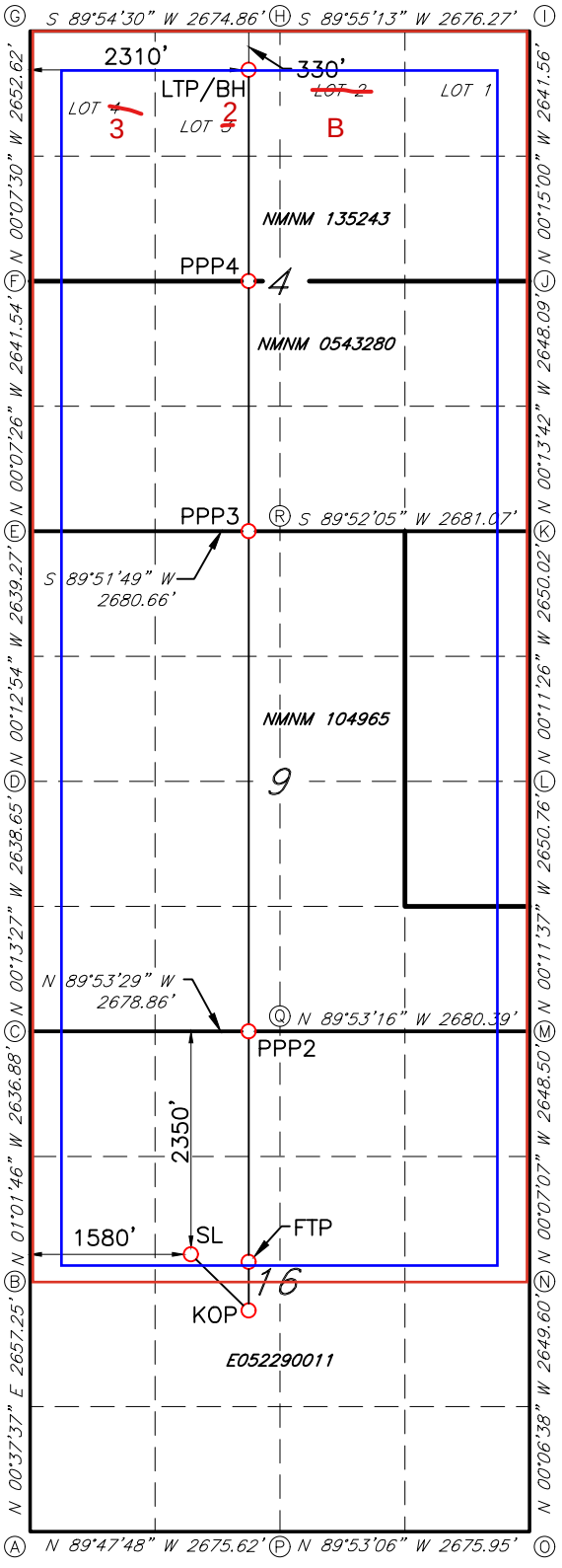
JOB #: LS21050445D1

ACREAGE DEDICATION PLATS

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

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

FORTY NINER RIDGE UNIT #144H



GEODETIC DATA
NAD 83 GRID – NM EAST

SURFACE LOCATION (SL)
N: 475308.0 – E: 678385.5

LAT: 32.3059153° N
LONG: 103.8897489° W

KICK OFF POINT (KOP)
N: 474771.6 – E: 679117.8

LAT: 32.3044325° N
LONG: 103.8873859° W

FIRST TAKE POINT (FTP)
N: 475344.5 – E: 679114.5

LAT: 32.3060073° N
LONG: 103.8873888° W

PROPOSED PENETRATION POINT 2 (PPP2)
0' FNL & 2338' FWL (SEC.16)
N: 477655.7 – E: 679101.2

LAT: 32.3123605° N
LONG: 103.8874008° W

PROPOSED PENETRATION POINT 3 (PPP3)
0' FNL & 2328' FWL (SEC.9)
N: 482942.4 – E: 679070.7

LAT: 32.3268928° N
LONG: 103.8874282° W

PROPOSED PENETRATION POINT 4 (PPP4)
2644' FSL & 2318' FWL (SEC.4)
N: 485586.0 – E: 679055.5

LAT: 32.3341598° N
LONG: 103.8874420° W

LAST TAKE POINT/BOTTOM HOLE (LTP/BH)
N: 487903.6 – E: 679042.1

LAT: 32.3405304° N
LONG: 103.8874540° W

CORNER DATA
NAD 83 GRID – NM EAST

A: FOUND BRASS CAP "1942"
N: 472367.7 – E: 676781.9

B: FOUND BRASS CAP "1942"
N: 475024.2 – E: 676811.0

C: FOUND BRASS CAP "1942"
N: 477660.1 – E: 676763.6

D: FOUND BRASS CAP "1942"
N: 480298.2 – E: 676753.3

E: FOUND BRASS CAP "1942"
N: 482936.8 – E: 676743.4

F: FOUND BRASS CAP "1942"
N: 485577.8 – E: 676737.7

G: FOUND BRASS CAP "1916"
N: 488229.8 – E: 676731.9

H: FOUND BRASS CAP "1916"
N: 488234.1 – E: 679406.2

I: FOUND BRASS CAP "1916"
N: 488237.8 – E: 682081.8

J: FOUND BRASS CAP "1916"
N: 485596.9 – E: 682093.4

K: FOUND BRASS CAP "1942"
N: 482949.4 – E: 682103.9

L: FOUND BRASS CAP "1942"
N: 480299.9 – E: 682112.7

M: FOUND BRASS CAP "1942"
N: 477649.8 – E: 682121.7

N: FOUND BRASS CAP "1942"
N: 475001.9 – E: 682127.2

O: FOUND BRASS CAP "1942"
N: 472352.8 – E: 682132.3

P: FOUND BRASS CAP "1942"
N: 472358.2 – E: 679456.9

Q: FOUND BRASS CAP "1942"
N: 477655.0 – E: 679441.9

R: FOUND BRASS CAP "1942"
N: 482943.2 – E: 679423.4

JOB #: LS21050445D1

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:** 12/30/24

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

If Other, please describe: _____

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

Well Name	API	ULSTR	Footages	Anticipated Oil BBL/D	Anticipated Gas MCF/D	Anticipated Produced Water BBL/D
Forty Niner Ridge Unit #144H		F 16 23S 30E	2350' FNL x 1580' FWL	1000	2400	4500
				Y1: 1500, Y2: 350, Y3: 200	Y1: 4000, Y2: 1800, Y3: 1000	Y1: 4000, Y2: 2000, Y3: 750

IV. Central Delivery Point Name: Forty Niner Ridge Unit #144H [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
Forty Niner Ridge Unit #144H		8/28/21	9/28/21	10/28/21	11/13/21	11/13/21

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:	12/30/24
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.

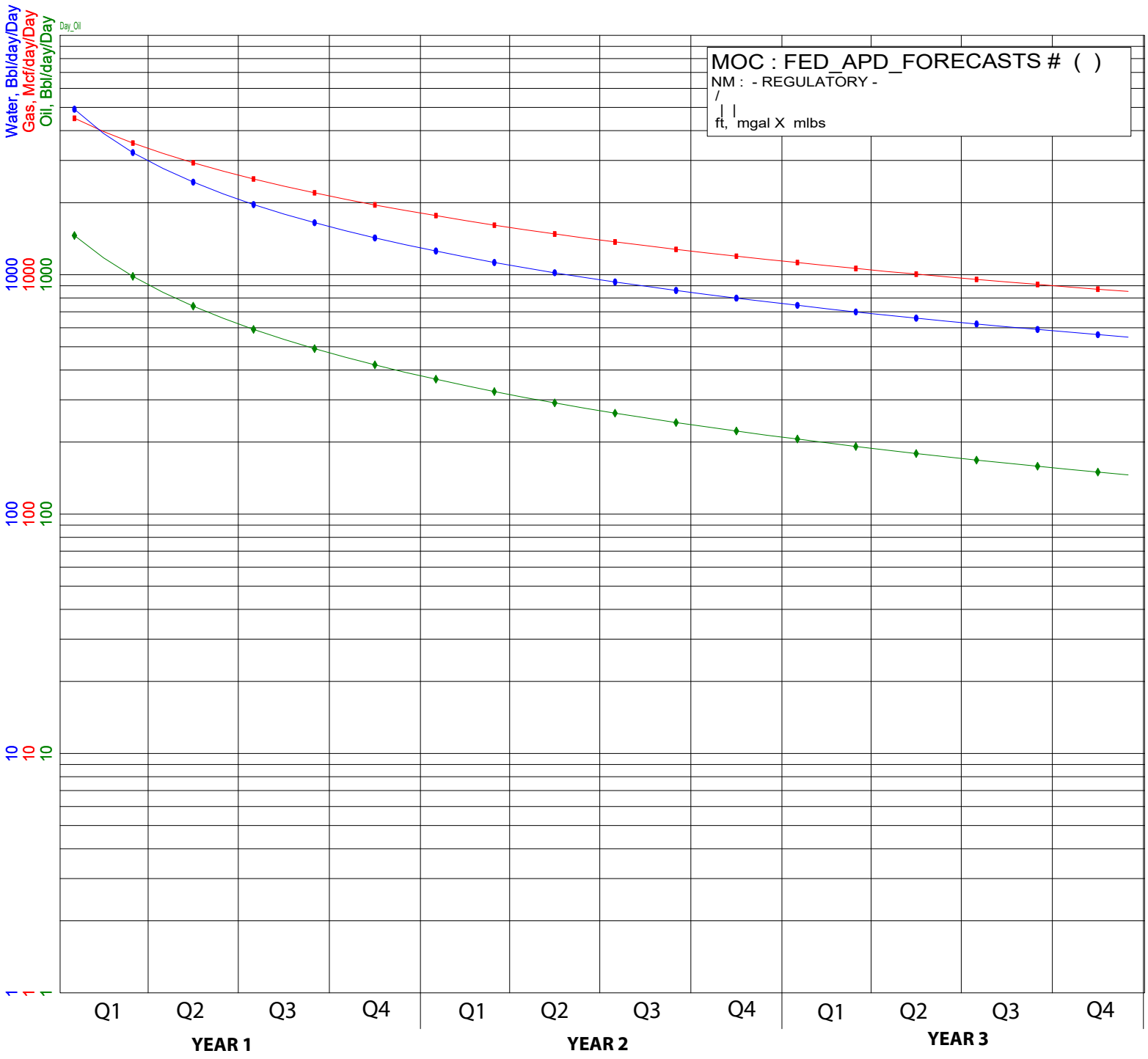
D. Natural gas will not be flared with the exceptions and provisions listed in the 19.15.27.8 D.(1) through (4). If there is no adequate takeaway for the separator gas, well(s) will be shut in until the natural gas gathering system is available with exception of emergency or malfunction situations. Venting 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 pressure venting 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 the diversion of natural gas around the metering element except for the sole purpose of inspecting and servicing the measurement equipment.

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



Oil, Bbl/day
Qual=EDDYWFMP2.5
Ref= 1/2025
Cum= 0
Rem= 430408
EUR= 430408
Yrs= 3.000
Qi= 1645.0
b= 0.950000
De= 77.000000
Df= 24.155973
Qab= 143.9

Gas, Mcf/day
Qual=EDDYWFMP2.5
Ref= 1/2025
Cum= 0
Rem= 1903434
EUR= 1903434
Yrs= 3.000
Qi= 4825.0
b= 1.100000
De= 62.500000
Df= 20.355806
Qab= 841.9

Water, Bbl/d
Qual=EDDYWFMP2.5
Ref= 1/2025
Cum= 0
Rem= 1474750
EUR= 1474750
Yrs= 3.000
Qi= 5625.0
b= 1.100000
De= 77.000000
Df= 21.653105
Qab= 542.2

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

Drilling Plan Data Report
05/06/2025

APD ID: 10400102933
Submission Date: 01/03/2025
Operator Name: MEWBOURNE OIL COMPANY
Well Name: FORTY NINER RIDGE UNIT COM
Well Number: 144H
Well Type: OIL WELL
Well Work Type: Drill

Highlighted data reflects the most recent changes

Show Final Text

Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical	Measured Depth	Lithologies	Mineral Resources	Producing Formatio
15514835	UNKNOWN	3135	28	28	OTHER : Topsoil	NONE	N
15514847	TOP SALT	2785	350	350	SALT	NONE	N
15514843	LAMAR	-390	3525	3525	LIMESTONE	NATURAL GAS, OIL	N
15514839	BELL CANYON	-415	3550	3573	SANDSTONE	NATURAL GAS, OIL	N
15514840	CHERRY CANYON	-1340	4475	4505	SANDSTONE	NATURAL GAS, OIL	N
15514841	MANZANITA	-1490	4625	4657	LIMESTONE	NATURAL GAS, OIL	N
15514848	BRUSHY CANYON	-2640	5775	5815	SANDSTONE	NATURAL GAS, OIL	N
15514834	BONE SPRING	-4240	7375	7427	LIMESTONE, SHALE	NATURAL GAS, OIL	Y
15514837	BONE SPRING 1ST	-5265	8400	8460	SANDSTONE	NATURAL GAS, OIL	N
15514838	BONE SPRING 2ND	-5885	9020	9085	SANDSTONE	NATURAL GAS, OIL	N
15514816	BONE SPRING 3RD	-7195	10330	10410	SANDSTONE	NATURAL GAS, OIL	N
15514851	WOLFCAMP	-7635	10770	11219	LIMESTONE, SANDSTONE, SHALE	NATURAL GAS, OIL	Y

Section 2 - Blowout Prevention

Pressure Rating (PSI): 5M
Rating Depth: 24015

Equipment: Annular, Pipe Rams, Blind Rams

Requesting Variance? YES

Variance request: A variance is requested for the use of a flexible 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. If a breaktesting variance is approved & incorporated, API Standard 53 will be incorporated and

Operator Name: MEWBOURNE OIL COMPANY

Well Name: FORTY NINER RIDGE UNIT COM **Well Number:** 144H

testing annular BOP to 70% of RWP or 100% of MASP, whichever is greater, will be performed.

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:

5M_BOPE_Choke_Diagram_20241230081543.pdf

3_String_Cactus_Wellhead_Schematic_20241230081545.pdf

BOP Diagram Attachment:

3_String_Multi_Bowl_WH_20241230081554.pdf

5M_BOPE_Schematic_20241230081554.pdf

Flex_Line_Specs_API_16C_20241230081556.pdf

Mewbourne_Break_Testing_Variance_20241230081603.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	17.5	13.375	NEW	API	N	0	300	0	300	3129	2829	300	H-40	48	ST&C	5.74	12.9	DRY	22.36	DRY	37.57
2	INTERMEDIATE	12.25	9.625	NEW	API	N	0	3385	0	3385	3220	-256	3385	J-55	36	LT&C	1.13	1.96	DRY	3.72	DRY	4.63
3	PRODUCTION	8.75	7.0	NEW	API	N	0	10556	0	10494	3220	-7365	10556	P-110	26	LT&C	1.18	1.88	DRY	2.52	DRY	3.02
4	LINER	6.125	4.5	NEW	API	N	10356	24015	10254	11047	-7125	-7918	13659	P-110	13.5	LT&C	1.67	1.94	DRY	1.83	DRY	2.29

Casing Attachments

Operator Name: MEWBOURNE OIL COMPANY

Well Name: FORTY NINER RIDGE UNIT COM **Well Number:** 144H

Casing Attachments

Casing ID: 1 **String** SURFACE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

13.375in_48__H40_STC_Csg_20241230081655.pdf

Casing ID: 2 **String** INTERMEDIATE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

9.625in_36__J55_LTC_Csg_20241230081732.pdf

Casing ID: 3 **String** PRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

7in_26__P110_LTC_Csg_20241230081819.pdf

Operator Name: MEWBOURNE OIL COMPANY

Well Name: FORTY NINER RIDGE UNIT COM **Well Number:** 144H

Casing Attachments

Casing ID: 4 **String** LINER

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

4.5in_13.5__P110_LTC_Csg_20241230081858.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	116	80	2.12	12.5	170	100	Class C	Salt, Gel, Extender, LCM
SURFACE	Tail		116	300	200	1.34	14.8	268	100	Class C	Retarder
INTERMEDIATE	Lead		0	2769	510	2.12	12.5	1090	25	Class C	Salt, Gel, Extender, LCM
INTERMEDIATE	Tail		2769	3450	200	1.34	14.8	268	25	Class C	Retarder
PRODUCTION	Lead		4450	7497	220	2.12	12.5	470	0	Class C	Gel, Retarder, Defoamer, Extender
PRODUCTION	Tail		7497	10556	400	1.18	15.6	472	0	Class C	Retarder
LINER	Lead		10356	24015	870	1.85	13.5	1610	25	Class C	Salt, Gel, Fluid Loss, Retarder, Dispersant, Defoamer, Anti-Settling Agent

Operator Name: MEWBOURNE OIL COMPANY

Well Name: FORTY NINER RIDGE UNIT COM **Well Number:** 144H

Section 5 - Circulating Medium

Mud System Type: Closed

Will an air or gas system be Used? NO

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

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

Describe what will be on location to control well or mitigate other conditions: Lost circulation material Sweeps Mud scavengers in surface hole

Describe the mud monitoring system utilized: 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	300	SPUD MUD	8.4	8.6							
300	3450	SALT SATURATED	10	10.2							
3450	10556	WATER-BASED MUD	8.6	9.7							
10556	24015	OIL-BASED MUD	10	11.1							

Section 6 - Test, Logging, Coring

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

Will run GR/CNL from KOP (10556') to surface (horizontal well vertical portion of hole). Stated logs run will be in the Completion Report and submitted to the BLM.

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

DIRECTIONAL SURVEY,MEASUREMENT WHILE DRILLING,MUD LOG/GEOLOGIC LITHOLOGY LOG,GAMMA RAY LOG,COMPENSATED NEUTRON LOG,

Coring operation description for the well:

None

Operator Name: MEWBOURNE OIL COMPANY

Well Name: FORTY NINER RIDGE UNIT COM **Well Number:** 144H

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 6388 **Anticipated Surface Pressure:** 3953

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

H2S_Plan_20241230082353.pdf

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

Forty_Niner_Ridge_Unit_144H_MOC_Dir_Plan_20250124090059.pdf
Forty_Niner_Ridge_Unit_144H_MOC_Dir_Plot_20250124090059.pdf

Other proposed operations facets description:

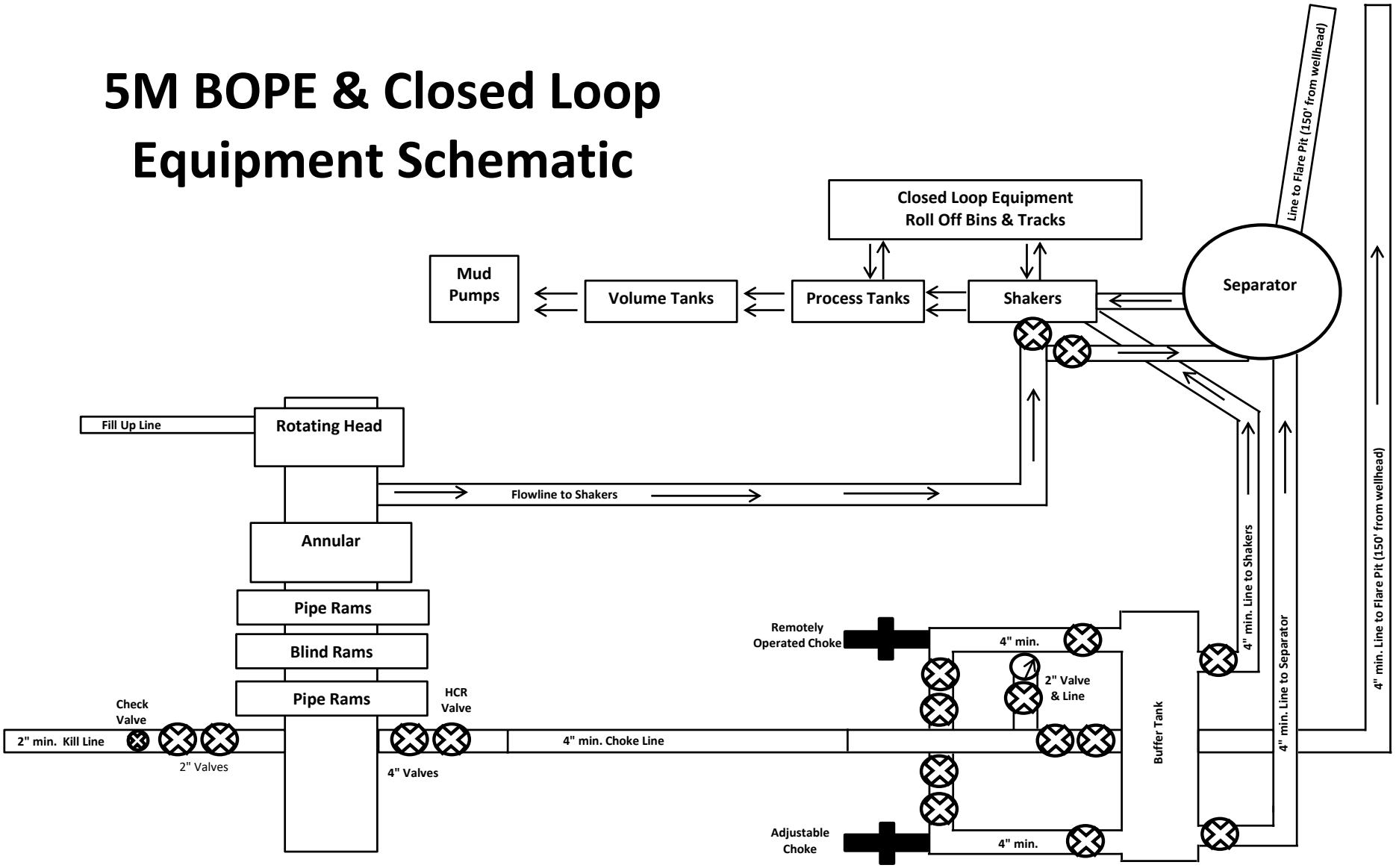
Other proposed operations facets attachment:

Forty_Niner_Ridge_Unit_144H_NGMP_20250103105022.pdf
Forty_Niner_Ridge_Unit_144H_Drlg_Program_20250124090114.pdf

Other Variance attachment:

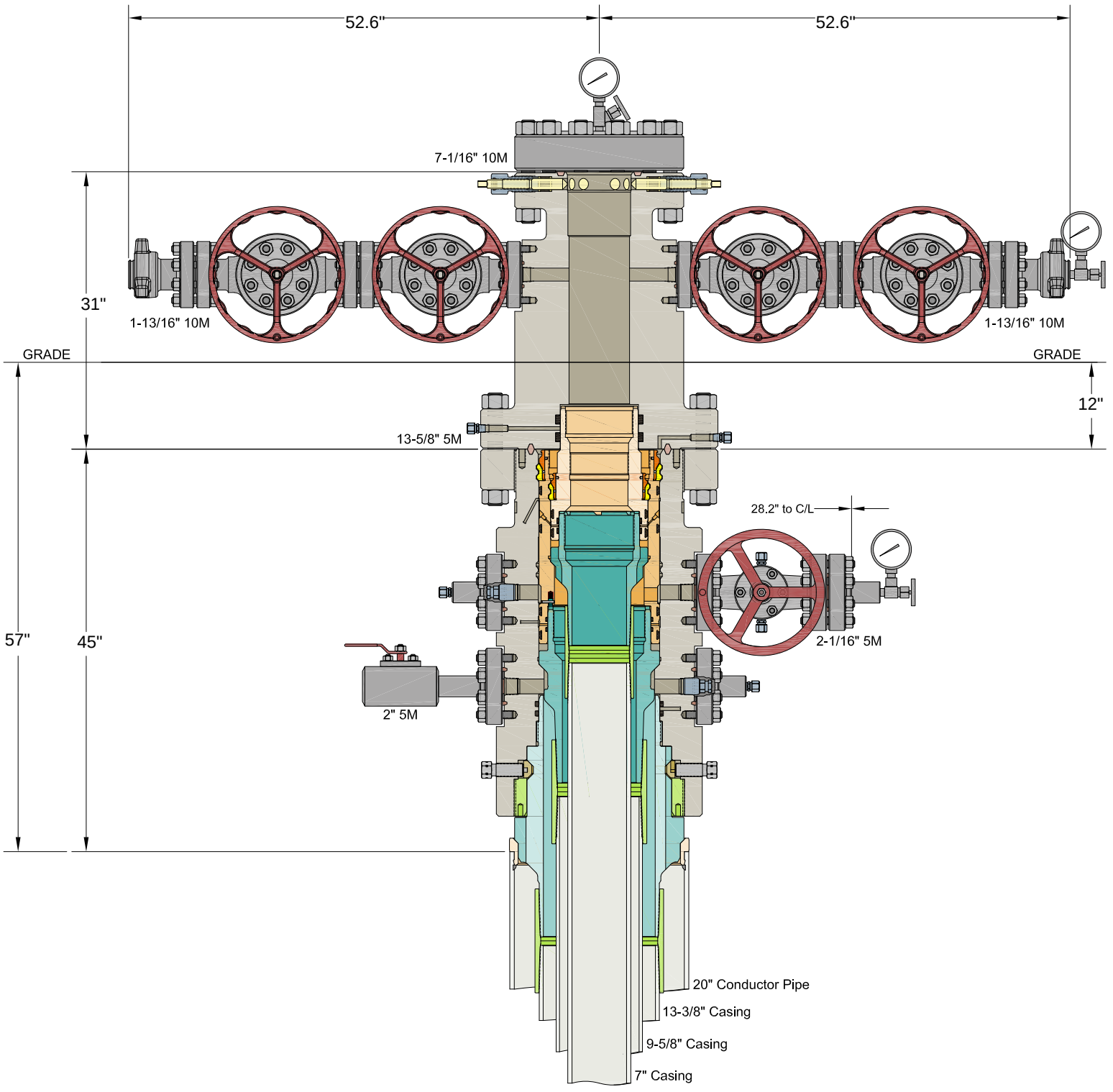
Mewbourne_Break_Testing_Variance_20241230082549.pdf
Mewbourne_Offline_Cementing_Variance_20241230082530.pdf
Forty_Niner_Ridge_Unit_144H_R_111Q_Csg___Cmt_Assumptions_20250103105033.pdf

5M BOPE & Closed Loop Equipment Schematic



Drawing not to scale

Note: All valves & lines on choke manifold are 4" unless otherwise noted. Exact manifold configuration may vary.

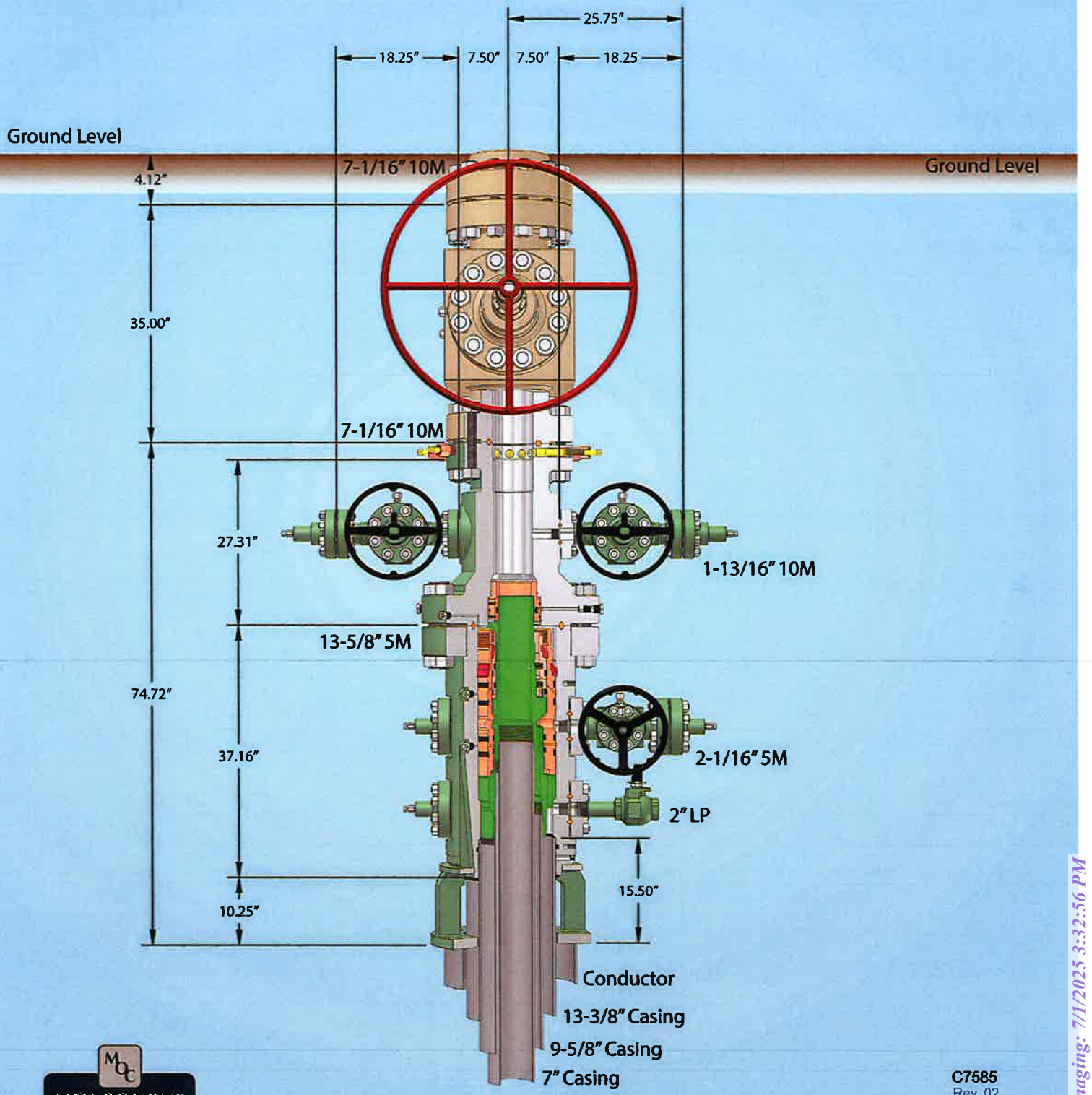


ALL DIMENSIONS APPROXIMATE

CACTUS WELLHEAD LLC	MEWBOURNE OIL COMPANY NEW MEXICO		
20" x 13-3/8" x 9-5/8" x 7" MBU-3T-CFL-R-DBLO Wellhead System With 9-5/8" & 7" Fluted Mandrel Casing Hangers And 13-5/8" 5M x 7-1/16" 10M CTH-DBLHPS Tubing Head	DRAWN	DLE	18APR22
	APPRV		
	DRAWING NO.	HBE0000660	

CAMERON
A Schlumberger Company

13-5/8" MN-DS Wellhead System



MEWBOURNE OIL COMPANY

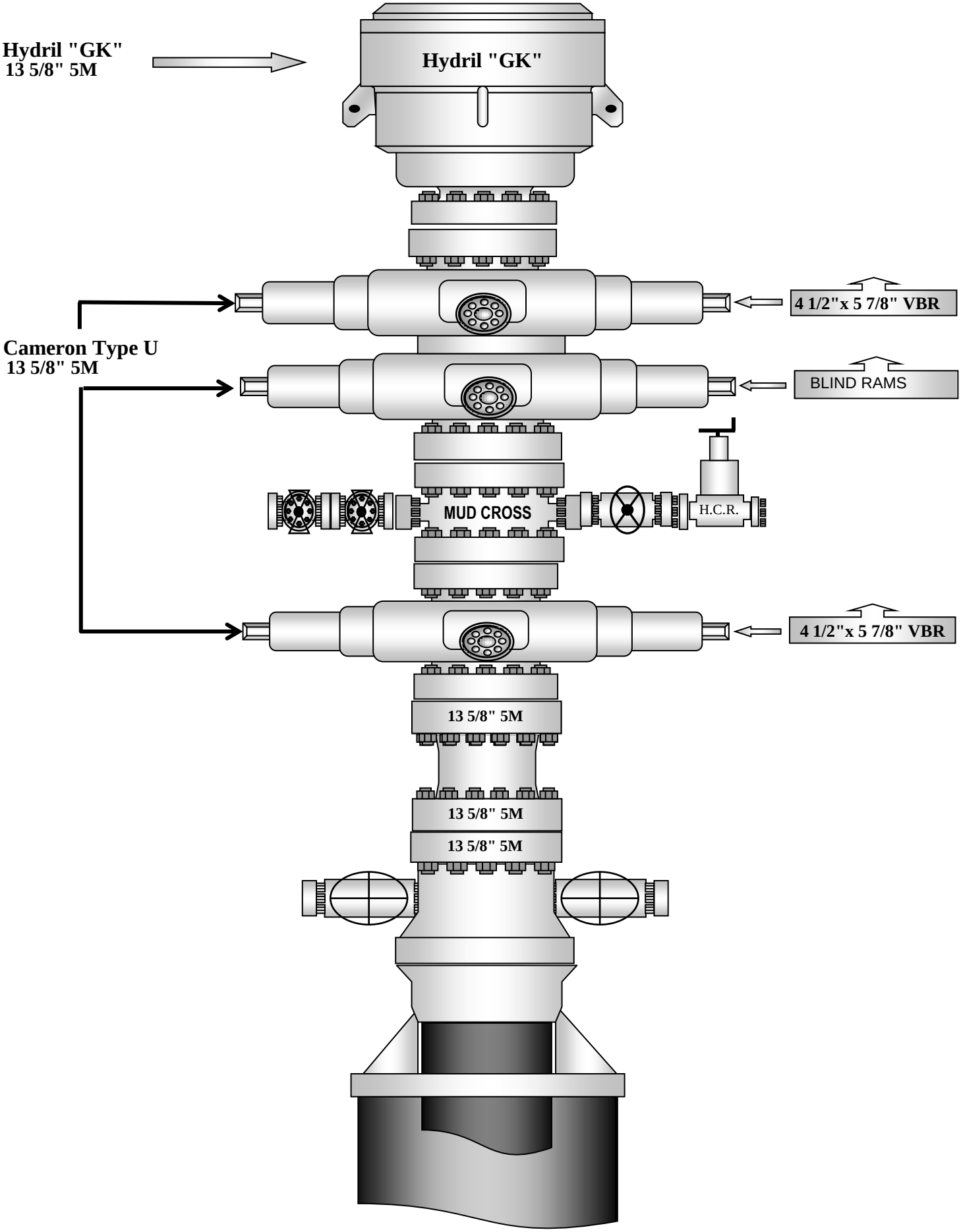
C7585
Rev. 02

NOTE: All dimensions on this drawing are estimated measurements and should be evaluated by engineering.

Capping flange 57" conductor cut-off

79

5M BOPE Schematic



LETONE

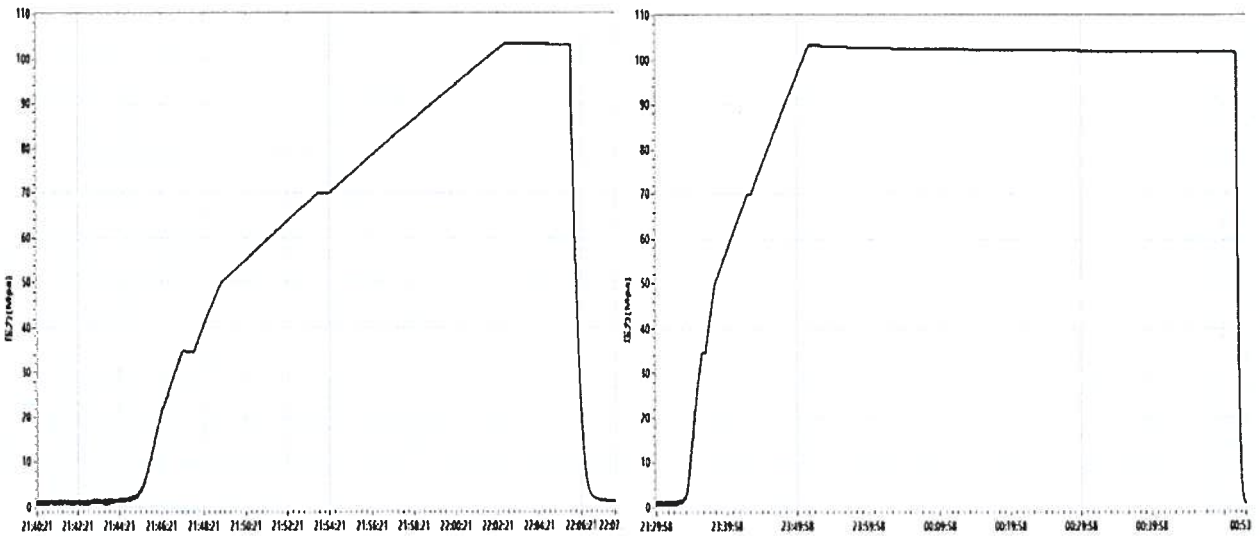
LUOHE LETONE HYDRAULICS TECHNOLOGY CO.,LTD

HYDROSTATIC TESTING REPORT

LTYY/QR-5.7.1-28 №: 230826015

Product Name	Choke And Kill Hose	Standard	API Spec 16C 3rd edition
Product Specification	3″×10000psi×60ft（18.29m）	Serial Number	7660144
Inspection Equipment	MTU-BS-1600-3200-E	Test medium	Water
Inspection Department	Q.C. Department	Inspection Date	2023.08.26
Rate of length change			
Standard requirements	At working pressure ,the rate of length change should not more than ±2%		
Testing result	10000psi (69.0MPa) ,Rate of length change 0.7%		
Hydrostatic testing			
Standard requirements	At 1.5 times working pressure, the initial pressure-holding period of not less than three minutes, the second pressure-holding period of not less than one hour, no leaks.		
Testing result	15000psi (103.5MPa), 3 min for the first time, 60 min for the second time, no leakage		

Graph of pressure testing:



Conclusion	The inspected items meet standard requirements of API Spec 16C 3rd edition				
Approver	Jiaolong Chen	Auditor	Hliqing Dong	Inspector	Zhansheng Wang

LETONE

LUOHE LETONE HYDRAULICS TECHNOLOGY CO.,LTD

CERTIFICATE OF QUALITY

LTYY/QR-5.7.1-19B №: LT2023-126-002

Customer Name	Austin Hose		
Product Name	Choke And Kill Hose		
Product Specification	3″×10000psi×60ft（18.29m）	Quantity	2PCS
Serial Number	7660143~7660144	FSL	FSL3
Temperature Range	-29℃～+121℃	Standard	API Spec 16C 3rd edition
Inspection Department	Q.C. Department	Inspection date	2023.08.26

Inspection Items	Inspection results
Appearance Checking	In accordance with API Spec 16C 3rd edition
Size and Lengths	In accordance with API Spec 16C 3rd edition
Dimensions and Tolerances	In accordance with API Spec 16C 3rd edition
End Connections: 4-1/16″×10000psi Integral flange for sour gas service	In accordance with API Spec 6A 21st edition
End Connections: 4-1/16″×10000psi Integral flange for sour gas service	In accordance with API Spec 17D 3rd edition
Hydrostatic Testing	In accordance with API Spec 16C 3rd edition
product Marking	In accordance with API Spec 16C 3rd edition
Inspection conclusion	The inspected items meet standard requirements of API Spec 16C 3rd edition
Remarks	

Approver	Jiaolong Chen	Auditor	Hliqing Dong	Inspector	Zhansheng Wang

LETONE

LUOHE LETONE HYDRAULICS TECHNOLOGY CO.,LTD

CERTIFICATE OF CONFORMANCE

№:LT230826016

Product Name：Choke And Kill Hose

Product Specification：3″×10000psi×60ft（18.29m）

Serial Number：7660143~7660144

End Connections: 4-1/16″×10000psi Integral flange for sour gas service

The Choke And Kill Hose assembly was produced by LUOHE LETONE HYDRAULICS TECHNOLOGY CO.,LTD . in Aug 2023, and inspected by LUOHE LETONE HYDRAULICS TECHNOLOGY CO.,LTD. according to API Spec 16C 3rd edition on Aug 26, 2023. The overall condition is good. This is to certify that the Choke And Kill Hose complies with all current standards and specifications for API Spec 16C 3rd edition .

QC Manager：Jiaolong Chen　　Date:Aug 26, 2023

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.

MEWBOURNE
OIL COMPANY

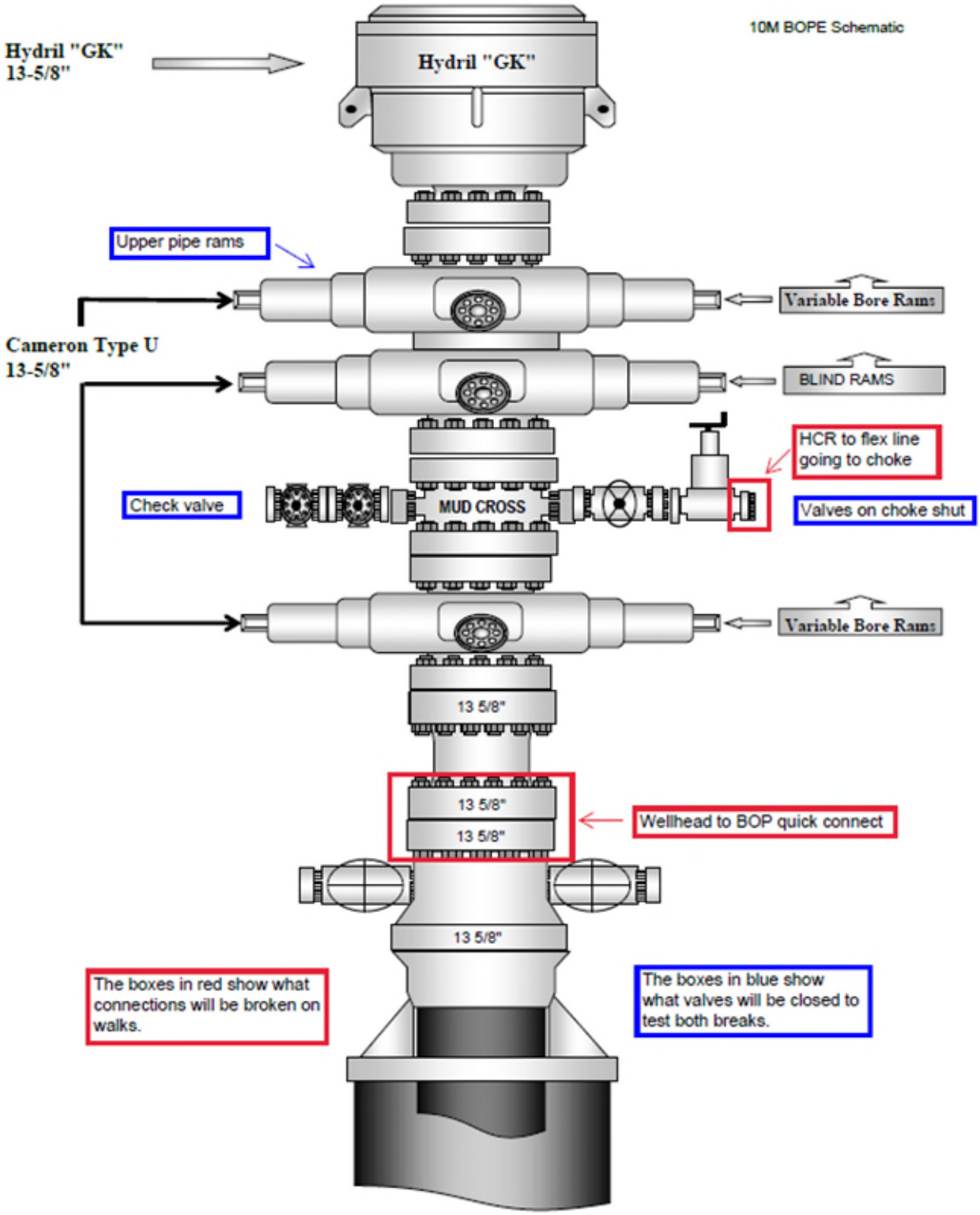


Figure 1. BOP diagram

MEWBOURNE
OIL COMPANY

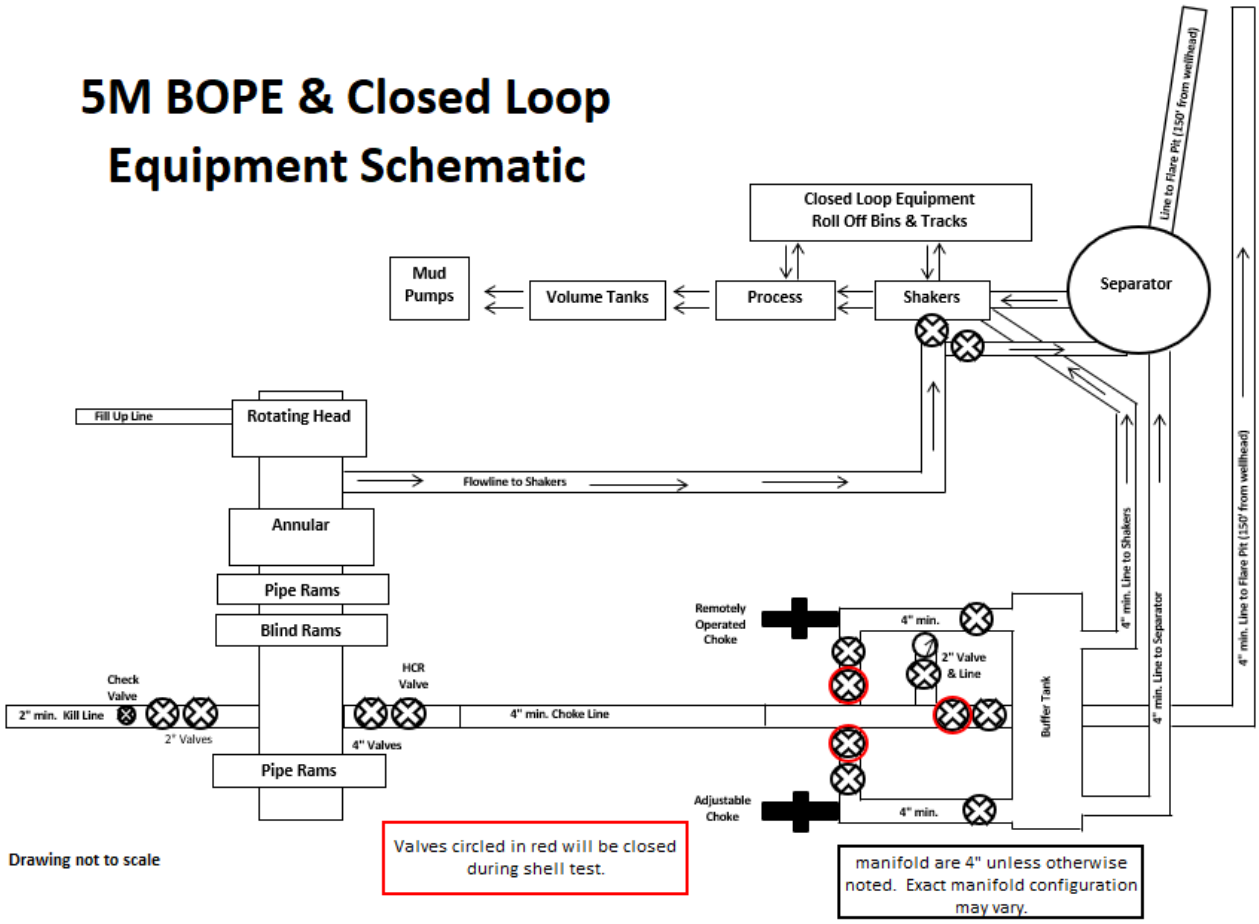


Figure 2. BOPE diagram

MEWBOURNE
OIL COMPANY

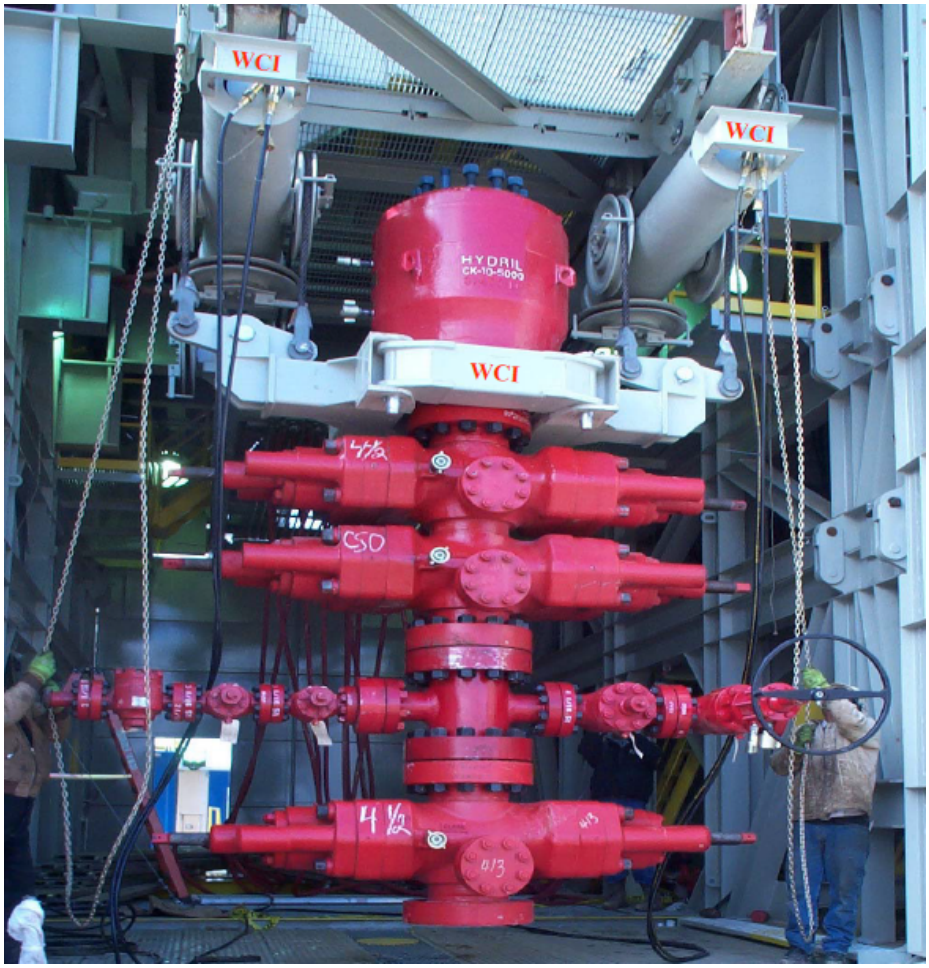


Figure 3. BOP handling system

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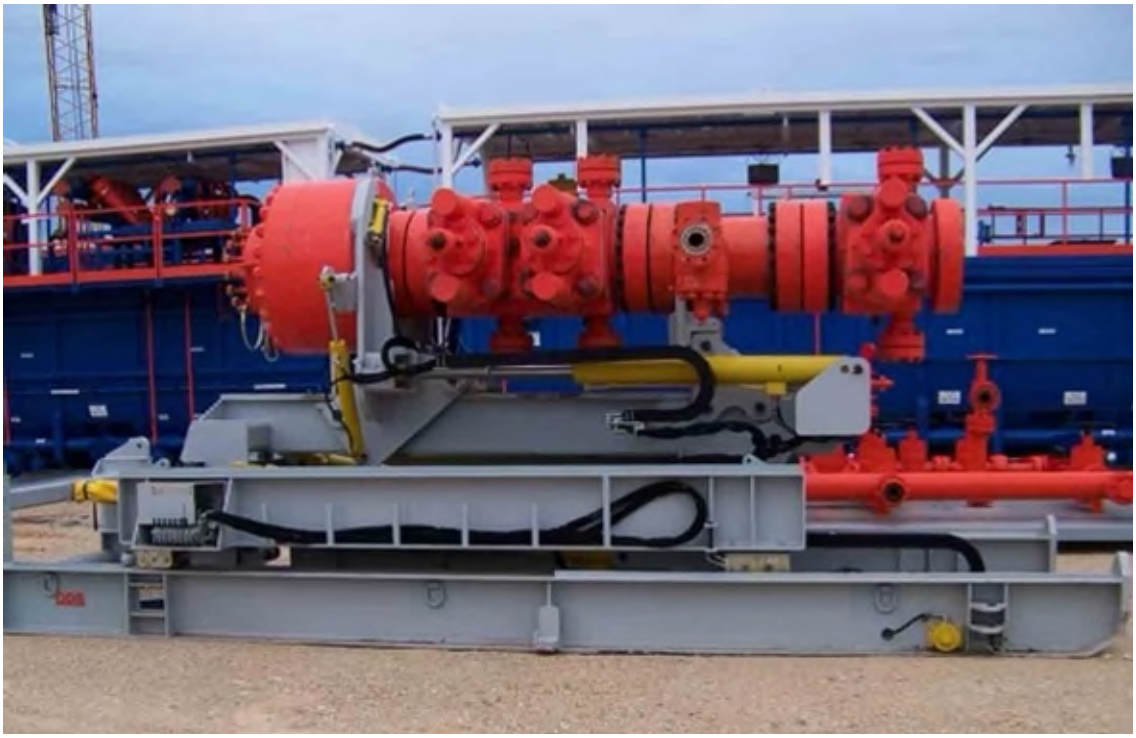

Figure 4. BOP handling system

MEWBOURNE
OIL COMPANY

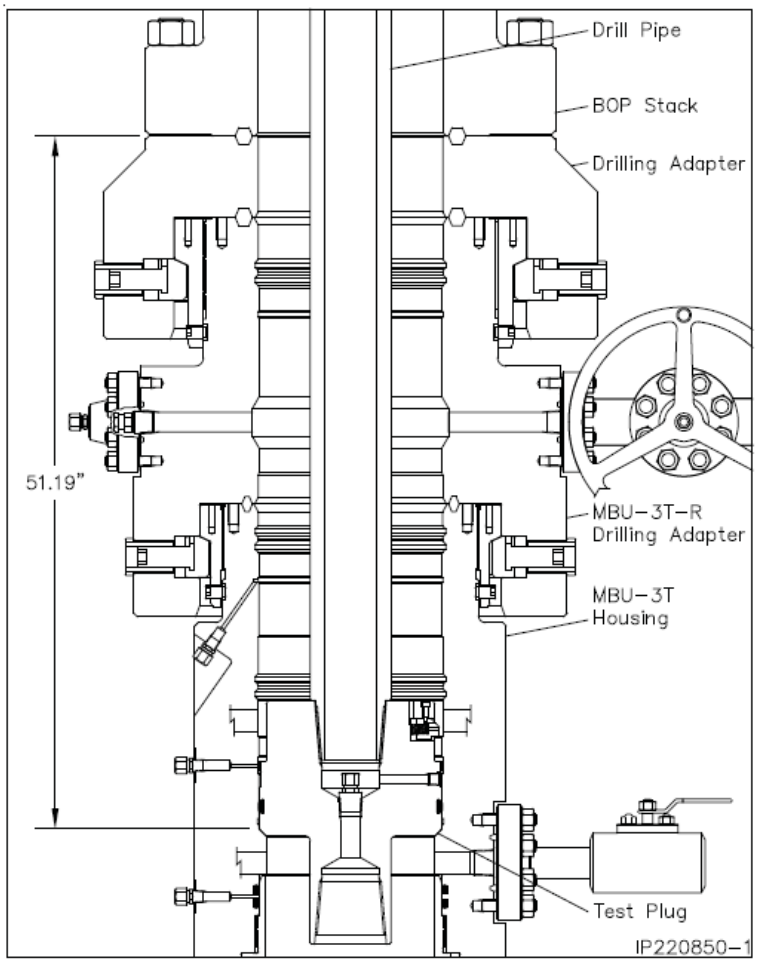

Figure 5. Cactus 5M wellhead with BOP quick connect

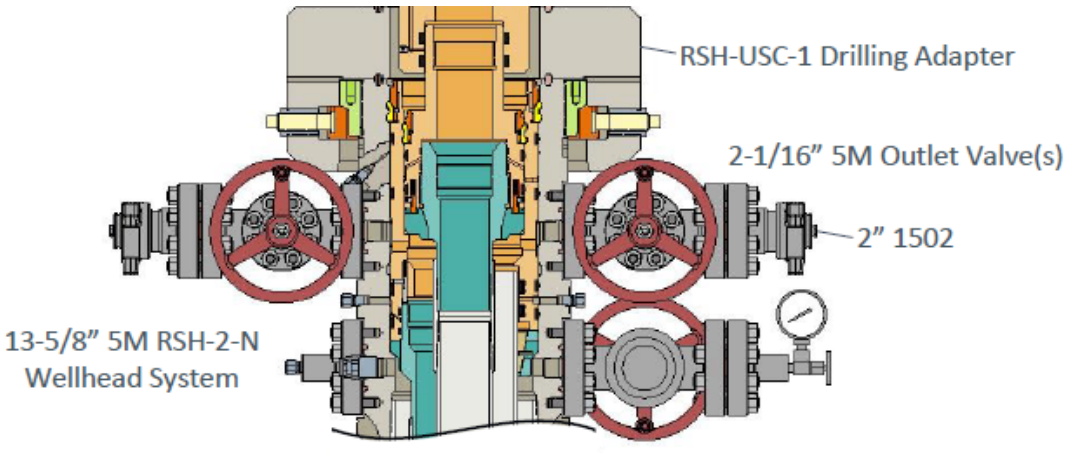

Figure 6. Vault 5M wellhead with BOP quick connect

Tenaris

API STC

Coupling	Pipe Body
Grade: **H40**	Grade: **H40**
Body: **-**	1st Band: **Black**
1st Band: **Black**	2nd Band: **-**
2nd Band: **-**	3rd Band: **-**
3rd Band: **-**	4th Band: **-**

Outside Diameter	13.375 in.	**Wall Thickness**	0.330 in.	**Grade**	H40
Min. Wall Thickness	87.50 %	**Pipe Body Drift**	API Standard	**Type**	Casing
Connection OD Option	Regular				

Pipe Body Data

Geometry				Performance	
Nominal OD	13.375 in.	**Drift**	12.559 in.	**SMYS**	40,000 psi
Wall Thickness	0.330 in.	**Plain End Weight**	46.02 lb/ft	**Min UTS**	60,000 psi
Nominal Weight	48 lb/ft	**OD Tolerance**	API	**Body Yield Strength**	541 x1000 lb
Nominal ID	12.715 in.			**Min. Internal Yield Pressure**	1730 psi
				Collapse Pressure	740 psi
				Max. Allowed Bending	14 °/100 ft

Connection Data

Geometry		Performance		Make-Up Torques	
Thread per In	8	**Joint Strength**	322 x1000 lb	**Minimum Torque**	2420 ft-lb
Connection OD	14.375 in.	**Coupling Face Load**	377 x1000 lb	**Optimum Torque**	3220 ft-lb
Hand Tight Stand Off	3.500 in.	**Internal Pressure Capacity**	1730 psi	**Maximum Torque**	4030 ft-lb

Notes

For products according to API Standards 5CT & 5B; Performance calculated considering API Technical Report 5C3 (Sections 9 & 10) equations.
For geometrical and steel grades combinations not considered in the API Standards 5CT and/or 5B; Performance calculations indirectly derived from API Technical Report 5C3 (Sections 9 & 10) equations.
Couplings OD are shown according to current API 5CT 10th Edition.

Tenaris

API LTC

Coupling	Pipe Body
Grade: **J55 (Casing)**	Grade: **J55 (Casing)**
Body: **Bright Green**	1st Band: **Bright Green**
1st Band: **White**	2nd Band: **-**
2nd Band: **-**	3rd Band: **-**
3rd Band: **-**	4th Band: **-**

Outside Diameter	9.625 in.	**Wall Thickness**	0.352 in.	**Grade**	J55 (Casing)
Min. Wall Thickness	87.50 %	**Pipe Body Drift**	API Standard	**Type**	Casing
Connection OD Option	Regular				

Pipe Body Data

Geometry				Performance	
Nominal OD	9.625 in.	**Drift**	8.765 in.	**SMYS**	55,000 psi
Wall Thickness	0.352 in.	**Plain End Weight**	34.89 lb/ft	**Min UTS**	75,000 psi
Nominal Weight	36 lb/ft	**OD Tolerance**	API	**Body Yield Strength**	564 x1000 lb
Nominal ID	8.921 in.			**Min. Internal Yield Pressure**	3520 psi
				Collapse Pressure	2020 psi
				Max. Allowed Bending	26 °/100 ft

Connection Data

Geometry		Performance		Make-Up Torques	
Thread per In	8	**Joint Strength**	453 x1000 lb	**Minimum Torque**	3400 ft-lb
Connection OD	10.625 in.	**Coupling Face Load**	433 x1000 lb	**Optimum Torque**	4530 ft-lb
Hand Tight Stand Off	3.500 in.	**Internal Pressure Capacity**	3520 psi	**Maximum Torque**	5660 ft-lb

Notes

For products according to API Standards 5CT & 5B; Performance calculated considering API Technical Report 5C3 (Sections 9 & 10) equations.
For geometrical and steel grades combinations not considered in the API Standards 5CT and/or 5B; Performance calculations indirectly derived from API Technical Report 5C3 (Sections 9 & 10) equations.
Couplings OD are shown according to current API 5CT 10th Edition.

Tenaris

API LTC

Coupling	Pipe Body
Grade: **P110**	Grade: **P110**
Body: **White**	1st Band: **White**
1st Band: **-**	2nd Band: **-**
2nd Band: **-**	3rd Band: **-**
3rd Band: **-**	4th Band: **-**

Outside Diameter	7.000 in.	**Wall Thickness**	0.362 in.	**Grade**	P110
Min. Wall Thickness	87.50 %	**Pipe Body Drift**	API Standard	**Type**	Casing
Connection OD Option	Regular				

Pipe Body Data

Geometry				Performance	
Nominal OD	7.000 in.	**Drift**	6.151 in.	**SMYS**	110,000 psi
Wall Thickness	0.362 in.	**Plain End Weight**	25.69 lb/ft	**Min UTS**	125,000 psi
Nominal Weight	26 lb/ft	**OD Tolerance**	API	**Body Yield Strength**	830 x1000 lb
Nominal ID	6.276 in.			**Min. Internal Yield Pressure**	9960 psi
				Collapse Pressure	6230 psi
				Max. Allowed Bending	72 °/100 ft

Connection Data

Geometry		Performance		Make-Up Torques	
Thread per In	8	**Joint Strength**	693 x1000 lb	**Minimum Torque**	5200 ft-lb
Connection OD	7.875 in.	**Coupling Face Load**	799 x1000 lb	**Optimum Torque**	6930 ft-lb
Hand Tight Stand Off	3 in.	**Internal Pressure Capacity**	9960 psi	**Maximum Torque**	8660 ft-lb

Notes

For products according to API Standards 5CT & 5B; Performance calculated considering API Technical Report 5C3 (Sections 9 & 10) equations.
For geometrical and steel grades combinations not considered in the API Standards 5CT and/or 5B; Performance calculations indirectly derived from API Technical Report 5C3 (Sections 9 & 10) equations.
Couplings OD are shown according to current API 5CT 10th Edition.

Tenaris

API LTC

Coupling	Pipe Body
Grade: **P110**	Grade: **P110**
Body: **White**	1st Band: **White**
1st Band: **-**	2nd Band: **-**
2nd Band: **-**	3rd Band: **-**
3rd Band: **-**	4th Band: **-**

Outside Diameter	4.500 in.	**Wall Thickness**	0.290 in.	**Grade**	P110
Min. Wall Thickness	87.50 %	**Pipe Body Drift**	API Standard	**Type**	Casing
Connection OD Option	Regular				

Pipe Body Data

Geometry				Performance	
Nominal OD	4.500 in.	**Drift**	3.795 in.	**SMYS**	110,000 psi
Wall Thickness	0.290 in.	**Plain End Weight**	13.05 lb/ft	**Min UTS**	125,000 psi
Nominal Weight	13.500 lb/ft	**OD Tolerance**	API	**Body Yield Strength**	422 x1000 lb
Nominal ID	3.920 in.			**Min. Internal Yield Pressure**	12,410 psi
				Collapse Pressure	10,690 psi
				Max. Allowed Bending	112 °/100 ft

Connection Data

Geometry		Performance		Make-Up Torques	
Thread per In	8	**Joint Strength**	338 x1000 lb	**Minimum Torque**	2750 ft-lb
Connection OD	5.250 in.	**Coupling Face Load**	473 x1000 lb	**Optimum Torque**	3660 ft-lb
Hand Tight Stand Off	3 in.	**Internal Pressure Capacity**	12,410 psi	**Maximum Torque**	4580 ft-lb

Notes

For products according to API Standards 5CT & 5B; Performance calculated considering API Technical Report 5C3 (Sections 9 & 10) equations.
For geometrical and steel grades combinations not considered in the API Standards 5CT and/or 5B; Performance calculations indirectly derived from API Technical Report 5C3 (Sections 9 & 10) equations.
Couplings OD are shown according to current API 5CT 10th Edition.

Mewbourne Oil Company, Forty Niner Ridge Unit 144H
Sec 16, T23S, R30E
SHL: 2350' FNL 1580' FWL (Sec 16)
BHL: 330' FNL 2310' FWL (Sec 4)

Well Location **GL: 3129'**

Point	Calls	Leases	Aliquot	Section	Township	Range	County	Lat	Long	TVD	MD
SHL	SHL: 2350' FNL & 1580' FWL (Sec 16)	State	SENW	16	23S	30E	Eddy	32.3059153	- 103.8897489	0'	0'
KOP	KOP: 2413' FSL & 2310' FWL (Sec 16)	State	NESW	16	23S	30E	Eddy	32.3044325	- 103.8873859	10,494'	10,556'
FTP	FTP: 2312' FNL & 2310' FWL (Sec 16)	State	SENW	16	23S	30E	Eddy	32.3060073	- 103.8873888	11,067'	11,456'
PPP2	PPP2: 0' FSL & 2328' FWL (Sec 9)	NMNM104965	SESW	9	23S	30E	Eddy	32.3123605	- 103.8874008	11,063'	13,767'
PPP3	PPP3: 0' FSL & 2328' FWL (Sec 4)	NMNM0543280	SESW	4	23S	30E	Eddy	32.3268928	- 103.8874282	11,055'	19,054'
PPP4	PPP4: 2618' FNL & 2318' FWL (Sec 4)	NMNM135243	SENW	4	23S	30E	Eddy	32.3341602	- 103.8881501	11,051'	21,697'
BHL	BHL: 330' FNL & 2310' FWL (Sec 4)	NMNM135243	NENW	4	23S	30E	Eddy	32.3405304	- 103.8874540	11,047'	24,015'

GEOLOGY

Formation	Est. Top (TVD)	Lithology	Mineral Resources	Formation	Est. Top (TVD)	Lithology	Mineral Resources
Rustler				Yeso			
Castile				Delaware (Lamar)	3525'	Limestone/Dolomite	Oil/Natural Gas
Salt Top	350'	Salt	None	Bell Canyon	3550'	Sandstone	Oil/Natural Gas
Marker Bed 126				Cherry Canyon	4475'	Sandstone	Oil/Natural Gas
Salt Base				Manzanita Marker	4625'	Limestone	Oil/Natural Gas
Yates				Basal Brushy Canyon	5775'	Sandstone	Oil/Natural Gas
Seven Rivers				Bone Spring	7375'	Limestone	Oil/Natural Gas
Queen				1st Bone Spring	8400'	Sandstone	Oil/Natural Gas
Capitan				2nd Bone Spring	9020'	Sandstone	Oil/Natural Gas
Grayburg				3rd Bone Spring	10330'	Sandstone	Oil/Natural Gas
San Andres				**Wolfcamp**	**10770'**	**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	17.5"	0'	0'	300'	300'	13.375" 48# H40 STC	5.74	12.90	22.36	37.57
Intermediate	12.25"	0'	0'	3385'	3385'	9.625" 36# J55 LTC	1.13	1.96	3.72	4.63
Production	8.75"	0'	0'	10556'	10494'	7" 26# P110 LTC	1.18	1.88	2.52	3.02
Liner	6.125"	10356'	10254'	24015'	11047'	4.5" 13.5# P110 LTC	1.67	1.94	1.83	2.29

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?	N
If yes, does production casing cement tie back a minimum of 50' above the Reef?	
Is well within the designated 4 string boundary.	N
Is well located in SOPA but not in R-111-Q?	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-Q and SOPA?	Y
If yes, are the first three strings cemented to surface?	N
Is 2nd string set 100' to 600' below the base of salt?	Y
Is an open annulus used to satisfy R-111-Q? If yes, see cement design.	Y
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, Forty Niner Ridge Unit 144H
Sec 16, T23S, R30E
SHL: 2350' FNL 1580' FWL (Sec 16)
BHL: 330' FNL 2310' FWL (Sec 4)

Design A - Cement Program

Csg. Size		# Sacks	Wt., lb/gal	Yield, ft^3/sack	TOC/BOC	Volume, ft^3	% Excess	Slurry Description
13.375 in	LEAD	80	12.5	2.12	0' - 116'	170	100%	Class C: Salt, Gel, Extender, LCM
	TAIL	200	14.8	1.34	116' - 300'	268		Class C: Retarder
9.625 in	LEAD	510	12.5	2.12	0' - 2769'	1090	25%	Class C: Salt, Gel, Extender, LCM
	TAIL	200	14.8	1.34	2769' - 3450'	268		Class C: Retarder
7 in	LEAD	220	12.5	2.12	4450' - 7497'	470	0%	Class C: Salt, Gel, Extender, LCM, Defoamer
	TAIL	400	15.6	1.18	7497' - 10556'	472		Class H: Retarder, Fluid Loss, Defoamer
4.5 in	LEAD	870	13.5	1.85	10356' - 24015'	1610	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
12.25	13.375	5M	Annular	X	2500#/3500#	24,015'
		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 flexible 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. If a breaktesting variance is approved & incorporated, API Standard 53 will be incorporated and testing annular BOP to 70% of RWP or 100% of MASP, whichever is greater, will be performed.

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' - 300'	8.4 - 8.6	Fresh Water
300' - 3450'	10.0 - 10.2	Brine
3450' - 10556'	8.6 - 9.7	Cut-Brine
10556' - 24015'	10.0 - 11.1	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

Mewbourne Oil Company, Forty Niner Ridge Unit 144H
Sec 16, T23S, R30E
SHL: 2350' FNL 1580' FWL (Sec 16)
BHL: 330' FNL 2310' FWL (Sec 4)

Logging and Testing Procedures

Logging, Coring and Testing.	
Y	Will run GR/CNL from KOP (10556') to surface (horizontal well – vertical portion of hole). Stated logs run will be in the Completion Report and submitted to the BLM.
N	No logs are planned based on well control or offset log information. Offset Well:
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	6388 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, Forty Niner Ridge Unit 144H
Sec 16, T23S, R30E
SHL: 2350' FNL 1580' FWL (Sec 16)
BHL: 330' FNL 2310' FWL (Sec 4)

Other facets of operation

Mewbourne Oil Company also requests approval to implement additional designs as described below &/or in other attachments. BLM will be notified of elected design.

Offline Cementing Variance: Variance is requested to perform offline cementing according to the attached procedure. **R-111Q:** Mewbourne proposes performing Open Hole Cementing per R-111Q Guidelines if well is in Potash.

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 Tension
Surface	17.5"	0'	0'	300'	300'	13.375" 48# H40 STC	5.74	12.90	22.36	37.57
Intermediate	12.25"	0'	0'	3385'	3385'	9.625" 36# J55 LTC	1.13	1.96	3.72	4.63
Production	8.75"	0'	0'	10556'	10494'	7 5/8" 29.7# HCP110 GBCD	1.35	1.79	2.45	3.00
Liner	6.75"	10356'	10254'	24015'	11047'	5.5" 20# P110 Talon	1.73	1.98	2.01	2.35

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.	Y
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?	N
If yes, does production casing cement tie back a minimum of 50' above the Reef?	
Is well within the designated 4 string boundary.	N
Is well located in SOPA but not in R-111-Q?	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-Q and SOPA?	Y
If yes, are the first three strings cemented to surface?	N
Is 2nd string set 100' to 600' below the base of salt?	Y
Is an open annulus used to satisfy R-111-Q? If yes, see cement design.	Y
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
13.375 in	LEAD	80	12.5	2.12	0' - 116'	170	100%	Class C: Salt, Gel, Extender, LCM
	TAIL	200	14.8	1.34	116' - 300'	268		Class C: Retarder
9.625 in	LEAD	510	12.5	2.12	0' - 2769'	1090	25%	Class C: Salt, Gel, Extender, LCM
	TAIL	200	14.8	1.34	2769' - 3450'	268		Class C: Retarder
7.625 in	LEAD	70	12.5	2.12	4450' - 5923'	150	0%	Class C: Salt, Gel, Extender, LCM, Defoamer
	TAIL	400	15.6	1.18	5923' - 10556'	472		Class H: Retarder, Fluid Loss, Defoamer
5.5 in	LEAD	380	13.5	1.85	10356' - 24015'	710	25%	Class H: Salt, Gel, Fluid Loss, Retarder, Dispersant, Defoamer, Anti-settling Agent

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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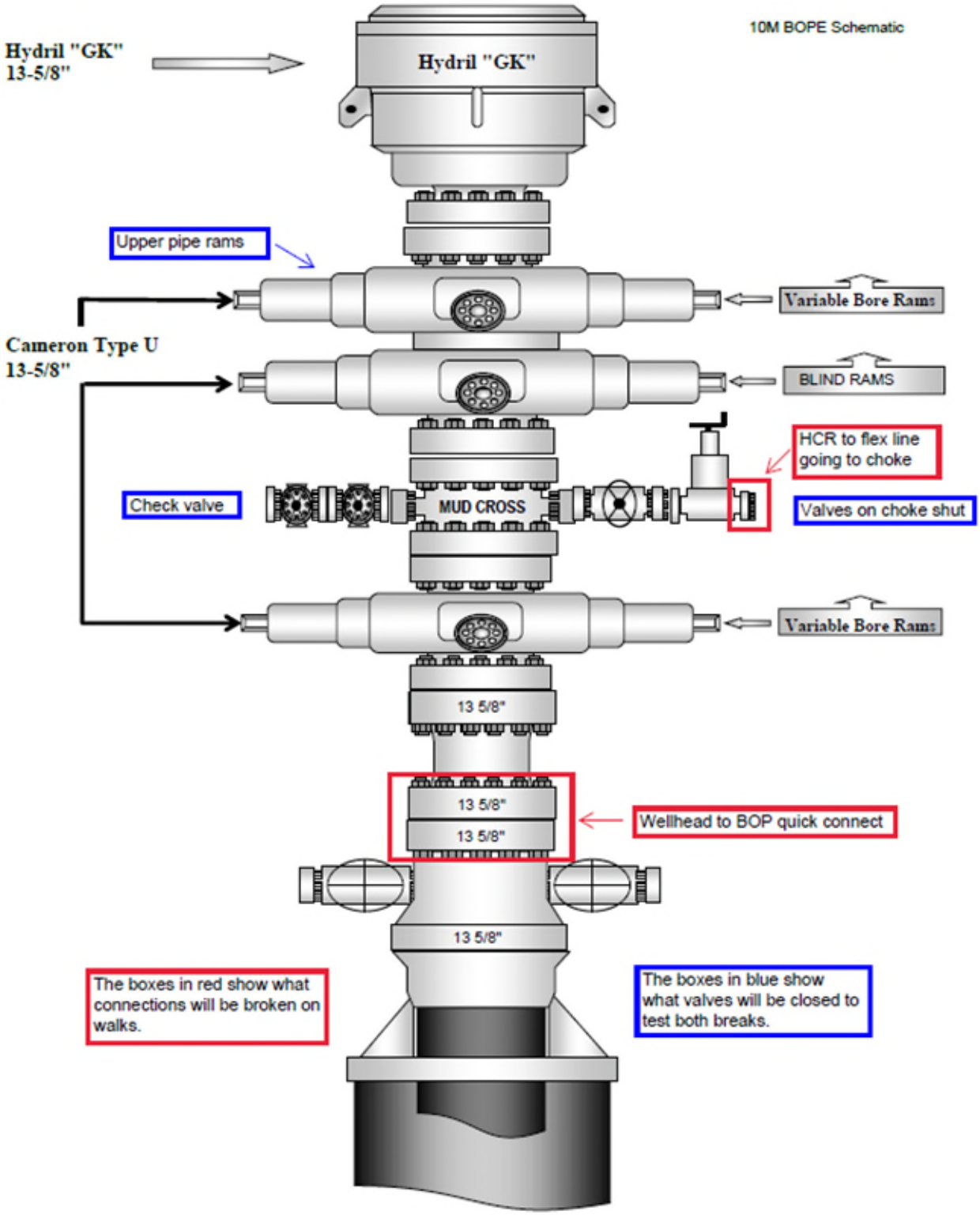

Figure 1. BOP diagram

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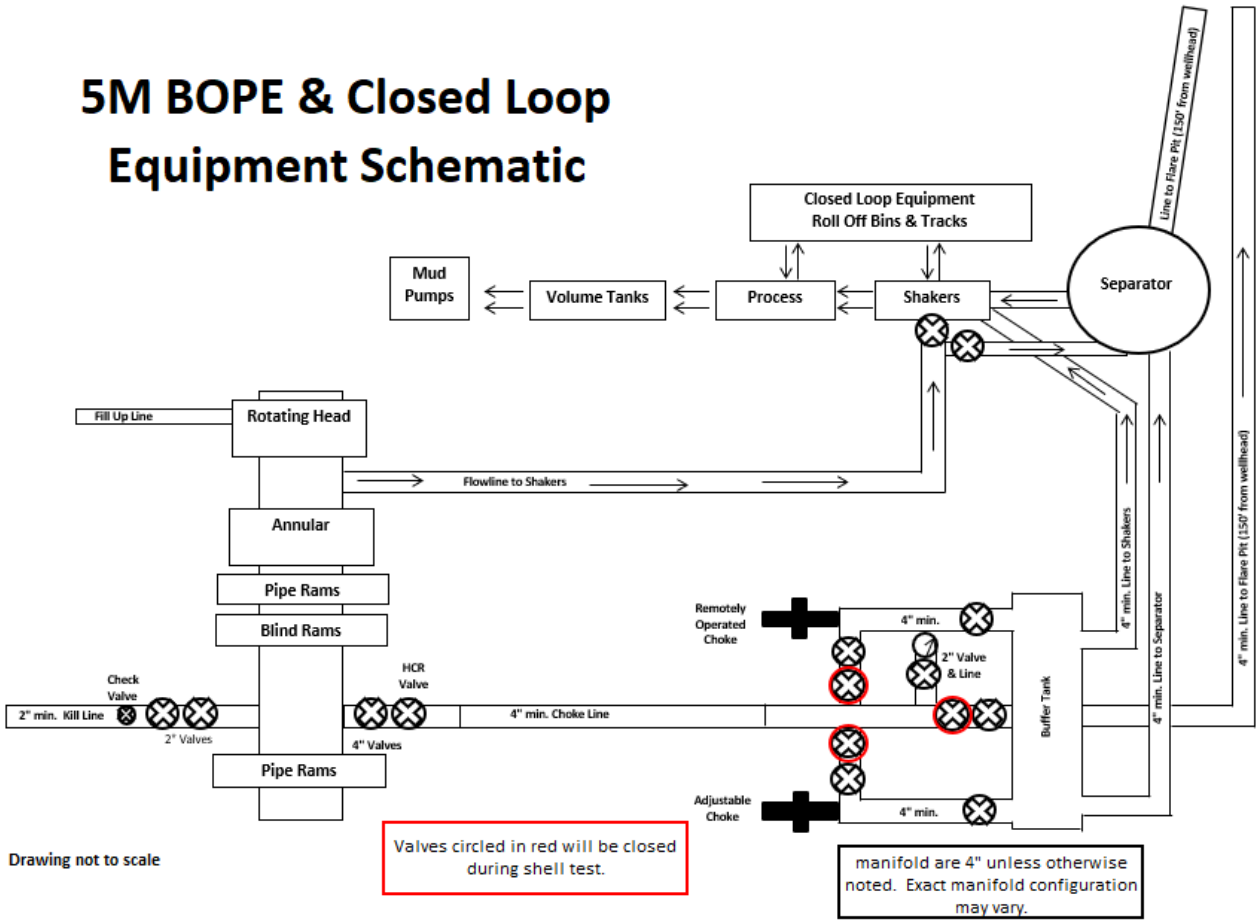

Figure 2. BOPE diagram

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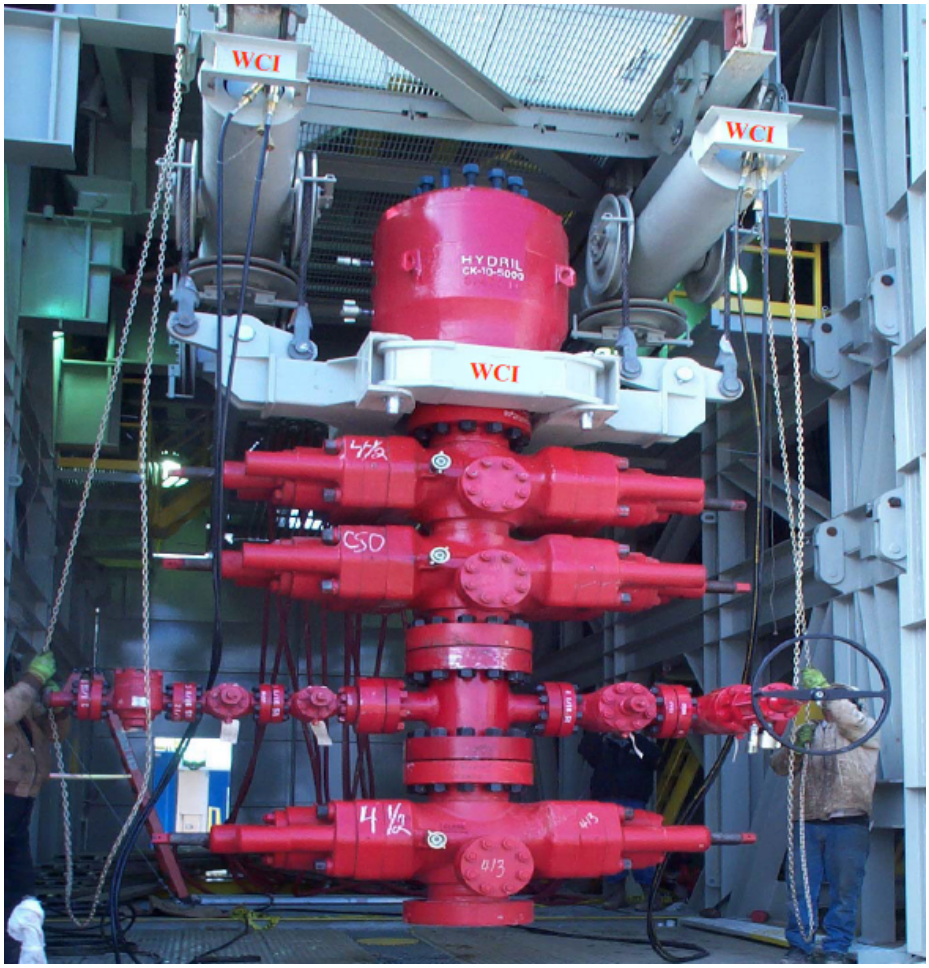

Figure 3. BOP handling system

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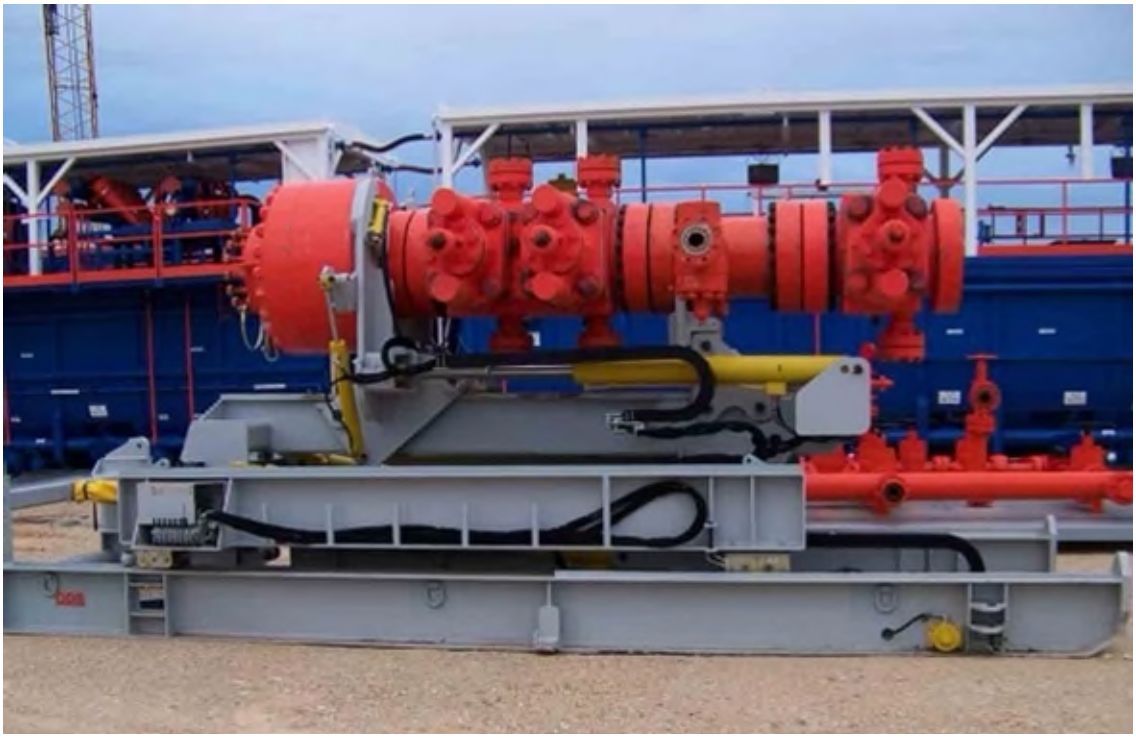

Figure 4. BOP handling system

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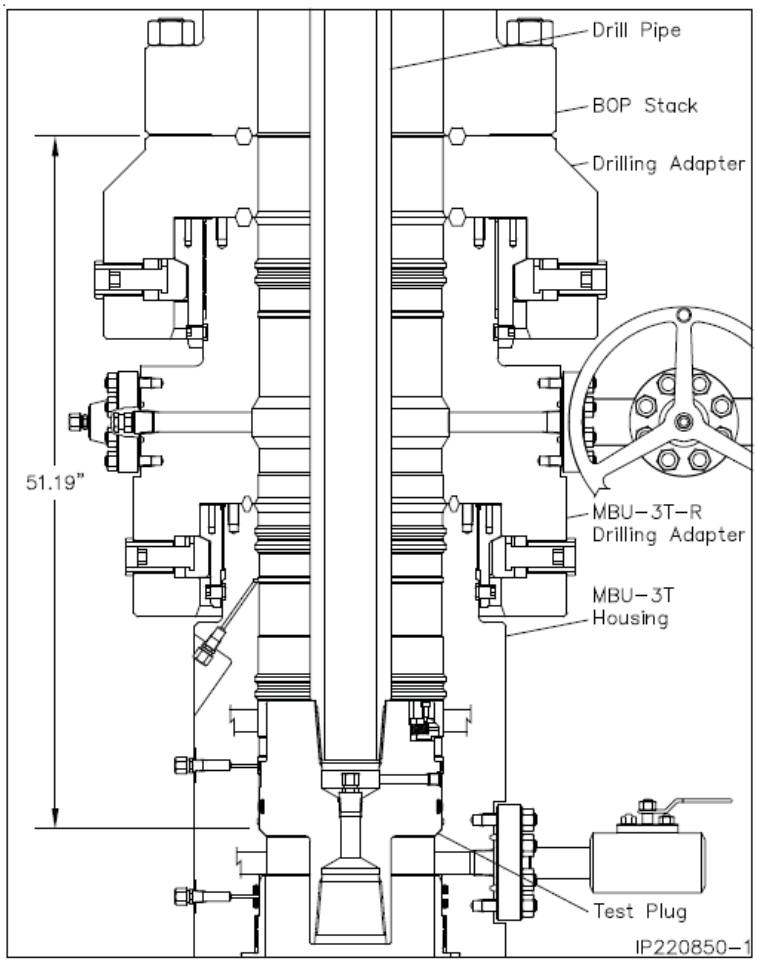

Figure 5. Cactus 5M wellhead with BOP quick connect

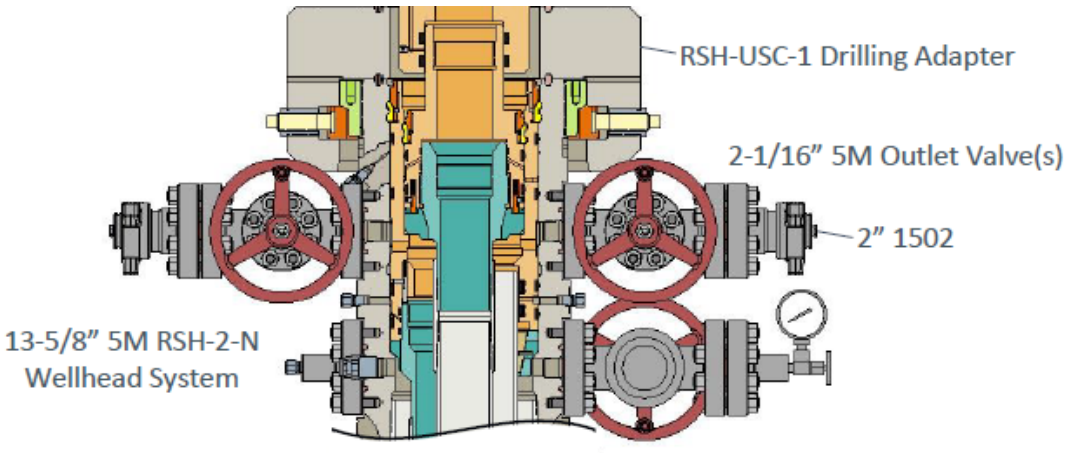

Figure 6. Vault 5M wellhead with BOP quick connect

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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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OIL COMPANY

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.

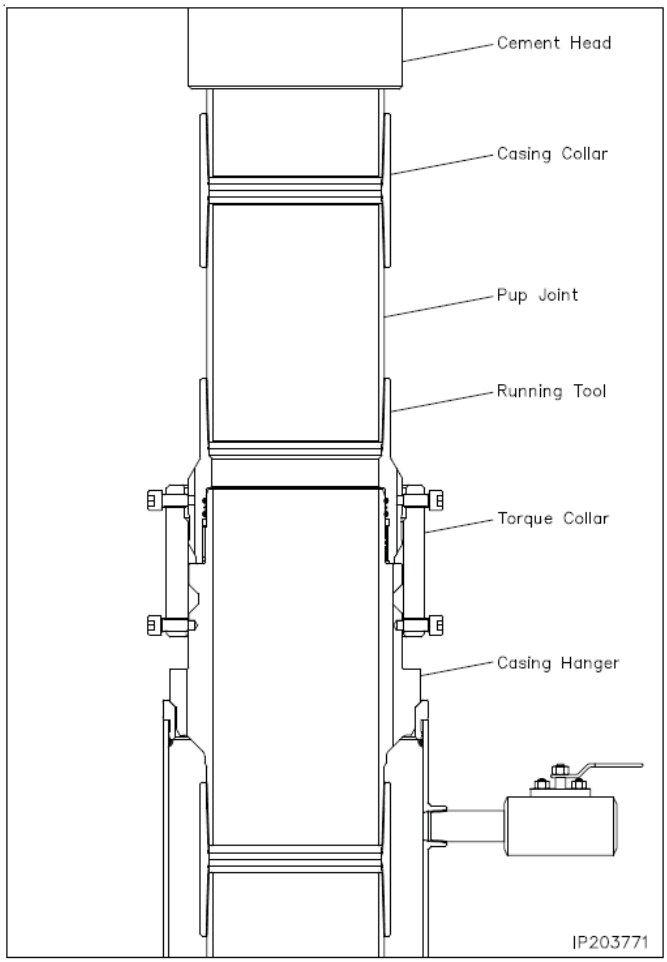

Figure 1. Cactus 13 3/8" 5M offline cementing tool. Pressure rating limited by the lesser of 5M tool rating or the 13 3/8" pup joint and casing.

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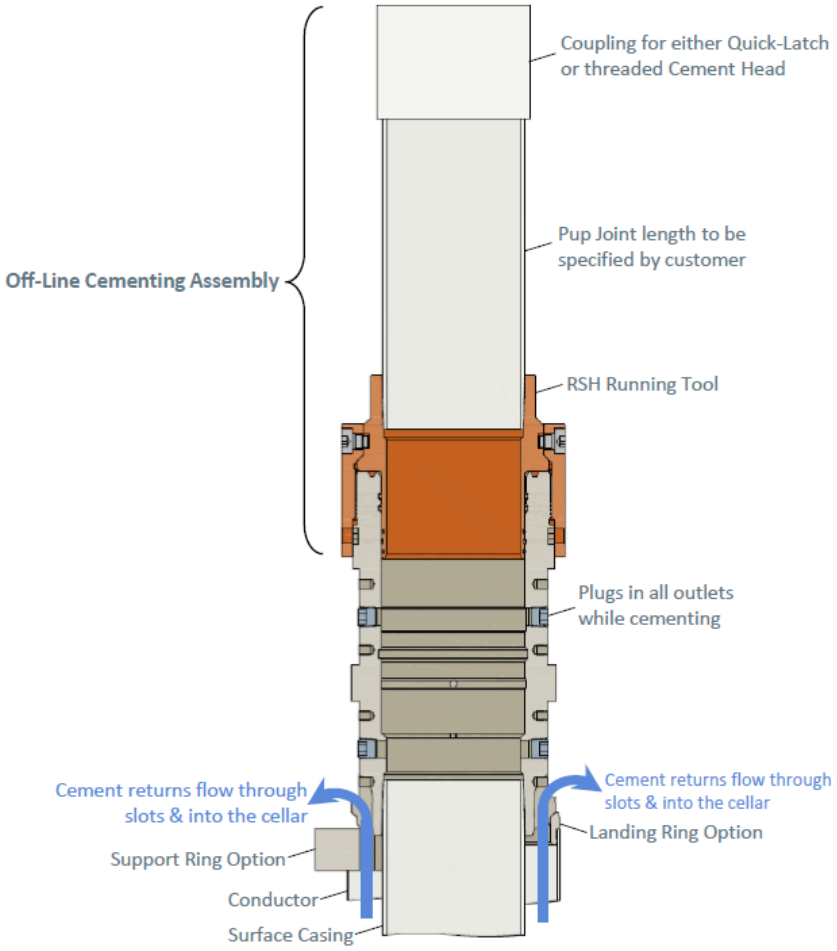

Figure 2. Vault 13 3/8” 5M offline cementing tool. Pressure rating limited by the lesser of 5M tool rating or the 13 3/8” pup joint and casing.

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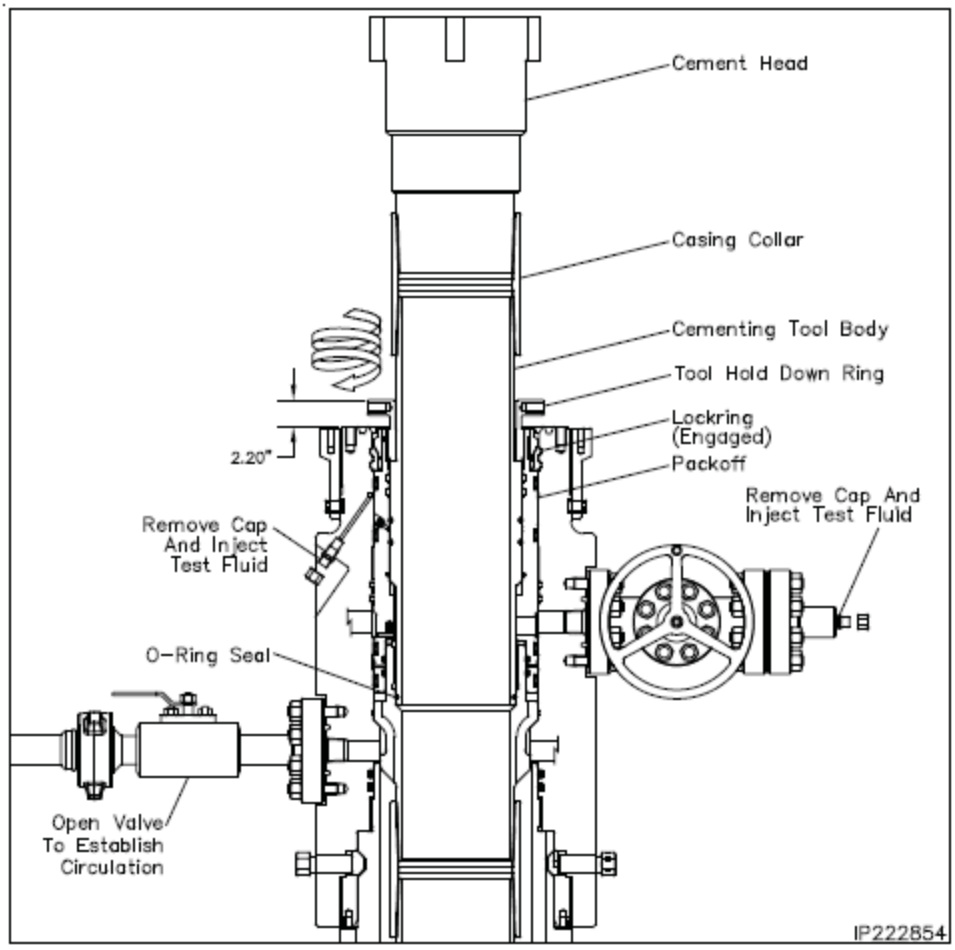

Figure 3. Cactus 9 5/8" 5M offline cementing tool. Pressure rating limited by the lesser of 5M tool rating or the 9 5/8" pup joint and casing.

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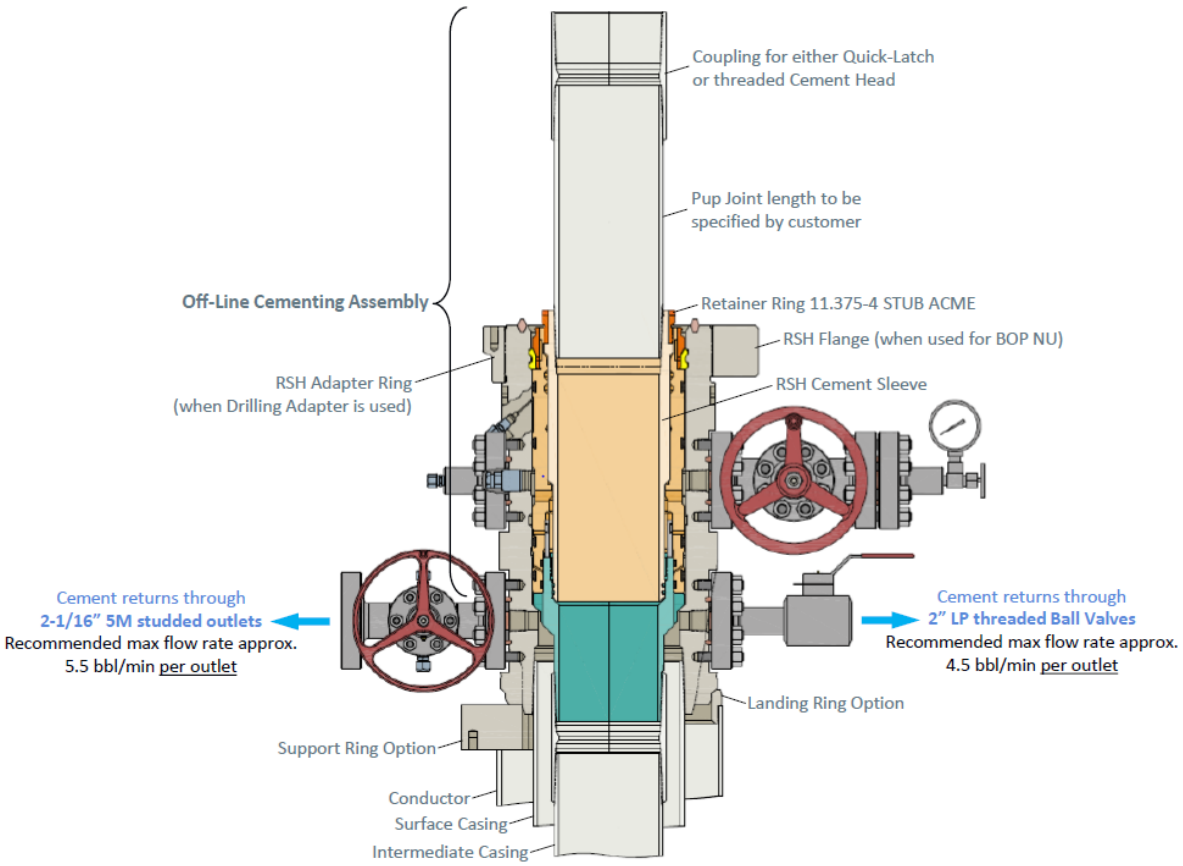

Figure 4. Vault 9 5/8" 5M offline cementing tool. Pressure rating limited by the lesser of 5M tool rating or the 9 5/8" pup joint and casing.

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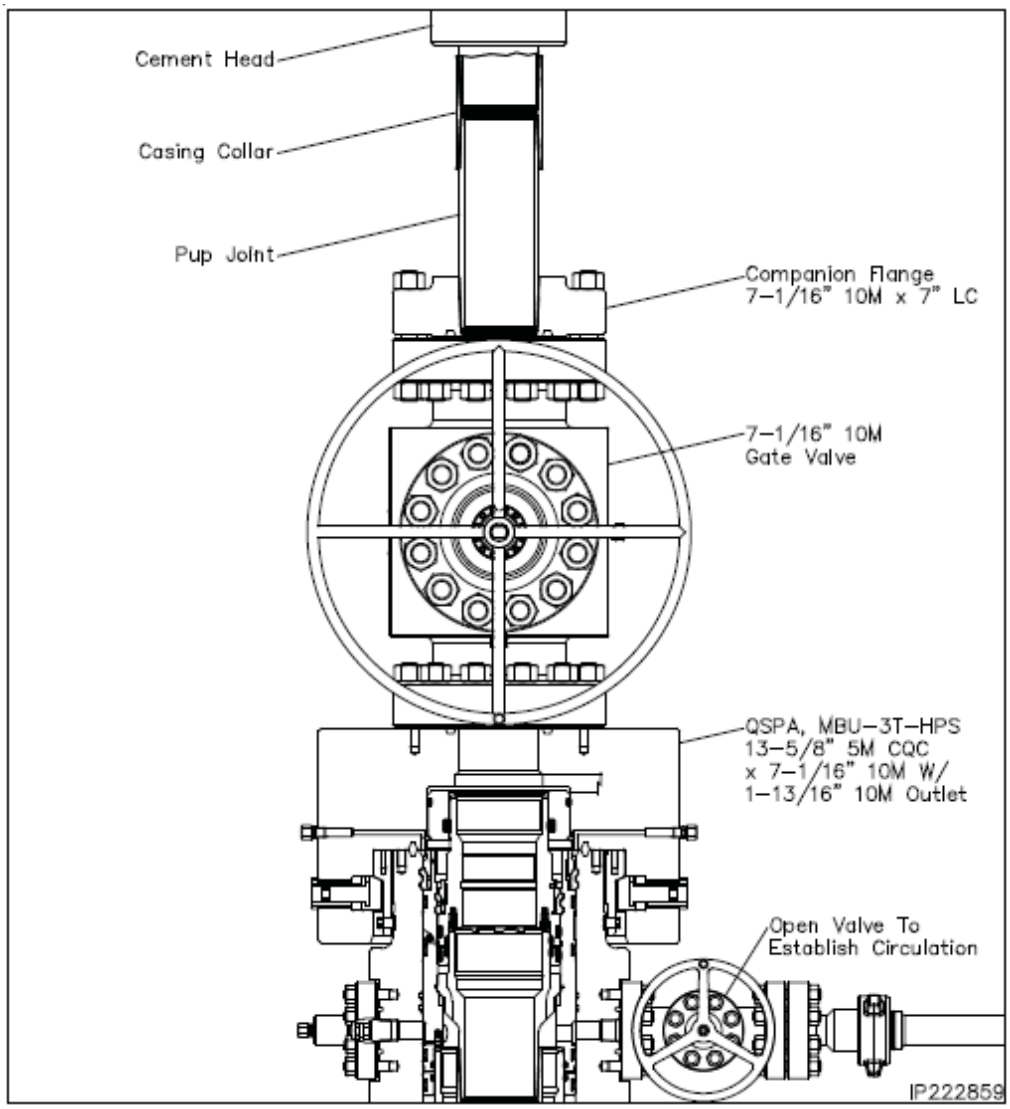

Figure 5. Cactus 7” 5M offline cementing tool. Pressure rating limited by the lesser of 5M tool rating or the 7” pup joint and casing.

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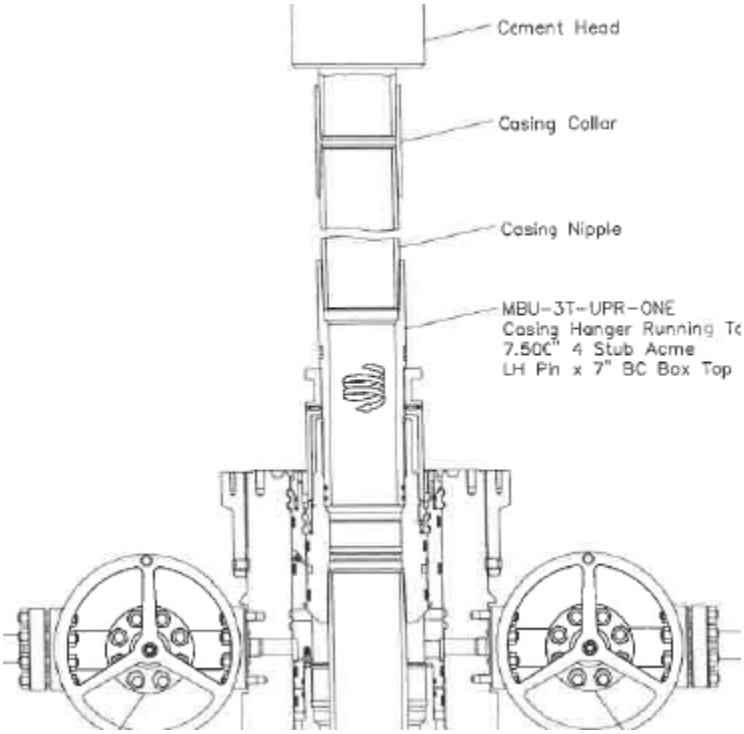


Figure 6. Cactus 7” 5M offline cementing tool. Pressure rating limited by the lesser of 5M tool rating or the 7” pup joint and casing.

MEWBOURNE OIL COMPANY

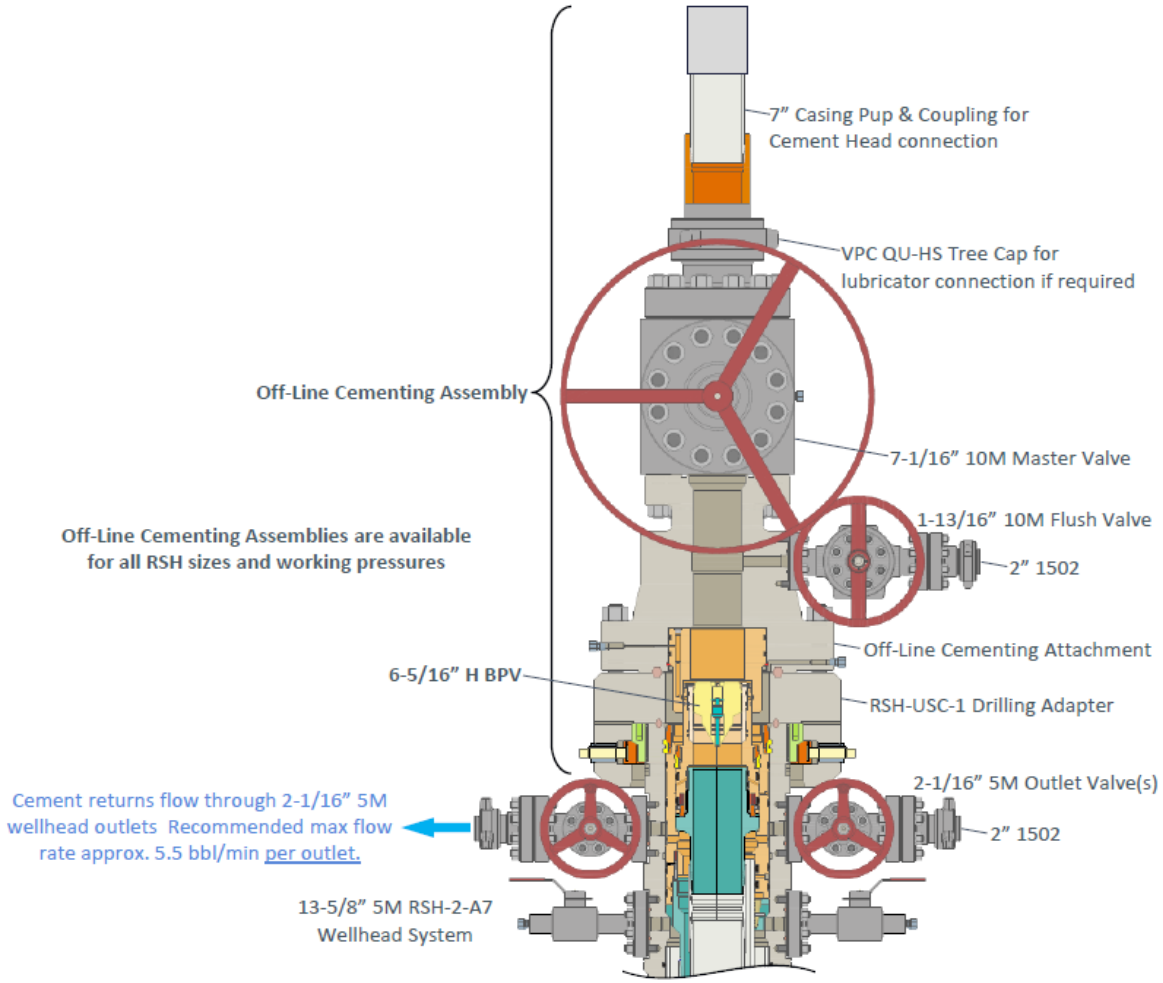


Figure 7. Vault 7" 5M offline cementing tool. Pressure rating limited by the lesser of 5M tool rating or the 7" pup joint and casing.

MEWBOURNE
OIL COMPANY

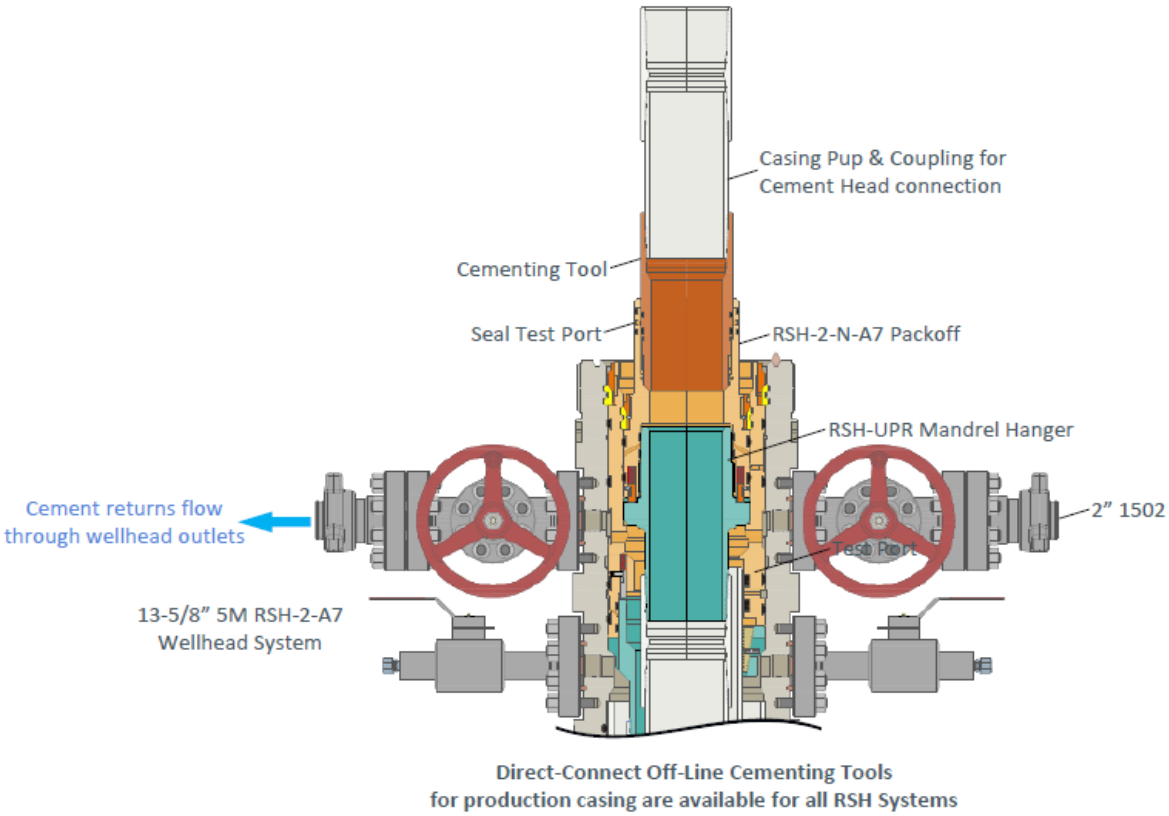


Figure 8. Vault 7" 5M offline cementing tool. Pressure rating limited by the lesser of 5M tool rating or the 7" pup joint and casing.

MEWBOURNE
OIL COMPANY

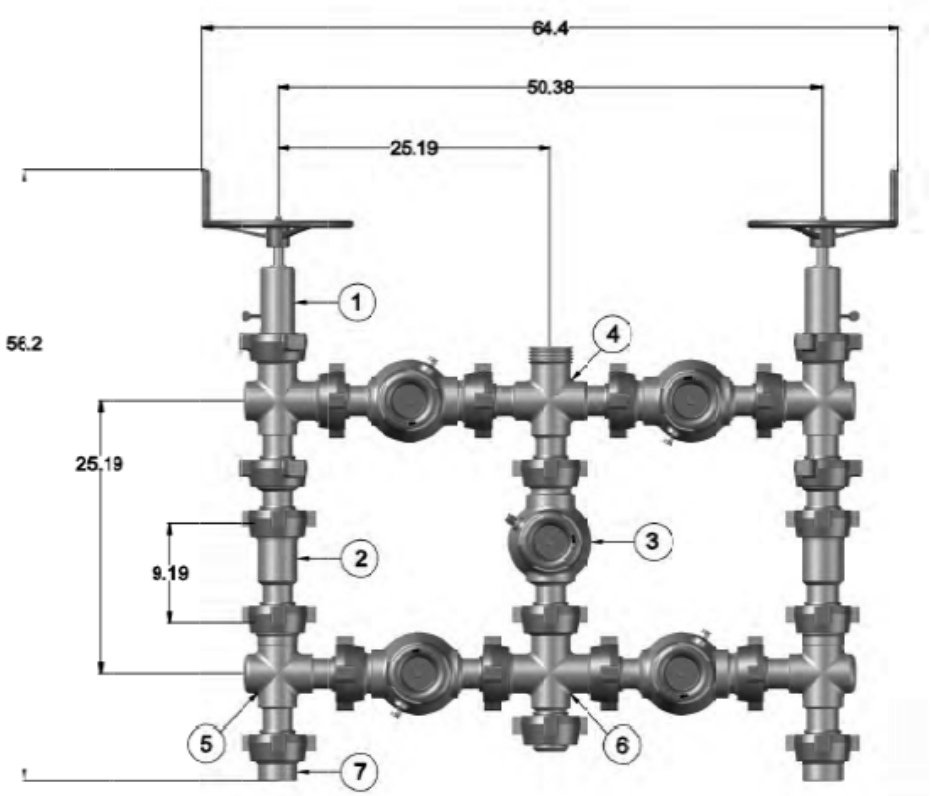


Figure 9. Five valve 15k choke manifold.

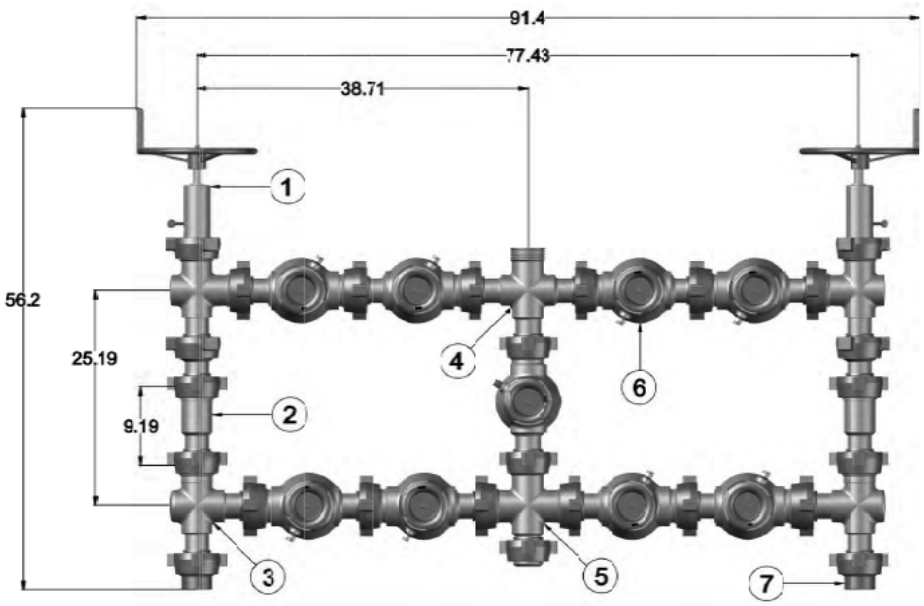


Figure 10. Nine valve 15k choke manifold.

Mewbourne Oil Company
R-111Q Procedure

Mewbourne Oil Company request permission to perform Open Hole Annulus procedure per R-111Q guidelines to be implemented as follows:

Production String

a) The Production string shall consist new oil field casing in good condition that meets API specifications, rated for the loads expected over the lifecycle of the well.

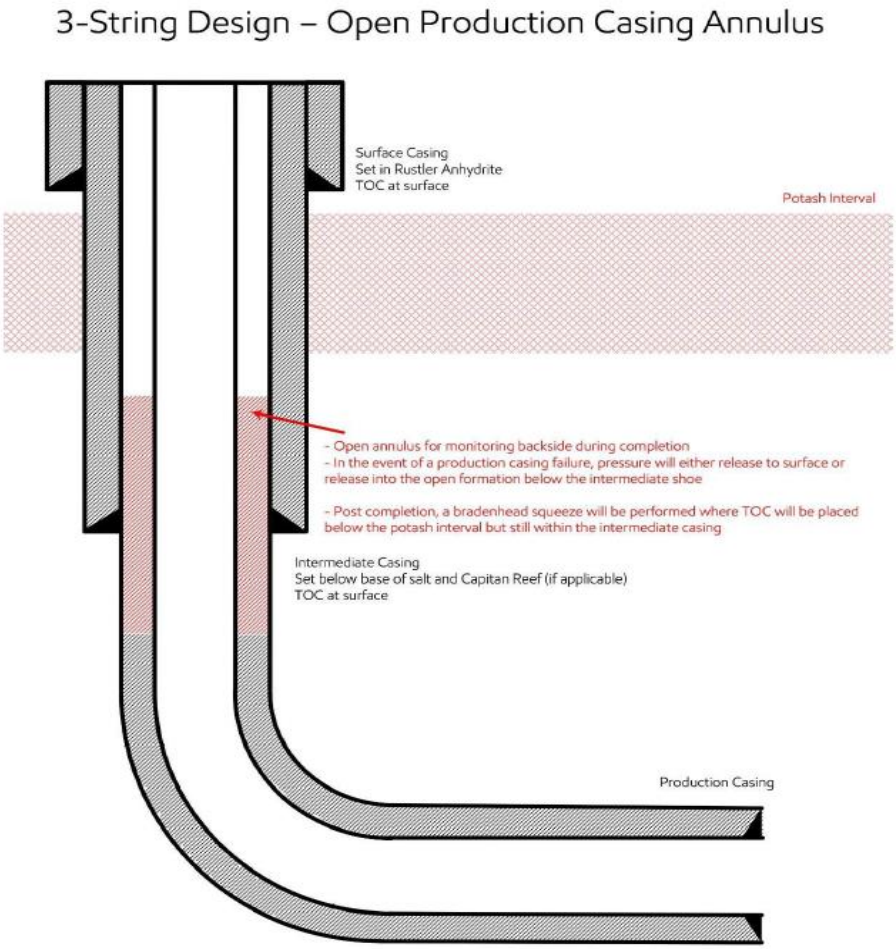
b) For wells within the KPLA where a 2nd intermediate string will not be utilized resulting in a 3 String Design (Surface, Salt or Salt/Capitan Reef, Production), the following safeguard shall apply to safely divert flow of wellbore fluids away from the Salt Interval in the event of a catastrophic production casing failure. The Surface Equipment utilized during stimulation operations should be designed to relieve pressure from the production x intermediate casing annulus below the burst threshold of the casing string components.

i. A monitored open annulus will be incorporated during completion by leaving the 1st Intermediate Casing x Production Casing annulus un-cemented and monitored inside the 1st Intermediate String. Reference wellbore diagram.

i.The top of cement in the Production Casing x 1st Intermediate Casing Annulus shall stand uncemented at least 500’ below the 1st Intermediate Casing Shoe. Zero percent excess shall be pumped on the Production Cementing Slurry to ensure no tie-back into the 1st Intermediate Casing Shoe.

ii.After Stimulation Operations have been concluded and no longer than 180 days after the well is brought online, the operator will be responsible for Bradenheading cement to ensure at least a 500’ tie back has been established inside the 1st Intermediate (Salt String / Capitan String) but not higher than Marker Bed No. 126 (base of the Potash mining interval).

iii.The top of cement may be estimated through pumped displacement volumes or with the use of a fluid shot tool prior to filling backside with fluid.


3-String Design – Open Production Casing Annulus
Surface Casing
Set in Rustler Anhydrite
TOC at surface
Potash Interval
- Open annulus for monitoring backside during completion
- In the event of a production casing failure, pressure will either release to surface or release into the open formation below the intermediate shoe
- Post completion, a bradenhead squeeze will be performed where TOC will be placed below the potash interval but still within the intermediate casing
Intermediate Casing
Set below base of salt and Capitan Reef (if applicable)
TOC at surface
Production Casing

Mewbourne Oil Company, Forty Niner Ridge Unit 144H
Sec 16, T23S, R30E
SHL: 2350' FNL 1580' FWL (Sec 16)
BHL: 330' FNL 2310' FWL (Sec 4)

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	17.5"	0'	0'	300'	300'	13.375" 48# H40 STC	5.74	12.90	22.36	37.57
Intermediate	12.25"	0'	0'	3385'	3385'	9.625" 36# J55 LTC	1.13	1.96	3.72	4.63
Production	8.75"	0'	0'	10556'	10494'	7" 26# P110 LTC	1.18	1.88	2.52	3.02
Liner	6.125"	10356'	10254'	24015'	11047'	4.5" 13.5# P110 LTC	1.67	1.94	1.83	2.29

Cement Program

Casing		# Sacks	Wt. lb/gal	Yield ft^3/sack	TOC/BOC	Volume ft^3	% Excess	Slurry Description
13.375 in	LEAD	80	12.5	2.12	0' - 116'	170	100%	Class C: Salt, Gel, Extender, LCM
	TAIL	200	14.8	1.34	116' - 300'	268		Class C: Retarder
9.625 in	LEAD	510	12.5	2.12	0' - 2769'	1090	25%	Class C: Salt, Gel, Extender, LCM
	TAIL	200	14.8	1.34	2769' - 3450'	268		Class C: Retarder
7 in	LEAD	220	12.5	2.12	4450' - 7497'	470	0%	Class C: Salt, Gel, Extender, LCM, Defoamer
	TAIL	400	15.6	1.18	7497' - 10556'	472		Class H: Retarder, Fluid Loss, Defoamer
7'' TOC @ 4450', BHS TOC @ 2950'								
Braden Head Sqz	LEAD	210	14.8	1.34	2950' - 4450'	290	25%	Class C
4.5 in	LEAD	870	13.5	1.85	10356' - 24015'	1610	25%	Class H: Salt, Gel, Fluid Loss, Retarder, Dispersant, Defoamer, Anti-settling Agent

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 Tension**	**SF Body Tension**
Surface	17.5"	0'	0'	300'	300'	13.375" 48# H40 STC	5.74	12.90	22.36	37.57
Intermediate	12.25"	0'	0'	3385'	3385'	9.625" 36# J55 LTC	1.13	1.96	3.72	4.63
Production	8.75"	0'	0'	10556'	10494'	7 5/8" 29.7# HCP110 GBCD	1.35	1.79	2.45	3.00
Liner	6.75"	10356'	10254'	24015'	11047'	5.5" 20# P110 Talon	1.73	1.98	2.01	2.35

Design B - Cement Program

Casing		# Sacks	Wt. lb/gal	Yield ft^3/sack	TOC/BOC	Volume ft^3	% Excess	Slurry Description
13.375 in	LEAD	80	12.5	2.12	0' - 116'	170	100%	Class C: Salt, Gel, Extender, LCM
	TAIL	200	14.8	1.34	116' - 300'	268		Class C: Retarder
1st Stg 9.625 in	LEAD	510	12.5	2.12	0' - 2769'	1090	25%	Class C: Salt, Gel, Extender, LCM
	TAIL	200	14.8	1.34	2769' - 3450'	268		Class C: Retarder
7.625 in	LEAD	70	12.5	2.12	4450' - 5923'	150	0%	Class C: Salt, Gel, Extender, LCM, Defoamer
	TAIL	400	15.6	1.18	5923' - 10556'	472		Class H: Retarder, Fluid Loss, Defoamer
7.625'' TOC @ 4450', BHS TOC @ 2950'								
Braden Head Sqz	LEAD	140	14.8	1.34	2950' - 4450'	190	25%	Class C
5.5 in	LEAD	380	13.5	1.85	10356' - 24015'	710	25%	Class H: Salt, Gel, Fluid Loss, Retarder, Dispersant, Defoamer, Anti-

Tenaris

API LTC

Coupling	Pipe Body
Grade: **P110**	Grade: **P110**
Body: **White**	1st Band: **White**
1st Band: **-**	2nd Band: **-**
2nd Band: **-**	3rd Band: **-**
3rd Band: **-**	4th Band: **-**

Outside Diameter	4.500 in.	**Wall Thickness**	0.290 in.	**Grade**	P110
Min. Wall Thickness	87.50 %	**Pipe Body Drift**	API Standard	**Type**	Casing
Connection OD Option	Regular				

Pipe Body Data

Geometry				Performance	
Nominal OD	4.500 in.	**Drift**	3.795 in.	**SMYS**	110,000 psi
Wall Thickness	0.290 in.	**Plain End Weight**	13.05 lb/ft	**Min UTS**	125,000 psi
Nominal Weight	13.500 lb/ft	**OD Tolerance**	API	**Body Yield Strength**	422 x1000 lb
Nominal ID	3.920 in.			**Min. Internal Yield Pressure**	12,410 psi
				Collapse Pressure	10,690 psi
				Max. Allowed Bending	112 °/100 ft

Connection Data

Geometry		Performance		Make-Up Torques	
Thread per In	8	**Joint Strength**	338 x1000 lb	**Minimum Torque**	2750 ft-lb
Connection OD	5.250 in.	**Coupling Face Load**	473 x1000 lb	**Optimum Torque**	3660 ft-lb
Hand Tight Stand Off	3 in.	**Internal Pressure Capacity**	12,410 psi	**Maximum Torque**	4580 ft-lb

Notes

For products according to API Standards 5CT & 5B; Performance calculated considering API Technical Report 5C3 (Sections 9 & 10) equations.
For geometrical and steel grades combinations not considered in the API Standards 5CT and/or 5B; Performance calculations indirectly derived from API Technical Report 5C3 (Sections 9 & 10) equations.
Couplings OD are shown according to current API 5CT 10th Edition.

U. S. Steel Tubular Products

8/10/2024 7:28:17 PM

5.500" 20.00lb/ft (0.361" Wall) P110 HP USS-TALON HTQ™ RD

MECHANICAL PROPERTIES	Pipe	USS-TALON HTQ™ RD		[6]
Minimum Yield Strength	125,000	--	psi	--
Maximum Yield Strength	140,000	--	psi	--
Minimum Tensile Strength	130,000	--	psi	--
DIMENSIONS	**Pipe**	**USS-TALON HTQ™ RD**		**--**
Outside Diameter	5.500	5.900	in.	--
Wall Thickness	0.361	--	in.	--
Inside Diameter	4.778	4.778	in.	--
Standard Drift	4.653	4.653	in.	--
Alternate Drift	--	--	in.	--
Nominal Linear Weight, T&C	20.00	--	lb/ft	--
Plain End Weight	19.83	--	lb/ft	--
SECTION AREA	**Pipe**	**USS-TALON HTQ™ RD**		**--**
Critical Area	5.828	5.828	sq. in.	--
Joint Efficiency	--	100.0	%	[2]
PERFORMANCE	**Pipe**	**USS-TALON HTQ™ RD**		**--**
Minimum Collapse Pressure	13,150	13,150	psi	--
Minimum Internal Yield Pressure	14,360	14,360	psi	--
Minimum Pipe Body Yield Strength	729,000	--	lb	--
Joint Strength	--	729,000	lb	--
Compression Rating	--	729,000	lb	--
Reference Length	--	24,300	ft	[5]
Maximum Uniaxial Bend Rating	--	104.2	deg/100 ft	[3]
MAKE-UP DATA	**Pipe**	**USS-TALON HTQ™ RD**		**--**
Make-Up Loss	--	5.58	in.	--
Minimum Make-Up Torque	--	18,400	ft-lb	[4]
Maximum Make-Up Torque	--	21,400	ft-lb	[4]
Maximum Operating Torque	--	44,400	ft-lb	[4]

Notes

1. Other than proprietary collapse and connection values, performance properties have been calculated using standard equations defined by API 5C3 and do not incorporate any additional design or safety factors. Calculations assume nominal pipe OD, nominal wall thickness, and Specified Minimum Yield Strength (SMYS).
2. Joint efficiencies are calculated by dividing the connection critical area by the pipe body area.
3. Uniaxial bend rating shown is structural only.
4. Torques have been calculated assuming a thread compound friction factor of 1.0 and are recommended only. Field make-up torques may require adjustment based on actual field conditions (e.g. make-up speed, temperature, thread compound, etc.).
5. Reference length is calculated by Joint Strength divided by Nominal Linear Weight, T&C with a 1.5 Safety factor.
6. Coupling must meet minimum mechanical properties of the pipe.

U. S. Steel Tubular Products
460 Wildwood Forest Drive, Suite 300S
Spring, Texas 77380

1-877-893-9461
connections@uss.com
www.usstubular.com

Tenaris

API LTC

Coupling	Pipe Body
Grade: **P110**	Grade: **P110**
Body: **White**	1st Band: **White**
1st Band: **-**	2nd Band: **-**
2nd Band: **-**	3rd Band: **-**
3rd Band: **-**	4th Band: **-**

Outside Diameter	7.000 in.	**Wall Thickness**	0.362 in.	**Grade**	P110
Min. Wall Thickness	87.50 %	**Pipe Body Drift**	API Standard	**Type**	Casing
Connection OD Option	Regular				

Pipe Body Data

Geometry				Performance	
Nominal OD	7.000 in.	**Drift**	6.151 in.	**SMYS**	110,000 psi
Wall Thickness	0.362 in.	**Plain End Weight**	25.69 lb/ft	**Min UTS**	125,000 psi
Nominal Weight	26 lb/ft	**OD Tolerance**	API	**Body Yield Strength**	830 x1000 lb
Nominal ID	6.276 in.			**Min. Internal Yield Pressure**	9960 psi
				Collapse Pressure	6230 psi
				Max. Allowed Bending	72 °/100 ft

Connection Data

Geometry		Performance		Make-Up Torques	
Thread per In	8	**Joint Strength**	693 x1000 lb	**Minimum Torque**	5200 ft-lb
Connection OD	7.875 in.	**Coupling Face Load**	799 x1000 lb	**Optimum Torque**	6930 ft-lb
Hand Tight Stand Off	3 in.	**Internal Pressure Capacity**	9960 psi	**Maximum Torque**	8660 ft-lb

Notes

For products according to API Standards 5CT & 5B; Performance calculated considering API Technical Report 5C3 (Sections 9 & 10) equations.
For geometrical and steel grades combinations not considered in the API Standards 5CT and/or 5B; Performance calculations indirectly derived from API Technical Report 5C3 (Sections 9 & 10) equations.
Couplings OD are shown according to current API 5CT 10th Edition.

tex-isle

Casing Performance Data Sheet
Manufactured to API 5CT
With GB CD Slim Connection

Grade	*P110 HC*
OD	*7.625”*
Nominal Wall Thickness	*0.375”*
Nominal Weight, T&C	*29.700 lb/ft*
Nominal Weight, PE	*29.060 lb/ft*
Nominal ID	*6.875”*
Standard Drift	*6.750”*

Performance Properties

Collapse Rating	*6,700 psi*
Internal Pressure Yield	*9,460 psi*
Pipe body Tension Yield	*940,000 lbs*

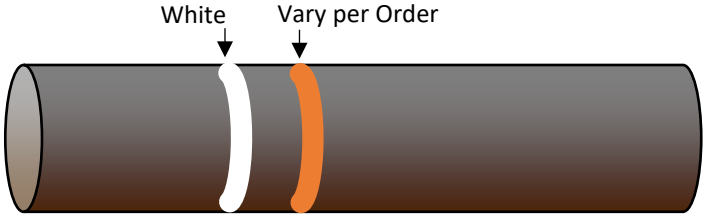
Connection Performance per GB

GB CD Slim Hole 7.900 COUPLING GEOMETRY			
Coupling OD (in.)	7.900	Makeup Loss (in.)	4.8125
Coupling Length (in.)	9.625	Critical Cross-Sect. (in.^{2})	6.721

GB CD Slim Hole 7.900 CONNECTION PERFORMANCE RATINGS/EFFICIENCIES						
Material Specification	API P-110	Min. Yield Str. (psi)		110,000	Min. Ultimate Str. (psi)	125,000
Tension		**Efficiency**			**Bending**	
			Gas	**Liquid*** **		
Tension OD Turn (kips)	776	Internal Pressure (%)	83%	100%	Build Rate to Yield (°/100 ft)	59.3
Thread Str. (kips)	794	External Pressure (%)	100%		**Yield Torque**	
Min. Tension Yield (kips)	702	Tension (%)	85%		Yield Torque (ft-lbs)	48,860
Min. Tension Ult. (kips)	798	Compression (%)	85%			
Joint Str. (kips)	794	Ratio of Areas (Cplg/Pipe)	0.79			
		Ratio of Areas (Cplg/OD Turn)	0.95			

MAKEUP TORQUE					
Min. MU Tq. (ft-lbs)	10,000	Max. MU Tq. (ft-lbs)	20,000	Running Tq. (ft-lbs)	See GBC RP
				Max. Operating Tq. (ft-lbs)*	46,410

Color Code



Tenaris

API LTC

Coupling	Pipe Body
Grade: **J55 (Casing)**	Grade: **J55 (Casing)**
Body: **Bright Green**	1st Band: **Bright Green**
1st Band: **White**	2nd Band: **-**
2nd Band: **-**	3rd Band: **-**
3rd Band: **-**	4th Band: **-**

Outside Diameter	9.625 in.	**Wall Thickness**	0.352 in.	**Grade**	J55 (Casing)
Min. Wall Thickness	87.50 %	**Pipe Body Drift**	API Standard	**Type**	Casing
Connection OD Option	Regular				

Pipe Body Data

Geometry				Performance	
Nominal OD	9.625 in.	**Drift**	8.765 in.	**SMYS**	55,000 psi
Wall Thickness	0.352 in.	**Plain End Weight**	34.89 lb/ft	**Min UTS**	75,000 psi
Nominal Weight	36 lb/ft	**OD Tolerance**	API	**Body Yield Strength**	564 x1000 lb
Nominal ID	8.921 in.			**Min. Internal Yield Pressure**	3520 psi
				Collapse Pressure	2020 psi
				Max. Allowed Bending	26 °/100 ft

Connection Data

Geometry		Performance		Make-Up Torques	
Thread per In	8	**Joint Strength**	453 x1000 lb	**Minimum Torque**	3400 ft-lb
Connection OD	10.625 in.	**Coupling Face Load**	433 x1000 lb	**Optimum Torque**	4530 ft-lb
Hand Tight Stand Off	3.500 in.	**Internal Pressure Capacity**	3520 psi	**Maximum Torque**	5660 ft-lb

Notes

For products according to API Standards 5CT & 5B; Performance calculated considering API Technical Report 5C3 (Sections 9 & 10) equations.
For geometrical and steel grades combinations not considered in the API Standards 5CT and/or 5B; Performance calculations indirectly derived from API Technical Report 5C3 (Sections 9 & 10) equations.
Couplings OD are shown according to current API 5CT 10th Edition.

Tenaris

API STC

Coupling	Pipe Body
Grade: **H40**	Grade: **H40**
Body: **-**	1st Band: **Black**
1st Band: **Black**	2nd Band: **-**
2nd Band: **-**	3rd Band: **-**
3rd Band: **-**	4th Band: **-**

Outside Diameter	13.375 in.	**Wall Thickness**	0.330 in.	**Grade**	H40
Min. Wall Thickness	87.50 %	**Pipe Body Drift**	API Standard	**Type**	Casing
Connection OD Option	Regular				

Pipe Body Data

Geometry				Performance	
Nominal OD	13.375 in.	**Drift**	12.559 in.	**SMYS**	40,000 psi
Wall Thickness	0.330 in.	**Plain End Weight**	46.02 lb/ft	**Min UTS**	60,000 psi
Nominal Weight	48 lb/ft	**OD Tolerance**	API	**Body Yield Strength**	541 x1000 lb
Nominal ID	12.715 in.			**Min. Internal Yield Pressure**	1730 psi
				Collapse Pressure	740 psi
				Max. Allowed Bending	14 °/100 ft

Connection Data

Geometry		Performance		Make-Up Torques	
Thread per In	8	**Joint Strength**	322 x1000 lb	**Minimum Torque**	2420 ft-lb
Connection OD	14.375 in.	**Coupling Face Load**	377 x1000 lb	**Optimum Torque**	3220 ft-lb
Hand Tight Stand Off	3.500 in.	**Internal Pressure Capacity**	1730 psi	**Maximum Torque**	4030 ft-lb

Notes

For products according to API Standards 5CT & 5B; Performance calculated considering API Technical Report 5C3 (Sections 9 & 10) equations.
For geometrical and steel grades combinations not considered in the API Standards 5CT and/or 5B; Performance calculations indirectly derived from API Technical Report 5C3 (Sections 9 & 10) equations.
Couplings OD are shown according to current API 5CT 10th Edition.

Mewbourne Oil Company

Eddy County, New Mexico NAD 83
Forty Niner Ridge Unit #144H
Sec 16, T23S, R30E
SHL: 2350' FNL & 1580' FWL (Sec 16)
BHL: 330' FNL & 2310' FWL (Sec 4)

Plan: Design #1

Standard Planning Report

24 January, 2025

Planning Report

Database:	Hobbs	**Local Co-ordinate Reference:**	Site Forty Niner Ridge Unit #144H
Company:	Mewbourne Oil Company	**TVD Reference:**	WELL @ 3157.0usft (Original Well Elev)
Project:	Eddy County, New Mexico NAD 83	**MD Reference:**	WELL @ 3157.0usft (Original Well Elev)
Site:	Forty Niner Ridge Unit #144H	**North Reference:**	Grid
Well:	Sec 16, T23S, R30E	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	BHL: 330' FNL & 2310' FWL (Sec 4)		
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 Forty Niner Ridge Unit #144H

Site Position:		**Northing:**	475,308.00 usft	**Latitude:**	32.3059154
From:	Map	**Easting:**	678,385.50 usft	**Longitude:**	-103.8897488
Position Uncertainty:	0.0 usft	**Slot Radius:**	13-3/16 "		

Well Sec 16, T23S, R30E

Well Position	**+N/-S**	0.0 usft	**Northing:**	475,308.00 usft	**Latitude:**	32.3059154
	+E/-W	0.0 usft	**Easting:**	678,385.50 usft	**Longitude:**	-103.8897488
Position Uncertainty		0.0 usft	**Wellhead Elevation:**	3,157.0 usft	**Ground Level:**	3,129.0 usft
Grid Convergence:		0.24 °				

Wellbore BHL: 330' FNL & 2310' FWL (Sec 4)

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	12/31/2014	7.30	60.12	48,254.03889688

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	2.98

Plan Survey Tool Program **Date** 1/2/2025

	Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.0	24,015.1	Design #1 (BHL: 330' FNL & 2310		

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	
3,600.0	0.00	0.00	3,600.0	0.0	0.0	0.00	0.00	0.00	0.00	
3,997.8	7.96	126.22	3,996.5	-16.3	22.2	2.00	2.00	0.00	126.22	
10,158.1	7.96	126.22	10,097.5	-520.1	710.1	0.00	0.00	0.00	0.00	
10,555.8	0.00	0.00	10,494.0	-536.4	732.3	2.00	-2.00	0.00	180.00	KOP: 2413' FSL & 23
11,456.8	90.09	359.67	11,067.0	37.5	729.0	10.00	10.00	0.00	-0.33	
24,015.1	90.09	359.67	11,047.0	12,595.6	656.6	0.00	0.00	0.00	0.00	BHL: 330' FNL & 231(

Planning Report

Database:	Hobbs	**Local Co-ordinate Reference:**	Site Forty Niner Ridge Unit #144H
Company:	Mewbourne Oil Company	**TVD Reference:**	WELL @ 3157.0usft (Original Well Elev)
Project:	Eddy County, New Mexico NAD 83	**MD Reference:**	WELL @ 3157.0usft (Original Well Elev)
Site:	Forty Niner Ridge Unit #144H	**North Reference:**	Grid
Well:	Sec 16, T23S, R30E	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	BHL: 330' FNL & 2310' FWL (Sec 4)		
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: 2350' FNL & 1580' FWL (Sec 16)									
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
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	0.00
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	0.00
2,100.0	0.00	0.00	2,100.0	0.0	0.0	0.0	0.00	0.00	0.00
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.0	0.00	0.00	0.00
2,300.0	0.00	0.00	2,300.0	0.0	0.0	0.0	0.00	0.00	0.00
2,400.0	0.00	0.00	2,400.0	0.0	0.0	0.0	0.00	0.00	0.00
2,500.0	0.00	0.00	2,500.0	0.0	0.0	0.0	0.00	0.00	0.00
2,600.0	0.00	0.00	2,600.0	0.0	0.0	0.0	0.00	0.00	0.00
2,700.0	0.00	0.00	2,700.0	0.0	0.0	0.0	0.00	0.00	0.00
2,800.0	0.00	0.00	2,800.0	0.0	0.0	0.0	0.00	0.00	0.00
2,900.0	0.00	0.00	2,900.0	0.0	0.0	0.0	0.00	0.00	0.00
3,000.0	0.00	0.00	3,000.0	0.0	0.0	0.0	0.00	0.00	0.00
3,100.0	0.00	0.00	3,100.0	0.0	0.0	0.0	0.00	0.00	0.00
3,200.0	0.00	0.00	3,200.0	0.0	0.0	0.0	0.00	0.00	0.00
3,300.0	0.00	0.00	3,300.0	0.0	0.0	0.0	0.00	0.00	0.00
3,400.0	0.00	0.00	3,400.0	0.0	0.0	0.0	0.00	0.00	0.00
3,500.0	0.00	0.00	3,500.0	0.0	0.0	0.0	0.00	0.00	0.00
3,600.0	0.00	0.00	3,600.0	0.0	0.0	0.0	0.00	0.00	0.00
3,700.0	2.00	126.22	3,700.0	-1.0	1.4	-1.0	2.00	2.00	0.00
3,800.0	4.00	126.22	3,799.8	-4.1	5.6	-3.8	2.00	2.00	0.00
3,900.0	6.00	126.22	3,899.5	-9.3	12.7	-8.6	2.00	2.00	0.00
3,997.8	7.96	126.22	3,996.5	-16.3	22.2	-15.1	2.00	2.00	0.00
4,000.0	7.96	126.22	3,998.7	-16.5	22.5	-15.3	0.00	0.00	0.00
4,100.0	7.96	126.22	4,097.7	-24.7	33.7	-22.9	0.00	0.00	0.00
4,200.0	7.96	126.22	4,196.8	-32.8	44.8	-30.5	0.00	0.00	0.00
4,300.0	7.96	126.22	4,295.8	-41.0	56.0	-38.0	0.00	0.00	0.00
4,400.0	7.96	126.22	4,394.9	-49.2	67.2	-45.6	0.00	0.00	0.00
4,500.0	7.96	126.22	4,493.9	-57.4	78.3	-53.2	0.00	0.00	0.00
4,600.0	7.96	126.22	4,592.9	-65.5	89.5	-60.8	0.00	0.00	0.00
4,700.0	7.96	126.22	4,692.0	-73.7	100.6	-68.4	0.00	0.00	0.00
4,800.0	7.96	126.22	4,791.0	-81.9	111.8	-76.0	0.00	0.00	0.00
4,900.0	7.96	126.22	4,890.0	-90.1	123.0	-83.6	0.00	0.00	0.00
5,000.0	7.96	126.22	4,989.1	-98.3	134.1	-91.1	0.00	0.00	0.00
5,100.0	7.96	126.22	5,088.1	-106.4	145.3	-98.7	0.00	0.00	0.00

Planning Report

Database:	Hobbs	**Local Co-ordinate Reference:**	Site Forty Niner Ridge Unit #144H
Company:	Mewbourne Oil Company	**TVD Reference:**	WELL @ 3157.0usft (Original Well Elev)
Project:	Eddy County, New Mexico NAD 83	**MD Reference:**	WELL @ 3157.0usft (Original Well Elev)
Site:	Forty Niner Ridge Unit #144H	**North Reference:**	Grid
Well:	Sec 16, T23S, R30E	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	BHL: 330' FNL & 2310' FWL (Sec 4)		
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)
5,200.0	7.96	126.22	5,187.2	-114.6	156.5	-106.3	0.00	0.00	0.00
5,300.0	7.96	126.22	5,286.2	-122.8	167.6	-113.9	0.00	0.00	0.00
5,400.0	7.96	126.22	5,385.2	-131.0	178.8	-121.5	0.00	0.00	0.00
5,500.0	7.96	126.22	5,484.3	-139.2	190.0	-129.1	0.00	0.00	0.00
5,600.0	7.96	126.22	5,583.3	-147.3	201.1	-136.7	0.00	0.00	0.00
5,700.0	7.96	126.22	5,682.3	-155.5	212.3	-144.2	0.00	0.00	0.00
5,800.0	7.96	126.22	5,781.4	-163.7	223.5	-151.8	0.00	0.00	0.00
5,900.0	7.96	126.22	5,880.4	-171.9	234.6	-159.4	0.00	0.00	0.00
6,000.0	7.96	126.22	5,979.5	-180.0	245.8	-167.0	0.00	0.00	0.00
6,100.0	7.96	126.22	6,078.5	-188.2	257.0	-174.6	0.00	0.00	0.00
6,200.0	7.96	126.22	6,177.5	-196.4	268.1	-182.2	0.00	0.00	0.00
6,300.0	7.96	126.22	6,276.6	-204.6	279.3	-189.8	0.00	0.00	0.00
6,400.0	7.96	126.22	6,375.6	-212.8	290.5	-197.3	0.00	0.00	0.00
6,500.0	7.96	126.22	6,474.6	-220.9	301.6	-204.9	0.00	0.00	0.00
6,600.0	7.96	126.22	6,573.7	-229.1	312.8	-212.5	0.00	0.00	0.00
6,700.0	7.96	126.22	6,672.7	-237.3	324.0	-220.1	0.00	0.00	0.00
6,800.0	7.96	126.22	6,771.8	-245.5	335.1	-227.7	0.00	0.00	0.00
6,900.0	7.96	126.22	6,870.8	-253.6	346.3	-235.3	0.00	0.00	0.00
7,000.0	7.96	126.22	6,969.8	-261.8	357.5	-242.9	0.00	0.00	0.00
7,100.0	7.96	126.22	7,068.9	-270.0	368.6	-250.5	0.00	0.00	0.00
7,200.0	7.96	126.22	7,167.9	-278.2	379.8	-258.0	0.00	0.00	0.00
7,300.0	7.96	126.22	7,266.9	-286.4	390.9	-265.6	0.00	0.00	0.00
7,400.0	7.96	126.22	7,366.0	-294.5	402.1	-273.2	0.00	0.00	0.00
7,500.0	7.96	126.22	7,465.0	-302.7	413.3	-280.8	0.00	0.00	0.00
7,600.0	7.96	126.22	7,564.1	-310.9	424.4	-288.4	0.00	0.00	0.00
7,700.0	7.96	126.22	7,663.1	-319.1	435.6	-296.0	0.00	0.00	0.00
7,800.0	7.96	126.22	7,762.1	-327.3	446.8	-303.6	0.00	0.00	0.00
7,900.0	7.96	126.22	7,861.2	-335.4	457.9	-311.1	0.00	0.00	0.00
8,000.0	7.96	126.22	7,960.2	-343.6	469.1	-318.7	0.00	0.00	0.00
8,100.0	7.96	126.22	8,059.2	-351.8	480.3	-326.3	0.00	0.00	0.00
8,200.0	7.96	126.22	8,158.3	-360.0	491.4	-333.9	0.00	0.00	0.00
8,300.0	7.96	126.22	8,257.3	-368.1	502.6	-341.5	0.00	0.00	0.00
8,400.0	7.96	126.22	8,356.4	-376.3	513.8	-349.1	0.00	0.00	0.00
8,500.0	7.96	126.22	8,455.4	-384.5	524.9	-356.7	0.00	0.00	0.00
8,600.0	7.96	126.22	8,554.4	-392.7	536.1	-364.2	0.00	0.00	0.00
8,700.0	7.96	126.22	8,653.5	-400.9	547.3	-371.8	0.00	0.00	0.00
8,800.0	7.96	126.22	8,752.5	-409.0	558.4	-379.4	0.00	0.00	0.00
8,900.0	7.96	126.22	8,851.5	-417.2	569.6	-387.0	0.00	0.00	0.00
9,000.0	7.96	126.22	8,950.6	-425.4	580.8	-394.6	0.00	0.00	0.00
9,100.0	7.96	126.22	9,049.6	-433.6	591.9	-402.2	0.00	0.00	0.00
9,200.0	7.96	126.22	9,148.7	-441.8	603.1	-409.8	0.00	0.00	0.00
9,300.0	7.96	126.22	9,247.7	-449.9	614.3	-417.3	0.00	0.00	0.00
9,400.0	7.96	126.22	9,346.7	-458.1	625.4	-424.9	0.00	0.00	0.00
9,500.0	7.96	126.22	9,445.8	-466.3	636.6	-432.5	0.00	0.00	0.00
9,600.0	7.96	126.22	9,544.8	-474.5	647.7	-440.1	0.00	0.00	0.00
9,700.0	7.96	126.22	9,643.8	-482.6	658.9	-447.7	0.00	0.00	0.00
9,800.0	7.96	126.22	9,742.9	-490.8	670.1	-455.3	0.00	0.00	0.00
9,900.0	7.96	126.22	9,841.9	-499.0	681.2	-462.9	0.00	0.00	0.00
10,000.0	7.96	126.22	9,941.0	-507.2	692.4	-470.4	0.00	0.00	0.00
10,100.0	7.96	126.22	10,040.0	-515.4	703.6	-478.0	0.00	0.00	0.00
10,158.1	7.96	126.22	10,097.5	-520.1	710.1	-482.4	0.00	0.00	0.00
10,200.0	7.12	126.22	10,139.1	-523.4	714.5	-485.5	2.00	-2.00	0.00
10,300.0	5.12	126.22	10,238.5	-529.7	723.1	-491.3	2.00	-2.00	0.00
10,400.0	3.12	126.22	10,338.2	-533.9	728.9	-495.2	2.00	-2.00	0.00

Planning Report

Database:	Hobbs	**Local Co-ordinate Reference:**	Site Forty Niner Ridge Unit #144H
Company:	Mewbourne Oil Company	**TVD Reference:**	WELL @ 3157.0usft (Original Well Elev)
Project:	Eddy County, New Mexico NAD 83	**MD Reference:**	WELL @ 3157.0usft (Original Well Elev)
Site:	Forty Niner Ridge Unit #144H	**North Reference:**	Grid
Well:	Sec 16, T23S, R30E	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	BHL: 330' FNL & 2310' FWL (Sec 4)		
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)
10,500.0	1.12	126.22	10,438.2	-536.1	731.9	-497.3	2.00	-2.00	0.00
10,555.8	0.00	0.00	10,494.0	-536.4	732.3	-497.6	2.00	-2.00	0.00
KOP: 2413' FSL & 2310' FWL (Sec 16)									
10,600.0	4.42	359.67	10,538.1	-534.7	732.3	-495.9	10.00	10.00	0.00
10,650.0	9.42	359.67	10,587.7	-528.7	732.3	-489.8	10.00	10.00	0.00
10,700.0	14.41	359.67	10,636.6	-518.4	732.2	-479.5	10.00	10.00	0.00
10,750.0	19.41	359.67	10,684.5	-503.8	732.1	-465.0	10.00	10.00	0.00
10,800.0	24.41	359.67	10,730.8	-485.2	732.0	-446.4	10.00	10.00	0.00
10,850.0	29.41	359.67	10,775.4	-462.5	731.9	-423.8	10.00	10.00	0.00
10,900.0	34.41	359.67	10,817.8	-436.1	731.7	-397.4	10.00	10.00	0.00
10,950.0	39.41	359.67	10,857.8	-406.1	731.5	-367.5	10.00	10.00	0.00
11,000.0	44.41	359.67	10,895.0	-372.7	731.4	-334.1	10.00	10.00	0.00
11,050.0	49.41	359.67	10,929.1	-336.2	731.1	-297.7	10.00	10.00	0.00
11,100.0	54.41	359.67	10,960.0	-296.9	730.9	-258.4	10.00	10.00	0.00
11,150.0	59.41	359.67	10,987.3	-255.0	730.7	-216.6	10.00	10.00	0.00
11,200.0	64.41	359.67	11,010.8	-210.9	730.4	-172.6	10.00	10.00	0.00
11,250.0	69.41	359.67	11,030.4	-164.9	730.2	-126.7	10.00	10.00	0.00
11,300.0	74.41	359.67	11,045.9	-117.4	729.9	-79.2	10.00	10.00	0.00
11,350.0	79.41	359.67	11,057.2	-68.7	729.6	-30.6	10.00	10.00	0.00
11,400.0	84.41	359.67	11,064.3	-19.2	729.3	18.8	10.00	10.00	0.00
11,450.0	89.41	359.67	11,067.0	30.7	729.0	68.6	10.00	10.00	0.00
11,455.8	89.99	359.67	11,067.0	36.5	729.0	74.4	10.00	10.00	0.00
FTP/LP: 2312' FNL & 2310' FWL (Sec 16)									
11,456.8	90.09	359.67	11,067.0	37.5	729.0	75.4	10.00	10.00	0.00
11,500.0	90.09	359.67	11,066.9	80.7	728.7	118.5	0.00	0.00	0.00
11,600.0	90.09	359.67	11,066.8	180.7	728.2	218.3	0.00	0.00	0.00
11,700.0	90.09	359.67	11,066.6	280.7	727.6	318.2	0.00	0.00	0.00
11,800.0	90.09	359.67	11,066.5	380.7	727.0	418.0	0.00	0.00	0.00
11,900.0	90.09	359.67	11,066.3	480.7	726.4	517.8	0.00	0.00	0.00
12,000.0	90.09	359.67	11,066.1	580.7	725.9	617.7	0.00	0.00	0.00
12,100.0	90.09	359.67	11,066.0	680.7	725.3	717.5	0.00	0.00	0.00
12,200.0	90.09	359.67	11,065.8	780.7	724.7	817.3	0.00	0.00	0.00
12,300.0	90.09	359.67	11,065.7	880.7	724.1	917.2	0.00	0.00	0.00
12,400.0	90.09	359.67	11,065.5	980.7	723.6	1,017.0	0.00	0.00	0.00
12,500.0	90.09	359.67	11,065.3	1,080.7	723.0	1,116.8	0.00	0.00	0.00
12,600.0	90.09	359.67	11,065.2	1,180.7	722.4	1,216.7	0.00	0.00	0.00
12,700.0	90.09	359.67	11,065.0	1,280.7	721.8	1,316.5	0.00	0.00	0.00
12,800.0	90.09	359.67	11,064.9	1,380.7	721.2	1,416.3	0.00	0.00	0.00
12,900.0	90.09	359.67	11,064.7	1,480.7	720.7	1,516.2	0.00	0.00	0.00
13,000.0	90.09	359.67	11,064.5	1,580.7	720.1	1,616.0	0.00	0.00	0.00
13,100.0	90.09	359.67	11,064.4	1,680.7	719.5	1,715.8	0.00	0.00	0.00
13,200.0	90.09	359.67	11,064.2	1,780.7	718.9	1,815.7	0.00	0.00	0.00
13,300.0	90.09	359.67	11,064.1	1,880.7	718.4	1,915.5	0.00	0.00	0.00
13,400.0	90.09	359.67	11,063.9	1,980.6	717.8	2,015.3	0.00	0.00	0.00
13,500.0	90.09	359.67	11,063.7	2,080.6	717.2	2,115.2	0.00	0.00	0.00
13,600.0	90.09	359.67	11,063.6	2,180.6	716.6	2,215.0	0.00	0.00	0.00
13,700.0	90.09	359.67	11,063.4	2,280.6	716.1	2,314.8	0.00	0.00	0.00
13,767.0	90.09	359.67	11,063.3	2,347.7	715.7	2,381.7	0.00	0.00	0.00
PPP2: 0' FSL & 2328' FWL (Sec 9)									
13,800.0	90.09	359.67	11,063.3	2,380.6	715.5	2,414.7	0.00	0.00	0.00
13,900.0	90.09	359.67	11,063.1	2,480.6	714.9	2,514.5	0.00	0.00	0.00
14,000.0	90.09	359.67	11,062.9	2,580.6	714.3	2,614.3	0.00	0.00	0.00
14,100.0	90.09	359.67	11,062.8	2,680.6	713.8	2,714.2	0.00	0.00	0.00

Planning Report

Database:	Hobbs	**Local Co-ordinate Reference:**	Site Forty Niner Ridge Unit #144H
Company:	Mewbourne Oil Company	**TVD Reference:**	WELL @ 3157.0usft (Original Well Elev)
Project:	Eddy County, New Mexico NAD 83	**MD Reference:**	WELL @ 3157.0usft (Original Well Elev)
Site:	Forty Niner Ridge Unit #144H	**North Reference:**	Grid
Well:	Sec 16, T23S, R30E	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	BHL: 330' FNL & 2310' FWL (Sec 4)		
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)
14,200.0	90.09	359.67	11,062.6	2,780.6	713.2	2,814.0	0.00	0.00	0.00
14,300.0	90.09	359.67	11,062.5	2,880.6	712.6	2,913.8	0.00	0.00	0.00
14,400.0	90.09	359.67	11,062.3	2,980.6	712.0	3,013.7	0.00	0.00	0.00
14,500.0	90.09	359.67	11,062.2	3,080.6	711.4	3,113.5	0.00	0.00	0.00
14,600.0	90.09	359.67	11,062.0	3,180.6	710.9	3,213.3	0.00	0.00	0.00
14,700.0	90.09	359.67	11,061.8	3,280.6	710.3	3,313.2	0.00	0.00	0.00
14,800.0	90.09	359.67	11,061.7	3,380.6	709.7	3,413.0	0.00	0.00	0.00
14,900.0	90.09	359.67	11,061.5	3,480.6	709.1	3,512.8	0.00	0.00	0.00
15,000.0	90.09	359.67	11,061.4	3,580.6	708.6	3,612.7	0.00	0.00	0.00
15,100.0	90.09	359.67	11,061.2	3,680.6	708.0	3,712.5	0.00	0.00	0.00
15,200.0	90.09	359.67	11,061.0	3,780.6	707.4	3,812.3	0.00	0.00	0.00
15,300.0	90.09	359.67	11,060.9	3,880.6	706.8	3,912.2	0.00	0.00	0.00
15,400.0	90.09	359.67	11,060.7	3,980.6	706.3	4,012.0	0.00	0.00	0.00
15,500.0	90.09	359.67	11,060.6	4,080.6	705.7	4,111.8	0.00	0.00	0.00
15,600.0	90.09	359.67	11,060.4	4,180.6	705.1	4,211.6	0.00	0.00	0.00
15,700.0	90.09	359.67	11,060.2	4,280.6	704.5	4,311.5	0.00	0.00	0.00
15,800.0	90.09	359.67	11,060.1	4,380.6	704.0	4,411.3	0.00	0.00	0.00
15,900.0	90.09	359.67	11,059.9	4,480.6	703.4	4,511.1	0.00	0.00	0.00
16,000.0	90.09	359.67	11,059.8	4,580.6	702.8	4,611.0	0.00	0.00	0.00
16,100.0	90.09	359.67	11,059.6	4,680.6	702.2	4,710.8	0.00	0.00	0.00
16,200.0	90.09	359.67	11,059.4	4,780.6	701.6	4,810.6	0.00	0.00	0.00
16,300.0	90.09	359.67	11,059.3	4,880.6	701.1	4,910.5	0.00	0.00	0.00
16,400.0	90.09	359.67	11,059.1	4,980.6	700.5	5,010.3	0.00	0.00	0.00
16,500.0	90.09	359.67	11,059.0	5,080.6	699.9	5,110.1	0.00	0.00	0.00
16,600.0	90.09	359.67	11,058.8	5,180.6	699.3	5,210.0	0.00	0.00	0.00
16,700.0	90.09	359.67	11,058.6	5,280.6	698.8	5,309.8	0.00	0.00	0.00
16,800.0	90.09	359.67	11,058.5	5,380.6	698.2	5,409.6	0.00	0.00	0.00
16,900.0	90.09	359.67	11,058.3	5,480.6	697.6	5,509.5	0.00	0.00	0.00
17,000.0	90.09	359.67	11,058.2	5,580.6	697.0	5,609.3	0.00	0.00	0.00
17,100.0	90.09	359.67	11,058.0	5,680.6	696.5	5,709.1	0.00	0.00	0.00
17,200.0	90.09	359.67	11,057.9	5,780.6	695.9	5,809.0	0.00	0.00	0.00
17,300.0	90.09	359.67	11,057.7	5,880.6	695.3	5,908.8	0.00	0.00	0.00
17,400.0	90.09	359.67	11,057.5	5,980.6	694.7	6,008.6	0.00	0.00	0.00
17,500.0	90.09	359.67	11,057.4	6,080.6	694.2	6,108.5	0.00	0.00	0.00
17,600.0	90.09	359.67	11,057.2	6,180.6	693.6	6,208.3	0.00	0.00	0.00
17,700.0	90.09	359.67	11,057.1	6,280.6	693.0	6,308.1	0.00	0.00	0.00
17,800.0	90.09	359.67	11,056.9	6,380.6	692.4	6,408.0	0.00	0.00	0.00
17,900.0	90.09	359.67	11,056.7	6,480.6	691.9	6,507.8	0.00	0.00	0.00
18,000.0	90.09	359.67	11,056.6	6,580.6	691.3	6,607.6	0.00	0.00	0.00
18,100.0	90.09	359.67	11,056.4	6,680.6	690.7	6,707.5	0.00	0.00	0.00
18,200.0	90.09	359.67	11,056.3	6,780.6	690.1	6,807.3	0.00	0.00	0.00
18,300.0	90.09	359.67	11,056.1	6,880.6	689.5	6,907.1	0.00	0.00	0.00
18,400.0	90.09	359.67	11,055.9	6,980.6	689.0	7,007.0	0.00	0.00	0.00
18,500.0	90.09	359.67	11,055.8	7,080.6	688.4	7,106.8	0.00	0.00	0.00
18,600.0	90.09	359.67	11,055.6	7,180.6	687.8	7,206.6	0.00	0.00	0.00
18,700.0	90.09	359.67	11,055.5	7,280.6	687.2	7,306.5	0.00	0.00	0.00
18,800.0	90.09	359.67	11,055.3	7,380.6	686.7	7,406.3	0.00	0.00	0.00
18,900.0	90.09	359.67	11,055.1	7,480.6	686.1	7,506.1	0.00	0.00	0.00
19,000.0	90.09	359.67	11,055.0	7,580.5	685.5	7,606.0	0.00	0.00	0.00
19,053.9	90.09	359.67	11,054.9	7,634.4	685.2	7,659.7	0.00	0.00	0.00
PPP3: 0' FSL & 2328' FWL (Sec 4)									
19,100.0	90.09	359.67	11,054.8	7,680.5	684.9	7,705.8	0.00	0.00	0.00
19,200.0	90.09	359.67	11,054.7	7,780.5	684.4	7,805.6	0.00	0.00	0.00
19,300.0	90.09	359.67	11,054.5	7,880.5	683.8	7,905.5	0.00	0.00	0.00

Planning Report

Database:	Hobbs	**Local Co-ordinate Reference:**	Site Forty Niner Ridge Unit #144H
Company:	Mewbourne Oil Company	**TVD Reference:**	WELL @ 3157.0usft (Original Well Elev)
Project:	Eddy County, New Mexico NAD 83	**MD Reference:**	WELL @ 3157.0usft (Original Well Elev)
Site:	Forty Niner Ridge Unit #144H	**North Reference:**	Grid
Well:	Sec 16, T23S, R30E	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	BHL: 330' FNL & 2310' FWL (Sec 4)		
Design:	Design #1		

Planned Survey

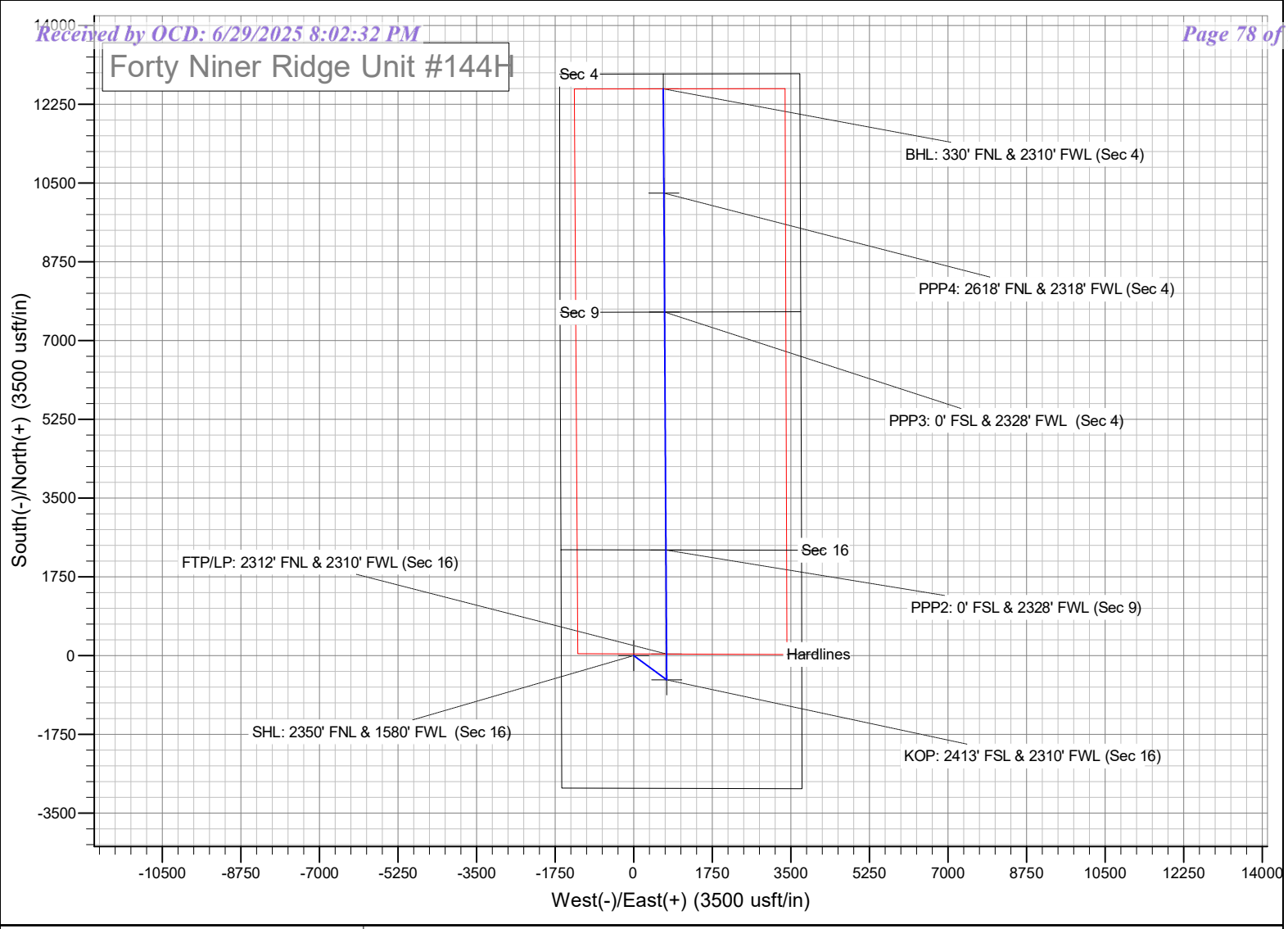
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
19,400.0	90.09	359.67	11,054.3	7,980.5	683.2	8,005.3	0.00	0.00	0.00
19,500.0	90.09	359.67	11,054.2	8,080.5	682.6	8,105.1	0.00	0.00	0.00
19,600.0	90.09	359.67	11,054.0	8,180.5	682.1	8,205.0	0.00	0.00	0.00
19,700.0	90.09	359.67	11,053.9	8,280.5	681.5	8,304.8	0.00	0.00	0.00
19,800.0	90.09	359.67	11,053.7	8,380.5	680.9	8,404.6	0.00	0.00	0.00
19,900.0	90.09	359.67	11,053.6	8,480.5	680.3	8,504.5	0.00	0.00	0.00
20,000.0	90.09	359.67	11,053.4	8,580.5	679.7	8,604.3	0.00	0.00	0.00
20,100.0	90.09	359.67	11,053.2	8,680.5	679.2	8,704.1	0.00	0.00	0.00
20,200.0	90.09	359.67	11,053.1	8,780.5	678.6	8,803.9	0.00	0.00	0.00
20,300.0	90.09	359.67	11,052.9	8,880.5	678.0	8,903.8	0.00	0.00	0.00
20,400.0	90.09	359.67	11,052.8	8,980.5	677.4	9,003.6	0.00	0.00	0.00
20,500.0	90.09	359.67	11,052.6	9,080.5	676.9	9,103.4	0.00	0.00	0.00
20,600.0	90.09	359.67	11,052.4	9,180.5	676.3	9,203.3	0.00	0.00	0.00
20,700.0	90.09	359.67	11,052.3	9,280.5	675.7	9,303.1	0.00	0.00	0.00
20,800.0	90.09	359.67	11,052.1	9,380.5	675.1	9,402.9	0.00	0.00	0.00
20,900.0	90.09	359.67	11,052.0	9,480.5	674.6	9,502.8	0.00	0.00	0.00
21,000.0	90.09	359.67	11,051.8	9,580.5	674.0	9,602.6	0.00	0.00	0.00
21,100.0	90.09	359.67	11,051.6	9,680.5	673.4	9,702.4	0.00	0.00	0.00
21,200.0	90.09	359.67	11,051.5	9,780.5	672.8	9,802.3	0.00	0.00	0.00
21,300.0	90.09	359.67	11,051.3	9,880.5	672.3	9,902.1	0.00	0.00	0.00
21,400.0	90.09	359.67	11,051.2	9,980.5	671.7	10,001.9	0.00	0.00	0.00
21,500.0	90.09	359.67	11,051.0	10,080.5	671.1	10,101.8	0.00	0.00	0.00
21,600.0	90.09	359.67	11,050.8	10,180.5	670.5	10,201.6	0.00	0.00	0.00
21,696.8	90.09	359.67	11,050.7	10,277.3	670.0	10,298.2	0.00	0.00	0.00
PPP4: 2618' FNL & 2318' FWL (Sec 4)									
21,700.0	90.09	359.67	11,050.7	10,280.5	669.9	10,301.4	0.00	0.00	0.00
21,800.0	90.09	359.67	11,050.5	10,380.5	669.4	10,401.3	0.00	0.00	0.00
21,900.0	90.09	359.67	11,050.4	10,480.5	668.8	10,501.1	0.00	0.00	0.00
22,000.0	90.09	359.67	11,050.2	10,580.5	668.2	10,600.9	0.00	0.00	0.00
22,100.0	90.09	359.67	11,050.0	10,680.5	667.6	10,700.8	0.00	0.00	0.00
22,200.0	90.09	359.67	11,049.9	10,780.5	667.1	10,800.6	0.00	0.00	0.00
22,300.0	90.09	359.67	11,049.7	10,880.5	666.5	10,900.4	0.00	0.00	0.00
22,400.0	90.09	359.67	11,049.6	10,980.5	665.9	11,000.3	0.00	0.00	0.00
22,500.0	90.09	359.67	11,049.4	11,080.5	665.3	11,100.1	0.00	0.00	0.00
22,600.0	90.09	359.67	11,049.3	11,180.5	664.8	11,199.9	0.00	0.00	0.00
22,700.0	90.09	359.67	11,049.1	11,280.5	664.2	11,299.8	0.00	0.00	0.00
22,800.0	90.09	359.67	11,048.9	11,380.5	663.6	11,399.6	0.00	0.00	0.00
22,900.0	90.09	359.67	11,048.8	11,480.5	663.0	11,499.4	0.00	0.00	0.00
23,000.0	90.09	359.67	11,048.6	11,580.5	662.5	11,599.3	0.00	0.00	0.00
23,100.0	90.09	359.67	11,048.5	11,680.5	661.9	11,699.1	0.00	0.00	0.00
23,200.0	90.09	359.67	11,048.3	11,780.5	661.3	11,798.9	0.00	0.00	0.00
23,300.0	90.09	359.67	11,048.1	11,880.5	660.7	11,898.8	0.00	0.00	0.00
23,400.0	90.09	359.67	11,048.0	11,980.5	660.1	11,998.6	0.00	0.00	0.00
23,500.0	90.09	359.67	11,047.8	12,080.5	659.6	12,098.4	0.00	0.00	0.00
23,600.0	90.09	359.67	11,047.7	12,180.5	659.0	12,198.3	0.00	0.00	0.00
23,700.0	90.09	359.67	11,047.5	12,280.5	658.4	12,298.1	0.00	0.00	0.00
23,800.0	90.09	359.67	11,047.3	12,380.5	657.8	12,397.9	0.00	0.00	0.00
23,900.0	90.09	359.67	11,047.2	12,480.5	657.3	12,497.8	0.00	0.00	0.00
24,000.0	90.09	359.67	11,047.0	12,580.5	656.7	12,597.6	0.00	0.00	0.00
24,015.1	90.09	359.67	11,047.0	12,595.6	656.6	12,612.7	0.00	0.00	0.00
BHL: 330' FNL & 2310' FWL (Sec 4)									

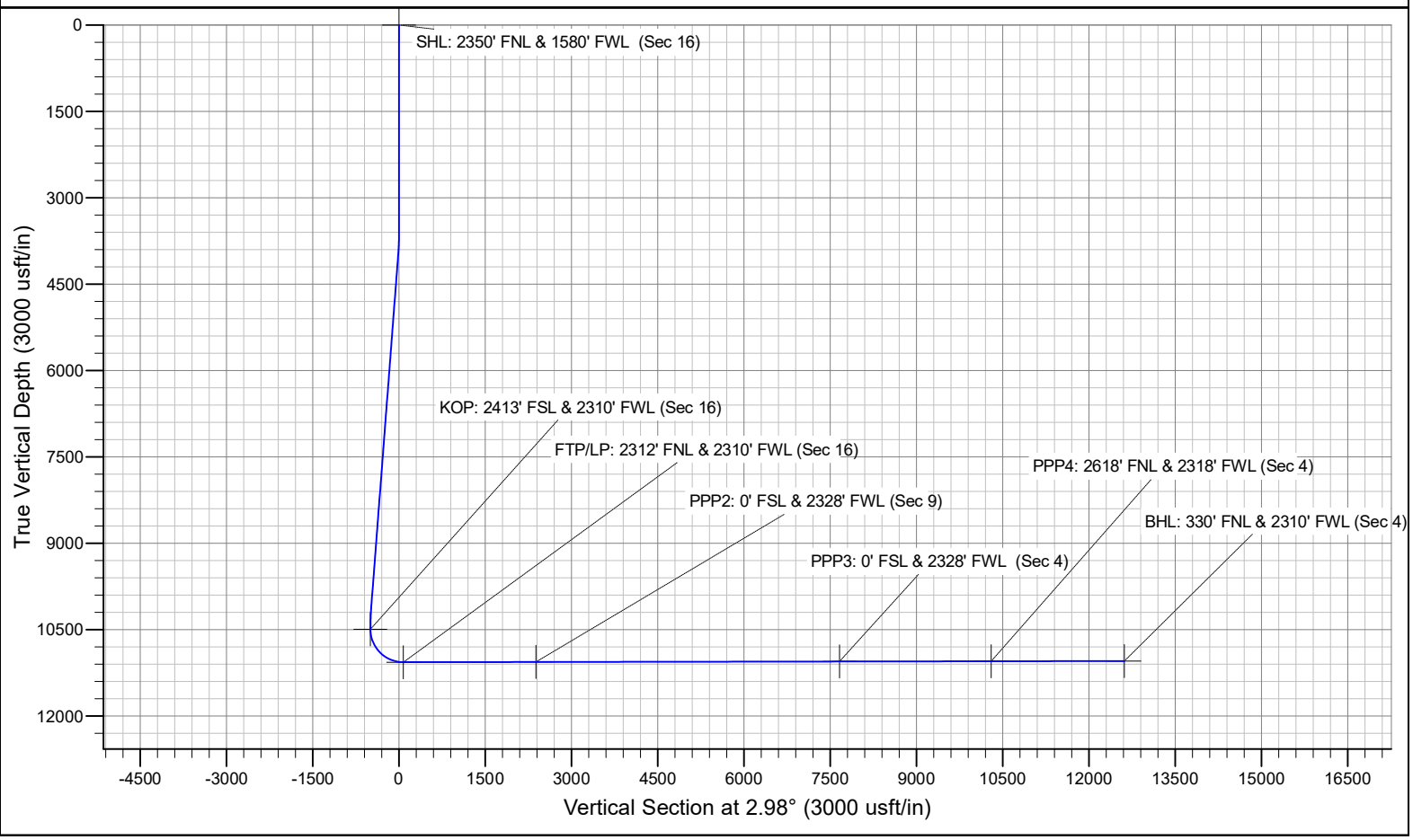
Planning Report

Database:	Hobbs	**Local Co-ordinate Reference:**	Site Forty Niner Ridge Unit #144H
Company:	Mewbourne Oil Company	**TVD Reference:**	WELL @ 3157.0usft (Original Well Elev)
Project:	Eddy County, New Mexico NAD 83	**MD Reference:**	WELL @ 3157.0usft (Original Well Elev)
Site:	Forty Niner Ridge Unit #144H	**North Reference:**	Grid
Well:	Sec 16, T23S, R30E	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	BHL: 330' FNL & 2310' FWL (Sec 4)		
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: 2350' FNL & 1580' - plan hits target center - Point	0.00	0.00	0.0	0.0	0.0	475,308.00	678,385.50	32.3059154	-103.8897488
KOP: 2413' FSL & 2310' - plan hits target center - Point	0.00	0.00	10,494.0	-536.4	732.3	474,771.60	679,117.80	32.3044326	-103.8873858
BHL: 330' FNL & 2310' F - plan hits target center - Point	0.00	0.00	11,047.0	12,595.6	656.6	487,903.60	679,042.10	32.3405305	-103.8874540
PPP4: 2618' FNL & 231 - plan hits target center - Point	0.00	0.00	11,050.7	10,277.3	670.0	485,585.30	679,055.46	32.3341578	-103.8874419
PPP3: 0' FSL & 2328' FV - plan hits target center - Point	0.00	0.00	11,054.9	7,634.4	685.2	482,942.40	679,070.69	32.3268929	-103.8874282
PPP2: 0' FSL & 2328' FV - plan hits target center - Point	0.00	0.00	11,063.3	2,347.7	715.7	477,655.66	679,101.17	32.3123605	-103.8874008
FTP/LP: 2312' FNL & 23 - plan hits target center - Point	0.00	0.00	11,067.0	36.5	729.0	475,344.50	679,114.49	32.3060074	-103.8873888


Forty Niner Ridge Unit #144H
Sec 4
BHL: 330' FNL & 2310' FWL (Sec 4)
PPP4: 2618' FNL & 2318' FWL (Sec 4)
Sec 9
PPP3: 0' FSL & 2328' FWL (Sec 4)
Sec 16
FTP/LP: 2312' FNL & 2310' FWL (Sec 16)
PPP2: 0' FSL & 2328' FWL (Sec 9)
Hardlines
SHL: 2350' FNL & 1580' FWL (Sec 16)
KOP: 2413' FSL & 2310' FWL (Sec 16)
South(-)/North(+) (3500 usft/in)
West(-)/East(+) (3500 usft/in)


SHL: 2350' FNL & 1580' FWL (Sec 16)
KOP: 2413' FSL & 2310' FWL (Sec 16)
FTP/LP: 2312' FNL & 2310' FWL (Sec 16)
PPP2: 0' FSL & 2328' FWL (Sec 9)
PPP4: 2618' FNL & 2318' FWL (Sec 4)
BHL: 330' FNL & 2310' FWL (Sec 4)
PPP3: 0' FSL & 2328' FWL (Sec 4)
True Vertical Depth (3000 usft/in)
Vertical Section at 2.98° (3000 usft/in)

PECOS DISTRICT
DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	MEWBOURNE OIL COMPANY
WELL NAME & NO.:	FORTY NINER RIDGE UNIT COM 144H
APD ID:	10400102933
LOCATION:	Section 16, T.23 S., R.30 E. NMP
COUNTY:	Eddy County, New Mexico

COA

H_2S	○ No		◉ Yes	
Potash / WIPP	○ None	○ Secretary	◉ R-111-Q	☑ Open Annulus
	3-String Design: Open Production Casing Annulus			☐ WIPP
Cave / Karst	○ Low	○ Medium	◉ High	○ Critical
Wellhead	○ Conventional	◉ Multibowl	○ Both	○ Diverter
Cementing	☑ Primary Squeeze	☐ Cont. Squeeze	☐ EchoMeter	☐ DV Tool
Special Req	☐ Capitan Reef	☐ Water Disposal	☑ COM	☑ Unit
Waste Prev.	○ Self-Certification	◉ Waste Man. Plan	○ APD Submitted prior to 06/10/2024	
Additional Language	☑ Flex Hose	☐ Casing Clearance	☐ Pilot Hole	☑ Break Testing
	☐ Four-String	☑ Offline Cementing	☐ Fluid-Filled	

A. HYDROGEN SULFIDE

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

APD is within the R-111-Q defined boundary. Operator must follow all procedures and requirements listed within the Order No. R-111-Q.

B. CASING

Primary Casing Program

1. The **13-3/8** inch surface casing shall be set at approximately **300** feet (a minimum of 70 feet (Eddy County) into the Rustler Anhydrite, above the salt, and below usable fresh water) and cemented to the surface. **If salt is encountered, set the 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

Approval Date: 04/28/2025

cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.

b. Wait on cement (WOC) time for a primary cement job will be a minimum of **8 hours** or **500 pounds compressive strength**, whichever is greater. (This is to include the lead cement)
c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
d. If cement falls back, remedial cementing will be done prior to drilling out that string.

2. The **9-5/8 in.** intermediate casing shall be set in a competent bed at approximately **3,385 ft.** The minimum required fill of cement behind the **9-5/8** inch intermediate casing is:

- **Cement to surface.** If cement does not circulate see B.1.a, c-d above. Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to **cave/karst, and potash**.

Note: The operator shall follow all applicable requirements in the Order No. R-111-Q. The minimum additives/characteristics of cement slurry as well as centralizer program prescribed for the 1st intermediate casing shall be in accordance with the Order No. R-111-Q.

3. Operator has proposed to set **7-inch** production casing at approximately **10,556 ft.** (10,494 ft. TVD). The minimum required fill of cement behind the **7** inch production casing is:

- Operator has proposed to cement in two stages by conventionally cementing the first stage and performing a bradenhead squeeze on the second stage within 180 days after well completion in accordance with the R-111-Q guidelines.

  a. First stage: Operator will cement production casing with intent to bring cement to top of Brushy Canyon formation. Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to **cave/karst and Potash**.

  b. Second stage: Operator will perform bradenhead squeeze within 180 days after completion per R-111-Q requirements. Cement shall be tie-back **at least 500 ft. into intermediate casing and below the Marker Bed 126.** If cement does not circulate, the appropriate BLM office shall be notified.

❖ Operator must run a cement evaluation tool (fluid shot tool, Temperature log or CBL, etc.) to verify TOC after the second stage bradenhead. Submit the results to the BLM. If cement does not tie-back at least 500 ft. into the previous casing shoe, the appropriate BLM office shall be notified.

❖ A monitored open annulus will be incorporated during completion by leaving the Intermediate Casing x Production Casing annulus un-cemented and monitored inside the Intermediate String. Operator must follow monitoring requirements listed within R-111-Q. Tieback requirements shall be met within 180 days.

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

- Cement should tie-back **100 feet** into the previous casing. Operator shall provide method of verification.

Alternate Casing Program

1. The **13-3/8** inch surface casing shall be set at approximately **300** feet (a minimum of 70 feet (Eddy County) into the Rustler Anhydrite, above the salt, and below usable fresh water) and cemented to the surface. **If salt is encountered, set the 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 completing the cement job.
    b. Wait on cement (WOC) time for a primary cement job will be a minimum of **8 hours** or **500 pounds compressive strength**, whichever is greater. (This is to include the lead cement)
    c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
    d. If cement falls back, remedial cementing will be done prior to drilling out that string.

2. The **9-5/8 in.** intermediate casing shall be set in a competent bed at approximately **3,385 ft.** The minimum required fill of cement behind the **9-5/8** inch intermediate casing is:

    - **Cement to surface.** If cement does not circulate see B.1.a, c-d above. Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to **cave/karst, and potash**.

    Note: The operator shall follow all applicable requirements in the Order No. R-111-Q. The minimum additives/characteristics of cement slurry as well as centralizer program prescribed for the 1st intermediate casing shall be in accordance with the Order No. R-111-Q.

3. Operator has proposed to set **7-5/8** inch production casing at approximately **10,556 ft.** (10,494 ft. TVD). The minimum required fill of cement behind the **7-5/8** inch production casing is:

    - Operator has proposed to cement in two stages by conventionally cementing the first stage and performing a bradenhead squeeze on the second stage within 180 days after well completion in accordance with the R-111-Q guidelines.

        a. First stage: Operator will cement production casing with intent to bring cement to top of Brushy Canyon formation. Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to **cave/karst and Potash**.

        b. Second stage: Operator will perform bradenhead squeeze within 180 days after completion per R-111-Q requirements. Cement shall be tie-back **at least 500 ft. into**

intermediate casing and below the Marker Bed 126. If cement does not circulate, the appropriate BLM office shall be notified.

- ❖ Operator must run a cement evaluation tool (fluid shot tool, Temperature log or CBL, etc.) to verify TOC after the second stage bradenhead. Submit the results to the BLM. If cement does not tie-back at least 500 ft. into the previous casing shoe, the appropriate BLM office shall be notified.

- ❖ A monitored open annulus will be incorporated during completion by leaving the Intermediate Casing x Production Casing annulus un-cemented and monitored inside the Intermediate String. Operator must follow monitoring requirements listed within R-111-Q. Tieback requirements shall be met within 180 days.

4. The minimum required fill of cement behind the **5-1/2** inch production liner is:

- Cement should tie-back **100 feet** into the previous casing. Operator shall provide method of verification.

Note: Cement volume is insufficient to satisfy the 100 ft. tie-back requirement. **More cement is needed.**

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 the commencement of any offline cementing procedure at **Eddy County: 575-361-2822**.

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. 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. BOP and BOPE shall be tested in accordance with title **43 CFR 3172**.
   - **i.** Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
   - **ii.** If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
   - **iii.** Manufacturer representative shall install the test plug for the initial BOP test.
   - **iv.** 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.

v. Whenever any seal subject to test pressure is broken, all the tests in 43 CFR 3172 must be followed.

BOPE Break Testing Variance (Utilizing a 10M BOPE system)

- BOPE Break Testing is ONLY permitted for intervals utilizing a 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 3172**.
- If in the event break testing is not utilized, then a full BOPE test would be conducted.

D. SPECIAL REQUIREMENT (S)

Unit Wells

The well sign for a unit well shall include the unit number in addition to the surface and bottom hole lease numbers. This also applies to participating area numbers. If a participating area has not been established, the operator can use the general unit designation, but will replace the unit number with the participating area number when the sign is replaced.

Commercial Well Determination

A commercial well determination shall be submitted after production has been established for at least six months. **(This is not necessary for secondary recovery unit wells)**

Communitization Agreement

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

- The operator will submit an as-drilled survey well plat of the well completion, but are not limited to, those specified in 43 CFR 3171 and 3172.

- 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)

Contact Eddy County Petroleum Engineering Inspection Staff:

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

1. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.
   a. In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).
   b. When the operator proposes to set surface casing with Spudder Rig
      i. Notify the BLM when moving in and removing the Spudder Rig.
      ii. Notify the BLM when moving in the 2nd Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
      iii. BOP/BOPE test to be conducted per **43 CFR 3172** as soon as 2nd Rig is rigged up on well.

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

3. For intervals in which cement to surface is required, cement to surface should be verified with a visual check and density or pH check to differentiate cement from spacer and drilling mud. The results should be documented in the driller's log and daily reports.

A. CASING

1. Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.
2. Wait on cement (WOC) for Potash Areas: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi for all cement blends of both lead and tail cement, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.
3. Wait on cement (WOC) for Water Basin: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.
4. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.
5. No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.
6. On that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Formation at the shoe shall be tested to a minimum of the mud weight equivalent anticipated to control the formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.
7. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.
8. Whenever a casing string is cemented in the R-111-Q potash area, the NMOCD requirements shall be followed.

B. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in **43 CFR 3172**.
2. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: The flex line must meet the requirements of API 16C. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.
3. 5M or higher system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.
4. If the operator has proposed a multi-bowl wellhead assembly in the APD. The following requirements must be met:
    i. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
    ii. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
    iii. Manufacturer representative shall install the test plug for the initial BOP test.
    iv. Whenever any seal subject to test pressure is broken, all the tests in 43 CFR 3172.6(b)(9) must be followed.
    v. If the cement does not circulate and one-inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
    i. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead cement), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).
    ii. In potash areas, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done.

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

iii. The tests shall be done by an independent service company utilizing a test plug not a cup or J-packer and can be initiated immediately with the casing valve open. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to **43 CFR 3172** with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for 8 hours or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).

iv. The test shall be run on a 5000-psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one-hour chart. A circular chart shall have a maximum 2-hour clock. If a twelve hour or twenty-four-hour chart is used, tester shall make a notation that it is run with a two hour clock.

v. The results of the test shall be reported to the appropriate BLM office.

vi. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.

vii. The BOP/BOPE test shall include a low-pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.

viii. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the Wolfcamp formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per **43 CFR 3172**.

C. DRILLING MUD

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

D. WASTE MATERIAL AND FLUIDS

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

disposed of on the well location or surrounding area. Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.

SA 04/23/2025

Approval Date: 04/28/2025

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: FORTY NINER RIDGE UNIT COM **Well Number:** 144H

Section 5 - Circulating Medium

Mud System Type: Closed

Will an air or gas system be Used? NO

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

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

Describe what will be on location to control well or mitigate other conditions: Lost circulation material Sweeps Mud scavengers in surface hole

Describe the mud monitoring system utilized: 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	300	SPUD MUD	8.4	8.6							
300	3450	SALT SATURATED	10	10.2							
3450	10556	WATER-BASED MUD	8.6	9.7							
10556	24015	OIL-BASED MUD	10	11.1							

Section 6 - Test, Logging, Coring

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

Will run GR/CNL from KOP (10556') to surface (horizontal well vertical portion of hole). Stated logs run will be in the Completion Report and submitted to the BLM.

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

DIRECTIONAL SURVEY,MEASUREMENT WHILE DRILLING,MUD LOG/GEOLOGIC LITHOLOGY LOG,GAMMA RAY LOG,COMPENSATED NEUTRON LOG,

Coring operation description for the well:

None

Operator Name: MEWBOURNE OIL COMPANY

Well Name: FORTY NINER RIDGE UNIT COM **Well Number:** 144H

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 6388 **Anticipated Surface Pressure:** 3953

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

H2S_Plan_20241230082353.pdf

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

Forty_Niner_Ridge_Unit_144H_MOC_Dir_Plan_20250124090059.pdf
Forty_Niner_Ridge_Unit_144H_MOC_Dir_Plot_20250124090059.pdf

Other proposed operations facets description:

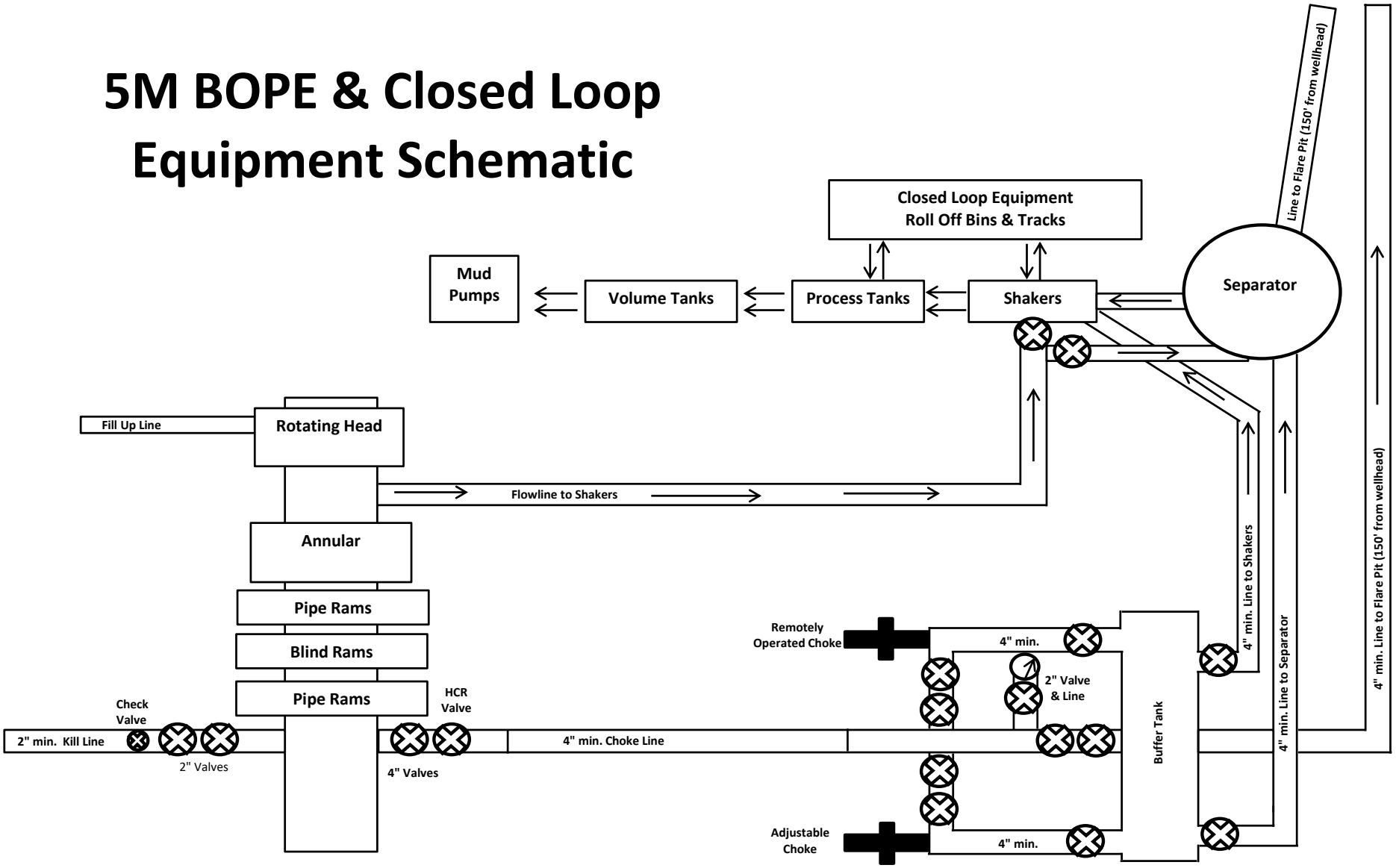
Other proposed operations facets attachment:

Forty_Niner_Ridge_Unit_144H_NGMP_20250103105022.pdf
Forty_Niner_Ridge_Unit_144H_Drlg_Program_20250124090114.pdf

Other Variance attachment:

Mewbourne_Break_Testing_Variance_20241230082549.pdf
Mewbourne_Offline_Cementing_Variance_20241230082530.pdf
Forty_Niner_Ridge_Unit_144H_R_111Q_Csg___Cmt_Assumptions_20250103105033.pdf

5M BOPE & Closed Loop Equipment Schematic



Drawing not to scale

Note: All valves & lines on choke manifold are 4" unless otherwise noted. Exact manifold configuration may vary.

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

General Information
Phone: (505) 629-6116

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

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

CONDITIONS

Operator:	OGRID:
MEWBOURNE OIL CO P.O. Box 5270 Hobbs, NM 88241	14744
	Action Number: 480010
	Action Type: [C-101] BLM - Federal/Indian Land Lease (Form 3160-3)

CONDITIONS

Created By	Condition	Condition Date
jsmith01	Cement is required to circulate on both surface and intermediate1 strings of casing.	6/29/2025
jsmith01	If cement does not circulate on any string, a Cement Bond Log (CBL) is required for that string of casing.	6/29/2025
matthew.gomez	Prior to production of this well a change to the well name/number is required to comply with the OCD well naming convention.	7/1/2025
matthew.gomez	Administrative order required for non-standard spacing unit prior to production.	7/1/2025
matthew.gomez	Notify the OCD 24 hours prior to casing & cement.	7/1/2025
matthew.gomez	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.	7/1/2025
matthew.gomez	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.	7/1/2025
matthew.gomez	File As Drilled C-102 and a directional Survey with C-104 completion packet.	7/1/2025
matthew.gomez	This well is within the R-111-Q defined boundary. Operator must follow all procedures and requirements listed within the order.	7/1/2025