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. 30-015-54491

3a. Address	3b. Phone No. *(include area code)*	10. Field and Pool, or Exploratory

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

At surface

At proposed prod. zone

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

14. Distance in miles and direction from nearest town or post office*	12. County or Parish	13. State

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)	16. No of acres in lease	17. Spacing Unit dedicated to this well

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.	19. Proposed Depth	20. BLM/BIA Bond No. in file

21. Elevations (Show whether DF, KDB, RT, GL, etc.)	22. Approximate date work will start*	23. Estimated duration

24. Attachments

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

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

25. Signature	Name *(Printed/Typed)*	Date

Title

Approved by *(Signature)*	Name *(Printed/Typed)*	Date

Title	Office

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

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

APPROVED WITH CONDITIONS

(Continued on page 2)

*(Instructions on page 2)

Approval Date: 09/13/2023

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: 09/13/2023

Additional Operator Remarks

Location of Well

0. SHL: SWSE / 290 FSL / 1540 FEL / TWSP: 26S / RANGE: 29E / SECTION: 20 / LAT: 32.0217667 / LONG: -104.0028986 (TVD: 0 feet, MD: 0 feet)

PPP: SWSE / 330 FSL / 1650 FEL / TWSP: 26S / RANGE: 29E / SECTION: 20 / LAT: 32.0218614 / LONG: -104.0032575 (TVD: 9517 feet, MD: 9524 feet)

PPP: NWNE / 330 FSL / 1650 FEL / TWSP: 26S / RANGE: 29E / SECTION: 20 / LAT: 32.0319141 / LONG: -104.0034775 (TVD: 10090 feet, MD: 13508 feet)

PPP: NWSE / 1249 FSL / 1685 FEL / TWSP: 26S / RANGE: 29E / SECTION: 17 / LAT: 32.0389764 / LONG: -104.0033964 (TVD: 10090 feet, MD: 16079 feet)

PPP: SWSE / 0 FSL / 1650 FEL / TWSP: 26S / RANGE: 29E / SECTION: 17 / LAT: 32.0355432 / LONG: -104.0035569 (TVD: 10090 feet, MD: 14829 feet)

PPP: SWSE / 131 FSL / 1649 FEL / TWSP: 26S / RANGE: 29E / SECTION: 17 / LAT: 32.0359035 / LONG: -104.00354 (TVD: 10090 feet, MD: 15000 feet)

BHL: NWNE / 330 FNL / 1650 FEL / TWSP: 26S / RANGE: 29E / SECTION: 17 / LAT: 32.0487359 / LONG: -104.0033964 (TVD: 10090 feet, MD: 19632 feet)

BLM Point of Contact

Name: JORDAN NAVARRETTE
Title: LIE
Phone: (575) 234-5972
Email: jnavarrette@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.

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

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

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

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

[1] API Number	[2] Pool Code	[3] Pool Name
	98220	PURPLE SAGE; WOLFCAMP (GAS)

[4] Property Code	[5] Property Name	[6] Well Number
	BLUE RIDGE 20-17 WA FED COM	1H

[7] OGRID No.	[8] Operator Name	[9] Elevation
372098	MARATHON OIL PERMIAN LLC	2901'

[10] Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
O	20	26S	29E		290'	South	1540'	East	EDDY

[11] Bottom Hole Location If Different From Surface

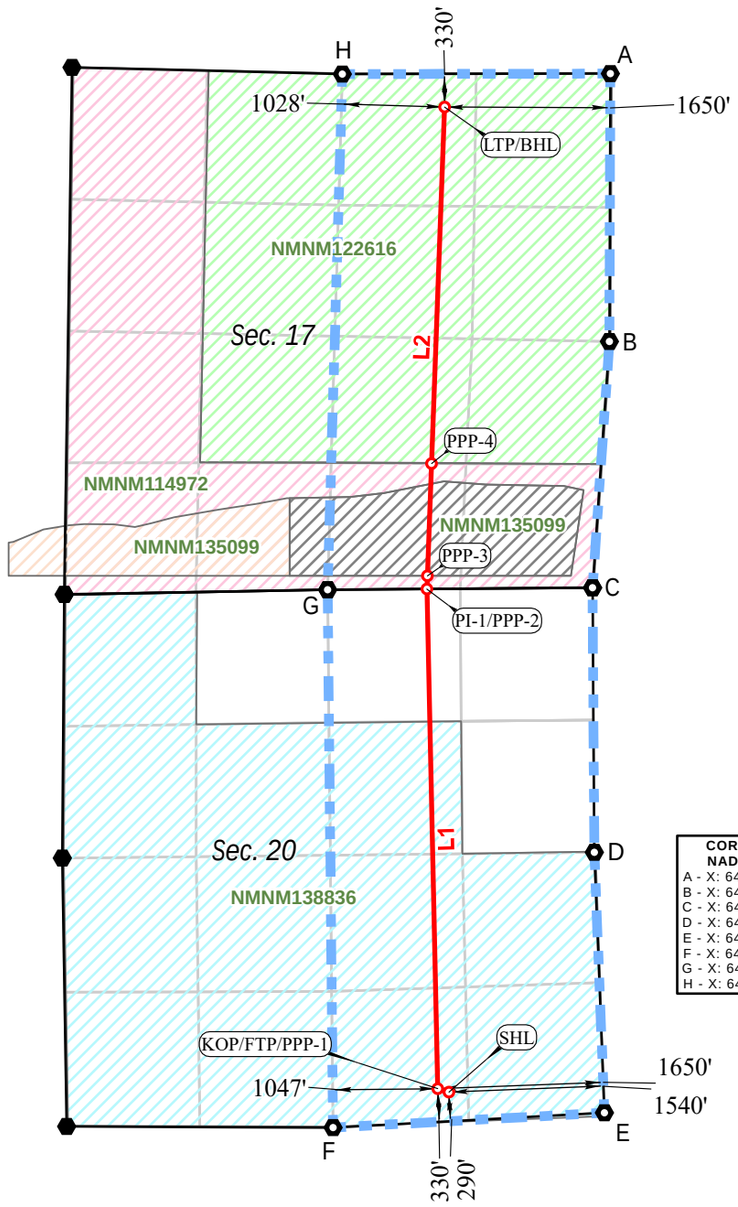
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
B	17	26S	29E		330'	North	1650'	East	EDDY

[12] Dedicated Acres	[13] Joint or Infill	[14] Consolidation Code	[15] Order No.
640.00			

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.

[16]

PPP-3	PPP-4	LAST TAKE/BOTTOM HOLE
FSL 131' FEL 1649', SECTION 17	FSL 1249' FEL 1685', SECTION 17	FNL 330' FEL 1650', SECTION 17
NAD 83, SPCS NM EAST	NAD 83, SPCS NM EAST	NAD 83, SPCS NM EAST
X:643529.88' / Y:376956.14'	X:643570.99' / Y:378074.09'	X:643701.55' / Y:381624.76'
LAT:32.03590355 / LON:-104.00354003	LAT:32.03897636 / LON:-104.00339635	LAT:32.04873586 / LON:-104.00293993
NAD 27, SPCS NM EAST	NAD 27, SPCS NM EAST	NAD 27, SPCS NM EAST
X:602344.38' / Y:376898.58'	X:602385.52' / Y:378016.50'	X:643701.55' / Y:381624.76'
LAT:32.03577863 / LON:-104.00305700	LAT:32.03885149 / LON:-104.00291322	LAT:32.04873586 / LON:104.00293993



[17] ***OPERATOR CERTIFICATION***

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

Terri Stathem — 6/19/2023
Signature — Date

Terri Stathem
Printed Name

tstathem@marathonoil.com
E-mail Address

[18] ***SURVEYOR CERTIFICATION***

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

Date of Survey: JUNE 28, 2023
Signature and Seal of Professional Surveyor

LLOYD P. SHORT NEW MEXICO 21653 PROFESSIONAL SURVEYOR

CORNER COORDINATES NAD 83, SPCS NM EAST	CORNER COORDINATES NAD 27, SPCS NM EAST
A - X: 645352.76' / Y: 381957.62'	A - X: 604167.34' / Y: 381899.95'
B - X: 645343.16' / Y: 379289.78'	B - X: 604157.68' / Y: 379232.16'
C - X: 645175.01' / Y: 376837.52'	C - X: 603989.47' / Y: 376779.95'
D - X: 645193.17' / Y: 374202.36'	D - X: 604007.56' / Y: 374144.84'
E - X: 645293.57' / Y: 371608.28'	E - X: 604107.90' / Y: 371550.82'
F - X: 642590.08' / Y: 371460.95'	F - X: 601404.47' / Y: 371403.51'
G - X: 642535.61' / Y: 376817.53'	G - X: 601350.13' / Y: 376759.99'
H - X: 642682.11' / Y: 381953.00'	H - X: 601496.75' / Y: 381895.34'

*FTP TO LTP LINE BEARINGS

PRODUCTION LINE	BEARING/LENGTH
L1	N01°14'35"W ~ 4977.92'
L2	N02°06'21"E ~ 4802.98'

PI-1/PPP-2	KOP/FTP/PPP-1	SURFACE HOLE
FSL 1' FEL 1650', SECTION 17	FSL:330' / FEL:1650', SECTION 17	FSL 290' FEL 1540', SECTION 20
NAD 83, SPCS NM EAST	NAD 83, SPCS NM EAST	NAD 83, SPCS NM EAST
X:643525.06' / Y:376825.03'	X:643633.05' / Y:371848.28'	X:643744.37' / Y:371814.17'
LAT:32.03554316 / LON:-104.00355688	LAT:32.02186143 / LON:-104.00325745	LAT:32.02176673 / LON:-104.00289859
NAD 27, SPCS NM EAST	NAD 27, SPCS NM EAST	NAD 27, SPCS NM EAST
X:602339.56' / Y:376767.47'	X:602447.42' / Y:371790.82'	X:602558.74' / Y:371756.71'
LAT:32.03541824 / LON:-104.00307386	LAT:32.02173633 / LON:-104.00277491	LAT:32.02164163 / LON:-104.00241608

Drill Line Events ⬢ Section Corners ▬ Drill Line ◄► Dimension Lines ▱ Federal Leases ▬ State Leases ⬚ HSU ○ HSU Corners

All bearings and coordinates refer to New Mexico State Plane coordinate system, East Zone, U.S. Survey Feet.

SHEET 1 OF 2
JOB No. R3996_005
REV 2 TCS 5/31/2023

Distances/areas relative to NAD 83 Combined Scale Factor: 0.99992127 Convergence Angle: 0.176499°

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: Marathon Oil Permian LLC **OGRID:** 972098 **Date:** 12 / 9 / 2023

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
Please see attached						

IV. Central Delivery Point Name: Blue Ridge Fed CTB [See 19.15.27.9(D)(1) NMAC]

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

Well Name	API	Spud Date	TD Reached Date	Completion Commencement Date	Initial Flow Back Date	First Production Date
Please see attached						

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

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

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

Section 2 – Enhanced Plan

EFFECTIVE APRIL 1, 2022

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

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

IX. Anticipated Natural Gas Production:

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

X. Natural Gas Gathering System (NGGS):

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

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

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

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

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

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

Section 3 - Certifications

Effective May 25, 2021

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

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

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

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

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

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

Section 4 - Notices

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

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

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

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

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

Signature:	*Terri Stathem*
Printed Name:	Terri Stathem
Title:	Manager Regulatory Compliance
E-mail Address:	tstathem@marathonoil.com
Date:	12/9/2023
Phone:	713-817-0224

OIL CONSERVATION DIVISION

(Only applicable when submitted as a standalone form)

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

III. Wells

Well Name	API	ULSTR	Footages	Anticipated Oil BBL/D	Anticipated Gas MCF/D	Anticipated Produced Water BBL/D
Blue Ridge 20-17WA Fed Com 1H (aka Blue Ridge WC Federal Com 701H)		0-20-26S-29E	290' FSL 1540' FEL (701H: 692' FSL 1585' FEL)	2300	1850	3500
Blue Ridge 20-17WA Fed Com 2H (aka Blue Ridge WC Federal Com #501H)		0-20-26S-29E	290' FSL 1570' FEL (501H: 691' FSL 1555' FEL)	2300	1850	3500
Mazer Rackham 20 WD FedCom 2H (aka Blue Ridge WC Federal Com #702H)		0-20-26S-29E	290' FSL 1540' FEL (702H: 689' FSL 1525' FEL)	2300	1850	3500

V. Anticipated Schedule

Well Name	API	Spud Date	TD Reached Date	Completion Commencement Date	Initial Flow Back Date	First Production Date
Blue Ridge 20-17WA Fed Com 1H (aka Blue Ridge WC Federal Com 701H)		1/15/2024	2/15/2024	5/1/2024	5/15/2024	5/15/2024
Blue Ridge 20-17WA Fed Com 2H (aka Blue Ridge WC Federal Com #501H)		1/15/2024	2/15/2024	5/1/2024	5/15/2024	5/15/2024
Mazer Rackham 20 WD FedCom 2H (aka Blue Ridge WC Federal Com #702H)		1/15/2024	2/15/2024	5/1/2024	5/15/2024	5/15/2024

APPENDIX

Section 1 - Parts VI, VII, and VIII

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

- Separation equipment is sized to allow for retention time and velocity to adequately separate oil, gas, and water at anticipated peak rates.
- All central tank battery equipment is designed to efficiently capture the remaining gas from the liquid phase.
- Valves and meters are designed to service without flow interruption or venting of gas.

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.

- **19.15.27.8 (A) – Venting and Flaring Of Natural Gas**
  - Marathon Oil Permian's field operations are designed with the goal of minimizing flaring and preventing venting of natural gas. If capturing the gas is not possible then the gas is combusted/flared using properly sized flares or combustors in accordance with state air permit rules.
- **19.15.27.8 (B) – Venting and Flaring During Drilling Operations**
  - A properly-sized flare stack will be located at a minimum 100' from the nearest surface hole location on the pad.
  - All natural gas produced during drilling operations will be flared. Venting will only occur if there is an equipment malfunction and/or to avoid risk of an immediate and substantial adverse impact on safety, public health, or the environment.
- **19.15.27.8 (C) – Venting and Flaring During Completion or Recompletion Operations**
  - During all phases of flowback, wells will flow through a sand separator, or other appropriate flowback separation equipment, and the well stream will be directed to a central tank battery (CTB) through properly sized flowlines.
  - The CTB will have properly sized separation equipment for maximum anticipated flow rates.
  - Multiple stages of separation will be used to separate gas from liquids. All gas will be routed to a sales outlet. Fluids will be routed to tanks equipped with a closed loop system that will recover any residual gas from the tanks and route such gas to a sales outlet.
- **19.15.27.8 (D) – Venting and Flaring During Production Operations**
  - During production, the well stream will be routed to the CTB where multiple stages of separation will separate gas from liquids. All gas will be routed to a sales outlet. Fluids will be routed to tanks equipped with a closed loop system that will recover any residual gas from the tanks and route such gas to a sales outlet, minimizing tank emissions.
  - Flares are equipped with auto-ignition systems and continuous pilot operations.
  - Automatic gauging equipment is installed on all tanks.
- **19.15.27.8 (E) – Performance Standards**
  - Production equipment will be designed to handle maximum anticipated rates and pressure.
  - Automatic gauging equipment is installed on all tanks to minimize venting.
  - All flared gas will be combusted in a flare stack that is properly sized and designed to ensure proper combustion.
  - Flares are equipped with continuous pilots and auto-ignitors along with remote monitoring of the pilot status.
  - Weekly AVOs and monthly LDAR inspections will be performed on all wells and facilities that produce more than 60 MCFD.
  - Gas/H2S detectors will be installed throughout the facilities and wellheads to detect leaks and enable timely repairs.

- **19.15.27.8 (F) – Measurement or Estimation of Vented and Flared Natural Gas**
  - All high pressure flared gas is measured by equipment conforming to API 14.10.
  - No meter bypasses are installed.
  - When metering is not practical due to low pressure/low rate, the vented or flared volume will be estimated through flare flow curves with the assistance of air emissions consultants, as necessary.

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

- Marathon Oil Permian will use best management practices to vent as minimally as possible during well intervention operations and downhole well maintenance.
- All natural gas is routed into the gas gathering system and directed to one of Marathon Oil Permian's multiple gas sales outlets.
- All venting events will be recorded and all start-up, shutdown, maintenance logs will be kept for control equipment.
- All control equipment will be maintained to provide highest run-time possible.
- All procedures are drafted to keep venting and flaring to the absolute minimum.

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

Application Data
09/14/2023

APD ID: 10400076637
Submission Date: 06/29/2021
Operator Name: MARATHON OIL PERMIAN LLC
Well Name: BLUE RIDGE 20-17 WA FED COM
Well Number: 1H
Well Type: OIL WELL
Well Work Type: Drill

Highlighted data reflects the most recent changes
Show Final Text

Section 1 - General

APD ID: 10400076637
Tie to previous NOS? N
Submission Date: 06/29/2021
BLM Office: Carlsbad
User: MELISSA SZUDERA
Title: REGULATORY COMPLIANCE REPRESENTATIVE
Federal/Indian APD: FED
Is the first lease penetrated for production Federal or Indian? FED
Lease number: NMNM138836
Lease Acres:
Surface access agreement in place?
Allotted?
Reservation:
Agreement in place? NO
Federal or Indian agreement:
Agreement number:
Agreement name:
Keep application confidential? Y
Permitting Agent? NO
APD Operator: MARATHON OIL PERMIAN LLC
Operator letter of

Operator Info

Operator Organization Name: MARATHON OIL PERMIAN LLC
Operator Address: 990 TOWN & COUNTRY BLVD
Zip: 77024
Operator PO Box:
Operator City: HOUSTON
State: TX
Operator Phone: (713)929-6600
Operator Internet Address:

Section 2 - Well Information

Well in Master Development Plan? NO
Master Development Plan name:
Well in Master SUPO? NO
Master SUPO name:
Well in Master Drilling Plan? NO
Master Drilling Plan name:
Well Name: BLUE RIDGE 20-17 WA FED COM
Well Number: 1H
Well API Number:
Field/Pool or Exploratory? Field and Pool
Field Name: PURPLE SAGE
Pool Name: WOLFCAMP (GAS)

Operator Name: MARATHON OIL PERMIAN LLC

Well Name: BLUE RIDGE 20-17 WA FED COM **Well Number:** 1H

Is the proposed well in an area containing other mineral resources? NATURAL GAS,OIL

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

Type of Well Pad: MULTIPLE WELL **Multiple Well Pad Name:** BLUE RIDGE 20-17 FED COM **Number:** 360-2

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

Well Work Type: Drill

Well Type: OIL WELL

Describe Well Type:

Well sub-Type: INFILL

Describe sub-type:

Distance to town: 14.5 Miles **Distance to nearest well:** 2179 FT **Distance to lease line:** 290 FT

Reservoir well spacing assigned acres Measurement: 640 Acres

Well plat: C102_BLUE_RIDGE_20_17_FED_COM_1HR_20230719142431.pdf

Well work start Date: 01/02/2022 **Duration:** 29 DAYS

Section 3 - Well Location Table

Survey Type: RECTANGULAR

Describe Survey Type:

Datum: NAD83 **Vertical Datum:** NAVD88

Survey number: 11403 **Reference Datum:** GROUND LEVEL

Wellbore	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD	Will this well produce from this
SHL Leg #1	290	FSL	1540	FEL	26S	29E	20	Aliquot SWSE	32.0217667	-104.0028986	EDDY	NEW MEXICO	NEW MEXICO	F	NMNM 138836	2901	0	0	Y
KOP Leg #1	330	FSL	1650	FEL	26S	29E	20	Aliquot SWSE	32.0218614	-104.0032575	EDDY	NEW MEXICO	NEW MEXICO	F	NMNM 138836	-6616	9524	9517	Y
PPP Leg #1-1	330	FSL	1650	FEL	26S	29E	20	Aliquot SWSE	32.0218614	-104.0032575	EDDY	NEW MEXICO	NEW MEXICO	F	NMNM 138836	-6616	9524	9517	Y

Operator Name: MARATHON OIL PERMIAN LLC

Well Name: BLUE RIDGE 20-17 WA FED COM **Well Number:** 1H

Wellbore	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD	Will this well produce from this
PPP Leg #1-2	330	FSL	1650	FEL	26S	29E	20	Aliquot NWNE	32.0319141	-104.0034775	EDDY	NEW MEXICO	NEW MEXICO	F	FEE	-7189	13508	10090	Y
PPP Leg #1-3	0	FSL	1650	FEL	26S	29E	17	Aliquot SWSE	32.0355432	-104.0035569	EDDY	NEW MEXICO	NEW MEXICO	F	NMNM 114972	-7189	14829	10090	Y
PPP Leg #1-4	131	FSL	1649	FEL	26S	29E	17	Aliquot SWSE	32.0359035	-104.00354	EDDY	NEW MEXICO	NEW MEXICO	F	NMNM 135099	-7189	15000	10090	Y
PPP Leg #1-5	1249	FSL	1685	FEL	26S	29E	17	Aliquot NWSE	32.0389764	-104.0033964	EDDY	NEW MEXICO	NEW MEXICO	F	NMNM 122616	-7189	16079	10090	Y
EXIT Leg #1	330	FNL	1650	FEL	26S	29E	17	Aliquot NWNE	32.0487359	-104.0033964	EDDY	NEW MEXICO	NEW MEXICO	F	NMNM 122616	-7189	19632	10090	Y
BHL Leg #1	330	FNL	1650	FEL	26S	29E	17	Aliquot NWNE	32.0487359	-104.0033964	EDDY	NEW MEXICO	NEW MEXICO	F	NMNM 122616	-7189	19632	10090	Y

AFMSS

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

Drilling Plan Data Report

09/14/2023

APD ID: 10400076637 **Submission Date:** 06/29/2021

Operator Name: MARATHON OIL PERMIAN LLC

Well Name: BLUE RIDGE 20-17 WA FED COM **Well Number:** 1H

Well Type: OIL WELL **Well Work Type:** Drill

Highlighted data reflects the most recent changes

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Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical	Measured Depth	Lithologies	Mineral Resources	Producing Formatio
12114359	PERMIAN	2901	0	0	ANHYDRITE	NONE	N
12114358	RUSTLER	2481	420	420	ANHYDRITE	OTHER : Brine	N
12114379	SALADO	2115	786	786	ANHYDRITE, SALT	OTHER : Brine	N
12114361	CASTILE	1869	1032	1032	ANHYDRITE, SALT	OTHER : BRINE	N
12114364	BASE OF SALT	119	2782	2782	ANHYDRITE, SALT	OTHER : Brine	N
12114365	LAMAR	119	2782	2782	SANDSTONE, SHALE	NONE	N
12114369	BELL CANYON	78	2823	2823	SANDSTONE	OIL	N
12114372	CHERRY CANYON	-997	3898	3898	SANDSTONE	OIL	N
12114373	BRUSHY CANYON	-2037	4938	4938	SANDSTONE	OIL	N
12114374	BONE SPRING LIME	-3655	6556	6556	LIMESTONE	NONE	N
12114380	UPPER AVALON SHALE	-3679	6580	6580	SHALE	OIL	N
12114375	BONE SPRING 1ST	-4556	7457	7457	SANDSTONE	OIL	N
12114376	BONE SPRING 2ND	-5330	8231	8231	SANDSTONE	OIL	N
12114377	BONE SPRING 3RD	-6408	9309	9309	SANDSTONE	OIL	N
12114378	WOLFCAMP	-6780	9681	9681	OTHER, SANDSTONE, SHALE : Carbonate	NATURAL GAS, OIL	Y

Section 2 - Blowout Prevention

Operator Name: MARATHON OIL PERMIAN LLC

Well Name: BLUE RIDGE 20-17 WA FED COM **Well Number:** 1H

Pressure Rating (PSI): 10M **Rating Depth:** 10000

Equipment: 13 5/8 BOP Annular (5,000 psi WP) and BOP Stack (10,000 psi WP) will be installed and tested before drilling all holes.
Requesting Variance? YES

Variance request: A variance is requested for the use of a flexible choke line from the BOP to Choke Manifold. See attached for specs and hydrostatic test chart.
Testing Procedure: "BOP/BOPE will be tested to 250 psi low and a high of 50% WP for the Annular and 10,000 psi for the BOP Stacking. Testing will be conducted by an independent service company per Onshore Order 2 requirements. The System may be upgraded to a higher pressure but still tested to the working pressure listed in the Equipment Description above. If the system is upgraded all the components installed will be functional and tested. Pipe rams will be operationally checked each 24 hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets. Other accessories to the BOP equipment will include a Kelly cock, full opening safety valve / inside BOP and choke lines and choke manifold. See attached schematics. Formation integrity test will be performed per Onshore Order #2. On Exploratory wells or on that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.i. A multibowl wellhead is being used. The BOP will be tested per Onshore Order #2 after installation on the surface casing which will cover testing requirements for a maximum of 30 days. If any seal subject to test pressure is broken the system must be tested. See attached schematic."

Choke Diagram Attachment:

2_Choke_Line_Flex_III_Rig_20210629043742.pdf

2_5M_10M.TWO_CHOKE_MANIFOLD.BLM.r1_20210629043742.pdf

2_Choke_Line_Test_Chart_SN_63393_20210629043742.pdf

2_Contitech_Hose_SN_663393_20210629043742.pdf

BOP Diagram Attachment:

2_Marathon_Permian___Drilling_Well_Control_Plan_06_05_2018_20210629043805.pdf

2_10.75_x_7.625_x_5.5_WH_Design_20210629043805.pdf

2_10M_Flex.BOPE_x_5M_ANNULAR.BLM_20210629043805.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	14.75	10.75	NEW	API	N	0	500	0	500	2901	2401	500	J-55	40.5	ST&C	6.57	1.95	BUOY	2.98	BUOY	2.98
2	INTERMEDIATE	9.875	7.625	NEW	API	N	0	9523	0	9517	2901	-6616	9523	P-110	29.7	BUTT	2.3	1.24	BUOY	2.35	BUOY	2.35
3	PRODUCTION	6.75	5.5	NEW	API	N	0	19631	0	10090	2915	-7189	19631	P-110	20	BUTT	1.33	1.24	BUOY	1.86	BUOY	1.86

Operator Name: MARATHON OIL PERMIAN LLC

Well Name: BLUE RIDGE 20-17 WA FED COM **Well Number:** 1H

Casing Attachments

Casing ID: 1 **String** SURFACE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

3_Malaga_3_String_Surface_20210629043838.pdf

Casing ID: 2 **String** INTERMEDIATE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

3_Malaga_3_String_Slim_Intermediate_20210629044801.pdf

Casing ID: 3 **String** PRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

3_Malaga_3_String_Slim_Production_20210629044820.pdf

Section 4 - Cement

Operator Name: MARATHON OIL PERMIAN LLC

Well Name: BLUE RIDGE 20-17 WA FED COM **Well Number:** 1H

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
SURFACE	Lead		0	200	161	1.73	13.5	278	150	Class C	LCM
SURFACE	Tail		200	500	251	1.33	14.8	334	100	CLASS C	Accelerator
PRODUCTION	Lead		7023	7523	27	1.29	14.5	35	30	Class H	Viscosifier, Retarder, Extender
PRODUCTION	Tail		7523	19631	1224	1.09	14.5	1334	30	Class H	Retarder, Extender, Fluid Loss, Dispersant.
INTERMEDIATE	Lead		0	8523	1470	2.49	11	3661	100	CLASS C	Extender, Accelerator.
INTERMEDIATE	Tail		8523	9523	218	1.28	13.8	279	30	CLASS H	Retarder

Section 5 - Circulating Medium

Mud System Type: Closed

Will an air or gas system be Used? NO

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

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

Describe what will be on location to control well or mitigate other conditions: The necessary mud products for additional weight and fluid loss control will be on location at all times.

Describe the mud monitoring system utilized: Losses or gains in the mud system will be monitored visually/manually as well as with an electronic PVT.

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	500	OTHER : Fresh Water	8.4	8.8							
500	9523	OIL-BASED MUD	9.2	10.2							

Operator Name: MARATHON OIL PERMIAN LLC

Well Name: BLUE RIDGE 20-17 WA FED COM **Well Number:** 1H

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
9523	19631	OIL-BASED MUD	10.5	12.5							
9236	15047	OIL-BASED MUD	12	13							

Section 6 - Test, Logging, Coring

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

GR from TD to Surface (horizontal well - vertical portion of well)

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

GAMMA RAY LOG,

Coring operation description for the well:

Run gamma-ray (GR) and corrected neutron log (CNL) or analogous to surface for future development of the area, one per shared well pad not to exceed 200 radial distance.

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 6559 **Anticipated Surface Pressure:** 4339

Anticipated Bottom Hole Temperature(F): 195

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

7_Blue_Ridge_1H2H_Rig_Layout_20210628092126.pdf
7_GCP_Blue_Ridge_20_17_Fed_Com_WA1H2H_06.16.2021_20210628092128.pdf
7_Blue_Ridge_1H2H_H2S_Layout_20210628092126.pdf
7_Blue_Ridge_20_17_Fed_Com_WA1H2H_H2S_Contingency_Plan_061121_20210628092130.pdf

Operator Name: MARATHON OIL PERMIAN LLC

Well Name: BLUE RIDGE 20-17 WA FED COM **Well Number:** 1H

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

8_Marathon_BlueRidge20_17_1H_PrelimA_WPReport_20210628141852.pdf

8_Marathon_BlueRidge20_17_1H_PrelimA_36x48WM_20210628141852.PDF

8_BLUE_RIDGE_20_17_FED_COM_WA1H2H_Fed_Lse_Int_Doc_20210628141918.pdf

drill_9_sub_APD_Drill_Plan_BLUE_RIDGE_20_17_WA_FED_COM_1H_rev_05.31.22_20220531094857.pdf

Other proposed operations facets description:

- Kelly cock will be in the drill string at all times.
- A full opening drill pipe stabbing valve having the appropriate connections will be on the rig floor unobstructed and readily accessible at all times.
- Hydrogen Sulfide detection equipment will be in operation after drilling out the surface casing shoe until the production casing is cemented. Breathing equipment will be on location upon drilling the surface casing shoe until total depth is reached. If Hydrogen Sulfide is encountered, measured amounts and formations will be reported to the BLM.

Potential Hazards:
- H2S detection equipment will be in operation after drilling out the surface casing shoe until the production casing has been cemented. Breathing equipment will be on location from drilling out the surface shoe until production casing is cemented. If H2S is encountered the operator will comply with Onshore Order #6.
- No abnormal temperatures or pressures are anticipated. All personnel will be familiar with all aspects of safe operation of equipment being used to drill this well. Adequate flare lines will be installed off the mud/gas separator where gas may be flared safely.
- No losses are anticipated at this time.
- All personnel will be familiar with all aspects of safe operation of equipment being used to drill this well.
- Adequate flare lines will be installed off the mud/gas separator where gas may be flared safely.

Other proposed operations facets attachment:

8_Batch_Drilling_Plan_and_Surface_Rig_Request_20210629044930.pdf

Other Variance attachment:

MARATHON OIL PERMIAN, LLC.

DRILLING AND OPERATIONS PLAN

WELL NAME & NUMBER: **BLUE RIDGE 20-17 WA FED COM 1H**

LOCATION: SECTION **20** TOWNSHIP **26S** RANGE **29E**

EDDY COUNTY, **NEW MEXICO**

WELL LOCATION TABLE

Traverse Segment	Latitude NAD83	Longitude NAD83	Elevation (ft SS)	MD (RKB)	TVD (RKB)	NS Foot	NS Indicator	EW Foot	EW Indicator	Township	Range	Section	Aliquot/Lot	Leasy Type	Lease Number
SHL	32.0217667	-104.0028986	2901	0	0	290	FSL	1540	FEL	26S	29E	20	SWSE	F	NMNM138836
KOP/FTP	32.0218614	-104.0032575	-6616	9524	9517	330	FSL	1650	FEL	26S	29E	20	SWSE	F	NMNM138836
PPP-2	32.0319141	-104.0034775	-7189	13508	10090	1320	FNL	1630	FEL	26S	29E	20	NWNE	P	PRIVATE
PPP-3	32.0355432	-104.0035569	-7189	14829	10090	0	FSL	1650	FEL	26S	29E	17	SWSE	F	NMNM114972
PPP-4	32.0389764	-104.0033964	-7189	16079	10090	1249	FSL	1685	FEL	26S	29E	17	NWSE	F	NMNM122616
LTP/BHL	32.0487359	-104.0029399	-7189	19632	10090	330	FNL	1650	FEL	26S	29E	17	NWNE	F	NMNM122616

GEOLOGIC FORMATIONS

Formation at Surface: Permian

Elevation: 2901

Formation	TVD (ft)	MD (ft)	Elevation (ft SS)	Lithologies	Mineral Resources	Producing Formation?
Rustler	420	420	2481	Anhydrite	Brine	No
Salado	786	786	2115	Salt/Anhydrite	Brine	No
Castile	1032	1032	1869	Salt/Anhydrite	Brine	No
Base of Salt (BX)	2782	2782	119	Salt/Anhydrite	Brine	No
Lamar	2782	2782	119	Sandstone/Shale	None	No
Bell Canyon	2823	2823	78	Sandstone	Oil	No
Cherry Canyon	3898	3898	-997	Sandstone	Oil	No
Brushy Canyon	4938	4938	-2037	Sandstone	Oil	No
Bone Spring Lime	6556	6556	-3655	Limestone	None	No
Upper Avalon Shale	6580	6580	-3679	Shale	Oil	No
1st Bone Spring Sand	7457	7457	-4556	Sandstone	Oil	No
2nd Bone Spring Carbonate	7738	7738	-4837	Limestone	None	No
2nd Bone Spring Sand	8231	8231	-5330	Sandstone	Oil	No
3rd Bone Spring Carbonate	8629	8629	-5728	Limestone	Oil	No
3rd Bone Spring Sand	9309	9309	-6408	Sandstone	Oil	No
Wolfcamp	9681	9681	-6780	Sandstone/Shale/Carbonates	Natural Gas/Oil	Yes
Wolfcamp A	9817	9817	-6916	Sandstone/Shale/Carbonates	Natural Gas/Oil	Yes
Wolfcamp B	10155	10155	-7254	Sandstone/Shale/Carbonates	Natural Gas/Oil	No
Wolfcamp C	10467	10467	-7566	Sandstone/Shale/Carbonates	Natural Gas/Oil	No
Wolfcamp D	10991	10991	-8090	Sandstone/Shale/Carbonates	Natural Gas/Oil	No

BLOWOUT PREVENTION

Pressure Rating (PSI): 10M

Rating Depth: 10,000

Equipment: 13 5/8 BOP Annular (5,000 psi WP) and BOP Stack (10,000 psi WP) will be installed and tested before drilling all holes.

Requesting Variance? Yes

Variance Request: A variance is requested for the use of a flexible choke line from the BOP to Choke Manifold. See attached for specs and hydrostatic test chart.

Testing Procedure: BOP/BOPE will be tested to 250 psi low and a high of 50% WP for the Annular and 10,000 psi for the BOP Stacking. Testing will be conducted by an independent service company per Onshore Order 2 requirements. The System may be upgraded to a higher pressure but still tested to the working pressure listed in the Equipment Description above. If the system is upgraded all the components installed will be functional and tested.

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

Formation integrity test will be performed per Onshore Order #2. On Exploratory wells or on that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.i. A multibowl wellhead is being used. The BOP will be tested per Onshore Order #2 after installation on the surface casing which will cover testing requirements for a maximum of 30 days. If any seal subject to test pressure is broken the system must be tested. See attached schematic.

CASING PROGRAM

String Type	Hole Size	Casing Size	Top Set MD	Bottom Set MD	Top Set TVD	Bottom Set TVD	Top Set MSL	Bottom Set MSL	Weight (lbs/ft)	Grade	Joint Type	Collapse SF	Burst SF	Joint SF Type	Joint SF	Body SF Type	Body SF	Tapered String?
Surface	14.75	10.75	0	500	0	500	2901	2401	40.5	J55	STC	6.57	1.95	BUOY	2.98	BUOY	2.98	N
Intermediate	9.875	7.625	0	9523	0	9517	2901	-6616	29.7	P110	BTC	2.30	1.24	BUOY	2.35	BUOY	2.35	N
Production	6.75	5.5	0	19631	0	10090	2901	-7189	20	P110	BTC	1.33	1.24	BUOY	1.86	BUOY	1.86	N

Casing Condition: New
Casing Standard: API

All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.h

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

CEMENT PROGRAM

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity (sks)	Yield (ft^3/sks)	Density (ppg)	Slurry Volume (ft^3)	Excess (%)	Cement Type	Additives
Surface	Lead	--	0	200	161	1.73	13.5	278	150	Class C	LCM
Surface	Tail	--	200	500	251	1.33	14.8	334	100	Class C	Accelerator
Intermediate	Lead	--	0	8523	1470	2.49	11	3661	100	Class C	Extender, Accelerator
Intermediate	Tail	--	8523	9523	218	1.28	13.8	279	30	Class H	Retarder
Production	Lead	--	7023	7523	27	1.29	14.5	35	30	Class H	Viscosifier, Retarder, Extender
Production	Tail	--	7523	19631	1224	1.09	14.5	1334	30	Class H	Retarder, Extender, Fluid Loss, Dispersant

Stage tool depth(s) will be adjusted based on hole conditions and cement volumes will be adjusted proportionally. Stage tool will be set a minimum of 50 feet below previous casing and a minimum of 200 feet above current shoe. Lab reports with the 500 psi compressive strength time for the cement will be onsite for review.

Pilot Hole? (Yes/No) **No**
if yes, provide information below
Pilot Hole Depth: N/A
KOP: N/A
Plugging Procedure for Pilot Hole: N/A

Plug Top	Plug Bottom	Excess (%)	Quantity (sx)	Density (ppg)	Yield (ft3/sks)	Water gal/sk	Slurry Description and Cement Type

CIRCULATING MEDIUM

Mud System Type: Closed
Will an air or gas system be used? No
Describe what will be on location to control well or mitigate other conditions:
The necessary mud products for additional weight and fluid loss control will be on location at all times.
Describe the mud monitoring system utilized:
Losses or gains in the mud system will be monitored visually/manually as well as with an electronic PVT.

Circulating Medium Table:

Top Depth	Bottom Depth	Mud Type	Min. Weight (ppg)	Max Weight (ppg)
0	500	Freshwater	8.4	8.8
500	9523	Brine	9.2	10.2
9523	19631	OBM	10.5	12.5

Losses or gains in the mud system will be monitored visually/manually as well as with an electronic PVT.
The necessary mud products for additional weight and fluid loss control will be on location at all times.

TESTING, LOGGING, CORING

List of production tests including testing procedures, equipment and safety measures:
List of open and cased hole logs run in the well:
Coring operation description for the well:

GR from TD to surface (horizontal well - vertical portion of hole)
GR while drilling from Intermediate casing shoe to TD.
Run gamma-ray (GR) and corrected neutron log (CNL) or analogous to surface for future development of the area, one per shared well pad not to exceed 200' radial distance.

Mud Logger: None
DST's: None
Open Hole Logs: GR while drilling from Surface shoe to TD

PRESSURE

Anticipated Bottom Hole Pressure: *(psi)* **6,559**
Anticipated Bottom Hole Temperature: *(F)* **195**
Anticipated Abnormal Pressure? *(Y/N)* **N**
Anticipated Abnormal Temperature? *(Y/N)* **N**

Potential Hazards:
H2S detection equipment will be in operation after drilling out the surface casing shoe until the production casing has been cemented. Breathing equipment will be on location from drilling out the surface shoe until production casing is cemented. If H2S is encountered the operator will comply with Onshore Order #6. Adequate flare lines will be installed off the mud/gas separator where gas may be flared safely. All personnel will be familiar with all aspects of safe operation of equipment being used to drill this well.

See attached H2S Contingency Plan.

OTHER INFORMATION

Auxiliary Well Control and Monitoring Equipment:
A Kelly cock will be in the drill string at all times. A full opening drill pipe stabbing valve having the appropriate connections will be on the rig floor unobstructed and readily accessible at all times.
Hydrogen Sulfide detection equipment will be in operation after drilling out the surface casing shoe until the production casing is cemented. Breathing equipment will be on location upon drilling the surface casing shoe until total depth is reached. If Hydrogen Sulfide is encountered, measured amounts and formations will be reported to the BLM.

Anticipated Starting Date and Duration of Operations:
Road and location construction will begin after the BLM has approved the APD. Anticipated spud date will be as soon as possible after BLM approval and as soon as a rig will be available. Move in operations and drilling is expected to take 30 days.

Batch Drilling Plan

- Marathon Oil Permian LLC. respectfully requests the option to “batch” drill sections of a well with intentions of returning to the well for later completion.
- When it is determined that the use of a “batch” drilling process to increase overall efficiency and reduce rig time on location, the following steps will be utilized to ensure compliant well control before releasing drilling rig during the batch process.
- Succeeding a successful cement job, fluid levels will be monitored in both the annulus and casing string to be verified static.
- A mandrel hanger packoff will be ran and installed in the multi-bowl wellhead isolating and creating a barrier on the annulus. This packoff will be tested to 5,000 PSI validating the seals.
- At this point the well is secure and the drilling adapter will be removed from the wellhead.
- A 13-5/8” 5M temporary abandonment cap will be installed on the wellhead by stud and nut flange. The seals of the TA cap will then be pressure tested to 5,000 PSI.
- The drilling rig will skid to the next well on the pad to continue the batch drilling process.
- When returning to the well with the TA cap, the TA cap will be removed and the BOP will be nippled up on the wellhead.
- A BOP test will then be conducted according to Onshore Order #2 and drilling operations will resume on the subject well.

Request for Surface Rig

- Marathon Oil Permian LLC. Requests the option to contract a surface rig to drill, set surface casing and cement on the subject well. If the timing between rigs is such that Marathon Oil Permian LLC. would not be able to preset the surface section, the primary drilling rig will drill the well in its entirety per the APD.

Marathon Oil
Eddy County, NM
Blue Ridge 20-17 WA FED COM
No. 1H
Prelim Plan A

Marathon Oil Corporation

PRODIRECTIONAL

US State Plane 1927 (Exact solution)
NAD 1927 (NADCON CONUS)
Clarke 1866
New Mexico East 3001
Mean Sea Level

RKB Elevation: well @ 2926.00usft

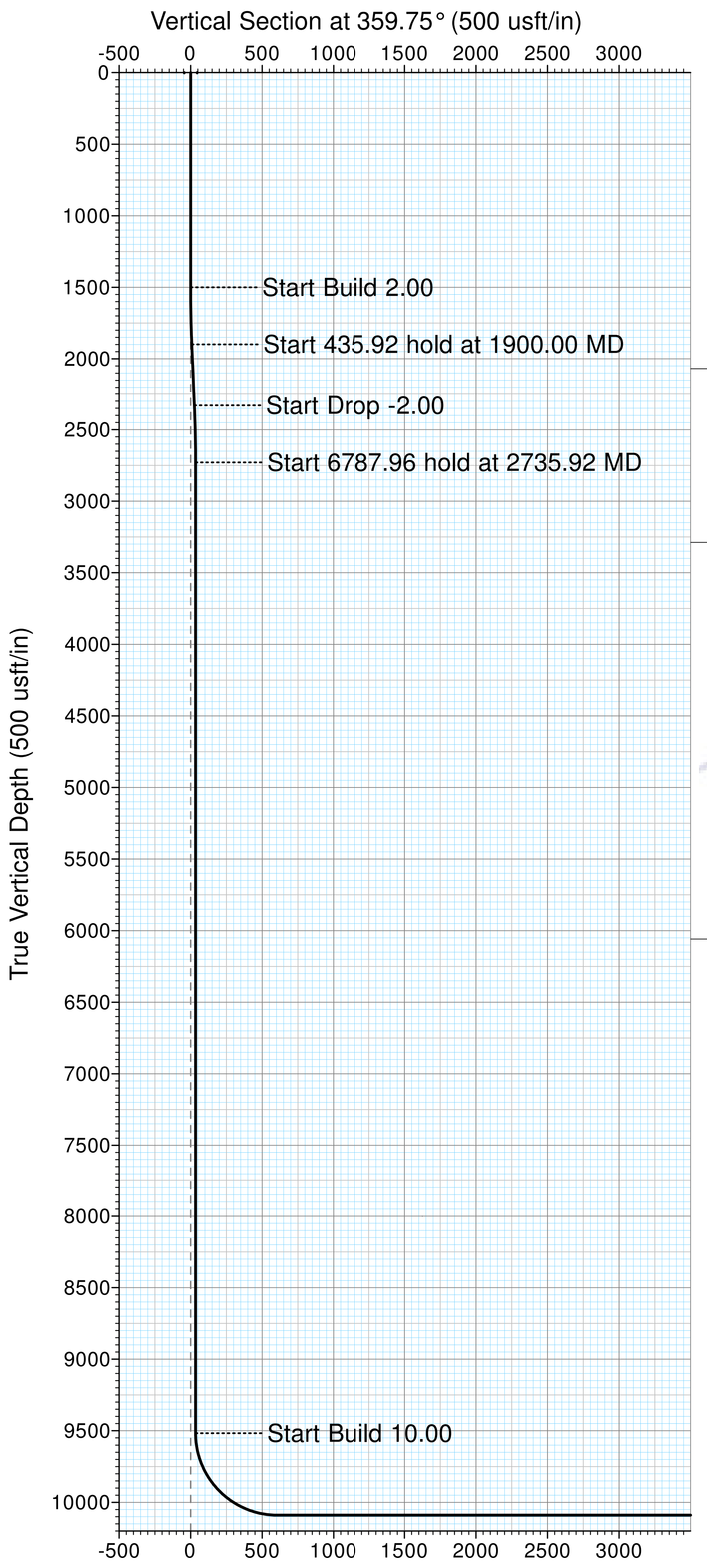
+N/-S	+E/-W	Northing	Easting	Latittude	Longitude	Slot
0.00	0.00	371756.71	602558.74	32.021642	-104.002416	

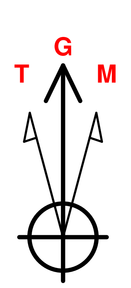
SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	VSect
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	1500.00	0.00	0.00	1500.00	0.00	0.00	0.00	0.00
3	1900.00	8.00	287.04	1898.70	8.17	-26.66	2.00	8.28
4	2335.92	8.00	287.04	2330.38	25.94	-84.66	0.00	26.31
5	2735.92	0.00	0.00	2729.08	34.11	-111.32	2.00	34.59
6	9523.88	0.00	0.00	9517.04	34.11	-111.32	0.00	34.59
7	10423.88	90.00	358.76	10090.00	606.93	-123.72	10.00	607.46
8	14757.06	90.00	358.76	10090.00	4939.10	-217.49	0.00	4940.00
9	14924.77	90.00	2.11	10090.00	5106.78	-216.21	2.00	5107.67
10	19631.58	90.00	2.11	10090.00	9810.39	-42.58	0.00	9810.48

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N/-S	+E/-W	Northing	Easting
[BlueRidge#1H]KOP/FTP	9517.04	34.11	-111.32	371790.82	602447.42
[BlueRidge#1H]LTP/BHL	10090.00	9810.39	-42.58	381567.10	602516.16
[BlueRidge#1H]PPP-2	10090.00	3690.72	-190.57	375447.43	602368.17
[BlueRidge#1H]PPP-3	10090.00	5010.76	-219.18	376767.47	602339.56
[BlueRidge#1H]PPP-4	10090.00	6259.79	-173.23	378016.50	602385.51





Azimuths to Grid North
True North: -0.17°
Magnetic North: 6.44°

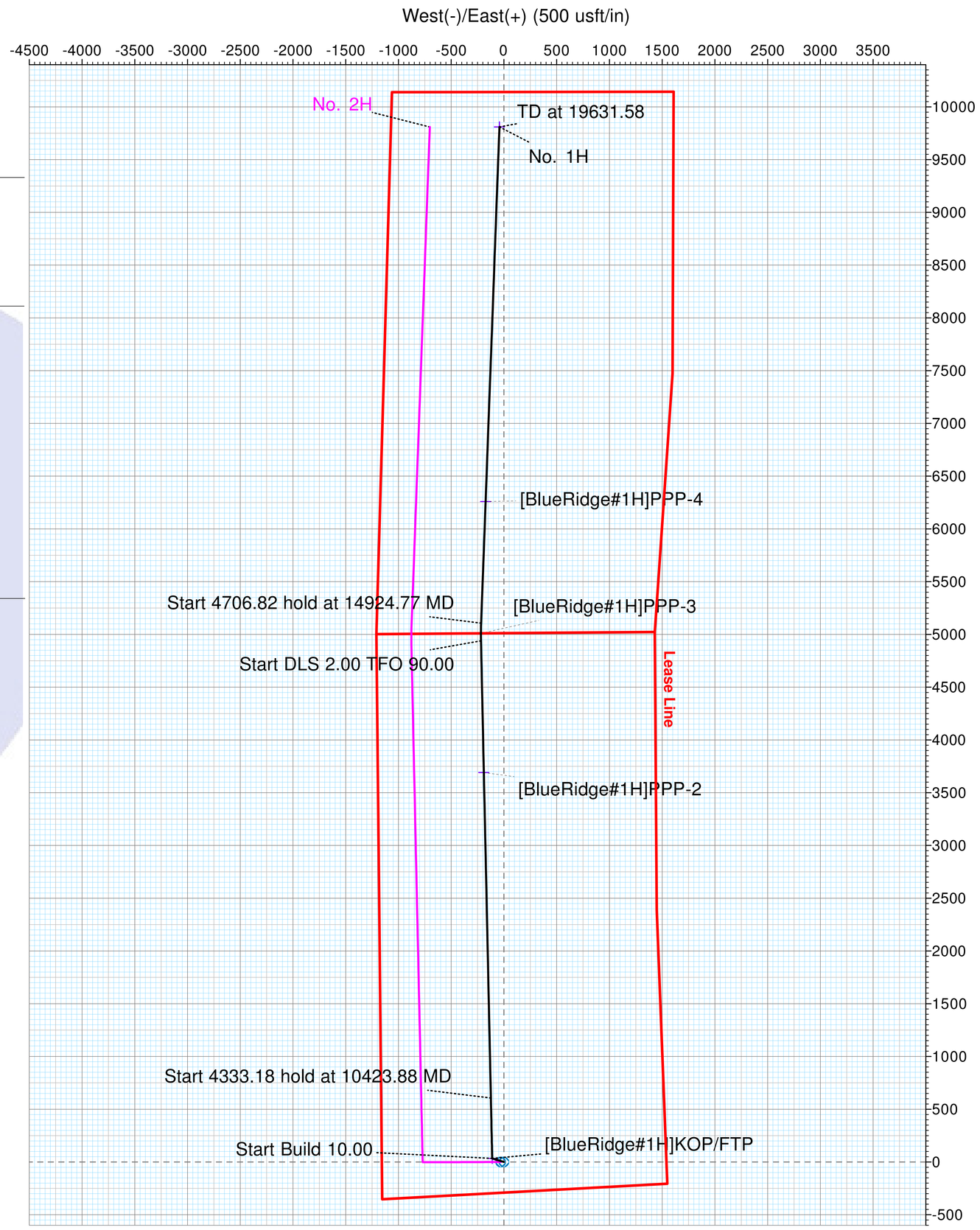
Magnetic Field
Strength: 47554.6snT
Dip Angle: 59.57°
Date: 6/11/2021
Model: HDGM

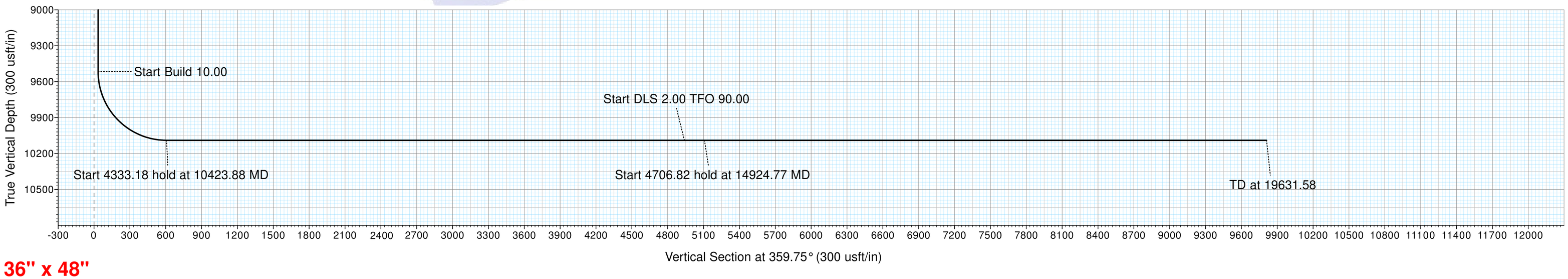
Azimuth Corrections

Total Magnetic Corr. (M to G): 6.44°

Declination (M to T): 6.62° East

Target Line: 10090' TVD @ 0' VS : 90°





36" x 48"

Marathon Oil

Pro Directional

Survey Report

Company:	Marathon Oil	**Local Co-ordinate Reference:**	Well No. 1H
Project:	Eddy County, NM	**TVD Reference:**	well @ 2926.00usft
Site:	Blue Ridge 20-17 WA FED COM	**MD Reference:**	well @ 2926.00usft
Well:	No. 1H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	Prelim Plan A	**Database:**	WellPlanner1

Project Eddy County, NM

Map System:	US State Plane 1927 (Exact solution)	**System Datum:**	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site Blue Ridge 20-17 WA FED COM

Site Position:		**Northing:**	371,756.71 usft	**Latitude:**	32.021642
From:	Map	**Easting:**	602,558.74 usft	**Longitude:**	-104.002416
Position Uncertainty:	0.00 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0.18 °

Well No. 1H

Well Position	**+N/-S**	0.00 usft	**Northing:**	371,756.71 usft	**Latitude:**	32.021642
	+E/-W	0.00 usft	**Easting:**	602,558.74 usft	**Longitude:**	-104.002416
Position Uncertainty		0.00 usft	**Wellhead Elevation:**	usft	**Ground Level:**	2,901.00 usft

Wellbore OH

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	6/11/2021	6.62	59.57	47,554.60

Design Prelim Plan A

Audit Notes:

Version:		**Phase:**	PLAN	**Tie On Depth:**	0.00

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	359.75

Survey Tool Program **Date** 6/14/2021

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	19,631.58	Prelim Plan A (OH)	MWD+HDGM	OWSG MWD + HRGM

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)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00

Marathon Oil

Pro Directional

Survey Report

Company:	Marathon Oil	**Local Co-ordinate Reference:**	Well No. 1H
Project:	Eddy County, NM	**TVD Reference:**	well @ 2926.00usft
Site:	Blue Ridge 20-17 WA FED COM	**MD Reference:**	well @ 2926.00usft
Well:	No. 1H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	Prelim Plan A	**Database:**	WellPlanner1

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)
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	2.00	287.04	1,599.98	0.51	-1.67	0.52	2.00	2.00	0.00
1,700.00	4.00	287.04	1,699.84	2.04	-6.67	2.07	2.00	2.00	0.00
1,800.00	6.00	287.04	1,799.45	4.60	-15.01	4.66	2.00	2.00	0.00
1,900.00	8.00	287.04	1,898.70	8.17	-26.66	8.28	2.00	2.00	0.00
2,000.00	8.00	287.04	1,997.73	12.25	-39.96	12.42	0.00	0.00	0.00
2,100.00	8.00	287.04	2,096.76	16.32	-53.27	16.55	0.00	0.00	0.00
2,200.00	8.00	287.04	2,195.78	20.40	-66.58	20.69	0.00	0.00	0.00
2,300.00	8.00	287.04	2,294.81	24.48	-79.88	24.82	0.00	0.00	0.00
2,335.92	8.00	287.04	2,330.38	25.94	-84.66	26.31	0.00	0.00	0.00
2,400.00	6.72	287.04	2,393.93	28.35	-92.51	28.75	2.00	-2.00	0.00
2,500.00	4.72	287.04	2,493.43	31.27	-102.04	31.71	2.00	-2.00	0.00
2,600.00	2.72	287.04	2,593.21	33.17	-108.24	33.63	2.00	-2.00	0.00
2,700.00	0.72	287.04	2,693.16	34.04	-111.10	34.53	2.00	-2.00	0.00
2,735.92	0.00	0.00	2,729.08	34.11	-111.32	34.59	2.00	-2.00	0.00
2,800.00	0.00	0.00	2,793.16	34.11	-111.32	34.59	0.00	0.00	0.00
2,900.00	0.00	0.00	2,893.16	34.11	-111.32	34.59	0.00	0.00	0.00
3,000.00	0.00	0.00	2,993.16	34.11	-111.32	34.59	0.00	0.00	0.00
3,100.00	0.00	0.00	3,093.16	34.11	-111.32	34.59	0.00	0.00	0.00
3,200.00	0.00	0.00	3,193.16	34.11	-111.32	34.59	0.00	0.00	0.00
3,300.00	0.00	0.00	3,293.16	34.11	-111.32	34.59	0.00	0.00	0.00
3,400.00	0.00	0.00	3,393.16	34.11	-111.32	34.59	0.00	0.00	0.00
3,500.00	0.00	0.00	3,493.16	34.11	-111.32	34.59	0.00	0.00	0.00
3,600.00	0.00	0.00	3,593.16	34.11	-111.32	34.59	0.00	0.00	0.00
3,700.00	0.00	0.00	3,693.16	34.11	-111.32	34.59	0.00	0.00	0.00
3,800.00	0.00	0.00	3,793.16	34.11	-111.32	34.59	0.00	0.00	0.00
3,900.00	0.00	0.00	3,893.16	34.11	-111.32	34.59	0.00	0.00	0.00
4,000.00	0.00	0.00	3,993.16	34.11	-111.32	34.59	0.00	0.00	0.00
4,100.00	0.00	0.00	4,093.16	34.11	-111.32	34.59	0.00	0.00	0.00
4,200.00	0.00	0.00	4,193.16	34.11	-111.32	34.59	0.00	0.00	0.00
4,300.00	0.00	0.00	4,293.16	34.11	-111.32	34.59	0.00	0.00	0.00
4,400.00	0.00	0.00	4,393.16	34.11	-111.32	34.59	0.00	0.00	0.00
4,500.00	0.00	0.00	4,493.16	34.11	-111.32	34.59	0.00	0.00	0.00
4,600.00	0.00	0.00	4,593.16	34.11	-111.32	34.59	0.00	0.00	0.00
4,700.00	0.00	0.00	4,693.16	34.11	-111.32	34.59	0.00	0.00	0.00
4,800.00	0.00	0.00	4,793.16	34.11	-111.32	34.59	0.00	0.00	0.00
4,900.00	0.00	0.00	4,893.16	34.11	-111.32	34.59	0.00	0.00	0.00
5,000.00	0.00	0.00	4,993.16	34.11	-111.32	34.59	0.00	0.00	0.00
5,100.00	0.00	0.00	5,093.16	34.11	-111.32	34.59	0.00	0.00	0.00

Marathon Oil

Pro Directional

Survey Report

Company:	Marathon Oil	**Local Co-ordinate Reference:**	Well No. 1H
Project:	Eddy County, NM	**TVD Reference:**	well @ 2926.00usft
Site:	Blue Ridge 20-17 WA FED COM	**MD Reference:**	well @ 2926.00usft
Well:	No. 1H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	Prelim Plan A	**Database:**	WellPlanner1

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)
5,200.00	0.00	0.00	5,193.16	34.11	-111.32	34.59	0.00	0.00	0.00
5,300.00	0.00	0.00	5,293.16	34.11	-111.32	34.59	0.00	0.00	0.00
5,400.00	0.00	0.00	5,393.16	34.11	-111.32	34.59	0.00	0.00	0.00
5,500.00	0.00	0.00	5,493.16	34.11	-111.32	34.59	0.00	0.00	0.00
5,600.00	0.00	0.00	5,593.16	34.11	-111.32	34.59	0.00	0.00	0.00
5,700.00	0.00	0.00	5,693.16	34.11	-111.32	34.59	0.00	0.00	0.00
5,800.00	0.00	0.00	5,793.16	34.11	-111.32	34.59	0.00	0.00	0.00
5,900.00	0.00	0.00	5,893.16	34.11	-111.32	34.59	0.00	0.00	0.00
6,000.00	0.00	0.00	5,993.16	34.11	-111.32	34.59	0.00	0.00	0.00
6,100.00	0.00	0.00	6,093.16	34.11	-111.32	34.59	0.00	0.00	0.00
6,200.00	0.00	0.00	6,193.16	34.11	-111.32	34.59	0.00	0.00	0.00
6,300.00	0.00	0.00	6,293.16	34.11	-111.32	34.59	0.00	0.00	0.00
6,400.00	0.00	0.00	6,393.16	34.11	-111.32	34.59	0.00	0.00	0.00
6,500.00	0.00	0.00	6,493.16	34.11	-111.32	34.59	0.00	0.00	0.00
6,600.00	0.00	0.00	6,593.16	34.11	-111.32	34.59	0.00	0.00	0.00
6,700.00	0.00	0.00	6,693.16	34.11	-111.32	34.59	0.00	0.00	0.00
6,800.00	0.00	0.00	6,793.16	34.11	-111.32	34.59	0.00	0.00	0.00
6,900.00	0.00	0.00	6,893.16	34.11	-111.32	34.59	0.00	0.00	0.00
7,000.00	0.00	0.00	6,993.16	34.11	-111.32	34.59	0.00	0.00	0.00
7,100.00	0.00	0.00	7,093.16	34.11	-111.32	34.59	0.00	0.00	0.00
7,200.00	0.00	0.00	7,193.16	34.11	-111.32	34.59	0.00	0.00	0.00
7,300.00	0.00	0.00	7,293.16	34.11	-111.32	34.59	0.00	0.00	0.00
7,400.00	0.00	0.00	7,393.16	34.11	-111.32	34.59	0.00	0.00	0.00
7,500.00	0.00	0.00	7,493.16	34.11	-111.32	34.59	0.00	0.00	0.00
7,600.00	0.00	0.00	7,593.16	34.11	-111.32	34.59	0.00	0.00	0.00
7,700.00	0.00	0.00	7,693.16	34.11	-111.32	34.59	0.00	0.00	0.00
7,800.00	0.00	0.00	7,793.16	34.11	-111.32	34.59	0.00	0.00	0.00
7,900.00	0.00	0.00	7,893.16	34.11	-111.32	34.59	0.00	0.00	0.00
8,000.00	0.00	0.00	7,993.16	34.11	-111.32	34.59	0.00	0.00	0.00
8,100.00	0.00	0.00	8,093.16	34.11	-111.32	34.59	0.00	0.00	0.00
8,200.00	0.00	0.00	8,193.16	34.11	-111.32	34.59	0.00	0.00	0.00
8,300.00	0.00	0.00	8,293.16	34.11	-111.32	34.59	0.00	0.00	0.00
8,400.00	0.00	0.00	8,393.16	34.11	-111.32	34.59	0.00	0.00	0.00
8,500.00	0.00	0.00	8,493.16	34.11	-111.32	34.59	0.00	0.00	0.00
8,600.00	0.00	0.00	8,593.16	34.11	-111.32	34.59	0.00	0.00	0.00
8,700.00	0.00	0.00	8,693.16	34.11	-111.32	34.59	0.00	0.00	0.00
8,800.00	0.00	0.00	8,793.16	34.11	-111.32	34.59	0.00	0.00	0.00
8,900.00	0.00	0.00	8,893.16	34.11	-111.32	34.59	0.00	0.00	0.00
9,000.00	0.00	0.00	8,993.16	34.11	-111.32	34.59	0.00	0.00	0.00
9,100.00	0.00	0.00	9,093.16	34.11	-111.32	34.59	0.00	0.00	0.00
9,200.00	0.00	0.00	9,193.16	34.11	-111.32	34.59	0.00	0.00	0.00
9,300.00	0.00	0.00	9,293.16	34.11	-111.32	34.59	0.00	0.00	0.00
9,400.00	0.00	0.00	9,393.16	34.11	-111.32	34.59	0.00	0.00	0.00

Marathon Oil

Pro Directional

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Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
9,500.00	0.00	0.00	9,493.16	34.11	-111.32	34.59	0.00	0.00	0.00
9,523.88	0.00	0.00	9,517.04	34.11	-111.32	34.59	0.00	0.00	0.00
[BlueRidge#1H]KOP/FTP									
9,550.00	2.61	358.76	9,543.15	34.71	-111.33	35.19	10.00	10.00	0.00
9,600.00	7.61	358.76	9,592.94	39.16	-111.43	39.64	10.00	10.00	0.00
9,650.00	12.61	358.76	9,642.14	47.93	-111.62	48.42	10.00	10.00	0.00
9,700.00	17.61	358.76	9,690.40	60.96	-111.90	61.45	10.00	10.00	0.00
9,750.00	22.61	358.76	9,737.34	78.14	-112.27	78.63	10.00	10.00	0.00
9,800.00	27.61	358.76	9,782.60	99.35	-112.73	99.84	10.00	10.00	0.00
9,850.00	32.61	358.76	9,825.83	124.42	-113.27	124.91	10.00	10.00	0.00
9,900.00	37.61	358.76	9,866.72	153.17	-113.90	153.66	10.00	10.00	0.00
9,950.00	42.61	358.76	9,904.95	185.36	-114.59	185.86	10.00	10.00	0.00
10,000.00	47.61	358.76	9,940.23	220.77	-115.36	221.27	10.00	10.00	0.00
10,050.00	52.61	358.76	9,972.28	259.11	-116.19	259.61	10.00	10.00	0.00
10,100.00	57.61	358.76	10,000.87	300.10	-117.08	300.61	10.00	10.00	0.00
10,150.00	62.61	358.76	10,025.78	343.43	-118.02	343.94	10.00	10.00	0.00
10,200.00	67.61	358.76	10,046.81	388.76	-119.00	389.27	10.00	10.00	0.00
10,250.00	72.61	358.76	10,063.82	435.75	-120.01	436.27	10.00	10.00	0.00
10,300.00	77.61	358.76	10,076.66	484.05	-121.06	484.57	10.00	10.00	0.00
10,350.00	82.61	358.76	10,085.24	533.28	-122.12	533.80	10.00	10.00	0.00
10,400.00	87.61	358.76	10,089.50	583.07	-123.20	583.60	10.00	10.00	0.00
10,423.88	90.00	358.76	10,090.00	606.93	-123.72	607.46	10.00	10.00	0.00
10,500.00	90.00	358.76	10,090.00	683.04	-125.37	683.57	0.00	0.00	0.00
10,600.00	90.00	358.76	10,090.00	783.01	-127.53	783.56	0.00	0.00	0.00
10,700.00	90.00	358.76	10,090.00	882.99	-129.69	883.54	0.00	0.00	0.00
10,800.00	90.00	358.76	10,090.00	982.97	-131.86	983.53	0.00	0.00	0.00
10,900.00	90.00	358.76	10,090.00	1,082.94	-134.02	1,083.51	0.00	0.00	0.00
11,000.00	90.00	358.76	10,090.00	1,182.92	-136.19	1,183.50	0.00	0.00	0.00
11,100.00	90.00	358.76	10,090.00	1,282.90	-138.35	1,283.48	0.00	0.00	0.00
11,200.00	90.00	358.76	10,090.00	1,382.87	-140.51	1,383.47	0.00	0.00	0.00
11,300.00	90.00	358.76	10,090.00	1,482.85	-142.68	1,483.45	0.00	0.00	0.00
11,400.00	90.00	358.76	10,090.00	1,582.83	-144.84	1,583.44	0.00	0.00	0.00
11,500.00	90.00	358.76	10,090.00	1,682.80	-147.01	1,683.42	0.00	0.00	0.00
11,600.00	90.00	358.76	10,090.00	1,782.78	-149.17	1,783.41	0.00	0.00	0.00
11,700.00	90.00	358.76	10,090.00	1,882.76	-151.33	1,883.39	0.00	0.00	0.00
11,800.00	90.00	358.76	10,090.00	1,982.73	-153.50	1,983.38	0.00	0.00	0.00
11,900.00	90.00	358.76	10,090.00	2,082.71	-155.66	2,083.36	0.00	0.00	0.00
12,000.00	90.00	358.76	10,090.00	2,182.69	-157.83	2,183.35	0.00	0.00	0.00
12,100.00	90.00	358.76	10,090.00	2,282.66	-159.99	2,283.33	0.00	0.00	0.00
12,200.00	90.00	358.76	10,090.00	2,382.64	-162.15	2,383.32	0.00	0.00	0.00
12,300.00	90.00	358.76	10,090.00	2,482.62	-164.32	2,483.30	0.00	0.00	0.00
12,400.00	90.00	358.76	10,090.00	2,582.59	-166.48	2,583.29	0.00	0.00	0.00
12,500.00	90.00	358.76	10,090.00	2,682.57	-168.65	2,683.27	0.00	0.00	0.00
12,600.00	90.00	358.76	10,090.00	2,782.54	-170.81	2,783.26	0.00	0.00	0.00

Marathon Oil

Pro Directional

Survey Report

Company:	Marathon Oil	**Local Co-ordinate Reference:**	Well No. 1H
Project:	Eddy County, NM	**TVD Reference:**	well @ 2926.00usft
Site:	Blue Ridge 20-17 WA FED COM	**MD Reference:**	well @ 2926.00usft
Well:	No. 1H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	Prelim Plan A	**Database:**	WellPlanner1

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)
12,700.00	90.00	358.76	10,090.00	2,882.52	-172.98	2,883.25	0.00	0.00	0.00
12,800.00	90.00	358.76	10,090.00	2,982.50	-175.14	2,983.23	0.00	0.00	0.00
12,900.00	90.00	358.76	10,090.00	3,082.47	-177.30	3,083.22	0.00	0.00	0.00
13,000.00	90.00	358.76	10,090.00	3,182.45	-179.47	3,183.20	0.00	0.00	0.00
13,100.00	90.00	358.76	10,090.00	3,282.43	-181.63	3,283.19	0.00	0.00	0.00
13,200.00	90.00	358.76	10,090.00	3,382.40	-183.80	3,383.17	0.00	0.00	0.00
13,300.00	90.00	358.76	10,090.00	3,482.38	-185.96	3,483.16	0.00	0.00	0.00
13,400.00	90.00	358.76	10,090.00	3,582.36	-188.12	3,583.14	0.00	0.00	0.00
13,500.00	90.00	358.76	10,090.00	3,682.33	-190.29	3,683.13	0.00	0.00	0.00
13,508.39	90.00	358.76	10,090.00	3,690.72	-190.47	3,691.51	0.00	0.00	0.00
[BlueRidge#1H]PPP-2									
13,600.00	90.00	358.76	10,090.00	3,782.31	-192.45	3,783.11	0.00	0.00	0.00
13,700.00	90.00	358.76	10,090.00	3,882.29	-194.62	3,883.10	0.00	0.00	0.00
13,800.00	90.00	358.76	10,090.00	3,982.26	-196.78	3,983.08	0.00	0.00	0.00
13,900.00	90.00	358.76	10,090.00	4,082.24	-198.94	4,083.07	0.00	0.00	0.00
14,000.00	90.00	358.76	10,090.00	4,182.22	-201.11	4,183.05	0.00	0.00	0.00
14,100.00	90.00	358.76	10,090.00	4,282.19	-203.27	4,283.04	0.00	0.00	0.00
14,200.00	90.00	358.76	10,090.00	4,382.17	-205.44	4,383.02	0.00	0.00	0.00
14,300.00	90.00	358.76	10,090.00	4,482.15	-207.60	4,483.01	0.00	0.00	0.00
14,400.00	90.00	358.76	10,090.00	4,582.12	-209.76	4,582.99	0.00	0.00	0.00
14,500.00	90.00	358.76	10,090.00	4,682.10	-211.93	4,682.98	0.00	0.00	0.00
14,600.00	90.00	358.76	10,090.00	4,782.08	-214.09	4,782.96	0.00	0.00	0.00
14,700.00	90.00	358.76	10,090.00	4,882.05	-216.26	4,882.95	0.00	0.00	0.00
14,757.06	90.00	358.76	10,090.00	4,939.10	-217.49	4,940.00	0.00	0.00	0.00
14,800.00	90.00	359.62	10,090.00	4,982.04	-218.10	4,982.93	2.00	0.00	2.00
14,828.71	90.00	0.19	10,090.00	5,010.74	-218.15	5,011.64	2.00	0.00	2.00
[BlueRidge#1H]PPP-3									
14,900.00	90.00	1.62	10,090.00	5,082.02	-217.02	5,082.92	2.00	0.00	2.00
14,924.77	90.00	2.11	10,090.00	5,106.78	-216.21	5,107.67	2.00	0.00	2.00
15,000.00	90.00	2.11	10,090.00	5,181.96	-213.44	5,182.84	0.00	0.00	0.00
15,100.00	90.00	2.11	10,090.00	5,281.89	-209.75	5,282.75	0.00	0.00	0.00
15,200.00	90.00	2.11	10,090.00	5,381.82	-206.06	5,382.67	0.00	0.00	0.00
15,300.00	90.00	2.11	10,090.00	5,481.76	-202.37	5,482.58	0.00	0.00	0.00
15,400.00	90.00	2.11	10,090.00	5,581.69	-198.68	5,582.50	0.00	0.00	0.00
15,500.00	90.00	2.11	10,090.00	5,681.62	-194.99	5,682.41	0.00	0.00	0.00
15,600.00	90.00	2.11	10,090.00	5,781.55	-191.30	5,782.33	0.00	0.00	0.00
15,700.00	90.00	2.11	10,090.00	5,881.48	-187.61	5,882.24	0.00	0.00	0.00
15,800.00	90.00	2.11	10,090.00	5,981.42	-183.92	5,982.16	0.00	0.00	0.00
15,900.00	90.00	2.11	10,090.00	6,081.35	-180.24	6,082.07	0.00	0.00	0.00
16,000.00	90.00	2.11	10,090.00	6,181.28	-176.55	6,181.99	0.00	0.00	0.00
16,078.58	90.00	2.11	10,090.00	6,259.81	-173.65	6,260.50	0.00	0.00	0.00
[BlueRidge#1H]PPP-4									
16,100.00	90.00	2.11	10,090.00	6,281.21	-172.86	6,281.90	0.00	0.00	0.00

Marathon Oil

Pro Directional

Survey Report

Company:	Marathon Oil	**Local Co-ordinate Reference:**	Well No. 1H
Project:	Eddy County, NM	**TVD Reference:**	well @ 2926.00usft
Site:	Blue Ridge 20-17 WA FED COM	**MD Reference:**	well @ 2926.00usft
Well:	No. 1H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	Prelim Plan A	**Database:**	WellPlanner1

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)
16,200.00	90.00	2.11	10,090.00	6,381.14	-169.17	6,381.82	0.00	0.00	0.00
16,300.00	90.00	2.11	10,090.00	6,481.07	-165.48	6,481.73	0.00	0.00	0.00
16,400.00	90.00	2.11	10,090.00	6,581.01	-161.79	6,581.65	0.00	0.00	0.00
16,500.00	90.00	2.11	10,090.00	6,680.94	-158.10	6,681.56	0.00	0.00	0.00
16,600.00	90.00	2.11	10,090.00	6,780.87	-154.41	6,781.48	0.00	0.00	0.00
16,700.00	90.00	2.11	10,090.00	6,880.80	-150.72	6,881.39	0.00	0.00	0.00
16,800.00	90.00	2.11	10,090.00	6,980.73	-147.04	6,981.31	0.00	0.00	0.00
16,900.00	90.00	2.11	10,090.00	7,080.67	-143.35	7,081.22	0.00	0.00	0.00
17,000.00	90.00	2.11	10,090.00	7,180.60	-139.66	7,181.14	0.00	0.00	0.00
17,100.00	90.00	2.11	10,090.00	7,280.53	-135.97	7,281.05	0.00	0.00	0.00
17,200.00	90.00	2.11	10,090.00	7,380.46	-132.28	7,380.97	0.00	0.00	0.00
17,300.00	90.00	2.11	10,090.00	7,480.39	-128.59	7,480.88	0.00	0.00	0.00
17,400.00	90.00	2.11	10,090.00	7,580.33	-124.90	7,580.80	0.00	0.00	0.00
17,500.00	90.00	2.11	10,090.00	7,680.26	-121.21	7,680.71	0.00	0.00	0.00
17,600.00	90.00	2.11	10,090.00	7,780.19	-117.52	7,780.63	0.00	0.00	0.00
17,700.00	90.00	2.11	10,090.00	7,880.12	-113.84	7,880.54	0.00	0.00	0.00
17,800.00	90.00	2.11	10,090.00	7,980.05	-110.15	7,980.46	0.00	0.00	0.00
17,900.00	90.00	2.11	10,090.00	8,079.99	-106.46	8,080.37	0.00	0.00	0.00
18,000.00	90.00	2.11	10,090.00	8,179.92	-102.77	8,180.29	0.00	0.00	0.00
18,100.00	90.00	2.11	10,090.00	8,279.85	-99.08	8,280.20	0.00	0.00	0.00
18,200.00	90.00	2.11	10,090.00	8,379.78	-95.39	8,380.12	0.00	0.00	0.00
18,300.00	90.00	2.11	10,090.00	8,479.71	-91.70	8,480.03	0.00	0.00	0.00
18,400.00	90.00	2.11	10,090.00	8,579.65	-88.01	8,579.95	0.00	0.00	0.00
18,500.00	90.00	2.11	10,090.00	8,679.58	-84.32	8,679.86	0.00	0.00	0.00
18,600.00	90.00	2.11	10,090.00	8,779.51	-80.63	8,779.78	0.00	0.00	0.00
18,700.00	90.00	2.11	10,090.00	8,879.44	-76.95	8,879.69	0.00	0.00	0.00
18,800.00	90.00	2.11	10,090.00	8,979.37	-73.26	8,979.61	0.00	0.00	0.00
18,900.00	90.00	2.11	10,090.00	9,079.31	-69.57	9,079.52	0.00	0.00	0.00
19,000.00	90.00	2.11	10,090.00	9,179.24	-65.88	9,179.44	0.00	0.00	0.00
19,100.00	90.00	2.11	10,090.00	9,279.17	-62.19	9,279.35	0.00	0.00	0.00
19,200.00	90.00	2.11	10,090.00	9,379.10	-58.50	9,379.27	0.00	0.00	0.00
19,300.00	90.00	2.11	10,090.00	9,479.03	-54.81	9,479.18	0.00	0.00	0.00
19,400.00	90.00	2.11	10,090.00	9,578.96	-51.12	9,579.10	0.00	0.00	0.00
19,500.00	90.00	2.11	10,090.00	9,678.90	-47.43	9,679.01	0.00	0.00	0.00
19,600.00	90.00	2.11	10,090.00	9,778.83	-43.75	9,778.93	0.00	0.00	0.00
19,631.58	90.00	2.11	10,090.00	9,810.39	-42.58	9,810.48	0.00	0.00	0.00
[BlueRidge#1H]LTP/BHL									

Marathon Oil

Pro Directional

Survey Report

Company:	Marathon Oil	**Local Co-ordinate Reference:**	Well No. 1H
Project:	Eddy County, NM	**TVD Reference:**	well @ 2926.00usft
Site:	Blue Ridge 20-17 WA FED COM	**MD Reference:**	well @ 2926.00usft
Well:	No. 1H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	Prelim Plan A	**Database:**	WellPlanner1

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
[BlueRidge#1H]KOP/FTl - plan hits target center - Point	0.00	0.00	9,517.04	34.11	-111.32	371,790.82	602,447.42	32.021736	-104.002775
[BlueRidge#1H]PPP-3 - plan misses target center by 1.04usft at 14828.71usft MD (10090.00 TVD, 5010.74 N, -218.15 E) - Point	0.00	0.00	10,090.00	5,010.76	-219.18	376,767.46	602,339.56	32.035418	-104.003074
[BlueRidge#1H]PPP-4 - plan misses target center by 0.42usft at 16078.58usft MD (10090.00 TVD, 6259.81 N, -173.65 E) - Point	0.00	0.00	10,090.00	6,259.79	-173.23	378,016.50	602,385.52	32.038852	-104.002913
[BlueRidge#1H]LTP/BHL - plan hits target center - Point	0.00	0.00	10,090.00	9,810.39	-42.58	381,567.10	602,516.16	32.048611	-104.002457
[BlueRidge#1H]PPP-2 - plan misses target center by 0.10usft at 13508.39usft MD (10090.00 TVD, 3690.72 N, -190.47 E) - Point	0.00	0.00	10,090.00	3,690.72	-190.57	375,447.43	602,368.17	32.031789	-104.002995

Checked By: _____ Approved By: _____ Date: _____

PECOS DISTRICT
DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	**Marathon**
LEASE NO.:	**NMNM138836**
LOCATION:	Section 20, T.26 S, R.29 E., NMPM
COUNTY:	Eddy County, New Mexico
WELL NAME & NO.:	Blue Ridge 20-17 WA Fed Com 1H
SURFACE HOLE FOOTAGE:	290'/S & 1540'/E
BOTTOM HOLE FOOTAGE:	330'/N & 1650'/E

COA

H_2S	○ Yes	◉ No		
Potash / WIPP	◉ None	○ Secretary	○ R-111-P	☐ WIPP
Cave / Karst	○ Low	◉ Medium	○ High	○ Critical
Wellhead	○ Conventional	◉ Multibowl	○ Both	○ Diverter
Cementing	☐ Primary Squeeze	☐ Cont. Squeeze	☐ EchoMeter	☐ DV Tool
Special Req	☐ Break Testing	☐ Water Disposal	☑ COM	☐ Unit
Variance	☑ Flex Hose	☐ Casing Clearance	☐ Pilot Hole	☐ Capitan Reef
Variance	☐ Four-String	☐ Offline Cementing	☑ Fluid-Filled	☐ Open Annulus
☐ **Batch APD / Sundry**				

A. HYDROGEN SULFIDE

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

B. CASING

1. The **10-3/4** inch surface casing shall be set at approximately **350** feet (a minimum of 70 feet (Eddy County) into the Rustler Anhydrite, above the salt, and below usable fresh water) and cemented to the surface.

    a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement 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)

 Approval Date: 09/13/2023

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.

Intermediate casing must be kept fluid filled to meet BLM minimum collapse requirement.

2. The minimum required fill of cement behind the **7-5/8** 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.

❖ In Medium Cave/Karst Areas if cement does not circulate to surface on the first two casing strings, the cement on the 3rd casing string must come to surface.

3. The minimum required fill of cement behind the **5-1/2** inch production casing is:
   - Cement should tie-back at least **200 feet** into previous casing string. Operator shall provide method of verification.

Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst.

C. PRESSURE CONTROL

1. Variance approved to use flex line from BOP to choke manifold. Manufacturer's specification to be readily available. No external damage to flex line. Flex line to be installed as straight as possible (no hard bends).

2. Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the casing shoe shall be **5000 (5M)** psi.
a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
c. Manufacturer representative shall install the test plug for the initial BOP test.
d. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
e. Whenever any seal subject to test pressure is broken, all the tests in 43 CFR 3172 must be followed.

D. SPECIAL REQUIREMENT (S)

Communitization Agreement

- The operator will submit a Communitization Agreement to the Santa Fe Office, 301 Dinosaur Trail Santa Fe, New Mexico 87508, at least 90 days before the anticipated date of first production from a well subject to a spacing order issued by the New Mexico Oil Conservation Division. The Communitization Agreement will include the signatures of all working interest owners in all Federal and Indian leases subject to the Communitization Agreement (i.e., operating rights owners and lessees of record), or certification that the operator has obtained the written signatures of all such owners and will make those signatures available to the BLM immediately upon request.
- The operator will submit an as-drilled survey well plat of the well completion, but are not limited to, those specified in 43 CFR 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)

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

☒ Lea County
Call the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240,
(575) 689-5981

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

   a. In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).

b. When the operator proposes to set surface casing with Spudder Rig
   - Notify the BLM when moving in and removing the Spudder Rig.
   - Notify the BLM when moving in the 2nd Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
   - BOP/BOPE test to be conducted per **43 CFR part 3170 Subpart 3172** as soon as 2nd Rig is rigged up on well.

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

3. The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.

A. CASING

1. Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.

2. Wait on cement (WOC) for Potash Areas: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi for all cement blends, 2) until cement has been in place at least 24 hours. WOC time will be recorded in the driller's log. The casing intergrity test can be done (prior to the cement setting up) immediately after bumping the plug.

3. Wait on cement (WOC) for Water Basin: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.

4. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.

5. No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.

6. On that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Formation at the shoe shall be tested to a minimum of the mud weight equivalent anticipated to control the formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.

7. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.

8. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.

B. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in **43 CFR part 3170 Subpart 3172** and **API STD 53 Sec. 5.3**.

2. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: The flex line must meet the requirements of API 16C. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.

3. 5M or higher system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.

4. If the operator has proposed a multi-bowl wellhead assembly in the APD. The following requirements must be met:

a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
c. Manufacturer representative shall install the test plug for the initial BOP test.
d. Whenever any seal subject to test pressure is broken, all the tests in **43 CFR part 3170 Subpart 3172** must be followed.
e. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.

5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.

a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead cement), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).

b. In potash areas, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. For all casing strings, casing cut-off and BOP installation can be initiated at twelve hours after bumping the cement plug. The BOPE test can be initiated after bumping the cement plug with the casing valve open. (only applies to single stage cement jobs, prior to the cement setting up.)

c. The tests shall be done by an independent service company utilizing a test plug not a cup or J-packer and can be initiated immediately with the casing valve open. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to **43 CFR part 3170 Subpart 3172** with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for water basin (8 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).

d. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE.

If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.

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

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

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

h. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the Wolfcamp formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per **43 CFR part 3170 Subpart 3172**.

C. DRILLING MUD

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

D. WASTE MATERIAL AND FLUIDS

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

Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.

ZS 8/10/2023

AFMSS

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

Operator Certification Data Report

09/14/2023

Operator

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

NAME: **Signed on:** 06/28/2021

Title:

Street Address:

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

Phone:

Email address:

Field

Representative Name:

Street Address:

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

Phone:

Email address:

1. DRILLING WELL CONTROL PLAN

1.1 WELL CONTROL - CERTIFICATIONS

Required IADC/IWCF Well Control Certifications Supervisor Level:

Any personnel who supervises or operates the BOP must possess a valid current IADC training certification and photo identification. This would include the onsite drilling supervisor, tool pusher/rig manager, driller, and any personnel that will be acting in these capacities. Another example of this may be a wireline or snubbing crew rigged up on the rig to assist the rig, the operator of each system must also have a valid control certification for their level of operation.

BLM recognizes IADC training as the industry approved accredited training. Online self-certifications will not be acceptable. Enforcement actions for the lack of a valid Supervisory Level certificate shall be prompt action to correct the deficiency. **Enforcement actions include but are not limited to immediate replacement of personnel lacking certifications, drilling operations being shut down or installment of a 10M annular.**

IADC Driller Level for all Drillers and general knowledge for the Assistant Driller, Derrick Hands, Floor Hands and Motor Hands is recognized by the BLM; however, a Driller Level certification will need to be presented only if acting in a temporary Driller Level certification capacity.

Well Control-Position/Roles

IADC Well control training and certification is targeted toward each role, e.g., Supervisor Level toward those who direct, Driller Level to those who act, Introductory to those who need to know.

- **Supervisor Level**
  - Specifies and has oversight that the correct actions are carried out
  - Role is to supervise well control equipment, training, testing, and well control events
  - Directs the testing of BOP and other well control equipment
  - Regularly direct well control crew drills
  - Land based rigs – usually runs the choke during a well kill operation
  - Due to role on the rig, training and certification is targeted more toward management of well control and managing an influx out of the well

- **Driller Level**
  - Performs an action to prevent or respond to well control accident
  - Role is to monitor the well via electronic devices while drilling and detect unplanned influxes
  - Assist with the testing of BOP and other well control equipment
  - Regularly assist with well control crew drills
  - When influx is detected, responsible to close the BOP
  - Due to role on the rig, training and certification is targeted more toward monitoring and shutting the well in (closing the BOP) when an influx is detected

(Well Control-Positions/Roles Continued)

- **Derrick Hand, Assistant Driller Introductory Level**
  - Role is to assist Driller with kick detection by physically monitoring the well at the mixing pits/tanks
  - Regularly record mud weights/viscosity for analysis by the Supervisor level and mud engineer so pre-influx signs can be detected
  - Mix required kill fluids as directed by Supervisor or Driller
  - Due to role on the rig, training and certification is targeted more toward monitoring for influxes, either via mud samples or visual signs on the pits/tanks

- **Motorman, Floor Hand Introductory Level**
  - Role is to assist the Supervisor, Driller, or Derrick Hand with detecting influxes
  - Be certain all valves are aligned for proper well control as directed by Supervisor
  - Perform Supervisor or Driller assigned tasks during a well control event
  - Due to role on the rig, training and certification is targeted more toward monitoring for influxes

1.2 WELL CONTROL-COMPONENT AND PREVENTER COMPATIBILITY CHECKLIST

The table below, which covers the drilling and casing of the 10M Stack portion of the well, outlines the tubulars and the compatible preventers in use. This table, combined with the mud program, documents that two barriers to flow can be maintained at all times, independent of the rating of the annular preventer.

- Example 6-1/8" Production hole section, 10M requirement

Component	OD	Preventer	RWP
Drill pipe	4"	Upper and Lower 3.5-5.5" VBRs	10M
HWDP	4"	Upper and Lower 3.5-5.5" VBRs	10M
Drill collars and MWD tools	4.75-5"	Upper and Lower 3.5-5.5" VBRs	10M
Mud Motor	4.75-5.25"	Upper and Lower 3.5-5.5" VBRs	10M
Production casing	4.5"	Upper and Lower 3.5-5.5" VBRs	10M
ALL	0-13-5/8"	Annular	5M
Open-hole	-	Blind Rams	10M

- VBR = Variable Bore Ram. Compatible range listed in chart.

1.3 WELL CONTROL-BOP TESTING

BOP Test will be completed per Onshore Oil and Gas Order #2 Well Control requirements. The 5M Annular Preventer on a required 10M BOP stack will be tested to 70 % of rated working

pressure including a 10 minute low pressure test. Pressure shall be maintained at least 10 minutes.

1.4 WELL CONTROL - DRILLS

The following drills are conducted and recorded in the Daily Drilling Report and the Contractor's reporting system while engaged in drilling operations:

Type	Frequency	Objective	Comments
Shallow gas kick drill - drilling	Once per well with crew on tour	Response training to a shallow gas influx	To be done prior to drilling surface hole if shallow gas is noted
Kick drill - drilling	Once per week per crew	Response training to an influx while drilling (bit on bottom)	Only one kick drill per week per crew is required, alternating between drilling and tripping.
Kick drill - tripping	Once per week per crew	Response training to an influx while tripping (bit off bottom). Practice stabbing TIW valve	

1.5 WELL CONTROL – MONITORING

- Drilling operations which utilize static fluid levels in the wellbore as the active barrier element, a means of accurately monitoring fill-up and displacement volumes during trips are available to the driller and operator. A recirculating trip tank is installed and equipped with a volume indicator easily read from the driller's / operator's position. This data is recorded on a calibrated chart recorder or digitally. The actual volumes are compared to the calculated volumes.
- The On-Site Supervisor ensures hole-filling and pit monitoring procedures are established and documented for every rig operation.
- The well is kept full of fluid with a known density and monitored at all times even when out of the hole.
- Flow checks are a minimum of 15 minutes.
- A flow check is made:
  - In the event of a drilling break.
  - After indications of down hole gains or losses.
  - Prior to all trips out of the hole.
  - After pulling into the casing shoe.
  - Before the BHA enters the BOP stack.
  - If trip displacement is incorrect.

Well Control-Monitoring (Continued)

  - Prior to dropping a survey instrument.
  - Prior to dropping a core ball.

  - After a well kill operation.
  - When the mud density is reduced in the well.
- Flow checks may be made at any time at the sole discretion of the driller or his designate. The Onsite Supervisor ensures that personnel are aware of this authority and the authority to close the well in immediately without further consultation.
- Record slow circulating rates (SCR) after each crew change, bit trip, and 500' of new hole drilled and after any variance greater than 0.2 ppg in MW. Slow pump rate recordings should include return flow percent, TVD, MD & pressure. SCR's will be done on all pumps at 30, 40 & 50 SPM. Pressures will be recorded at the choke panel. SCR will be recorded in the IADC daily report and ORB Wellview daily report
- Drilling blind (i.e. without returns) is permissible only in known lithology where the absence of hydrocarbons has been predetermined and written approval of the Drilling Manager.
- All open hole logs to be run with pack-off or lubricator.
- The Drilling Contractor has a fully working pit level totalizer / monitoring system with read out for the driller and an audible alarm set to 10 BBL gain / loss volume. Systems are selectable to enable monitoring of all pits in use. Pit volumes are monitored at all times, especially when transferring fluids. Both systems data is recorded on a calibrated chart recorder or electronically.
- The Drilling Contractor has a fully working return mud flow indicator with drillers display and an audible alarm, and is adjustable to record any variance in return volumes.

1.6 WELL CONTROL – SHUT IN

- The "hard shut in" method (i.e. against a closed choke using either an annular or ram type preventer) is the Company standard.
- The HCR(s) or failsafe valves are left closed during drilling to prevent any erosion and buildup of solids. The adjustable choke should also be left closed.
- The rig specific shut in procedure, the BOP configuration along with space-out position for the tool joints is posted in the Driller's control cabin or doghouse.
- No well kill operation commences until there is a plan agreed by the Superintendent, On-Site Supervisor and the Drilling Manager.
- During a well kill by circulation, constant bottom hole pressure is maintained throughout.
- Kill sheets are maintained by the Driller and posted in the Driller's control cabin or doghouse. The sheet is updated at a minimum every 500 feet.

2. SHUT-IN PROCEDURES:

2.1 PROCEDURE WHILE DRILLING

- Sound alarm (alert crew)

- Space out drill string – Stop rotating, pick the drill string up off bottom, and space out to ensure no tool joint is located in the BOP element selected for initial closure.
- Shut down pumps (stop pumps and observe well.)
- Shut-in Well - If flow is suspected or confirmed, close uppermost applicable BOP element. (HCR and choke will already be in the closed position.)
    - **Note:** Either the uppermost pipe ram or annular preventer can be used.
- Confirm shut-in
- Notify toolpusher/company representative
- Gather all relevant data required:
    - SIDPP and SICP
    - Hole Depth and Hole TVD
    - Pit gain
    - Time
    - Kick Volume
    - Pipe depth
    - MW in, MW out
    - SPR's (Slow Pump Rate's)
- Regroup and identify forward plan (let well stabilize, update kill sheet, inventory mud additives and mud volumes on location)
- Company Representative, Drilling Superintendent, Drilling Engineer and Drilling Manager will discuss well control kill method to be utilized. A verbal Risk Assessment and preferred kill method will be finalized. Initial Risk Assessment will be finalized within 1 hour of initial shut in.
- No well kill operation commences until there is a plan agreed by the Superintendent, On-Site Supervisor and the Drilling Contractor PIC.
- Recheck all pressures and fluid volume on accumulator unit
- If pressure has built or is anticipated during the kill to reach 1,000 psi or greater, the annular preventer will not be used as the primary pressure control device and operations will swap to the upper BOP pipe ram.

2.2 PROCEDURE WHILE TRIPPING

- Sound alarm (alert crew)
- Stab full opening safety valve in the drill string and close.
- Space out drill string (ensure no tool joint is located in the BOP element selected for initial closure).
- Shut down pumps (stop pumps and observe well.)
- Shut-in Well - If flow is suspected or confirmed, close uppermost applicable BOP element. (HCR and choke will already be in the closed position.)
    - **Note:** Either the uppermost pipe ram or annular preventer can be used.
- Confirm shut-in
- Notify tool pusher/company representative
- Gather all relevant data required:
    - SIDPP and SICP
    - Hole Depth and Hole TVD
    - Pit gain

Procedure While Tripping (Continued)

- Time
- Kick Volume
- Pipe depth

- MW in, MW out
- SPR's (Slow Pump Rate's)

- Regroup and identify forward plan (let well stabilize, update kill sheet, inventory mud additives and mud volumes on location)
- Company Representative, Drilling Superintendent, Drilling Engineer and Drilling Manager will discuss well control kill method to be utilized. A verbal Risk Assessment and preferred kill method will be finalized. Initial Risk Assessment will be finalized within 1 hour of initial shut in.
- No well kill operation commences until there is a plan agreed by the Superintendent, On-Site Supervisor and the Drilling Contractor PIC.
- Recheck all pressures and fluid volume on accumulator unit
- If pressure has built or is anticipated during the kill to reach 1,000 psi or greater, the annular preventer will not be used as the primary pressure control device and operations will swap to the upper BOP pipe ram.

2.3 PROCEDURE WHILE RUNNING CASING

- Sound alarm (alert crew)
- Stab crossover and full opening safety valve and close
- Space out casing (ensure no coupling is located in the BOP element selected for initial closure).
- Shut down pumps (stop pumps and observe well.)
- Shut-in Well - If flow is suspected or confirmed, close uppermost applicable BOP element. (HCR and choke will already be in the closed position.)
  - **Note:** Either the uppermost pipe ram or annular preventer can be used.
- Confirm shut-in
- Notify tool pusher/company representative
- Gather all relevant data required:
  - SIDPP and SICP
  - Hole Depth and Hole TVD
  - Pit gain
  - Time
  - Kick Volume
  - Pipe depth
  - MW in, MW out
  - SPR's (Slow Pump Rate's)
- Regroup and identify forward plan (let well stabilize, update kill sheet, inventory mud additives and mud volumes on location)
- Company Representative, Drilling Superintendent, Drilling Engineer and Drilling Manager will discuss well control kill method to be utilized. A verbal Risk Assessment and preferred kill method will be finalized. Initial Risk Assessment will be finalized within 1 hour of initial shut in.
- No well kill operation commences until there is a plan agreed by the Superintendent, On-Site Supervisor and the Drilling Contractor PIC.
- Recheck all pressures and fluid volume on accumulator unit
- If pressure has built or is anticipated during the kill to reach 1,000 psi or greater, the annular preventer will not be used as the primary pressure control device and operations will swap to the upper BOP pipe ram.

2.4 PROCEDURE WITH NO PIPE IN HOLE (OPEN HOLE)

- Sound alarm (alert crew)
- Shut-in with blind rams or BSR. (HCR and choke will already be in the closed position.)
- Confirm shut-in

- Notify toolpusher/company representative
- Gather all relevant data required:
  - Shut-In Pressure
  - Hole Depth and Hole TVD
  - Pit gain
  - Time
  - Kick Volume
  - MW in, MW out
  - SPR's (Slow Pump Rate's)
- Regroup and identify forward plan (let well stabilize, update kill sheet, inventory mud additives and mud volumes on location)
- Company Representative, Drilling Superintendent, Drilling Engineer and Drilling Manager will discuss well control kill method to be utilized. A verbal Risk Assessment and preferred kill method will be finalized. Initial Risk Assessment will be finalized within 1 hour of initial shut in.
- No well kill operation commences until there is a plan agreed by the Superintendent, On-Site Supervisor and the Drilling Contractor PIC.
- Recheck all pressures and fluid volume on accumulator unit.

2.5 PROCEDURE WHILE PULLING BHA THRU STACK

- PRIOR to pulling last joint of drill pipe thru the stack.
- Perform flow check, if flowing.
- Sound alarm (alert crew).
- Stab full opening safety valve and close
- Space out drill string with tool joint just beneath the upper pipe ram.
- Shut-in using upper pipe ram. (HCR and choke will already be in the closed position).
- Confirm shut-in.
- Notify toolpusher/company representative
- Read and record the following:
  - SIDPP and SICP
  - Pit gain
  - Time
- Regroup and identify forward plan

- **With BHA in the stack and compatible ram preventer and pipe combo immediately available**.
  - Sound alarm (alert crew)
  - Stab crossover and full opening safety valve and close
  - Space out drill string with upset just beneath the compatible pipe ram.
  - Shut-in using compatible pipe ram. (HCR and choke will already be in the closed position.)
  - Confirm shut-in
  - Notify toolpusher/company representative
  - Read and record the following:
    - SIDPP and SICP
    - Pit gain

Procedures While Pulling BHA thru Stack (Continued)

    - Time
  - Regroup and identify forward plan

- **With BHA in the stack and <u>NO</u> compatible ram preventer and pipe combo immediately available**.
    - Sound alarm (alert crew)
    - If possible to pick up high enough, pull string clear of the stack and follow “Open Hole” scenario.
    - If impossible to pick up high enough to pull the string clear of the stack:
    - Stab crossover, make up one joint/stand of drill pipe, and full opening safety valve and close
    - Space out drill string with tool joint just beneath the upper pipe ram.
    - Shut-in using upper pipe ram. (HCR and choke will already be in the closed position.)
    - Confirm shut-in
    - Notify toolpusher/company representative
    - Read and record the following:
        - SIDPP and SICP
        - Pit gain
        - Time

LEGEND

PROPOSED WELL PAD

PERMANENT EASEMENT

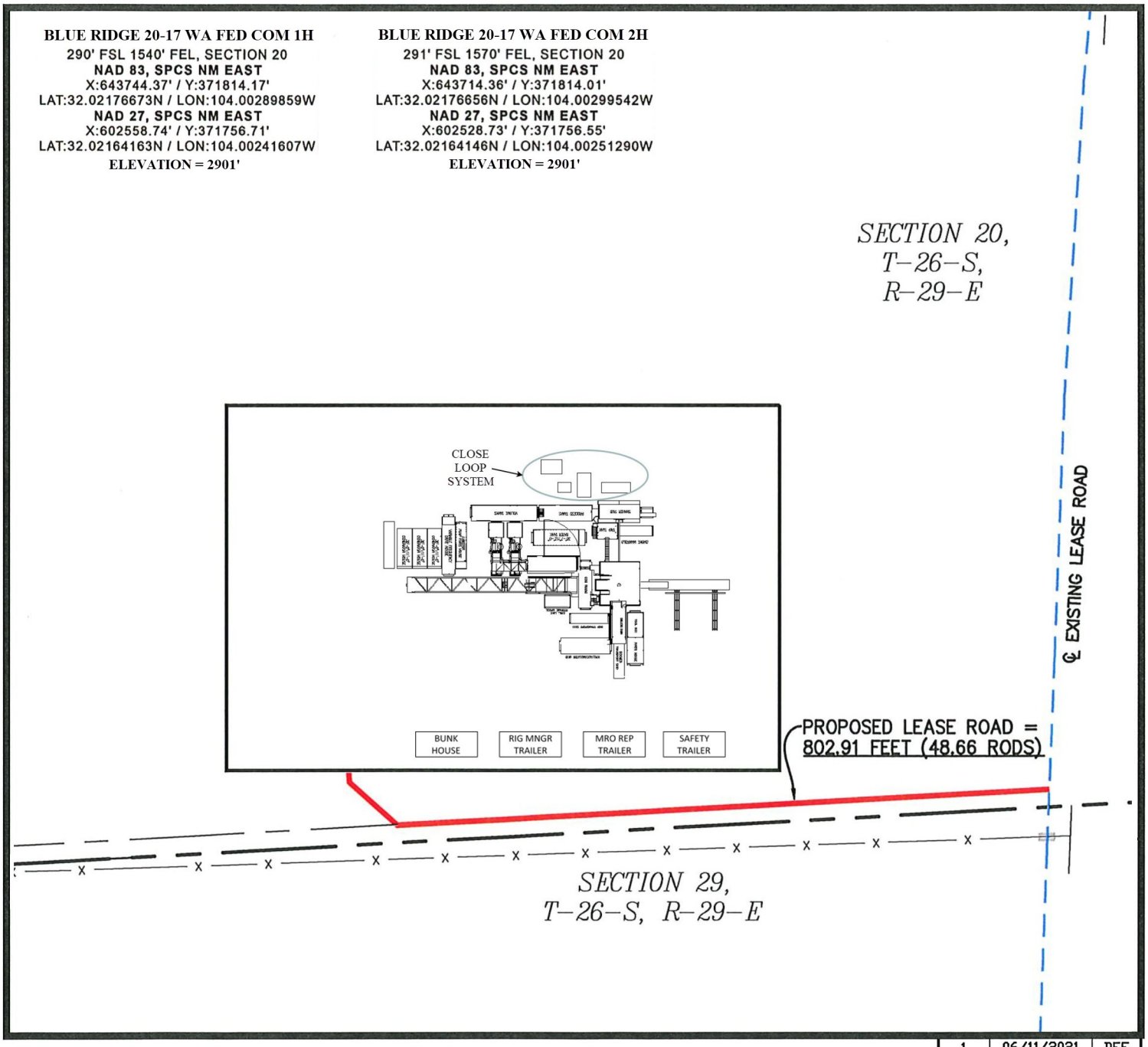
PROPOSED LEASE ROAD

RIG LAYOUT

BLUE RIDGE 20-17 FED COM
SEC. 20 TWP. 26-S RGE. 29-E
SURVEY: N.M.P.M.
COUNTY: EDDY
OPERATOR: MARATHON OIL PERMIAN LLC
U.S.G.S. TOPOGRAPHIC MAP: RED BLUFF, N.M.

BLUE RIDGE 20-17 WA FED COM 1H
290' FSL 1540' FEL, SECTION 20
NAD 83, SPCS NM EAST
X:643744.37' / Y:371814.17'
LAT:32.02176673N / LON:104.00289859W
NAD 27, SPCS NM EAST
X:602558.74' / Y:371756.71'
LAT:32.02164163N / LON:104.00241607W
ELEVATION = 2901'

BLUE RIDGE 20-17 WA FED COM 2H
291' FSL 1570' FEL, SECTION 20
NAD 83, SPCS NM EAST
X:643714.36' / Y:371814.01'
LAT:32.02176656N / LON:104.00299542W
NAD 27, SPCS NM EAST
X:602528.73' / Y:371756.55'
LAT:32.02164146N / LON:104.00251290W
ELEVATION = 2901'



REV.	DATE	BY
1	06/11/2021	DEF

NOTE:
THIS IS NOT A BOUNDARY SURVEY, APPARENT PROPERTY CORNERS AND PROPERTY LINES ARE SHOWN FOR INFORMATION ONLY. BOUNDARY DATA SHOWN IS FROM STATE OF NEW MEXICO OIL CONSERVATION DIVISION FORM C-102 INCLUDED IN THIS SUBMITTAL.

100' 0' 100' 200'
SCALE: 1" = 200'

SHEET 7 OF 8

PREPARED BY:
R-SQUARED GLOBAL, LLC
510 TRENTON ST., UNIT B,
WEST MONROE, LA 71291
318-323-6900 OFFICE
JOB No. R3996_005

MARATHON OIL COMPANY

BLUE RIDGE 20-17 FED COM
WA Well # 1H
WA Well # 2H

SHL: 290' FSL & 1540' FEL of Unit Letter 'O', Section 20 T-26S, R-29E
BHL: 330' FNL & 1650 FEL of Unit Letter 'B', Section 17, T-26S, R-29E

EDDY County, New Mexico

Rig: TBD

06/11/2021

EMERGENCY MEDICAL PROCEDURES
DO NOT PANIC
REMAIN CALM-THINK

1. HOLD YOUR BREATH. (DO NOT INHALE, STOP BREATHING)

2. PUT ON BREATHING APPARATUS. (NOTE: DO NOT ATTEMPT RESCUE UNTIL YOU HAVE PUT ON BREATHING APPARATUS.)

3. REMOVE VICTIM (S) TO FRESH AIR AS QUICKLY AS POSSIBLE.

4. BE SURE YOU HAVE MOVED VICTIM OUT OF CONTAMINATED AREA BEFORE REMOVING YOUR RESPIRATOR.

5. APPLY MOUTH-TO-MOUTH ARTIFICIAL RESPIRATION, WHICH IS MORE EFFECTIVE, WHILE SOMEONE ELSE GETS THE OXYGEN RESUSCITATOR. RENDER OXYGEN RESUSCITATION ONLY IF PORPERLY TRAINED IN ITS USE.

6. PROVIDE FOR PROMPT TRANSPORTATION TO HOSPITAL AND CONTUNUE GIVING ARTIFICIAL RESPIRATION IF NEEDED.

7. HOSPITAL (S) OR MEDICAL FACILITIES NEED TO BE INFORMED BEFOREHAND, OF THE POSSIBILITY OF H2S GAS POISONING, NO MATTER HOW REMOTE THE POSSIBLITY IS.

Lea Regional Medical Center	(575)492-5000
5419 N Lovington Hwy, Hobbs, NM 88240	
AMBULANCE	911
FIRE DEPARTMENT- HOBBS, NM	(575) 397-9308
POLICE - HOBBS, NM	(575) 397-9265

8. NOTIFY EMERGENCY-ROOM PERSONEL THAT THE VICTIM (S) HAVE POSSIBLY BEEN EXPOSED TO H2S GAS POISONING.

****
****

TOTAL SAFETY INC
1420 East Greene St.
Carlsbad, NM 88220

THIS H2S DRILLING OPERATIONS PLAN WAS
PREPARED BY: Sean Chamblee
Strategic Account Manager
Cell: 713-703-6295

TOTAL SAFETY INC

1420 East Greene St
Carlsbad, NM 88220
Phone: 432-561-5049

H2S DRILLING OPERATIONS PLAN INDEX

VII. LIST OF APPENDICES
- A. Emergency and Medical Facilities
- B. Law Enforcement Agencies and Fire Fighting Facilities
- C. Well Control Specialists
- D. Governmental Agencies

VIII. RESIDENTS AND LANDOWNERS
- A. Radius of Exposure Map with Residences Shown
- B. Residents Within Radius of Exposure and Telephone Numbers

IX. ADDITIONAL INFORMATION
- A. Hydrogen Sulfide Essay
- B. Hydrogen Sulfide Hazards
- C. Toxicity Table
- D. Treatment
- E. Characteristics of H2S
- F. Safe Practices

INTRODUCTION

H2S DRILLING OPERATIONS PLAN
This Drilling Operations Plan was written specifically for:

MARATHON OIL COMPANY
4111 TIDWELL
CALRSBAD, NM 88220

Action Plan for Accidental Release of H2S

BLUE RIDGE 20-17 FED COM
WA Well # 1H
WA Well # 2H

EDDY COUNTY, NM

Information, provisions and practices, as set forth in this plan, may be subject to revision and/or updating.

06/11/2021

MARATHON OIL COMPANY
4111 TIDWELL
CALRSBAD, NM 88220

BLUE RIDGE 20-17 FED COM
WA Well # 1H
WA Well # 2H

EDDY COUNTY, NM

DIRECTIONS

FROM THE MARATHON OFFICE AT 4111 TIDWELL, CARLSBAD, NM, HEAD SOUTH ON TIDWELL RD TOWARD US HWY 285 N FOR 0.2 MILES. TURN LEFT ONTO US HWY 285 S, HEADING SOUTH, FOR 28.6 MILES TO CATFISH ROAD, ON THE NM/TX STATE LINE. TURN LEFT ONTO CATFISH ROAD, HEADING EAST, FOR 17.7 MILES TO A CALICHE ROAD. TURN LEFT ON THE CALICHE ROAD, HEADING NORTH FOR 1.6 MILES TO THE PROPOSED LEASE ROAD FOR THE MAZER RACKHAM 20 FED COM AV11H–AV3H–WD15H–SB12H–WD10H–WD7H–WD2H & BLUE RIDGE 20–17 FED COM WA2H–WA1H WELL LOCATION PAD. TURN LEFT ONTO SAID PROPOSED LEASE ROAD, HEADING WEST, FOR 0.16 MILES ENTERING THE NORTHEAST CORNER OF SAID WELL LOCATION PAD.

GPS Coordinates: 32.02176673, -104.00289859
EDDY COUNTY, NEW MEXICO

PURPOSE OF PLAN: The purpose of this plan is to safeguard the lives of the public, contract personnel and company personnel in the event of equipment failure or disasters during drilling or completion operations in formations that may contain Hydrogen Sulfide Gas, H2S.

As a precautionary measure, this Drilling Plan has been prepared to assure the safety of all concerned, should a disaster occur. However, the Oil Company Representative may have specified materials and practices for the drilling or completion of this well, which supercede the minimum requirements as outlined in this plan.

Definitions: For the purpose of this plan the following definitions are to be referred to:

Controlled Release – Any release that is planned and occurs during normal operations. A controlled release is managed per the procedures outlined in this section.

Uncontrolled Release – Any release that is unplanned and not immediately contained utilizing established shut-in procedures. An uncontrolled release is normally associated with a loss of well control.

SCBA – (Self Contained Breathing Apparatus) – A full-face mask respirator with a supplied positive pressure air source.

Donned SCBA – When it is required per this plan to **"don"** a SCBA, personnel will be 100% masked up and be on supplied breathing air.

SCBA On Person – When it is required per this plan to have SCBA "on person", personnel will be required to wear the SCBA equipment - but not be masked up.

"Qualified Buddy" – Person who has been fit tested and is trained and is familiar with the requirements of donning an SCBA. This person will provide immediate assistance to another person who may be utilizing an SCBA or SkaPack in an IDLH atmosphere in the event of an emergency situation.

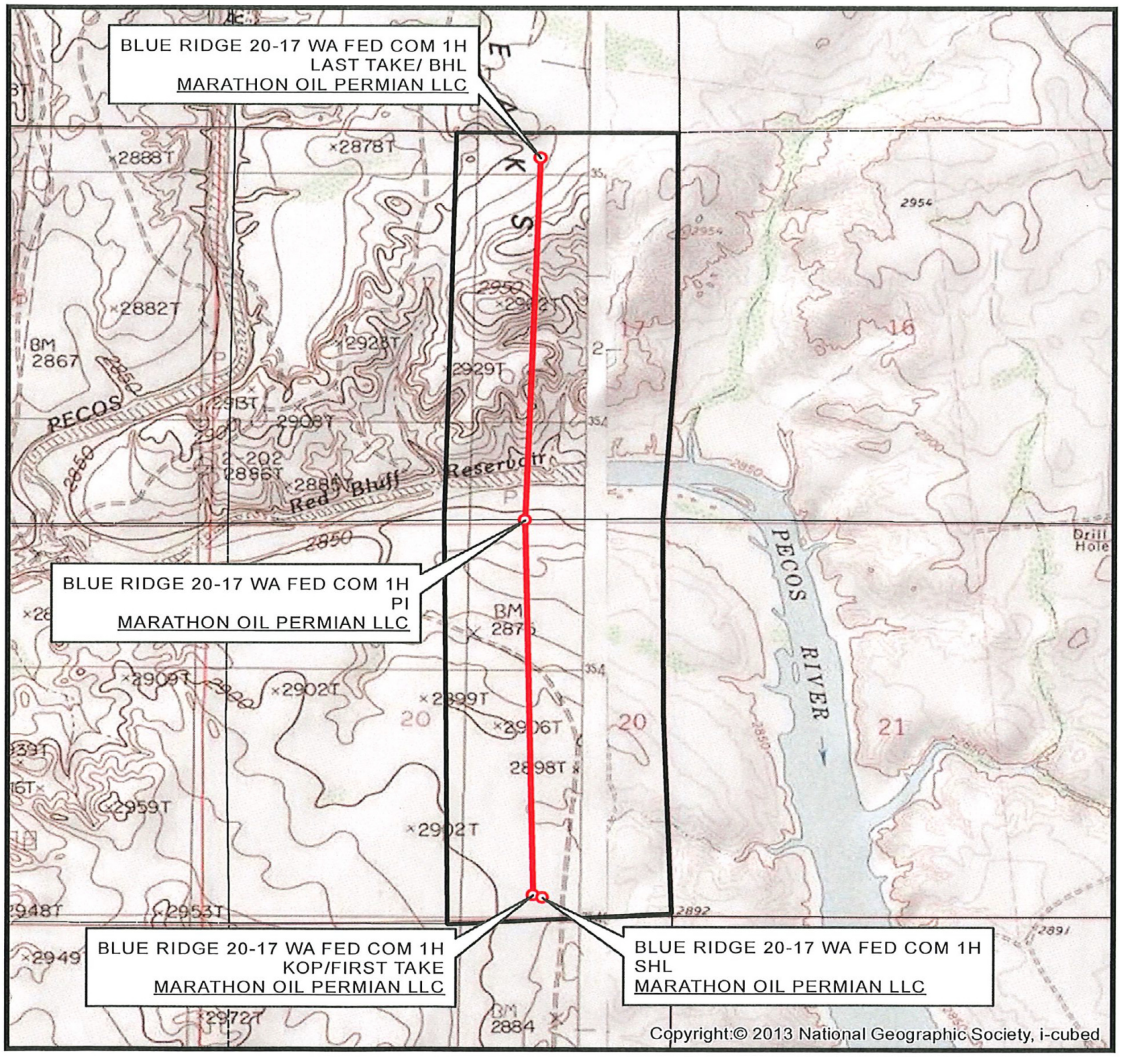
In Scope Personnel – Rig Personnel who will be working or otherwise present in potential H2S release areas, including the rig floor, cellar, pits, and shaker areas. This would not include 3rd party contractors who do not have a function, besides evacuating the rig, during an emergency condition such as during a well control event or H2S / LEL alarm. All qualified personnel that have a function to shut a well in during an emergency will be considered In-Scope per this plan

Out of Scope Personnel –. All personnel that are not in scope will be Out of Scope per the definition of this plan

H2S Office – Onsite office trailer space or vehicle that will be designated as the H2S office

Marathon H2S Plan Custodian – Marathon HES Advisor, Supervisor or Technician that has been specifically assigned per the authorization page of this plan to maintain this document.

LOCATION VERIFICATION MAP



SEC. 20 TWP. 26-S RGE. 29-E
SURVEY: N.M.P.M.
COUNTY: EDDY
OPERATOR: MARATHON OIL PERMIAN LLC
DESCRIPTION: 290' FSL & 1540' FEL
ELEVATION: 2901'
LEASE: BLUE RIDGE 20-17 FED COM
U.S.G.S. TOPOGRAPHIC MAP: RED BLUFF, NM,TX.

1 " = 2,000 '
CONTOUR INTERVAL = 10'

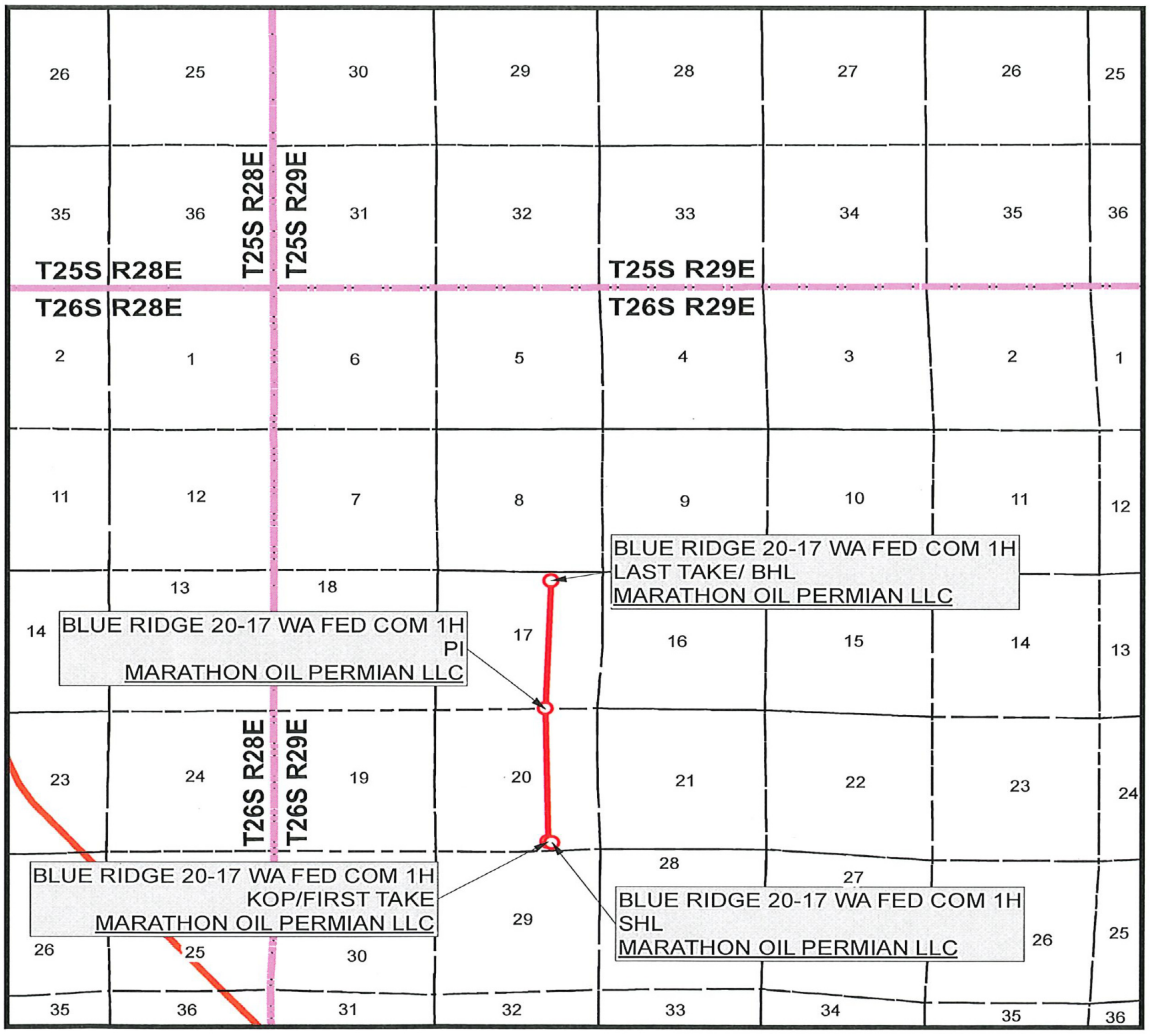
R-SQUARED GLOBAL LLC

SHEET 2 OF 4

PREPARED BY:
R-SQUARED GLOBAL, LLC
510 TRENTON ST., UNIT B, WEST MONROE, LA 71291
318-323-6900 OFFICE

JOB No. R3996_005

VICINITY MAP

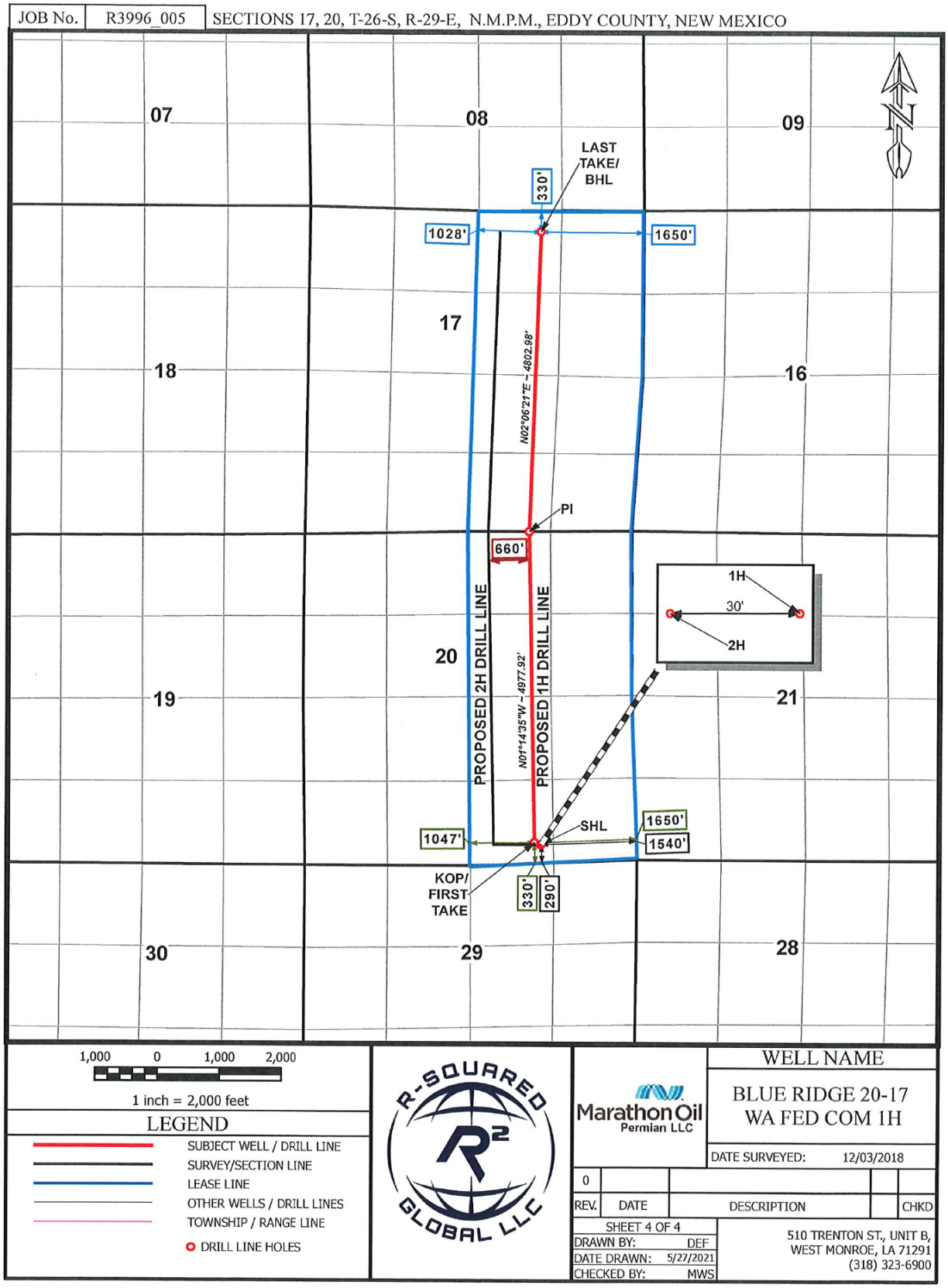


SEC. 20 TWP. 26-S RGE. 29-E
SURVEY: N.M.P.M.
COUNTY: EDDY
OPERATOR: MARATHON OIL PERMIAN LLC
DESCRIPTION: 290' FSL & 1540' FEL
ELEVATION: 2901'
LEASE: BLUE RIDGE 20-17 FED COM
U.S.G.S. TOPOGRAPHIC MAP: RED BLUFF, NM,TX.

1 " = 1 MILE

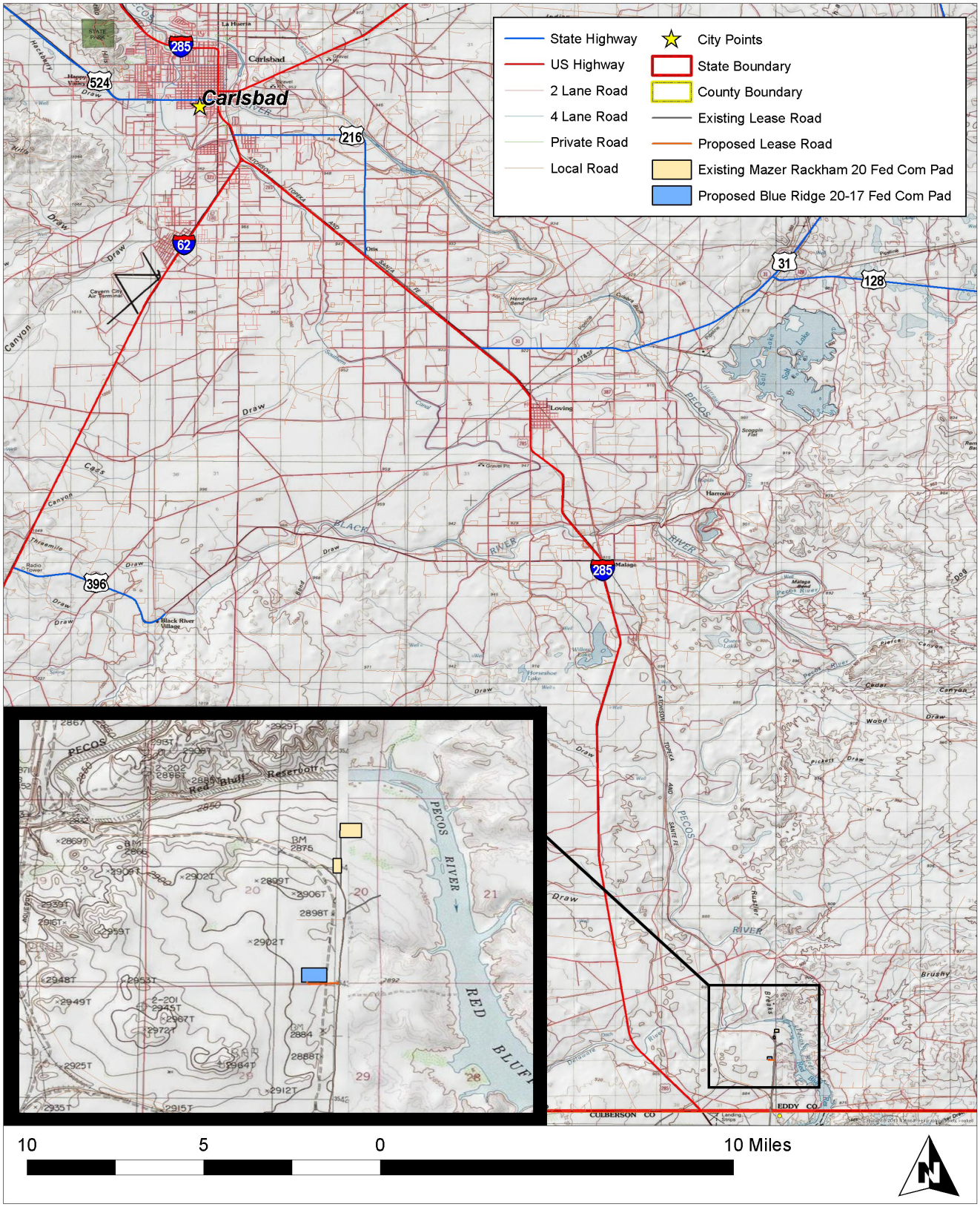
SHEET 3 OF 4

PREPARED BY:
R-SQUARED GLOBAL, LLC
510 TRENTON ST., UNIT B, WEST MONROE, LA 71291
318-323-6900 OFFICE
JOB No. R3996_005


JOB No. R3996_005
SECTIONS 17, 20, T-26-S, R-29-E, N.M.P.M., EDDY COUNTY, NEW MEXICO
07
08
09
17
18
16
20
19
21
30
29
28
LAST TAKE/ BHL
330'
1028'
1650'
N02°06'21"E ~ 4802.98'
PI
660'
PROPOSED 2H DRILL LINE
PROPOSED 1H DRILL LINE
N01°14'35"W ~ 4977.92'
1H
30'
2H
SHL
1650'
1540'
1047'
KOP/ FIRST TAKE
330'
290'
1,000 0 1,000 2,000
1 inch = 2,000 feet
LEGEND
SUBJECT WELL / DRILL LINE
SURVEY/SECTION LINE
LEASE LINE
OTHER WELLS / DRILL LINES
TOWNSHIP / RANGE LINE
DRILL LINE HOLES
R-SQUARED GLOBAL LLC
Marathon Oil Permian LLC
WELL NAME
BLUE RIDGE 20-17 WA FED COM 1H
DATE SURVEYED: 12/03/2018
REV. DATE DESCRIPTION CHKD
0
SHEET 4 OF 4
DRAWN BY: DEF
DATE DRAWN: 5/27/2021
CHECKED BY: MWS
510 TRENTON ST., UNIT B,
WEST MONROE, LA 71291
(318) 323-6900

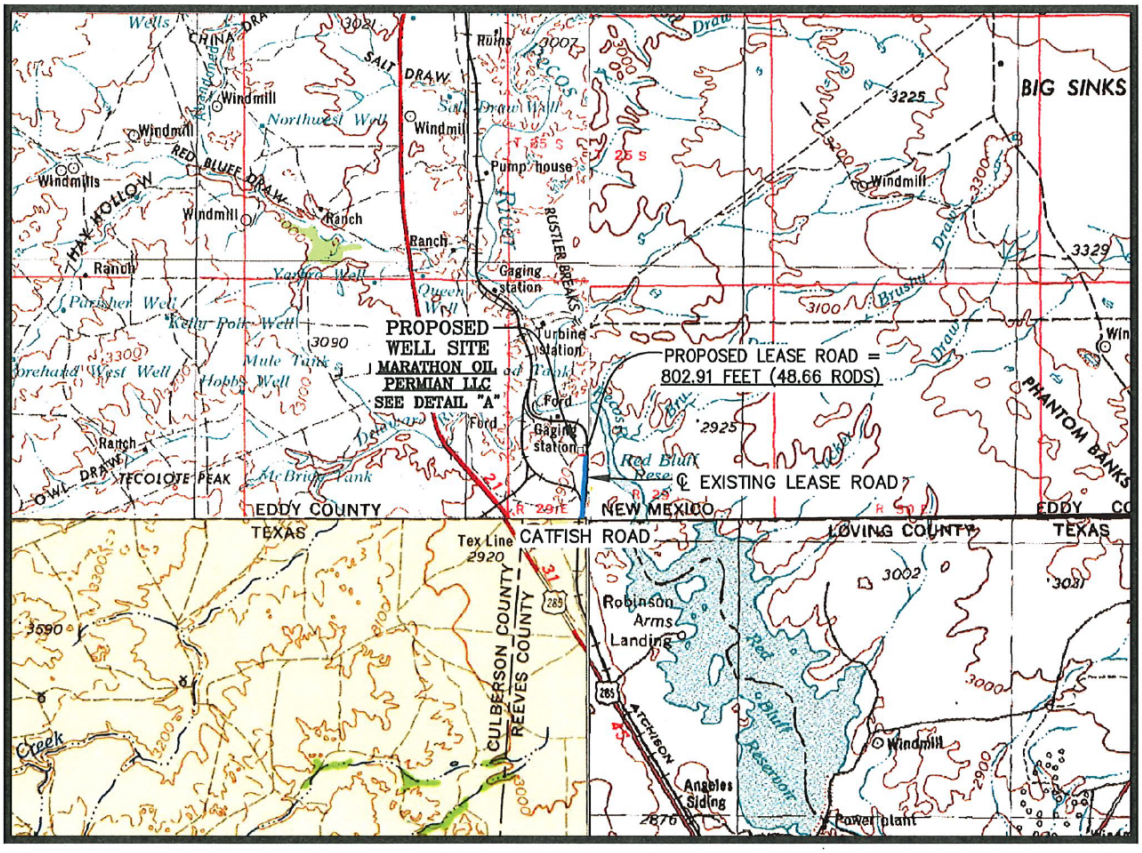
VICINITY & DISTANCE TO TOWN MAP

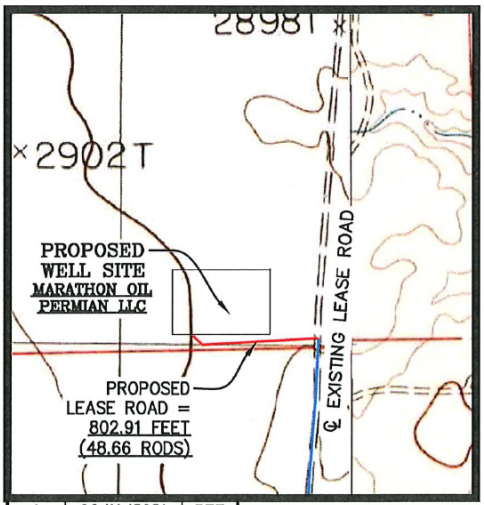
(EXISTING) MAZER RACKHAM 20 FED COM
PROPOSED BLUE RIDGE 20-17 FED COM
SEC. 20 TWP. 26S RGE. 29E
EDDY COUNTY, NEW MEXICO



VICINITY AND EXISTING ROADS MAP

BLUE RIDGE 20-17 FED COM
SEC. 20 TWP. 26-S RGE. 29-E
SURVEY: N.M.P.M.
COUNTY: EDDY
OPERATOR: MARATHON OIL PERMIAN LLC
U.S.G.S. TOPOGRAPHIC MAP: RED BLUFF, N.M.





REV.	DATE	BY
1	06/11/2021	DEF

DETAIL A
N.T.S.

SCALE: 1" = 20,000'
CONTOUR INTERVAL = 100'

DIRECTIONS TO LOCATION:
FROM THE MARATHON OFFICE AT 4111 TIDWELL, CARLSBAD, NM, HEAD SOUTH ON TIDWELL RD TOWARD US HWY 285 N FOR 0.2 MILES. TURN LEFT ONTO US HWY 285 S, HEADING SOUTH, FOR 28.6 MILES TO CATFISH ROAD, ON THE NM/TX STATE LINE. TURN LEFT ONTO CATFISH ROAD, HEADING EAST, FOR 17.7 MILES TO A CALICHE ROAD. TURN LEFT ON THE CALICHE ROAD, HEADING NORTH FOR 1.6 MILES TO THE PROPOSED LEASE ROAD FOR THE BLUE RIDGE 20–17 FED COM WA2H–WA1H WELL LOCATION PAD. TURN LEFT ONTO SAID PROPOSED LEASE ROAD, HEADING WEST, FOR 0.16 MILES ENTERING THE NORTHEAST CORNER OF SAID WELL LOCATION PAD.

SHEET 6 OF 8

PREPARED BY:
R–SQUARED GLOBAL, LLC
510 TRENTON ST., UNIT B,
WEST MONROE, LA 71291
318–323–6900 OFFICE
JOB No. R3996_005

H2S LAYOUT

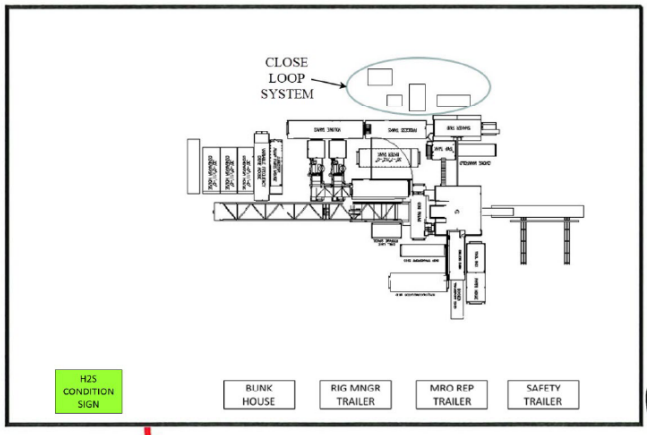
BLUE RIDGE 20-17 FED COM
SEC. 20 TWP. 26-S RGE. 29-E
SURVEY: N.M.P.M.
COUNTY: EDDY
OPERATOR: MARATHON OIL PERMIAN LLC
U.S.G.S. TOPOGRAPHIC MAP: RED BLUFF, N.M.

LEGEND
PROPOSED WELL PAD
PERMANENT EASEMENT
PROPOSED LEASE ROAD

BLUE RIDGE 20 17 WA FED COM 1H
290' FSL 1540' FEL, SECTION 20
NAD 83, SPCS NM EAST
X:643744.37' / Y:371814.17'
LAT:32.02176673N / LON:104.00289859W
NAD 27, SPCS NM EAST
X:602558.74' / Y:371756.71'
LAT:32.02164163N / LON:104.00241607W
ELEVATION = 2901'

BLUE RIDGE 20-17 WA FED COM 2H
291' FSL 1570' FEL, SECTION 20
NAD 83, SPCS NM EAST
X:643714.36' / Y:371814.01'
LAT:32.02176656N / LON:104.00299542W
NAD 27, SPCS NM EAST
X:602528.73' / Y:371756.55'
LAT:32.02164146N / LON:104.00251290W
ELEVATION = 2901'

H2S Sensor	Elsa Escape Packs
- Cellar	- Pits
- Rig Floor	- Trip Tanks
- Shaker Skid	- Accumulator
- Bell Nipple	- 4 Rig Floor
Wind Sock	**30 Minute SCBA**
- Dog House	- 3 Briefing Area
- Company Rep Trailer	- 3 Alternate Briefing Area



℄ EXISTING LEASE ROAD

PROPOSED LEASE ROAD = 802.91 FEET (48.66 RODS)

SECTION 20, T-26-S, R-29-E

SECTION 29, T-26-S, R-29-E

REV.	DATE	BY
1	06/11/2021	DEF

NOTE:
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100' 0' 100' 200'
SCALE: 1" = 200'

SHEET 8 OF 8

PREPARED BY:
R-SQUARED GLOBAL, LLC
510 TRENTON ST., UNIT B,
WEST MONROE, LA 71291
318-323-6900 OFFICE
JOB No. R3996_005

SAFETY EQUIPMENT

All H2S related Safety Equipment must be installed, tested and Operational at a depth of 500 fee above, or 3 days prior to penetrating the first zone expected to contain H2S.

SAFETY EQUIPMENT PROVIDED BY TOTAL SAFETY INC.

QTY	EQUIPMENT
6 each	30-minute self-contained breathing apparatus
6 each	ELSA Escape Packs
1 Lot	Sufficient low-pressure airline hose with quick connects
1	6 Channel fixed H2S monitor
4	H2S Sensors (Loc determined at rig up – General: Cellar, Shale Shaker, floor/driller area)
4	Explosion proof Alarm Station (1-Drill Floor, 1- Pits/Shakers, 1- Generators, 1 Quarters area)
10	Personal H2S Monitors
1	Gastec pump type gas detector
Set	Various range of H2s & SO2 detector tubes
2 each	Windsocks w/frames and poles
1 Set	H2S and briefing area signs
1 Set	Well condition signs and flags
1	Flare Gun & Flares

TYPE OF EQUIPMENT AND STORAGE LOCATIONS

1. There will be six 30-minute self-contained breathing apparatus on location. They will be positioned as follows: Two at Briefing Area #1 Two at Briefing Area #2, Two at rig dog house. SCBA Facepieces will be equipped with voice amplifiers for effective means of communication when using protective breathing apparatus.

2. There will be six Escape-type packs on location. One for the Derrickman. One on the Shaker. One at the bottom of rig dog house stairway and spares.

3. A Gastec, pump type, gas detector with low and high range detector tubes for H2S and SO2 will be located in the doghouse

4. Two Briefing Areas will be designated at opposite ends of the location.

5. The Briefing Area most upwind is designated as the Safety Briefing Area #1. In an emergency, personnel must assemble at this upwind area for instructions from their supervisor.

6.The H2S 'Safety" trailer provided by Total Safety, Inc. will contain a cascade system of at least 5 each -300 C.F. air cylinders that will provide a continuous air supply to air lines located on the rig. Note: This trailer will **Only** be provided if H2S conditions require the use of the Air Trailer. (If Required)

7. Two windsocks will be installed so as to be visible from all parts of the location.

8. A well condition warning sign will be displayed at the location entrance to advise of current operating conditions. The condition signs must be at least 200' from the entrance but not more than 500' away.

9. A list of emergency telephone numbers will be kept on rig floor, tool pusher's trailer, the Oil Company's trailer and in the "safety" trailer (if Provided).

10. The primary means of communication will be cell phones.

11. A barricade will be available to block the entrance to location should an emergency occur. In most cases the use of a vehicle is used to block the entrance.

12. A 6-channel H2S monitor will be located in the doghouse. The 3 sensors will be installed: one on the shale shaker, one at the Cellar, one at the rig floor.

13. An undulating high and low pitch siren and light will be installed on the derrick "A" leg.

14. If H2S concentration reach 10 ppm an explosion-proof bug blower (fan) will be installed under the rig floor to disperse possible accumulations of H2S.

15. Any time it is necessary to flare gas containing H2S, a Sulfur Dioxide monitor or Detector tubes will be used to determine SO2 concentrations.

16. A flare gun with flares will also be provided in the event it is necessary to ignite the well from a safe distance.

OPERATING PROCEDURES

BLOWOUT PREVENTION MEASURES DURING DRILLING

1. Blowout Prevention Requirements:
   All BOP equipment shall meet the American Petroleum Institute specifications as to materials acceptable for H2S service and tested accordingly (or to BLM specifications).

2. Drilling String Requirements:
   All drill string components are to be of material that meets the American Petroleum Institute's specifications for H2S service. All drill string components should be inspected to IADC critical service specifications prior to running in well.

GAS MONITORING EQUIPMENT

1. A continuous H2S detection system, consisting of three H2S detectors and an audible/visual warning system will be in operating during all phases of this H2S Drilling Operations Plan. The detection system will be adjusted and calibrated such that an H2S exposure of 10 ppm or higher (at any sensor) will trigger the audible and visual portion (wailing or yelping siren) of the warning system (i.e. H2S continually present at or above threshold levels) a trained operator or H2S supervisor will monitor the H2S detection system.

2. When approaching or completing H2S formations, crewmembers may attach personnel H2S monitors to their person.

3. Hand held H2S sampling gas detectors will be used to check areas not covered by automatic monitoring equipment.

CREW TRAINING AND PROTECTION

1. All personal working at the well site will be properly trained in accordance with the general training requirements outlined in the API Recommended Practices for Safe Drilling of Wells Containing H2S. The training will cover, but will not be limited to, the following:

a. General information of H2S AND SO2 GAS
b. Hazards of these gases
c. Safety equipment on location
d. Proper use and care of personal protective equipment
e. Operational procedures in dealing with H2S gas
f. Evacuation procedures
g. First aid, reviving an H2S victim, toxicity, etc.
h. Designated Safe Briefing Areas
i. Buddy System
j. Regulations
k. Review of Drilling Operations Plan

2. Initial training shall be completed when drilling reaches, a depth of 500' above or 3 days prior to penetrating (whichever comes first) the first zone containing or expected to contain H2S. It must also include a review of the site specific Drilling Operations Plan and, if applicable, the Public Protections Plan.

3. Weekly H2S and well control drills for all personnel on each working crew shall be conducted.

4. All training sessions and drills shall be recorded on the driller's log or its equivalent.

5. Safety Equipment:
As outlined in the Safety Equipment index, H2S safety protection equipment will be available to/or assigned each person on location.

6. One person (by job title) shall be designated and identified to all on-site personnel as the person primarily responsible for the overall operation of the on-site safety and training programs. This will be the PIC

METALLURGICAL CONSIDERATONS

1. Steel drill pipe used in H2S environments should have yield strength of 95,000psi or less because of potential embrittlement problems. Must conform to the current National Association of Corrosion Engineers (NACE) Standard MR-0175-90, Material Requirement, Sulfide Stress Cracking Resistant Metallica Material for Oil Field Equipment. Drill stem joints near the top of the drill string are normally under the highest stress levels during drilling and do not have the protection of elevated down hole temperatures. These factors should be considered in design of the drill string. Precautions should be taken to minimize drill string stress caused by conditions such as excessive dogleg severity, improper torque, whip, abrasive wear or tool joints and joint imbalance. American Petroleum Institute, Bulletin RR 7G, will be used as a guideline for drill string precautions.

2. Corrosion inhibitors may be applied to the drill pipe or to the mud system as an additional safeguard.

3. Blowout preventors should meet or exceed the recommendations for H2S service as set forth in the latest edition of API RI 53.

MUD PROGRAM AND TREATING

1. It is of utmost importance that the mud be closely monitored for detection of H2S and reliability of the H2S treating chemicals.

2. Identification and analysis of sulfides in the mud and mud filtrates will be carried out per operators prescribed procedures.

3. The mud system will be pre-treated with Zinc Carbonate, Ironite Sponge or similar chemicals of H2S control prior to drilling into the H2s bearing formation. Sufficient quantities of corrosion inhibitor should be on location to treat the drill string during Drill Stem Test Operations. Additionally, Aqua Ammonia should be on hand to treat the drill string for crew protection, should H2S be encountered while tripping string following drill stem testing

WELL CONTROL EQUIPMENT

1. Flare System
    a. A flare system shall be designed and installed to safely gather and burn H2S Bearing gas.
        1. Flare lines shall be located as far from the operating site as feasible and in a manner to compensate for wind changes.
        2. The flare line mouth shall be located not less then 150' from wellbore.
        3. Flare lines shall be straight unless targeted with running tees.
        4. Flare Gun & Flares to ignite the well

2. Remote Controlled Choke
    a. A remote controlled choke shall be installed for all H2S drilling and where feasible for completion operations. A remote controlled valve may be used in lieu of this requirement for completions operations.

3. Mud-gas separators and rotating heads shall be installed and operable for all exploratory wells.

OPERATING CONDITIONS

A Well Condition Sign and Flag will be posted on all access roads to the location. The sign shall be legible and large enough to be read by all persons entering the well site and be placed a minimum of 200' but no more than 500' from the well site which allows vehicles to turn around at a safe distance prior to reaching the site.

DEFINITION OF WARNING FLAGS

1. Condition:
   GREEN-NORMAL OPERATIONS
   Any operation where the possibility of encountering H2S exists but no H2S has been detected.

2. Condition:
   YELLOW-POTENTIAL DANGER, CAUTION
   Any operation where the possibility of encountering H2S exists and in all situations where concentrations of H2S are detected in the air below the threshold level (10ppm)
   a. Cause of condition:
      *Circulating up drill breaks
      *Trip gas after trip
      *Circulating out gas on choke
      *Poisonous gas present, but below threshold concentrations
      *Drill stem test
   b. Safety Action:
      *Check safety equipment and keep it with you
      *Be alert for a change in condition
      *Follow instructions

3. Condition:
   RED-EXTREME DANGER
   Presence of H2S at or greater than 10ppm. Breathing apparatus must be worn.

   a. Safety action:

*MASK UP. All personal will have protective breathing equipment with them. All nonessential personnel will move to the Safe Briefing Area and stay there until instructed to do otherwise. All essential Qualified Personnel, using the "Buddy System" (those necessary to maintain control of the well) will don breathing apparatus to perform operations related to well control.

The decision to ignite the well is the responsibility of the operator's on-site representative and should be made only as a last resort, when it is clear that:

*human life is endangered

*there is no hope of controlling the well under prevailing conditions

Order evacuation of local people within the danger zone. Request help from local authorities, State Police, Sheriff's Dept. and Service Representative.

CIRCULATING OUT KICK (WAIT AND WEIGHT METHOD)

If it is suspected that H2S is present with the gas whenever a kick is taken, the wait and weight method of eliminating gas and raising the mud will be followed.

1. Wait and Weight Method:
   a. The wait and Weight Method is:
      *increase density of mud in pits to 'kill' weight mud.
      *open choke and bring pump to initial circulating pressure by holding casing pressure at original valve until pump is up to predetermined speed.
      *when initial circulating pressure is obtained on drill pipe, zero pump stroke counter and record time.
      *reduce drill pipe pressure from initial circulating pressure to final circulating pressure by using pump strokes and/or time according to graph
      *when 'kill' weight mud is at the bit, hold final circulating pressure until kill weight mud is to surface.

   b. If a kick has occurred, the standard blowout procedure will be followed and the wait and weight method will be used to kill the well. When the well has been put on the choke and circulation has been established, the following safety procedure must be established.
      *determine when gas is anticipated to reach surface.

*all non-essential personnel must be moved to safe briefing area
*all remaining personnel will check out and keep with them their protective breathing apparatus.
*mud men will see that the proper amount of H2S scavenging chemical is in the mud and record times checked
*make sure ignition flare is burning and valves are open to designated flare stacks

CORING OPERATIONS IN H2S BEARING ZONES

1. Personal protective breathing apparatus will be worn from 10 to 15 stands in advance of retrieving the core barrel. Cores to be transported should be sealed and marked to the presence of H2S.
   a. Yellow Caution Flag will be flown at the well condition sign.
   b. The "NO SMOKING" rule will be enforced

DRILL STEM TESTING OF H2S ZONES

1. The DST subsurface equipment will be suitable for H2S service as recommended by the API
2. Drill stem testing of H2S zone will be conducted in daylight hours
3. All non-essential personnel will be moved to an established safe area or off location
4. The "NO SMOKING" rule will be enforced
5. DST fluids will be circulated through a remote controlled choke and a separator to permit flaring of gas. A continuous pilot light will be used.
6. A yellow or red flag will be flown at entrance to location depending on present gas condition
7. If warranted, the use of Aqua Ammonia for neutralizing the toxicity of H2S from drill string
   a. During drill stem tests adequate Filming Amine for H2S corrosion and Aqua Ammonia for neutralizing H2S should be on location.
8. On completion of DST, if H2S contaminated formation fluids or gases are present in drill string, floor workers will be masked up before test valve is removed from drill string and continue "mask

on" conditions until such time that readings in the work area do not exceed 10ppm of H2S gas.

EMERGENCY PROCEDURES

SOUNDING ALARM

In case of an alarm the crews will muster up at the designated area. Total Safety will be dispatched with (2) HES Techs who are to go in under protective breathing air and check the alarm readings and sniff ambient air for the presence of H2S.

By no means are the Co. Rep or HES Advisor to go in under air with the HES Tech. If there is another method in place where the Rig Manager is to go in with the Tech we need to ensure that the rig company has cleared them and that they are properly trained.

1. The fact is to be instilled in the minds of all rig personnel that the sounding alarm means only one thing: H2S IS PRESENT. Everyone is to proceed to his assigned station and the contingency plan is put into effect.

DRILLING CREW ACTIONS

1. All personnel will don their protective breathing apparatus. The driller will take necessary precautions as indicated in operating procedures.
2. The Buddy system will be implemented. All personnel will act upon directions from the operator's on-site representative.
3. If there are non-essential personnel on location, they will move off location.
4. Entrance to the location will be patrolled, and the proper well condition flag will be displayed at the entrance to the location.

RESPONSIBILITIES OF PERSONNEL

In order to assure the proper execution of this plan, it is essential that one person be responsible for and in complete charge of implementing these procedures. The responsibility will be as follows:

1. The operator's on-site representative or his assistant
2. Contract Tool Pusher

STEPS TO BE TAKEN

In the event of an accidental release of a potentially hazardous volume of H2S, the following steps will be taken:

1. Contact by the quickest means of communications: the main offices of Oil Company & Contractor as listed on the preceding page.
2. An assigned crewmember will blockade the entrance to the location. No unauthorized personnel will be allowed entry into the location.
3. The operator's on-site representative will remain on location and attempt to regain control of the well.
4. The drilling company's rig superintendent will begin evacuation of those persons in immediate danger. He will begin by telephoning residents in the danger zone. In the event of no contact by telephoning, the tool pusher will proceed at once to each dwelling for a person-to-person contact. In the event the tool pusher cannot leave the location, he will assign a responsible crewmember to proceed in the evacuation off local residents. Upon arrival, the Sheriff's Department and TOTAL SAFETY personnel will aid in further evacuation.

LEAK IGNITION

Leak Ignition procedure: (used to ignite a leak in the event it becomes necessary to protect the public)

1. Two men, the operator's on-site representative and the contractor's rig superintendent or TOTAL SAFETY's representative(s), wearing self-contained pressure demand air masks must determine the perimeter of the flammable area. This should be done with one man using an H2S detector and the other one using a flammable gas detector. The flammable perimeter should be established at 30% to 40% of the lower flammable limits.
2. After the flammable perimeter has been established and all employees and citizens have been removed from the area, the ignition team should move to the up-wind area of the leak perimeter and fire a flare into the area if the leak isn't ignited on the first attempt, move in 20 to 30 feet and fire again. Continue moving in and firing until the leak is ignited or the flammable gas detector indicates the ignition

team is moving into the hazardous area. If trouble is incurred in igniting the leak by firing toward the leak, try firing 40 degrees to 90 degrees to each side of the area where you have been firing. If still no ignition is accomplished ignite the copper line burner and push it into the leak area. This should accomplish ignition. If ignition is not possible due to the makeup of the gas, the toxic leak perimeter must be established and maintained to insure evacuation is completed and continue until the emergency is secure.

3. The following equipment and man-power will be required to support the ignition team:
    a. one flare gun with flares
    b. four pressure demand air packs
    c. two nylon ropes tied to the ignition team
    d. two men in a clear area equipped with air packs
    e. portable propane bottle with copper line
4. The person with the final authority to ignite the well.

GENERAL EQUIPMENT

1. Two areas on the location will be designated as Briefing Areas. The one that is upwind from the well will be designated a the "Safe Briefing Area"
2. In the case of an emergency, personnel will assemble in the upwind area as per prior instructions from the operator's representative.
3. The H2S "Safety" trailer provide by TOTAL SAFETY will contain 10 air cylinders, a resuscitator, one 30-minute air pack and will have a windsock.
4. Two other windsocks will be installed.
5. A condition warning sign will be displayed at the location entrance.
6. A list of emergency telephone numbers will be kept on the rig floor, tool pusher's trailer and the Oil Company's trailer.
7. Two barricades will be available to block the entrance to location.
8. An undulating high and low pitch siren will be installed.
9. A telephone line or mobile phone will be available at the well site for incoming and outgoing communications.

CRITICAL OPERATIONS

These guidelines will be implemented during H2S alarms on drilling locations with the intent of minimizing catastrophic damage of "**critical tasks**" ONLY and exposure of field personnel (e.g. cement in the stack). We will wait on Total Safety (or H2S Safety Company) for all other alarm events that aren't defined as "critical".

1.) H2S alarm sounds, crews secure well, and muster based off of wind direction. MOC Operation, MOC Safety, and H2S service company notification will be made and representative from the H2S Service Company is in route to location.
2.) Two qualified in scope personnel will don SCBA, utilizing the "buddy system", and respond to area of H2S alarm location to verify the presence of H2S utilizing hand held four gas analyzer or other approved and provided method.
3.) If no H2S is found, the "all clear" will be authorized by the Marathon Oil Drilling Superintendent and HES to resume operations. H2S service company will still be required to respond.

Note: Personnel will return to muster area awaiting H2S service company and additional equipment if H2S is verified.

Note: Personnel will be trained annually on H2S and the elements of this guideline. The MOC HES Advisor and Co Man will receive hands on training from a H2S service company field tech, on how to properly identify the location of the alarming sensor, and the proper method for checking the alarmed area.

APPENDICES

EMERGENCY & MEDICAL FACILITIES:

Marathon Oil Corporation Emergency Numbers			
Eric Pulpan	Drilling Manager	epulpan@marathonoil.com	713-296-2985
Matt McGaugh	Drilling Superintendent	jmmcgaugh@marathonoil.com	713-397-6190
Josh Love	Drilling Superintendent	jlove1@marathonoil.com	405-657-6126
Kyler Rose	Drilling Engineer	ksrose@marathonoil.com	713-296-3212
Steve Donley	Drilling Engineer	sdonley@marathonoil.com	405-593-4331
Joe Olivas	HES Professional	jolivas@marathonoil.com	713-296-3999
Jeremy Wilson	Lead HES Advisor	pbcomphes2@marathonoil.com	940-507-1991
Scott Doughty	Lead HES Advisor	pbcomphes2@marathonoil.com	281-772-0843

Emergency Services Area Numbers: Or Call 911			
Sheriff (Eddy County, NM)	**575-887-7551**	**New Mexico Poison Control**	**800-222-1222**
Sheriff (Lea County, NM)	**575-396-3611**	**Border Patrol (Las Cruces, NM)**	**575-528-6600**
New Mexico State Police	**575-392-5580/5588**	**Energy Minerals & Natural Resources Dept.**	**575-748-1283**
Carlsbad Medical Center	**575-887-4100**	**Environmental Health Dept.**	**505-476-8600**
Lea Regional Medical Center	**575-492-5000**	**OSHA (Santa Fe, NM)**	**505-827-2855**
Police (Carlsbad, NM)	**575-885-2111**		
Police (Hobbs, NM)	**575-392-9265**		
Fire (Carlsbad, NM)	**575-885-3124**		
Fire (Hobbs, NM)	**575-397-9308**		
Ambulance Service	**911**	**TOTAL SAFETY H2S – SAFETY SERVICES**	**432-561-5049**

1. For Life Flight, 1st dial "911" They will determine nearest helicopter and confirm the need for helicopter.

ADDITIONAL INFORMATION

A. HYDROGEN SULFIDE ESSAY

A deadly enemy of those people employed in the petroleum industry, this gas can paralyze or kill quickly. At least part of the answer lies in education in the hazards, symptoms, characteristics, safe practices, treatment, and the proper use of personal protective equipment.

B. HYDROGEN SULFIDE HAZARDS

The principal hazard to personnel is asphyxiation or poisoning by inhalation. Hydrogen Sulfide is a colorless, flammable gas having an offensive odor and a sweetish taste. It is highly toxic and doubly hazardous because it is heavier than air (specific gravity = 1.19). It's offensive odor, like that of a rotten egg, has been used as an indicator by many old timers in the oil field, but is not a reliable warning of the presence of gas in a dangerous concentration because people differ greatly I their ability to detect smells. Where high concentrations are encountered, the olfactory nerves are rapidly paralyzed, diluting the sense of smell as a warning indicator. A concentration of a few hundredths of one percent higher than that causing irritation can cause asphyxia and death-in other words there is a very narrow margin between conscious ness and unconsciousness, and between unconsciousness and death.

Where high concentrations cause respiratory paralysis, spontaneous breathing does not return unless artificial respiration is applies. Although breathing is paralyzed the heart may continue beating for ten minutes after the attack.

C. PHYSIOLOGICAL SYSTEMS

ACUTE: results in almost instantaneous asphyxia, with seeming respiratory paralysis acute poisoning, or strangulation, may occur after even a few seconds inhalation of high concentration and results in panting respiration, pallor, cramps, paralysis and almost immediate loss of consciousness with extreme rapidity from respiratory and cardiac paralysis. One breath of a sufficiently high concentration may have this result.

SUBACUTE: RESULTS IN IRRITATION, PRINCIPALLY OF THE EYES, PERSISTENT COUGH, TIGHTENING OR BURNING IN THE CHEST AND SKIN IRRITATION FOLOWED BY DEPRESSION OF THE CENTRAL NERVOUS SYSTEM. The eye irritation ranges in severity from mild conjunctivitis to swelling and bulging of the conjunctiva photophobia (abnormal intolerance of light) and temporary blindness.

D. TREATMENT

1. Victim should be removed to fresh air immediately by rescuers wearing respiratory protective equipment. Protect yourself while rescuing.
2. If the victim is not breathing, begin immediately to apply artificial respiration. (See other chart for the chances for life after breathing has stopped.) If a resuscitator is available let another employee get it and prepare for use.
3. Treat for shock, keep victim warm and comfortable
4. Call a doctor, in all cases, victims of poisoning should be attended by a physician.

E. CHARACTERISTICS OF H2S

1. Extremely Toxic (refer to chart for toxicity of Hydrogen Sulfide).
2. Heavier than air. Specific gravity= 1.19.
3. Colorless, has odor of rotten eggs.
4. Burns with a blue flame and produces sulfur Dioxide (SO2) gas, which is very irritating to eyes and lungs. The SO2 is also toxic and can cause serious injury.
5. H2S is almost as toxic as hydrogen cyanide.
6. H2S forms explosive mixture, with air between 4.3% and 46% by volume.
7. Between 5 and 6 times as toxic as carbon monoxide.
8. Produces irritation to eyes, throat, and respiratory tract.
9. Threshold Limit Value (TLV) maximum of eight hours exposure without protective respiratory equipment-10ppm.

F. SAFE PRACTICES

If you are faced with an H2S problem in your operations, the following safe practices are recommended:

1. Be absolutely sure all concerned are familiar with the hazards concerning H2S and how to avoid it.
2. All employees should know how to operate and maintain respiration equipment.
3. Be able to give and demonstrate artificial respiration.
4. Post areas where there is poisonous gas with suitable warning signs.
5. Be sure all new employees are thoroughly schooled before they are sent to the field-tomorrow may be too late.
6. Teach men to avoid gas whenever possible-work on the windward side, have fresh air mask available.
7. Never let bad judgment guide you-wear respiratory equipment when gauging tanks, etc. Never try to hold your breath in order to enter a contaminated atmosphere.
8. In areas of high concentration, a two-man operation is preferred.
9. Never enter a tank, cellar or other enclosed place where gas can accumulate without proper respiratory protective equipment and a safety belt secured to a lifeline held by another person outside.
10. Always check out danger areas first with H2S detectors before allowing anyone to enter. DO NOT TRY TO DETERMINE THE PRESENCE OF GAS BY its ODOR.
11. Wear proper respiratory equipment for the job at hand. Never take a chance with equipment with which you are unfamiliar. If in doubt, consult your supervisor.
12. Carry out practice drills every month with emergency and maintenance breathing air equipment. Telling or showing a group how to operate equipment is not enough-make them show you.
13. Maximum care should be taken to prevent the escape of fumes into the air of working places by leaks, etc.
14. Communication such as radio and telephones should be provided for those people employed where H2S may be present.

TOXICITY OF HYDROGEN SULFIDE TO MEN

H2S Per Cent (PPM)**	0 - 2 Minutes	0 - 15 Minutes	15 - 30 Minutes	30 Minutes to 1 hour	1 - 4 Hours	4 - 8 Hours	4 - 48 Hours
0.005 (50) 0.010 (100)				Mild Conjunctivities; respiratory tract irritation			
0.010 (100) 0.015 (150)		Coughing; irritation of eyes; loss of sense of smell	Disturbed respiration; pain in eyes; sleepiness	Throat	Salivation & mucous discharge; sharp pain in eyes; coughing	Increased symptoms*	Hemorrhage & death*
0.015 (150) 0.020 (200)		Loss of sense of smell	Throat & eye irritation	Throat & eye irritation	Difficult breathing; blurred vision; light & shy	Serious irritating effects	Hemorrhage & death*
0.025 (250) 0.035 (350)	Irritation of eyes; loss of sense of smell	Irritation of eyes	Painful secretion of tears; weariness	Light & shy; nasal catarrh; pain in eyes; difficult breathing	Hemorrhage & death		
0.035 (350)		Irritation of eyes; loss of sense of smell	Difficult respiration coughing; irritation of eyes	Increased irritation of eyes and nasal tract; dull pain head; weariness; light shy	Dizziness weakness; increased irritation; death	Death*	
0.050 (500)	Coughing collapse & unconsciousness	Respiratory disturbances; irritation of eyes; collapse	Serious eye irritation; palpitation of heart; few cases of death*	Severe pain in eyes and head dizziness; trembling of extreities; great weakness & death*			
0.060 (600) 0.070 (700) 0.808 (800) 0.100 (1000) 0.150 (1500)	Collapse * unconsciousness; death*	Collapse* unconsciousness; death*					

*Data secured from experiments of dogs which have susceptibility similar to men. **PPM - parts per million

Form 3160-5
(June 2019)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

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

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160-3 (APD) for such proposals.

SUBMIT IN TRIPLICATE *- Other instructions on page 2*

5. Lease Serial No.

6. If Indian, Allottee or Tribe Name

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

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

8. Well Name and No.

2. Name of Operator

9. API Well No. 30-015-54491

3a. Address

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

10. Field and Pool or Exploratory Area

4. Location of Well *(Footage, Sec., T.,R.,M., or Survey Description)*

11. Country or Parish, State

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

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

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

14. I hereby certify that the foregoing is true and correct. Name *(Printed/Typed)*

Title

Signature

Date

THE SPACE FOR FEDERAL OR STATE OFICE USE

Approved by

Title

Date

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

Office

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

(Instructions on page 2)

GENERAL INSTRUCTIONS

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

SPECIFIC INSTRUCTIONS

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

Item 13: Proposals to abandon a well and subsequent reports of abandonment should include such special information as is required by the local Federal office. In addition, such proposals and reports should include reasons for the abandonment; data on any former or present productive zones or other zones with present significant fluid contents not sealed off by cement or otherwise; depths (top and bottom) and method of placement of cement plugs; mud or other material placed below, between and above plugs; amount, size, method of parting of any casing, liner or tubing pulled and the depth to the top of any tubing left in the hole; method of closing top of well and date well site conditioned for final inspection looking for approval of the abandonment. If the proposal will involve **hydraulic fracturing operations**, you must comply with 43 CFR 3162.3-3, including providing information about the protection of usable water. Operators should provide the best available information about all formations containing water and their depths. This information could include data and interpretation of resistivity logs run on nearby wells. Information may also be obtained from state or tribal regulatory agencies and from local BLM offices.

NOTICES

The privacy Act of 1974 and the regulation in 43 CFR 2.48(d) provide that you be furnished the following information in connection with information required by this application.
AUTHORITY: 30 U.S.C. 181 et seq., 351 et seq., 25 U.S.C. 396; 43 CFR 3160.
PRINCIPAL PURPOSE: The information is used to: (1) Evaluate, when appropriate, approve applications, and report completion of subsequent well operations, on a Federal or Indian lease; and (2) document for administrative use, information for the management, disposal and use of National Resource lands and resources, such as: (a) evaluating the equipment and procedures to be used during a proposed subsequent well operation and reviewing the completed well operations for compliance with the approved plan; (b) requesting and granting approval to perform those actions covered by 43 CFR 3162.3-2, 3162.3-3, and 3162.3-4; (c) reporting the beginning or resumption of production, as required by 43 CFR 3162.4-1(c)and (d) analyzing future applications to drill or modify operations in light of data obtained and methods used.
ROUTINE USES: Information from the record and/or the record will be transferred to appropriate Federal, State, local or foreign agencies, when relevant to civil, criminal or regulatory investigations or prosecutions in connection with congressional inquiries or to consumer reporting agencies to facilitate collection of debts owed the Government.
EFFECT OF NOT PROVIDING THE INFORMATION: Filing of this notice and report and disclosure of the information is mandatory for those subsequent well operations specified in 43 CFR 3162.3-2, 3162.3-3, 3162.3-4.

The Paperwork Reduction Act of 1995 requires us to inform you that:
The BLM collects this information to evaluate proposed and/or completed subsequent well operations on Federal or Indian oil and gas leases.
Response to this request is mandatory.
The BLM would like you to know that you do not have to respond to this or any other Federal agency-sponsored information collection unless it displays a currently valid OMB control number.

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

Additional Information

Additional Remarks

Well Name & # change: From: Blue Ridge 20-17 WA Fed Com 1H to Blue Ridge WC Federal Com 701H.

Please see attached supporting documents: C102, Directional Plans, Drill Plans, Well Pad diagram. (Well Pad expansion requested sundry: 2753371

Location of Well

0. SHL: SWSE / 290 FSL / 1540 FEL / TWSP: 26S / RANGE: 29E / SECTION: 20 / LAT: 32.0217667 / LONG: -104.0028986 (TVD: 0 feet, MD: 0 feet)

PPP: SWSE / 330 FSL / 1650 FEL / TWSP: 26S / RANGE: 29E / SECTION: 20 / LAT: 32.0218614 / LONG: -104.0032575 (TVD: 9517 feet, MD: 9524 feet)

PPP: NWNE / 330 FSL / 1650 FEL / TWSP: 26S / RANGE: 29E / SECTION: 20 / LAT: 32.0319141 / LONG: -104.0034775 (TVD: 10090 feet, MD: 13508 feet)

PPP: NWSE / 1249 FSL / 1685 FEL / TWSP: 26S / RANGE: 29E / SECTION: 17 / LAT: 32.0389764 / LONG: -104.0033964 (TVD: 10090 feet, MD: 16079 feet)

PPP: SWSE / 0 FSL / 1650 FEL / TWSP: 26S / RANGE: 29E / SECTION: 17 / LAT: 32.0355432 / LONG: -104.0035569 (TVD: 10090 feet, MD: 14829 feet)

PPP: SWSE / 131 FSL / 1649 FEL / TWSP: 26S / RANGE: 29E / SECTION: 17 / LAT: 32.0359035 / LONG: -104.00354 (TVD: 10090 feet, MD: 15000 feet)

BHL: NWNE / 330 FNL / 1650 FEL / TWSP: 26S / RANGE: 29E / SECTION: 17 / LAT: 32.0487359 / LONG: -104.0033964 (TVD: 10090 feet, MD: 19632 feet)

Well Name: BLUE RIDGE WC Fed Com

Well Location: T26S / R29E / SEC 20 / SWSE /

County or Parish/State:

Well Number: 701H

Type of Well: OIL WELL

Allottee or Tribe Name:

Lease Number: NMNM138836

Unit or CA Name:

Unit or CA Number:

US Well Number:

Well Status: Approved Application for Permit to Drill

Operator: MARATHON OIL PERMIAN LLC

Notice of Intent

Sundry ID: 2763987

Type of Submission: Notice of Intent

Type of Action: APD Change

Date Sundry Submitted: 12/01/2023

Time Sundry Submitted: 06:01

Date proposed operation will begin: 12/06/2023

Procedure Description: Marathon Oil Permian respectfully requests approval to change the APD for the Blue Ridge 20-17 WA Fed Com #1H as follows: API # not assigned. APD ID: 10400076718 SHL: Approved: 290' FSL & 1540' FEL, Sec. 20, 26S, 29E Proposed: 692' FSL & 1585' FEL, Sec. 20, 26S, 29E BHL: Approved: 330' FNL & 1650' FEL, Sec. 17, 26S, 29E Proposed: 330' FNL & 2310' FEL, Sec. 17, 26S, 29E Attached drill plans include changes to the casing and cement design for the well. Well Name & # change: From: Blue Ridge 20-17 WA Fed Com 1H to Blue Ridge WC Federal Com 701H. Please see attached supporting documents: C102, Directional Plans, Drill Plans, Well Pad diagram. (Well Pad expansion requested sundry: 2753371

NOI Attachments

Procedure Description

Blue_Ridge_WC_Federal_Com_701H_Drill_Plan_20231201055522.pdf

Blue_Ridge_WC_Federal_Com_701H_Dir_Plan_20231201055514.pdf

Blue_Ridge_WC_Federal_Com_701H_AC_20231201055502.pdf

BLUE_RIDGE_FED_Well_pad_diagram_20231201055452.pdf

Blue_Ridge_WC_Federal_Com_701H_C102_20231201055443.pdf

Well Name: BLUE RIDGE WC Fed Com

Well Location: T26S / R29E / SEC 20 / SWSE /

County or Parish/State:

Well Number: 701H

Type of Well: OIL WELL

Allottee or Tribe Name:

Lease Number: NMNM138836

Unit or CA Name:

Unit or CA Number:

US Well Number:

Well Status: Approved Application for Permit to Drill

Operator: MARATHON OIL PERMIAN LLC

Conditions of Approval

Specialist Review

Blue_Ridge_WC_Fed_Com_701H_COA_20231206153606.pdf

Additional

Master_Surface_Use_COAs_Blue_Ridge_20_17_WA_Fed_Com_1H_2H_wells_20231204115935.pdf

Operator

I certify that the foregoing is true and correct. Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction. Electronic submission of Sundry Notices through this system satisfies regulations requiring a

Operator Electronic Signature: TERRI STATHEM

Signed on: DEC 01, 2023 01:41 PM

Name: MARATHON OIL PERMIAN LLC

Title: Regulatory Compliance Manager

Street Address: 990 TOWN & COUNTRY BLVD

City: HOUSTON **State:** TX

Phone: (713) 296-2113

Email address: TSTATHEM@MARATHONOIL.COM

Field

Representative Name:

Street Address:

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

Phone:

Email address:

BLM Point of Contact

BLM POC Name: CHRISTOPHER WALLS

BLM POC Title: Petroleum Engineer

BLM POC Phone: 5752342234

BLM POC Email Address: cwalls@blm.gov

Disposition: Approved

Disposition Date: 12/07/2023

Signature: Chris Walls

MARATHON OIL PERMIAN, LLC.

DRILLING AND OPERATIONS PLAN

WELL NAME & NUMBER: **BLUE RIDGE BS FEDERAL COM 701H**

LOCATION: SECTION **20** TOWNSHIP **26S** RANGE **29E**

EDDY COUNTY, **NEW MEXICO**

Section 1: GEOLOGICAL FORMATIONS

Name of Surface Formation: Permian

Elevation: 2899 *feet*

Estimated Tops of Important Geological Markers:

Formation	TVD (ft)	MD (ft)	Elevation (ft SS)	Lithologies	Mineral Resources	Producing Formation?
Rustler	391	418	2508	Anhydrite	Brine	No
Salado	813	840	2086	Salt/Anhydrite	Brine	No
Castile	1059	1086	1840	Salt/Anhydrite	Brine	No
Base of Salt (BX)	2617	2644	282	Salt/Anhydrite	Brine	No
Lamar	2805	2832	94	Sandstone/Shale	None	No
Bell Canyon	2860	2887	39	Sandstone	Oil	No
Cherry Canyon	3925	3952	-1026	Sandstone	Oil	No
Brushy Canyon	5015	5042	-2116	Sandstone	Oil	No
Bone Spring Lime	6580	6607	-3681	Limestone	None	No
Upper Avalon Shale	6865	6892	-3966	Shale	Oil	Yes
1st Bone Spring Sand	7479	7506	-4580	Sandstone	Oil	Yes
2nd Bone Spring Carbonate	7762	7789	-4863	Limestone/Shale	None	No
2nd Bone Spring Sand	8258	8285	-5359	Sandstone	Oil	Yes
3rd Bone Spring Carbonate	8660	8687	-5761	Limestone	Oil	No
3rd Bone Spring Sand	9356	9383	-6457	Sandstone	Oil	Yes
Wolfcamp	9707	9734	-6808	Sandstone/Shale/Carbonates	Natural Gas / Oil	Yes
Wolfcamp A	9845	9872	-6946	Sandstone/Shale/Carbonates	Natural Gas / Oil	Yes
Wolfcamp B	10182	10209	-7283	Sandstone/Shale/Carbonates	Natural Gas / Oil	No
Wolfcamp C	10495	10522	-7596	Sandstone/Shale/Carbonates	Natural Gas / Oil	No
Wolfcamp D	11019	11046	-8120	Sandstone/Shale/Carbonates	Natural Gas / Oil	No

Section 2: BLOWOUT PREVENTER TESTING PROCEDURE

Pressure Rating (PSI): 10M

Rating Depth: 10000

Equipment: 13 5/8 BOP Annular (5,000 psi WP) and BOP Stack (10,000 psi WP) will be installed and tested before drilling all holes.

Requesting Variance? Yes

Variance Request: A variance is requested for the use of a flexible choke line from the BOP to Choke Manifold. See attached for specs and hydrostatic test chart.

Testing Procedure: BOP/BOPE will be tested to 250 psi low and a high of 100% WP for the Annular and 5,000psi for the BOP Stacking before drilling the intermediate hole, 10,000psi for the BOP Stacking before drilling the production hole. Testing will be conducted by an independent service company per Onshore Order 2 requirements. The System may be upgraded to a higher pressure but still tested to the working pressure listed in the Equipment Description above. If the system is upgraded all the components installed will be functional and tested.

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

Formation integrity test will be performed per Onshore Order #2. On Exploratory wells or on that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.i. A multibowl wellhead is being used. The BOP will be tested per Onshore Order #2 after installation on the surface casing which will cover testing requirements for a maximum of 30 days. If any seal subject to test pressure is broken the system must be tested. See attached schematic.

Section 3: CASING PROGRAM

String Type	Hole Size	Casing Size	Top Set MD	Bottom Set MD	Top Set TVD	Bottom Set TVD	Top Set MSL	Bottom Set MSL	Weight (lbs/ft)	Grade	Joint Type	Collapse SF	Burst SF	Joint SF Type	Joint SF	Body SF Type	Body SF
Surface	17.5	13.375	0	488	0	461	2899	2438	54.5	J55	BTC	5.22	1.81	BUOY	4.52	BUOY	4.52
Intermediate	12.25	9.625	0	9220	0	9152	2899	-6253	40	P110HC	BTC	1.20	1.42	BUOY	2.44	BUOY	2.44
Production	8.75	5.5	0	19463	0	9825	2899	-6926	23	P110HC	TLW	2.53	1.26	BUOY	2.22	BUOY	2.22
All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.h												Safety Factors will Meet or Exceed					

Casing Condition: New
Casing Standard: API
Tapered String? No

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

Section 4: CEMENT PROGRAM

String Type	Lead/Tail	Top MD	Bottom MD	Quantity (sks)	Yield (ft^3/sks)	Density (ppg)	Slurry Volume (ft^3)	Excess (%)	Cement Type	Additives
Surface	Lead	0	338	161	2.12	12.5	342	25	Class C	Extender,Accelerator,LCM
Surface	Tail	338	488	99	1.32	14.8	130	25	Class C	Accelerator
Intermediate	Lead	0	8720	1580	2.18	12.4	3444	25	Class C	Extender,Accelerator,LCM
Intermediate	Tail	8720	9220	147	1.33	14.8	196	25	Class C	Retarder
Production	Tail	8920	19463	2022	1.68	13	3397	25	Class H	Retarder, Extender, Fluid Loss, Suspension Agent

Stage tool depth(s) will be adjusted based on hole conditions and cement volumes will be adjusted proportionally. Stage tool will be set a minimum of 50 feet below previous casing and a minimum of 200 feet above current shoe. Lab reports with the 500 psi compressive strength time for the cement will be onsite for review.

Pilot Hole? No
Pilot Hole Depth: N/A
KOP Depth: N/A
Plugging Procedure for Pilot Hole: N/A

Plug Top	Plug Bottom	Excess (%)	Quantity (sx)	Density (ppg)	Yield (ft3/sks)	Water gal/sk	Slurry Description and Cement Type

Section 5: CIRCULATING MEDIUM

Mud System Type: Closed
Will an air or gas system be used? No

Describe what will be on location to control well or mitigate other conditions:
The necessary mud products for additional weight and fluid loss control will be on location at all times.

Describe the mud monitoring system utilized:
Losses or gains in the mud system will be monitored visually/manually as well as with an electronic PVT.

Circulating Medium Table:

Top Depth	Bottom Depth	Mud Type	Min. Weight (ppg)	Max Weight (ppg)
0	488	Water Based Mud	8.4	8.8
488	9220	Brine or Oil Based Mud	9.2	10.2
9220	19463	Oil Based Mud	10.5	12.5

Section 6: TESTING, LOGGING, CORING

List of production tests including testing procedures, equipment and safety measures:
GR from TD to surface (horizontal well - vertical portion of hole)

List of open and cased hole logs run in the well:
GR while drilling from Intermediate casing shoe to TD.

Coring operation description for the well:
Run gamma-ray (GR) and corrected neutron log (CNL) or analogous to surface for future development of the area, one per shared well pad not to exceed 200' radial distance.

Section 7: ANTICIPATED PRESSURE

Anticipated Bottom Hole Pressure: **6386** PSI
Anticipated Bottom Hole Temperature: **195** ˚F
Anticipated Abnormal Pressure? **No**
Anticipated Abnormal Temperature? **No**

Potential Hazards:
H2S detection equipment will be in operation after drilling out the surface casing shoe until the production casing has been cemented. Breathing equipment will be on location from drilling out the surface shoe until production casing is cemented. If H2S is encountered the operator will comply with Onshore Order #6. Adequate flare lines will be installed off the mud/gas separator where gas may be flared safely. All personnel will be familiar with all aspects of safe operation of equipment being used to drill this well. See attached H2S Contingency Plan.

Section 8: OTHER INFORMATION

Auxiliary Well Control and Monitoring Equipment:
A Kelly cock will be in the drill string at all times. A full opening drill pipe stabbing valve having the appropriate connections will be on the rig floor unobstructed and readily accessible at all times.
Hydrogen Sulfide detection equipment will be in operation after drilling out the surface casing shoe until the production casing is cemented. Breathing equipment will be on location upon drilling the surface casing shoe until total depth is reached. If Hydrogen Sulfide is encountered, measured amounts and formations will be reported to the BLM.

Anticipated Starting Date and Duration of Operations:
Road and location construction will begin after the BLM has approved the APD. Anticipated spud date will be as soon as possible after BLM approval and as soon as a rig will be available. Move in operations and drilling is expected to take 30 days.

Marathon Oil Corporation

Company: Marathon Oil
Well: Blue Ridge WC Federal Com 701H
County: Eddy County, New Mexico (NAD 27)
Rig: Precision 580
Wellbore: Wellbore #1
Design: Design #1
Date: 16:59, October 30 2023

Geodetic System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: New Mexico East 3001
System Datum: Mean Sea Level

WELL DETAILS: Blue Ridge WC Federal Com 701H

GL @ 2899.00 WELL @ 2922.50usft (Precision 580)

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	372156.62	602498.69	32° 1' 21.869 N	104° 0' 9.381 W

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSect	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	
1500.00	0.00	0.00	1500.00	0.00	0.00	0.00	0.000	0.00	KOP, 2.00°/100' Build
1999.94	10.00	240.51	1997.40	-21.42	-37.87	2.00	240.511	-21.68	Begin 10.00° Tangent
6198.91	10.00	240.51	6132.60	-380.30	-672.48	0.00	0.000	-384.99	Begin 2.00°/100' Drop
6698.84	0.00	0.00	6630.00	-401.72	-710.35	2.00	180.000	-406.67	Begin Vertical Hold
9320.88	0.00	0.00	9252.04	-401.72	-710.35	0.00	0.000	-406.67	KOP, 10.00°/100' Build
10220.88	90.00	358.76	9825.00	171.10	-722.79	10.00	358.756	166.05	Begin 90.00° Lateral
14656.69	90.00	358.76	9825.00	4605.86	-819.10	0.00	0.000	4600.03	Begin 2.00°/100' Turn
14837.08	90.00	2.36	9825.00	4786.21	-817.34	2.00	90.000	4780.39	Hold 90.00° Inc, 2.36° Azm
15915.74	90.00	2.36	9825.00	5863.96	-772.85	0.00	0.000	5858.42	Begin 2.00°/100' Turn
15928.69	90.00	2.10	9825.00	5876.90	-772.35	2.00	-90.000	5871.36	Hold 90.00° Inc, 2.10° Azm
19463.53	90.00	2.10	9825.00	9409.35	-642.52	0.00	0.000	9404.64	PBHL

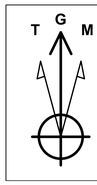
DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
KOP/FTP/PPP-1_B.R.F.C. 701H	0.00	-401.72	-710.35	371754.90	601788.34	32° 1' 17.915 N	104° 0' 17.647 W
LTP/PBHL_B.R.F.C. 701H	9825.00	9409.35	-642.52	381565.97	601856.17	32° 2' 55.009 N	104° 0' 16.512 W
PPP-2/PI-1_B.R.F.C. 701H	9825.00	4605.86	-819.10	376762.48	601679.59	32° 2' 7.476 N	104° 0' 18.733 W
PPP-3_B.R.F.C. 701H	9825.00	4741.97	-814.09	376898.59	601684.60	32° 2' 8.823 N	104° 0' 18.670 W
PPP-4_B.R.F.C. 701H	9825.00	5863.96	-772.85	378020.58	601725.84	32° 2' 19.926 N	104° 0' 18.151 W

SURVEY PROGRAM

Depth From	Depth To	Survey/Plan	Tool
0.00	19463.53	Design #1 (Wellbore #1)	MWD+IFR1+FDIR

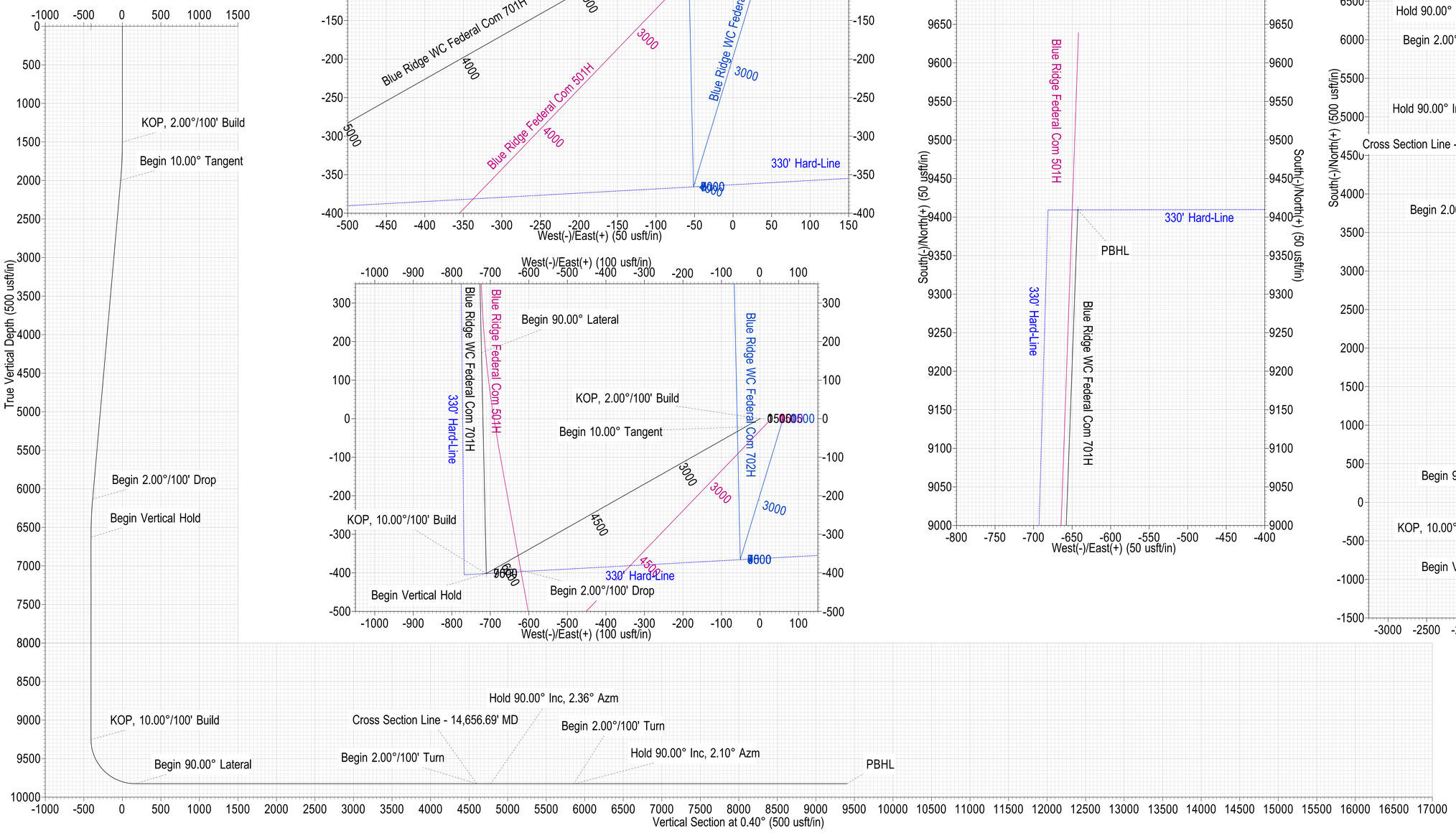
MS Directional

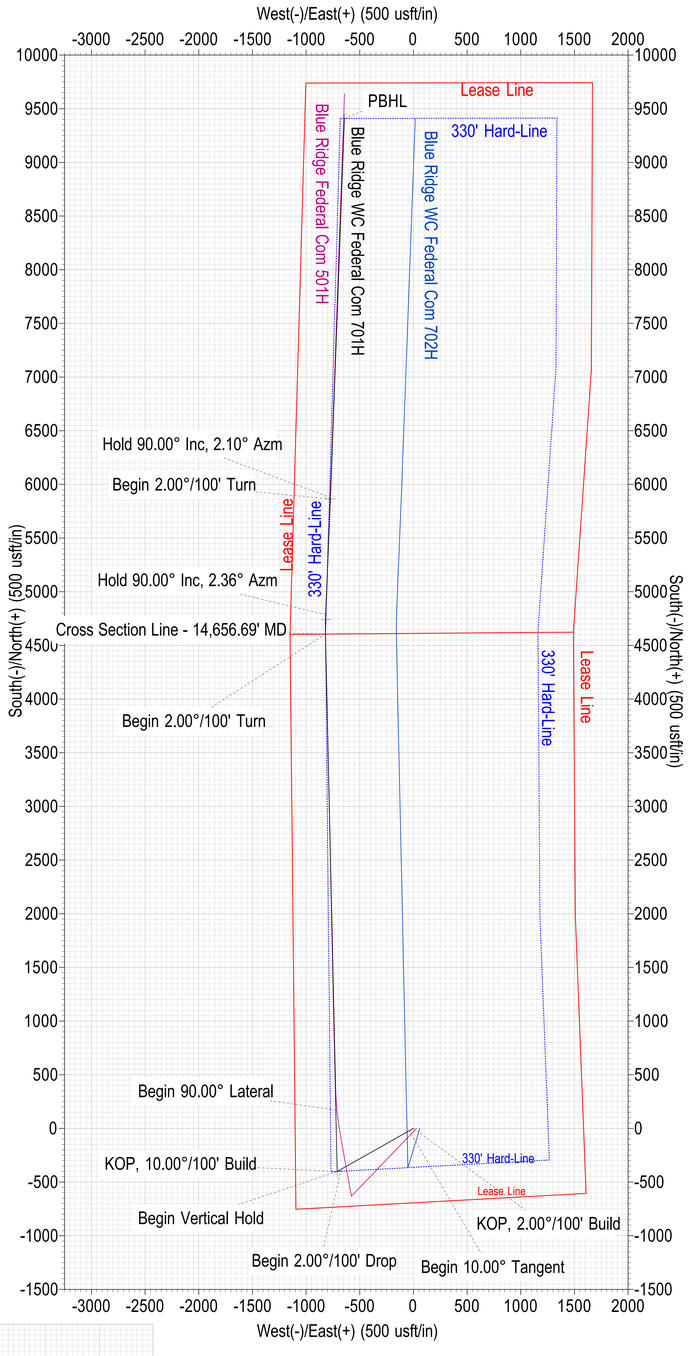


Azimuths to Grid North
True North: -0.18°
Magnetic North: 6.24°

Magnetic Field
Strength: 47280.7nT
Dip Angle: 59.47°
Date: 12/31/2023
Model: HDGM2023

To convert a Magnetic Direction to a Grid Direction, Add 6.241°
To convert a Magnetic Direction to a True Direction, Add 6.417° East
To convert a True Direction to a Grid Direction, Subtract 0.175°





Marathon Oil
Blue Ridge WC Federal Com 701H
Precision 580

Marathon Oil

Eddy County, New Mexico (NAD 27)
Blue Ridge (501H, 701H, 702H)
Blue Ridge WC Federal Com 701H

Wellbore #1

Plan: Design #1

Standard Planning Report

31 October, 2023

Marathon Oil Corporation

MS Directional
Planning Report

MS Directional

Database:	EDM 5000.15 Conroe DB	**Local Co-ordinate Reference:**	Well Blue Ridge WC Federal Com 701H
Company:	Marathon Oil	**TVD Reference:**	WELL @ 2922.50usft (Precision 580)
Project:	Eddy County, New Mexico (NAD 27)	**MD Reference:**	WELL @ 2922.50usft (Precision 580)
Site:	Blue Ridge (501H, 701H, 702H)	**North Reference:**	Grid
Well:	Blue Ridge WC Federal Com 701H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Project Eddy County, New Mexico (NAD 27)

Map System:	US State Plane 1927 (Exact solution)	**System Datum:**	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site Blue Ridge (501H, 701H, 702H)

Site Position:		**Northing:**	372,156.62 usft	**Latitude:**	32° 1' 21.869 N
From:	Map	**Easting:**	602,528.68 usft	**Longitude:**	104° 0' 9.033 W
Position Uncertainty:	0.00 usft	**Slot Radius:**	13-3/16 "		

Well Blue Ridge WC Federal Com 701H

Well Position	**+N/-S**	0.00 usft	**Northing:**	372,156.62 usft	**Latitude:**	32° 1' 21.869 N
	+E/-W	0.00 usft	**Easting:**	602,498.69 usft	**Longitude:**	104° 0' 9.381 W
Position Uncertainty		0.00 usft	**Wellhead Elevation:**	usft	**Ground Level:**	2,899.00 usft
Grid Convergence:		0.175 °				

Wellbore Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM2023	12/31/2023	6.417	59.467	47,280.70

Design Design #1

Audit Notes:

Version:		**Phase:**	PLAN	**Tie On Depth:**	0.00

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	0.40

Plan Survey Tool Program **Date** 10/30/2023

	Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	19,463.53	Design #1 (Wellbore #1)	MWD+IFR1+FDIR	
				OWSG MWD + IFR1 + FDIF	

Marathon Oil Corporation

MS Directional
Planning Report

MS Directional

Database:	EDM 5000.15 Conroe DB	**Local Co-ordinate Reference:**	Well Blue Ridge WC Federal Com 701H
Company:	Marathon Oil	**TVD Reference:**	WELL @ 2922.50usft (Precision 580)
Project:	Eddy County, New Mexico (NAD 27)	**MD Reference:**	WELL @ 2922.50usft (Precision 580)
Site:	Blue Ridge (501H, 701H, 702H)	**North Reference:**	Grid
Well:	Blue Ridge WC Federal Com 701H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

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
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.000	
1,999.94	10.00	240.51	1,997.40	-21.42	-37.87	2.00	2.00	0.00	240.511	
6,198.91	10.00	240.51	6,132.60	-380.30	-672.48	0.00	0.00	0.00	0.000	
6,698.84	0.00	0.00	6,630.00	-401.72	-710.35	2.00	-2.00	0.00	180.000	
9,320.89	0.00	0.00	9,252.04	-401.72	-710.35	0.00	0.00	0.00	0.000	
10,220.89	90.00	358.76	9,825.00	171.10	-722.79	10.00	10.00	0.00	358.756	
14,656.69	90.00	358.76	9,825.00	4,605.86	-819.10	0.00	0.00	0.00	0.000	PPP-2/PI-1_B.R.F.C
14,837.08	90.00	2.36	9,825.00	4,786.21	-817.34	2.00	0.00	2.00	90.000	
15,915.74	90.00	2.36	9,825.00	5,863.96	-772.85	0.00	0.00	0.00	0.000	PPP-4_B.R.F.C. 70
15,928.69	90.00	2.10	9,825.00	5,876.90	-772.35	2.00	0.00	-2.00	-90.000	
19,463.53	90.00	2.10	9,825.00	9,409.35	-642.52	0.00	0.00	0.00	0.000	LTP/PBHL_B.R.F.C

Marathon Oil Corporation

MS Directional
Planning Report

MS Directional

Database:	EDM 5000.15 Conroe DB	**Local Co-ordinate Reference:**	Well Blue Ridge WC Federal Com 701H
Company:	Marathon Oil	**TVD Reference:**	WELL @ 2922.50usft (Precision 580)
Project:	Eddy County, New Mexico (NAD 27)	**MD Reference:**	WELL @ 2922.50usft (Precision 580)
Site:	Blue Ridge (501H, 701H, 702H)	**North Reference:**	Grid
Well:	Blue Ridge WC Federal Com 701H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
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)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
KOP, 2.00°/100' Build									
1,600.00	2.00	240.51	1,599.98	-0.86	-1.52	-0.87	2.00	2.00	0.00
1,700.00	4.00	240.51	1,699.84	-3.44	-6.07	-3.48	2.00	2.00	0.00
1,800.00	6.00	240.51	1,799.45	-7.73	-13.66	-7.82	2.00	2.00	0.00
1,900.00	8.00	240.51	1,898.70	-13.72	-24.27	-13.89	2.00	2.00	0.00
1,999.94	10.00	240.51	1,997.40	-21.42	-37.87	-21.68	2.00	2.00	0.00
Begin 10.00° Tangent									
2,100.00	10.00	240.51	2,095.95	-29.97	-53.00	-30.34	0.00	0.00	0.00
2,200.00	10.00	240.51	2,194.43	-38.52	-68.11	-38.99	0.00	0.00	0.00
2,300.00	10.00	240.51	2,292.91	-47.07	-83.22	-47.64	0.00	0.00	0.00
2,400.00	10.00	240.51	2,391.39	-55.61	-98.34	-56.30	0.00	0.00	0.00
2,500.00	10.00	240.51	2,489.87	-64.16	-113.45	-64.95	0.00	0.00	0.00
2,600.00	10.00	240.51	2,588.35	-72.71	-128.56	-73.60	0.00	0.00	0.00
2,700.00	10.00	240.51	2,686.83	-81.25	-143.68	-82.25	0.00	0.00	0.00
2,800.00	10.00	240.51	2,785.31	-89.80	-158.79	-90.91	0.00	0.00	0.00
2,900.00	10.00	240.51	2,883.80	-98.35	-173.90	-99.56	0.00	0.00	0.00
3,000.00	10.00	240.51	2,982.28	-106.89	-189.02	-108.21	0.00	0.00	0.00
3,100.00	10.00	240.51	3,080.76	-115.44	-204.13	-116.86	0.00	0.00	0.00
3,200.00	10.00	240.51	3,179.24	-123.99	-219.24	-125.51	0.00	0.00	0.00
3,300.00	10.00	240.51	3,277.72	-132.53	-234.36	-134.17	0.00	0.00	0.00
3,400.00	10.00	240.51	3,376.20	-141.08	-249.47	-142.82	0.00	0.00	0.00
3,500.00	10.00	240.51	3,474.68	-149.63	-264.58	-151.47	0.00	0.00	0.00
3,600.00	10.00	240.51	3,573.16	-158.17	-279.70	-160.12	0.00	0.00	0.00
3,700.00	10.00	240.51	3,671.65	-166.72	-294.81	-168.78	0.00	0.00	0.00
3,800.00	10.00	240.51	3,770.13	-175.27	-309.92	-177.43	0.00	0.00	0.00
3,900.00	10.00	240.51	3,868.61	-183.82	-325.04	-186.08	0.00	0.00	0.00
4,000.00	10.00	240.51	3,967.09	-192.36	-340.15	-194.73	0.00	0.00	0.00
4,100.00	10.00	240.51	4,065.57	-200.91	-355.26	-203.38	0.00	0.00	0.00
4,200.00	10.00	240.51	4,164.05	-209.46	-370.38	-212.04	0.00	0.00	0.00
4,300.00	10.00	240.51	4,262.53	-218.00	-385.49	-220.69	0.00	0.00	0.00
4,400.00	10.00	240.51	4,361.01	-226.55	-400.60	-229.34	0.00	0.00	0.00
4,500.00	10.00	240.51	4,459.49	-235.10	-415.72	-237.99	0.00	0.00	0.00
4,600.00	10.00	240.51	4,557.98	-243.64	-430.83	-246.65	0.00	0.00	0.00
4,700.00	10.00	240.51	4,656.46	-252.19	-445.94	-255.30	0.00	0.00	0.00
4,800.00	10.00	240.51	4,754.94	-260.74	-461.06	-263.95	0.00	0.00	0.00
4,900.00	10.00	240.51	4,853.42	-269.28	-476.17	-272.60	0.00	0.00	0.00
5,000.00	10.00	240.51	4,951.90	-277.83	-491.28	-281.25	0.00	0.00	0.00
5,100.00	10.00	240.51	5,050.38	-286.38	-506.39	-289.91	0.00	0.00	0.00

Marathon Oil Corporation

MS Directional
Planning Report

MS Directional

Database:	EDM 5000.15 Conroe DB	**Local Co-ordinate Reference:**	Well Blue Ridge WC Federal Com 701H
Company:	Marathon Oil	**TVD Reference:**	WELL @ 2922.50usft (Precision 580)
Project:	Eddy County, New Mexico (NAD 27)	**MD Reference:**	WELL @ 2922.50usft (Precision 580)
Site:	Blue Ridge (501H, 701H, 702H)	**North Reference:**	Grid
Well:	Blue Ridge WC Federal Com 701H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
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)
5,200.00	10.00	240.51	5,148.86	-294.93	-521.51	-298.56	0.00	0.00	0.00
5,300.00	10.00	240.51	5,247.34	-303.47	-536.62	-307.21	0.00	0.00	0.00
5,400.00	10.00	240.51	5,345.83	-312.02	-551.73	-315.86	0.00	0.00	0.00
5,500.00	10.00	240.51	5,444.31	-320.57	-566.85	-324.52	0.00	0.00	0.00
5,600.00	10.00	240.51	5,542.79	-329.11	-581.96	-333.17	0.00	0.00	0.00
5,700.00	10.00	240.51	5,641.27	-337.66	-597.07	-341.82	0.00	0.00	0.00
5,800.00	10.00	240.51	5,739.75	-346.21	-612.19	-350.47	0.00	0.00	0.00
5,900.00	10.00	240.51	5,838.23	-354.75	-627.30	-359.12	0.00	0.00	0.00
6,000.00	10.00	240.51	5,936.71	-363.30	-642.41	-367.78	0.00	0.00	0.00
6,100.00	10.00	240.51	6,035.19	-371.85	-657.53	-376.43	0.00	0.00	0.00
6,198.91	10.00	240.51	6,132.60	-380.30	-672.48	-384.99	0.00	0.00	0.00
Begin 2.00°/100' Drop									
6,200.00	9.98	240.51	6,133.67	-380.39	-672.64	-385.08	2.00	-2.00	0.00
6,300.00	7.98	240.51	6,232.44	-388.08	-686.22	-392.86	2.00	-2.00	0.00
6,400.00	5.98	240.51	6,331.70	-394.05	-696.79	-398.91	2.00	-2.00	0.00
6,500.00	3.98	240.51	6,431.32	-398.32	-704.35	-403.23	2.00	-2.00	0.00
6,600.00	1.98	240.51	6,531.18	-400.88	-708.87	-405.82	2.00	-2.00	0.00
6,698.84	0.00	0.00	6,630.00	-401.72	-710.35	-406.67	2.00	-2.00	0.00
Begin Vertical Hold									
6,700.00	0.00	0.00	6,631.16	-401.72	-710.35	-406.67	0.00	0.00	0.00
6,800.00	0.00	0.00	6,731.16	-401.72	-710.35	-406.67	0.00	0.00	0.00
6,900.00	0.00	0.00	6,831.16	-401.72	-710.35	-406.67	0.00	0.00	0.00
7,000.00	0.00	0.00	6,931.16	-401.72	-710.35	-406.67	0.00	0.00	0.00
7,100.00	0.00	0.00	7,031.16	-401.72	-710.35	-406.67	0.00	0.00	0.00
7,200.00	0.00	0.00	7,131.16	-401.72	-710.35	-406.67	0.00	0.00	0.00
7,300.00	0.00	0.00	7,231.16	-401.72	-710.35	-406.67	0.00	0.00	0.00
7,400.00	0.00	0.00	7,331.16	-401.72	-710.35	-406.67	0.00	0.00	0.00
7,500.00	0.00	0.00	7,431.16	-401.72	-710.35	-406.67	0.00	0.00	0.00
7,600.00	0.00	0.00	7,531.16	-401.72	-710.35	-406.67	0.00	0.00	0.00
7,700.00	0.00	0.00	7,631.16	-401.72	-710.35	-406.67	0.00	0.00	0.00
7,800.00	0.00	0.00	7,731.16	-401.72	-710.35	-406.67	0.00	0.00	0.00
7,900.00	0.00	0.00	7,831.16	-401.72	-710.35	-406.67	0.00	0.00	0.00
8,000.00	0.00	0.00	7,931.16	-401.72	-710.35	-406.67	0.00	0.00	0.00
8,100.00	0.00	0.00	8,031.16	-401.72	-710.35	-406.67	0.00	0.00	0.00
8,200.00	0.00	0.00	8,131.16	-401.72	-710.35	-406.67	0.00	0.00	0.00
8,300.00	0.00	0.00	8,231.16	-401.72	-710.35	-406.67	0.00	0.00	0.00
8,400.00	0.00	0.00	8,331.16	-401.72	-710.35	-406.67	0.00	0.00	0.00
8,500.00	0.00	0.00	8,431.16	-401.72	-710.35	-406.67	0.00	0.00	0.00
8,600.00	0.00	0.00	8,531.16	-401.72	-710.35	-406.67	0.00	0.00	0.00
8,700.00	0.00	0.00	8,631.16	-401.72	-710.35	-406.67	0.00	0.00	0.00
8,800.00	0.00	0.00	8,731.16	-401.72	-710.35	-406.67	0.00	0.00	0.00
8,900.00	0.00	0.00	8,831.16	-401.72	-710.35	-406.67	0.00	0.00	0.00
9,000.00	0.00	0.00	8,931.16	-401.72	-710.35	-406.67	0.00	0.00	0.00
9,100.00	0.00	0.00	9,031.16	-401.72	-710.35	-406.67	0.00	0.00	0.00
9,200.00	0.00	0.00	9,131.16	-401.72	-710.35	-406.67	0.00	0.00	0.00
9,300.00	0.00	0.00	9,231.16	-401.72	-710.35	-406.67	0.00	0.00	0.00
9,320.89	0.00	0.00	9,252.04	-401.72	-710.35	-406.67	0.00	0.00	0.00
KOP, 10.00°/100' Build									
9,350.00	2.91	358.76	9,281.14	-400.98	-710.37	-405.93	10.00	10.00	0.00
9,400.00	7.91	358.76	9,330.91	-396.27	-710.47	-401.22	10.00	10.00	0.00
9,450.00	12.91	358.76	9,380.07	-387.24	-710.66	-392.19	10.00	10.00	0.00
9,500.00	17.91	358.76	9,428.25	-373.96	-710.95	-378.91	10.00	10.00	0.00
9,550.00	22.91	358.76	9,475.10	-356.53	-711.33	-361.49	10.00	10.00	0.00

Marathon Oil Corporation

MS Directional
Planning Report

MS Directional

Database:	EDM 5000.15 Conroe DB	**Local Co-ordinate Reference:**	Well Blue Ridge WC Federal Com 701H
Company:	Marathon Oil	**TVD Reference:**	WELL @ 2922.50usft (Precision 580)
Project:	Eddy County, New Mexico (NAD 27)	**MD Reference:**	WELL @ 2922.50usft (Precision 580)
Site:	Blue Ridge (501H, 701H, 702H)	**North Reference:**	Grid
Well:	Blue Ridge WC Federal Com 701H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
9,600.00	27.91	358.76	9,520.25	-335.08	-711.80	-340.05	10.00	10.00	0.00
9,650.00	32.91	358.76	9,563.36	-309.79	-712.35	-314.75	10.00	10.00	0.00
9,700.00	37.91	358.76	9,604.09	-280.83	-712.98	-285.80	10.00	10.00	0.00
9,750.00	42.91	358.76	9,642.15	-248.44	-713.68	-253.41	10.00	10.00	0.00
9,800.00	47.91	358.76	9,677.24	-212.85	-714.45	-217.83	10.00	10.00	0.00
9,850.00	52.91	358.76	9,709.09	-174.34	-715.29	-179.33	10.00	10.00	0.00
9,900.00	57.91	358.76	9,737.47	-133.20	-716.18	-138.19	10.00	10.00	0.00
9,950.00	62.91	358.76	9,762.15	-89.74	-717.13	-94.75	10.00	10.00	0.00
10,000.00	67.91	358.76	9,782.95	-44.30	-718.11	-49.31	10.00	10.00	0.00
10,050.00	72.91	358.76	9,799.71	2.78	-719.13	-2.24	10.00	10.00	0.00
10,100.00	77.91	358.76	9,812.30	51.14	-720.18	46.11	10.00	10.00	0.00
10,150.00	82.91	358.76	9,820.62	100.42	-721.25	95.38	10.00	10.00	0.00
10,200.00	87.91	358.76	9,824.62	150.23	-722.34	145.18	10.00	10.00	0.00
10,220.89	90.00	358.76	9,825.00	171.10	-722.79	166.05	10.00	10.00	0.00
Begin 90.00° Lateral									
10,300.00	90.00	358.76	9,825.00	250.20	-724.51	245.14	0.00	0.00	0.00
10,400.00	90.00	358.76	9,825.00	350.18	-726.68	345.09	0.00	0.00	0.00
10,500.00	90.00	358.76	9,825.00	450.15	-728.85	445.05	0.00	0.00	0.00
10,600.00	90.00	358.76	9,825.00	550.13	-731.02	545.01	0.00	0.00	0.00
10,700.00	90.00	358.76	9,825.00	650.10	-733.19	644.97	0.00	0.00	0.00
10,800.00	90.00	358.76	9,825.00	750.08	-735.36	744.93	0.00	0.00	0.00
10,900.00	90.00	358.76	9,825.00	850.06	-737.53	844.89	0.00	0.00	0.00
11,000.00	90.00	358.76	9,825.00	950.03	-739.71	944.85	0.00	0.00	0.00
11,100.00	90.00	358.76	9,825.00	1,050.01	-741.88	1,044.81	0.00	0.00	0.00
11,200.00	90.00	358.76	9,825.00	1,149.99	-744.05	1,144.76	0.00	0.00	0.00
11,300.00	90.00	358.76	9,825.00	1,249.96	-746.22	1,244.72	0.00	0.00	0.00
11,400.00	90.00	358.76	9,825.00	1,349.94	-748.39	1,344.68	0.00	0.00	0.00
11,500.00	90.00	358.76	9,825.00	1,449.92	-750.56	1,444.64	0.00	0.00	0.00
11,600.00	90.00	358.76	9,825.00	1,549.89	-752.73	1,544.60	0.00	0.00	0.00
11,700.00	90.00	358.76	9,825.00	1,649.87	-754.90	1,644.56	0.00	0.00	0.00
11,800.00	90.00	358.76	9,825.00	1,749.85	-757.08	1,744.52	0.00	0.00	0.00
11,900.00	90.00	358.76	9,825.00	1,849.82	-759.25	1,844.48	0.00	0.00	0.00
12,000.00	90.00	358.76	9,825.00	1,949.80	-761.42	1,944.44	0.00	0.00	0.00
12,100.00	90.00	358.76	9,825.00	2,049.77	-763.59	2,044.39	0.00	0.00	0.00
12,200.00	90.00	358.76	9,825.00	2,149.75	-765.76	2,144.35	0.00	0.00	0.00
12,300.00	90.00	358.76	9,825.00	2,249.73	-767.93	2,244.31	0.00	0.00	0.00
12,400.00	90.00	358.76	9,825.00	2,349.70	-770.10	2,344.27	0.00	0.00	0.00
12,500.00	90.00	358.76	9,825.00	2,449.68	-772.27	2,444.23	0.00	0.00	0.00
12,600.00	90.00	358.76	9,825.00	2,549.66	-774.45	2,544.19	0.00	0.00	0.00
12,700.00	90.00	358.76	9,825.00	2,649.63	-776.62	2,644.15	0.00	0.00	0.00
12,800.00	90.00	358.76	9,825.00	2,749.61	-778.79	2,744.11	0.00	0.00	0.00
12,900.00	90.00	358.76	9,825.00	2,849.59	-780.96	2,844.06	0.00	0.00	0.00
13,000.00	90.00	358.76	9,825.00	2,949.56	-783.13	2,944.02	0.00	0.00	0.00
13,100.00	90.00	358.76	9,825.00	3,049.54	-785.30	3,043.98	0.00	0.00	0.00
13,200.00	90.00	358.76	9,825.00	3,149.52	-787.47	3,143.94	0.00	0.00	0.00
13,300.00	90.00	358.76	9,825.00	3,249.49	-789.64	3,243.90	0.00	0.00	0.00
13,400.00	90.00	358.76	9,825.00	3,349.47	-791.81	3,343.86	0.00	0.00	0.00
13,500.00	90.00	358.76	9,825.00	3,449.44	-793.99	3,443.82	0.00	0.00	0.00
13,600.00	90.00	358.76	9,825.00	3,549.42	-796.16	3,543.78	0.00	0.00	0.00
13,700.00	90.00	358.76	9,825.00	3,649.40	-798.33	3,643.74	0.00	0.00	0.00
13,800.00	90.00	358.76	9,825.00	3,749.37	-800.50	3,743.69	0.00	0.00	0.00
13,900.00	90.00	358.76	9,825.00	3,849.35	-802.67	3,843.65	0.00	0.00	0.00
14,000.00	90.00	358.76	9,825.00	3,949.33	-804.84	3,943.61	0.00	0.00	0.00
14,100.00	90.00	358.76	9,825.00	4,049.30	-807.01	4,043.57	0.00	0.00	0.00

Marathon Oil Corporation

MS Directional
Planning Report

MS Directional

Database:	EDM 5000.15 Conroe DB	**Local Co-ordinate Reference:**	Well Blue Ridge WC Federal Com 701H
Company:	Marathon Oil	**TVD Reference:**	WELL @ 2922.50usft (Precision 580)
Project:	Eddy County, New Mexico (NAD 27)	**MD Reference:**	WELL @ 2922.50usft (Precision 580)
Site:	Blue Ridge (501H, 701H, 702H)	**North Reference:**	Grid
Well:	Blue Ridge WC Federal Com 701H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
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)
14,200.00	90.00	358.76	9,825.00	4,149.28	-809.18	4,143.53	0.00	0.00	0.00
14,300.00	90.00	358.76	9,825.00	4,249.26	-811.36	4,243.49	0.00	0.00	0.00
14,400.00	90.00	358.76	9,825.00	4,349.23	-813.53	4,343.45	0.00	0.00	0.00
14,500.00	90.00	358.76	9,825.00	4,449.21	-815.70	4,443.41	0.00	0.00	0.00
14,600.00	90.00	358.76	9,825.00	4,549.19	-817.87	4,543.37	0.00	0.00	0.00
14,656.69	90.00	358.76	9,825.00	4,605.86	-819.10	4,600.03	0.00	0.00	0.00
Begin 2.00°/100' Turn - Cross Section Line - 14,656.69' MD									
14,700.00	90.00	359.62	9,825.00	4,649.17	-819.71	4,643.33	2.00	0.00	2.00
14,800.00	90.00	1.62	9,825.00	4,749.16	-818.63	4,743.33	2.00	0.00	2.00
14,837.08	90.00	2.36	9,825.00	4,786.21	-817.34	4,780.39	2.00	0.00	2.00
Hold 90.00° Inc, 2.36° Azm									
14,900.00	90.00	2.36	9,825.00	4,849.08	-814.74	4,843.27	0.00	0.00	0.00
15,000.00	90.00	2.36	9,825.00	4,949.00	-810.62	4,943.22	0.00	0.00	0.00
15,100.00	90.00	2.36	9,825.00	5,048.91	-806.49	5,043.16	0.00	0.00	0.00
15,200.00	90.00	2.36	9,825.00	5,148.83	-802.37	5,143.10	0.00	0.00	0.00
15,300.00	90.00	2.36	9,825.00	5,248.74	-798.25	5,243.04	0.00	0.00	0.00
15,400.00	90.00	2.36	9,825.00	5,348.65	-794.12	5,342.98	0.00	0.00	0.00
15,500.00	90.00	2.36	9,825.00	5,448.57	-790.00	5,442.92	0.00	0.00	0.00
15,600.00	90.00	2.36	9,825.00	5,548.48	-785.87	5,542.86	0.00	0.00	0.00
15,700.00	90.00	2.36	9,825.00	5,648.40	-781.75	5,642.80	0.00	0.00	0.00
15,800.00	90.00	2.36	9,825.00	5,748.31	-777.62	5,742.75	0.00	0.00	0.00
15,900.00	90.00	2.36	9,825.00	5,848.23	-773.50	5,842.69	0.00	0.00	0.00
15,915.74	90.00	2.36	9,825.00	5,863.96	-772.85	5,858.42	0.00	0.00	0.00
Begin 2.00°/100' Turn									
15,928.69	90.00	2.10	9,825.00	5,876.90	-772.35	5,871.36	2.00	0.00	-2.00
Hold 90.00° Inc, 2.10° Azm									
16,000.00	90.00	2.10	9,825.00	5,948.16	-769.73	5,942.64	0.00	0.00	0.00
16,100.00	90.00	2.10	9,825.00	6,048.09	-766.05	6,042.60	0.00	0.00	0.00
16,200.00	90.00	2.10	9,825.00	6,148.02	-762.38	6,142.55	0.00	0.00	0.00
16,300.00	90.00	2.10	9,825.00	6,247.96	-758.71	6,242.51	0.00	0.00	0.00
16,400.00	90.00	2.10	9,825.00	6,347.89	-755.04	6,342.46	0.00	0.00	0.00
16,500.00	90.00	2.10	9,825.00	6,447.82	-751.36	6,442.42	0.00	0.00	0.00
16,600.00	90.00	2.10	9,825.00	6,547.75	-747.69	6,542.37	0.00	0.00	0.00
16,700.00	90.00	2.10	9,825.00	6,647.69	-744.02	6,642.33	0.00	0.00	0.00
16,800.00	90.00	2.10	9,825.00	6,747.62	-740.34	6,742.29	0.00	0.00	0.00
16,900.00	90.00	2.10	9,825.00	6,847.55	-736.67	6,842.24	0.00	0.00	0.00
17,000.00	90.00	2.10	9,825.00	6,947.48	-733.00	6,942.20	0.00	0.00	0.00
17,100.00	90.00	2.10	9,825.00	7,047.42	-729.33	7,042.15	0.00	0.00	0.00
17,200.00	90.00	2.10	9,825.00	7,147.35	-725.65	7,142.11	0.00	0.00	0.00
17,300.00	90.00	2.10	9,825.00	7,247.28	-721.98	7,242.06	0.00	0.00	0.00
17,400.00	90.00	2.10	9,825.00	7,347.21	-718.31	7,342.02	0.00	0.00	0.00
17,500.00	90.00	2.10	9,825.00	7,447.15	-714.64	7,441.98	0.00	0.00	0.00
17,600.00	90.00	2.10	9,825.00	7,547.08	-710.96	7,541.93	0.00	0.00	0.00
17,700.00	90.00	2.10	9,825.00	7,647.01	-707.29	7,641.89	0.00	0.00	0.00
17,800.00	90.00	2.10	9,825.00	7,746.94	-703.62	7,741.84	0.00	0.00	0.00
17,900.00	90.00	2.10	9,825.00	7,846.88	-699.94	7,841.80	0.00	0.00	0.00
18,000.00	90.00	2.10	9,825.00	7,946.81	-696.27	7,941.75	0.00	0.00	0.00
18,100.00	90.00	2.10	9,825.00	8,046.74	-692.60	8,041.71	0.00	0.00	0.00
18,200.00	90.00	2.10	9,825.00	8,146.67	-688.93	8,141.67	0.00	0.00	0.00
18,300.00	90.00	2.10	9,825.00	8,246.61	-685.25	8,241.62	0.00	0.00	0.00
18,400.00	90.00	2.10	9,825.00	8,346.54	-681.58	8,341.58	0.00	0.00	0.00
18,500.00	90.00	2.10	9,825.00	8,446.47	-677.91	8,441.53	0.00	0.00	0.00
18,600.00	90.00	2.10	9,825.00	8,546.40	-674.24	8,541.49	0.00	0.00	0.00

Marathon Oil Corporation

MS Directional
Planning Report

MS Directional

Database:	EDM 5000.15 Conroe DB	**Local Co-ordinate Reference:**	Well Blue Ridge WC Federal Com 701H
Company:	Marathon Oil	**TVD Reference:**	WELL @ 2922.50usft (Precision 580)
Project:	Eddy County, New Mexico (NAD 27)	**MD Reference:**	WELL @ 2922.50usft (Precision 580)
Site:	Blue Ridge (501H, 701H, 702H)	**North Reference:**	Grid
Well:	Blue Ridge WC Federal Com 701H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
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)
18,700.00	90.00	2.10	9,825.00	8,646.34	-670.56	8,641.44	0.00	0.00	0.00
18,800.00	90.00	2.10	9,825.00	8,746.27	-666.89	8,741.40	0.00	0.00	0.00
18,900.00	90.00	2.10	9,825.00	8,846.20	-663.22	8,841.36	0.00	0.00	0.00
19,000.00	90.00	2.10	9,825.00	8,946.13	-659.54	8,941.31	0.00	0.00	0.00
19,100.00	90.00	2.10	9,825.00	9,046.07	-655.87	9,041.27	0.00	0.00	0.00
19,200.00	90.00	2.10	9,825.00	9,146.00	-652.20	9,141.22	0.00	0.00	0.00
19,300.00	90.00	2.10	9,825.00	9,245.93	-648.53	9,241.18	0.00	0.00	0.00
19,400.00	90.00	2.10	9,825.00	9,345.86	-644.85	9,341.13	0.00	0.00	0.00
19,463.53	90.00	2.10	9,825.00	9,409.35	-642.52	9,404.64	0.00	0.00	0.00
PBHL									

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
KOP/FTP/PPP-1_B.R - plan misses target center by 816.07usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E) - Point	0.00	0.01	0.00	-401.72	-710.35	371,754.90	601,788.34	32° 1' 17.915 N	104° 0' 17.647 W
PPP-2/PI-1_B.R.F.C. - plan hits target center - Point	0.00	0.01	9,825.00	4,605.86	-819.10	376,762.48	601,679.59	32° 2' 7.476 N	104° 0' 18.733 W
LTP/PBHL_B.R.F.C. 7 - plan hits target center - Point	0.00	0.01	9,825.00	9,409.35	-642.52	381,565.97	601,856.17	32° 2' 55.009 N	104° 0' 16.512 W
PPP-4 B.R.F.C. 701H - plan hits target center - Point	0.00	0.01	9,825.00	5,863.96	-772.85	378,020.58	601,725.84	32° 2' 19.926 N	104° 0' 18.151 W
PPP-3_B.R.F.C. 701H - plan misses target center by 4.73usft at 14792.86usft MD (9825.00 TVD, 4742.02 N, -818.82 E) - Point	0.00	0.01	9,825.00	4,741.97	-814.09	376,898.59	601,684.60	32° 2' 8.823 N	104° 0' 18.670 W

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
1,500.00	1,500.00	0.00	0.00	KOP, 2.00°/100' Build
1,999.94	1,997.40	-21.42	-37.87	Begin 10.00° Tangent
6,198.91	6,132.60	-380.30	-672.48	Begin 2.00°/100' Drop
6,698.84	6,630.00	-401.72	-710.35	Begin Vertical Hold
9,320.89	9,252.04	-401.72	-710.35	KOP, 10.00°/100' Build
10,220.89	9,825.00	171.10	-722.79	Begin 90.00° Lateral
14,656.69	9,825.00	4,605.86	-819.10	Begin 2.00°/100' Turn
14,656.69	9,825.00	4,605.86	-819.10	Cross Section Line - 14,656.69' MD
14,837.08	9,825.00	4,786.21	-817.34	Hold 90.00° Inc, 2.36° Azm
15,915.74	9,825.00	5,863.96	-772.85	Begin 2.00°/100' Turn
15,928.69	9,825.00	5,876.90	-772.35	Hold 90.00° Inc, 2.10° Azm
19,463.53	9,825.00	9,409.35	-642.52	PBHL

Marathon Oil

Eddy County, New Mexico (NAD 27)
Blue Ridge (501H, 701H, 702H)
Blue Ridge WC Federal Com 701H

Wellbore #1
Design #1

Anticollision Report

31 October, 2023

Marathon Oil Corporation

MS Directional

Anticollision Report

MS Directional

Company:	Marathon Oil	**Local Co-ordinate Reference:**	Well Blue Ridge WC Federal Com 701H
Project:	Eddy County, New Mexico (NAD 27)	**TVD Reference:**	WELL @ 2922.50usft (Precision 580)
Reference Site:	Blue Ridge (501H, 701H, 702H)	**MD Reference:**	WELL @ 2922.50usft (Precision 580)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	Blue Ridge WC Federal Com 701H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM 5000.15 Conroe DB
Reference Design:	Design #1	**Offset TVD Reference:**	Reference Datum

Reference Design #1

Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD + Stations Interval 100.00usft	**Error Model:**	ISCWSA
Depth Range:	Unlimited	**Scan Method:**	Closest Approach 3D
Results Limited by:	Maximum centre distance of 10,000.00usft	**Error Surface:**	Pedal Curve
Warning Levels Evaluated at:	2.00 **Sigma**	**Casing Method:**	Not applied

Survey Tool Program **Date** 10/30/2023

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	19,463.53	Design #1 (Wellbore #1)	MWD+IFR1+FDIR	OWSG MWD + IFR1 + FDIR Correction

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Blue Ridge (501H, 701H, 702H)						
Blue Ridge Federal Com 501H - Wellbore #1 - Design #1	1,500.00	1,500.00	29.99	19.68	2.908	CC
Blue Ridge Federal Com 501H - Wellbore #1 - Design #1	1,600.00	1,600.73	30.29	19.29	2.754	ES
Blue Ridge Federal Com 501H - Wellbore #1 - Design #1	8,468.96	8,557.74	89.64	29.87	1.500	Level 3, SF
Blue Ridge WC Federal Com 702H - Wellbore #1 - Desig	1,500.00	1,500.00	60.00	49.69	5.819	CC, ES
Blue Ridge WC Federal Com 702H - Wellbore #1 - Desig	19,464.05	19,365.91	659.50	482.30	3.722	SF

Offset Design: Blue Ridge (501H, 701H, 702H) - Blue Ridge Federal Com 501H - Wellbore #1 - Design #1

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+IFR1+FDIR

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Azimuth from North (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Rule Assigned: Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.00	0.00	90.000	0.00	29.99	29.99				
100.00	100.00	100.00	100.00	0.14	0.14	90.000	0.00	29.99	29.99	29.72	0.27	109.360	
200.00	200.00	200.00	200.00	0.50	0.50	90.000	0.00	29.99	29.99	29.00	0.99	30.257	
300.00	300.00	300.00	300.00	0.85	0.85	90.000	0.00	29.99	29.99	28.28	1.71	17.557	
400.00	400.00	400.00	400.00	1.21	1.21	90.000	0.00	29.99	29.99	27.56	2.43	12.367	
423.56	423.56	423.56	423.56	1.30	1.30	90.000	0.00	29.99	29.99	27.40	2.59	11.561	
500.00	500.00	500.00	500.00	1.57	1.57	90.000	0.00	29.99	29.99	26.85	3.14	9.545	
524.13	524.13	524.13	524.13	1.66	1.66	90.000	0.00	29.99	29.99	26.67	3.32	9.047	
600.00	600.00	600.00	600.00	1.93	1.93	90.000	0.00	29.99	29.99	26.13	3.86	7.772	
633.33	633.33	633.33	633.33	2.05	2.05	90.000	0.00	29.99	29.99	25.89	4.10	7.318	
700.00	700.00	700.00	700.00	2.29	2.29	90.000	0.00	29.99	29.99	25.41	4.58	6.554	
800.00	800.00	800.00	800.00	2.65	2.65	90.000	0.00	29.99	29.99	24.70	5.29	5.666	
900.00	900.00	900.00	900.00	3.00	3.00	90.000	0.00	29.99	29.99	23.98	6.01	4.990	
1,000.00	1,000.00	1,000.00	1,000.00	3.36	3.36	90.000	0.00	29.99	29.99	23.26	6.73	4.458	
1,100.00	1,100.00	1,100.00	1,100.00	3.72	3.72	90.000	0.00	29.99	29.99	22.55	7.44	4.029	
1,200.00	1,200.00	1,200.00	1,200.00	4.08	4.08	90.000	0.00	29.99	29.99	21.83	8.16	3.675	
1,300.00	1,300.00	1,300.00	1,300.00	4.44	4.44	90.000	0.00	29.99	29.99	21.11	8.88	3.378	
1,400.00	1,400.00	1,400.00	1,400.00	4.80	4.80	90.000	0.00	29.99	29.99	20.40	9.59	3.126	
1,500.00	1,500.00	1,500.00	1,500.00	5.16	5.16	90.000	0.00	29.99	29.99	19.68	10.31	2.908	CC
1,600.00	1,599.98	1,600.73	1,600.71	5.50	5.50	90.788	-1.28	28.76	30.29	19.29	11.00	2.754	ES
1,700.00	1,699.84	1,701.44	1,701.27	5.84	5.84	93.060	-5.10	25.08	31.23	19.58	11.66	2.679	
1,800.00	1,799.45	1,802.12	1,801.56	6.18	6.17	96.545	-11.47	18.95	32.89	20.58	12.32	2.670	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Marathon Oil Corporation

MS Directional

Anticollision Report

MS Directional

Company:	Marathon Oil	**Local Co-ordinate Reference:**	Well Blue Ridge WC Federal Com 701H
Project:	Eddy County, New Mexico (NAD 27)	**TVD Reference:**	WELL @ 2922.50usft (Precision 580)
Reference Site:	Blue Ridge (501H, 701H, 702H)	**MD Reference:**	WELL @ 2922.50usft (Precision 580)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	Blue Ridge WC Federal Com 701H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM 5000.15 Conroe DB
Reference Design:	Design #1	**Offset TVD Reference:**	Reference Datum

Offset Design: Blue Ridge (501H, 701H, 702H) - Blue Ridge Federal Com 501H - Wellbore #1 - Design #1

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+IFR1+FDIR

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Azimuth from North (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Rule Assigned: Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
1,900.00	1,898.70	1,902.75	1,901.43	6.52	6.51	100.845	-20.36	10.39	35.39	22.41	12.99	2.725	
1,999.94	1,997.40	2,003.23	2,000.65	6.86	6.85	105.501	-31.76	-0.58	38.84	25.17	13.66	2.842	
2,100.00	2,095.95	2,103.17	2,099.07	7.21	7.20	109.500	-44.27	-12.62	42.95	28.58	14.36	2.990	
2,200.00	2,194.43	2,203.05	2,197.42	7.56	7.55	112.781	-56.77	-24.65	47.23	32.16	15.07	3.135	
2,300.00	2,292.91	2,302.92	2,295.78	7.91	7.90	115.506	-69.27	-36.68	51.65	35.87	15.78	3.274	
2,400.00	2,391.39	2,402.79	2,394.14	8.27	8.25	117.795	-81.77	-48.71	56.16	39.67	16.49	3.406	
2,500.00	2,489.87	2,502.67	2,492.49	8.63	8.61	119.739	-94.27	-60.75	60.76	43.55	17.21	3.530	
2,600.00	2,588.35	2,602.54	2,590.85	8.99	8.96	121.408	-106.77	-72.78	65.41	47.48	17.93	3.648	
2,700.00	2,686.83	2,702.42	2,689.20	9.35	9.32	122.854	-119.27	-84.81	70.12	51.46	18.66	3.758	
2,800.00	2,785.31	2,802.29	2,787.56	9.72	9.69	124.116	-131.77	-96.84	74.86	55.48	19.39	3.862	
2,900.00	2,883.80	2,902.17	2,885.91	10.09	10.05	125.228	-144.27	-108.87	79.64	59.52	20.12	3.959	
3,000.00	2,982.28	3,002.04	2,984.27	10.45	10.42	126.213	-156.77	-120.90	84.44	63.59	20.85	4.050	
3,100.00	3,080.76	3,101.91	3,082.63	10.82	10.78	127.091	-169.27	-132.93	89.27	67.69	21.59	4.136	
3,200.00	3,179.24	3,201.79	3,180.98	11.19	11.15	127.880	-181.77	-144.97	94.12	71.80	22.32	4.216	
3,300.00	3,277.72	3,301.66	3,279.34	11.56	11.52	128.590	-194.27	-157.00	98.99	75.92	23.06	4.292	
3,400.00	3,376.20	3,401.54	3,377.69	11.93	11.89	129.234	-206.77	-169.03	103.86	80.06	23.81	4.363	
3,500.00	3,474.68	3,501.41	3,476.05	12.30	12.26	129.821	-219.27	-181.06	108.75	84.21	24.55	4.430	
3,600.00	3,573.16	3,601.29	3,574.41	12.67	12.63	130.356	-231.77	-193.09	113.66	88.36	25.29	4.494	
3,700.00	3,671.65	3,701.16	3,672.76	13.05	13.00	130.848	-244.27	-205.12	118.57	92.53	26.04	4.553	
3,800.00	3,770.13	3,801.03	3,771.12	13.42	13.38	131.300	-256.77	-217.15	123.49	96.70	26.79	4.610	
3,900.00	3,868.61	3,900.91	3,869.47	13.79	13.75	131.717	-269.27	-229.19	128.41	100.88	27.53	4.664	
4,000.00	3,967.09	4,000.78	3,967.83	14.17	14.12	132.104	-281.77	-241.22	133.35	105.06	28.28	4.715	
4,100.00	4,065.57	4,100.66	4,066.18	14.54	14.50	132.463	-294.27	-253.25	138.29	109.25	29.03	4.763	
4,200.00	4,164.05	4,200.53	4,164.54	14.92	14.87	132.797	-306.77	-265.28	143.23	113.45	29.78	4.809	
4,300.00	4,262.53	4,300.40	4,262.90	15.30	15.25	133.109	-319.27	-277.31	148.18	117.65	30.53	4.853	
4,400.00	4,361.01	4,400.28	4,361.25	15.67	15.62	133.401	-331.77	-289.34	153.13	121.85	31.28	4.895	
4,500.00	4,459.49	4,500.15	4,459.61	16.05	16.00	133.674	-344.27	-301.37	158.09	126.05	32.04	4.934	
4,600.00	4,557.98	4,600.03	4,557.96	16.43	16.38	133.931	-356.77	-313.41	163.05	130.26	32.79	4.972	
4,700.00	4,656.46	4,699.90	4,656.32	16.80	16.75	134.173	-369.27	-325.44	168.01	134.47	33.54	5.009	
4,800.00	4,754.94	4,799.78	4,754.67	17.18	17.13	134.401	-381.77	-337.47	172.98	138.68	34.30	5.043	
4,900.00	4,853.42	4,899.65	4,853.03	17.56	17.51	134.616	-394.27	-349.50	177.95	142.89	35.05	5.076	
5,000.00	4,951.90	4,999.52	4,951.39	17.94	17.88	134.819	-406.77	-361.53	182.92	147.11	35.81	5.108	
5,100.00	5,050.38	5,099.40	5,049.74	18.31	18.26	135.012	-419.27	-373.56	187.89	151.33	36.56	5.139	
5,200.00	5,148.86	5,199.27	5,148.10	18.69	18.64	135.194	-431.77	-385.59	192.87	155.55	37.32	5.168	
5,300.00	5,247.34	5,299.15	5,246.45	19.07	19.02	135.368	-444.27	-397.63	197.85	159.77	38.08	5.196	
5,400.00	5,345.83	5,399.02	5,344.81	19.45	19.40	135.533	-456.77	-409.66	202.83	163.99	38.83	5.223	
5,500.00	5,444.31	5,498.90	5,443.17	19.83	19.78	135.690	-469.27	-421.69	207.81	168.22	39.59	5.249	
5,600.00	5,542.79	5,598.77	5,541.52	20.21	20.15	135.840	-481.76	-433.72	212.79	172.44	40.35	5.274	
5,700.00	5,641.27	5,698.64	5,639.88	20.59	20.53	135.983	-494.26	-445.75	217.77	176.67	41.11	5.298	
5,800.00	5,739.75	5,798.52	5,738.23	20.97	20.91	136.119	-506.76	-457.78	222.76	180.90	41.86	5.321	
5,900.00	5,838.23	5,898.39	5,836.59	21.35	21.29	136.249	-519.26	-469.81	227.75	185.12	42.62	5.343	
6,000.00	5,936.71	5,998.27	5,934.94	21.73	21.67	136.374	-531.76	-481.84	232.74	189.35	43.38	5.365	
6,100.00	6,035.19	6,098.14	6,033.30	22.10	22.05	136.494	-544.26	-493.88	237.72	193.58	44.14	5.386	
6,198.91	6,132.60	6,196.92	6,130.58	22.48	22.43	136.608	-556.63	-505.78	242.66	197.77	44.89	5.405	
6,200.00	6,133.67	6,198.02	6,131.66	22.48	22.43	136.609	-556.76	-505.91	242.71	197.81	44.90	5.406	
6,300.00	6,232.44	6,297.88	6,230.00	22.86	22.81	137.115	-569.26	-517.94	247.29	201.64	45.65	5.417	
6,400.00	6,331.70	6,397.65	6,328.25	23.23	23.19	138.367	-581.75	-529.96	251.15	204.75	46.40	5.413	
6,500.00	6,431.32	6,497.20	6,426.29	23.59	23.57	140.340	-594.21	-541.95	254.50	207.36	47.13	5.399	
6,600.00	6,531.18	6,597.15	6,524.80	23.95	23.95	142.939	-606.38	-553.66	257.60	209.74	47.86	5.382	
6,698.84	6,630.00	6,696.89	6,623.57	24.28	24.32	145.572	-616.34	-563.25	260.27	211.71	48.56	5.359	
6,700.00	6,631.16	6,698.06	6,624.73	24.29	24.33	145.603	-616.44	-563.34	260.30	211.73	48.57	5.359	
6,800.00	6,731.16	6,799.59	6,725.72	24.62	24.70	147.844	-623.99	-570.62	262.60	213.34	49.27	5.330	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Marathon Oil Corporation

MS Directional

Anticollision Report

MS Directional

Company:	Marathon Oil	**Local Co-ordinate Reference:**	Well Blue Ridge WC Federal Com 701H
Project:	Eddy County, New Mexico (NAD 27)	**TVD Reference:**	WELL @ 2922.50usft (Precision 580)
Reference Site:	Blue Ridge (501H, 701H, 702H)	**MD Reference:**	WELL @ 2922.50usft (Precision 580)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	Blue Ridge WC Federal Com 701H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM 5000.15 Conroe DB
Reference Design:	Design #1	**Offset TVD Reference:**	Reference Datum

Offset Design: Blue Ridge (501H, 701H, 702H) - Blue Ridge Federal Com 501H - Wellbore #1 - Design #1 — **Offset Site Error:** 0.00 usft

Survey Program: 0-MWD+IFR1+FDIR — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Azimuth from North (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Rule Assigned: Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
6,900.00	6,831.16	6,901.75	6,827.64	24.95	25.06	149.302	-628.98	-575.42	264.32	214.37	49.96	5.291	
7,000.00	6,931.16	7,004.28	6,930.11	25.28	25.42	149.989	-631.36	-577.71	265.20	214.56	50.64	5.237	
7,100.00	7,031.16	7,105.33	7,031.16	25.61	25.75	150.049	-631.57	-577.91	265.28	213.98	51.30	5.171	
7,200.00	7,131.16	7,205.33	7,131.16	25.94	26.08	150.049	-631.57	-577.91	265.28	213.32	51.96	5.106	
7,300.00	7,231.16	7,305.33	7,231.16	26.27	26.40	150.049	-631.57	-577.91	265.28	212.66	52.62	5.042	
7,400.00	7,331.16	7,405.33	7,331.16	26.60	26.73	150.049	-631.57	-577.91	265.28	212.00	53.28	4.979	
7,500.00	7,431.16	7,505.33	7,431.16	26.94	27.05	150.049	-631.57	-577.91	265.28	211.34	53.94	4.918	
7,600.00	7,531.16	7,605.33	7,531.16	27.27	27.38	150.049	-631.57	-577.91	265.28	210.67	54.60	4.858	
7,700.00	7,631.16	7,705.33	7,631.16	27.61	27.71	150.049	-631.57	-577.91	265.28	210.01	55.27	4.800	
7,800.00	7,731.16	7,805.33	7,731.16	27.94	28.04	150.049	-631.57	-577.91	265.28	209.34	55.93	4.743	
7,900.00	7,831.16	7,905.33	7,831.16	28.28	28.36	150.049	-631.57	-577.91	265.28	208.68	56.60	4.687	
8,000.00	7,931.16	8,008.51	7,934.34	28.62	28.71	150.046	-631.52	-577.92	265.25	207.98	57.27	4.632	
8,100.00	8,031.16	8,179.73	8,102.68	28.95	29.25	147.819	-604.42	-582.80	249.95	193.75	56.20	4.447	
8,200.00	8,131.16	8,323.89	8,232.93	29.29	29.64	140.719	-544.48	-593.58	210.65	157.12	53.53	3.935	
8,300.00	8,231.16	8,433.71	8,319.62	29.63	29.88	126.171	-478.40	-605.47	157.18	104.54	52.64	2.986	
8,400.00	8,331.16	8,514.62	8,374.45	29.97	30.03	100.923	-419.93	-615.99	105.40	48.23	57.17	1.844	
8,468.96	8,400.12	8,557.74	8,400.09	30.20	30.10	79.788	-385.83	-622.13	89.64	29.87	59.77	1.500	Level 3, SF
8,500.00	8,431.16	8,574.49	8,409.34	30.31	30.12	70.930	-372.08	-624.60	93.31	35.90	57.42	1.625	
8,600.00	8,531.16	8,619.68	8,432.21	30.65	30.19	49.231	-333.73	-631.50	143.63	98.65	44.98	3.193	
8,700.00	8,631.16	8,650.00	8,445.80	30.99	30.23	38.037	-307.06	-636.30	220.91	182.62	38.29	5.770	
8,800.00	8,731.16	8,682.19	8,458.64	31.33	30.26	29.090	-278.02	-641.52	307.09	270.96	36.13	8.500	
8,900.00	8,831.16	8,700.00	8,465.03	31.67	30.28	25.190	-261.65	-644.47	397.50	362.95	34.56	11.503	
9,000.00	8,931.16	8,722.75	8,472.43	32.01	30.31	21.056	-240.49	-648.28	490.19	456.08	34.10	14.373	
9,100.00	9,031.16	8,750.00	8,480.16	32.35	30.33	17.081	-214.77	-652.90	584.68	550.52	34.16	17.115	
9,200.00	9,131.16	8,750.00	8,480.16	32.69	30.33	17.081	-214.77	-652.90	679.74	646.24	33.50	20.290	
9,300.00	9,231.16	8,750.00	8,480.16	33.04	30.33	17.081	-214.77	-652.90	776.05	742.86	33.19	23.385	
9,320.89	9,252.04	8,750.00	8,480.16	33.11	30.33	17.081	-214.77	-652.90	796.27	763.13	33.15	24.021	
9,350.00	9,281.14	8,767.23	8,484.40	33.21	30.35	15.055	-198.34	-655.86	823.91	790.46	33.46	24.626	
9,400.00	9,330.91	8,773.62	8,485.85	33.38	30.35	14.692	-192.21	-656.96	870.99	837.56	33.43	26.055	
9,450.00	9,380.07	8,781.16	8,487.47	33.54	30.36	14.522	-184.96	-658.27	916.73	883.35	33.38	27.461	
9,500.00	9,428.25	8,800.00	8,491.08	33.70	30.38	13.413	-166.76	-661.54	961.07	927.58	33.50	28.690	
9,550.00	9,475.10	8,800.00	8,491.08	33.85	30.38	14.701	-166.76	-661.54	1,003.39	970.10	33.29	30.144	
9,600.00	9,520.25	8,800.00	8,491.08	33.99	30.38	16.624	-166.76	-661.54	1,044.05	1,010.94	33.12	31.528	
9,650.00	9,563.36	8,820.36	8,494.30	34.12	30.39	16.182	-146.98	-665.10	1,082.41	1,049.22	33.19	32.608	
9,700.00	9,604.09	8,831.91	8,495.81	34.24	30.40	17.532	-135.71	-667.13	1,118.68	1,085.50	33.18	33.714	
9,750.00	9,642.15	8,850.00	8,497.71	34.35	30.41	18.390	-118.00	-670.32	1,152.67	1,119.43	33.24	34.677	
9,800.00	9,677.24	8,850.00	8,497.71	34.45	30.41	24.955	-118.00	-670.32	1,184.16	1,150.95	33.21	35.654	
9,850.00	9,709.09	8,869.54	8,499.12	34.54	30.43	28.806	-98.83	-673.77	1,213.04	1,179.70	33.34	36.387	
9,900.00	9,737.47	8,882.87	8,499.70	34.61	30.43	40.152	-85.72	-676.12	1,239.32	1,205.85	33.47	37.025	
9,950.00	9,762.15	8,901.21	8,500.00	34.68	30.45	59.686	-67.67	-679.37	1,262.91	1,229.25	33.66	37.518	
10,000.00	9,782.95	8,930.72	8,500.00	34.74	30.47	80.390	-38.60	-684.45	1,283.40	1,249.51	33.89	37.866	
10,050.00	9,799.71	8,976.87	8,500.00	34.79	30.50	81.313	6.96	-691.78	1,300.00	1,265.86	34.14	38.081	
10,100.00	9,812.30	9,024.47	8,500.00	34.83	30.54	82.265	54.08	-698.58	1,312.48	1,278.08	34.39	38.160	
10,150.00	9,820.62	9,073.16	8,500.00	34.86	30.59	83.238	102.38	-704.73	1,320.73	1,286.07	34.66	38.104	
10,200.00	9,824.62	9,122.54	8,500.00	34.89	30.65	84.225	151.46	-710.12	1,324.68	1,289.74	34.93	37.918	
10,220.89	9,825.00	9,143.28	8,500.00	34.90	30.67	84.639	172.10	-712.13	1,325.05	1,289.99	35.05	37.802	
10,300.00	9,825.00	9,222.04	8,500.00	34.94	30.79	86.212	250.60	-718.40	1,325.02	1,289.51	35.51	37.317	
10,400.00	9,825.00	9,321.84	8,500.00	35.01	30.95	88.202	350.28	-723.25	1,325.01	1,288.89	36.11	36.690	
10,500.00	9,825.00	9,421.81	8,500.00	35.11	31.14	88.700	450.23	-725.61	1,325.01	1,288.24	36.76	36.043	
10,505.09	9,825.00	9,426.90	8,500.00	35.11	31.15	88.700	455.32	-725.73	1,325.01	1,288.21	36.80	36.008	
10,600.00	9,825.00	9,521.81	8,500.00	35.23	31.35	88.699	550.20	-727.86	1,325.01	1,287.54	37.46	35.369	
10,700.00	9,825.00	9,621.81	8,500.00	35.38	31.58	88.699	650.17	-730.11	1,325.01	1,286.79	38.21	34.674	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Marathon Oil Corporation

MS Directional

Anticollision Report

MS Directional

Company:	Marathon Oil	**Local Co-ordinate Reference:**	Well Blue Ridge WC Federal Com 701H
Project:	Eddy County, New Mexico (NAD 27)	**TVD Reference:**	WELL @ 2922.50usft (Precision 580)
Reference Site:	Blue Ridge (501H, 701H, 702H)	**MD Reference:**	WELL @ 2922.50usft (Precision 580)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	Blue Ridge WC Federal Com 701H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM 5000.15 Conroe DB
Reference Design:	Design #1	**Offset TVD Reference:**	Reference Datum

Offset Design: Blue Ridge (501H, 701H, 702H) - Blue Ridge Federal Com 501H - Wellbore #1 - Design #1

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+IFR1+FDIR

Offset Well Error: 0.00 usft

Rule Assigned: Distance

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Azimuth from North (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
10,800.00	9,825.00	9,721.81	8,500.00	35.56	31.84	88.699	750.15	-732.36	1,325.01	1,285.99	39.01	33.964	
10,900.00	9,825.00	9,821.81	8,500.00	35.75	32.12	88.698	850.12	-734.61	1,325.01	1,285.15	39.86	33.244	
11,000.00	9,825.00	9,921.81	8,500.00	35.97	32.41	88.698	950.10	-736.86	1,325.00	1,284.26	40.74	32.521	
11,100.00	9,825.00	10,021.81	8,500.00	36.21	32.73	88.698	1,050.07	-739.11	1,325.00	1,283.33	41.67	31.797	
11,200.00	9,825.00	10,121.81	8,500.00	36.46	33.07	88.697	1,150.05	-741.36	1,325.00	1,282.37	42.63	31.078	
11,300.00	9,825.00	10,221.81	8,500.00	36.74	33.42	88.697	1,250.02	-743.60	1,325.00	1,281.37	43.63	30.367	
11,400.00	9,825.00	10,321.81	8,500.00	37.03	33.79	88.696	1,350.00	-745.85	1,325.00	1,280.34	44.66	29.665	
11,500.00	9,825.00	10,421.81	8,500.00	37.34	34.18	88.696	1,449.97	-748.10	1,325.00	1,279.28	45.73	28.977	
11,600.00	9,825.00	10,521.81	8,500.00	37.67	34.59	88.695	1,549.95	-750.35	1,325.00	1,278.19	46.82	28.302	
11,700.00	9,825.00	10,621.81	8,500.00	38.01	35.01	88.695	1,649.92	-752.60	1,325.00	1,277.07	47.93	27.643	
11,800.00	9,825.00	10,721.81	8,500.00	38.37	35.45	88.694	1,749.90	-754.85	1,325.00	1,275.93	49.07	27.000	
11,900.00	9,825.00	10,821.81	8,500.00	38.75	35.91	88.694	1,849.87	-757.10	1,325.00	1,274.77	50.24	26.375	
12,000.00	9,825.00	10,921.81	8,500.00	39.14	36.38	88.693	1,949.85	-759.35	1,325.00	1,273.58	51.42	25.767	
12,100.00	9,825.00	11,021.81	8,500.00	39.54	36.86	88.692	2,049.82	-761.60	1,325.00	1,272.37	52.63	25.177	
12,200.00	9,825.00	11,121.81	8,500.00	39.96	37.35	88.692	2,149.80	-763.85	1,325.00	1,271.15	53.85	24.604	
12,300.00	9,825.00	11,221.81	8,500.00	40.40	37.86	88.691	2,249.77	-766.10	1,325.00	1,269.91	55.09	24.050	
12,400.00	9,825.00	11,321.81	8,500.00	40.84	38.38	88.690	2,349.74	-768.34	1,325.00	1,268.65	56.35	23.513	
12,500.00	9,825.00	11,421.81	8,500.00	41.30	38.92	88.689	2,449.72	-770.59	1,325.00	1,267.38	57.62	22.994	
12,600.00	9,825.00	11,521.81	8,500.00	41.78	39.46	88.688	2,549.69	-772.84	1,325.00	1,266.09	58.91	22.492	
12,700.00	9,825.00	11,621.81	8,500.00	42.26	40.02	88.687	2,649.67	-775.09	1,325.00	1,264.79	60.21	22.006	
12,800.00	9,825.00	11,721.81	8,500.00	42.76	40.58	88.685	2,749.64	-777.34	1,325.00	1,263.48	61.52	21.536	
12,900.00	9,825.00	11,821.81	8,500.00	43.26	41.16	88.684	2,849.62	-779.59	1,325.00	1,262.15	62.85	21.082	
13,000.00	9,825.00	11,921.81	8,500.00	43.78	41.75	88.682	2,949.59	-781.84	1,325.00	1,260.82	64.18	20.644	
13,100.00	9,825.00	12,021.81	8,500.00	44.31	42.34	88.680	3,049.57	-784.09	1,325.00	1,259.47	65.53	20.220	
13,200.00	9,825.00	12,121.81	8,500.00	44.85	42.95	88.678	3,149.54	-786.34	1,325.00	1,258.11	66.89	19.810	
13,300.00	9,825.00	12,221.81	8,500.00	45.40	43.56	88.676	3,249.52	-788.59	1,325.00	1,256.75	68.25	19.414	
13,400.00	9,825.00	12,321.81	8,500.00	45.96	44.18	88.673	3,349.49	-790.84	1,325.00	1,255.38	69.63	19.031	
13,500.00	9,825.00	12,421.81	8,500.00	46.53	44.81	88.670	3,449.47	-793.08	1,325.00	1,253.99	71.01	18.660	
13,600.00	9,825.00	12,521.81	8,500.00	47.10	45.44	88.666	3,549.44	-795.33	1,325.00	1,252.60	72.40	18.302	
13,700.00	9,825.00	12,621.81	8,500.00	47.69	46.09	88.661	3,649.42	-797.58	1,325.00	1,251.21	73.79	17.956	
13,800.00	9,825.00	12,721.81	8,500.00	48.28	46.74	88.655	3,749.39	-799.83	1,325.00	1,249.80	75.20	17.621	
13,900.00	9,825.00	12,821.81	8,500.00	48.88	47.39	88.648	3,849.36	-802.08	1,325.00	1,248.39	76.61	17.296	
14,000.00	9,825.00	12,921.81	8,500.00	49.49	48.06	88.638	3,949.34	-804.33	1,325.00	1,246.98	78.02	16.982	
14,100.00	9,825.00	13,021.81	8,500.00	50.11	48.73	88.625	4,049.31	-806.58	1,325.00	1,245.56	79.44	16.678	
14,200.00	9,825.00	13,121.81	8,500.00	50.73	49.40	88.606	4,149.29	-808.83	1,325.00	1,244.13	80.87	16.384	
14,300.00	9,825.00	13,221.81	8,500.00	51.36	50.08	88.576	4,249.26	-811.08	1,325.00	1,242.70	82.30	16.099	
14,400.00	9,825.00	13,321.81	8,500.00	52.00	50.77	88.523	4,349.24	-813.33	1,325.00	1,241.26	83.74	15.823	
14,500.00	9,825.00	13,421.81	8,500.00	52.64	51.46	88.404	4,449.21	-815.58	1,325.00	1,239.82	85.18	15.555	
14,600.00	9,825.00	13,521.81	8,500.00	53.29	52.16	87.861	4,549.19	-817.83	1,325.00	1,238.37	86.63	15.295	
14,656.69	9,825.00	13,578.50	8,500.00	53.66	52.55	0.000	4,605.86	-819.10	1,325.00	1,237.55	87.45	15.151	
14,700.00	9,825.00	13,621.81	8,500.00	53.94	52.86	-89.601	4,649.17	-819.75	1,325.00	1,236.92	88.08	15.043	
14,800.00	9,825.00	13,721.81	8,500.00	54.60	53.56	-88.378	4,749.16	-818.74	1,325.00	1,235.47	89.53	14.799	
14,800.11	9,825.00	13,721.92	8,500.00	54.60	53.56	-88.376	4,749.27	-818.74	1,325.00	1,235.46	89.54	14.798	
14,837.08	9,825.00	13,758.89	8,500.00	54.84	53.82	-87.750	4,786.22	-817.48	1,325.00	1,234.93	90.07	14.710	
14,900.00	9,825.00	13,821.81	8,500.00	55.26	54.26	-87.742	4,849.09	-814.99	1,325.00	1,234.01	90.99	14.561	
15,000.00	9,825.00	13,921.81	8,500.00	55.92	54.96	-87.737	4,949.01	-811.03	1,325.00	1,232.54	92.46	14.331	
15,100.00	9,825.00	14,021.81	8,500.00	56.59	55.67	-87.735	5,048.93	-807.07	1,325.00	1,231.08	93.92	14.107	
15,200.00	9,825.00	14,121.81	8,500.00	57.26	56.38	-87.734	5,148.85	-803.11	1,325.00	1,229.61	95.39	13.890	
15,300.00	9,825.00	14,221.81	8,500.00	57.94	57.10	-87.733	5,248.78	-799.14	1,325.00	1,228.13	96.87	13.679	
15,400.00	9,825.00	14,321.81	8,500.00	58.62	57.82	-87.733	5,348.70	-795.18	1,325.00	1,226.66	98.34	13.473	
15,500.00	9,825.00	14,421.81	8,500.00	59.31	58.54	-87.732	5,448.62	-791.22	1,325.00	1,225.18	99.82	13.274	
15,600.00	9,825.00	14,521.81	8,500.00	60.00	59.27	-87.732	5,548.54	-787.26	1,325.00	1,223.70	101.30	13.080	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Marathon Oil Corporation

MS Directional
Anticollision Report

MS Directional

Company:	Marathon Oil	**Local Co-ordinate Reference:**	Well Blue Ridge WC Federal Com 701H
Project:	Eddy County, New Mexico (NAD 27)	**TVD Reference:**	WELL @ 2922.50usft (Precision 580)
Reference Site:	Blue Ridge (501H, 701H, 702H)	**MD Reference:**	WELL @ 2922.50usft (Precision 580)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	Blue Ridge WC Federal Com 701H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM 5000.15 Conroe DB
Reference Design:	Design #1	**Offset TVD Reference:**	Reference Datum

Offset Design: Blue Ridge (501H, 701H, 702H) - Blue Ridge Federal Com 501H - Wellbore #1 - Design #1 — **Offset Site Error:** 0.00 usft

Survey Program: 0-MWD+IFR1+FDIR — **Rule Assigned:** — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Azimuth from North (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
15,700.00	9,825.00	14,621.81	8,500.00	60.70	60.00	-87.732	5,648.46	-783.30	1,325.00	1,222.21	102.79	12.891	
15,800.00	9,825.00	14,721.81	8,500.00	61.40	60.74	-87.732	5,748.38	-779.34	1,325.00	1,220.73	104.27	12.707	
15,900.00	9,825.00	14,821.81	8,500.00	62.10	61.47	-87.732	5,848.30	-775.38	1,325.00	1,219.24	105.76	12.528	
15,915.74	9,825.00	14,837.55	8,500.00	62.21	61.59	-87.733	5,864.04	-774.76	1,325.00	1,219.00	106.00	12.500	
15,928.69	9,825.00	14,850.49	8,500.00	62.30	61.69	-87.982	5,876.97	-774.27	1,325.00	1,218.81	106.19	12.478	
16,000.00	9,825.00	14,921.80	8,500.00	62.81	62.21	-87.982	5,948.23	-771.76	1,325.00	1,217.75	107.25	12.354	
16,100.00	9,825.00	15,021.80	8,500.00	63.52	62.96	-87.982	6,048.17	-768.24	1,325.00	1,216.25	108.75	12.184	
16,200.00	9,825.00	15,121.80	8,500.00	64.23	63.70	-87.982	6,148.11	-764.72	1,325.00	1,214.76	110.24	12.019	
16,300.00	9,825.00	15,221.80	8,500.00	64.95	64.45	-87.982	6,248.04	-761.20	1,325.00	1,213.26	111.74	11.858	
16,400.00	9,825.00	15,321.80	8,500.00	65.67	65.21	-87.982	6,347.98	-757.68	1,325.00	1,211.76	113.24	11.701	
16,500.00	9,825.00	15,421.80	8,500.00	66.40	65.96	-87.982	6,447.92	-754.15	1,325.00	1,210.26	114.74	11.548	
16,600.00	9,825.00	15,521.80	8,500.00	67.12	66.72	-87.982	6,547.86	-750.63	1,325.00	1,208.76	116.25	11.398	
16,700.00	9,825.00	15,621.80	8,500.00	67.85	67.47	-87.982	6,647.79	-747.11	1,325.00	1,207.25	117.75	11.252	
16,800.00	9,825.00	15,721.80	8,500.00	68.59	68.24	-87.982	6,747.73	-743.59	1,325.00	1,205.74	119.26	11.110	
16,900.00	9,825.00	15,821.80	8,500.00	69.32	69.00	-87.982	6,847.67	-740.07	1,325.00	1,204.24	120.77	10.971	
17,000.00	9,825.00	15,921.80	8,500.00	70.06	69.76	-87.982	6,947.61	-736.55	1,325.00	1,202.73	122.28	10.836	
17,100.00	9,825.00	16,021.80	8,500.00	70.80	70.53	-87.982	7,047.55	-733.02	1,325.01	1,201.22	123.79	10.704	
17,200.00	9,825.00	16,121.80	8,500.00	71.55	71.30	-87.982	7,147.48	-729.50	1,325.01	1,199.70	125.30	10.574	
17,300.00	9,825.00	16,221.80	8,500.00	72.29	72.07	-87.982	7,247.42	-725.98	1,325.01	1,198.19	126.82	10.448	
17,400.00	9,825.00	16,321.80	8,500.00	73.04	72.85	-87.982	7,347.36	-722.46	1,325.01	1,196.67	128.33	10.325	
17,500.00	9,825.00	16,421.80	8,500.00	73.79	73.62	-87.982	7,447.30	-718.94	1,325.01	1,195.16	129.85	10.204	
17,600.00	9,825.00	16,521.80	8,500.00	74.55	74.40	-87.982	7,547.24	-715.42	1,325.01	1,193.64	131.37	10.086	
17,700.00	9,825.00	16,621.80	8,500.00	75.30	75.18	-87.982	7,647.17	-711.89	1,325.01	1,192.12	132.89	9.971	
17,800.00	9,825.00	16,721.80	8,500.00	76.06	75.96	-87.982	7,747.11	-708.37	1,325.01	1,190.60	134.41	9.858	
17,900.00	9,825.00	16,821.80	8,500.00	76.82	76.74	-87.982	7,847.05	-704.85	1,325.01	1,189.08	135.93	9.748	
18,000.00	9,825.00	16,921.80	8,500.00	77.58	77.52	-87.982	7,946.99	-701.33	1,325.01	1,187.55	137.46	9.640	
18,100.00	9,825.00	17,021.80	8,500.00	78.34	78.31	-87.982	8,046.92	-697.81	1,325.01	1,186.03	138.98	9.534	
18,200.00	9,825.00	17,121.80	8,500.00	79.11	79.09	-87.982	8,146.86	-694.28	1,325.01	1,184.51	140.50	9.430	
18,300.00	9,825.00	17,221.80	8,500.00	79.87	79.88	-87.982	8,246.80	-690.76	1,325.01	1,182.98	142.03	9.329	
18,400.00	9,825.00	17,321.80	8,500.00	80.64	80.67	-87.982	8,346.74	-687.24	1,325.01	1,181.45	143.56	9.230	
18,500.00	9,825.00	17,421.80	8,500.00	81.41	81.46	-87.982	8,446.68	-683.72	1,325.01	1,179.93	145.09	9.133	
18,600.00	9,825.00	17,521.80	8,500.00	82.19	82.25	-87.982	8,546.61	-680.20	1,325.01	1,178.40	146.61	9.037	
18,700.00	9,825.00	17,621.80	8,500.00	82.96	83.04	-87.982	8,646.55	-676.68	1,325.01	1,176.87	148.14	8.944	
18,800.00	9,825.00	17,721.80	8,500.00	83.73	83.84	-87.982	8,746.49	-673.15	1,325.01	1,175.34	149.68	8.853	
18,900.00	9,825.00	17,821.80	8,500.00	84.51	84.63	-87.982	8,846.43	-669.63	1,325.02	1,173.81	151.21	8.763	
19,000.00	9,825.00	17,921.80	8,500.00	85.29	85.43	-87.982	8,946.37	-666.11	1,325.02	1,172.28	152.74	8.675	
19,100.00	9,825.00	18,021.80	8,500.00	86.07	86.22	-87.982	9,046.30	-662.59	1,325.02	1,170.74	154.27	8.589	
19,200.00	9,825.00	18,121.80	8,500.00	86.85	87.02	-87.982	9,146.24	-659.07	1,325.02	1,169.21	155.81	8.504	
19,300.00	9,825.00	18,221.80	8,500.00	87.63	87.82	-87.982	9,246.18	-655.54	1,325.02	1,167.68	157.34	8.421	
19,400.00	9,825.00	18,321.80	8,500.00	88.42	88.62	-87.982	9,346.12	-652.02	1,325.02	1,166.14	158.88	8.340	
19,463.53	9,825.00	18,385.33	8,500.00	88.91	89.13	-87.982	9,409.61	-649.79	1,325.02	1,165.17	159.85	8.289	
19,464.05	9,825.00	18,385.84	8,500.00	88.94	89.14	-87.982	9,410.12	-649.77	1,325.02	1,165.16	159.86	8.289	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Marathon Oil Corporation

MS Directional

Anticollision Report

MS Directional

Company:	Marathon Oil	**Local Co-ordinate Reference:**	Well Blue Ridge WC Federal Com 701H
Project:	Eddy County, New Mexico (NAD 27)	**TVD Reference:**	WELL @ 2922.50usft (Precision 580)
Reference Site:	Blue Ridge (501H, 701H, 702H)	**MD Reference:**	WELL @ 2922.50usft (Precision 580)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	Blue Ridge WC Federal Com 701H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM 5000.15 Conroe DB
Reference Design:	Design #1	**Offset TVD Reference:**	Reference Datum

Offset Design: Blue Ridge (501H, 701H, 702H) - Blue Ridge WC Federal Com 702H - Wellbore #1 - Design #1 — **Offset Site Error:** 0.00 usft

Survey Program: 0-MWD+IFR1+FDIR — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Azimuth from North (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Rule Assigned: Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.00	0.00	90.000	0.00	60.00	60.00				
100.00	100.00	100.00	100.00	0.14	0.14	90.000	0.00	60.00	60.00	59.73	0.27	218.794	
200.00	200.00	200.00	200.00	0.50	0.50	90.000	0.00	60.00	60.00	59.01	0.99	60.534	
300.00	300.00	300.00	300.00	0.85	0.85	90.000	0.00	60.00	60.00	58.29	1.71	35.126	
400.00	400.00	400.00	400.00	1.21	1.21	90.000	0.00	60.00	60.00	57.57	2.43	24.742	
423.27	423.27	423.27	423.27	1.30	1.30	90.000	0.00	60.00	60.00	57.41	2.59	23.149	
500.00	500.00	500.00	500.00	1.57	1.57	90.000	0.00	60.00	60.00	56.86	3.14	19.096	
524.83	524.83	524.83	524.83	1.66	1.66	90.000	0.00	60.00	60.00	56.68	3.32	18.072	
600.00	600.00	600.00	600.00	1.93	1.93	90.000	0.00	60.00	60.00	56.14	3.86	15.548	
633.33	633.33	633.33	633.33	2.05	2.05	90.000	0.00	60.00	60.00	55.90	4.10	14.642	
700.00	700.00	700.00	700.00	2.29	2.29	90.000	0.00	60.00	60.00	55.42	4.58	13.112	
800.00	800.00	800.00	800.00	2.65	2.65	90.000	0.00	60.00	60.00	54.71	5.29	11.336	
900.00	900.00	900.00	900.00	3.00	3.00	90.000	0.00	60.00	60.00	53.99	6.01	9.984	
1,000.00	1,000.00	1,000.00	1,000.00	3.36	3.36	90.000	0.00	60.00	60.00	53.27	6.73	8.920	
1,100.00	1,100.00	1,100.00	1,100.00	3.72	3.72	90.000	0.00	60.00	60.00	52.56	7.44	8.061	
1,200.00	1,200.00	1,200.00	1,200.00	4.08	4.08	90.000	0.00	60.00	60.00	51.84	8.16	7.352	
1,300.00	1,300.00	1,300.00	1,300.00	4.44	4.44	90.000	0.00	60.00	60.00	51.12	8.88	6.759	
1,400.00	1,400.00	1,400.00	1,400.00	4.80	4.80	90.000	0.00	60.00	60.00	50.41	9.59	6.254	
1,500.00	1,500.00	1,500.00	1,500.00	5.16	5.16	90.000	0.00	60.00	60.00	49.69	10.31	5.819	CC, ES
1,600.00	1,599.98	1,600.60	1,600.58	5.50	5.50	90.780	-1.69	59.49	61.01	50.02	11.00	5.548	
1,700.00	1,699.84	1,701.09	1,700.92	5.84	5.83	92.963	-6.75	57.95	64.12	52.46	11.66	5.500	
1,800.00	1,799.45	1,801.38	1,800.82	6.18	6.16	96.139	-15.15	55.39	69.46	57.14	12.32	5.637	
1,900.00	1,898.70	1,901.36	1,900.05	6.52	6.49	99.790	-26.86	51.83	77.24	64.24	12.99	5.944	
1,999.94	1,997.40	2,000.88	1,998.34	6.86	6.83	103.450	-41.79	47.29	87.57	73.90	13.67	6.405	
2,100.00	2,095.95	2,100.12	2,096.06	7.21	7.16	106.542	-58.27	42.28	99.39	85.03	14.35	6.924	
2,200.00	2,194.43	2,199.29	2,193.72	7.56	7.50	108.970	-74.74	37.27	111.43	96.39	15.04	7.408	
2,300.00	2,292.91	2,298.45	2,291.39	7.91	7.84	110.922	-91.21	32.25	123.64	107.90	15.74	7.856	
2,400.00	2,391.39	2,397.62	2,389.05	8.27	8.19	112.521	-107.68	27.24	135.97	119.53	16.44	8.272	
2,500.00	2,489.87	2,496.79	2,486.71	8.63	8.54	113.854	-124.16	22.23	148.39	131.25	17.14	8.655	
2,600.00	2,588.35	2,595.96	2,584.38	8.99	8.90	114.981	-140.63	17.22	160.88	143.03	17.85	9.011	
2,700.00	2,686.83	2,695.13	2,682.04	9.35	9.25	115.945	-157.10	12.21	173.43	154.86	18.57	9.339	
2,800.00	2,785.31	2,794.30	2,779.70	9.72	9.61	116.779	-173.57	7.20	186.02	166.73	19.29	9.644	
2,900.00	2,883.80	2,893.47	2,877.36	10.09	9.97	117.508	-190.05	2.19	198.64	178.63	20.01	9.927	
3,000.00	2,982.28	2,992.64	2,975.03	10.45	10.33	118.149	-206.52	-2.82	211.30	190.56	20.73	10.191	
3,100.00	3,080.76	3,091.81	3,072.69	10.82	10.69	118.717	-222.99	-7.83	223.98	202.52	21.46	10.436	
3,200.00	3,179.24	3,190.97	3,170.35	11.19	11.06	119.225	-239.46	-12.84	236.68	214.49	22.19	10.665	
3,300.00	3,277.72	3,290.14	3,268.02	11.56	11.42	119.681	-255.93	-17.85	249.39	226.47	22.92	10.880	
3,400.00	3,376.20	3,389.31	3,365.68	11.93	11.79	120.093	-272.41	-22.86	262.12	238.47	23.66	11.081	
3,500.00	3,474.68	3,488.48	3,463.34	12.30	12.15	120.467	-288.88	-27.87	274.87	250.47	24.39	11.269	
3,600.00	3,573.16	3,587.65	3,561.00	12.67	12.52	120.808	-305.35	-32.88	287.62	262.49	25.13	11.446	
3,700.00	3,671.65	3,686.82	3,658.67	13.05	12.89	121.119	-321.82	-37.89	300.38	274.52	25.87	11.613	
3,800.00	3,770.13	3,788.38	3,758.91	13.42	13.27	121.246	-337.43	-42.64	312.83	286.21	26.62	11.751	
3,900.00	3,868.61	3,890.45	3,860.16	13.79	13.64	120.769	-349.72	-46.38	324.42	297.04	27.38	11.850	
4,000.00	3,967.09	3,992.39	3,961.67	14.17	14.01	119.722	-358.54	-49.06	335.23	307.10	28.12	11.920	
4,100.00	4,065.57	4,093.93	4,063.06	14.54	14.37	118.152	-363.89	-50.69	345.45	316.59	28.86	11.969	
4,200.00	4,164.05	4,194.83	4,163.93	14.92	14.72	116.101	-365.79	-51.27	355.35	325.76	29.58	12.012	
4,300.00	4,262.53	4,293.43	4,262.53	15.30	15.05	113.856	-365.80	-51.27	365.44	335.16	30.28	12.069	
4,400.00	4,361.01	4,391.91	4,361.01	15.67	15.38	111.733	-365.80	-51.27	376.06	345.09	30.98	12.140	
4,500.00	4,459.49	4,490.39	4,459.49	16.05	15.71	109.730	-365.80	-51.27	387.17	355.50	31.68	12.223	
4,600.00	4,557.98	4,588.88	4,557.98	16.43	16.04	107.840	-365.80	-51.27	398.73	366.36	32.37	12.316	
4,700.00	4,656.46	4,687.36	4,656.46	16.80	16.37	106.059	-365.80	-51.27	410.70	377.63	33.07	12.418	
4,800.00	4,754.94	4,785.84	4,754.94	17.18	16.70	104.380	-365.80	-51.27	423.04	389.27	33.77	12.526	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Marathon Oil Corporation

MS Directional

Anticollision Report

MS Directional

Company:	Marathon Oil	**Local Co-ordinate Reference:**	Well Blue Ridge WC Federal Com 701H
Project:	Eddy County, New Mexico (NAD 27)	**TVD Reference:**	WELL @ 2922.50usft (Precision 580)
Reference Site:	Blue Ridge (501H, 701H, 702H)	**MD Reference:**	WELL @ 2922.50usft (Precision 580)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	Blue Ridge WC Federal Com 701H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM 5000.15 Conroe DB
Reference Design:	Design #1	**Offset TVD Reference:**	Reference Datum

Offset Design: Blue Ridge (501H, 701H, 702H) - Blue Ridge WC Federal Com 702H - Wellbore #1 - Design #1

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+IFR1+FDIR

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Azimuth from North (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Rule Assigned: Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
4,900.00	4,853.42	4,884.32	4,853.42	17.56	17.04	102.798	-365.80	-51.27	435.72	401.25	34.47	12.639	
5,000.00	4,951.90	4,982.80	4,951.90	17.94	17.37	101.306	-365.80	-51.27	448.72	413.54	35.17	12.757	
5,100.00	5,050.38	5,081.28	5,050.38	18.31	17.71	99.899	-365.80	-51.27	462.00	426.13	35.88	12.877	
5,200.00	5,148.86	5,179.76	5,148.86	18.69	18.04	98.571	-365.80	-51.27	475.55	438.97	36.58	13.000	
5,300.00	5,247.34	5,278.24	5,247.34	19.07	18.38	97.318	-365.80	-51.27	489.34	452.05	37.28	13.125	
5,400.00	5,345.83	5,376.73	5,345.83	19.45	18.72	96.134	-365.80	-51.27	503.35	465.36	37.99	13.250	
5,500.00	5,444.31	5,475.21	5,444.31	19.83	19.06	95.014	-365.80	-51.27	517.56	478.87	38.69	13.376	
5,600.00	5,542.79	5,573.69	5,542.79	20.21	19.40	93.955	-365.80	-51.27	531.96	492.56	39.40	13.502	
5,700.00	5,641.27	5,672.17	5,641.27	20.59	19.73	92.951	-365.80	-51.27	546.53	506.42	40.11	13.627	
5,800.00	5,739.75	5,770.65	5,739.75	20.97	20.07	92.001	-365.80	-51.27	561.26	520.45	40.81	13.752	
5,900.00	5,838.23	5,869.13	5,838.23	21.35	20.41	91.099	-365.80	-51.27	576.14	534.62	41.52	13.876	
6,000.00	5,936.71	5,967.61	5,936.71	21.73	20.75	90.242	-365.80	-51.27	591.15	548.92	42.23	13.998	
6,100.00	6,035.19	6,066.09	6,035.19	22.10	21.09	89.428	-365.80	-51.27	606.29	563.35	42.94	14.119	
6,198.91	6,132.60	6,163.50	6,132.60	22.48	21.43	88.663	-365.80	-51.27	621.37	577.73	43.64	14.238	
6,200.00	6,133.67	6,164.57	6,133.67	22.48	21.44	88.655	-365.80	-51.27	621.54	577.89	43.65	14.239	
6,300.00	6,232.44	6,263.34	6,232.44	22.86	21.78	87.991	-365.80	-51.27	635.34	590.98	44.36	14.322	
6,400.00	6,331.70	6,362.60	6,331.70	23.23	22.12	87.494	-365.80	-51.27	646.14	601.08	45.07	14.337	
6,500.00	6,431.32	6,462.22	6,431.32	23.59	22.47	87.149	-365.80	-51.27	653.89	608.11	45.77	14.286	
6,600.00	6,531.18	6,562.08	6,531.18	23.95	22.82	86.946	-365.80	-51.27	658.53	612.06	46.47	14.171	
6,698.84	6,630.00	6,660.90	6,630.00	24.28	23.16	86.880	-365.80	-51.27	660.06	612.91	47.15	13.999	
6,700.00	6,631.16	6,662.06	6,631.16	24.29	23.17	86.880	-365.80	-51.27	660.06	612.90	47.16	13.997	
6,800.00	6,731.16	6,762.06	6,731.16	24.62	23.51	86.880	-365.80	-51.27	660.06	612.22	47.83	13.799	
6,900.00	6,831.16	6,862.06	6,831.16	24.95	23.86	86.880	-365.80	-51.27	660.06	611.55	48.51	13.606	
7,000.00	6,931.16	6,962.06	6,931.16	25.28	24.21	86.880	-365.80	-51.27	660.06	610.87	49.19	13.419	
7,100.00	7,031.16	7,062.06	7,031.16	25.61	24.56	86.880	-365.80	-51.27	660.06	610.19	49.87	13.236	
7,200.00	7,131.16	7,162.06	7,131.16	25.94	24.91	86.880	-365.80	-51.27	660.06	609.51	50.55	13.058	
7,300.00	7,231.16	7,262.06	7,231.16	26.27	25.26	86.880	-365.80	-51.27	660.06	608.83	51.23	12.884	
7,400.00	7,331.16	7,362.06	7,331.16	26.60	25.61	86.880	-365.80	-51.27	660.06	608.15	51.91	12.715	
7,500.00	7,431.16	7,462.06	7,431.16	26.94	25.96	86.880	-365.80	-51.27	660.06	607.46	52.59	12.550	
7,600.00	7,531.16	7,562.06	7,531.16	27.27	26.31	86.880	-365.80	-51.27	660.06	606.78	53.28	12.389	
7,700.00	7,631.16	7,662.06	7,631.16	27.61	26.66	86.880	-365.80	-51.27	660.06	606.09	53.96	12.232	
7,800.00	7,731.16	7,762.06	7,731.16	27.94	27.01	86.880	-365.80	-51.27	660.06	605.41	54.65	12.078	
7,900.00	7,831.16	7,862.06	7,831.16	28.28	27.37	86.880	-365.80	-51.27	660.06	604.72	55.34	11.928	
8,000.00	7,931.16	7,962.06	7,931.16	28.62	27.72	86.880	-365.80	-51.27	660.06	604.04	56.02	11.782	
8,100.00	8,031.16	8,062.06	8,031.16	28.95	28.07	86.880	-365.80	-51.27	660.06	603.35	56.71	11.639	
8,200.00	8,131.16	8,162.06	8,131.16	29.29	28.42	86.880	-365.80	-51.27	660.06	602.66	57.40	11.499	
8,300.00	8,231.16	8,262.06	8,231.16	29.63	28.77	86.880	-365.80	-51.27	660.06	601.97	58.09	11.363	
8,400.00	8,331.16	8,362.06	8,331.16	29.97	29.12	86.880	-365.80	-51.27	660.06	601.28	58.78	11.230	
8,500.00	8,431.16	8,462.06	8,431.16	30.31	29.48	86.880	-365.80	-51.27	660.06	600.59	59.47	11.099	
8,600.00	8,531.16	8,562.06	8,531.16	30.65	29.83	86.880	-365.80	-51.27	660.06	599.90	60.16	10.972	
8,700.00	8,631.16	8,662.06	8,631.16	30.99	30.18	86.880	-365.80	-51.27	660.06	599.21	60.85	10.847	
8,800.00	8,731.16	8,762.06	8,731.16	31.33	30.53	86.880	-365.80	-51.27	660.06	598.51	61.54	10.725	
8,900.00	8,831.16	8,862.06	8,831.16	31.67	30.89	86.880	-365.80	-51.27	660.06	597.82	62.24	10.606	
9,000.00	8,931.16	8,962.06	8,931.16	32.01	31.24	86.880	-365.80	-51.27	660.06	597.13	62.93	10.489	
9,100.00	9,031.16	9,062.06	9,031.16	32.35	31.59	86.880	-365.80	-51.27	660.06	596.43	63.62	10.374	
9,200.00	9,131.16	9,162.06	9,131.16	32.69	31.95	86.880	-365.80	-51.27	660.06	595.74	64.32	10.262	
9,300.00	9,231.16	9,262.06	9,231.16	33.04	32.30	86.880	-365.80	-51.27	660.06	595.04	65.01	10.153	
9,320.89	9,252.04	9,282.94	9,252.04	33.11	32.37	86.880	-365.80	-51.27	660.06	594.90	65.16	10.130	
9,350.00	9,281.14	9,311.00	9,280.09	33.21	32.47	86.885	-365.11	-51.28	660.06	594.70	65.35	10.100	
9,400.00	9,330.91	9,359.19	9,328.06	33.38	32.64	86.914	-360.74	-51.38	660.05	594.37	65.68	10.050	
9,450.00	9,380.07	9,407.40	9,375.52	33.54	32.80	86.969	-352.34	-51.56	660.04	594.04	66.00	10.001	
9,500.00	9,428.25	9,455.64	9,422.13	33.70	32.96	87.049	-339.98	-51.83	660.03	593.72	66.31	9.954	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Marathon Oil Corporation

MS Directional

Anticollision Report

MS Directional

Company:	Marathon Oil	**Local Co-ordinate Reference:**	Well Blue Ridge WC Federal Com 701H
Project:	Eddy County, New Mexico (NAD 27)	**TVD Reference:**	WELL @ 2922.50usft (Precision 580)
Reference Site:	Blue Ridge (501H, 701H, 702H)	**MD Reference:**	WELL @ 2922.50usft (Precision 580)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	Blue Ridge WC Federal Com 701H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM 5000.15 Conroe DB
Reference Design:	Design #1	**Offset TVD Reference:**	Reference Datum

Offset Design: Blue Ridge (501H, 701H, 702H) - Blue Ridge WC Federal Com 702H - Wellbore #1 - Design #1

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+IFR1+FDIR

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Azimuth from North (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Rule Assigned: Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
9,550.00	9,475.10	9,503.92	9,467.58	33.85	33.11	87.151	-323.72	-52.18	660.01	593.40	66.61	9.909	
9,600.00	9,520.25	9,552.26	9,511.55	33.99	33.26	87.272	-303.68	-52.62	659.99	593.09	66.89	9.866	
9,650.00	9,563.36	9,600.00	9,553.16	34.12	33.39	87.440	-280.31	-53.12	659.96	592.80	67.16	9.826	
9,668.18	9,578.46	9,618.29	9,568.57	34.16	33.44	87.462	-270.45	-53.34	659.95	592.69	67.26	9.812	
9,700.00	9,604.09	9,649.15	9,593.82	34.24	33.52	87.559	-252.72	-53.72	659.93	592.51	67.43	9.788	
9,750.00	9,642.15	9,697.73	9,631.54	34.35	33.65	87.716	-222.14	-54.38	659.90	592.23	67.67	9.752	
9,800.00	9,677.24	9,746.41	9,666.59	34.45	33.76	87.876	-188.40	-55.11	659.88	591.98	67.90	9.718	
9,850.00	9,709.09	9,795.19	9,698.73	34.54	33.87	88.035	-151.72	-55.91	659.85	591.73	68.11	9.687	
9,900.00	9,737.47	9,844.10	9,727.69	34.61	33.97	88.188	-112.34	-56.76	659.82	591.51	68.31	9.659	
9,950.00	9,762.15	9,893.13	9,753.25	34.68	34.06	88.331	-70.52	-57.67	659.80	591.30	68.50	9.633	
10,000.00	9,782.95	9,942.30	9,775.20	34.74	34.14	88.458	-26.55	-58.62	659.77	591.11	68.66	9.609	
10,050.00	9,799.71	9,991.62	9,793.35	34.79	34.21	88.567	19.28	-59.62	659.76	590.94	68.81	9.588	
10,100.00	9,812.30	10,041.08	9,807.53	34.83	34.28	88.654	66.64	-60.64	659.74	590.80	68.94	9.569	
10,150.00	9,820.62	10,090.70	9,817.59	34.86	34.34	88.716	115.20	-61.69	659.73	590.67	69.06	9.553	
10,200.00	9,824.62	10,140.48	9,823.43	34.89	34.38	88.751	164.61	-62.77	659.73	590.57	69.16	9.539	
10,211.37	9,824.92	10,151.82	9,824.16	34.89	34.39	88.755	175.92	-63.01	659.73	590.55	69.18	9.536	
10,220.89	9,825.00	10,161.32	9,824.59	34.90	34.40	88.757	185.41	-63.22	659.73	590.53	69.20	9.534	
10,300.00	9,825.00	10,240.43	9,825.00	34.94	34.46	88.758	264.49	-64.93	659.73	590.41	69.32	9.517	
10,400.00	9,825.00	10,340.43	9,825.00	35.01	34.56	88.758	364.47	-67.10	659.74	590.22	69.52	9.490	
10,500.00	9,825.00	10,440.43	9,825.00	35.11	34.68	88.758	464.45	-69.26	659.74	589.99	69.75	9.458	
10,600.00	9,825.00	10,540.43	9,825.00	35.23	34.81	88.758	564.42	-71.43	659.75	589.72	70.03	9.421	
10,700.00	9,825.00	10,640.43	9,825.00	35.38	34.97	88.758	664.40	-73.60	659.75	589.40	70.35	9.379	
10,800.00	9,825.00	10,740.43	9,825.00	35.56	35.15	88.758	764.38	-75.76	659.75	589.05	70.70	9.331	
10,900.00	9,825.00	10,840.43	9,825.00	35.75	35.35	88.758	864.35	-77.93	659.76	588.66	71.10	9.279	
11,000.00	9,825.00	10,940.43	9,825.00	35.97	35.57	88.758	964.33	-80.10	659.76	588.23	71.54	9.223	
11,100.00	9,825.00	11,040.43	9,825.00	36.21	35.81	88.758	1,064.31	-82.27	659.77	587.76	72.01	9.162	
11,200.00	9,825.00	11,140.43	9,825.00	36.46	36.06	88.758	1,164.28	-84.43	659.77	587.25	72.52	9.097	
11,300.00	9,825.00	11,240.43	9,825.00	36.74	36.34	88.758	1,264.26	-86.60	659.78	586.70	73.07	9.029	
11,400.00	9,825.00	11,340.43	9,825.00	37.03	36.63	88.758	1,364.24	-88.77	659.78	586.12	73.66	8.957	
11,500.00	9,825.00	11,440.43	9,825.00	37.34	36.94	88.758	1,464.21	-90.93	659.78	585.51	74.28	8.883	
11,600.00	9,825.00	11,540.43	9,825.00	37.67	37.27	88.758	1,564.19	-93.10	659.79	584.86	74.93	8.805	
11,700.00	9,825.00	11,640.43	9,825.00	38.01	37.61	88.758	1,664.17	-95.27	659.79	584.17	75.62	8.725	
11,800.00	9,825.00	11,740.43	9,825.00	38.37	37.98	88.758	1,764.14	-97.43	659.80	583.46	76.34	8.643	
11,900.00	9,825.00	11,840.43	9,825.00	38.75	38.35	88.758	1,864.12	-99.60	659.80	582.71	77.09	8.559	
12,000.00	9,825.00	11,940.43	9,825.00	39.14	38.74	88.758	1,964.10	-101.77	659.81	581.93	77.87	8.473	
12,100.00	9,825.00	12,040.43	9,825.00	39.54	39.15	88.758	2,064.07	-103.93	659.81	581.12	78.69	8.385	
12,200.00	9,825.00	12,140.43	9,825.00	39.96	39.57	88.758	2,164.05	-106.10	659.82	580.29	79.53	8.297	
12,300.00	9,825.00	12,240.43	9,825.00	40.40	40.01	88.758	2,264.02	-108.27	659.82	579.42	80.40	8.207	
12,400.00	9,825.00	12,340.43	9,825.00	40.84	40.46	88.758	2,364.00	-110.43	659.82	578.53	81.29	8.117	
12,500.00	9,825.00	12,440.43	9,825.00	41.30	40.92	88.758	2,463.98	-112.60	659.83	577.61	82.21	8.026	
12,600.00	9,825.00	12,540.43	9,825.00	41.78	41.39	88.758	2,563.95	-114.77	659.83	576.67	83.16	7.934	
12,700.00	9,825.00	12,640.43	9,825.00	42.26	41.88	88.758	2,663.93	-116.93	659.84	575.71	84.13	7.843	
12,800.00	9,825.00	12,740.43	9,825.00	42.76	42.38	88.758	2,763.91	-119.10	659.84	574.71	85.13	7.751	
12,900.00	9,825.00	12,840.43	9,825.00	43.26	42.89	88.758	2,863.88	-121.27	659.85	573.70	86.14	7.660	
13,000.00	9,825.00	12,940.43	9,825.00	43.78	43.41	88.758	2,963.86	-123.43	659.85	572.67	87.18	7.568	
13,100.00	9,825.00	13,040.43	9,825.00	44.31	43.94	88.758	3,063.84	-125.60	659.85	571.61	88.25	7.478	
13,200.00	9,825.00	13,140.43	9,825.00	44.85	44.49	88.758	3,163.81	-127.77	659.86	570.53	89.33	7.387	
13,300.00	9,825.00	13,240.43	9,825.00	45.40	45.04	88.758	3,263.79	-129.93	659.86	569.44	90.43	7.297	
13,400.00	9,825.00	13,340.43	9,825.00	45.96	45.60	88.758	3,363.77	-132.10	659.87	568.32	91.55	7.208	
13,500.00	9,825.00	13,440.43	9,825.00	46.53	46.17	88.758	3,463.74	-134.27	659.87	567.19	92.69	7.119	
13,600.00	9,825.00	13,540.43	9,825.00	47.10	46.75	88.758	3,563.72	-136.44	659.88	566.04	93.84	7.032	
13,700.00	9,825.00	13,640.43	9,825.00	47.69	47.34	88.758	3,663.70	-138.60	659.88	564.87	95.01	6.945	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Marathon Oil Corporation

MS Directional

Anticollision Report

MS Directional

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Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	Blue Ridge WC Federal Com 701H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM 5000.15 Conroe DB
Reference Design:	Design #1	**Offset TVD Reference:**	Reference Datum

Offset Design: Blue Ridge (501H, 701H, 702H) - Blue Ridge WC Federal Com 702H - Wellbore #1 - Design #1

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+IFR1+FDIR

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Azimuth from North (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Rule Assigned: Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
13,800.00	9,825.00	13,740.43	9,825.00	48.28	47.93	88.758	3,763.67	-140.77	659.89	563.68	96.20	6.859	
13,900.00	9,825.00	13,840.43	9,825.00	48.88	48.54	88.758	3,863.65	-142.94	659.89	562.48	97.41	6.775	
14,000.00	9,825.00	13,940.43	9,825.00	49.49	49.15	88.758	3,963.63	-145.10	659.89	561.27	98.63	6.691	
14,100.00	9,825.00	14,040.43	9,825.00	50.11	49.77	88.758	4,063.60	-147.27	659.90	560.04	99.86	6.608	
14,200.00	9,825.00	14,140.43	9,825.00	50.73	50.39	88.758	4,163.58	-149.44	659.90	558.79	101.11	6.527	
14,300.00	9,825.00	14,240.43	9,825.00	51.36	51.03	88.758	4,263.56	-151.60	659.91	557.53	102.37	6.446	
14,400.00	9,825.00	14,340.43	9,825.00	52.00	51.66	88.758	4,363.53	-153.77	659.91	556.26	103.65	6.367	
14,500.00	9,825.00	14,440.43	9,825.00	52.64	52.31	88.758	4,463.51	-155.94	659.92	554.98	104.94	6.289	
14,600.00	9,825.00	14,540.43	9,825.00	53.29	52.96	88.758	4,563.48	-158.10	659.92	553.68	106.24	6.212	
14,601.98	9,825.00	14,542.41	9,825.00	53.30	52.97	88.758	4,565.46	-158.15	659.92	553.66	106.26	6.210	
14,656.69	9,825.00	14,595.37	9,825.00	53.66	53.32	88.910	4,618.42	-159.28	659.94	552.97	106.96	6.170	
14,700.00	9,825.00	14,630.57	9,825.00	53.94	53.55	89.614	4,653.62	-159.74	659.99	552.53	107.46	6.142	
14,800.00	9,825.00	14,711.85	9,825.00	54.60	54.09	91.239	4,734.89	-159.13	659.65	551.08	108.57	6.076	
14,837.08	9,825.00	14,741.99	9,825.00	54.84	54.29	91.842	4,765.02	-158.32	659.36	550.38	108.97	6.051	
14,869.54	9,825.00	14,768.41	9,825.00	55.06	54.46	92.367	4,791.41	-157.35	659.21	549.89	109.32	6.030	
14,900.00	9,825.00	14,798.87	9,825.00	55.26	54.66	92.367	4,821.85	-156.09	659.21	549.49	109.72	6.008	
15,000.00	9,825.00	14,898.87	9,825.00	55.92	55.33	92.367	4,921.77	-151.96	659.22	548.17	111.05	5.936	
15,100.00	9,825.00	14,998.87	9,825.00	56.59	55.99	92.367	5,021.68	-147.83	659.22	546.84	112.39	5.866	
15,200.00	9,825.00	15,098.87	9,825.00	57.26	56.67	92.367	5,121.60	-143.70	659.23	545.49	113.74	5.796	
15,300.00	9,825.00	15,198.87	9,825.00	57.94	57.35	92.367	5,221.51	-139.57	659.24	544.14	115.10	5.728	
15,400.00	9,825.00	15,298.87	9,825.00	58.62	58.03	92.367	5,321.42	-135.44	659.24	542.78	116.47	5.660	
15,500.00	9,825.00	15,398.87	9,825.00	59.31	58.72	92.367	5,421.34	-131.31	659.25	541.41	117.84	5.594	
15,600.00	9,825.00	15,498.87	9,825.00	60.00	59.41	92.367	5,521.25	-127.18	659.26	540.03	119.23	5.529	
15,700.00	9,825.00	15,598.87	9,825.00	60.70	60.11	92.367	5,621.17	-123.05	659.26	538.64	120.62	5.465	
15,800.00	9,825.00	15,698.87	9,825.00	61.40	60.81	92.367	5,721.08	-118.92	659.27	537.24	122.03	5.403	
15,900.00	9,825.00	15,798.87	9,825.00	62.10	61.52	92.367	5,821.00	-114.79	659.27	535.84	123.44	5.341	
15,915.74	9,825.00	15,814.61	9,825.00	62.21	61.63	92.367	5,836.73	-114.14	659.28	535.62	123.66	5.331	
15,928.69	9,825.00	15,827.56	9,825.00	62.30	61.72	92.367	5,849.66	-113.60	659.31	535.47	123.84	5.324	
16,000.00	9,825.00	15,901.87	9,825.00	62.81	62.24	92.107	5,923.92	-110.79	659.38	534.48	124.90	5.279	
16,100.00	9,825.00	16,001.87	9,825.00	63.52	62.96	92.107	6,023.85	-107.12	659.38	533.06	126.32	5.220	
16,200.00	9,825.00	16,101.87	9,825.00	64.23	63.67	92.107	6,123.78	-103.44	659.38	531.63	127.75	5.161	
16,300.00	9,825.00	16,201.87	9,825.00	64.95	64.39	92.107	6,223.71	-99.77	659.39	530.20	129.19	5.104	
16,400.00	9,825.00	16,301.87	9,825.00	65.67	65.12	92.107	6,323.65	-96.09	659.39	528.75	130.64	5.047	
16,500.00	9,825.00	16,401.87	9,825.00	66.40	65.84	92.107	6,423.58	-92.41	659.40	527.31	132.09	4.992	
16,600.00	9,825.00	16,501.87	9,825.00	67.12	66.57	92.107	6,523.51	-88.74	659.40	525.85	133.55	4.938	
16,700.00	9,825.00	16,601.87	9,825.00	67.85	67.30	92.107	6,623.44	-85.06	659.40	524.39	135.01	4.884	
16,800.00	9,825.00	16,701.87	9,825.00	68.59	68.04	92.107	6,723.38	-81.38	659.41	522.93	136.48	4.831	
16,900.00	9,825.00	16,801.87	9,825.00	69.32	68.77	92.107	6,823.31	-77.71	659.41	521.45	137.96	4.780	
17,000.00	9,825.00	16,901.87	9,825.00	70.06	69.52	92.107	6,923.24	-74.03	659.41	519.98	139.44	4.729	
17,100.00	9,825.00	17,001.87	9,825.00	70.80	70.26	92.107	7,023.17	-70.35	659.42	518.50	140.92	4.679	
17,200.00	9,825.00	17,101.87	9,825.00	71.55	71.00	92.107	7,123.11	-66.68	659.42	517.01	142.41	4.630	
17,300.00	9,825.00	17,201.87	9,825.00	72.29	71.75	92.107	7,223.04	-63.00	659.42	515.52	143.91	4.582	
17,400.00	9,825.00	17,301.87	9,825.00	73.04	72.50	92.107	7,322.97	-59.33	659.43	514.02	145.41	4.535	
17,500.00	9,825.00	17,401.87	9,825.00	73.79	73.25	92.107	7,422.90	-55.65	659.43	512.52	146.91	4.489	
17,600.00	9,825.00	17,501.87	9,825.00	74.55	74.01	92.107	7,522.84	-51.97	659.44	511.02	148.42	4.443	
17,700.00	9,825.00	17,601.87	9,825.00	75.30	74.76	92.107	7,622.77	-48.30	659.44	509.51	149.93	4.398	
17,800.00	9,825.00	17,701.87	9,825.00	76.06	75.52	92.107	7,722.70	-44.62	659.44	507.99	151.45	4.354	
17,900.00	9,825.00	17,801.87	9,825.00	76.82	76.28	92.107	7,822.63	-40.94	659.45	506.47	152.97	4.311	
18,000.00	9,825.00	17,901.87	9,825.00	77.58	77.05	92.107	7,922.57	-37.27	659.45	504.95	154.50	4.268	
18,100.00	9,825.00	18,001.87	9,825.00	78.34	77.81	92.107	8,022.50	-33.59	659.45	503.43	156.03	4.227	
18,200.00	9,825.00	18,101.87	9,825.00	79.11	78.58	92.107	8,122.43	-29.92	659.46	501.90	157.56	4.185	
18,300.00	9,825.00	18,201.87	9,825.00	79.87	79.35	92.107	8,222.36	-26.24	659.46	500.37	159.09	4.145	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Marathon Oil Corporation

MS Directional

Anticollision Report

MS Directional

Company:	Marathon Oil	**Local Co-ordinate Reference:**	Well Blue Ridge WC Federal Com 701H
Project:	Eddy County, New Mexico (NAD 27)	**TVD Reference:**	WELL @ 2922.50usft (Precision 580)
Reference Site:	Blue Ridge (501H, 701H, 702H)	**MD Reference:**	WELL @ 2922.50usft (Precision 580)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	Blue Ridge WC Federal Com 701H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM 5000.15 Conroe DB
Reference Design:	Design #1	**Offset TVD Reference:**	Reference Datum

Offset Design: Blue Ridge (501H, 701H, 702H) - Blue Ridge WC Federal Com 702H - Wellbore #1 - Design #1

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+IFR1+FDIR

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Azimuth from North (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Rule Assigned: Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
18,400.00	9,825.00	18,301.87	9,825.00	80.64	80.12	92.107	8,322.29	-22.56	659.46	498.83	160.63	4.105	
18,500.00	9,825.00	18,401.87	9,825.00	81.41	80.89	92.107	8,422.23	-18.89	659.47	497.29	162.18	4.066	
18,600.00	9,825.00	18,501.87	9,825.00	82.19	81.66	92.107	8,522.16	-15.21	659.47	495.75	163.72	4.028	
18,700.00	9,825.00	18,601.87	9,825.00	82.96	82.44	92.107	8,622.09	-11.53	659.47	494.20	165.27	3.990	
18,800.00	9,825.00	18,701.87	9,825.00	83.73	83.21	92.107	8,722.02	-7.86	659.48	492.65	166.83	3.953	
18,900.00	9,825.00	18,801.87	9,825.00	84.51	83.99	92.107	8,821.96	-4.18	659.48	491.10	168.38	3.917	
19,000.00	9,825.00	18,901.87	9,825.00	85.29	84.77	92.107	8,921.89	-0.50	659.49	489.55	169.94	3.881	
19,100.00	9,825.00	19,001.87	9,825.00	86.07	85.55	92.107	9,021.82	3.17	659.49	487.99	171.50	3.845	
19,200.00	9,825.00	19,101.87	9,825.00	86.85	86.33	92.107	9,121.75	6.85	659.49	486.43	173.06	3.811	
19,300.00	9,825.00	19,201.87	9,825.00	87.63	87.12	92.107	9,221.69	10.52	659.50	484.86	174.63	3.777	
19,400.00	9,825.00	19,301.87	9,825.00	88.42	87.90	92.107	9,321.62	14.20	659.50	483.30	176.20	3.743	
19,463.53	9,825.00	19,365.40	9,825.00	88.91	88.40	92.107	9,385.10	16.54	659.50	482.30	177.20	3.722	
19,464.05	9,825.00	19,365.91	9,825.00	88.94	88.40	92.107	9,385.62	16.56	659.50	482.30	177.21	3.722 SF	

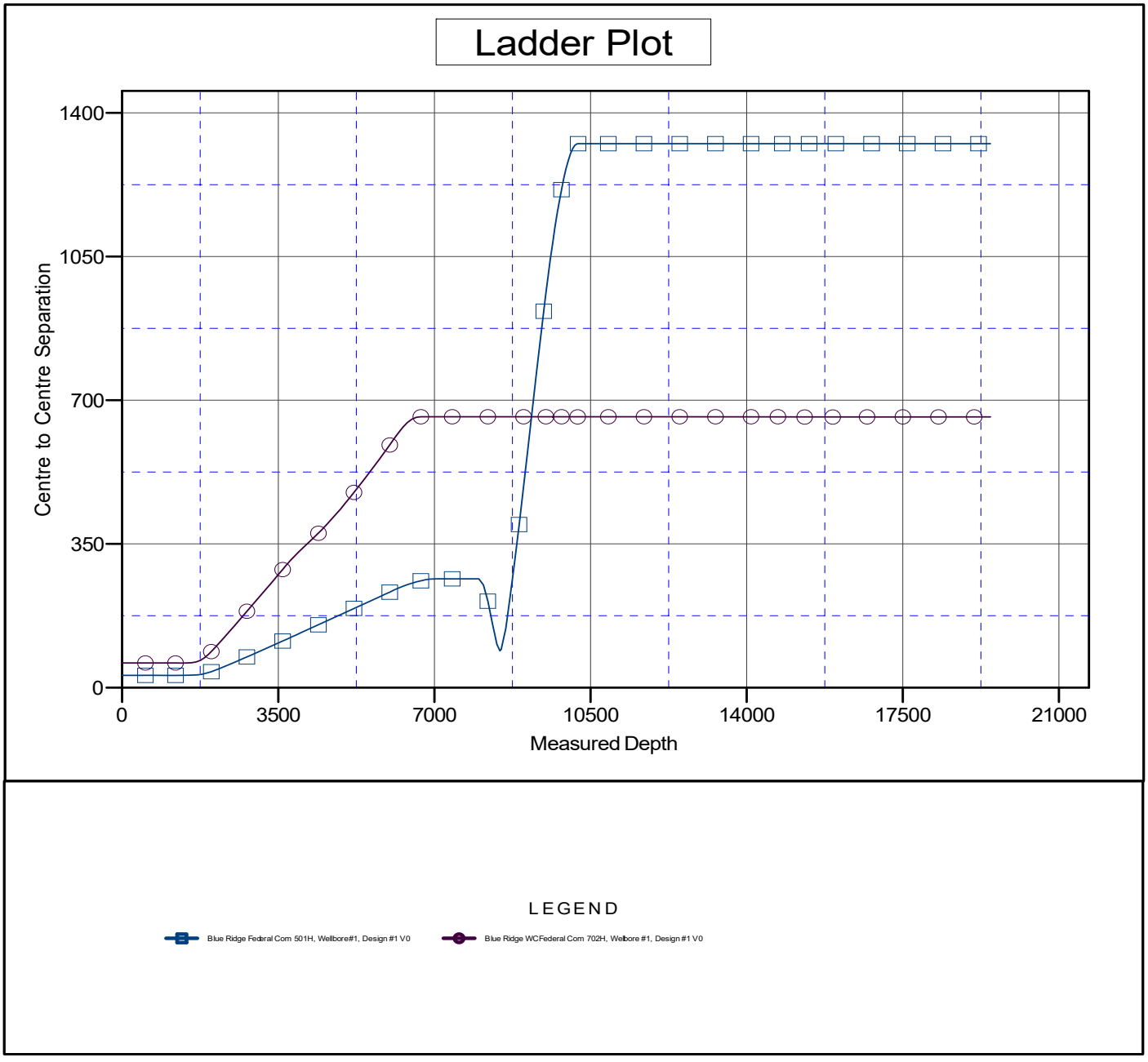
Marathon Oil Corporation

MS Directional
Anticollision Report

MS Directional

Company:	Marathon Oil	**Local Co-ordinate Reference:**	Well Blue Ridge WC Federal Com 701H
Project:	Eddy County, New Mexico (NAD 27)	**TVD Reference:**	WELL @ 2922.50usft (Precision 580)
Reference Site:	Blue Ridge (501H, 701H, 702H)	**MD Reference:**	WELL @ 2922.50usft (Precision 580)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	Blue Ridge WC Federal Com 701H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM 5000.15 Conroe DB
Reference Design:	Design #1	**Offset TVD Reference:**	Reference Datum

Reference Depths are relative to WELL @ 2922.50usft (Precision 580)
Offset Depths are relative to Offset Datum
Central Meridian is 104° 20' 0.000 W
Coordinates are relative to: Blue Ridge WC Federal Com 701H
Coordinate System is US State Plane 1927 (Exact solution), New Mexico East 30(
Grid Convergence at Surface is: 0.175°



Marathon Oil Corporation

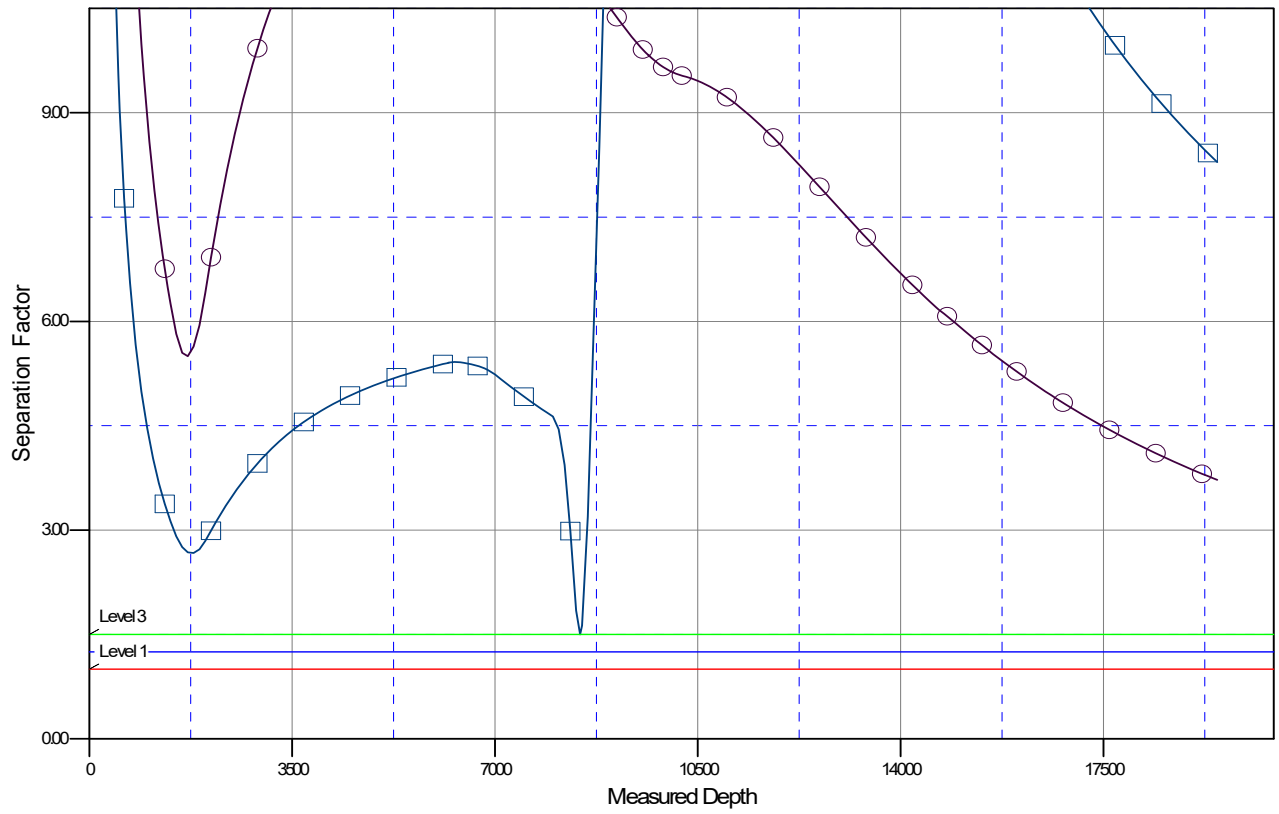
MS Directional
Anticollision Report

MS Directional

Company:	Marathon Oil	**Local Co-ordinate Reference:**	Well Blue Ridge WC Federal Com 701H
Project:	Eddy County, New Mexico (NAD 27)	**TVD Reference:**	WELL @ 2922.50usft (Precision 580)
Reference Site:	Blue Ridge (501H, 701H, 702H)	**MD Reference:**	WELL @ 2922.50usft (Precision 580)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	Blue Ridge WC Federal Com 701H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM 5000.15 Conroe DB
Reference Design:	Design #1	**Offset TVD Reference:**	Reference Datum

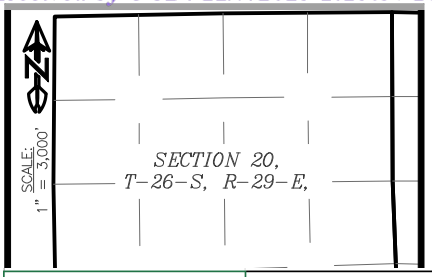
Reference Depths are relative to WELL @ 2922.50usft (Precision 580)
Offset Depths are relative to Offset Datum
Central Meridian is 104° 20' 0.000 W
Coordinates are relative to: Blue Ridge WC Federal Com 701H
Coordinate System is US State Plane 1927 (Exact solution), New Mexico East 30(
Grid Convergence at Surface is: 0.175°

Separation Factor Plot



LEGEND

Blue Ridge Federal Com 501H, Wellbore#1, Design #1 V0
Blue Ridge WCFederal Com 702H, Wellbore #1, Design #1 V0



WELL PAD LOCATION PLAT

BLUE RIDGE FEDERAL COM
SEC. 20 TWP. 26-S RGE. 29-E
SURVEY: N.M.P.M.
COUNTY: EDDY
OPERATOR: MARATHON OIL PERMIAN LLC
MAP: RED BLUFF, N.M.

Well Name	FKA Well Name	SHL Sec. 20	BHL Sec. 17
Blue Ridge WC Federal Com 801H	Mazer Rackham 20 WA Fed Com 14H	293' FSL 1600' FEL	330' FNL 2310' FEL
Blue Ridge BS Federal Com 551H	Mazer Rackham 20 WB Fed Com 13H	291' FSL 1570' FEL	100' FNL 1320' FEL
Blue Ridge WC Federal Com 802H	Mazer Rackham 20 WA Fed Com 9H	290' FSL 1540' FEL	330' FNL 660' FEL
Blue Ridge BS Federal Com 552H		493' FSL 1592' FEL	TBD
Blue Ridge BS Federal Com 553H		491' FSL 1562' FEL	TBD
Blue Ridge BS Federal Com 554H		490' FSL 1532' FEL	TBD
Blue Ridge BS Federal Com 555H		488' FSL 1502' FEL	TBD
Blue Ridge WC Federal Com 701H	Blue Ridge 20-17 Fed Com 1H	692' FSL 1585' FEL	330' FNL 2310' FEL
Blue Ridge BS Federal Com 501H	Blue Ridge 20-17 Fed Com 2H	691' FSL 1555' FEL	100' FNL 2310' FEL
Blue Ridge WC Federal Com 702H	Mazer Rackham 20 WD Fed Com 2H	689' FSL 1525' FEL	330' FNL 1650' FEL

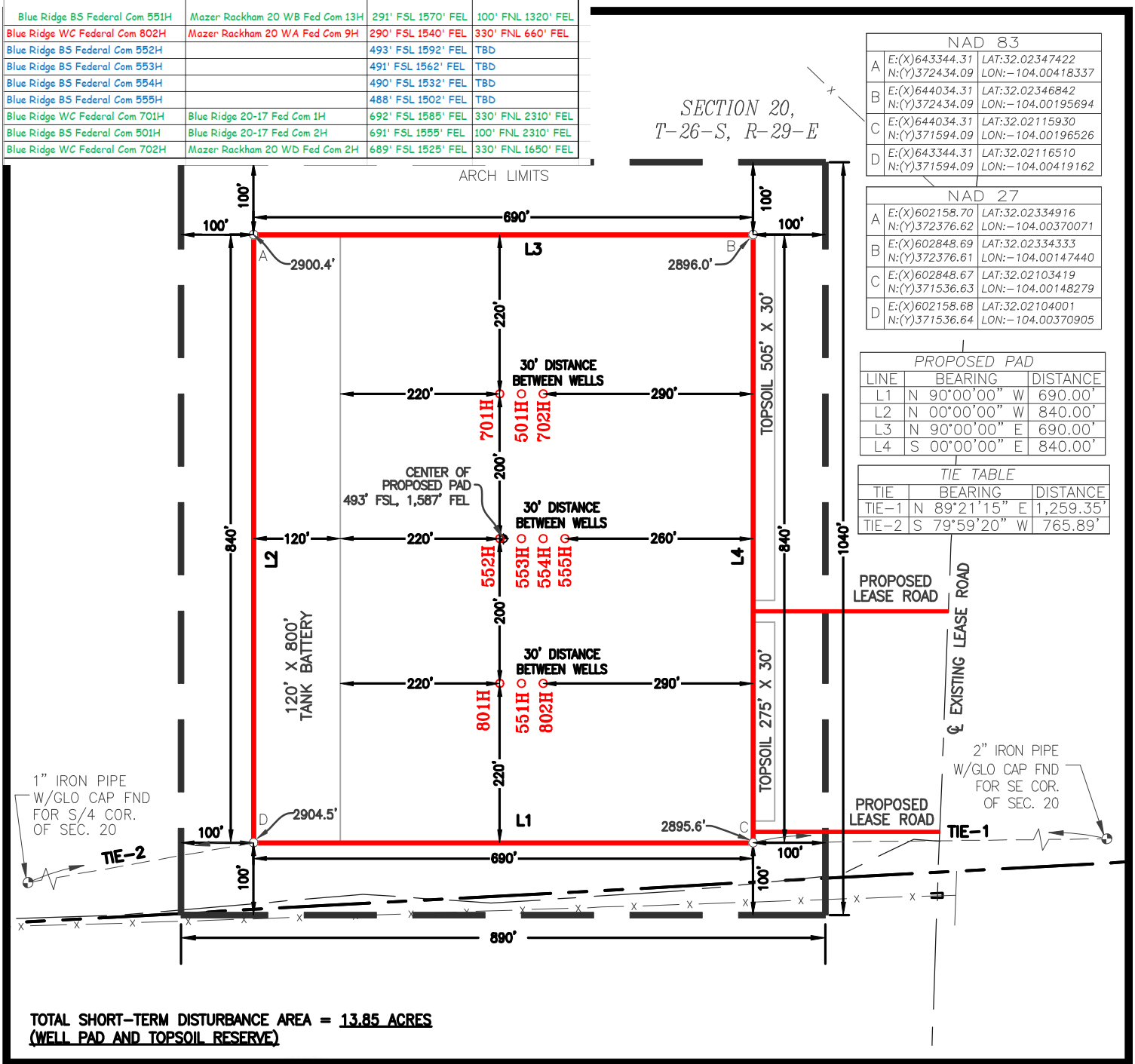
100' 0' 100' 200'
SCALE: 1" = 200'

NAD 83		
A	E:(X)643344.31 N:(Y)372434.09	LAT:32.02347422 LON:-104.00418337
B	E:(X)644034.31 N:(Y)372434.09	LAT:32.02346842 LON:-104.00195694
C	E:(X)644034.31 N:(Y)371594.09	LAT:32.02115930 LON:-104.00196526
D	E:(X)643344.31 N:(Y)371594.09	LAT:32.02116510 LON:-104.00419162

NAD 27		
A	E:(X)602158.70 N:(Y)372376.62	LAT:32.02334916 LON:-104.00370071
B	E:(X)602848.69 N:(Y)372376.61	LAT:32.02334333 LON:-104.00147440
C	E:(X)602848.67 N:(Y)371536.63	LAT:32.02103419 LON:-104.00148279
D	E:(X)602158.68 N:(Y)371536.64	LAT:32.02104001 LON:-104.00370905

PROPOSED PAD		
LINE	BEARING	DISTANCE
L1	N 90°00'00" W	690.00'
L2	N 00°00'00" W	840.00'
L3	N 90°00'00" E	690.00'
L4	S 00°00'00" E	840.00'

TIE TABLE		
TIE	BEARING	DISTANCE
TIE-1	N 89°21'15" E	1,259.35'
TIE-2	S 79°59'20" W	765.89'



TOTAL SHORT-TERM DISTURBANCE AREA = 13.85 ACRES
(WELL PAD AND TOPSOIL RESERVE)

REV.	DATE	BY
0	08/07/2023	DEF

SEPTEMBER 22, 2023

LLOYD P. SHORT NEW MEXICO 21653 PROFESSIONAL SURVEYOR

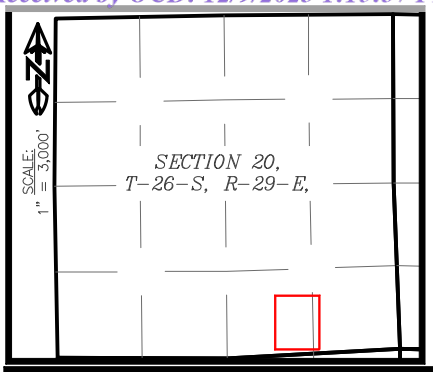
Lloyd P. Short

NOTE:
THIS IS NOT A BOUNDARY SURVEY, APPARENT PROPERTY CORNERS AND PROPERTY LINES ARE SHOWN FOR INFORMATION ONLY. BOUNDARY DATA SHOWN IS FROM STATE OF NEW MEXICO OIL CONSERVATION DIVISION FORM C-102 INCLUDED IN THIS SUBMITTAL.

I, LLYOD P. SHORT, NEW MEXICO PROFESSIONAL SURVEYOR NO. 21653, DO HEREBY CERTIFY THAT THIS EASEMENT SURVEY PLAT AND THE ACTUAL SURVEY ON THE GROUND UPON WHICH IT IS BASED WERE PERFORMED BY ME OR UNDER MY DIRECT SUPERVISION; THAT I AM RESPONSIBLE FOR THIS SURVEY; THAT THIS SURVEY MEETS THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO; AND THAT IT IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF. I FUTHER CERTIFY THAT THIS SURVEY IS NOT A LAND DIVISION OR SUBDIVISION AS DEFINED IN THE NEW MEXICO SUBDIVISION ACT AND THAT THIS INSTRUMENT IS AN EASEMENT SURVEY PLAT CROSSING AN EXISTING TRACT OR TRACTS.

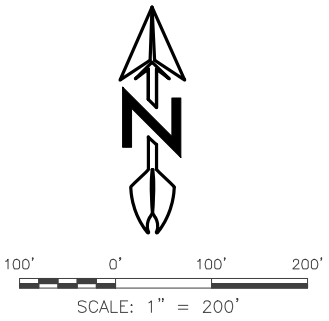
SHEET 2 OF 5

PREPARED BY:
DELTA FIELD SERVICES, LLC
510 TRENTON ST.
WEST MONROE, LA 71291
318-323-6900 OFFICE
JOB No. MRO_0006_ER

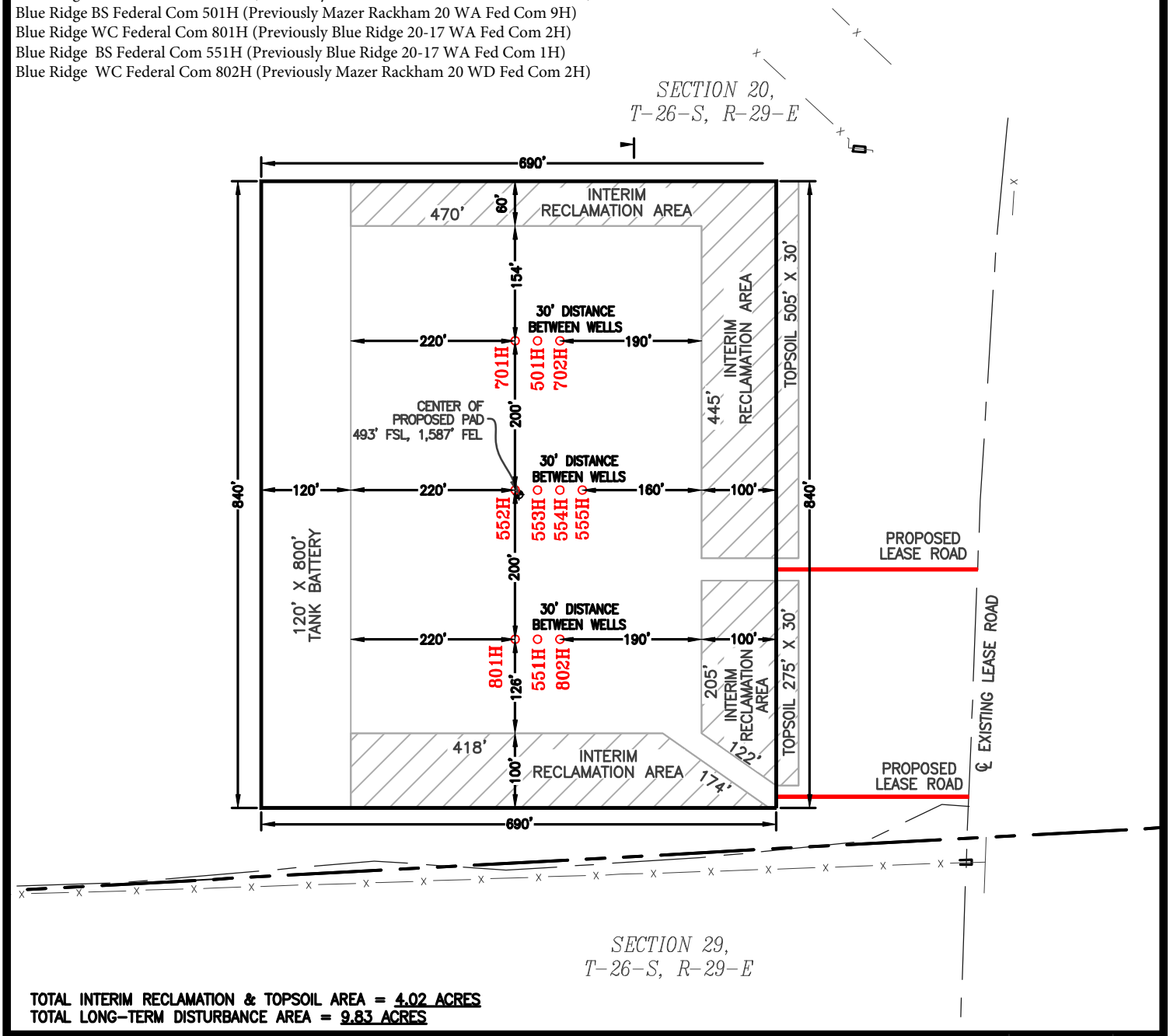


WELL PAD LOCATION PLAT

BLUE RIDGE FEDERAL COM
SEC. 20 TWP. 26-S RGE. 29-E
SURVEY: N.M.P.M.
COUNTY: EDDY
OPERATOR: MARATHON OIL PERMIAN LLC
U.S.G.S. TOPOGRAPHIC MAP: RED BLUFF, N.M.



Blue Ridge WC Federal Com 702H (Previously Mazer Rackham 20 WA Fed Com 14H)
Blue Ridge WC Federal Com 701H (Previously Mazer Rackham 20 WB Fed Com 13H)
Blue Ridge BS Federal Com 501H (Previously Mazer Rackham 20 WA Fed Com 9H)
Blue Ridge WC Federal Com 801H (Previously Blue Ridge 20-17 WA Fed Com 2H)
Blue Ridge BS Federal Com 551H (Previously Blue Ridge 20-17 WA Fed Com 1H)
Blue Ridge WC Federal Com 802H (Previously Mazer Rackham 20 WD Fed Com 2H)



TOTAL INTERIM RECLAMATION & TOPSOIL AREA = 4.02 ACRES
TOTAL LONG-TERM DISTURBANCE AREA = 9.83 ACRES

REV.	DATE	BY
0	08/07/2023	DEF

SEPTEMBER 22, 2023

LLOYD P. SHORT NEW MEXICO 21653 PROFESSIONAL SURVEYOR

NOTE:
THIS IS NOT A BOUNDARY SURVEY, APPARENT PROPERTY CORNERS AND PROPERTY LINES ARE SHOWN FOR INFORMATION ONLY. BOUNDARY DATA SHOWN IS FROM STATE OF NEW MEXICO OIL CONSERVATION DIVISION FORM C-102 INCLUDED IN THIS SUBMITTAL.

I, LLYOD P. SHORT, NEW MEXICO PROFESSIONAL SURVEYOR NO. 21653, DO HEREBY CERTIFY THAT THIS EASEMENT SURVEY PLAT AND THE ACTUAL SURVEY ON THE GROUND UPON WHICH IT IS BASED WERE PERFORMED BY ME OR UNDER MY DIRECT SUPERVISION; THAT I AM RESPONSIBLE FOR THIS SURVEY; THAT THIS SURVEY MEETS THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO; AND THAT IT IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF. I FUTHER CERTIFY THAT THIS SURVEY IS NOT A LAND DIVISION OR SUBDIVISION AS DEFINED IN THE NEW MEXICO SUBDIVISION ACT AND THAT THIS INSTRUMENT IS AN EASEMENT SURVEY PLAT CROSSING AN EXISTING TRACT OR TRACTS.

SHEET 3 OF 5

PREPARED BY:
DELTA FIELD SERVICES, LLC
510 TRENTON ST.
WEST MONROE, LA 71291
318-323-6900 OFFICE
JOB No. MRO_0006_ER

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

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

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

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

1 API Number	2 Pool Code	3 Pool Name
30-015-54491	98220	PURPLE SAGE; WOLFCAMP (GAS)

4 Property Code	5 Property Name	6 Well Number
335054	BLUE RIDGE WC FEDERAL COM	701H

7 OGRID No.	8 Operator Name	9 Elevation
372098	MARATHON OIL PERMIAN LLC	2899'

10 Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
O	20	26S	29E		692'	SOUTH	1585'	EAST	EDDY

11 Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
B	17	26S	29E		330'	NORTH	2310'	EAST	EDDY

12 Dedicated Acres	13 Joint or Infill	14 Consolidation Code	15 Order No.
640.00			

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.

16

LAST TAKE/BOTTOM HOLE
FNL 330' FEL 2310', SECTION 17
NAD 83, SPCS NM EAST
X:643041.54' / Y:381623.62'
LAT:32.04873825 / LON:-104.00507018
NAD 27, SPCS NM EAST
X:601856.17' / Y:381565.97'
LAT:32.04861350 / LON:-104.00458664

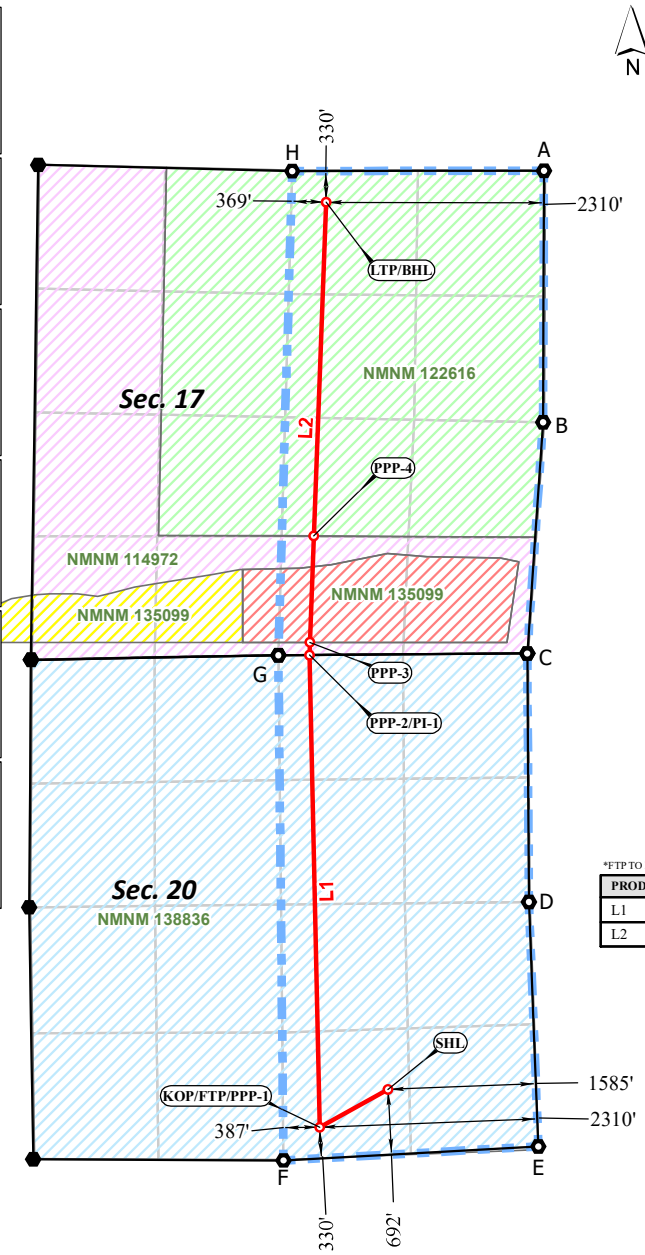
PPP-4
FSL 1258' FEL 2343', SECTION 17
NAD 83, SPCS NM EAST
X:642911.30' / Y:378078.16'
LAT:32.03899310 / LON:-104.00552529
NAD 27, SPCS NM EAST
X:601725.84' / Y:378020.58'
LAT:32.03886823 / LON:-104.00504205

PPP-3
FSL 136' FEL 2308', SECTION 17
NAD 83, SPCS NM EAST
X:642870.08' / Y:376956.14'
LAT:32.03590907 / LON:-104.00566930
NAD 27, SPCS NM EAST
X:601684.60' / Y:376898.59'
LAT:32.03578418 / LON:-104.00518617

PPP-2/PI-1
FNL 0' FEL 2310', SECTIONS 20
NAD 83, SPCS NM EAST
X:642865.08' / Y:376820.03'
LAT:32.03553494 / LON:-104.00568677
NAD 27, SPCS NM EAST
X:601679.59' / Y:376762.48'
LAT:32.03541005 / LON:-104.00520365

KOP/FTP/PPP-1
FSL 330' FEL 2310', SECTION 20
NAD 83, SPCS NM EAST
X:642973.95' / Y:371812.36'
LAT:32.02176820 / LON:-104.00538449
NAD 27, SPCS NM EAST
X:601788.34' / Y:371754.90'
LAT:32.02164314 / LON:-104.00490185

SURFACE HOLE
FSL 692' FEL 1585', SECTION 20
NAD 83, SPCS NM EAST
X:643684.31' / Y:372214.09'
LAT:32.02286660 / LON:-104.00308846
NAD 27, SPCS NM EAST
X:602498.69' / Y:372156.62'
LAT:32.02274151 / LON:-104.00260589



17 ***OPERATOR CERTIFICATION***

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

Terri Stathem 12.1.2023
Signature Date
TStathem
Printed Name
TStathem@marathonoil.com
E-mail Address

18 ***SURVEYOR CERTIFICATION***

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

Date of Survey: SEPTEMBER 22, 2023
Signature and Seal of Professional Surveyor

LLOYD P. SHORT NEW MEXICO 21653 PROFESSIONAL SURVEYOR

*FTP TO LTP LINE BEARINGS

PRODUCTION LINE	BEARING/LENGTH
L1	N01°14'44"W ~ 5008.86'
L2	N02°06'14"E ~ 4806.83'

CORNER COORDINATES NAD 83, SPCS NM EAST
A - X: 645352.76' / Y: 381957.62'
B - X: 645343.16' / Y: 379289.78'
C - X: 645175.01' / Y: 376837.52'
D - X: 645193.17' / Y: 374202.36'
E - X: 645293.57' / Y: 371608.28'
F - X: 642590.08' / Y: 371460.95'
G - X: 642535.61' / Y: 376817.53'
H - X: 642682.11' / Y: 381953.00'

CORNER COORDINATES NAD 27, SPCS NM EAST
A - X: 604167.34' / Y: 381899.95'
B - X: 604157.68' / Y: 379232.16'
C - X: 603989.47' / Y: 376779.95'
D - X: 604007.56' / Y: 374144.84'
E - X: 604107.90' / Y: 371550.82'
F - X: 601404.47' / Y: 371403.51'
G - X: 601350.13' / Y: 376759.99'
H - X: 601496.75' / Y: 381895.34'

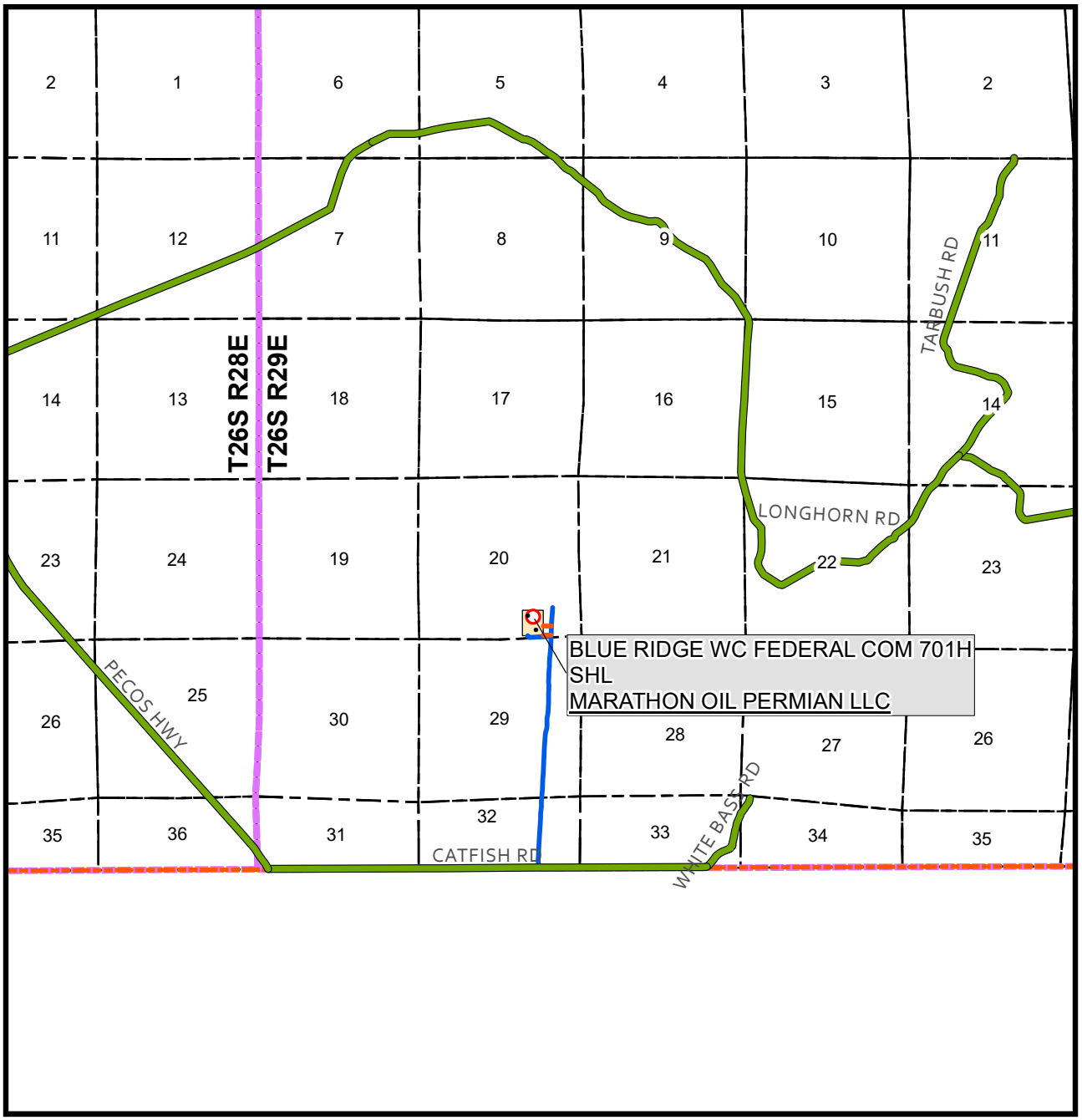
Drill Line Events ⬢ Section Corners ━ Drill Line ┄ Dimension Lines ▨ Federal Leases ▭ HSU ○ HSU Corners

All bearings and coordinates refer to New Mexico State Plane coordinate system, East Zone, U.S. Survey Feet.

Distances/areas archive to NAD 83 grid measurements. Combined Scale Factor: 0.99992127 and a Convergence Angle: 0.17649900°

SHEET 1 OF 2
JOB No. MRO_0006_BR
REV 0 TCS 9/21/2023

VICINITY MAP



SEC. 20 TWP. 26S RGE. 29E
SURVEY: N.M.P.M.
COUNTY: EDDY
OPERATOR: MARATHON OIL PERMIAN LLC
DESCRIPTION: 692' FSL & 1585' FEL
ELEVATION: 2899'
LEASE: BLUE RIDGE WC FEDERAL COM
U.S.G.S. TOPOGRAPHIC MAP: RED BLUFF, NM.

1" = 1 MILE

FROM THE MARATHON OFFICE AT 4111 TIDWELL, CARLSBAD, NM, HEAD SOUTH ON TIDWELL RD TOWARD US HWY 285 N FOR 0.2 MILES. TURN LEFT ONTO US HWY 285 S, HEADING SOUTH FOR 28.6 MILES TO CATFISH ROAD, ON THE NM/TX STATE LINE. TURN LEFT ONTO CATFISH ROAD, HEADING EAST FOR 1.7 MILES TO A CALICHE ROAD. TURN LEFT ON A CALICHE ROAD AND CONTINUE 1.45 MILES TO THE PROPOSED LEASE ROAD. TURN LEFT ONTO SAID PROPOSED LEASE ROAD, HEADING WEST, 258 FEET ENTERING THE SOUTHWEST CORNER OF BLUE RIDGE FEDERAL COM WELL LOCATION PAD.

SHEET 2 OF 2

PREPARED BY:
DELTA FIELD SERVICES, LLC
510 TRENTON STREET, WEST MONROE, LA 71291
318-323-6900 OFFICE
JOB No. MRO_0006_BR

PECOS DISTRICT
DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Marathon
LEASE NO.:	**NMNM138836**
LOCATION:	Section 20, T.26 S, R.29 E., NMPM
COUNTY:	Eddy County, New Mexico
WELL NAME & NO.:	Blue Ridge Fed WC Com 701H
SURFACE HOLE FOOTAGE:	692'/S & 1585'/E
BOTTOM HOLE FOOTAGE:	330'/N & 2310'/E

*Previously known as **Blue Ridge 20-17 WA Fed Com 1H**. Changes approved through engineering via **Sundry 2763987** on **12-1-2023**. Any previous COAs not addressed within the updated COAs still apply.*

COA

H_2S	○ Yes	◉ No		
Potash / WIPP	◉ None	○ Secretary	○ R-111-P	☐ WIPP
Cave / Karst	○ Low	◉ Medium	○ High	○ Critical
Wellhead	○ Conventional	◉ Multibowl	○ Both	○ Diverter
Cementing	☐ Primary Squeeze	☐ Cont. Squeeze	☐ EchoMeter	☐ DV Tool
Special Req	☐ Break Testing	☐ Water Disposal	☑ COM	☐ Unit
Variance	☑ Flex Hose	☐ Casing Clearance	☐ Pilot Hole	☐ Capitan Reef
Variance	☐ Four-String	☐ Offline Cementing	☑ Fluid-Filled	☐ Open Annulus
☐ **Batch APD / Sundry**				

A. HYDROGEN SULFIDE

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

B. CASING

1. The **13-3/8** inch surface casing shall be set at approximately **350** feet (a minimum of 70 feet (Eddy County) into the Rustler Anhydrite, above the salt, and below usable fresh water) and cemented to the surface.

    a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement 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.

Intermediate casing must be kept fluid filled to meet BLM minimum collapse requirement.

2. The minimum required fill of cement behind the **9-5/8** inch intermediate casing is:
   - Cement to surface. If cement does not circulate see B.1.a, c-d above.

Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst.

❖ In Medium Cave/Karst Areas if cement does not circulate to surface on the first two casing strings, the cement on the 3rd casing string must come to surface.

3. The minimum required fill of cement behind the **5-1/2** inch production casing is: Cement should tie-back at least **200 feet** into previous casing string. Operator shall provide method of verification.

C. PRESSURE CONTROL

1. Variance approved to use flex line from BOP to choke manifold. Manufacturer's specification to be readily available. No external damage to flex line. Flex line to be installed as straight as possible (no hard bends).

2. Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the casing shoe shall be **5000 (5M)** psi. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
   a. 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.
   b. Manufacturer representative shall install the test plug for the initial BOP test.
   c. 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.
   d. Whenever any seal subject to test pressure is broken, all the tests in 43 CFR 3172 must be followed.

D. SPECIAL REQUIREMENT (S)

Communitization Agreement

- The operator will submit a Communitization Agreement to the Santa Fe Office, 301 Dinosaur Trail Santa Fe, New Mexico 87508, at least 90 days before the anticipated date of first production from a well subject to a spacing order issued by the New Mexico Oil Conservation Division. The Communitization Agreement will include the signatures of all working interest owners in all Federal and Indian leases subject to the Communitization Agreement (i.e., operating rights owners and lessees of record), or certification that the operator has obtained the written signatures of all such owners and will make those signatures available to the BLM immediately upon request.
- The operator will submit an as-drilled survey well plat of the well completion, but are not limited to, those specified in 43 CFR 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)

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

☒ Lea County
Call the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240,
(575) 689-5981

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

   a. In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure

rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).

b. When the operator proposes to set surface casing with Spudder Rig
   - Notify the BLM when moving in and removing the Spudder Rig.
   - Notify the BLM when moving in the 2nd Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
   - BOP/BOPE test to be conducted per **43 CFR part 3170 Subpart 3172** as soon as 2nd Rig is rigged up on well.

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

3. The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.

A. CASING

1. Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.

2. Wait on cement (WOC) for Potash Areas: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi for all cement blends, 2) until cement has been in place at least 24 hours. WOC time will be recorded in the driller's log. The casing intergrity test can be done (prior to the cement setting up) immediately after bumping the plug.

3. Wait on cement (WOC) for Water Basin: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.

4. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.

5. No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.

6. On that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Formation at the shoe shall be tested to a minimum of the mud weight equivalent anticipated to control the formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.

7. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.

8. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.

B. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in **43 CFR part 3170 Subpart 3172** and **API STD 53 Sec. 5.3**.

2. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: The flex line must meet the requirements of API 16C. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.

3. 5M or higher system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.

4. If the operator has proposed a multi-bowl wellhead assembly in the APD. The following requirements must be met:

a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
c. Manufacturer representative shall install the test plug for the initial BOP test.
d. Whenever any seal subject to test pressure is broken, all the tests in **43 CFR part 3170 Subpart 3172** must be followed.
e. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.

5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.

a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead cement), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).

b. In potash areas, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. For all casing strings, casing cut-off and BOP installation can be initiated at twelve hours after bumping the cement plug. The BOPE test can be initiated after bumping the cement plug with the casing valve open. (only applies to single stage cement jobs, prior to the cement setting up.)

c. The tests shall be done by an independent service company utilizing a test plug not a cup or J-packer and can be initiated immediately with the casing valve open. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to **43 CFR part 3170 Subpart 3172** with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for water basin (8 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).

d. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE.

If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.

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

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

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

h. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the Wolfcamp formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per **43 CFR part 3170 Subpart 3172**.

C. DRILLING MUD

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

D. WASTE MATERIAL AND FLUIDS

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

Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.

ZS 12/6/2023

PECOS DISTRICT
SURFACE USE
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Marathon Oil Permian LLC
LEASE NO.:	NMNM138836
COUNTY:	Eddy County, New Mexico

Wells:

Blue Ridge 20-17 WA Fed Com 1H - (*formerly, Mazer Rackham 20 Fed Com WA 9H*)
Surface Hole Location: 290 FSL & 1540' FEL, Section 20, T. 26 S., R. 29 E.
Bottom Hole Location: 330' FNL & 1650' FEL, Section 17, T. 26 S., R. 29 E.

Blue Ridge 20-17 WA Fed Com 2H – (*formerly Mazer Rackham 20 Fed Com WB 13H*)
Surface Hole Location: 291' FSL & 1570' FEL, Section 20, T. 26 S., R. 29 E.
Bottom Hole Location: 330' FNL & 2310' FEL, Section 17, T. 26 S., R. 29 E.

Application for Permit to Drill, Well Pad, Access Road, On-location Production Facilities

TABLE OF CONTENTS

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

I. GENERAL PROVISIONS

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

II. PERMIT EXPIRATION

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

III. ARCHAEOLOGICAL, PALEONTOLOGY & HISTORICAL SITES

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

OR

If the entire project is covered under the Permian Basin Programmatic Agreement (cultural resources only):

The proponent has contributed funds commensurate to the undertaking into an account for offsite mitigation. Participation in the PA serves as mitigation for the effects of this project on cultural resources. If any human skeletal remains, funerary objects, sacred objects, or objects of cultural patrimony are discovered at any time during construction, all construction activities shall halt and the BLM will be notified as soon as possible within 24 hours. Work shall not resume until a Notice to Proceed is issued by the BLM. See Stipulation 6 for more information.

If the proposed project is split between a Class III inventory and a Permian Basin Programmatic Agreement contribution, the portion of the project covered under Class III inventory should default to the first paragraph stipulations.

The holder is hereby obligated to comply with procedures established in the Native American Graves Protection and Repatriation Act (NAGPRA) to protect such cultural items as human remains, associated funerary objects, sacred objects, and objects of cultural patrimony discovered inadvertently during the course of project implementation. In the event that any of the cultural items listed above are discovered during the course of project work, the proponent shall immediately halt the disturbance and contact the BLM within 24 hours for instructions. The proponent or initiator of any project shall be held responsible for protecting, evaluating, reporting, excavating, treating, and disposing of these cultural items according to the procedures established by the BLM in consultation with Indian Tribes."

Any paleontological resource (historic or prehistoric site or object) discovered by the holder, or

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

IV. NOXIOUS WEEDS

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

V. SPECIAL REQUIREMENT(S)

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

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

Cave/Karst:

Construction Mitigation

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

General Construction:

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

- All spills or leaks will be reported to the BLM immediately for their immediate and proper treatment.

Pad Construction:

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

Road Construction:

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

Drilling Mitigation

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

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

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

Production Mitigation

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

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

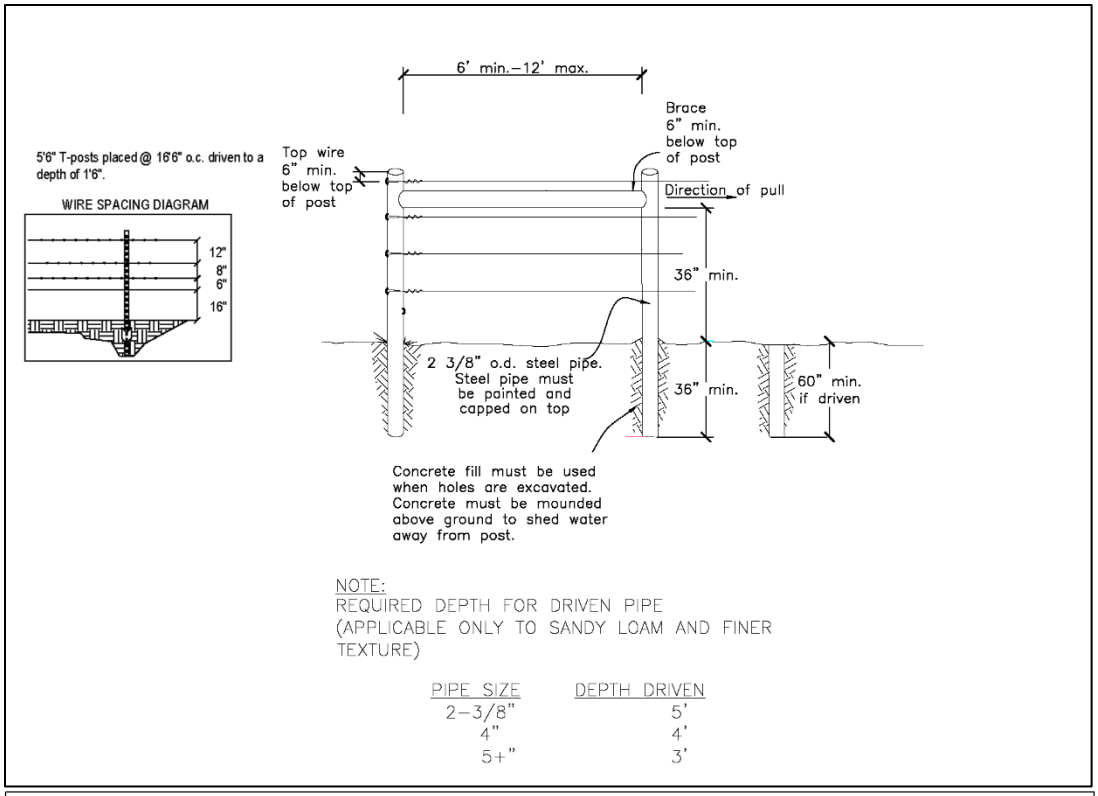
Residual and Cumulative Mitigation
The operator will perform annual pressure monitoring on all casing annuli and reported in a sundry notice. If the test results indicated a casing failure has occurred, remedial action will be taken to correct the problem to the BLM's approval.

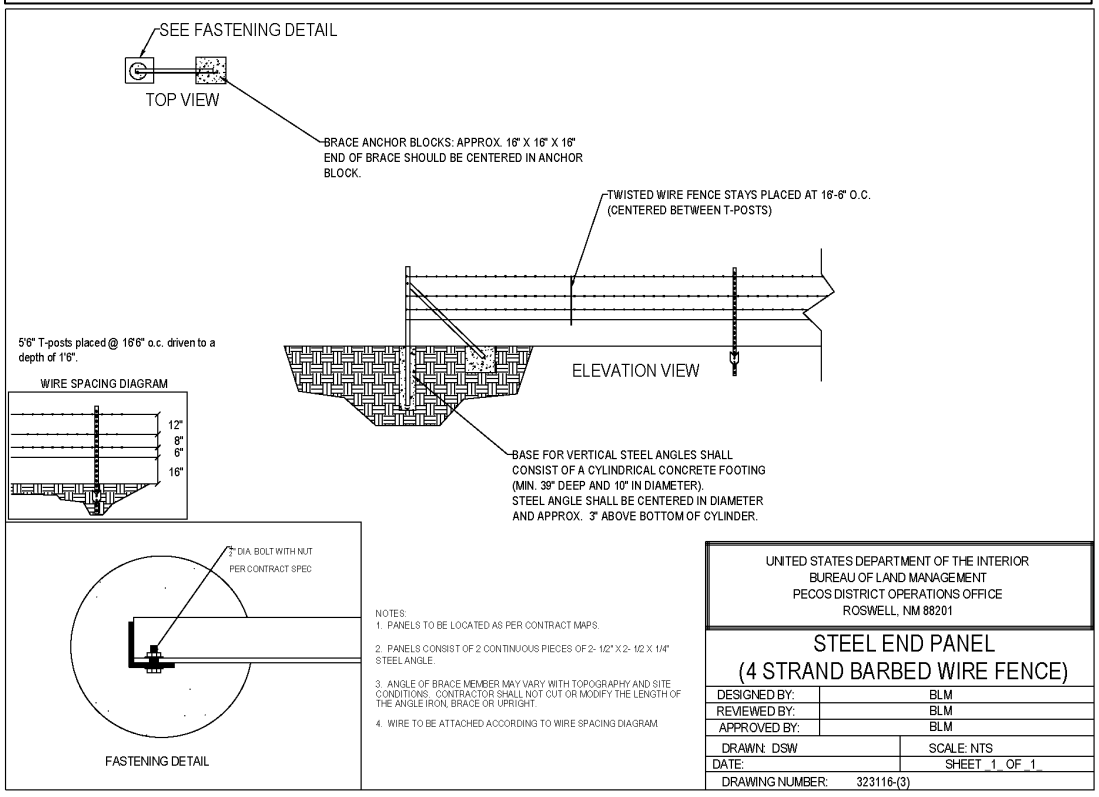
Plugging and Abandonment Mitigation
Upon well abandonment in high cave karst areas additional plugging conditions of approval may be required. The BLM will assess the situation and work with the operator to ensure proper plugging of the wellbore.

Range:

Cattleguards
Where a permanent cattleguard is approved, an appropriately sized cattleguard(s) sufficient to carry out the project shall be installed and maintained at fence crossing(s). Any existing cattleguard(s) on the access road shall be repaired or replaced if they are damaged or have deteriorated beyond practical use. The operator shall be responsible for the condition of the existing cattleguard(s) that are in place and are utilized during lease operations. A gate shall be constructed on one side of the cattleguard and fastened securely to H-braces.

Fence Requirement
Where entry granted across a fence line, the fence must be H-braced or angle iron braced and tied off on both sides of the passageway prior to cutting. Once the work is completed, the fence will be restored to its prior condition, or better. The operator shall consult the private surface landowner or the grazing allotment holder prior to cutting any fence(s).





Any damage to structures that provide water to livestock throughout the life of the well, caused by operations from the well site, must be immediately corrected by the operator. The operator must

notify the BLM office (575-234-5972) and the private surface landowner or the grazing allotment holder if any damage occurs to structures that provide water to livestock.

Texas Hornshell Mussel:

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

Oil and Gas Zone D - CCA Boundary requirements.

- Implement erosion control measures in accordance with the Reasonable and Prudent Practices for Stabilization ("RAPPS")
- Comply with SPCC requirements in accordance with 40 CFR Part 112;
- Comply with the United States Army Corp of Engineers (USACE) Nationwide 12 General Permit, where applicable;
- Utilize technologies (like underground borings for pipelines), where feasible;
- Educate personnel, agents, contractors, and subcontractors about the requirements of conservation measures, COAs, Stips and provide direction in accordance with the Permit.

VI. CONSTRUCTION

A. NOTIFICATION

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

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

B. TOPSOIL

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

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

C. CLOSED LOOP SYSTEM

Tanks are required for drilling operations: No Pits.

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

D. FEDERAL MINERAL MATERIALS PIT

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

E. WELL PAD SURFACING

Surfacing of the well pad is not required.

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

F. EXCLOSURE FENCING (CELLARS & PITS)

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

G. ON LEASE ACCESS ROADS

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

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

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

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

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

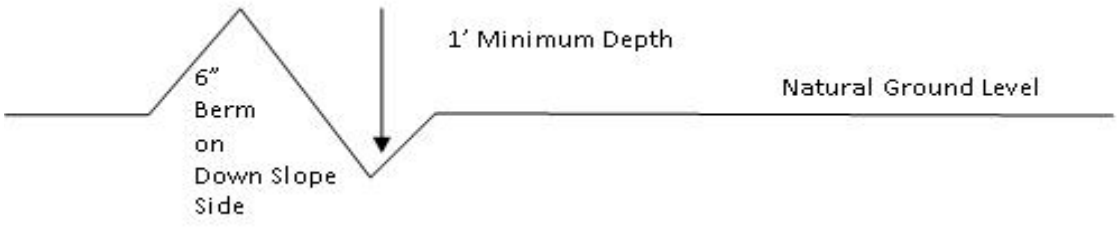
Ditching
Ditching shall be required on both sides of the road.

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

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

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

Cross Section of a Typical Lead-off Ditch



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

Formula for Spacing Interval of Lead-off Ditches

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

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

Public Access

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

Construction Steps

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

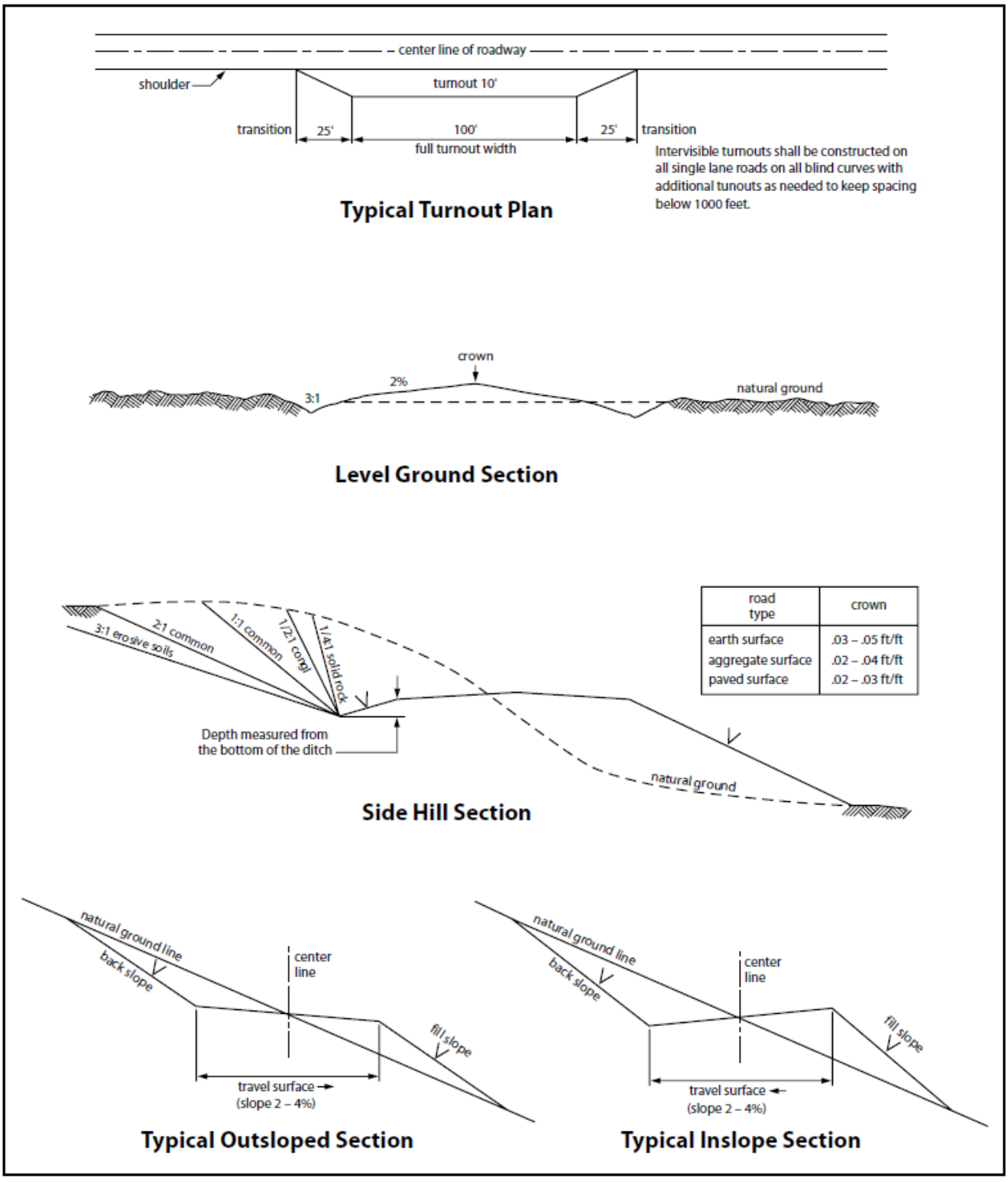


Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

VII. PRODUCTION (POST DRILLING)

A. WELL STRUCTURES & FACILITIES

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

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

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

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

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

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

21. Special Stipulations:

Karst:

- The BLM, Carlsbad Field Office, will be informed immediately if any subsurface drainage channels, passages, or voids are intersected by trenching, and no pipe will be laid in the trench at that point until clearance has been issued by the Authorized Officer.
- If a void is encountered alignments may be rerouted to avoid the karst feature and lessen; the potential of subsidence or collapse of karst features, buildup of toxic or combustible gas, or other possible impacts to cave and karst resources from the buried pipeline.
- Special restoration stipulations or realignment may be required at such intersections, if any.
- A leak detection plan **will be submitted to the BLM Carlsbad Field Office for approval** prior to pipeline installation. The method could incorporate gauges to detect pressure drops, situating values and lines so they can be visually inspected periodically or installing electronic sensors to alarm when a leak is present. The leak detection plan will incorporate an automatic shut off system that will be installed for proposed pipelines to minimize the effects of an undesirable event.
- Regular monitoring is required to quickly identify leaks for their immediate and proper treatment.
- All spills or leaks will be reported to the BLM immediately for their immediate and proper treatment.

VIII. INTERIM RECLAMATION

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

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

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

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

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

IX. FINAL ABANDONMENT & RECLAMATION

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

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

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

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

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

Seed Mixture 1 for Loamy Sites

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

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

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

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

*Pounds of pure live seed:

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

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720
District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

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

CONDITIONS

Action 292870

CONDITIONS

Operator: MARATHON OIL PERMIAN LLC 990 Town & Country Blvd. Houston, TX 77024	OGRID: 372098
	Action Number: 292870
	Action Type: [C-101] BLM - Federal/Indian Land Lease (Form 3160-3)

CONDITIONS

Created By	Condition	Condition Date
ward.rikala	Notify OCD 24 hours prior to casing & cement	12/18/2023
ward.rikala	Will require a File As Drilled C-102 and a Directional Survey with the C-104	12/18/2023
ward.rikala	Once the well is spud, to prevent ground water contamination through whole or partial conduits from the surface, the operator shall drill without interruption through the fresh water zone or zones and shall immediately set in cement the water protection string	12/18/2023
ward.rikala	Cement is required to circulate on both surface and intermediate1 strings of casing	12/18/2023
ward.rikala	If cement does not circulate on any string, a CBL is required for that string of casing	12/18/2023
ward.rikala	Oil base muds are not to be used until fresh water zones are cased and cemented providing isolation from the oil or diesel. This includes synthetic oils. Oil based mud, drilling fluids and solids must be contained in a steel closed loop system	12/18/2023