

Form 3160-5  
(June 2019)

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

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

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

5. Lease Serial No. **NMNM110835**

6. If Indian, Allottee or Tribe Name

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

1. Type of Well  
 Oil Well     Gas Well     Other

2. Name of Operator **EOG RESOURCES INCORPORATED**

3a. Address **1111 BAGBY SKY LOBBY 2, HOUSTON, TX 770**    3b. Phone No. (include area code) **(713) 651-7000**

4. Location of Well (Footage, Sec., T.,R.,M., or Survey Description)  
**SEC 13/T25S/R32E/NMP**

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

8. Well Name and No. **MERCILESS 13 FED COM/510H**

9. API Well No. **30-025-50965**

10. Field and Pool or Exploratory Area  
**WC-025 G-08 S253235G/LOWER BONE SPRING**

11. Country or Parish, State  
**LEA/NM**

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

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

13. Describe Proposed or Completed Operation: Clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or 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 performed 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 determined that the site is ready for final inspection.)

Merciless 13 Fed Com 510H API #: 30-025-50965  
 EOG respectfully requests an amendment to our approved APD for this well to reflect the following changes:  
 Update casing and cement program to current design.  
 Change primary intermediate casing to 11". Add backup 10-3/4", 8-5/8", 5-1/2" casing design

14. I hereby certify that the foregoing is true and correct. Name (Printed/Typed)  
**CRAIG RICHARDSON / Ph: (432) 686-3600**

Title **Regulatory Specialist**

Signature \_\_\_\_\_ Date **01/23/2023**

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

Approved by  
**KEITH P IMMATTY / Ph: (575) 988-4722 / Approved**

Title **ENGINEER** Date **01/24/2023**

Office **CARLSBAD**

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.

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

(Instructions on page 2)

## GENERAL INSTRUCTIONS

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

## SPECIFIC INSTRUCTIONS

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

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

## NOTICES

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

AUTHORITY: 30 U.S.C. 181 et seq., 351 et seq., 25 U.S.C. 396; 43 CFR 3160.

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

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

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

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

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

Response to this request is mandatory.

The BLM would like you to know that you do not have to respond to this or any other Federal agency-sponsored information collection unless it displays a currently valid OMB control number.

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

## Additional Information

### Location of Well

0. SHL: TR A / 310 FNL / 580 FEL / TWSP: 25S / RANGE: 32E / SECTION: 13 / LAT: 32.1369969 / LONG: -103.6217627 ( TVD: 0 feet, MD: 0 feet )

PPP: TR A / 100 FNL / 920 FEL / TWSP: 25S / RANGE: 32E / SECTION: 13 / LAT: 32.1375706 / LONG: -103.6228618 ( TVD: 10604 feet, MD: 10627 feet )

BHL: TR H / 2541 FNL / 920 FEL / TWSP: 25S / RANGE: 32E / SECTION: 24 / LAT: 32.1163486 / LONG: -103.6228812 ( TVD: 10869 feet, MD: 18449 feet )

CONFIDENTIAL



### Merciless 13 Fed Com 510H

#### Revised Permit Information 01/23/2023:

Well Name: Merciless 13 Fed Com 510H

Location: SHL: 310' FNL & 587' FEL, Section 13, T-25-S, R-32-E, Lea Co., N.M.

BHL: 2541' FNL & 920' FEL, Section 24, T-25-S, R-32-E, Lea Co., N.M.

#### Casing Program A:

Hole Size	Interval MD		Interval TVD		Csg OD	Weight	Grade	Conn
	From (ft)	To (ft)	From (ft)	To (ft)				
16"	0	980	0	980	13-3/8"	54.5#	J-55	STC
11"	0	4,014	0	4,000	9-5/8"	40#	J-55	LTC
11"	4,014	4,704	4,000	4,690	9-5/8"	40#	HCK-55	LTC
6-3/4"	0	18,449	0	10,869	5-1/2"	17#	HCP-110	LTC

Variance is requested to waive the centralizer requirements for the 9-5/8" casing in the 11" hole size. An expansion additive will be utilized, in the cement slurry, for the entire length of the 11" hole interval to maximize cement bond and zonal isolation.

Variance is also requested to waive any centralizer requirements for the 5-1/2" casing in the 6-3/4" hole size. An expansion additive will be utilized, in the cement slurry, for the entire length of the 6-3/4" hole interval to maximize cement bond and zonal isolation.

EOG requests permission to allow deviation from the 0.422" annulus clearance requirement for the intermediate (salt) section from Onshore Order #2 under the following conditions:

- The variance is not applicable within the Potash Boundaries or Capitan Reef areas.
- Operator takes responsibility to get casing to set point in the event that the clearance causes stuck pipe issues.

#### Cementing Program:

Depth	No. Sacks	Wt.	Yld	Slurry Description
		ppg	Ft3/sk	
980' 13-3/8"	300	13.5	1.73	Lead: Class C + 4.0% Bentonite Gel + 0.5% CaCl <sub>2</sub> + 0.25 lb/sk Cello-Flake (TOC @ Surface)
	100	14.8	1.34	Tail: Class C + 0.6% FL-62 + 0.25 lb/sk Cello-Flake + 0.2% Sodium Metasilicate (TOC @ 780')
4,690' 9-5/8"	440	12.7	2.22	Lead: Class C + 10% NaCl + 6% Bentonite Gel + 3% MagOx (TOC @ Surface)
	160	14.8	1.32	Tail: Class C + 10% NaCl + 3% MagOx (TOC @ 3,750')
18,449' 5-1/2"	370	10.5	3.21	Lead: Class H + 0.4% Halad-344 + 0.35% HR-601 + 3% Microbond (TOC @ 4,190')
	570	13.2	1.52	Tail: Class H + 5% NEX-020 + 0.2% NAC-102 + 0.15% NAS-725 + 0.5% NFL-549 + 0.2% NFP-703 + 1% NBE-737 + 0.3% NRT-241 (TOC @ 10410')



### Merciless 13 Fed Com 510H

Additive	Purpose
Bentonite Gel	Lightweight/Lost circulation prevention
Calcium Chloride	Accelerator
Cello-flake	Lost circulation prevention
Sodium Metasilicate	Accelerator
MagOx	Expansive agent
Pre-Mag-M	Expansive agent
Sodium Chloride	Accelerator
FL-62	Fluid loss control
Halad-344	Fluid loss control
Halad-9	Fluid loss control
HR-601	Retarder
Microbond	Expansive Agent

Note: Cement volumes based on bit size plus at least 25% excess in the open hole plus 10% excess in the cased-hole overlap section.

#### Mud Program:

Depth (TVD)	Type	Weight (ppg)	Viscosity	Water Loss
0 – 980'	Fresh - Gel	8.6-8.8	28-34	N/c
980' – 4,690'	Brine	8.6-8.8	28-34	N/c
4,690' – 18,449'	Oil Base	8.8-9.5	58-68	N/c - 6

#### Wellhead & Offline Cementing:

EOG Resources Inc. (EOG) respectfully requests a variance from the minimum standards for well control equipment testing of Onshore Order No. 2 (item III.A.2.a.i) to allow a testing schedule of the blow out preventer (BOP) and blow out prevention equipment (BOPE) along with Batch Drilling & Offline cement operations to include the following:

- Full BOPE test at first installation on the pad.
- Full BOPE test every 21 days per Onshore Order No. 2.
- Function test BOP elements per Onshore Order No. 2.
- Break testing BOP and BOPE coupled with batch drilling operations and option to offline cement and/or remediate (if needed) any surface or intermediate sections, according to attached offline cementing support documentation.
- After the well section is secured, the BOP will be disconnected from the wellhead and walked with the rig to another well on the pad.
- TA cap will also be installed per Wellhead vendor procedure and pressure inside the casing will be monitored via the valve on the TA cap as per standard batch drilling ops.
- See attached "EOG BLM Variance 3a -Offline Cement Intermediate Operational Procedure"

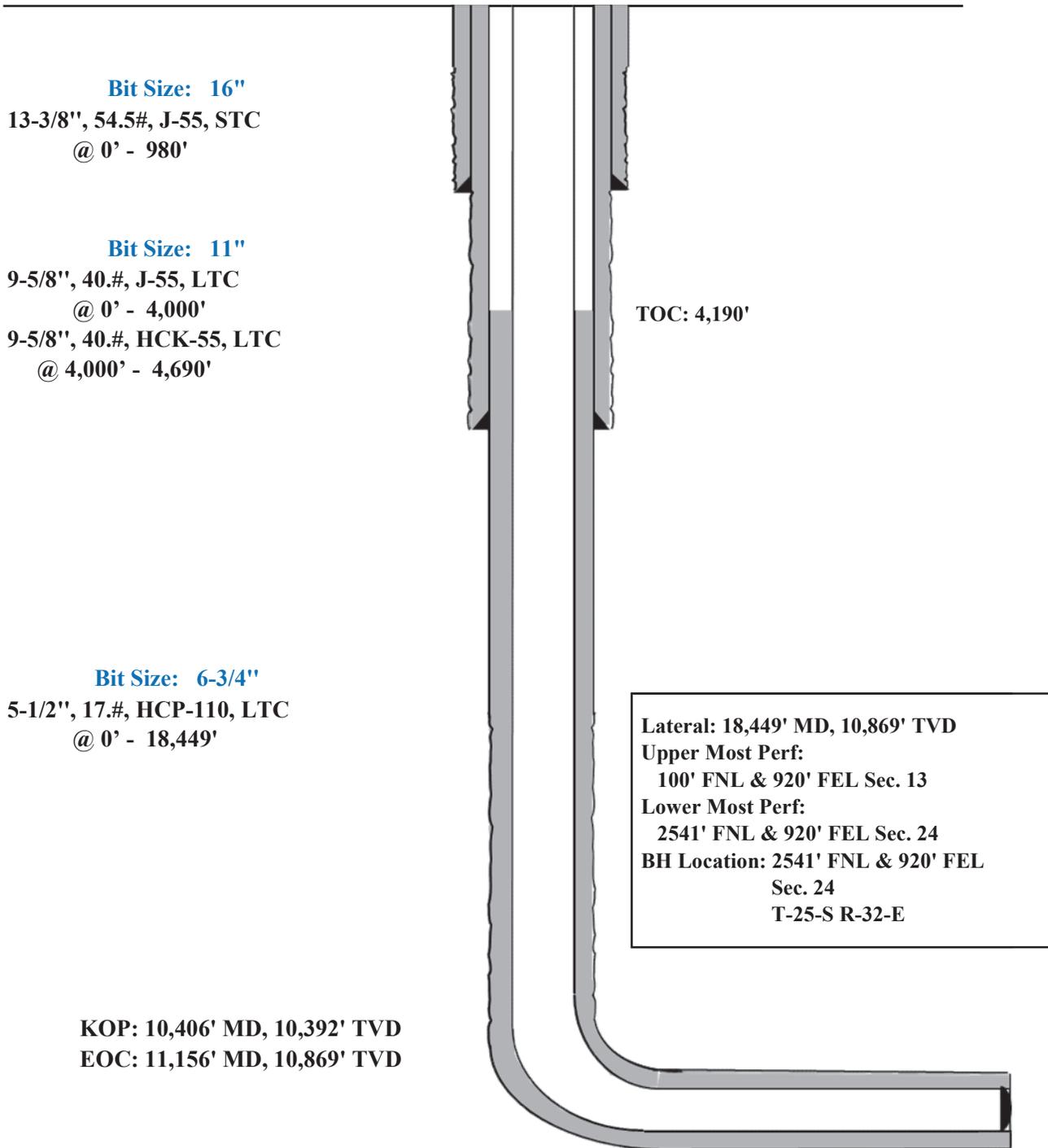


**Merciless 13 Fed Com 510H**

310' FNL  
 587' FEL  
 Section 13  
 T-25-S, R-32-E

Revised Wellbore A:  
 API: 30-025-50965

KB: 3519'  
 GL: 3494'





### Merciless 13 Fed Com 510H

#### Revised Permit Information 01/23/2023:

Well Name: Merciless 13 Fed Com 510H

Location: SHL: 310' FNL & 587' FEL, Section 13, T-25-S, R-32-E, Lea Co., N.M.

BHL: 2541' FNL & 920' FEL, Section 24, T-25-S, R-32-E, Lea Co., N.M.

#### Casing Program B:

Hole Size	Interval MD		Interval TVD		Csg OD	Weight	Grade	Conn
	From (ft)	To (ft)	From (ft)	To (ft)				
13-1/2"	0	980	0	980	10-3/4"	40.5#	J-55	STC
9-7/8"	0	4,014	0	4,000	8-5/8"	32#	J-55	BTC-SC
9-7/8"	4,014	4,704	4,000	4,690	8-5/8"	32#	P110-EC	BTC-SC
6-3/4"	0	18,449	0	10,869	5-1/2"	17#	HCP-110	LTC

#### Cementing Program:

Depth	No. Sacks	Wt. ppg	Yld Ft3/sk	Slurry Description
980' 10-3/4"	330	13.5	1.73	Lead: Class C + 4.0% Bentonite Gel + 0.5% CaCl <sub>2</sub> + 0.25 lb/sk Cello-Flake (TOC @ Surface)
	110	14.8	1.34	Tail: Class C + 0.6% FL-62 + 0.25 lb/sk Cello-Flake + 0.2% Sodium Metasilicate (TOC @ 780')
4,690' 8-5/8"	320	12.7	2.22	Lead: Class C + 10% NaCl + 6% Bentonite Gel + 3% MagOx (TOC @ Surface)
	150	14.8	1.32	Tail: Class C + 10% NaCl + 3% MagOx (TOC @ 3,750')
18,449' 5-1/2"	610	10.5	3.21	Lead: Class H + 0.4% Halad-344 + 0.35% HR-601 + 3% Microbond (TOC @ 4,190')
	590	13.2	1.52	Tail: Class H + 5% NEX-020 + 0.2% NAC-102 + 0.15% NAS-725 + 0.5% NFL-549 + 0.2% NFP-703 + 1% NBE-737 + 0.3% NRT-241 (TOC @ 10410')


**eog resources**  
**Merciless 13 Fed Com 510H**

<b>Additive</b>	<b>Purpose</b>
Bentonite Gel	Lightweight/Lost circulation prevention
Calcium Chloride	Accelerator
Cello-flake	Lost circulation prevention
Sodium Metasilicate	Accelerator
MagOx	Expansive agent
Pre-Mag-M	Expansive agent
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FL-62	Fluid loss control
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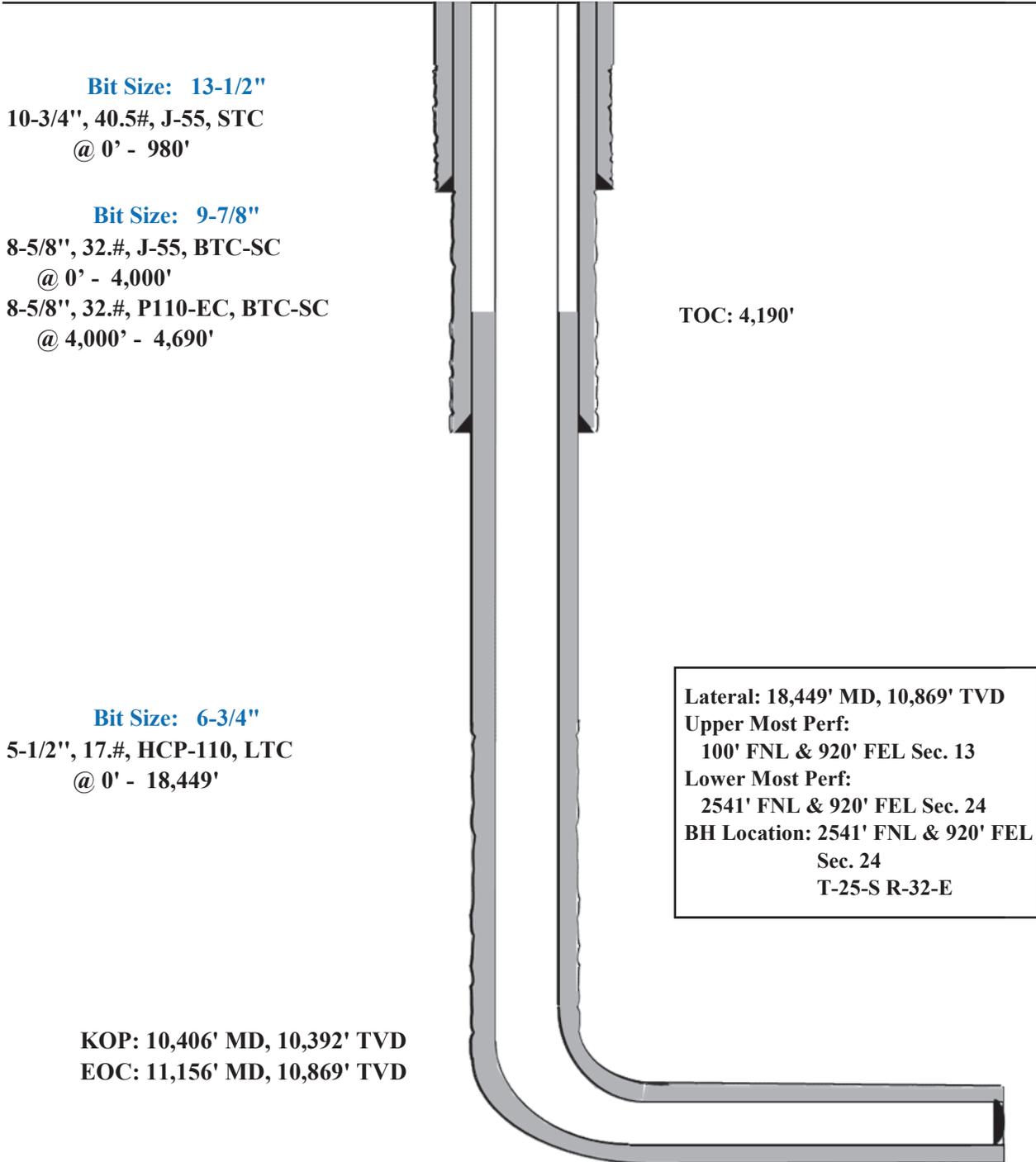


**Merciless 13 Fed Com 510H**

310'  
587'  
Section 13  
T-25-S, R-32-E

Revised Wellbore B:  
  
API: 30-025-50965

KB: 3519'  
GL: 3494'



**Bit Size: 13-1/2"**  
10-3/4", 40.5#, J-55, STC  
@ 0' - 980'

**Bit Size: 9-7/8"**  
8-5/8", 32.#, J-55, BTC-SC  
@ 0' - 4,000'  
8-5/8", 32.#, P110-EC, BTC-SC  
@ 4,000' - 4,690'

TOC: 4,190'

**Bit Size: 6-3/4"**  
5-1/2", 17.#, HCP-110, LTC  
@ 0' - 18,449'

Lateral: 18,449' MD, 10,869' TVD  
Upper Most Perf:  
100' FNL & 920' FEL Sec. 13  
Lower Most Perf:  
2541' FNL & 920' FEL Sec. 24  
BH Location: 2541' FNL & 920' FEL  
Sec. 24  
T-25-S R-32-E

KOP: 10,406' MD, 10,392' TVD  
EOC: 11,156' MD, 10,869' TVD

**GEOLOGIC NAME OF SURFACE FORMATION:**

Permian

**ESTIMATED TOPS OF IMPORTANT GEOLOGICAL MARKERS:**

Rustler	874'
Tamarisk Anhydrite	957'
Top of Salt	1,187'
Base of Salt	4,586'
Lamar	4,807'
Bell Canyon	4,838'
Cherry Canyon	5,805'
Brushy Canyon	7,304'
Bone Spring Lime	8,711'
Leonard (Avalon) Shale	8,800'
1st Bone Spring Sand	9,745'
2nd Bone Spring Shale	10,032'
2nd Bone Spring Sand	10,242'
TD	10,869'

**ESTIMATED DEPTHS OF ANTICIPATED FRESH WATER, OIL OR GAS:**

Upper Permian Sands	0- 400'	Fresh Water
Bell Canyon	4,838'	Oil
Cherry Canyon	5,805'	Oil
Brushy Canyon	7,304'	Oil
Leonard (Avalon) Shale	8,800'	Oil
1st Bone Spring Sand	9,745'	Oil
2nd Bone Spring Shale	10,032'	Oil
2nd Bone Spring Sand	10,242'	Oil



## Midland

Lea County, NM (NAD 83 NME)  
Merciless 13 Fed Com  
#510H

OH

Plan: Plan #0.2

## Standard Planning Report

03 November, 2022



Planning Report

<b>Database:</b>	PEDM	<b>Local Co-ordinate Reference:</b>	Well #510H
<b>Company:</b>	Midland	<b>TVD Reference:</b>	kb @ 3504.0usft
<b>Project:</b>	Lea County, NM (NAD 83 NME)	<b>MD Reference:</b>	kb @ 3504.0usft
<b>Site:</b>	Merciless 13 Fed Com	<b>North Reference:</b>	Grid
<b>Well:</b>	#510H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #0.2		

<b>Project</b>	Lea County, NM (NAD 83 NME)		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	New Mexico Eastern Zone		

<b>Site</b>	Merciless 13 Fed Com				
<b>Site Position:</b>		<b>Northing:</b>	414,304.00 usft	<b>Latitude:</b>	32° 8' 13.472 N
<b>From:</b>	Map	<b>Easting:</b>	757,406.00 usft	<b>Longitude:</b>	103° 38' 7.002 W
<b>Position Uncertainty:</b>	0.0 usft	<b>Slot Radius:</b>	13-3/16 "		

<b>Well</b>	#510H					
<b>Well Position</b>	<b>+N/-S</b>	0.0 usft	<b>Northing:</b>	414,303.00 usft	<b>Latitude:</b>	32° 8' 13.192 N
	<b>+E/-W</b>	0.0 usft	<b>Easting:</b>	761,590.00 usft	<b>Longitude:</b>	103° 37' 18.343 W
<b>Position Uncertainty</b>	0.0 usft		<b>Wellhead Elevation:</b>	usft	<b>Ground Level:</b>	3,494.0 usft
<b>Grid Convergence:</b>	0.38 °					

<b>Wellbore</b>	OH				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2020	4/5/2022	6.47	59.79	47,353.12368920

<b>Design</b>	Plan #0.2			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>
	0.0	0.0	0.0	182.26

<b>Plan Survey Tool Program</b>	<b>Date</b>	11/3/2022		
<b>Depth From (usft)</b>	<b>Depth To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Remarks</b>
1	0.0	18,448.8 Plan #0.2 (OH)	EOG MWD+IFR1	
			MWD + IFR1	



Planning Report

<b>Database:</b>	PEDM	<b>Local Co-ordinate Reference:</b>	Well #510H
<b>Company:</b>	Midland	<b>TVD Reference:</b>	kb @ 3504.0usft
<b>Project:</b>	Lea County, NM (NAD 83 NME)	<b>MD Reference:</b>	kb @ 3504.0usft
<b>Site:</b>	Merciless 13 Fed Com	<b>North Reference:</b>	Grid
<b>Well:</b>	#510H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #0.2		

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,303.6	4.07	306.82	1,303.4	4.3	-5.8	2.00	2.00	0.00	306.82	
7,115.4	4.07	306.82	7,100.6	251.7	-336.2	0.00	0.00	0.00	0.00	
7,319.0	0.00	359.99	7,304.0	256.0	-342.0	2.00	-2.00	0.00	180.00	
10,406.5	0.00	359.99	10,391.5	256.0	-342.0	0.00	0.00	0.00	0.00	0.00 KOP(Merciless 13 FC
10,627.0	26.46	180.00	10,604.2	206.0	-342.0	12.00	12.00	-81.65	180.00	FTP(Merciless 13 FC;
11,156.5	90.00	179.66	10,868.9	-221.5	-340.2	12.00	12.00	-0.06	-0.38	
15,909.1	90.00	179.66	10,869.0	-4,974.0	-312.0	0.00	0.00	0.00	0.00	0.00 FED PP(Merciless 13
18,449.2	90.00	179.66	10,869.0	-7,514.0	-297.0	0.00	0.00	0.00	0.00	0.00 PBHL(Merciless 13 Fi



Planning Report

<b>Database:</b>	PEDM	<b>Local Co-ordinate Reference:</b>	Well #510H
<b>Company:</b>	Midland	<b>TVD Reference:</b>	kb @ 3504.0usft
<b>Project:</b>	Lea County, NM (NAD 83 NME)	<b>MD Reference:</b>	kb @ 3504.0usft
<b>Site:</b>	Merciless 13 Fed Com	<b>North Reference:</b>	Grid
<b>Well:</b>	#510H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #0.2		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	2.00	306.82	1,200.0	1.0	-1.4	-1.0	2.00	2.00	0.00
1,303.6	4.07	306.82	1,303.4	4.3	-5.8	-4.1	2.00	2.00	0.00
1,400.0	4.07	306.82	1,399.6	8.4	-11.3	-8.0	0.00	0.00	0.00
1,500.0	4.07	306.82	1,499.3	12.7	-17.0	-12.0	0.00	0.00	0.00
1,600.0	4.07	306.82	1,599.1	16.9	-22.6	-16.0	0.00	0.00	0.00
1,700.0	4.07	306.82	1,698.8	21.2	-28.3	-20.1	0.00	0.00	0.00
1,800.0	4.07	306.82	1,798.6	25.5	-34.0	-24.1	0.00	0.00	0.00
1,900.0	4.07	306.82	1,898.3	29.7	-39.7	-28.1	0.00	0.00	0.00
2,000.0	4.07	306.82	1,998.1	34.0	-45.4	-32.2	0.00	0.00	0.00
2,100.0	4.07	306.82	2,097.8	38.2	-51.1	-36.2	0.00	0.00	0.00
2,200.0	4.07	306.82	2,197.6	42.5	-56.8	-40.2	0.00	0.00	0.00
2,300.0	4.07	306.82	2,297.3	46.7	-62.4	-44.2	0.00	0.00	0.00
2,400.0	4.07	306.82	2,397.1	51.0	-68.1	-48.3	0.00	0.00	0.00
2,500.0	4.07	306.82	2,496.8	55.2	-73.8	-52.3	0.00	0.00	0.00
2,600.0	4.07	306.82	2,596.6	59.5	-79.5	-56.3	0.00	0.00	0.00
2,700.0	4.07	306.82	2,696.3	63.8	-85.2	-60.3	0.00	0.00	0.00
2,800.0	4.07	306.82	2,796.1	68.0	-90.9	-64.4	0.00	0.00	0.00
2,900.0	4.07	306.82	2,895.8	72.3	-96.6	-68.4	0.00	0.00	0.00
3,000.0	4.07	306.82	2,995.5	76.5	-102.2	-72.4	0.00	0.00	0.00
3,100.0	4.07	306.82	3,095.3	80.8	-107.9	-76.5	0.00	0.00	0.00
3,200.0	4.07	306.82	3,195.0	85.0	-113.6	-80.5	0.00	0.00	0.00
3,300.0	4.07	306.82	3,294.8	89.3	-119.3	-84.5	0.00	0.00	0.00
3,400.0	4.07	306.82	3,394.5	93.5	-125.0	-88.5	0.00	0.00	0.00
3,500.0	4.07	306.82	3,494.3	97.8	-130.7	-92.6	0.00	0.00	0.00
3,600.0	4.07	306.82	3,594.0	102.1	-136.3	-96.6	0.00	0.00	0.00
3,700.0	4.07	306.82	3,693.8	106.3	-142.0	-100.6	0.00	0.00	0.00
3,800.0	4.07	306.82	3,793.5	110.6	-147.7	-104.7	0.00	0.00	0.00
3,900.0	4.07	306.82	3,893.3	114.8	-153.4	-108.7	0.00	0.00	0.00
4,000.0	4.07	306.82	3,993.0	119.1	-159.1	-112.7	0.00	0.00	0.00
4,100.0	4.07	306.82	4,092.8	123.3	-164.8	-116.7	0.00	0.00	0.00
4,200.0	4.07	306.82	4,192.5	127.6	-170.5	-120.8	0.00	0.00	0.00
4,300.0	4.07	306.82	4,292.3	131.9	-176.1	-124.8	0.00	0.00	0.00
4,400.0	4.07	306.82	4,392.0	136.1	-181.8	-128.8	0.00	0.00	0.00
4,500.0	4.07	306.82	4,491.8	140.4	-187.5	-132.8	0.00	0.00	0.00
4,600.0	4.07	306.82	4,591.5	144.6	-193.2	-136.9	0.00	0.00	0.00
4,700.0	4.07	306.82	4,691.3	148.9	-198.9	-140.9	0.00	0.00	0.00
4,800.0	4.07	306.82	4,791.0	153.1	-204.6	-144.9	0.00	0.00	0.00
4,900.0	4.07	306.82	4,890.7	157.4	-210.3	-149.0	0.00	0.00	0.00
5,000.0	4.07	306.82	4,990.5	161.6	-215.9	-153.0	0.00	0.00	0.00
5,100.0	4.07	306.82	5,090.2	165.9	-221.6	-157.0	0.00	0.00	0.00
5,200.0	4.07	306.82	5,190.0	170.2	-227.3	-161.0	0.00	0.00	0.00
5,300.0	4.07	306.82	5,289.7	174.4	-233.0	-165.1	0.00	0.00	0.00



Planning Report

<b>Database:</b>	PEDM	<b>Local Co-ordinate Reference:</b>	Well #510H
<b>Company:</b>	Midland	<b>TVD Reference:</b>	kb @ 3504.0usft
<b>Project:</b>	Lea County, NM (NAD 83 NME)	<b>MD Reference:</b>	kb @ 3504.0usft
<b>Site:</b>	Merciless 13 Fed Com	<b>North Reference:</b>	Grid
<b>Well:</b>	#510H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #0.2		

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)	
5,400.0	4.07	306.82	5,389.5	178.7	-238.7	-169.1	0.00	0.00	0.00	
5,500.0	4.07	306.82	5,489.2	182.9	-244.4	-173.1	0.00	0.00	0.00	
5,600.0	4.07	306.82	5,589.0	187.2	-250.1	-177.2	0.00	0.00	0.00	
5,700.0	4.07	306.82	5,688.7	191.4	-255.7	-181.2	0.00	0.00	0.00	
5,800.0	4.07	306.82	5,788.5	195.7	-261.4	-185.2	0.00	0.00	0.00	
5,900.0	4.07	306.82	5,888.2	199.9	-267.1	-189.2	0.00	0.00	0.00	
6,000.0	4.07	306.82	5,988.0	204.2	-272.8	-193.3	0.00	0.00	0.00	
6,100.0	4.07	306.82	6,087.7	208.5	-278.5	-197.3	0.00	0.00	0.00	
6,200.0	4.07	306.82	6,187.5	212.7	-284.2	-201.3	0.00	0.00	0.00	
6,300.0	4.07	306.82	6,287.2	217.0	-289.9	-205.3	0.00	0.00	0.00	
6,400.0	4.07	306.82	6,387.0	221.2	-295.5	-209.4	0.00	0.00	0.00	
6,500.0	4.07	306.82	6,486.7	225.5	-301.2	-213.4	0.00	0.00	0.00	
6,600.0	4.07	306.82	6,586.5	229.7	-306.9	-217.4	0.00	0.00	0.00	
6,700.0	4.07	306.82	6,686.2	234.0	-312.6	-221.5	0.00	0.00	0.00	
6,800.0	4.07	306.82	6,786.0	238.2	-318.3	-225.5	0.00	0.00	0.00	
6,900.0	4.07	306.82	6,885.7	242.5	-324.0	-229.5	0.00	0.00	0.00	
7,000.0	4.07	306.82	6,985.4	246.8	-329.6	-233.5	0.00	0.00	0.00	
7,100.0	4.07	306.82	7,085.2	251.0	-335.3	-237.6	0.00	0.00	0.00	
7,115.4	4.07	306.82	7,100.6	251.7	-336.2	-238.2	0.00	0.00	0.00	
7,200.0	2.38	306.82	7,185.0	254.5	-340.0	-240.9	2.00	-2.00	0.00	
7,300.0	0.38	306.82	7,285.0	256.0	-341.9	-242.3	2.00	-2.00	0.00	
7,319.0	0.00	359.99	7,304.0	256.0	-342.0	-242.3	2.00	-2.00	0.00	
7,400.0	0.00	0.00	7,385.0	256.0	-342.0	-242.3	0.00	0.00	0.00	
7,500.0	0.00	0.00	7,485.0	256.0	-342.0	-242.3	0.00	0.00	0.00	
7,600.0	0.00	0.00	7,585.0	256.0	-342.0	-242.3	0.00	0.00	0.00	
7,700.0	0.00	0.00	7,685.0	256.0	-342.0	-242.3	0.00	0.00	0.00	
7,800.0	0.00	0.00	7,785.0	256.0	-342.0	-242.3	0.00	0.00	0.00	
7,900.0	0.00	0.00	7,885.0	256.0	-342.0	-242.3	0.00	0.00	0.00	
8,000.0	0.00	0.00	7,985.0	256.0	-342.0	-242.3	0.00	0.00	0.00	
8,100.0	0.00	0.00	8,085.0	256.0	-342.0	-242.3	0.00	0.00	0.00	
8,200.0	0.00	0.00	8,185.0	256.0	-342.0	-242.3	0.00	0.00	0.00	
8,300.0	0.00	0.00	8,285.0	256.0	-342.0	-242.3	0.00	0.00	0.00	
8,400.0	0.00	0.00	8,385.0	256.0	-342.0	-242.3	0.00	0.00	0.00	
8,500.0	0.00	0.00	8,485.0	256.0	-342.0	-242.3	0.00	0.00	0.00	
8,600.0	0.00	0.00	8,585.0	256.0	-342.0	-242.3	0.00	0.00	0.00	
8,700.0	0.00	0.00	8,685.0	256.0	-342.0	-242.3	0.00	0.00	0.00	
8,800.0	0.00	0.00	8,785.0	256.0	-342.0	-242.3	0.00	0.00	0.00	
8,900.0	0.00	0.00	8,885.0	256.0	-342.0	-242.3	0.00	0.00	0.00	
9,000.0	0.00	0.00	8,985.0	256.0	-342.0	-242.3	0.00	0.00	0.00	
9,100.0	0.00	0.00	9,085.0	256.0	-342.0	-242.3	0.00	0.00	0.00	
9,200.0	0.00	0.00	9,185.0	256.0	-342.0	-242.3	0.00	0.00	0.00	
9,300.0	0.00	0.00	9,285.0	256.0	-342.0	-242.3	0.00	0.00	0.00	
9,400.0	0.00	0.00	9,385.0	256.0	-342.0	-242.3	0.00	0.00	0.00	
9,500.0	0.00	0.00	9,485.0	256.0	-342.0	-242.3	0.00	0.00	0.00	
9,600.0	0.00	0.00	9,585.0	256.0	-342.0	-242.3	0.00	0.00	0.00	
9,700.0	0.00	0.00	9,685.0	256.0	-342.0	-242.3	0.00	0.00	0.00	
9,800.0	0.00	0.00	9,785.0	256.0	-342.0	-242.3	0.00	0.00	0.00	
9,900.0	0.00	0.00	9,885.0	256.0	-342.0	-242.3	0.00	0.00	0.00	
10,000.0	0.00	0.00	9,985.0	256.0	-342.0	-242.3	0.00	0.00	0.00	
10,100.0	0.00	0.00	10,085.0	256.0	-342.0	-242.3	0.00	0.00	0.00	
10,200.0	0.00	0.00	10,185.0	256.0	-342.0	-242.3	0.00	0.00	0.00	
10,300.0	0.00	0.00	10,285.0	256.0	-342.0	-242.3	0.00	0.00	0.00	
10,406.5	0.00	359.99	10,391.5	256.0	-342.0	-242.3	0.00	0.00	0.00	
10,425.0	2.22	180.00	10,410.0	255.6	-342.0	-241.9	12.00	12.00	0.00	



Planning Report

<b>Database:</b>	PEDM	<b>Local Co-ordinate Reference:</b>	Well #510H
<b>Company:</b>	Midland	<b>TVD Reference:</b>	kb @ 3504.0usft
<b>Project:</b>	Lea County, NM (NAD 83 NME)	<b>MD Reference:</b>	kb @ 3504.0usft
<b>Site:</b>	Merciless 13 Fed Com	<b>North Reference:</b>	Grid
<b>Well:</b>	#510H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #0.2		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
10,450.0	5.22	180.00	10,434.9	254.0	-342.0	-240.3	12.00	12.00	0.00
10,475.0	8.22	180.00	10,459.7	251.1	-342.0	-237.4	12.00	12.00	0.00
10,500.0	11.22	180.00	10,484.4	246.9	-342.0	-233.2	12.00	12.00	0.00
10,525.0	14.22	180.00	10,508.8	241.4	-342.0	-227.7	12.00	12.00	0.00
10,550.0	17.22	180.00	10,532.8	234.6	-342.0	-220.9	12.00	12.00	0.00
10,575.0	20.22	180.00	10,556.5	226.6	-342.0	-212.9	12.00	12.00	0.00
10,600.0	23.22	180.00	10,579.7	217.3	-342.0	-203.6	12.00	12.00	0.00
10,627.0	26.46	180.00	10,604.2	206.0	-342.0	-192.3	12.00	12.00	0.00
10,650.0	29.22	179.96	10,624.6	195.2	-342.0	-181.6	12.00	12.00	-0.16
10,675.0	32.22	179.93	10,646.1	182.5	-342.0	-168.8	12.00	12.00	-0.14
10,700.0	35.22	179.90	10,666.8	168.6	-342.0	-155.0	12.00	12.00	-0.12
10,725.0	38.22	179.87	10,686.9	153.7	-341.9	-140.0	12.00	12.00	-0.10
10,750.0	41.22	179.85	10,706.1	137.7	-341.9	-124.1	12.00	12.00	-0.09
10,775.0	44.22	179.83	10,724.5	120.7	-341.8	-107.1	12.00	12.00	-0.08
10,800.0	47.22	179.82	10,741.9	102.8	-341.8	-89.2	12.00	12.00	-0.07
10,825.0	50.22	179.80	10,758.4	84.0	-341.7	-70.5	12.00	12.00	-0.06
10,850.0	53.22	179.79	10,773.9	64.4	-341.7	-50.9	12.00	12.00	-0.06
10,875.0	56.22	179.77	10,788.3	44.0	-341.6	-30.5	12.00	12.00	-0.05
10,900.0	59.22	179.76	10,801.7	22.9	-341.5	-9.4	12.00	12.00	-0.05
10,925.0	62.22	179.75	10,813.9	1.1	-341.4	12.4	12.00	12.00	-0.05
10,950.0	65.22	179.74	10,825.0	-21.3	-341.3	34.8	12.00	12.00	-0.04
10,975.0	68.22	179.73	10,834.9	-44.3	-341.2	57.7	12.00	12.00	-0.04
11,000.0	71.22	179.72	10,843.5	-67.8	-341.1	81.2	12.00	12.00	-0.04
11,025.0	74.22	179.71	10,851.0	-91.6	-341.0	105.0	12.00	12.00	-0.04
11,050.0	77.22	179.70	10,857.1	-115.8	-340.8	129.2	12.00	12.00	-0.04
11,075.0	80.22	179.69	10,862.0	-140.4	-340.7	153.7	12.00	12.00	-0.04
11,100.0	83.22	179.68	10,865.6	-165.1	-340.6	178.4	12.00	12.00	-0.04
11,125.0	86.22	179.67	10,867.9	-190.0	-340.4	203.3	12.00	12.00	-0.04
11,150.0	89.22	179.66	10,868.9	-215.0	-340.3	228.2	12.00	12.00	-0.04
11,156.5	90.00	179.66	10,868.9	-221.5	-340.2	234.7	12.00	12.00	-0.04
11,200.0	90.00	179.66	10,868.9	-265.0	-340.0	278.2	0.00	0.00	0.00
11,300.0	90.00	179.66	10,868.9	-365.0	-339.4	378.1	0.00	0.00	0.00
11,400.0	90.00	179.66	10,868.9	-465.0	-338.8	478.0	0.00	0.00	0.00
11,500.0	90.00	179.66	10,868.9	-565.0	-338.2	577.9	0.00	0.00	0.00
11,600.0	90.00	179.66	10,868.9	-665.0	-337.6	677.8	0.00	0.00	0.00
11,700.0	90.00	179.66	10,869.0	-765.0	-337.0	777.7	0.00	0.00	0.00
11,800.0	90.00	179.66	10,869.0	-864.9	-336.4	877.6	0.00	0.00	0.00
11,900.0	90.00	179.66	10,869.0	-964.9	-335.8	977.5	0.00	0.00	0.00
12,000.0	90.00	179.66	10,869.0	-1,064.9	-335.2	1,077.4	0.00	0.00	0.00
12,100.0	90.00	179.66	10,869.0	-1,164.9	-334.6	1,177.3	0.00	0.00	0.00
12,200.0	90.00	179.66	10,869.0	-1,264.9	-334.0	1,277.1	0.00	0.00	0.00
12,300.0	90.00	179.66	10,869.0	-1,364.9	-333.4	1,377.0	0.00	0.00	0.00
12,400.0	90.00	179.66	10,869.0	-1,464.9	-332.9	1,476.9	0.00	0.00	0.00
12,500.0	90.00	179.66	10,869.0	-1,564.9	-332.3	1,576.8	0.00	0.00	0.00
12,600.0	90.00	179.66	10,869.0	-1,664.9	-331.7	1,676.7	0.00	0.00	0.00
12,700.0	90.00	179.66	10,869.0	-1,764.9	-331.1	1,776.6	0.00	0.00	0.00
12,800.0	90.00	179.66	10,869.0	-1,864.9	-330.5	1,876.5	0.00	0.00	0.00
12,900.0	90.00	179.66	10,869.0	-1,964.9	-329.9	1,976.4	0.00	0.00	0.00
13,000.0	90.00	179.66	10,869.0	-2,064.9	-329.3	2,076.3	0.00	0.00	0.00
13,100.0	90.00	179.66	10,869.0	-2,164.9	-328.7	2,176.2	0.00	0.00	0.00
13,200.0	90.00	179.66	10,869.0	-2,264.9	-328.1	2,276.1	0.00	0.00	0.00
13,300.0	90.00	179.66	10,869.0	-2,364.9	-327.5	2,376.0	0.00	0.00	0.00
13,400.0	90.00	179.66	10,869.0	-2,464.9	-326.9	2,475.9	0.00	0.00	0.00
13,500.0	90.00	179.66	10,869.0	-2,564.9	-326.3	2,575.8	0.00	0.00	0.00



Planning Report

<b>Database:</b>	PEDM	<b>Local Co-ordinate Reference:</b>	Well #510H
<b>Company:</b>	Midland	<b>TVD Reference:</b>	kb @ 3504.0usft
<b>Project:</b>	Lea County, NM (NAD 83 NME)	<b>MD Reference:</b>	kb @ 3504.0usft
<b>Site:</b>	Merciless 13 Fed Com	<b>North Reference:</b>	Grid
<b>Well:</b>	#510H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #0.2		

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)	
13,600.0	90.00	179.66	10,869.0	-2,664.9	-325.7	2,675.7	0.00	0.00	0.00	
13,700.0	90.00	179.66	10,869.0	-2,764.9	-325.1	2,775.6	0.00	0.00	0.00	
13,800.0	90.00	179.66	10,869.0	-2,864.9	-324.5	2,875.5	0.00	0.00	0.00	
13,900.0	90.00	179.66	10,869.0	-2,964.9	-323.9	2,975.4	0.00	0.00	0.00	
14,000.0	90.00	179.66	10,869.0	-3,064.9	-323.3	3,075.3	0.00	0.00	0.00	
14,100.0	90.00	179.66	10,869.0	-3,164.9	-322.8	3,175.2	0.00	0.00	0.00	
14,200.0	90.00	179.66	10,869.0	-3,264.9	-322.2	3,275.1	0.00	0.00	0.00	
14,300.0	90.00	179.66	10,869.0	-3,364.9	-321.6	3,375.0	0.00	0.00	0.00	
14,400.0	90.00	179.66	10,869.0	-3,464.9	-321.0	3,474.9	0.00	0.00	0.00	
14,500.0	90.00	179.66	10,869.0	-3,564.9	-320.4	3,574.8	0.00	0.00	0.00	
14,600.0	90.00	179.66	10,869.0	-3,664.9	-319.8	3,674.7	0.00	0.00	0.00	
14,700.0	90.00	179.66	10,869.0	-3,764.9	-319.2	3,774.6	0.00	0.00	0.00	
14,800.0	90.00	179.66	10,869.0	-3,864.9	-318.6	3,874.5	0.00	0.00	0.00	
14,900.0	90.00	179.66	10,869.0	-3,964.9	-318.0	3,974.4	0.00	0.00	0.00	
15,000.0	90.00	179.66	10,869.0	-4,064.9	-317.4	4,074.3	0.00	0.00	0.00	
15,100.0	90.00	179.66	10,869.0	-4,164.9	-316.8	4,174.2	0.00	0.00	0.00	
15,200.0	90.00	179.66	10,869.0	-4,264.9	-316.2	4,274.1	0.00	0.00	0.00	
15,300.0	90.00	179.66	10,869.0	-4,364.9	-315.6	4,373.9	0.00	0.00	0.00	
15,400.0	90.00	179.66	10,869.0	-4,464.9	-315.0	4,473.8	0.00	0.00	0.00	
15,500.0	90.00	179.66	10,869.0	-4,564.9	-314.4	4,573.7	0.00	0.00	0.00	
15,600.0	90.00	179.66	10,869.0	-4,664.9	-313.8	4,673.6	0.00	0.00	0.00	
15,700.0	90.00	179.66	10,869.0	-4,764.9	-313.2	4,773.5	0.00	0.00	0.00	
15,800.0	90.00	179.66	10,869.0	-4,864.9	-312.6	4,873.4	0.00	0.00	0.00	
15,909.1	90.00	179.66	10,869.0	-4,974.0	-312.0	4,982.4	0.00	0.00	0.00	
16,000.0	90.00	179.66	10,869.0	-5,064.9	-311.5	5,073.2	0.00	0.00	0.00	
16,100.0	90.00	179.66	10,869.0	-5,164.9	-310.9	5,173.1	0.00	0.00	0.00	
16,200.0	90.00	179.66	10,869.0	-5,264.9	-310.3	5,273.0	0.00	0.00	0.00	
16,300.0	90.00	179.66	10,869.0	-5,364.9	-309.7	5,372.9	0.00	0.00	0.00	
16,400.0	90.00	179.66	10,869.0	-5,464.9	-309.1	5,472.8	0.00	0.00	0.00	
16,500.0	90.00	179.66	10,869.0	-5,564.9	-308.5	5,572.7	0.00	0.00	0.00	
16,600.0	90.00	179.66	10,869.0	-5,664.9	-307.9	5,672.6	0.00	0.00	0.00	
16,700.0	90.00	179.66	10,869.0	-5,764.9	-307.3	5,772.5	0.00	0.00	0.00	
16,800.0	90.00	179.66	10,869.0	-5,864.9	-306.7	5,872.4	0.00	0.00	0.00	
16,900.0	90.00	179.66	10,869.0	-5,964.9	-306.1	5,972.3	0.00	0.00	0.00	
17,000.0	90.00	179.66	10,869.0	-6,064.9	-305.5	6,072.2	0.00	0.00	0.00	
17,100.0	90.00	179.66	10,869.0	-6,164.9	-304.9	6,172.1	0.00	0.00	0.00	
17,200.0	90.00	179.66	10,869.0	-6,264.9	-304.3	6,272.0	0.00	0.00	0.00	
17,300.0	90.00	179.66	10,869.0	-6,364.9	-303.7	6,371.9	0.00	0.00	0.00	
17,400.0	90.00	179.66	10,869.0	-6,464.9	-303.1	6,471.8	0.00	0.00	0.00	
17,500.0	90.00	179.66	10,869.0	-6,564.8	-302.5	6,571.7	0.00	0.00	0.00	
17,600.0	90.00	179.66	10,869.0	-6,664.8	-302.0	6,671.6	0.00	0.00	0.00	
17,700.0	90.00	179.66	10,869.0	-6,764.8	-301.4	6,771.5	0.00	0.00	0.00	
17,800.0	90.00	179.66	10,869.0	-6,864.8	-300.8	6,871.4	0.00	0.00	0.00	
17,900.0	90.00	179.66	10,869.0	-6,964.8	-300.2	6,971.3	0.00	0.00	0.00	
18,000.0	90.00	179.66	10,869.0	-7,064.8	-299.6	7,071.2	0.00	0.00	0.00	
18,100.0	90.00	179.66	10,869.0	-7,164.8	-299.0	7,171.1	0.00	0.00	0.00	
18,200.0	90.00	179.66	10,869.0	-7,264.8	-298.4	7,271.0	0.00	0.00	0.00	
18,300.0	90.00	179.66	10,869.0	-7,364.8	-297.8	7,370.9	0.00	0.00	0.00	
18,400.0	90.00	179.66	10,869.0	-7,464.8	-297.2	7,470.7	0.00	0.00	0.00	
18,449.2	90.00	179.66	10,869.0	-7,514.0	-297.0	7,519.9	0.00	0.00	0.00	



Planning Report

<b>Database:</b>	PEDM	<b>Local Co-ordinate Reference:</b>	Well #510H
<b>Company:</b>	Midland	<b>TVD Reference:</b>	kb @ 3504.0usft
<b>Project:</b>	Lea County, NM (NAD 83 NME)	<b>MD Reference:</b>	kb @ 3504.0usft
<b>Site:</b>	Merciless 13 Fed Com	<b>North Reference:</b>	Grid
<b>Well:</b>	#510H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #0.2		

Design Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
- Shape									
KOP(Merciless 13 FC#5 - plan hits target center - Point	0.00	0.00	10,391.5	256.0	-342.0	414,559.00	761,248.00	32° 8' 15.747 N	103° 37' 22.301 W
FTP(Merciless 13 FC#5 - plan hits target center - Point	0.00	0.00	10,604.2	206.0	-342.0	414,509.00	761,248.00	32° 8' 15.252 N	103° 37' 22.305 W
FED PP(Merciless 13 FC - plan hits target center - Point	0.00	0.00	10,869.0	-4,974.0	-312.0	409,329.00	761,278.00	32° 7' 23.992 N	103° 37' 22.353 W
PBHL(Merciless 13 FC# - plan hits target center - Point	0.00	0.00	10,869.0	-7,514.0	-297.0	406,789.00	761,293.00	32° 6' 58.857 N	103° 37' 22.373 W



Lea County, NM (NAD 83 NME)

Merciless 13 Fed Com #510H

Plan #0.2

PROJECT DETAILS: Lea County, NM (NAD 83 NME)

Geodetic System: US State Plane 1983  
 Datum: North American Datum 1983  
 Ellipsoid: GRS 1980  
 Zone: New Mexico Eastern Zone  
 System Datum: Mean Sea Level



Azimuths to Grid North  
 True North: -0.38°  
 Magnetic North: 6.09°

Magnetic Field  
 Strength: 47353.1nT  
 Dip Angle: 69.79°  
 Date: 4/5/2022  
 Model: IGRF2020

To convert a Magnetic Direction to a Grid Direction, Add 6.09°  
 To convert a Magnetic Direction to a True Direction, Add 6.47° East  
 To convert a True Direction to a Grid Direction, Subtract 0.38°

WELL DETAILS: #510H

kb @ 3504.0usft				3494.0
Northing	Easting	Latitude	Longitude	
414303.00	761590.00	32° 8' 13.192 N	103° 37' 18.343 W	

SECTION DETAILS

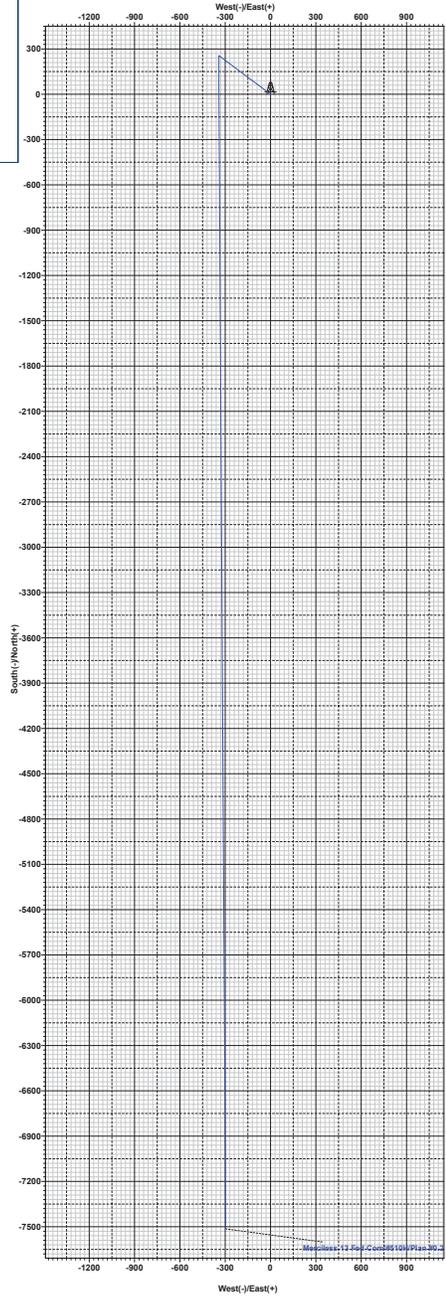
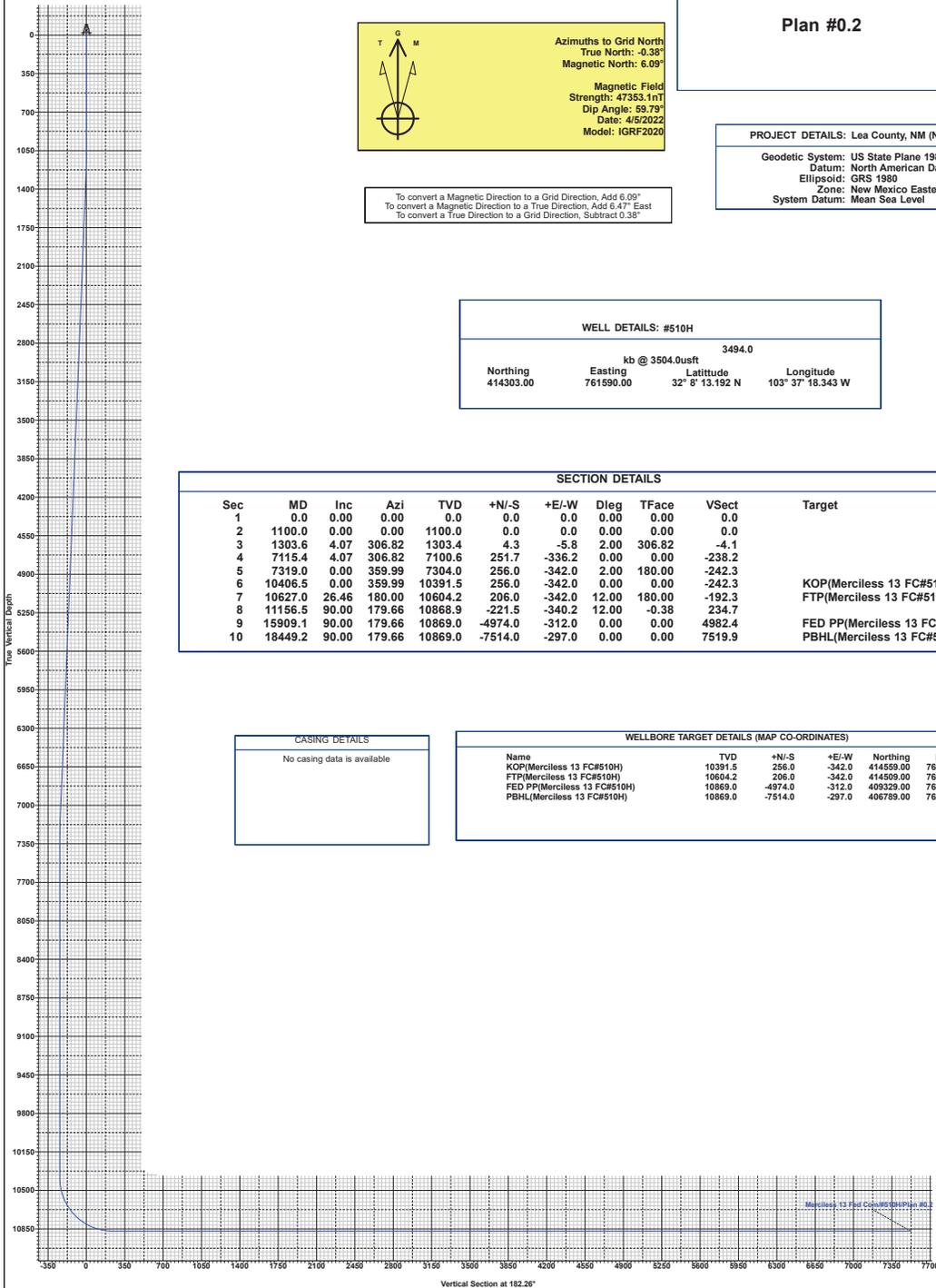
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	1100.0	0.00	0.00	1100.0	0.0	0.0	0.00	0.00	0.0	
3	1303.6	4.07	306.82	1303.4	4.3	-5.8	2.00	306.82	-4.1	
4	7115.4	4.07	306.82	7100.6	251.7	-336.2	0.00	0.00	-238.2	
5	7319.0	0.00	359.99	7304.0	256.0	-342.0	2.00	180.00	-242.3	
6	10406.5	0.00	359.99	10391.5	256.0	-342.0	0.00	0.00	-242.3	KOP(Merciless 13 FC#510H)
7	10627.0	26.46	180.00	10604.2	206.0	-342.0	12.00	180.00	-192.3	FTP(Merciless 13 FC#510H)
8	11156.5	90.00	179.66	10868.9	-221.5	-340.2	12.00	-0.38	234.7	
9	15909.1	90.00	179.66	10869.0	-4974.0	-312.0	0.00	0.00	4982.4	FED PP(Merciless 13 FC#510H)
10	18449.2	90.00	179.66	10869.0	-7514.0	-297.0	0.00	0.00	7519.9	PBHL(Merciless 13 FC#510H)

CASING DETAILS

No casing data is available

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N/-S	+E/-W	Northing	Easting
KOP(Merciless 13 FC#510H)	10391.5	256.0	-342.0	414559.00	761248.00
FTP(Merciless 13 FC#510H)	10604.2	206.0	-342.0	414559.00	761248.00
FED PP(Merciless 13 FC#510H)	10869.0	-4974.0	-312.0	409329.00	761278.00
PBHL(Merciless 13 FC#510H)	10869.0	-7514.0	-297.0	406789.00	761293.00



Lea County, NM (NAD 83 NME)  
 Merciless 13 Fed Com #510H  
 Plan #0.2  
 Date: 1/24/2023  
 11:47:00 AM

**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 179087

**CONDITIONS**

Operator: EOG RESOURCES INC P.O. Box 2267 Midland, TX 79702	OGRID: 7377
	Action Number: 179087
	Action Type: [C-103] NOI Change of Plans (C-103A)

**CONDITIONS**

Created By	Condition	Condition Date
pkautz	None	1/27/2023