

Form 3160-5
(June 2019)UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENTFORM 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. **NMNM60354**
6. If Indian, Allottee or Tribe Name**SUBMIT IN TRIPLICATE - Other instructions on page 2**

1. Type of Well

☒ Oil Well ☐ Gas Well ☐ Other2. Name of Operator **EOG RESOURCES INCORPORATED**3a. Address **1111 BAGBY SKY LOBBY 2, HOUSTON, TX 770** 3b. Phone No. (include area code)
(713) 651-70004. Location of Well (Footage, Sec., T., R., M., or Survey Description)
SEC 18/T26S/R31E/NMP

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

8. Well Name and No. **CASSIDY 18 FED COM/778H**9. API Well No. **30-015-47948**10. Field and Pool or Exploratory Area
PURPLE SAGE; WOLFCAMP (GAS)11. Country or Parish, State
EDDY/NM

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	
☐ Subsequent Report	☐ Alter Casing	☐ Hydraulic Fracturing	☐ Reclamation	☐ Well Integrity	
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☒ Other	
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon		
	☐ 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 recompleat 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 recompleat 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.)

EOG respectfully requests an amendment to our approved APD for this well to reflect the following changes:

Change SHL from T-26-S, R-31-E, Sec 18, 912' FSL, 863' FWL, Eddy Co., NM,
to T-26-S, R-31-E, Sec 18, 794' FSL, 682' FWL, Eddy Co., N.M.

Change BHL from T-26-S, R-31-E, Sec 7, 230' FNL, 540' FWL, Eddy Co., NM,
to T-26-S, R-31-E, Sec 7, 230' FNL, 540' FWL, Eddy Co., N.M.

Update casing and cement program to current design.

Update HSU to 1280 acres.

14. The drilling program necessary for new casing design and cement program is not attached. Returned by Keith Immatty on 3-4-22.
STAR HARRELL / Ph: (432) 848-9161 Regulatory Specialist

Signature

Date

03/05/2022

THE SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by

CHRISTOPHER WALLS / Ph: (575) 234-2234 / Approved

Title Petroleum Engineer

Date 03/08/2022

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 CARLSBAD

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: LOT 4 / 912 FSL / 863 FWL / TWSP: 26S / RANGE: 31E / SECTION: 18 / LAT: 32.037859 / LONG: -103.823369 (TVD: 0 feet, MD: 0 feet)

PPP: LOT 4 / 330 FSL / 330 FWL / TWSP: 26S / RANGE: 31E / SECTION: 18 / LAT: 32.036247 / LONG: -103.825088 (TVD: 12134 feet, MD: 12291 feet)

BHL: LOT 1 / 230 FNL / 330 FWL / TWSP: 26S / RANGE: 31E / SECTION: 7 / LAT: 32.064012 / LONG: -103.825101 (TVD: 12177 feet, MD: 22397 feet)

CONFIDENTIAL

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) 476-3460 Fax: (505) 476-3462

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

Form C-102

Revised August 1, 2011

Submit one copy to appropriate
District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number 30-015-47948		Pool Code 98220	Pool Name Purple Sage; Wolfcamp (Gas)
Property Code 329880	Property Name CASSIDY 18 FED COM		Well Number 778H
OGRID No. 7377	Operator Name EOG RESOURCES, INC.		Elevation 3184'

Surface Location

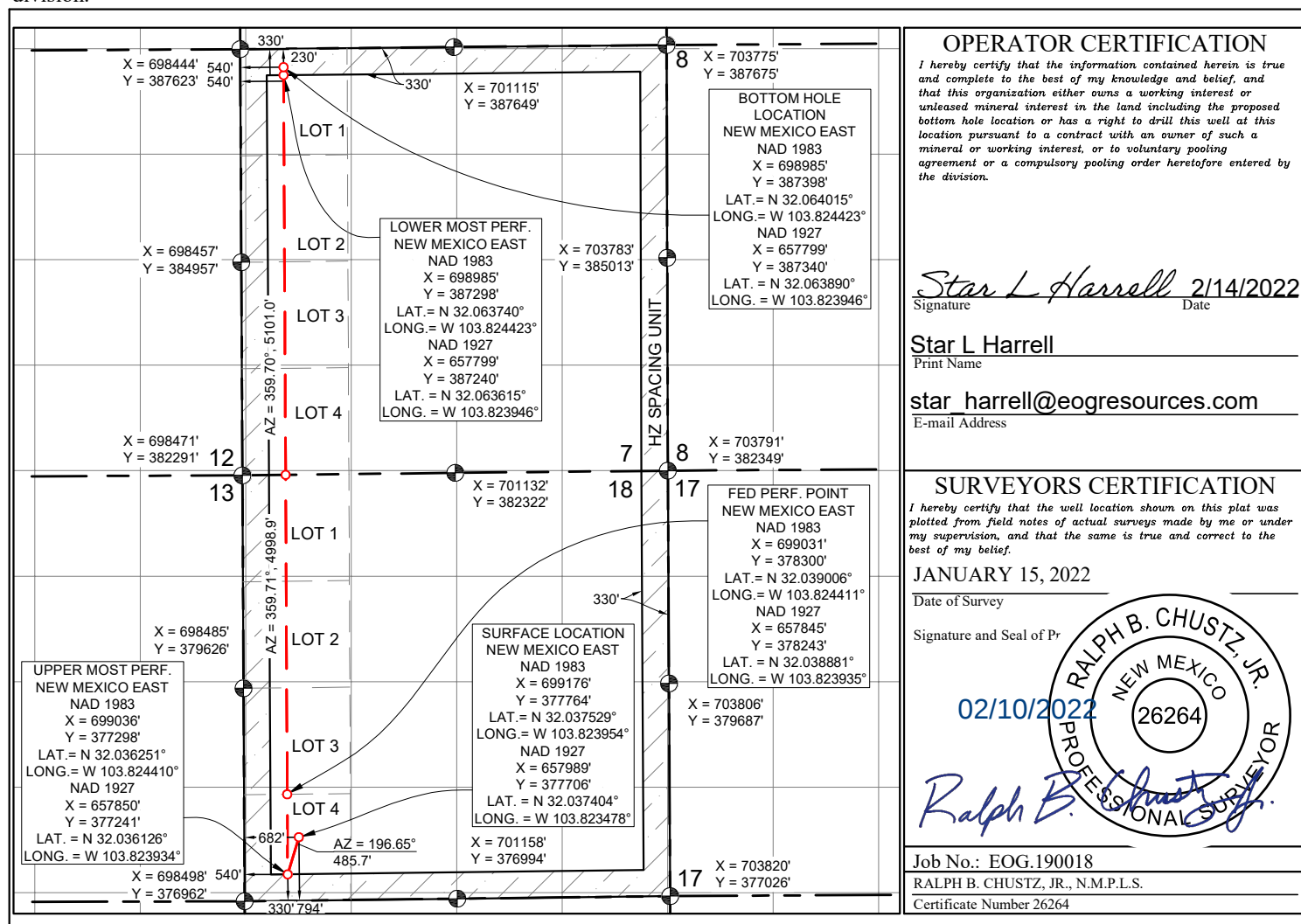
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
4	18	26 S	31 E		794	SOUTH	682	WEST	EDDY

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
1	7	26 S	31 E		230	NORTH	540	WEST	EDDY

Dedicated Acres	Joint or Infill	Consolidated Code	Order No.
1280.4			

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.





Cassidy 18 Fed Com 778H

Revised Permit Information 01/25/2022:

Well Name: Cassidy 18 Fed Com 778H

Location: SHL: 794' FSL & 682' FWL, Section 18, T-26-S, R-31-E, Eddy Co., N.M.

BHL: 230' FNL & 540' FWL, Section 7, T-26-S, R-31-E, Eddy Co., N.M.

Casing Program:

Hole Size	Interval	Csg OD	Weight	Grade	Conn	DFmin Collapse	DFmin Burst	DFmin Tension
12.25"	0' - 890'	9.625"	36#	J-55	LTC	1.125	1.25	1.6
8.75"	0' - 11,080'	7.625"	29.7#	HCP-110	FXL	1.125	1.25	1.6
6.75"	0' - 10,580'	5.5"	20#	P110-EC	DWC/C IS MS	1.125	1.25	1.6
6.75"	10,580' - 11,080'	5.5"	20#	P110-EC	Vam Sprint SF	1.125	1.25	1.6
6.75"	11,080' - 22,492'	5.5"	20#	P110-EC	DWC/C IS MS	1.125	1.25	1.6

Variance is requested to waive the centralizer requirements for the 7-5/8" casing in the 8-3/4" hole size. An expansion additive will be utilized, in the cement slurry, for the entire length of the 8-3/4" 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.

Variance is also requested to waive the annular clearance requirements for the 5-1/2" casing by 7-5/8" casing annulus to the proposed top of cement.

EOG requests permission to allow deviation from the 0.422" annulus clearance requirement from Onshore Order #2 under the following conditions:

- Annular clearance to meet or exceed 0.422" between intermediate casing ID and production casing coupling only on the first 500' overlap between both casing strings.
- Annular clearance less than 0.422" is acceptable for the production open hole section.

Cementing Program:

Depth	No. Sacks	Wt. ppg	Yld Ft3/sk	Slurry Description
890' 9-5/8"	260	13.5	1.73	Lead: Class C + 4.0% Bentonite Gel + 0.5% CaCl ₂ + 0.25 lb/sk Cello-Flake (TOC @ Surface)
	80	14.8	1.34	Tail: Class C + 0.6% FL-62 + 0.25 lb/sk Cello-Flake + 0.2% Sodium Metasilicate (TOC @ 690')
11,080' 7-5/8"	460	14.2	1.11	1st Stage (Tail): Class C + 0.6% Halad-9 + 0.45% HR-601 + 3% Microbond (TOC @ 7,157')
	1000	14.8	1.5	2nd Stage (Bradenhead squeeze): Class C + 3% Salt + 1% PreMag-M + 6% Bentonite Gel (TOC @ surface)
22,492' 5-1/2"	1010	14.2	1.31	Lead: Class H + 0.4% Halad-344 + 0.35% HR-601 + 3% Microbond (TOC @ 10,580')



Cassidy 18 Fed Com 778H

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

EOG requests variance from minimum standards to pump a two stage cement job on the 7-5/8" intermediate casing string with the first stage being pumped conventionally with the calculated top of cement at the Brushy Canyon (7,357') and the second stage performed as a bradenhead squeeze with planned cement from the Brushy Canyon to surface. If necessary, a top out consisting of sacks of Class C cement + 3% Salt + 1% PreMag-M + 6% Bentonite Gel (2.30 yld, 12.91 ppg) will be executed as a contingency. Top will be verified by Echo-meter.

EOG will include the Echo-meter verified fluid top and the volume of displacement fluid above the cement slurry in the annulus in all post-drill sundries on wells utilizing this cement program.

EOG will report to the BLM the volume of fluid (limited to 5 bbls) used to flush intermediate casing valves following backside cementing procedures.

Mud Program:

Depth	Type	Weight (ppg)	Viscosity	Water Loss
0 – 890'	Fresh - Gel	8.6-8.8	28-34	N/c
890' – 11,080'	Brine	10.0-10.2	28-34	N/c
11,080' – 11,838'	Oil Base	8.7-9.4	58-68	N/c - 6
11,838' – 22,492'	Oil Base	10.0-14.0	58-68	4 - 6



Cassidy 18 Fed Com 778H

Wellhead:

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.i) to allow a testing schedule of the blow out preventer (BOP) and blow out prevention equipment (BOPE) to include the following:

- Full BOPE test at first installation on the pad.
- Full BOPE test every 30 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 production sections that do not penetrate the Wolfcamp or deeper formations.
- After the well section is cemented the BOP will be disconnected from the wellhead and walked with the rig to another well on the pad. The cemented well will be secured with a blind flange and a pressure gauge for monitoring.



Cassidy 18 Fed Com 778H

794' FSL
682' FWL
Section 18
T-26-S, R-31-E

Revised Wellbore

KB: 3209'
GL: 3184'

API: 30-015-47878

Bit Size: 12-1/4"
9-5/8", 36#, J-55, LTC, 0' - 890'

Bit Size: 8-3/4"
7-5/8", 29.7#, HCP-110, FXL, 0' - 11,080'

Bit Size: 6-3/4"
5-1/2", 20#, P110-EC, DWC/C IS MS, @ 0' - 10,580'
5-1/2", 20#, P110-EC, Vam Sprint SF, @ 10,580' - 11,080'
5-1/2", 20#, P110-EC, DWC/C IS MS, @ 11,080' - 22,492'

TOC: 10,580'

Lateral: 22,492' MD, 12,251' TVD
Upper Most Perf:
330' FSL & 540' FWL Sec. 18
Lower Most Perf:
330' FNL & 540' FWL Sec. 7
BH Location: 230' FNL & 540' FWL
Sec. 7
T-26-S R-31-E

KOP: 11,838'



Cassidy 18 Fed Com 778H

Design B**4. CASING PROGRAM**

Hole Size	Interval	Csg OD	Weight	Grade	Conn	DFmin Collapse	DFmin Burst	DFmin Tension
13"	0' - 890'	10.75"	40.5#	J-55	STC	1.125	1.25	1.6
9.875"	0' - 11,080'	8.75"	38.5#	P110-EC	Vam Sprint-SF	1.125	1.25	1.6
7.875"	0' - 22,492'	6"	24#	P110-HP	Eagle SFH SC	1.125	1.25	1.6

Variance is requested to waive the centralizer requirements for the 8-3/4" casing in the 9-7/8" hole size. An expansion additive will be utilized, in the cement slurry, for the entire length of the 9-7/8" hole interval to maximize cement bond and zonal isolation.

Variance is also requested to waive any centralizer requirements for the 6" casing in the 7-7/8" hole size. An expansion additive will be utilized, in the cement slurry, for the entire length of the 7-7/8" hole interval to maximize cement bond and zonal isolation.

Variance is also requested to waive the annular clearance requirements for the 6" casing by 8-3/4" casing annulus to the proposed top of cement.

EOG requests permission to allow deviation from the 0.422" annulus clearance requirement from Onshore Order #2 under the following conditions:

- Annular clearance to meet or exceed 0.422" between intermediate casing ID and production casing coupling only on the first 500' overlap between both casing strings.
- Annular clearance less than 0.422" is acceptable for the production open hole section.

Cementing Program:

Depth	No. Sacks	Wt. ppg	Yld Ft3/sk	Slurry Description
890' 13"	240	13.5	1.73	Lead: Class C + 4.0% Bentonite Gel + 0.5% CaCl ₂ + 0.25 lb/sk Cello-Flake (TOC @ Surface)
	70	14.8	1.34	Tail: Class C + 0.6% FL-62 + 0.25 lb/sk Cello-Flake + 0.2% Sodium Metasilicate (TOC @ 690')
11,080' 9.875"	520	14.2	1.11	1st Stage (Tail): Class C + 0.6% Halad-9 + 0.45% HR-601 + 3% Microbond (TOC @ 7,160')
	1390	14.8	1.5	2nd Stage (Bradenhead squeeze): Class C + 3% Salt + 1% PreMag-M + 6% Bentonite Gel (TOC @ surface)
22,492' 7.875"	1660	14.2	1.31	Lead: Class H + 0.4% Halad-344 + 0.35% HR-601 + 3% Microbond (TOC @ 10,580')



Cassidy 18 Fed Com 778H

Wellhead:

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.i) to allow a testing schedule of the blow out preventer (BOP) and blow out prevention equipment (BOPE) to include the following:

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- Full BOPE test every 30 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 production sections that do not penetrate the Wolfcamp or deeper formations.
- After the well section is cemented the BOP will be disconnected from the wellhead and walked with the rig to another well on the pad. The cemented well will be secured with a blind flange and a pressure gauge for monitoring.



Cassidy 18 Fed Com 778H

794' FSL
682' FWL
Section 18
T-26-S, R-31-E

Proposed Wellbore

KB: 3209'
GL: 3184'

API: 30-015-47878

Bit Size: 13"
10-3/4", 40.5#, J-55, STC, 0' - 890'

Bit Size: 9-7/8"
8-3/4" 38.5#, P110-EC, Vam Sprint-SF, 0' - 11,080'

Bit Size: 7-7/8"
6", 24#, P110-HP, Eagle SFH SC,
@ 0' - 22,492'

KOP: 11,838'

TOC: 10,580'

Lateral: 22,492' MD, 12,251' TVD
Upper Most Perf:
330' FSL & 540' FWL Sec. 18
Lower Most Perf:
330' FNL & 540' FWL Sec. 7
BH Location: 230' FNL & 540' FWL
Sec. 7
T-26-S R-31-E



Midland

Eddy County, NM (NAD 83 NME)

Cassidy 18 Fed Com

#778H

OH

Plan: Plan #0.1

Standard Planning Report

14 February, 2022



Planning Report

Database:	PEDM	Local Co-ordinate Reference:	Well #778H
Company:	Midland	TVD Reference:	KB = 25' @ 3210.0usft
Project:	Eddy County, NM (NAD 83 NME)	MD Reference:	KB = 25' @ 3210.0usft
Site:	Cassidy 18 Fed Com	North Reference:	Grid
Well:	#778H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #0.1		

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

Site	Cassidy 18 Fed Com				
Site Position:		Northing:	377,185.00 usft	Latitude:	32° 2' 9.214 N
From:	Map	Easting:	702,663.00 usft	Longitude:	103° 48' 45.751 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "		

Well	#778H					
Well Position	+N/-S	0.0 usft	Northing:	377,764.00 usft	Latitude:	32° 2' 15.108 N
	+E/-W	0.0 usft	Easting:	699,176.00 usft	Longitude:	103° 49' 26.230 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level:	3,185.0 usft
Grid Convergence:		0.27 °				

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2020	5/28/2020	6.77	59.73	47,468.53765824

Design	Plan #0.1				
Audit Notes:					
Version:	Phase:	PLAN	Tie On Depth:	0.0	
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.0	0.0	0.0	358.86	

Plan Survey Tool Program	Date	2/14/2022			
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks	
1	0.0	22,490.9 Plan #0.1 (OH)	EOG MWD+IFR1		
			MWD + IFR1		



Planning Report

Database:	PEDM	Local Co-ordinate Reference:	Well #778H
Company:	Midland	TVD Reference:	KB = 25' @ 3210.0usft
Project:	Eddy County, NM (NAD 83 NME)	MD Reference:	KB = 25' @ 3210.0usft
Site:	Cassidy 18 Fed Com	North Reference:	Grid
Well:	#778H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #0.1		

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
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,150.0	0.00	0.00	1,150.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,645.7	9.91	190.60	1,643.2	-42.0	-7.9	2.00	2.00	0.00	190.60	
5,568.8	9.91	190.60	5,507.8	-706.0	-132.1	0.00	0.00	0.00	0.00	
6,064.5	0.00	0.01	6,001.0	-748.0	-140.0	2.00	-2.00	0.00	180.00	
11,837.0	0.00	0.01	11,773.5	-748.0	-140.0	0.00	0.00	0.00	0.00	KOP(Cassidy 18 Fed
12,384.9	65.94	0.00	12,208.2	-466.0	-140.0	12.04	12.04	0.00	0.00	FTP(Cassidy 18 Fed
12,584.6	89.91	359.69	12,249.7	-272.1	-140.6	12.00	12.00	-0.16	-0.78	
13,392.8	89.91	359.69	12,251.0	536.0	-145.0	0.00	0.00	0.00	0.00	Fed Perf 1(Cassidy 18
22,390.9	90.09	359.73	12,251.0	9,534.0	-191.0	0.00	0.00	0.00	13.17	LTP(Cassidy 18 Fed
22,490.9	89.91	0.27	12,251.0	9,634.0	-191.0	0.57	-0.19	0.54	109.21	PBHL(Cassidy 18 Fed



Planning Report

Database:	PEDM	Local Co-ordinate Reference:	Well #778H
Company:	Midland	TVD Reference:	KB = 25' @ 3210.0usft
Project:	Eddy County, NM (NAD 83 NME)	MD Reference:	KB = 25' @ 3210.0usft
Site:	Cassidy 18 Fed Com	North Reference:	Grid
Well:	#778H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #0.1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
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
1,150.0	0.00	0.00	1,150.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	1.00	190.60	1,200.0	-0.4	-0.1	-0.4	2.00	2.00	0.00
1,300.0	3.00	190.60	1,299.9	-3.9	-0.7	-3.8	2.00	2.00	0.00
1,400.0	5.00	190.60	1,399.7	-10.7	-2.0	-10.7	2.00	2.00	0.00
1,500.0	7.00	190.60	1,499.1	-21.0	-3.9	-20.9	2.00	2.00	0.00
1,600.0	9.00	190.60	1,598.2	-34.7	-6.5	-34.5	2.00	2.00	0.00
1,645.7	9.91	190.60	1,643.2	-42.0	-7.9	-41.9	2.00	2.00	0.00
1,700.0	9.91	190.60	1,696.7	-51.2	-9.6	-51.0	0.00	0.00	0.00
1,800.0	9.91	190.60	1,795.2	-68.2	-12.8	-67.9	0.00	0.00	0.00
1,900.0	9.91	190.60	1,893.7	-85.1	-15.9	-84.8	0.00	0.00	0.00
2,000.0	9.91	190.60	1,992.2	-102.0	-19.1	-101.6	0.00	0.00	0.00
2,100.0	9.91	190.60	2,090.7	-118.9	-22.3	-118.5	0.00	0.00	0.00
2,200.0	9.91	190.60	2,189.3	-135.9	-25.4	-135.3	0.00	0.00	0.00
2,300.0	9.91	190.60	2,287.8	-152.8	-28.6	-152.2	0.00	0.00	0.00
2,400.0	9.91	190.60	2,386.3	-169.7	-31.8	-169.0	0.00	0.00	0.00
2,500.0	9.91	190.60	2,484.8	-186.6	-34.9	-185.9	0.00	0.00	0.00
2,600.0	9.91	190.60	2,583.3	-203.5	-38.1	-202.7	0.00	0.00	0.00
2,700.0	9.91	190.60	2,681.8	-220.5	-41.3	-219.6	0.00	0.00	0.00
2,800.0	9.91	190.60	2,780.3	-237.4	-44.4	-236.5	0.00	0.00	0.00
2,900.0	9.91	190.60	2,878.8	-254.3	-47.6	-253.3	0.00	0.00	0.00
3,000.0	9.91	190.60	2,977.3	-271.2	-50.8	-270.2	0.00	0.00	0.00
3,100.0	9.91	190.60	3,075.8	-288.2	-53.9	-287.0	0.00	0.00	0.00
3,200.0	9.91	190.60	3,174.3	-305.1	-57.1	-303.9	0.00	0.00	0.00
3,300.0	9.91	190.60	3,272.8	-322.0	-60.3	-320.7	0.00	0.00	0.00
3,400.0	9.91	190.60	3,371.3	-338.9	-63.4	-337.6	0.00	0.00	0.00
3,500.0	9.91	190.60	3,469.8	-355.8	-66.6	-354.5	0.00	0.00	0.00
3,600.0	9.91	190.60	3,568.3	-372.8	-69.8	-371.3	0.00	0.00	0.00
3,700.0	9.91	190.60	3,666.9	-389.7	-72.9	-388.2	0.00	0.00	0.00
3,800.0	9.91	190.60	3,765.4	-406.6	-76.1	-405.0	0.00	0.00	0.00
3,900.0	9.91	190.60	3,863.9	-423.5	-79.3	-421.9	0.00	0.00	0.00
4,000.0	9.91	190.60	3,962.4	-440.5	-82.4	-438.7	0.00	0.00	0.00
4,100.0	9.91	190.60	4,060.9	-457.4	-85.6	-455.6	0.00	0.00	0.00
4,200.0	9.91	190.60	4,159.4	-474.3	-88.8	-472.5	0.00	0.00	0.00
4,300.0	9.91	190.60	4,257.9	-491.2	-91.9	-489.3	0.00	0.00	0.00
4,400.0	9.91	190.60	4,356.4	-508.2	-95.1	-506.2	0.00	0.00	0.00
4,500.0	9.91	190.60	4,454.9	-525.1	-98.3	-523.0	0.00	0.00	0.00
4,600.0	9.91	190.60	4,553.4	-542.0	-101.4	-539.9	0.00	0.00	0.00
4,700.0	9.91	190.60	4,651.9	-558.9	-104.6	-556.7	0.00	0.00	0.00
4,800.0	9.91	190.60	4,750.4	-575.8	-107.8	-573.6	0.00	0.00	0.00
4,900.0	9.91	190.60	4,848.9	-592.8	-110.9	-590.5	0.00	0.00	0.00
5,000.0	9.91	190.60	4,947.4	-609.7	-114.1	-607.3	0.00	0.00	0.00
5,100.0	9.91	190.60	5,045.9	-626.6	-117.3	-624.2	0.00	0.00	0.00



Planning Report

Database:	PEDM	Local Co-ordinate Reference:	Well #778H
Company:	Midland	TVD Reference:	KB = 25' @ 3210.0usft
Project:	Eddy County, NM (NAD 83 NME)	MD Reference:	KB = 25' @ 3210.0usft
Site:	Cassidy 18 Fed Com	North Reference:	Grid
Well:	#778H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #0.1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
5,200.0	9.91	190.60	5,144.5	-643.5	-120.4	-641.0	0.00	0.00	0.00	
5,300.0	9.91	190.60	5,243.0	-660.5	-123.6	-657.9	0.00	0.00	0.00	
5,400.0	9.91	190.60	5,341.5	-677.4	-126.8	-674.7	0.00	0.00	0.00	
5,500.0	9.91	190.60	5,440.0	-694.3	-130.0	-691.6	0.00	0.00	0.00	
5,568.8	9.91	190.60	5,507.8	-706.0	-132.1	-703.2	0.00	0.00	0.00	
5,600.0	9.29	190.60	5,538.5	-711.1	-133.1	-708.3	2.00	-2.00	0.00	
5,700.0	7.29	190.60	5,637.5	-725.2	-135.7	-722.4	2.00	-2.00	0.00	
5,800.0	5.29	190.60	5,736.9	-736.0	-137.8	-733.1	2.00	-2.00	0.00	
5,900.0	3.29	190.60	5,836.6	-743.4	-139.1	-740.5	2.00	-2.00	0.00	
6,000.0	1.29	190.60	5,936.5	-747.3	-139.9	-744.4	2.00	-2.00	0.00	
6,064.5	0.00	0.01	6,001.0	-748.0	-140.0	-745.1	2.00	-2.00	0.00	
6,100.0	0.00	0.00	6,036.5	-748.0	-140.0	-745.1	0.00	0.00	0.00	
6,200.0	0.00	0.00	6,136.5	-748.0	-140.0	-745.1	0.00	0.00	0.00	
6,300.0	0.00	0.00	6,236.5	-748.0	-140.0	-745.1	0.00	0.00	0.00	
6,400.0	0.00	0.00	6,336.5	-748.0	-140.0	-745.1	0.00	0.00	0.00	
6,500.0	0.00	0.00	6,436.5	-748.0	-140.0	-745.1	0.00	0.00	0.00	
6,600.0	0.00	0.00	6,536.5	-748.0	-140.0	-745.1	0.00	0.00	0.00	
6,700.0	0.00	0.00	6,636.5	-748.0	-140.0	-745.1	0.00	0.00	0.00	
6,800.0	0.00	0.00	6,736.5	-748.0	-140.0	-745.1	0.00	0.00	0.00	
6,900.0	0.00	0.00	6,836.5	-748.0	-140.0	-745.1	0.00	0.00	0.00	
7,000.0	0.00	0.00	6,936.5	-748.0	-140.0	-745.1	0.00	0.00	0.00	
7,100.0	0.00	0.00	7,036.5	-748.0	-140.0	-745.1	0.00	0.00	0.00	
7,200.0	0.00	0.00	7,136.5	-748.0	-140.0	-745.1	0.00	0.00	0.00	
7,300.0	0.00	0.00	7,236.5	-748.0	-140.0	-745.1	0.00	0.00	0.00	
7,400.0	0.00	0.00	7,336.5	-748.0	-140.0	-745.1	0.00	0.00	0.00	
7,500.0	0.00	0.00	7,436.5	-748.0	-140.0	-745.1	0.00	0.00	0.00	
7,600.0	0.00	0.00	7,536.5	-748.0	-140.0	-745.1	0.00	0.00	0.00	
7,700.0	0.00	0.00	7,636.5	-748.0	-140.0	-745.1	0.00	0.00	0.00	
7,800.0	0.00	0.00	7,736.5	-748.0	-140.0	-745.1	0.00	0.00	0.00	
7,900.0	0.00	0.00	7,836.5	-748.0	-140.0	-745.1	0.00	0.00	0.00	
8,000.0	0.00	0.00	7,936.5	-748.0	-140.0	-745.1	0.00	0.00	0.00	
8,100.0	0.00	0.00	8,036.5	-748.0	-140.0	-745.1	0.00	0.00	0.00	
8,200.0	0.00	0.00	8,136.5	-748.0	-140.0	-745.1	0.00	0.00	0.00	
8,300.0	0.00	0.00	8,236.5	-748.0	-140.0	-745.1	0.00	0.00	0.00	
8,400.0	0.00	0.00	8,336.5	-748.0	-140.0	-745.1	0.00	0.00	0.00	
8,500.0	0.00	0.00	8,436.5	-748.0	-140.0	-745.1	0.00	0.00	0.00	
8,600.0	0.00	0.00	8,536.5	-748.0	-140.0	-745.1	0.00	0.00	0.00	
8,700.0	0.00	0.00	8,636.5	-748.0	-140.0	-745.1	0.00	0.00	0.00	
8,800.0	0.00	0.00	8,736.5	-748.0	-140.0	-745.1	0.00	0.00	0.00	
8,900.0	0.00	0.00	8,836.5	-748.0	-140.0	-745.1	0.00	0.00	0.00	
9,000.0	0.00	0.00	8,936.5	-748.0	-140.0	-745.1	0.00	0.00	0.00	
9,100.0	0.00	0.00	9,036.5	-748.0	-140.0	-745.1	0.00	0.00	0.00	
9,200.0	0.00	0.00	9,136.5	-748.0	-140.0	-745.1	0.00	0.00	0.00	
9,300.0	0.00	0.00	9,236.5	-748.0	-140.0	-745.1	0.00	0.00	0.00	
9,400.0	0.00	0.00	9,336.5	-748.0	-140.0	-745.1	0.00	0.00	0.00	
9,500.0	0.00	0.00	9,436.5	-748.0	-140.0	-745.1	0.00	0.00	0.00	
9,600.0	0.00	0.00	9,536.5	-748.0	-140.0	-745.1	0.00	0.00	0.00	
9,700.0	0.00	0.00	9,636.5	-748.0	-140.0	-745.1	0.00	0.00	0.00	
9,800.0	0.00	0.00	9,736.5	-748.0	-140.0	-745.1	0.00	0.00	0.00	
9,900.0	0.00	0.00	9,836.5	-748.0	-140.0	-745.1	0.00	0.00	0.00	
10,000.0	0.00	0.00	9,936.5	-748.0	-140.0	-745.1	0.00	0.00	0.00	
10,100.0	0.00	0.00	10,036.5	-748.0	-140.0	-745.1	0.00	0.00	0.00	
10,200.0	0.00	0.00	10,136.5	-748.0	-140.0	-745.1	0.00	0.00	0.00	
10,300.0	0.00	0.00	10,236.5	-748.0	-140.0	-745.1	0.00	0.00	0.00	



Planning Report

Database:	PEDM	Local Co-ordinate Reference:	Well #778H
Company:	Midland	TVD Reference:	KB = 25' @ 3210.0usft
Project:	Eddy County, NM (NAD 83 NME)	MD Reference:	KB = 25' @ 3210.0usft
Site:	Cassidy 18 Fed Com	North Reference:	Grid
Well:	#778H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #0.1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
10,400.0	0.00	0.00	10,336.5	-748.0	-140.0	-745.1	0.00	0.00	0.00
10,500.0	0.00	0.00	10,436.5	-748.0	-140.0	-745.1	0.00	0.00	0.00
10,600.0	0.00	0.00	10,536.5	-748.0	-140.0	-745.1	0.00	0.00	0.00
10,700.0	0.00	0.00	10,636.5	-748.0	-140.0	-745.1	0.00	0.00	0.00
10,800.0	0.00	0.00	10,736.5	-748.0	-140.0	-745.1	0.00	0.00	0.00
10,900.0	0.00	0.00	10,836.5	-748.0	-140.0	-745.1	0.00	0.00	0.00
11,000.0	0.00	0.00	10,936.5	-748.0	-140.0	-745.1	0.00	0.00	0.00
11,100.0	0.00	0.00	11,036.5	-748.0	-140.0	-745.1	0.00	0.00	0.00
11,200.0	0.00	0.00	11,136.5	-748.0	-140.0	-745.1	0.00	0.00	0.00
11,300.0	0.00	0.00	11,236.5	-748.0	-140.0	-745.1	0.00	0.00	0.00
11,400.0	0.00	0.00	11,336.5	-748.0	-140.0	-745.1	0.00	0.00	0.00
11,500.0	0.00	0.00	11,436.5	-748.0	-140.0	-745.1	0.00	0.00	0.00
11,600.0	0.00	0.00	11,536.5	-748.0	-140.0	-745.1	0.00	0.00	0.00
11,700.0	0.00	0.00	11,636.5	-748.0	-140.0	-745.1	0.00	0.00	0.00
11,800.0	0.00	0.00	11,736.5	-748.0	-140.0	-745.1	0.00	0.00	0.00
11,837.0	0.00	0.01	11,773.5	-748.0	-140.0	-745.1	0.00	0.00	0.00
KOP(Cassidy 18 Fed Com #778H)									
11,850.0	1.56	0.00	11,786.5	-747.8	-140.0	-744.9	12.04	12.04	0.00
11,875.0	4.57	0.00	11,811.4	-746.5	-140.0	-743.6	12.04	12.04	0.00
11,900.0	7.58	0.00	11,836.3	-743.8	-140.0	-740.9	12.04	12.04	0.00
11,925.0	10.59	0.00	11,861.0	-739.9	-140.0	-737.0	12.04	12.04	0.00
11,950.0	13.60	0.00	11,885.4	-734.7	-140.0	-731.7	12.04	12.04	0.00
11,975.0	16.61	0.00	11,909.6	-728.1	-140.0	-725.2	12.04	12.04	0.00
12,000.0	19.62	0.00	11,933.3	-720.4	-140.0	-717.5	12.04	12.04	0.00
12,025.0	22.62	0.00	11,956.6	-711.4	-140.0	-708.5	12.04	12.04	0.00
12,050.0	25.63	0.00	11,979.4	-701.1	-140.0	-698.2	12.04	12.04	0.00
12,075.0	28.64	0.00	12,001.7	-689.7	-140.0	-686.8	12.04	12.04	0.00
12,100.0	31.65	0.00	12,023.3	-677.2	-140.0	-674.3	12.04	12.04	0.00
12,125.0	34.66	0.00	12,044.2	-663.5	-140.0	-660.6	12.04	12.04	0.00
12,150.0	37.67	0.00	12,064.4	-648.8	-140.0	-645.9	12.04	12.04	0.00
12,175.0	40.68	0.00	12,083.8	-633.0	-140.0	-630.1	12.04	12.04	0.00
12,200.0	43.69	0.00	12,102.3	-616.2	-140.0	-613.3	12.04	12.04	0.00
12,225.0	46.70	0.00	12,119.9	-598.5	-140.0	-595.6	12.04	12.04	0.00
12,250.0	49.71	0.00	12,136.6	-579.8	-140.0	-576.9	12.04	12.04	0.00
12,275.0	52.71	0.00	12,152.3	-560.3	-140.0	-557.5	12.04	12.04	0.00
12,300.0	55.72	0.00	12,166.9	-540.1	-140.0	-537.2	12.04	12.04	0.00
12,325.0	58.73	0.00	12,180.4	-519.0	-140.0	-516.2	12.04	12.04	0.00
12,350.0	61.74	0.00	12,192.8	-497.3	-140.0	-494.5	12.04	12.04	0.00
12,375.0	64.75	0.00	12,204.1	-475.0	-140.0	-472.2	12.04	12.04	0.00
12,384.9	65.94	0.00	12,208.2	-466.0	-140.0	-463.1	12.04	12.04	0.00
FTP(Cassidy 18 Fed Com #778H)									
12,400.0	67.75	359.97	12,214.1	-452.1	-140.0	-449.3	12.00	12.00	-0.18
12,425.0	70.75	359.93	12,223.0	-428.8	-140.0	-425.9	12.00	12.00	-0.17
12,450.0	73.75	359.89	12,230.6	-405.0	-140.1	-402.1	12.00	12.00	-0.16
12,475.0	76.75	359.85	12,237.0	-380.8	-140.1	-377.9	12.00	12.00	-0.16
12,500.0	79.75	359.81	12,242.1	-356.3	-140.2	-353.5	12.00	12.00	-0.15
12,525.0	82.75	359.77	12,245.9	-331.6	-140.3	-328.8	12.00	12.00	-0.15
12,550.0	85.75	359.74	12,248.4	-306.7	-140.4	-303.9	12.00	12.00	-0.15
12,575.0	88.75	359.70	12,249.6	-281.8	-140.5	-278.9	12.00	12.00	-0.15
12,584.6	89.91	359.69	12,249.7	-272.1	-140.6	-269.3	12.00	12.00	-0.15
12,600.0	89.91	359.69	12,249.7	-256.8	-140.6	-253.9	0.00	0.00	0.00
12,700.0	89.91	359.69	12,249.9	-156.8	-141.2	-153.9	0.00	0.00	0.00
12,800.0	89.91	359.69	12,250.0	-56.8	-141.7	-53.9	0.00	0.00	0.00
12,900.0	89.91	359.69	12,250.2	43.2	-142.3	46.0	0.00	0.00	0.00



Planning Report

Database:	PEDM	Local Co-ordinate Reference:	Well #778H
Company:	Midland	TVD Reference:	KB = 25' @ 3210.0usft
Project:	Eddy County, NM (NAD 83 NME)	MD Reference:	KB = 25' @ 3210.0usft
Site:	Cassidy 18 Fed Com	North Reference:	Grid
Well:	#778H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #0.1		

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)
13,000.0	89.91	359.69	12,250.4	143.2	-142.8	146.0	0.00	0.00	0.00
13,100.0	89.91	359.69	12,250.5	243.2	-143.4	246.0	0.00	0.00	0.00
13,200.0	89.91	359.69	12,250.7	343.2	-143.9	346.0	0.00	0.00	0.00
13,300.0	89.91	359.69	12,250.8	443.2	-144.5	446.0	0.00	0.00	0.00
13,392.8	89.91	359.69	12,251.0	536.0	-145.0	538.8	0.00	0.00	0.00
Fed Perf 1(Cassidy 18 Fed Com #778H)									
13,400.0	89.91	359.69	12,251.0	543.2	-145.0	546.0	0.00	0.00	0.00
13,500.0	89.91	359.69	12,251.2	643.2	-145.6	646.0	0.00	0.00	0.00
13,600.0	89.91	359.69	12,251.3	743.2	-146.1	746.0	0.00	0.00	0.00
13,700.0	89.91	359.69	12,251.5	843.2	-146.7	846.0	0.00	0.00	0.00
13,800.0	89.91	359.69	12,251.6	943.2	-147.2	946.0	0.00	0.00	0.00
13,900.0	89.92	359.69	12,251.8	1,043.2	-147.8	1,045.9	0.00	0.00	0.00
14,000.0	89.92	359.69	12,251.9	1,143.2	-148.3	1,145.9	0.00	0.00	0.00
14,100.0	89.92	359.69	12,252.1	1,243.2	-148.9	1,245.9	0.00	0.00	0.00
14,200.0	89.92	359.69	12,252.2	1,343.2	-149.4	1,345.9	0.00	0.00	0.00
14,300.0	89.92	359.69	12,252.3	1,443.2	-150.0	1,445.9	0.00	0.00	0.00
14,400.0	89.93	359.69	12,252.5	1,543.2	-150.5	1,545.9	0.00	0.00	0.00
14,500.0	89.93	359.69	12,252.6	1,643.2	-151.0	1,645.9	0.00	0.00	0.00
14,600.0	89.93	359.69	12,252.7	1,743.2	-151.6	1,745.9	0.00	0.00	0.00
14,700.0	89.93	359.69	12,252.8	1,843.2	-152.1	1,845.9	0.00	0.00	0.00
14,800.0	89.94	359.69	12,253.0	1,943.2	-152.7	1,945.8	0.00	0.00	0.00
14,900.0	89.94	359.69	12,253.1	2,043.2	-153.2	2,045.8	0.00	0.00	0.00
15,000.0	89.94	359.69	12,253.2	2,143.2	-153.7	2,145.8	0.00	0.00	0.00
15,100.0	89.94	359.69	12,253.3	2,243.2	-154.3	2,245.8	0.00	0.00	0.00
15,200.0	89.94	359.69	12,253.4	2,343.2	-154.8	2,345.8	0.00	0.00	0.00
15,300.0	89.95	359.69	12,253.5	2,443.2	-155.3	2,445.8	0.00	0.00	0.00
15,400.0	89.95	359.69	12,253.6	2,543.2	-155.9	2,545.8	0.00	0.00	0.00
15,500.0	89.95	359.70	12,253.7	2,643.2	-156.4	2,645.8	0.00	0.00	0.00
15,600.0	89.95	359.70	12,253.7	2,743.2	-156.9	2,745.8	0.00	0.00	0.00
15,700.0	89.95	359.70	12,253.8	2,843.2	-157.5	2,845.8	0.00	0.00	0.00
15,800.0	89.96	359.70	12,253.9	2,943.2	-158.0	2,945.7	0.00	0.00	0.00
15,900.0	89.96	359.70	12,254.0	3,043.2	-158.5	3,045.7	0.00	0.00	0.00
16,000.0	89.96	359.70	12,254.0	3,143.2	-159.0	3,145.7	0.00	0.00	0.00
16,100.0	89.96	359.70	12,254.1	3,243.2	-159.6	3,245.7	0.00	0.00	0.00
16,200.0	89.96	359.70	12,254.2	3,343.2	-160.1	3,345.7	0.00	0.00	0.00
16,300.0	89.97	359.70	12,254.2	3,443.2	-160.6	3,445.7	0.00	0.00	0.00
16,400.0	89.97	359.70	12,254.3	3,543.2	-161.1	3,545.7	0.00	0.00	0.00
16,500.0	89.97	359.70	12,254.3	3,643.2	-161.7	3,645.7	0.00	0.00	0.00
16,600.0	89.97	359.70	12,254.4	3,743.2	-162.2	3,745.7	0.00	0.00	0.00
16,700.0	89.98	359.70	12,254.4	3,843.2	-162.7	3,845.6	0.00	0.00	0.00
16,800.0	89.98	359.70	12,254.5	3,943.2	-163.2	3,945.6	0.00	0.00	0.00
16,900.0	89.98	359.70	12,254.5	4,043.2	-163.8	4,045.6	0.00	0.00	0.00
17,000.0	89.98	359.70	12,254.6	4,143.2	-164.3	4,145.6	0.00	0.00	0.00
17,100.0	89.98	359.70	12,254.6	4,243.2	-164.8	4,245.6	0.00	0.00	0.00
17,200.0	89.99	359.70	12,254.6	4,343.2	-165.3	4,345.6	0.00	0.00	0.00
17,300.0	89.99	359.70	12,254.6	4,443.2	-165.8	4,445.6	0.00	0.00	0.00
17,400.0	89.99	359.70	12,254.7	4,543.2	-166.3	4,545.6	0.00	0.00	0.00
17,500.0	89.99	359.71	12,254.7	4,643.2	-166.9	4,645.6	0.00	0.00	0.00
17,600.0	89.99	359.71	12,254.7	4,743.2	-167.4	4,745.5	0.00	0.00	0.00
17,700.0	90.00	359.71	12,254.7	4,843.2	-167.9	4,845.5	0.00	0.00	0.00
17,800.0	90.00	359.71	12,254.7	4,943.2	-168.4	4,945.5	0.00	0.00	0.00
17,900.0	90.00	359.71	12,254.7	5,043.2	-168.9	5,045.5	0.00	0.00	0.00
18,000.0	90.00	359.71	12,254.7	5,143.2	-169.4	5,145.5	0.00	0.00	0.00



Planning Report

Database:	PEDM	Local Co-ordinate Reference:	Well #778H
Company:	Midland	TVD Reference:	KB = 25' @ 3210.0usft
Project:	Eddy County, NM (NAD 83 NME)	MD Reference:	KB = 25' @ 3210.0usft
Site:	Cassidy 18 Fed Com	North Reference:	Grid
Well:	#778H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #0.1		

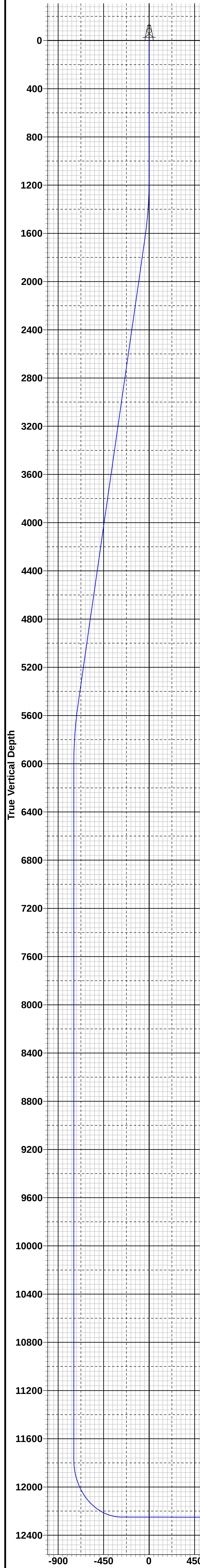
Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
18,100.0	90.00	359.71	12,254.7	5,243.2	-169.9	5,245.5	0.00	0.00	0.00
18,200.0	90.01	359.71	12,254.7	5,343.2	-170.4	5,345.5	0.00	0.00	0.00
18,300.0	90.01	359.71	12,254.7	5,443.2	-170.9	5,445.5	0.00	0.00	0.00
18,400.0	90.01	359.71	12,254.7	5,543.2	-171.5	5,545.5	0.00	0.00	0.00
18,500.0	90.01	359.71	12,254.6	5,643.2	-172.0	5,645.5	0.00	0.00	0.00
18,600.0	90.01	359.71	12,254.6	5,743.1	-172.5	5,745.4	0.00	0.00	0.00
18,700.0	90.02	359.71	12,254.6	5,843.1	-173.0	5,845.4	0.00	0.00	0.00
18,800.0	90.02	359.71	12,254.6	5,943.1	-173.5	5,945.4	0.00	0.00	0.00
18,900.0	90.02	359.71	12,254.5	6,043.1	-174.0	6,045.4	0.00	0.00	0.00
19,000.0	90.02	359.71	12,254.5	6,143.1	-174.5	6,145.4	0.00	0.00	0.00
19,100.0	90.03	359.71	12,254.4	6,243.1	-175.0	6,245.4	0.00	0.00	0.00
19,200.0	90.03	359.71	12,254.4	6,343.1	-175.5	6,345.4	0.00	0.00	0.00
19,300.0	90.03	359.71	12,254.3	6,443.1	-176.0	6,445.4	0.00	0.00	0.00
19,400.0	90.03	359.71	12,254.3	6,543.1	-176.5	6,545.4	0.00	0.00	0.00
19,500.0	90.03	359.71	12,254.2	6,643.1	-177.0	6,645.3	0.00	0.00	0.00
19,600.0	90.04	359.72	12,254.2	6,743.1	-177.5	6,745.3	0.00	0.00	0.00
19,700.0	90.04	359.72	12,254.1	6,843.1	-178.0	6,845.3	0.00	0.00	0.00
19,800.0	90.04	359.72	12,254.0	6,943.1	-178.5	6,945.3	0.00	0.00	0.00
19,900.0	90.04	359.72	12,254.0	7,043.1	-179.0	7,045.3	0.00	0.00	0.00
20,000.0	90.04	359.72	12,253.9	7,143.1	-179.5	7,145.3	0.00	0.00	0.00
20,100.0	90.05	359.72	12,253.8	7,243.1	-179.9	7,245.3	0.00	0.00	0.00
20,200.0	90.05	359.72	12,253.7	7,343.1	-180.4	7,345.3	0.00	0.00	0.00
20,300.0	90.05	359.72	12,253.6	7,443.1	-180.9	7,445.3	0.00	0.00	0.00
20,400.0	90.05	359.72	12,253.6	7,543.1	-181.4	7,545.2	0.00	0.00	0.00
20,500.0	90.05	359.72	12,253.5	7,643.1	-181.9	7,645.2	0.00	0.00	0.00
20,600.0	90.06	359.72	12,253.4	7,743.1	-182.4	7,745.2	0.00	0.00	0.00
20,700.0	90.06	359.72	12,253.3	7,843.1	-182.9	7,845.2	0.00	0.00	0.00
20,800.0	90.06	359.72	12,253.2	7,943.1	-183.4	7,945.2	0.00	0.00	0.00
20,900.0	90.06	359.72	12,253.0	8,043.1	-183.9	8,045.2	0.00	0.00	0.00
21,000.0	90.07	359.72	12,252.9	8,143.1	-184.3	8,145.2	0.00	0.00	0.00
21,100.0	90.07	359.72	12,252.8	8,243.1	-184.8	8,245.2	0.00	0.00	0.00
21,200.0	90.07	359.72	12,252.7	8,343.1	-185.3	8,345.2	0.00	0.00	0.00
21,300.0	90.07	359.72	12,252.6	8,443.1	-185.8	8,445.1	0.00	0.00	0.00
21,400.0	90.07	359.72	12,252.5	8,543.1	-186.3	8,545.1	0.00	0.00	0.00
21,500.0	90.08	359.72	12,252.3	8,643.1	-186.8	8,645.1	0.00	0.00	0.00
21,600.0	90.08	359.73	12,252.2	8,743.1	-187.2	8,745.1	0.00	0.00	0.00
21,700.0	90.08	359.73	12,252.1	8,843.1	-187.7	8,845.1	0.00	0.00	0.00
21,800.0	90.08	359.73	12,251.9	8,943.1	-188.2	8,945.1	0.00	0.00	0.00
21,900.0	90.08	359.73	12,251.8	9,043.1	-188.7	9,045.1	0.00	0.00	0.00
22,000.0	90.09	359.73	12,251.6	9,143.1	-189.1	9,145.1	0.00	0.00	0.00
22,100.0	90.09	359.73	12,251.5	9,243.1	-189.6	9,245.0	0.00	0.00	0.00
22,200.0	90.09	359.73	12,251.3	9,343.1	-190.1	9,345.0	0.00	0.00	0.00
22,300.0	90.09	359.73	12,251.1	9,443.1	-190.6	9,445.0	0.00	0.00	0.00
22,390.9	90.09	359.73	12,251.0	9,534.0	-191.0	9,535.9	0.00	0.00	0.00
LTP(Cassidy 18 Fed Com #778H)									
22,400.0	90.08	359.78	12,251.0	9,543.1	-191.0	9,545.0	0.57	-0.19	0.54
22,490.9	89.91	0.27	12,251.0	9,634.0	-191.0	9,635.9	0.57	-0.19	0.54
PBHL(Cassidy 18 Fed Com #778H)									



Planning Report

Database:	PEDM	Local Co-ordinate Reference:	Well #778H
Company:	Midland	TVD Reference:	KB = 25' @ 3210.0usft
Project:	Eddy County, NM (NAD 83 NME)	MD Reference:	KB = 25' @ 3210.0usft
Site:	Cassidy 18 Fed Com	North Reference:	Grid
Well:	#778H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #0.1		

Design Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
KOP(Cassidy 18 Fed Cc - plan hits target center - Point	0.00	0.00	11,773.5	-748.0	-140.0	377,016.00	699,036.00	32° 2' 7.712 N	103° 49' 27.897 W
FTP(Cassidy 18 Fed Co - plan hits target center - Point	0.00	0.00	12,208.2	-466.0	-140.0	377,298.00	699,036.00	32° 2' 10.503 N	103° 49' 27.881 W
Fed Perf 1(Cassidy 18 F - plan hits target center - Point	0.00	0.00	12,251.0	536.0	-145.0	378,300.00	699,031.00	32° 2' 20.419 N	103° 49' 27.885 W
LTP(Cassidy 18 Fed Coi - plan hits target center - Point	0.00	0.00	12,251.0	9,534.0	-191.0	387,298.00	698,985.00	32° 3' 49.465 N	103° 49' 27.926 W
PBHL(Cassidy 18 Fed C - plan hits target center - Point	0.00	0.00	12,251.0	9,634.0	-191.0	387,398.00	698,985.00	32° 3' 50.455 N	103° 49' 27.921 W



To convert a Magnetic Direction to a Grid Direction, Add 6.50°
To convert a Magnetic Direction to a True Direction, Add 6.77° East
To convert a True Direction to a Grid Direction, Subtract 0.27°

Eddy County, NM (NAD 83 NME)

Cassidy 18 Fed Com #778H

Plan #0.1

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

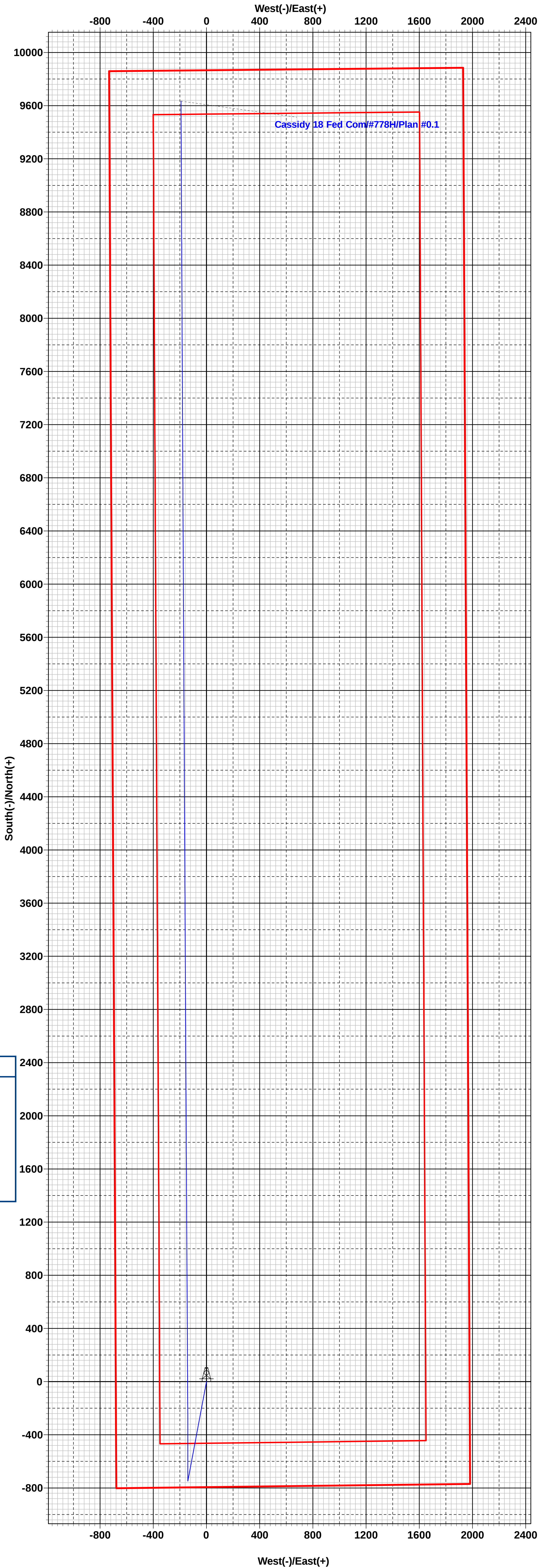
Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Eastern Zone
System Datum: Mean Sea Level

WELL DETAILS: #778H				
			3185.0	
KB = 25' @ 3210.0usft				
Northing	Easting	Latitude	Longitude	
377764.00	699176.00	32° 2' 15.108 N	103° 49' 26.230 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	1150.0	0.00	0.00	1150.0	0.0	0.0	0.00	0.00	0.0	
3	1645.7	9.91	190.60	1643.2	-42.0	-7.9	2.00	190.60	-41.9	
4	5568.8	9.91	190.60	5507.8	-706.0	-132.1	0.00	0.00	-703.2	
5	6064.5	0.00	0.00	6001.0	-748.0	-140.0	2.00	180.00	-745.1	
6	11837.0	0.00	0.00	11773.5	-748.0	-140.0	0.00	0.00	-745.1	KOP(Cassidy 18 Fed Com #778H)
7	12384.9	65.94	0.00	12208.2	-466.0	-140.0	12.04	0.00	-463.1	FTP(Cassidy 18 Fed Com #778H)
8	12584.6	89.91	359.69	12249.7	-272.1	-140.6	0.00	0.00	-269.3	
9	13392.8	89.91	359.69	12251.0	536.0	-145.0	0.00	0.00	538.8	Fed Perf 1(Cassidy 18 Fed Com #778H)
10	22390.9	90.09	359.73	12251.0	9534.0	-191.0	0.00	13.17	9535.9	LTP(Cassidy 18 Fed Com #778H)
11	22490.9	89.91	0.27	12251.0	9634.0	-191.0	0.57	109.21	9635.9	PBHL(Cassidy 18 Fed Com #778H)

CASING DETAILS
No casing data is available

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)					
Name	TVD	+N/-S	+E/-W	Northings	Easting
KOP(Cassidy 18 Fed Com #778H)	11773.5	-748.0	-140.0	377016.00	699036.00
FTP(Cassidy 18 Fed Com #778H)	12208.2	-466.0	-140.0	377298.00	699036.00
Fed Perf 1(Cassidy 18 Fed Com #778H)	12251.0	536.0	-145.0	378300.00	699031.00
LTP(Cassidy 18 Fed Com #778H)	12251.0	9534.0	-191.0	387298.00	698985.00
PBHL(Cassidy 18 Fed Com #778H)	12251.0	9634.0	-191.0	387398.00	698985.00



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

COMMENTS

Action 129022

COMMENTS

Operator: EOG RESOURCES INC P.O. Box 2267 Midland, TX 79702	OGRID: 7377
	Action Number: 129022
	Action Type: [C-103] NOI Change of Plans (C-103A)

COMMENTS

Created By	Comment	Comment Date
kpickford	Defining well 30-015-47874 CASSIDY 18 FEDERAL COM #730H	7/27/2022

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
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811 S. First St., Artesia, NM 88210
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State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Action 129022

CONDITIONS

Operator: EOG RESOURCES INC P.O. Box 2267 Midland, TX 79702	OGRID: 7377
	Action Number: 129022
	Action Type: [C-103] NOI Change of Plans (C-103A)

CONDITIONS

Created By	Condition	Condition Date
kpickford	Adhere to previous NMOCD Conditions of Approval	7/27/2022