

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENTFORM APPROVED
OMB NO. 1004-0137
Expires: January 31, 2018**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.
NMNM13647

Indian, Allottee or Tribe Name

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

SUBMIT IN TRIPLICATE - Other instructions on page 2

1. Type of Well

☒ Oil Well ☐ Gas Well ☐ Other2. Name of Operator
MARATHON OIL PERMIAN LLCContact: JENNIFER VAN CUREN
E-Mail: jvancuren@marathonoil.com8. Well Name and No.
CAVE LION FEDERAL 5 WA 9H9. API Well No.
30-025-454203a. Address
5555 SAN FELIPE ST
HOUSTON, TX 770563b. Phone No. (include area code)
Ph: 713-296-250010. Field and Pool or Exploratory Area
WOLFCAMP

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

Sec 5 T26S R35E Mer NMP SESW 287FSL 1841FWL

11. County or Parish, State

LEA COUNTY, 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
-
- ☒
- Subsequent Report
-
- ☐
- Final Abandonment Notice

- ☐
- Acidize
-
- ☐
- Alter Casing
-
- ☐
- Casing Repair
-
- ☐
- Change Plans
-
- ☐
- Convert to Injection

- ☐
- Deepen
-
- ☐
- Hydraulic Fracturing
-
- ☐
- New Construction
-
- ☐
- Plug and Abandon
-
- ☐
- Plug Back

- ☐
- Production (Start/Resume)
-
- ☐
- Reclamation
-
- ☐
- Recomplete
-
- ☐
- Temporarily Abandon
-
- ☐
- Water Disposal

- ☐
- Water Shut-Off
-
- ☐
- Well Integrity
-
- ☒
- Other
-
- Change to Original APD

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 determined that the site is ready for final inspection.

Marathon Oil Permian LLC. respectfully requests to make the following changes to the approved APD.

Change Name to match OCD formatting
From: Cave Lion Federal 5 WA 9H
To: Cave Lion 5 WA Federal 9HChange SHL
From: 287 FSL & 1841 FWL
To: 287 FSL & 1871 FWLChange FTP
From: 150 FSL & 2315 FWLNo new surface disturbance. Covered under DOI-BLM-NM-P020-2018-0079-EA. LCR
Engineering and All previous CDs still apply. 25 2-21-19. Previous CDs apply. 02/28/2019

14. I hereby certify that the foregoing is true and correct.

Electronic Submission #451458 verified by the BLM Well Information System
For MARATHON OIL PERMIAN LLC, sent to the Hobbs
Committed to AFMSS for processing by PRISCILLA PEREZ on 01/29/2019 ()

Name (Printed/Typed) JENNIFER VAN CUREN

Title SR. REGULATORY COMPLIANCE REP

Signature (Electronic Submission)

Date 01/23/2019

THIS SPACE FOR FEDERAL OR STATE OFFICE 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)

** OPERATOR-SUBMITTED ** OPERATOR-SUBMITTED ** OPERATOR-SUBMITTED **

Additional data for EC transaction #451458 that would not fit on the form

32. Additional remarks, continued

To: 100 FSL & 2315 FWL

Change LTP

From: 150 FNL & 2313 FWL

To: 100 FNL & 2313 FWL

Update slurry density of the intermediate 2

From: 15.6

To: 14.8

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

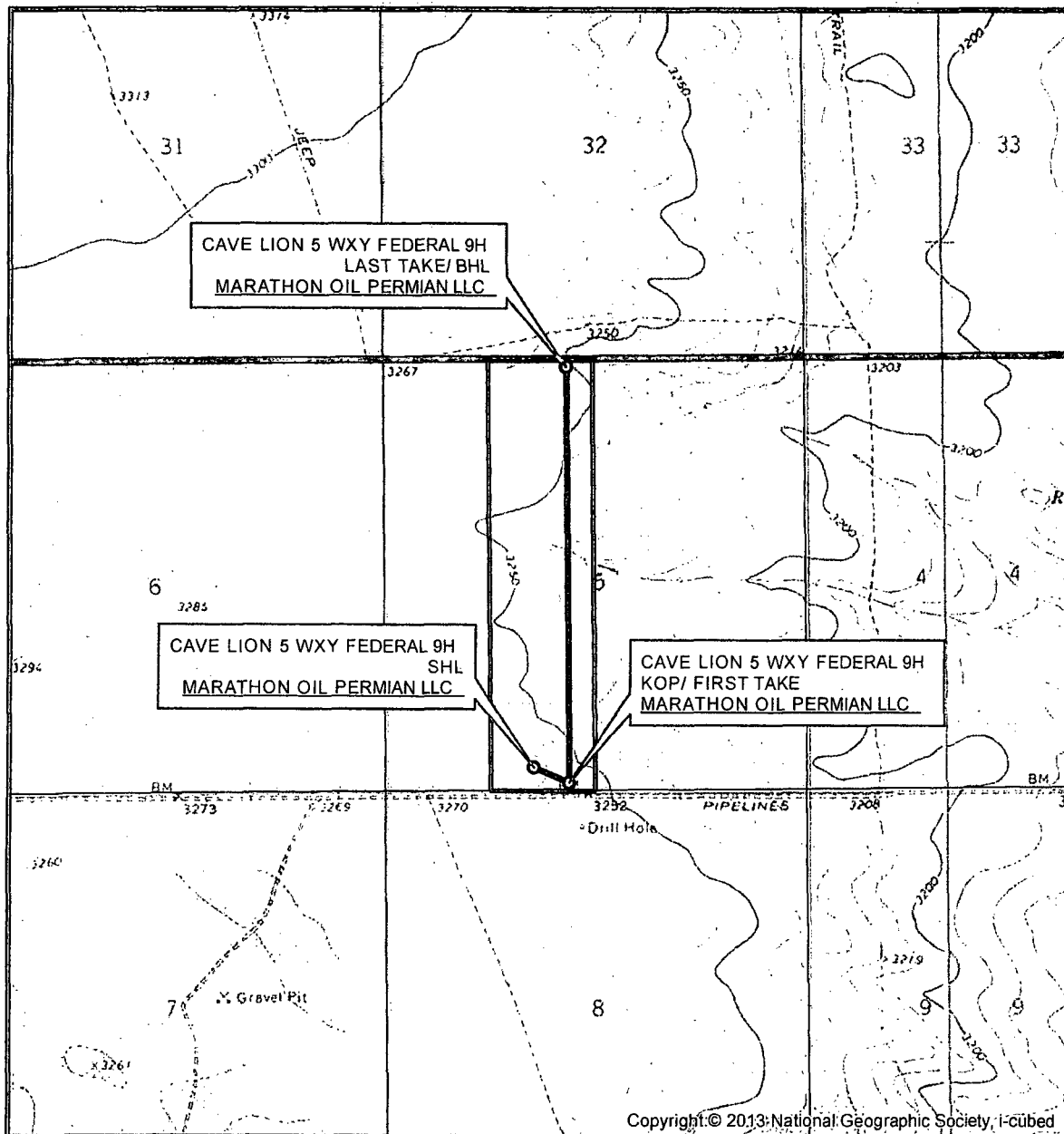
WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number		² Pool Code 98117		³ Pool Name WC-025 G-09 S263504N; WOLFCAMP	
⁴ Property Code		⁵ Property Name CAVE LION 5 WXY FEDERAL			⁶ Well Number 9H
⁷ OGRID No. 372098		⁸ Operator Name MARATHON OIL PERMIAN LLC			⁹ Elevation 3262'
¹⁰ Surface Location					
UL or lot no. N	Section 5	Township 26S	Range 35E	Lot Idn	Feet from the 287
				North/South line SOUTH	Feet from the 1871
				East/West line WEST	County LEA
¹¹ Bottom Hole Location If Different From Surface					
UL or lot no. C	Section 5	Township 26S	Range 35E	Lot Idn	Feet from the 100
				North/South line NORTH	Feet from the 2313
				East/West line WEST	County LEA
¹² Dedicated Acres 160.0		¹³ Joint or Infill		¹⁴ Consolidation Code	
				¹⁵ Order No.	

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.

Infill Well SECTION 31 SECTION 32 SECTION 33 SECTION 4 SECTION 6 SECTION 5 SECTION 7 SECTION 8 2313' 1871' 2315' 2315' SHL 287' 100' 100' 774' 330' 330' T25S R35E T26S R35E LAST TAKE/ BHL KOP/ FIRST TAKE SHEET 1 OF 3 JOB No. R3757_005 REV 4 BM 12/5/2018	CORNER COORDINATES NAD 83, SPCS NM EAST A - X: 832342.14' / Y: 393968.72' B - X: 833663.69' / Y: 393977.99' C - X: 833719.73' / Y: 388693.48' D - X: 832397.11' / Y: 388684.41'	CORNER COORDINATES NAD 27, SPCS NM EAST A - X: 791154.74' / Y: 393911.00' B - X: 792476.27' / Y: 393920.25' C - X: 792532.08' / Y: 388635.88' D - X: 791209.47' / Y: 388626.82'	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. <i>[Signature]</i> 1/4/2018 Signature Date Adrian Covarrubias Printed Name E-mail Address
	LAST TAKE POINT/BOTTOM HOLE LOCATION 100' FNL 2313' FWL, SECTION 5 NAD 83, SPCS NM EAST X: 833334.76' / Y: 393875.68' LAT: 32.07933642N / LON: -103.39057643W NAD 27, SPCS NM EAST X: 792147.33' / Y: 393817.95' LAT: 32.07921019N / LON: -103.39011336W		
	FIRST TAKE POINT 100' FSL 2315' FWL, SECTION 5 NAD 83, SPCS NM EAST X: 833388.68' / Y: 388791.21' LAT: 32.06535996N / LON: -103.39054579W NAD 27, SPCS NM EAST X: 792201.03' / Y: 388733.61' LAT: 32.06523366N / LON: -103.39008351W		
	KICK OFF POINT 100' FSL 2315' FWL, SECTION 5 NAD 83, SPCS NM EAST X: 833388.68' / Y: 388791.21' LAT: 32.06535996N / LON: -103.39054579W NAD 27, SPCS NM EAST X: 792201.03' / Y: 388733.61' LAT: 32.06523366N / LON: -103.39008351W		
SURFACE HOLE LOCATION 287' FSL 1871' FWL, SECTION 5 NAD 83, SPCS NM EAST X: 832942.34' / Y: 388974.66' LAT: 32.06587490N / LON: -103.39198130W NAD 27, SPCS NM EAST X: 791754.71' / Y: 388917.06' LAT: 32.06574861N / LON: -103.39151894W			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. DECEMBER 13, 2018 Date of Survey Signature and Seal of Professional Surveyor <i>[Signature]</i> Certificate Number LLOYD P. SHORT 21653

LOCATION VERIFICATION MAP



SEC. 5 TWP. 26-S RGE. 35-E
 SURVEY: N.M.P.M.
 COUNTY: LEA
 OPERATOR: MARATHON OIL PERMIAN LLC
 DESCRIPTION: 287' FSL & 1871' FWL
 ELEVATION: 3262'
 LEASE: CAVE LION 5 FEDERAL
 U.S.G.S. TOPOGRAPHIC MAP: ANDREWS PLACE, NM, TX.

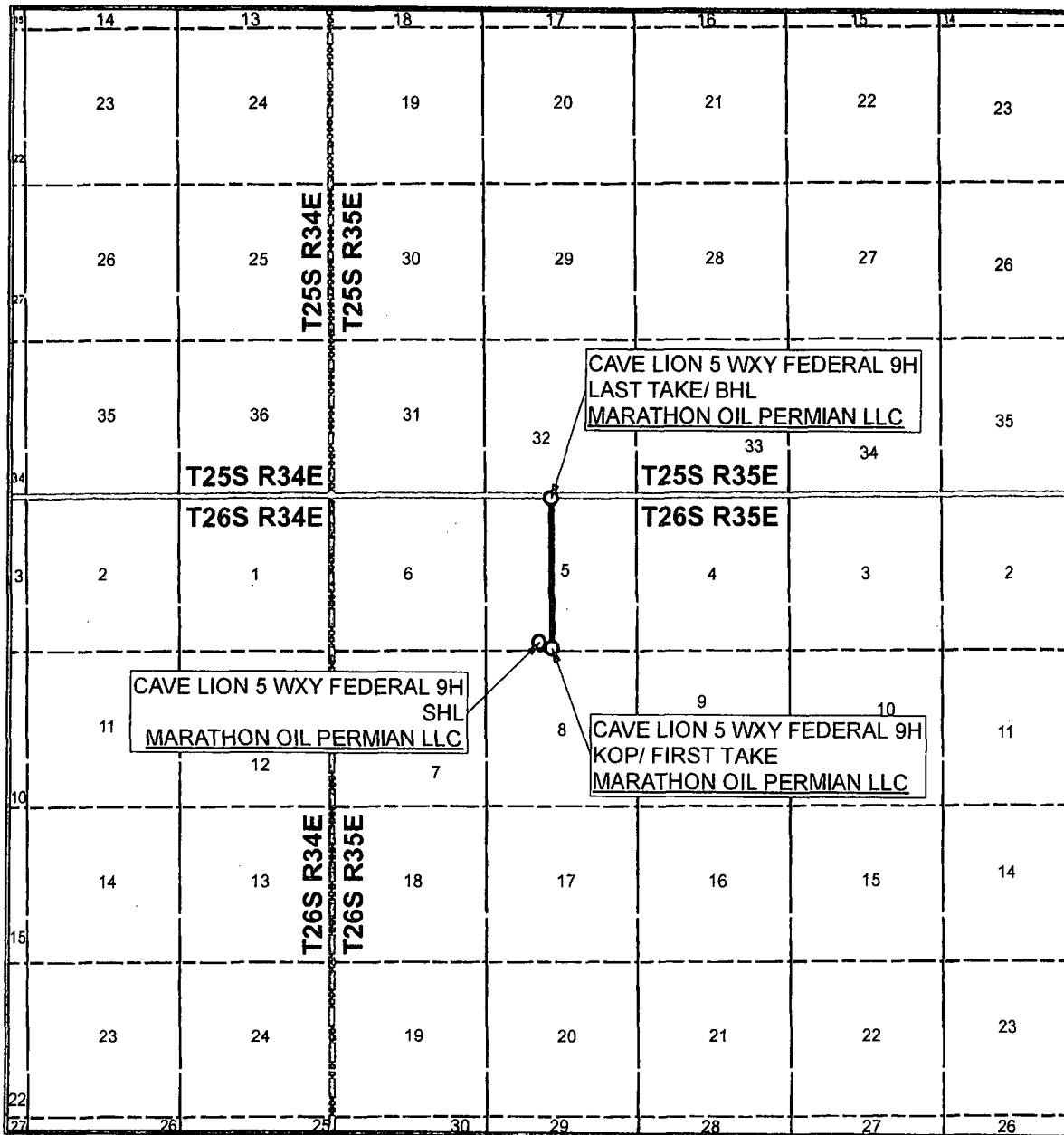
1" = 2,000'
 CONTOUR INTERVAL = 10'



SHEET 2 OF 3

PREPARED BY:
 R-SQUARED GLOBAL, LLC
 1309 LOUISVILLE AVENUE, MONROE, LA 71201
 318-323-6900 OFFICE
 JOB No. R3757_005

VICINITY MAP



SEC. 5 TWP. 26-S RGE. 35-E
 SURVEY: N.M.P.M.
 COUNTY: LEA
 OPERATOR: MARATHON OIL PERMIAN LLC
 DESCRIPTION: 287' FSL & 1871' FWL
 ELEVATION: 3262'
 LEASE: CAVE LION 5 FEDERAL
 U.S.G.S. TOPOGRAPHIC MAP: ANDREWS PLACE, NM, TX.

1" = 1 MILE



SHEET 3 OF 3

PREPARED BY:
 R-SQUARED GLOBAL, LLC
 1309 LOUISVILLE AVENUE, MONROE, LA 71201
 318-323-6900 OFFICE
 JOB No. R3767_005



Marathon Oil
Lea County, NM
Cave Lion 5 Federal
WCY #9H
Prelim Plan C
GL: 3262' + KB: 26.5' (H&P480)

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

RKB Elevation: Well @ 3288.50usft (GL: 3262' + KB: 26.5' (H&P480))

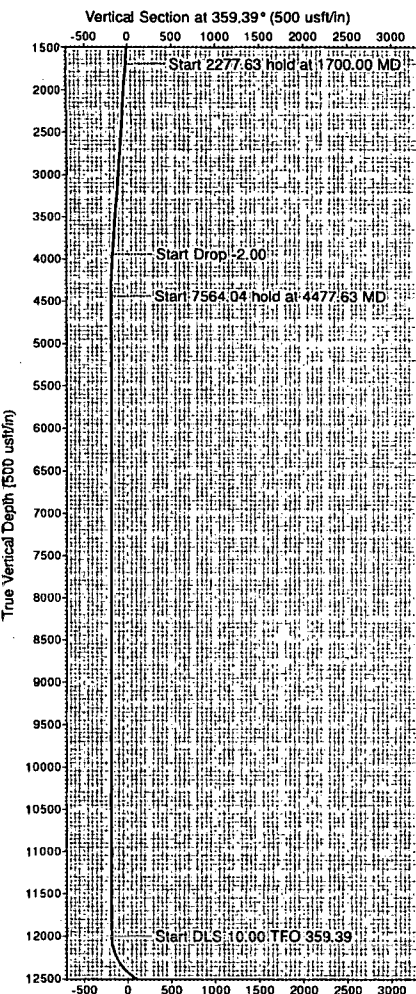
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	388917.06	791754.71	32.065749	-103.391519	

SECTION DETAILS

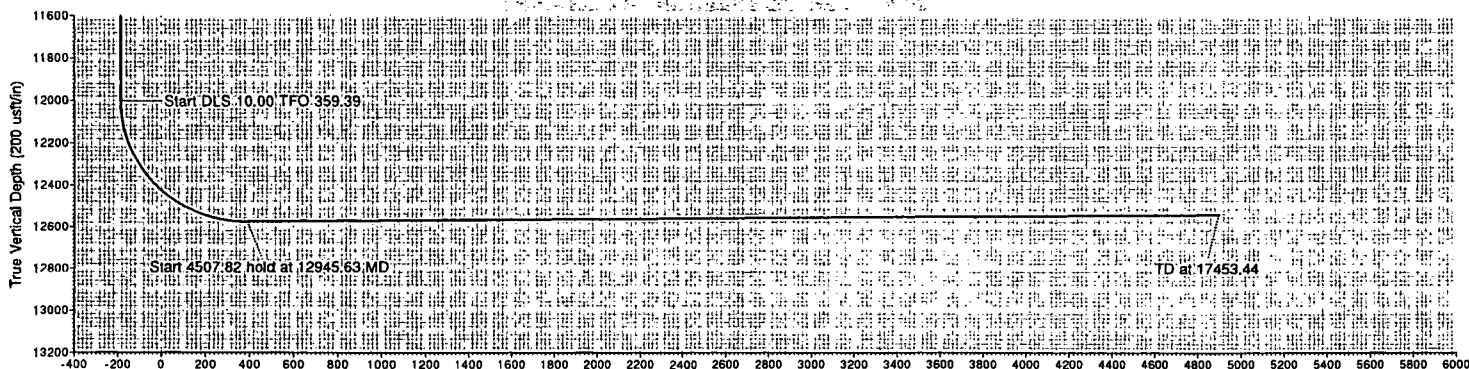
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	VSecl
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	1200.00	0.00	0.00	1200.00	0.00	0.00	0.00	0.00
3	1700.00	10.00	112.34	1697.47	-16.55	40.25	2.00	-16.97
4	3977.63	10.00	112.34	3940.49	-166.90	406.07	0.00	-171.22
5	4477.63	0.00	0.00	4437.96	-183.45	446.32	2.00	-188.19
6	12041.67	0.00	0.00	12002.00	-183.45	446.32	0.00	-188.19
7	12945.63	90.40	359.39	12574.94	393.43	440.23	10.00	388.72
8	17453.44	90.40	359.39	12543.82	4900.89	392.62	0.00	4896.43

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N/-S	+E/-W	Northing	Easting
[CaveLionWA#9H]FTP	12002.00	-183.45	446.32	388733.61	792201.03
[CaveLionWA#9H]LTP/BHL	12543.82	4900.89	392.62	393817.95	792147.33

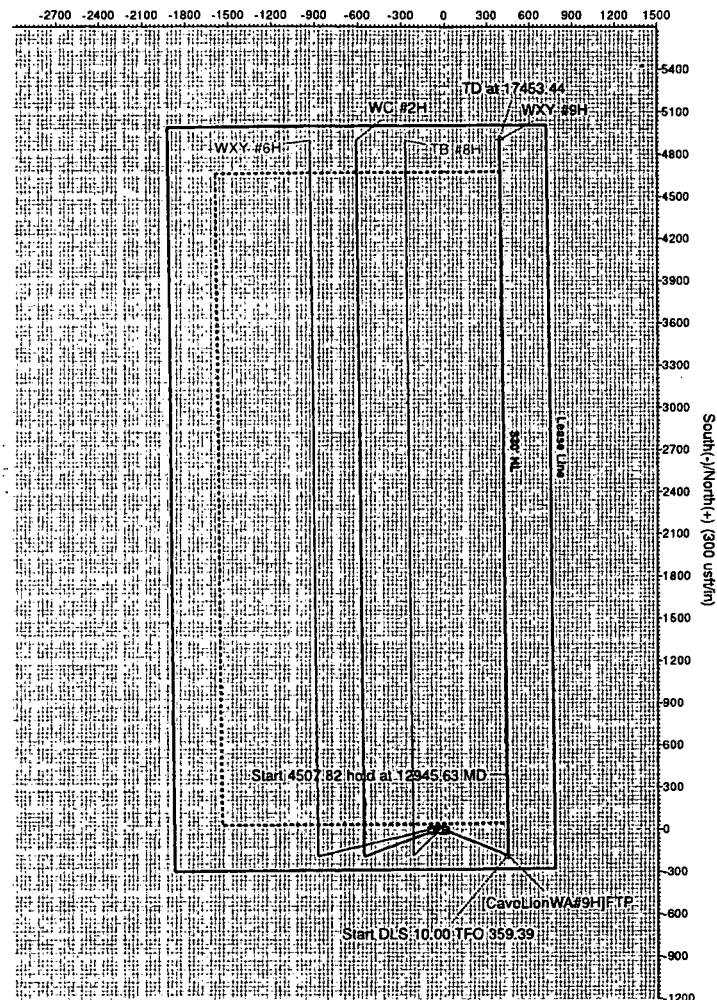


Target Line: 12578' TVD @ 0° VS, 90.4° INC



36" x 48"

West(-)/East(+) (300 usf/in)



Azimuths to Grid North
True North: -0.50°
Magnetic North: 6.20°
Magnetic Field
Strength: 47827.3nT
Dip Angle: 53.73°
Date: 4/13/2018
Model: HDGM

Azimuth Corrections

Total Magnetic Corr. (M to G): 6.20°

Declination (M to T): 6.70° East

Company:	Marathon Oil	Local Co-ordinate Reference:	Well WXY #9H
Project:	Lea County, NM	TVD Reference:	Well @ 3288.50usft (GL: 3262' + KB: 26.5' (H&P480))
Site:	Cave Lion 5 Federal	MD Reference:	Well @ 3288.50usft (GL: 3262' + KB: 26.5' (H&P480))
Well:	WXY #9H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Prelim Plan C	Database:	WellPlanner1

Project:	Lea 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		Cave Lion 5 Federal			
Site Position:		Northing:	388,805.07 usft	Latitude:	32.065478
From:	Map	Easting:	790,215.00 usft	Longitude:	-103.396492
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.50 °

Well	WXY #9H				
Well Position	+N-S	0.00 usft	Northing:	388,917.06 usft	Latitude: 32.065749
	+E-W	0.00 usft	Easting:	791,754.71 usft	Longitude: -103.391519
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level: 3,262.00 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	4/13/2018	6.70	59.73	47,827.30

Design:	Prelim Plan C			
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	359.39

Survey Tool Program		Date	12/17/2018		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.00	1,150.00	Prelim Plan C (OH)	MWD+IFR1	OWSG MWD + IFR1	
1,150.00	5,400.00	Prelim Plan C (OH)	MWD+IFR1	OWSG MWD + IFR1	
5,400.00	10,000.00	Prelim Plan C (OH)	MWD+IFR1	OWSG MWD + IFR1	
10,000.00	17,453.45	Prelim Plan C (OH)	MWD+IFR1	OWSG MWD + IFR1	

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

Company:	Marathon Oil	Local Co-ordinate Reference:	Well WXY #9H
Project:	Lea County, NM	TVD Reference:	Well @ 3288.50usft (GL: 3262' + KB: 26.5' (H&P480))
Site:	Cave Lion 5 Federal	MD Reference:	Well @ 3288.50usft (GL: 3262' + KB: 26.5' (H&P480))
Well:	WXY #9H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Prelim Plan C	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)
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	2.00	112.34	1,299.98	-0.66	1.61	-0.68	2.00	2.00	0.00
1,400.00	4.00	112.34	1,399.84	-2.65	6.45	-2.72	2.00	2.00	0.00
1,500.00	6.00	112.34	1,499.45	-5.97	14.52	-6.12	2.00	2.00	0.00
1,600.00	8.00	112.34	1,598.70	-10.60	25.79	-10.87	2.00	2.00	0.00
1,700.00	10.00	112.34	1,697.47	-16.55	40.25	-16.97	2.00	2.00	0.00
1,800.00	10.00	112.34	1,795.95	-23.15	56.32	-23.75	0.00	0.00	0.00
1,900.00	10.00	112.34	1,894.43	-29.75	72.38	-30.52	0.00	0.00	0.00
2,000.00	10.00	112.34	1,992.91	-36.35	88.44	-37.29	0.00	0.00	0.00
2,100.00	10.00	112.34	2,091.39	-42.95	104.50	-44.06	0.00	0.00	0.00
2,200.00	10.00	112.34	2,189.87	-49.55	120.56	-50.83	0.00	0.00	0.00
2,300.00	10.00	112.34	2,288.35	-56.16	136.62	-57.61	0.00	0.00	0.00
2,400.00	10.00	112.34	2,386.83	-62.76	152.68	-64.38	0.00	0.00	0.00
2,500.00	10.00	112.34	2,485.31	-69.36	168.74	-71.15	0.00	0.00	0.00
2,600.00	10.00	112.34	2,583.79	-75.96	184.80	-77.92	0.00	0.00	0.00
2,700.00	10.00	112.34	2,682.27	-82.56	200.87	-84.70	0.00	0.00	0.00
2,800.00	10.00	112.34	2,780.75	-89.16	216.93	-91.47	0.00	0.00	0.00
2,900.00	10.00	112.34	2,879.23	-95.76	232.99	-98.24	0.00	0.00	0.00
3,000.00	10.00	112.34	2,977.72	-102.37	249.05	-105.01	0.00	0.00	0.00
3,100.00	10.00	112.34	3,076.20	-108.97	265.11	-111.78	0.00	0.00	0.00
3,200.00	10.00	112.34	3,174.68	-115.57	281.17	-118.56	0.00	0.00	0.00
3,300.00	10.00	112.34	3,273.16	-122.17	297.23	-125.33	0.00	0.00	0.00
3,400.00	10.00	112.34	3,371.64	-128.77	313.29	-132.10	0.00	0.00	0.00
3,500.00	10.00	112.34	3,470.12	-135.37	329.35	-138.87	0.00	0.00	0.00
3,600.00	10.00	112.34	3,568.60	-141.97	345.41	-145.64	0.00	0.00	0.00
3,700.00	10.00	112.34	3,667.08	-148.58	361.48	-152.42	0.00	0.00	0.00
3,800.00	10.00	112.34	3,765.56	-155.18	377.54	-159.19	0.00	0.00	0.00
3,900.00	10.00	112.34	3,864.04	-161.78	393.60	-165.96	0.00	0.00	0.00
3,977.63	10.00	112.34	3,940.49	-166.90	406.07	-171.22	0.00	0.00	0.00
4,000.00	9.55	112.34	3,962.54	-168.35	409.58	-172.70	2.00	-2.00	0.00
4,100.00	7.55	112.34	4,061.42	-174.00	423.33	-178.50	2.00	-2.00	0.00
4,200.00	5.55	112.34	4,160.76	-178.34	433.89	-182.95	2.00	-2.00	0.00
4,300.00	3.55	112.34	4,260.44	-181.36	441.23	-186.04	2.00	-2.00	0.00
4,400.00	1.55	112.34	4,360.34	-183.05	445.35	-187.78	2.00	-2.00	0.00
4,477.63	0.00	0.00	4,437.96	-183.45	446.32	-188.19	2.00	-2.00	0.00
4,500.00	0.00	0.00	4,460.33	-183.45	446.32	-188.19	0.00	0.00	0.00

Company:	Marathon Oil	Local Co-ordinate Reference:	Well WXY #9H
Project:	Lea County, NM	TVD Reference:	Well @ 3288.50usft (GL: 3262' + KB: 26.5' (H&P480))
Site:	Cave Lion 5 Federal	MD Reference:	Well @ 3288.50usft (GL: 3262' + KB: 26.5' (H&P480))
Well:	WXY #9H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Prelim Plan C	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)
4,600.00	0.00	0.00	4,560.33	-183.45	446.32	-188.19	0.00	0.00	0.00
4,700.00	0.00	0.00	4,660.33	-183.45	446.32	-188.19	0.00	0.00	0.00
4,800.00	0.00	0.00	4,760.33	-183.45	446.32	-188.19	0.00	0.00	0.00
4,900.00	0.00	0.00	4,860.33	-183.45	446.32	-188.19	0.00	0.00	0.00
5,000.00	0.00	0.00	4,960.33	-183.45	446.32	-188.19	0.00	0.00	0.00
5,100.00	0.00	0.00	5,060.33	-183.45	446.32	-188.19	0.00	0.00	0.00
5,200.00	0.00	0.00	5,160.33	-183.45	446.32	-188.19	0.00	0.00	0.00
5,300.00	0.00	0.00	5,260.33	-183.45	446.32	-188.19	0.00	0.00	0.00
5,400.00	0.00	0.00	5,360.33	-183.45	446.32	-188.19	0.00	0.00	0.00
5,500.00	0.00	0.00	5,460.33	-183.45	446.32	-188.19	0.00	0.00	0.00
5,600.00	0.00	0.00	5,560.33	-183.45	446.32	-188.19	0.00	0.00	0.00
5,700.00	0.00	0.00	5,660.33	-183.45	446.32	-188.19	0.00	0.00	0.00
5,800.00	0.00	0.00	5,760.33	-183.45	446.32	-188.19	0.00	0.00	0.00
5,900.00	0.00	0.00	5,860.33	-183.45	446.32	-188.19	0.00	0.00	0.00
6,000.00	0.00	0.00	5,960.33	-183.45	446.32	-188.19	0.00	0.00	0.00
6,100.00	0.00	0.00	6,060.33	-183.45	446.32	-188.19	0.00	0.00	0.00
6,200.00	0.00	0.00	6,160.33	-183.45	446.32	-188.19	0.00	0.00	0.00
6,300.00	0.00	0.00	6,260.33	-183.45	446.32	-188.19	0.00	0.00	0.00
6,400.00	0.00	0.00	6,360.33	-183.45	446.32	-188.19	0.00	0.00	0.00
6,500.00	0.00	0.00	6,460.33	-183.45	446.32	-188.19	0.00	0.00	0.00
6,600.00	0.00	0.00	6,560.33	-183.45	446.32	-188.19	0.00	0.00	0.00
6,700.00	0.00	0.00	6,660.33	-183.45	446.32	-188.19	0.00	0.00	0.00
6,800.00	0.00	0.00	6,760.33	-183.45	446.32	-188.19	0.00	0.00	0.00
6,900.00	0.00	0.00	6,860.33	-183.45	446.32	-188.19	0.00	0.00	0.00
7,000.00	0.00	0.00	6,960.33	-183.45	446.32	-188.19	0.00	0.00	0.00
7,100.00	0.00	0.00	7,060.33	-183.45	446.32	-188.19	0.00	0.00	0.00
7,200.00	0.00	0.00	7,160.33	-183.45	446.32	-188.19	0.00	0.00	0.00
7,300.00	0.00	0.00	7,260.33	-183.45	446.32	-188.19	0.00	0.00	0.00
7,400.00	0.00	0.00	7,360.33	-183.45	446.32	-188.19	0.00	0.00	0.00
7,500.00	0.00	0.00	7,460.33	-183.45	446.32	-188.19	0.00	0.00	0.00
7,600.00	0.00	0.00	7,560.33	-183.45	446.32	-188.19	0.00	0.00	0.00
7,700.00	0.00	0.00	7,660.33	-183.45	446.32	-188.19	0.00	0.00	0.00
7,800.00	0.00	0.00	7,760.33	-183.45	446.32	-188.19	0.00	0.00	0.00
7,900.00	0.00	0.00	7,860.33	-183.45	446.32	-188.19	0.00	0.00	0.00
8,000.00	0.00	0.00	7,960.33	-183.45	446.32	-188.19	0.00	0.00	0.00
8,100.00	0.00	0.00	8,060.33	-183.45	446.32	-188.19	0.00	0.00	0.00
8,200.00	0.00	0.00	8,160.33	-183.45	446.32	-188.19	0.00	0.00	0.00
8,300.00	0.00	0.00	8,260.33	-183.45	446.32	-188.19	0.00	0.00	0.00
8,400.00	0.00	0.00	8,360.33	-183.45	446.32	-188.19	0.00	0.00	0.00
8,500.00	0.00	0.00	8,460.33	-183.45	446.32	-188.19	0.00	0.00	0.00
8,600.00	0.00	0.00	8,560.33	-183.45	446.32	-188.19	0.00	0.00	0.00
8,700.00	0.00	0.00	8,660.33	-183.45	446.32	-188.19	0.00	0.00	0.00

Company:	Marathon Oil	Local Co-ordinate Reference:	Well WXY #9H
Project:	Lea County, NM	TVD Reference:	Well @ 3288.50usft (GL: 3262' + KB: 26.5' (H&P480))
Site:	Cave Lion 5 Federal	MD Reference:	Well @ 3288.50usft (GL: 3262' + KB: 26.5' (H&P480))
Well:	WXY #9H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Prelim Plan C	Database:	WellPlanner1

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Buird Rate (°/100usft)	Turn Rate (°/100usft)
8,800.00	0.00	0.00	8,760.33	-183.45	446.32	-188.19	0.00	0.00	0.00
8,900.00	0.00	0.00	8,860.33	-183.45	446.32	-188.19	0.00	0.00	0.00
9,000.00	0.00	0.00	8,960.33	-183.45	446.32	-188.19	0.00	0.00	0.00
9,100.00	0.00	0.00	9,060.33	-183.45	446.32	-188.19	0.00	0.00	0.00
9,200.00	0.00	0.00	9,160.33	-183.45	446.32	-188.19	0.00	0.00	0.00
9,300.00	0.00	0.00	9,260.33	-183.45	446.32	-188.19	0.00	0.00	0.00
9,400.00	0.00	0.00	9,360.33	-183.45	446.32	-188.19	0.00	0.00	0.00
9,500.00	0.00	0.00	9,460.33	-183.45	446.32	-188.19	0.00	0.00	0.00
9,600.00	0.00	0.00	9,560.33	-183.45	446.32	-188.19	0.00	0.00	0.00
9,700.00	0.00	0.00	9,660.33	-183.45	446.32	-188.19	0.00	0.00	0.00
9,800.00	0.00	0.00	9,760.33	-183.45	446.32	-188.19	0.00	0.00	0.00
9,900.00	0.00	0.00	9,860.33	-183.45	446.32	-188.19	0.00	0.00	0.00
10,000.00	0.00	0.00	9,960.33	-183.45	446.32	-188.19	0.00	0.00	0.00
10,100.00	0.00	0.00	10,060.33	-183.45	446.32	-188.19	0.00	0.00	0.00
10,200.00	0.00	0.00	10,160.33	-183.45	446.32	-188.19	0.00	0.00	0.00
10,300.00	0.00	0.00	10,260.33	-183.45	446.32	-188.19	0.00	0.00	0.00
10,400.00	0.00	0.00	10,360.33	-183.45	446.32	-188.19	0.00	0.00	0.00
10,500.00	0.00	0.00	10,460.33	-183.45	446.32	-188.19	0.00	0.00	0.00
10,600.00	0.00	0.00	10,560.33	-183.45	446.32	-188.19	0.00	0.00	0.00
10,700.00	0.00	0.00	10,660.33	-183.45	446.32	-188.19	0.00	0.00	0.00
10,800.00	0.00	0.00	10,760.33	-183.45	446.32	-188.19	0.00	0.00	0.00
10,900.00	0.00	0.00	10,860.33	-183.45	446.32	-188.19	0.00	0.00	0.00
11,000.00	0.00	0.00	10,960.33	-183.45	446.32	-188.19	0.00	0.00	0.00
11,100.00	0.00	0.00	11,060.33	-183.45	446.32	-188.19	0.00	0.00	0.00
11,200.00	0.00	0.00	11,160.33	-183.45	446.32	-188.19	0.00	0.00	0.00
11,300.00	0.00	0.00	11,260.33	-183.45	446.32	-188.19	0.00	0.00	0.00
11,400.00	0.00	0.00	11,360.33	-183.45	446.32	-188.19	0.00	0.00	0.00
11,500.00	0.00	0.00	11,460.33	-183.45	446.32	-188.19	0.00	0.00	0.00
11,600.00	0.00	0.00	11,560.33	-183.45	446.32	-188.19	0.00	0.00	0.00
11,700.00	0.00	0.00	11,660.33	-183.45	446.32	-188.19	0.00	0.00	0.00
11,800.00	0.00	0.00	11,760.33	-183.45	446.32	-188.19	0.00	0.00	0.00
11,900.00	0.00	0.00	11,860.33	-183.45	446.32	-188.19	0.00	0.00	0.00
12,000.00	0.00	0.00	11,960.33	-183.45	446.32	-188.19	0.00	0.00	0.00
12,041.67	0.00	0.00	12,002.00	-183.45	446.32	-188.19	0.00	0.00	0.00
[CaveLionWA#9H]FTP									
12,050.00	0.83	359.39	12,010.33	-183.39	446.32	-188.13	10.00	10.00	0.00
12,100.00	5.83	359.39	12,060.23	-180.48	446.29	-185.23	10.00	10.00	0.00
12,150.00	10.83	359.39	12,109.68	-173.24	446.21	-177.98	10.00	10.00	0.00
12,200.00	15.83	359.39	12,158.32	-161.71	446.09	-166.45	10.00	10.00	0.00
12,250.00	20.83	359.39	12,205.77	-145.99	445.92	-150.73	10.00	10.00	0.00
12,300.00	25.83	359.39	12,251.67	-126.20	445.72	-130.94	10.00	10.00	0.00
12,350.00	30.83	359.39	12,295.66	-102.48	445.46	-107.21	10.00	10.00	0.00

Company:	Marathon Oil	Local Co-ordinate Reference:	Well WXY #9H
Project:	Lea County, NM	TVD Reference:	Well @ 3288.50usft (GL: 3262' + KB: 26.5' (H&P480))
Site:	Cave Lion 5 Federal	MD Reference:	Well @ 3288.50usft (GL: 3262' + KB: 26.5' (H&P480))
Well:	WXY #9H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Prelim Plan C	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)
12,400.00	35.83	359.39	12,337.42	-75.01	445.17	-79.75	10.00	10.00	0.00
12,450.00	40.83	359.39	12,376.63	-44.01	444.85	-48.75	10.00	10.00	0.00
12,500.00	45.83	359.39	12,412.99	-9.71	444.49	-14.44	10.00	10.00	0.00
12,550.00	50.83	359.39	12,446.22	27.62	444.09	22.89	10.00	10.00	0.00
12,600.00	55.83	359.39	12,476.07	67.72	443.67	62.99	10.00	10.00	0.00
12,650.00	60.83	359.39	12,502.31	110.26	443.22	105.53	10.00	10.00	0.00
12,700.00	65.83	359.39	12,524.74	154.92	442.75	150.20	10.00	10.00	0.00
12,750.00	70.83	359.39	12,543.20	201.37	442.26	196.65	10.00	10.00	0.00
12,800.00	75.83	359.39	12,557.53	249.25	441.75	244.53	10.00	10.00	0.00
12,850.00	80.83	359.39	12,567.64	298.20	441.23	293.49	10.00	10.00	0.00
12,900.00	85.83	359.39	12,573.44	347.84	440.71	343.13	10.00	10.00	0.00
12,945.63	90.40	359.39	12,574.94	393.43	440.23	388.72	10.00	10.00	0.00
13,000.00	90.40	359.39	12,574.57	447.80	439.65	443.09	0.00	0.00	0.00
13,100.00	90.40	359.39	12,573.88	547.79	438.60	543.09	0.00	0.00	0.00
13,200.00	90.40	359.39	12,573.19	647.78	437.54	643.09	0.00	0.00	0.00
13,300.00	90.40	359.39	12,572.50	747.78	436.48	743.09	0.00	0.00	0.00
13,400.00	90.40	359.39	12,571.81	847.77	435.43	843.08	0.00	0.00	0.00
13,500.00	90.40	359.39	12,571.12	947.76	434.37	943.08	0.00	0.00	0.00
13,600.00	90.40	359.39	12,570.43	1,047.75	433.32	1,043.08	0.00	0.00	0.00
13,700.00	90.40	359.39	12,569.74	1,147.74	432.26	1,143.08	0.00	0.00	0.00
13,800.00	90.40	359.39	12,569.05	1,247.74	431.20	1,243.07	0.00	0.00	0.00
13,900.00	90.40	359.39	12,568.35	1,347.73	430.15	1,343.07	0.00	0.00	0.00
14,000.00	90.40	359.39	12,567.66	1,447.72	429.09	1,443.07	0.00	0.00	0.00
14,100.00	90.40	359.39	12,566.97	1,547.71	428.04	1,543.07	0.00	0.00	0.00
14,200.00	90.40	359.39	12,566.28	1,647.70	426.98	1,643.06	0.00	0.00	0.00
14,300.00	90.40	359.39	12,565.59	1,747.70	425.92	1,743.06	0.00	0.00	0.00
14,400.00	90.40	359.39	12,564.90	1,847.69	424.87	1,843.06	0.00	0.00	0.00
14,500.00	90.40	359.39	12,564.21	1,947.68	423.81	1,943.06	0.00	0.00	0.00
14,600.00	90.40	359.39	12,563.52	2,047.67	422.76	2,043.06	0.00	0.00	0.00
14,700.00	90.40	359.39	12,562.83	2,147.66	421.70	2,143.05	0.00	0.00	0.00
14,800.00	90.40	359.39	12,562.14	2,247.66	420.64	2,243.05	0.00	0.00	0.00
14,900.00	90.40	359.39	12,561.45	2,347.65	419.59	2,343.05	0.00	0.00	0.00
15,000.00	90.40	359.39	12,560.76	2,447.64	418.53	2,443.05	0.00	0.00	0.00
15,100.00	90.40	359.39	12,560.07	2,547.63	417.47	2,543.04	0.00	0.00	0.00
15,200.00	90.40	359.39	12,559.38	2,647.62	416.42	2,643.04	0.00	0.00	0.00
15,300.00	90.40	359.39	12,558.69	2,747.62	415.36	2,743.04	0.00	0.00	0.00
15,400.00	90.40	359.39	12,558.00	2,847.61	414.31	2,843.04	0.00	0.00	0.00
15,500.00	90.40	359.39	12,557.31	2,947.60	413.25	2,943.03	0.00	0.00	0.00
15,600.00	90.40	359.39	12,556.62	3,047.59	412.19	3,043.03	0.00	0.00	0.00
15,700.00	90.40	359.39	12,555.93	3,147.58	411.14	3,143.03	0.00	0.00	0.00
15,800.00	90.40	359.39	12,555.24	3,247.58	410.08	3,243.03	0.00	0.00	0.00
15,900.00	90.40	359.39	12,554.55	3,347.57	409.03	3,343.02	0.00	0.00	0.00

Company:	Marathon Oil	Local Co-ordinate Reference:	Well WXY #9H
Project:	Lea County, NM	TVD Reference:	Well @ 3288.50usft (GL: 3262' + KB: 26.5' (H&P480))
Site:	Cave Lion 5 Federal	MD Reference:	Well @ 3288.50usft (GL: 3262' + KB: 26.5' (H&P480))
Well:	WXY #9H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Prelim Plan C	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)
16,000.00	90.40	359.39	12,553.86	3,447.56	407.97	3,443.02	0.00	0.00	0.00
16,100.00	90.40	359.39	12,553.17	3,547.55	406.91	3,543.02	0.00	0.00	0.00
16,200.00	90.40	359.39	12,552.47	3,647.55	405.86	3,643.02	0.00	0.00	0.00
16,300.00	90.40	359.39	12,551.78	3,747.54	404.80	3,743.01	0.00	0.00	0.00
16,400.00	90.40	359.39	12,551.09	3,847.53	403.75	3,843.01	0.00	0.00	0.00
16,500.00	90.40	359.39	12,550.40	3,947.52	402.69	3,943.01	0.00	0.00	0.00
16,600.00	90.40	359.39	12,549.71	4,047.51	401.63	4,043.01	0.00	0.00	0.00
16,700.00	90.40	359.39	12,549.02	4,147.51	400.58	4,143.01	0.00	0.00	0.00
16,800.00	90.40	359.39	12,548.33	4,247.50	399.52	4,243.00	0.00	0.00	0.00
16,900.00	90.40	359.39	12,547.64	4,347.49	398.46	4,343.00	0.00	0.00	0.00
17,000.00	90.40	359.39	12,546.95	4,447.48	397.41	4,443.00	0.00	0.00	0.00
17,100.00	90.40	359.39	12,546.26	4,547.47	396.35	4,543.00	0.00	0.00	0.00
17,200.00	90.40	359.39	12,545.57	4,647.47	395.30	4,642.99	0.00	0.00	0.00
17,300.00	90.40	359.39	12,544.88	4,747.46	394.24	4,742.99	0.00	0.00	0.00
17,400.00	90.40	359.39	12,544.19	4,847.45	393.18	4,842.99	0.00	0.00	0.00
17,453.45	90.40	359.39	12,543.82	4,900.89	392.62	4,896.43	0.00	0.00	0.00

[CaveLionWA#9H]LTP/BHL

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
[CaveLionWA#9H]FTP	0.00	0.00	12,002.0 0	-183.45	446.32	388,733.61	792,201.03	32.065234	-103.390084
- plan hits target center - Point									
[CaveLionWA#9H]LTP/B	0.00	0.00	12,543.8 2	4,900.89	392.62	393,817.95	792,147.33	32.079210	-103.390114
- plan hits target center - Point									

Checked By: _____ Approved By: _____ Date: _____

WELL LOCATION PLAT

CAVE LION FEDERAL 26-35-5 (PAD 1)

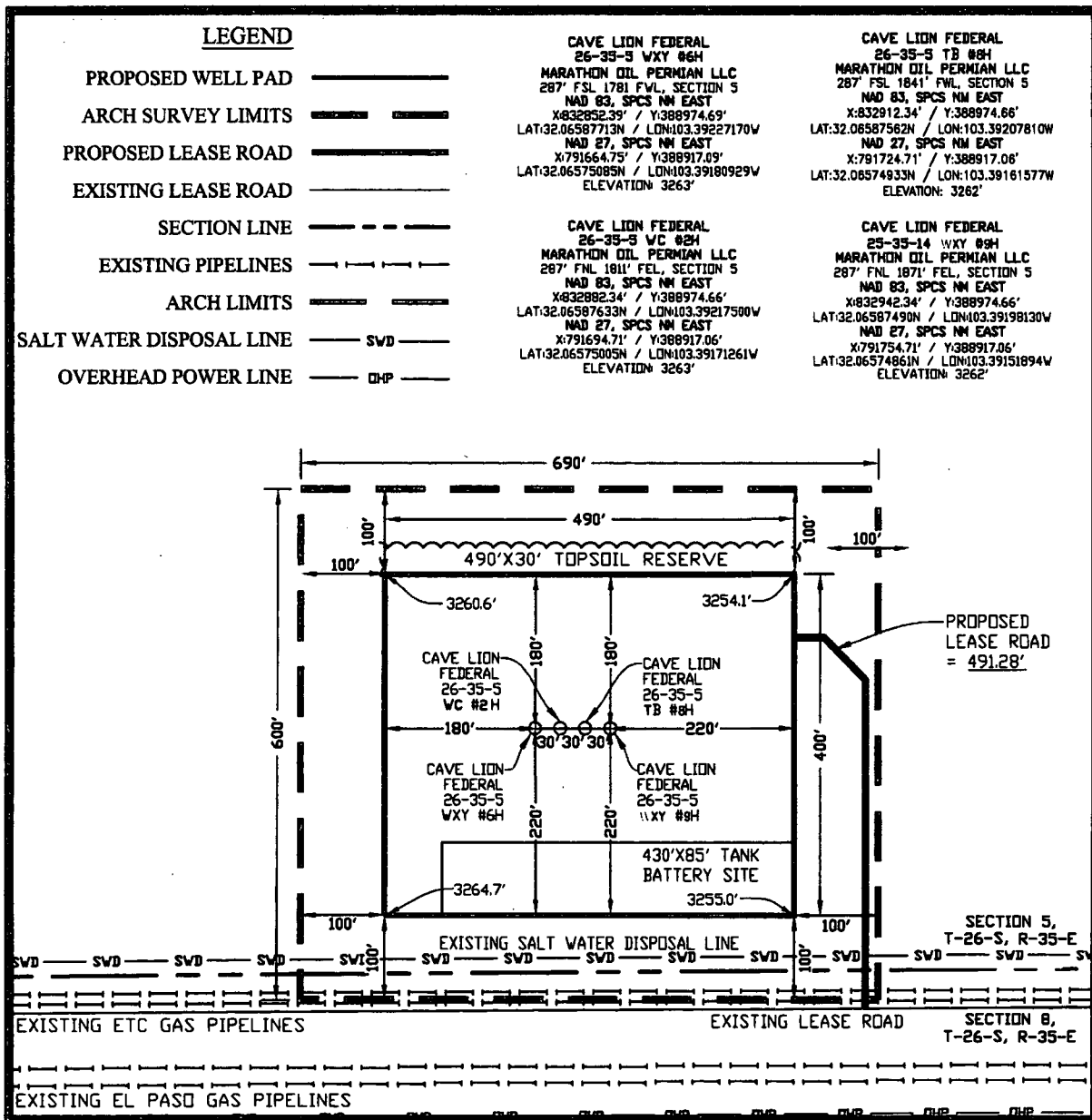
SEC. 5 TWP. 26-S RGE. 35-E

SURVEY: N.M.P.M.

COUNTY: LEA

OPERATOR: MARATHON OIL PERMIAN LLC

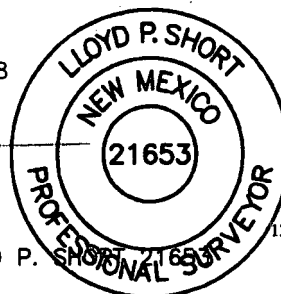
U.S.G.S. TOPOGRAPHIC MAP: ANDREW'S PLACE, N.M.



DIRECTIONS TO LOCATION:

MAY 18, 2018

Lloyd P. Short



LLOYD P. SHORT

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

PREPARED BY:
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