

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

6. If Indian, Allottee or Tribe Name

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

8. Well Name and No.
CAVE LION FEDERAL 5 TB 8H9. API Well No.
30-025-4541910. Field and Pool or Exploratory Area
BONESPRING

11. County or Parish, State

LEA COUNTY, NM

SUBMIT IN TRIPLICATE - Other instructions on page 2

1. Type of Well

☒ Oil Well ☐ Gas Well ☐ Other

2. Name of Operator

MARATHON OIL PERMIAN LLC

Contact: JENNIFER VAN CUREN

E-Mail: jvancuren@marathonoil.com

3a. Address

5555 SAN FELIPE ST
HOUSTON, TX 77056

3b. Phone No. (include area code)

Ph: 713-296-2500

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

Sec 5 T26S R35E Mer NMP SESW 287FSL 1871FWL

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	Change to Original APD
	☐ 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 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 TB 8H
To: Cave Lion 5 TB Federal 8HChange SHL
From: 287 FSL & 1871 FWL
To: 287 FSL & 1841 FWLChange FTP
From: 150 FSL & 2315 FWLNo new surface disturbance covered under DOI-BLM-NM-PD20-2018-0979-EA.
CCR
Engineering is good. All previous COAs still apply. 25 2/21/19. Previous COAs apply. 02082008

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

Electronic Submission #451444 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 #451444 that would not fit on the form

32. Additional remarks, continued

To: 100 FSL & 1650 FWL

Change LTP

From: 150 FNL & 2313 FWL

To: 100 FNL & 1652 FWL

Update slurry density of the intermediate 2

From: 15.6

To: 14.8



Marathon Oil
Lea County, NM
Cave Lion 5 Federal
TB #8H
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))

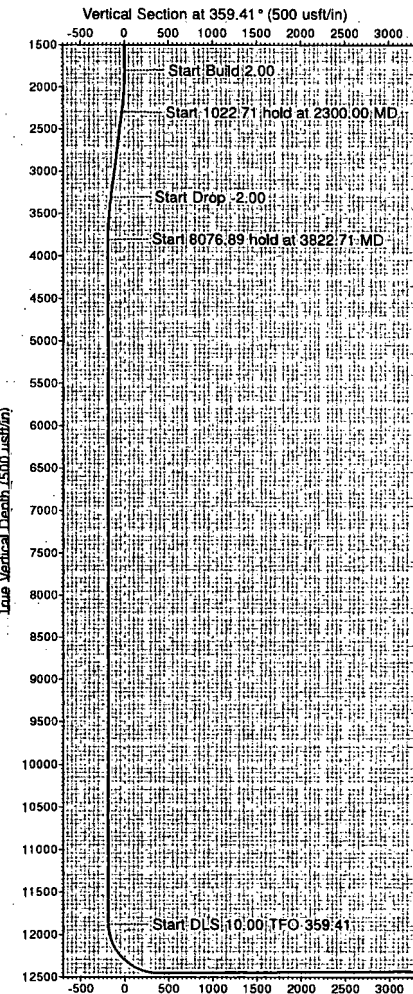
+N-S	+E-W	Northing	Easting	Latitude	Longitude	Spot
0.00	0.00	388917.06	791724.71	32.065749	-103.391616	

SECTION DETAILS

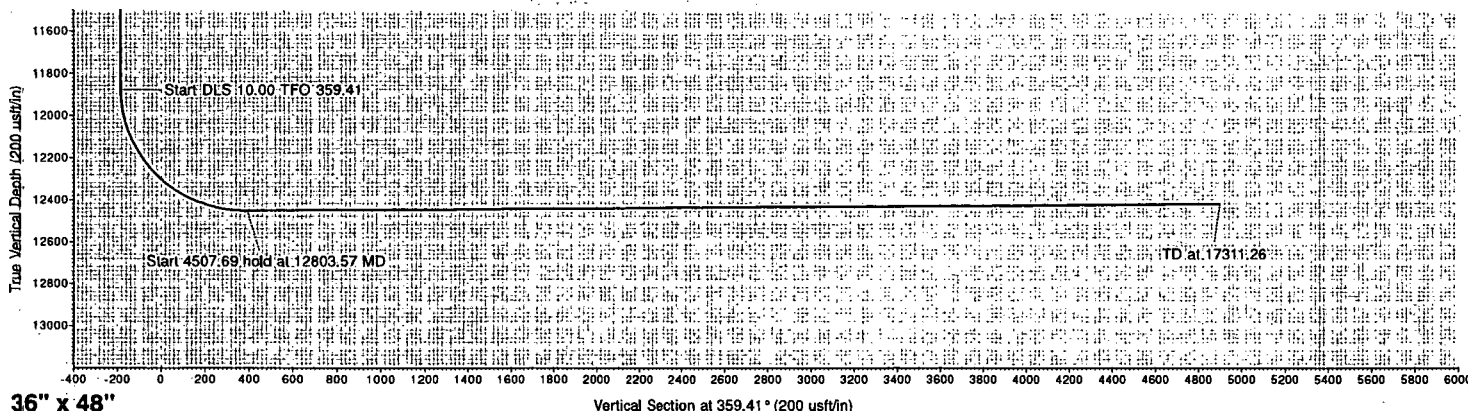
Sec	MD	Inc	Azi	TVD	+N-S	+E-W	Dleg	Vsect
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	1800.00	0.00	0.00	1800.00	0.00	0.00	0.00	0.00
3	2300.00	10.00	224.74	2297.47	-30.92	-30.63	2.00	-30.60
4	3322.71	10.00	224.74	3304.64	-157.06	-155.64	0.00	-155.45
5	3822.71	0.00	0.00	3802.11	-187.98	-186.27	2.00	-186.05
6	11899.61	0.00	0.00	11879.00	-187.98	-186.27	0.00	-186.05
7	12803.57	90.40	359.41	12451.94	388.91	-192.25	10.00	390.86
8	17311.26	90.40	359.41	12420.80	4896.25	-238.93	0.00	4898.45

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

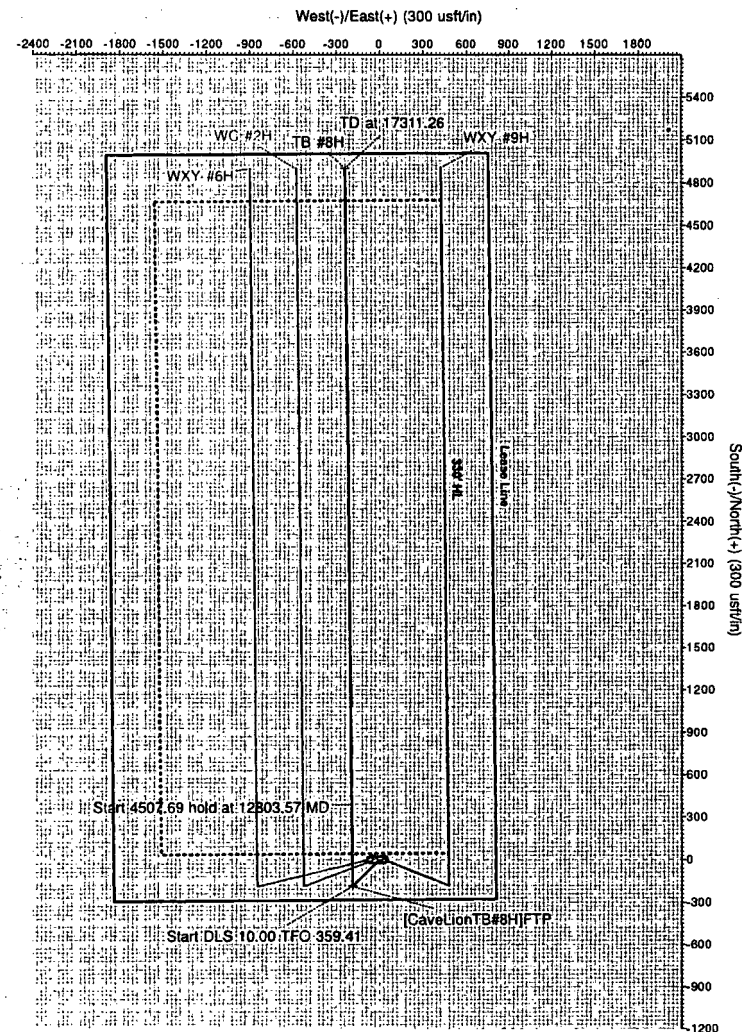
Name	TVD	+N-S	+E-W	Northing	Easting
[CaveLionTB#8H]FTP	11879.00	-187.98	-186.27	388729.08	791538.44
[CaveLionTB#8H]LTP/BHL	12420.80	4896.25	-238.93	393813.31	791485.78



Target Line: 12455' TVD @ 0° VS, 90.4° INC



36" x 48"



Azimuths to Grid North
True North: -0.50°
Magnetic North: 6.20°

Magnetic Field
Strength: 47827.35nT
Dip Angle: 59.72°
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 TB #8H
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:	TB #8H	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:	TB #8H					
Well Position	+N/-S	0.00 usft	Northing:	388,917.06 usft	Latitude:	32.065749
	+E/-W	0.00 usft	Easting:	791,724.71 usft	Longitude:	-103.391616
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)	+N/-S	+E/-W	Direction	
	(usft)	(usft)	(usft)	(°)	
	0.00	0.00	0.00	359.41	

Survey Tool Program:	Date 12/17/2018				
From	To	Survey (Wellbore)	Tool Name	Description	
(usft)	(usft)				
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	17,311.26	Prelim Plan C (OH)	MWD+IFR1	OWSG MWD + IFR1	

Planned Survey										
Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Vertical	Dogleg	Build	Turn	
Depth	(°)	(°)	Depth	(usft)	(usft)	Section	Rate	Rate	Rate	
(usft)			(usft)			(usft)	(°/100usft)	(°/100usft)	(°/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 TB #8H
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:	TB #8H	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	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	2.00	224.74	1,899.98	-1.24	-1.23	-1.23	2.00	2.00	0.00
2,000.00	4.00	224.74	1,999.84	-4.96	-4.91	-4.91	2.00	2.00	0.00
2,100.00	6.00	224.74	2,099.45	-11.15	-11.05	-11.03	2.00	2.00	0.00
2,200.00	8.00	224.74	2,198.70	-19.80	-19.62	-19.60	2.00	2.00	0.00
2,300.00	10.00	224.74	2,297.47	-30.92	-30.63	-30.60	2.00	2.00	0.00
2,400.00	10.00	224.74	2,395.95	-43.25	-42.86	-42.81	0.00	0.00	0.00
2,500.00	10.00	224.74	2,494.43	-55.58	-55.08	-55.01	0.00	0.00	0.00
2,600.00	10.00	224.74	2,592.91	-67.92	-67.30	-67.22	0.00	0.00	0.00
2,700.00	10.00	224.74	2,691.39	-80.25	-79.52	-79.43	0.00	0.00	0.00
2,800.00	10.00	224.74	2,789.87	-92.59	-91.75	-91.64	0.00	0.00	0.00
2,900.00	10.00	224.74	2,888.35	-104.92	-103.97	-103.85	0.00	0.00	0.00
3,000.00	10.00	224.74	2,986.83	-117.26	-116.19	-116.06	0.00	0.00	0.00
3,100.00	10.00	224.74	3,085.31	-129.59	-128.41	-128.26	0.00	0.00	0.00
3,200.00	10.00	224.74	3,183.79	-141.93	-140.64	-140.47	0.00	0.00	0.00
3,300.00	10.00	224.74	3,282.27	-154.26	-152.86	-152.68	0.00	0.00	0.00
3,322.71	10.00	224.74	3,304.64	-157.06	-155.64	-155.45	0.00	0.00	0.00
3,400.00	8.45	224.74	3,380.93	-165.87	-164.36	-164.17	2.00	-2.00	0.00
3,500.00	6.45	224.74	3,480.08	-175.08	-173.49	-173.29	2.00	-2.00	0.00
3,600.00	4.45	224.74	3,579.62	-181.83	-180.18	-179.97	2.00	-2.00	0.00
3,700.00	2.45	224.74	3,679.43	-186.11	-184.42	-184.20	2.00	-2.00	0.00
3,800.00	0.45	224.74	3,779.39	-187.92	-186.21	-185.99	2.00	-2.00	0.00
3,822.71	0.00	0.00	3,802.11	-187.98	-186.27	-186.05	2.00	-2.00	0.00
3,900.00	0.00	0.00	3,879.39	-187.98	-186.27	-186.05	0.00	0.00	0.00
4,000.00	0.00	0.00	3,979.39	-187.98	-186.27	-186.05	0.00	0.00	0.00
4,100.00	0.00	0.00	4,079.39	-187.98	-186.27	-186.05	0.00	0.00	0.00
4,200.00	0.00	0.00	4,179.39	-187.98	-186.27	-186.05	0.00	0.00	0.00
4,300.00	0.00	0.00	4,279.39	-187.98	-186.27	-186.05	0.00	0.00	0.00
4,400.00	0.00	0.00	4,379.39	-187.98	-186.27	-186.05	0.00	0.00	0.00
4,500.00	0.00	0.00	4,479.39	-187.98	-186.27	-186.05	0.00	0.00	0.00

Company:	Marathon Oil	Local Co-ordinate Reference:	Well TB #8H
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:	TB #8H	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	4,579.39	-187.98	-186.27	-186.05	0.00	0.00	0.00	
4,700.00	0.00	0.00	4,679.39	-187.98	-186.27	-186.05	0.00	0.00	0.00	
4,800.00	0.00	0.00	4,779.39	-187.98	-186.27	-186.05	0.00	0.00	0.00	
4,900.00	0.00	0.00	4,879.39	-187.98	-186.27	-186.05	0.00	0.00	0.00	
5,000.00	0.00	0.00	4,979.39	-187.98	-186.27	-186.05	0.00	0.00	0.00	
5,100.00	0.00	0.00	5,079.39	-187.98	-186.27	-186.05	0.00	0.00	0.00	
5,200.00	0.00	0.00	5,179.39	-187.98	-186.27	-186.05	0.00	0.00	0.00	
5,300.00	0.00	0.00	5,279.39	-187.98	-186.27	-186.05	0.00	0.00	0.00	
5,400.00	0.00	0.00	5,379.39	-187.98	-186.27	-186.05	0.00	0.00	0.00	
5,500.00	0.00	0.00	5,479.39	-187.98	-186.27	-186.05	0.00	0.00	0.00	
5,600.00	0.00	0.00	5,579.39	-187.98	-186.27	-186.05	0.00	0.00	0.00	
5,700.00	0.00	0.00	5,679.39	-187.98	-186.27	-186.05	0.00	0.00	0.00	
5,800.00	0.00	0.00	5,779.39	-187.98	-186.27	-186.05	0.00	0.00	0.00	
5,900.00	0.00	0.00	5,879.39	-187.98	-186.27	-186.05	0.00	0.00	0.00	
6,000.00	0.00	0.00	5,979.39	-187.98	-186.27	-186.05	0.00	0.00	0.00	
6,100.00	0.00	0.00	6,079.39	-187.98	-186.27	-186.05	0.00	0.00	0.00	
6,200.00	0.00	0.00	6,179.39	-187.98	-186.27	-186.05	0.00	0.00	0.00	
6,300.00	0.00	0.00	6,279.39	-187.98	-186.27	-186.05	0.00	0.00	0.00	
6,400.00	0.00	0.00	6,379.39	-187.98	-186.27	-186.05	0.00	0.00	0.00	
6,500.00	0.00	0.00	6,479.39	-187.98	-186.27	-186.05	0.00	0.00	0.00	
6,600.00	0.00	0.00	6,579.39	-187.98	-186.27	-186.05	0.00	0.00	0.00	
6,700.00	0.00	0.00	6,679.39	-187.98	-186.27	-186.05	0.00	0.00	0.00	
6,800.00	0.00	0.00	6,779.39	-187.98	-186.27	-186.05	0.00	0.00	0.00	
6,900.00	0.00	0.00	6,879.39	-187.98	-186.27	-186.05	0.00	0.00	0.00	
7,000.00	0.00	0.00	6,979.39	-187.98	-186.27	-186.05	0.00	0.00	0.00	
7,100.00	0.00	0.00	7,079.39	-187.98	-186.27	-186.05	0.00	0.00	0.00	
7,200.00	0.00	0.00	7,179.39	-187.98	-186.27	-186.05	0.00	0.00	0.00	
7,300.00	0.00	0.00	7,279.39	-187.98	-186.27	-186.05	0.00	0.00	0.00	
7,400.00	0.00	0.00	7,379.39	-187.98	-186.27	-186.05	0.00	0.00	0.00	
7,500.00	0.00	0.00	7,479.39	-187.98	-186.27	-186.05	0.00	0.00	0.00	
7,600.00	0.00	0.00	7,579.39	-187.98	-186.27	-186.05	0.00	0.00	0.00	
7,700.00	0.00	0.00	7,679.39	-187.98	-186.27	-186.05	0.00	0.00	0.00	
7,800.00	0.00	0.00	7,779.39	-187.98	-186.27	-186.05	0.00	0.00	0.00	
7,900.00	0.00	0.00	7,879.39	-187.98	-186.27	-186.05	0.00	0.00	0.00	
8,000.00	0.00	0.00	7,979.39	-187.98	-186.27	-186.05	0.00	0.00	0.00	
8,100.00	0.00	0.00	8,079.39	-187.98	-186.27	-186.05	0.00	0.00	0.00	
8,200.00	0.00	0.00	8,179.39	-187.98	-186.27	-186.05	0.00	0.00	0.00	
8,300.00	0.00	0.00	8,279.39	-187.98	-186.27	-186.05	0.00	0.00	0.00	
8,400.00	0.00	0.00	8,379.39	-187.98	-186.27	-186.05	0.00	0.00	0.00	
8,500.00	0.00	0.00	8,479.39	-187.98	-186.27	-186.05	0.00	0.00	0.00	
8,600.00	0.00	0.00	8,579.39	-187.98	-186.27	-186.05	0.00	0.00	0.00	
8,700.00	0.00	0.00	8,679.39	-187.98	-186.27	-186.05	0.00	0.00	0.00	

Company:	Marathon Oil	Local Co-ordinate Reference:	Well TB #8H
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:	TB #8H	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)	
8,800.00	0.00	0.00	8,779.39	-187.98	-186.27	-186.05	0.00	0.00	0.00	
8,900.00	0.00	0.00	8,879.39	-187.98	-186.27	-186.05	0.00	0.00	0.00	
9,000.00	0.00	0.00	8,979.39	-187.98	-186.27	-186.05	0.00	0.00	0.00	
9,100.00	0.00	0.00	9,079.39	-187.98	-186.27	-186.05	0.00	0.00	0.00	
9,200.00	0.00	0.00	9,179.39	-187.98	-186.27	-186.05	0.00	0.00	0.00	
9,300.00	0.00	0.00	9,279.39	-187.98	-186.27	-186.05	0.00	0.00	0.00	
9,400.00	0.00	0.00	9,379.39	-187.98	-186.27	-186.05	0.00	0.00	0.00	
9,500.00	0.00	0.00	9,479.39	-187.98	-186.27	-186.05	0.00	0.00	0.00	
9,600.00	0.00	0.00	9,579.39	-187.98	-186.27	-186.05	0.00	0.00	0.00	
9,700.00	0.00	0.00	9,679.39	-187.98	-186.27	-186.05	0.00	0.00	0.00	
9,800.00	0.00	0.00	9,779.39	-187.98	-186.27	-186.05	0.00	0.00	0.00	
9,900.00	0.00	0.00	9,879.39	-187.98	-186.27	-186.05	0.00	0.00	0.00	
10,000.00	0.00	0.00	9,979.39	-187.98	-186.27	-186.05	0.00	0.00	0.00	
10,100.00	0.00	0.00	10,079.39	-187.98	-186.27	-186.05	0.00	0.00	0.00	
10,200.00	0.00	0.00	10,179.39	-187.98	-186.27	-186.05	0.00	0.00	0.00	
10,300.00	0.00	0.00	10,279.39	-187.98	-186.27	-186.05	0.00	0.00	0.00	
10,400.00	0.00	0.00	10,379.39	-187.98	-186.27	-186.05	0.00	0.00	0.00	
10,500.00	0.00	0.00	10,479.39	-187.98	-186.27	-186.05	0.00	0.00	0.00	
10,600.00	0.00	0.00	10,579.39	-187.98	-186.27	-186.05	0.00	0.00	0.00	
10,700.00	0.00	0.00	10,679.39	-187.98	-186.27	-186.05	0.00	0.00	0.00	
10,800.00	0.00	0.00	10,779.39	-187.98	-186.27	-186.05	0.00	0.00	0.00	
10,900.00	0.00	0.00	10,879.39	-187.98	-186.27	-186.05	0.00	0.00	0.00	
11,000.00	0.00	0.00	10,979.39	-187.98	-186.27	-186.05	0.00	0.00	0.00	
11,100.00	0.00	0.00	11,079.39	-187.98	-186.27	-186.05	0.00	0.00	0.00	
11,200.00	0.00	0.00	11,179.39	-187.98	-186.27	-186.05	0.00	0.00	0.00	
11,300.00	0.00	0.00	11,279.39	-187.98	-186.27	-186.05	0.00	0.00	0.00	
11,400.00	0.00	0.00	11,379.39	-187.98	-186.27	-186.05	0.00	0.00	0.00	
11,500.00	0.00	0.00	11,479.39	-187.98	-186.27	-186.05	0.00	0.00	0.00	
11,600.00	0.00	0.00	11,579.39	-187.98	-186.27	-186.05	0.00	0.00	0.00	
11,700.00	0.00	0.00	11,679.39	-187.98	-186.27	-186.05	0.00	0.00	0.00	
11,800.00	0.00	0.00	11,779.39	-187.98	-186.27	-186.05	0.00	0.00	0.00	
11,899.61	0.00	0.00	11,879.00	-187.98	-186.27	-186.05	0.00	0.00	0.00	
[CaveLionTB#8H]FTP										
11,950.00	5.04	359.41	11,929.33	-185.77	-186.29	-183.84	10.00	10.00	0.00	
12,000.00	10.04	359.41	11,978.88	-179.21	-186.36	-177.28	10.00	10.00	0.00	
12,050.00	15.04	359.41	12,027.67	-168.36	-186.47	-166.43	10.00	10.00	0.00	
12,100.00	20.04	359.41	12,075.33	-153.29	-186.63	-151.36	10.00	10.00	0.00	
12,150.00	25.04	359.41	12,121.50	-134.13	-186.83	-132.20	10.00	10.00	0.00	
12,200.00	30.04	359.41	12,165.82	-111.03	-187.07	-109.09	10.00	10.00	0.00	
12,250.00	35.04	359.41	12,207.96	-84.14	-187.35	-82.21	10.00	10.00	0.00	
12,300.00	40.04	359.41	12,247.59	-53.69	-187.66	-51.75	10.00	10.00	0.00	
12,350.00	45.04	359.41	12,284.42	-19.90	-188.01	-17.96	10.00	10.00	0.00	

Company:	Marathon Oil	Local Co-ordinate Reference:	Well TB #8H
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:	TB #8H	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	50.04	359.41	12,318.16	16.98	-188.39	18.92	10.00	10.00	0.00
12,450.00	55.04	359.41	12,348.57	56.65	-188.80	58.59	10.00	10.00	0.00
12,500.00	60.04	359.41	12,375.39	98.82	-189.24	100.77	10.00	10.00	0.00
12,550.00	65.04	359.41	12,398.44	143.17	-189.70	145.12	10.00	10.00	0.00
12,600.00	70.04	359.41	12,417.54	189.36	-190.18	191.31	10.00	10.00	0.00
12,650.00	75.04	359.41	12,432.54	237.04	-190.67	238.99	10.00	10.00	0.00
12,700.00	80.04	359.41	12,443.32	285.85	-191.18	287.80	10.00	10.00	0.00
12,750.00	85.04	359.41	12,449.81	335.41	-191.69	337.36	10.00	10.00	0.00
12,803.57	90.40	359.41	12,451.94	388.91	-192.25	390.86	10.00	10.00	0.00
12,900.00	90.40	359.41	12,451.28	485.33	-193.24	487.30	0.00	0.00	0.00
13,000.00	90.40	359.41	12,450.59	585.33	-194.28	587.29	0.00	0.00	0.00
13,100.00	90.40	359.41	12,449.90	685.32	-195.32	687.29	0.00	0.00	0.00
13,200.00	90.40	359.41	12,449.21	785.31	-196.35	787.29	0.00	0.00	0.00
13,300.00	90.40	359.41	12,448.51	885.30	-197.39	887.29	0.00	0.00	0.00
13,400.00	90.40	359.41	12,447.82	985.29	-198.42	987.29	0.00	0.00	0.00
13,500.00	90.40	359.41	12,447.13	1,085.29	-199.46	1,087.28	0.00	0.00	0.00
13,600.00	90.40	359.41	12,446.44	1,185.28	-200.49	1,187.28	0.00	0.00	0.00
13,700.00	90.40	359.41	12,445.75	1,285.27	-201.53	1,287.28	0.00	0.00	0.00
13,800.00	90.40	359.41	12,445.06	1,385.26	-202.56	1,387.28	0.00	0.00	0.00
13,900.00	90.40	359.41	12,444.37	1,485.26	-203.60	1,487.27	0.00	0.00	0.00
14,000.00	90.40	359.41	12,443.68	1,585.25	-204.64	1,587.27	0.00	0.00	0.00
14,100.00	90.40	359.41	12,442.99	1,685.24	-205.67	1,687.27	0.00	0.00	0.00
14,200.00	90.40	359.41	12,442.30	1,785.23	-206.71	1,787.27	0.00	0.00	0.00
14,300.00	90.40	359.41	12,441.61	1,885.22	-207.74	1,887.26	0.00	0.00	0.00
14,400.00	90.40	359.41	12,440.91	1,985.22	-208.78	1,987.26	0.00	0.00	0.00
14,500.00	90.40	359.41	12,440.22	2,085.21	-209.81	2,087.26	0.00	0.00	0.00
14,600.00	90.40	359.41	12,439.53	2,185.20	-210.85	2,187.26	0.00	0.00	0.00
14,700.00	90.40	359.41	12,438.84	2,285.19	-211.89	2,287.25	0.00	0.00	0.00
14,800.00	90.40	359.41	12,438.15	2,385.19	-212.92	2,387.25	0.00	0.00	0.00
14,900.00	90.40	359.41	12,437.46	2,485.18	-213.96	2,487.25	0.00	0.00	0.00
15,000.00	90.40	359.41	12,436.77	2,585.17	-214.99	2,587.25	0.00	0.00	0.00
15,100.00	90.40	359.41	12,436.08	2,685.16	-216.03	2,687.24	0.00	0.00	0.00
15,200.00	90.40	359.41	12,435.39	2,785.15	-217.06	2,787.24	0.00	0.00	0.00
15,300.00	90.40	359.41	12,434.70	2,885.15	-218.10	2,887.24	0.00	0.00	0.00
15,400.00	90.40	359.41	12,434.01	2,985.14	-219.14	2,987.24	0.00	0.00	0.00
15,500.00	90.40	359.41	12,433.31	3,085.13	-220.17	3,087.23	0.00	0.00	0.00
15,600.00	90.40	359.41	12,432.62	3,185.12	-221.21	3,187.23	0.00	0.00	0.00
15,700.00	90.40	359.41	12,431.93	3,285.12	-222.24	3,287.23	0.00	0.00	0.00
15,800.00	90.40	359.41	12,431.24	3,385.11	-223.28	3,387.23	0.00	0.00	0.00
15,900.00	90.40	359.41	12,430.55	3,485.10	-224.31	3,487.23	0.00	0.00	0.00
16,000.00	90.40	359.41	12,429.86	3,585.09	-225.35	3,587.22	0.00	0.00	0.00
16,100.00	90.40	359.41	12,429.17	3,685.08	-226.39	3,687.22	0.00	0.00	0.00

Company:	Marathon Oil	Local Co-ordinate Reference:	Well TB #8H
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:	TB #8H	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)
16,200.00	90.40	359.41	12,428.48	3,785.08	-227.42	3,787.22	0.00	0.00	0.00
16,300.00	90.40	359.41	12,427.79	3,885.07	-228.46	3,887.22	0.00	0.00	0.00
16,400.00	90.40	359.41	12,427.10	3,985.06	-229.49	3,987.21	0.00	0.00	0.00
16,500.00	90.40	359.41	12,426.41	4,085.05	-230.53	4,087.21	0.00	0.00	0.00
16,600.00	90.40	359.41	12,425.71	4,185.05	-231.56	4,187.21	0.00	0.00	0.00
16,700.00	90.40	359.41	12,425.02	4,285.04	-232.60	4,287.21	0.00	0.00	0.00
16,800.00	90.40	359.41	12,424.33	4,385.03	-233.64	4,387.20	0.00	0.00	0.00
16,900.00	90.40	359.41	12,423.64	4,485.02	-234.67	4,487.20	0.00	0.00	0.00
17,000.00	90.40	359.41	12,422.95	4,585.02	-235.71	4,587.20	0.00	0.00	0.00
17,100.00	90.40	359.41	12,422.26	4,685.01	-236.74	4,687.20	0.00	0.00	0.00
17,200.00	90.40	359.41	12,421.57	4,785.00	-237.78	4,787.19	0.00	0.00	0.00
17,300.00	90.40	359.41	12,420.88	4,884.99	-238.81	4,887.19	0.00	0.00	0.00
17,311.26	90.40	359.41	12,420.80	4,896.25	-238.93	4,898.45	0.00	0.00	0.00
[CaveLionTB#8H]LTP/BHL									

Design Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
[CaveLionTB#8H]FTP	0.00	0.00	11,879.00	-187.98	-186.27	388,729.08	791,538.44	32.065237	-103.392223
- plan hits target center									
- Point									
[CaveLionTB#8H]LTP/BI	0.00	0.00	12,420.80	4,896.25	-238.93	393,813.31	791,485.78	32.079213	-103.392249
- plan hits target center									
- Point									

Checked By: _____ Approved By: _____ Date: _____

DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
CASE RECORDATION
(MASS) Serial Register Page

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01 10-21-1976;090STAT2776;43USC1761

Case Type 286001: ROW-COMM SITE, FLPMA

Commodity 971: NON-ENERGY FACILITIES

Case Disposition: AUTHORIZED

Case File Juris: CARLSBAD FIELD OFFICE

Total Acres:
0.005

Serial Number
NMNM 120413

Serial Number: NMNM-- 120413

Name & Address	Int Rel	% Interest
DOE PO BOX 3090 CARLSBAD NM 88221	HOLDER	100.00000000

Serial Number: NMNM-- 120413

Mer	Twp	Rng	Sec	SType	Nr	Suff	Subdivision	District/ Field Office	County	Mgmt Agency
23	0200S	0230E	009	ALIQ			SENE;	CARLSBAD FIELD OFFICE	EDDY	BUREAU OF LAND MGMT
23	0210S	0240E	008	ALIQ			NESE;	CARLSBAD FIELD OFFICE	EDDY	BUREAU OF LAND MGMT
23	0240S	0250E	023	ALIQ			NWSE;	CARLSBAD FIELD OFFICE	EDDY	BUREAU OF LAND MGMT
23	0220S	0290E	004	ALIQ			NESW;	CARLSBAD FIELD OFFICE	EDDY	BUREAU OF LAND MGMT
23	0230S	0300E	033	ALIQ			SENE;	CARLSBAD FIELD OFFICE	EDDY	BUREAU OF LAND MGMT
23	0150S	0310E	007	ALIQ			SWNW;	ROSWELL FIELD OFFICE	CHAVES	BUREAU OF LAND MGMT
23	0220S	0310E	008	ALIQ			NWNW;	CARLSBAD FIELD OFFICE	EDDY	BUREAU OF LAND MGMT
23	0210S	0320E	013	ALIQ			SWSW;	CARLSBAD FIELD OFFICE	LEA	BUREAU OF LAND MGMT
23	0220S	0350E	031	ALIQ			NENE;	CARLSBAD FIELD OFFICE	LEA	BUREAU OF LAND MGMT

Relinquished/Withdrawn Lands

Serial Number: NMNM-- 120413

Serial Number: NMNM-- 120413

Act Date	Act Code	Action Txt	Action Remarks	Pending Off
04/08/2008	124	APLN RECD		
04/08/2008	841	CAT 2 COST RECOVERY-PROC		
04/17/2008	110	APLN COMPLETE		
04/17/2008	971	COST RECOV (PROC) RECD	\$379.00;1	
06/14/2008	005	NEPA ANALYSIS APPROVED	CX-NM-520-2008-0856;	
06/14/2008	852	RENTAL EXEMPT		
07/10/2008	065	COST RECOV (MON) RECD	\$379.00;1	
07/10/2008	307	ROW GRANTED-ISSUED		
07/10/2008	501	REFERENCE NUMBER	DOE SEISMIC SITES;	
07/10/2008	974	AUTOMATED RECORD VERIF	OWL/BJS;	
07/10/2018	853	COMPL/REVIEW DUE DATE		
12/31/2037	763	EXPIRES		

NO WARRANTY IS MADE BY BLM FOR USE OF THE DATA FOR PURPOSES NOT INTENDED BY BLM

DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
CASE RECORDATION
(MASS) Serial Register Page

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Line Number Remark Text

Serial Number: NMNM-- 120413

0002	VARIOUS SEISMIC SITES/25 SQ FT
0003	9 SITES/ ONE CO-LOCATED ON EXISTING COMM TOWER
0004	NM-85425 COMBINED WITH NM-120413

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 97088	³ Pool Name WC-025 G-08 S2535340; BONE SPRING
⁴ Property Code	⁵ Property Name CAVE LION 5 TB FEDERAL	⁶ Well Number 8H
⁷ OGRID No. 372098	⁸ Operator Name MARATHON OIL PERMIAN LLC	⁹ Elevation 3262'

¹⁰ Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
N	5	26S	35E		287	SOUTH	1841	WEST	LEA

¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
C	5	26S	35E		100	NORTH	1652	WEST	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.

Defining Well SHEET 1 OF 3 JOB No. R3757_006 REV 3 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. Signature: Date: 1/4/2019 Printed Name: Adrian Covarrubias E-mail Address: 18 SURVEYOR CERTIFICATION I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief. DECEMBER 13, 2018 Date of Survey Signature and Seal of Professional Surveyor: Certificate Number: LLOYD P. SHORT 21653
	LAST TAKE POINT/BOTTOM HOLE LOCATION 100' FSL 1652' FWL, SECTION 5 NAD 83, SPCS NM EAST X: 832673.19' / Y: 393871.04' LAT: 32.07933954N / LON: -103.39271226W NAD 27, SPCS NM EAST X: 791485.78' / Y: 393813.31' LAT: 32.07921333N / LON: -103.39224912W		
	FIRST TAKE POINT 100' FSL 1650' FWL, SECTION 5 NAD 83, SPCS NM EAST X: 832726.08' / Y: 388786.67' LAT: 32.06536336N / LON: -103.39268462W NAD 27, SPCS NM EAST X: 791538.44' / Y: 388729.08' LAT: 32.06523708N / LON: -103.39222227W		
	KICK OFF POINT 100' FSL 1650' FWL, SECTION 5 NAD 83, SPCS NM EAST X: 832726.08' / Y: 388786.67' LAT: 32.06536336N / LON: -103.39268462W NAD 27, SPCS NM EAST X: 791538.44' / Y: 388729.08' LAT: 32.06523708N / LON: -103.39222227W		
	SURFACE HOLE LOCATION 287' FSL 1841' FWL, SECTION 5 NAD 83, SPCS NM EAST X: 832912.34' / Y: 388974.66' LAT: 32.06587562N / LON: -103.39207813W NAD 27, SPCS NM EAST X: 791724.71' / Y: 388917.06' LAT: 32.06574933N / LON: -103.39161577W		